

**THORN TURN WASTE PARK  
THORN ROAD  
HOUGHTON REGIS  
BEDFORDSHIRE**

**ASSESSMENT OF POTENTIAL AND UPDATED  
PROJECT DESIGN**

**Albion**  
archaeology



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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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## Acknowledgements

*Albion Archaeology is grateful to the Community Services Directorate of Central Bedfordshire Council, who commissioned the work. The site was monitored on behalf of the Local Planning Authority by Martin Oake (Central Bedfordshire Council Archaeologist).*

*This report has been prepared by David Ingham and Richard Gregson (Albion Archaeology), with contributions by Jennifer Browning (University of Leicester Archaeological Services: animal bone), Holly Duncan (Albion Archaeology: non-ceramic artefacts), John Giorgi (freelance: charred plant remains) and Jackie Wells (Albion Archaeology: ceramic artefacts).*

*Fieldwork was managed for Albion Archaeology by Rob Wardill and supervised by Richard Gregson and Marcin Koziminski, with investigation and recording carried out by Mike Emra, Gary Manning, Krzysztof Ryniec and Adrian Woolmer. Processing of the ecofact samples was undertaken by Slavomir Utrata and Ben Carroll, with initial processing of the finds carried out by Jackie Wells. Site drawings were digitised by Joan Lightning. All Albion Archaeology projects are under the overall management of Drew Shotliff.*

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**Key Terms**

CBC	Central Bedfordshire Council
CBCA	Central Bedfordshire Council Archaeologist
HER	Central Bedfordshire and Luton Historic Environment Record
WSI	Written Scheme of Investigation



## **Non-Technical Summary**

*Planning permission was granted by Central Bedfordshire Council for the construction of a waste park on land at Thorn Turn, Thorn Road, Houghton Regis, Bedfordshire. The development area, centred on grid reference TL 0002 2424, lies on ground that slopes gently down from Chalk Hill in the south to the Ouzel Brook in the north. The underlying geology consists of the West Melbury Marly Chalk Formation, with a superficial Head deposit of alluvial clays, silts and gravels.*

*The surrounding area contains extensive evidence of Iron Age, Roman and medieval settlement. For this reason, a condition was attached to the planning consent, requiring a programme of archaeological works, which Albion Archaeology was commissioned to carry out. These began with an evaluation in 2012 that identified remains dating from at least the Roman period onwards, as a result of which an area was demarcated for full archaeological excavation.*

*The excavation was carried out between December 2015 and August 2016, and revealed late Bronze Age to early Iron Age field systems, trackways, and a small amount of settlement-related activity. A large well or water-pit that was associated with heating water also dated to this period. A Roman trackway was also identified, as well as the remains of medieval ridge-and-furrow cultivation, and post-medieval field boundaries and a sunken track.*

*This document provides a preliminary summary of the results and assesses their significance. It also contains proposals for further analysis, and publication of the data in the Bedfordshire Archaeology journal. The project archive will ultimately be deposited with Luton Culture (entry no. LTNMG 1160).*



## 1. INTRODUCTION

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### 1.1 **Project background**

Planning permission was granted by Central Bedfordshire Council for the construction of a waste park on land at Thorn Turn, Thorn Road, Houghton Regis, Bedfordshire (CB/15/01626/REG3). The waste park forms part of a larger overall development, in the form of a highways depot and commercial units.

As the development would have an impact on archaeological remains, a condition was attached to the planning consent requiring the implementation of a programme of archaeological works. A design brief (CBC 2015) was issued by the CBC Archaeologist (CBCA), setting out in detail the requirements for these works.

Albion Archaeology was commissioned to carry out the archaeological works, in accordance with a Written Scheme of Investigation (WSI) that was approved in advance by the CBCA (Albion Archaeology 2015). These began with an evaluation (Albion Archaeology 2012) that identified remains dating from at least the Roman period onwards, as a result of which an area was specified for archaeological mitigation. This report provides a preliminary summary of the results and assesses their significance.

### 1.2 **Site Location and Geology**

The site, centred on (NGR) TL 0002 2424, lies on the eastern side of the A5. It is bounded to the north by the Ouzel Brook and agricultural fields, with the Houghton Regis sewage works to the east, and further agricultural fields and a small area of woodland to the south. A rifle range lies to the north-east.

The site lies on gently sloping ground at a height of *c.* 100m OD, overlooked by Chalk Hill to the south. The land slopes down slightly from Chalk Hill to the Ouzel Brook in the north. The underlying geology consists of the West Melbury Marly Chalk Formation, with a superficial Head deposit of alluvial clays, silts and gravels (British Geological Survey 2015).

### 1.3 **Archaeological Background**

A detailed archaeological and historical background is given in the design brief (CBC 2015); the key elements of this that relate to the excavated remains are summarised below.

The surrounding area contains extensive evidence of prehistoric and Roman occupation, including two Iron Age sites (HER 14581 and HER 15141) near Sewell to the south-west. Surface finds indicate the existence of further Iron Age and Roman occupation to the west of the development area (HER 16179), of which Watling Street forms the western boundary. To the north, an area identified as Thorn Green (HER 12242) is the site of a former village green that is probably associated with the medieval settlement of Thorn (HER 16088).

Excavations from the early 1950s to mid-1970s on the chalk ridge immediately south of the development area produced a sequence of remains, including burials, from the Neolithic to Saxon periods (HER 687). More recent work on the line of the A5-M1





link to the north has uncovered an early–middle Iron Age farmstead (HER 18290), a late Iron Age / early Roman enclosed settlement (HER 16541), and a probable later Bronze Age / early Iron Age pit alignment and ditches that may extend southwards into the wider Thorn Turn development area (Martin Oake pers. comm.).

Evaluation for the Houghton Regis North: Land West of Bidwell project has revealed numerous remains dating from the Iron Age onwards (Bidwell West Consortium 2014). These include a middle Iron Age to Romano-British settlement west of Thorn Farm, a late Iron Age / Romano-British settlement to the north of Thorn Spring (a medieval moated site), and a cluster of late Iron Age / Romano-British funerary remains.

#### **1.4 Project Objectives**

The overall purpose of the archaeological works was to determine and understand the nature, function and character of the site in its cultural and environmental setting, and to prepare and disseminate a report that fully describes the findings.

Based on the results of the evaluation, the following research themes were established for the archaeological mitigation works, in line with local and regional research agendas:

- The origins and development of field systems in the Roman period (Going and Plouviez 2000, 21; Oake 2007, 11)
- The relationship between Roman field systems and settlements (Oake 2007, 11)
- Pit alignments: their function in the landscape and relationship to the settlement pattern (Going and Plouviez 2000, 19; Oake 2007, 11)
- The origin and development of medieval field systems (Oake 2007, 14; Wade 2000, 24)
- The origins and development of field systems in Bedfordshire and the wider region (Oake 2007, 17; Brown *et al.* 2000, 45)
- The study of buried land surfaces (Oake 2007, 17; Brown *et al.* 2000, 46; Medlycott 2011, 85)

#### **1.5 Purpose of this Report**

This report presents a detailed assessment of the results of all stages of the archaeological investigations. An Updated Project Design is included, listing the remaining tasks that will be required to analyse, publish and archive the results of the fieldwork. The completion of these tasks will fulfil the final requirements stipulated in the Written Scheme of Investigation (Albion Archaeology 2015).



## 2. PROVISIONAL SUMMARY OF RESULTS

### 2.1 Introduction

Figure 2 shows a phased plan of all the exposed archaeological remains, which were excavated between December 2015 and August 2016. The requirements of the development meant that not all of the mitigation area needed to be machined deeply enough to reach the archaeological horizon; these areas were still covered by subsoil, masking any archaeological features in those areas, and are shown on Figure 2.

### 2.2 Methodological Approach to Assessing Contextual Data

The contextual data were assessed in order to establish a coherent spatial and chronological framework. For ease of reference, the 554 contexts that were recorded have been combined into Groups (indicated by a 'G' prefix). These relate to associated, contemporary groups of related contexts, such as trackway ditches, field boundaries, post-holes and pits (Table 1). Occasional references are made to individual features within a Group; these are indicated by an 'F' prefix.

The Groups were then mostly assigned to Periods, each of which represents a distinct chronological period of contemporary activity, although fourteen Groups remain undated.

The text which follows is structured by Period and discussed by Group. It presents the contextual evidence, while information on the artefacts and ecofacts that were recovered can be found in Appendices 1–2.

Period	Group	Group Description
1: Late Bronze Age to early Iron Age	G1	Trackway and possible wheel rut
	G2	Well/water-pit
	G2.01	Waterlogged primary fill of G2
	G2.02	Waterlogged second fill of G2
	G2.03	Re-cut of G2
	G2.04	Curvilinear ditches east of G2
	G2.05	Animal disturbance
	G2.06	Deposits of fire-cracked stones
	G2.07	Chalky clay surface
	G2.08	Re-cut of ditches G2.04
	G2.09	Linear feature cutting G2.03
	G2.10	Extension of G2.10
	G2.11	Re-cut of G2.09
	G2.12	Fire-cracked stones within G2.03
	G2.13	Charcoal-rich fill of G2.03
	G2.14	Final fill of G2.03
	G2.15	Fill of ditches G2.08
	G3	Pit
	G4	Two elongated pits
	G4.01	Backfill within G4
	G4.02	Fill of G4
G5	Three post-holes and a pit	
G6	Cluster of post-holes and small pits	
G7	Rooting	
G8	Cluster of four pits	
G10	Field ditches and associated pit	
G11	Six ditches	



Period	Group	Group Description	
1: Pre-Roman	G12	Five ditches	
	G13	Field ditches	
	G14	Trackway	
	G15	Ditch	
	G16	Ditch	
	G17	Ditch	
	G18	Post-hole	
	G19	Gully	
	G20	Gully	
	G21	Ditch	
	G22	Ditch	
	G23	Junction of two ditches	
	G24	Trackway	
	G25	Ditch	
	G26	Ditch	
	G27	Re-cut of ditch G25	
	G28	Re-cut of ditch G26	
	G30	Ditch	
	2: Roman	G31	Ditch
		G32	Re-cut of ditch G31
		G33	Ditch
		G38	Palaeochannel
	3: Medieval	G40	Two ditches
		G41	Two furrows
		G42	Furrows
		G43	Furrows
		G44	Furrows
	4: Post-medieval	G45	Field ditches
		G45.01	Chalky clay deposit in G45
		G46	Field ditch and re-cut
G47		Field ditch and re-cut	
G48		Hollow-way and ditch	
G49		Ditch	
G52		Subsoil	
G53		Topsoil	
5: Undated	G9	Two pits/post-holes	
	G39	Ditch	
	G50	Pit	
	G51	Alluvium	

**Table 1:** Summary of provisional phasing

### 2.3 Period 1: Late Bronze Age to Early Iron Age Activity (Fig. 3)

The earliest identified remains of human activity dated to the late Bronze Age to early Iron Age. These comprised a large pit associated with heating water, a cluster of settlement-related activity, and the remains of a field system and trackways.

#### 2.3.1 Field system and trackways

The fragmentary remains of a relatively extensive field system were revealed across the site. Nearly all the field ditches were 0.5–1.5m wide and up to *c.* 0.5m deep; only a few contained dating evidence, which mostly comprises late Bronze Age / early Iron Age pottery, though the presence of small amounts of specifically early Iron Age material suggests a degree of longevity to the fields' duration of use.



Only the field formed principally by ditches G10 was clearly defined; the other ditches indicate that further fields existed, but their layout was either obscured by the subsoil and furrows, or lay largely beyond the excavated area. A small, undated pit was the only feature identified within field G10. The southern edge of the field was formed by ditch G25, which also partially defined a second field to the south; this southern boundary of field G10 was subsequently re-cut by G27. The presence of ditches G11–12, G15–17, G23, G26/G28 suggests that further activity took place in the region of this second field to the south of G10, with modifications over time, but truncation by furrows prevented the layout of this activity from being determined.

Ditch G21 appears stratigraphically to have redefined the eastern side of field G10, though it may have formed a contemporary track within the edge of the field to lead animals in or out. Ditches G24 are likely to have formed a track leading to and/or from the south-western corner of the field.

Two further trackways were identified. G1 also led south from field G10, appearing to continue beyond the southern limit of excavation, although part of its course was obscured by subsoil. The ditches that defined it were as little as 3.5m apart towards the northern end, diverging to 8–9m apart further south. The ditches themselves were 0.8–1.7m wide and 0.1–0.45m deep. A possible wheel rut was identified within the trackway towards the south. The southern end of a possible second trackway was identified at the northern limit of excavation; these ditches were *c.* 8m apart, measuring 0.7–1.1m wide and 0.2–0.5m deep. Both sets of trackway ditches contained small amounts of late Bronze Age / early Iron Age pottery.

Ditches G13 and G30 suggest the presence of further fields to the north of the excavation limit, but the layout of these within the excavated area was obscured by the subsoil. Similar difficulties apply to the interpretation of ditches G19 and G20 at the southern edge of the excavation area. Little dating evidence was recovered for any of these four ditches, but the limited ceramic and stratigraphic evidence that was recorded does suggest broad contemporaneity with the other fields and trackways.

### 2.3.2 Settlement-related activity

A scatter of pits and post-holes were present across an area of *c.* 100m along the eastern edge of the excavated area. Late Bronze Age / early Iron Age pottery was recovered from the majority of these, albeit only in small quantities; only water-pit G2 and the features associated with it were signally lacking in pottery.

Pits G4 were large, but their function is unclear. The northern of the two was 5.5m long, 1.4m wide and 0.7m deep; the other was shorter and shallower, but wider. The four pits in G8 were smaller, measuring 0.9–1.8m in diameter and no more than 0.4m deep, while pit G7 was smaller still, though its irregular shape and profile suggest that it may have been no more than a patch of root disturbance. It is unclear whether all four features in G6 were post-holes or whether the larger two, which were *c.* 0.7m in diameter, were small pits, but no clear pattern to their layout could be discerned either way. The three post-holes and elongated pit in G5 did form an arc, however, and it is possible that they represent the remains of a small structure such as a windbreak. Post-hole G18 appeared to exist in isolation.



### 2.3.2.1 Well/water-pit G2 and related features

Feature G2 originated as a well or water-pit that measured *c.* 3.3m in diameter and 2m deep. It had waterlogged deposits G2.01 and G2.02 in its base; the upper one of these, G2.02, contained the partial skeleton of a sheep. The feature was then expanded to the north (G2.03), becoming twice as long but only 1.45m deep.

The pit's function changed, however, as it began to be deliberately backfilled: *c.* 250kg of burnt stones (G2.06) were deposited in the eastern side of the pit, some in a pile, the others in a line along the edge. The stones' location suggests that they were backfilled from the area to the east of the pit, which was bounded by ditches G2.04 (subsequently redefined by G2.08). This area may have once held a burnt mound of these stones, though no *in situ* evidence survived for this; the stones had perhaps been used for heating water drawn from the well/water-pit. The only feature identified within this area (G2.05) was irregularly shaped and is thought to have been an animal burrow. Ditch G22 was identified to the south, but it is unclear whether this was related.

The pit was further backfilled with redeposited chalky clay natural (G2.07), 0.4–0.6m thick, which appears to have formed a surface. This surface and the sides of the pit were cut by gully G2.09/2.10 and partial re-cut G2.11, which may have borne some relation to ditches G2.04 that delimited the area to the east — the area that they defined perhaps included the part of the pit that was still open. They are at least known to have been contemporaneous with the well/water-pit: gully G2.09/2.10 (0.6m wide and 0.45m deep) was sealed by the uppermost fill of the pit (G2.14), while this uppermost deposit was also similar to the fill of gully G2.09/2.10 and deposit G2.15 in the ditches to the east.

A neatly stacked pile of fire-cracked stones (G2.12) was found on top of the clay surface within the pit, forming a roughly oval mound that was 1.2m long, 1m wide and up to 0.25m thick. These were mainly composed of quartzite, with a lesser amount of flint and other stones, and ranged in size from 40 x 20 x 20mm to 140 x 120 x 80mm. A charcoal-rich deposit (G2.13) that was up to 100mm thick overlay the pile of stones. The pit's uppermost fill (G2.14) also contained charcoal, but in much smaller quantities; this deposit was similar to G2.15 in the ditches to the east.

## 2.4 Period 2: Roman Trackway and Palaeochannel (Fig. 2)

Evidence for activity within the excavated area during the Roman period was confined to a few isolated remains at the limit of excavation, with even these largely obscured by the subsoil. Ditch G31 to the north only partially survived being re-cut by G32, which was 1.2m wide and up to 0.75m deep; they may have formed the southern edge of a trackway, as a roughly parallel ditch (G33) was identified to the north, though only G32 yielded any Roman pottery.

In the south-east corner of the excavation area lay G38, on the line of one of the G1 trackway ditches in Period 1. This was recorded as part of a possible small palaeochannel, measuring up to 4.5m wide (but only 0.4m deep), though the early ditch may simply have been expanded to form a sump, thereby remaining in use for longer and ultimately acquiring a small collection of Roman pottery.



### **2.5 Period 3: Medieval Farming (Fig. 2)**

No artefactual dating evidence was recovered from any of the features assigned to Period 3, but the furrows are typologically assumed to be medieval in origin, while ditches G40 shared the same alignment as the majority of the furrows. The ditches were only 4m apart and may have formed a trackway, though the northern ditch was only identified in a trial trench beyond the main excavation area.

Three alignments of furrows were identified (G41, G42/43 and G44), suggesting that they were located within separate fields. Furrows G43 were on the same alignment as G42 but were stratigraphically later, suggesting that the ridge and furrow was reinstated in this field after falling out of use or being levelled out at some point.

### **2.6 Period 4: Post-medieval Fields and Hollow-way (Fig. 2)**

Several ditches (G45–47) within the main excavation represent post-medieval field boundaries, as does a further one (G49) in a trench to the north (not illustrated). Some of these correspond with ones shown on the 1762 Estate Map of the area; some also contained fragments of post-medieval/modern brick and tile. They varied considerably in size, ranging from 0.7m to 2.2m in width and 0.1m to 0.75m in depth. G48 also represents a post-medieval ditch, this one flanking the northern side of a hollow-way.

### **2.7 Period 5: Undated Features (Fig. 2)**

A number of features could not be dated either by their artefactual content, their stratigraphic relationships with other features, or by cartographic evidence. These include ditch G39, the two features in G9, which were either small pits or large post-holes, and pit G50 (not illustrated), which lay in a trench to the north of the main excavation area and contained fragments of modern-looking animal bone. Alluvium G51 is also technically undated, though its stratigraphic relationship with the archaeological features means that it dates back at least as far as the Bronze Age.



### **3. ANALYTICAL POTENTIAL OF THE DATA**

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#### **3.1 Contextual Data**

The contextual data has allowed a limited reconstruction of the sequence of activity on site from the late Bronze Age to early Iron Age through to the post-medieval period. Much of this activity can only be dated to broad periods, however, due not least to a high degree of residuality in the pottery assemblage; there are also a number of features that could not be dated even to one of these broad periods. With the exception of Period 1 well/water-pit G2, the prehistoric and Roman features were poorly preserved as a result of medieval ploughing.

Examination of the contextual data in relation to the other datasets has already been achieved to the level possible, although the acquisition of radiocarbon dates for the faunal remains from well/water-pit G2 will at least help to refine the date for this specific feature and the few others related to it.

#### **3.2 Ceramic Artefacts**

The pottery assemblage, which is characteristic of material recovered locally from similar sites of the same period, comprises just 82 sherds (576g), representing approximately 54 vessels. Roughly three quarters by number (though only half by weight) of these are late Bronze Age or early Iron Age in date. The few sherds of ceramic building material are all post-medieval.

The ceramic assemblage has limited potential to address the project's original research objectives, primarily by providing dating evidence. It has already been fully catalogued and analysed, and has no further analytical potential.

#### **3.3 Non-ceramic Artefacts**

This small assemblage consists entirely of artefacts that are either residual within the context in which they were found, post-medieval, or not closely datable. It therefore has little overall potential to address the project's original research objectives, although identification of the stone type and source of the possible saddle quern from Period 1 well/water-pit G2 has moderate potential to establish the existence of trade connections in the late Bronze Age to early Iron Age, and its presence does indicate the processing of grain nearby.

#### **3.4 Animal Bone**

The faunal assemblage dates predominantly to the late Bronze Age to early Iron Age, but is very small and poorly preserved, and has generally little potential to address the project's original research objectives. The exception is a partial sheep skeleton from Period 1 well/water-pit G2, which has potential to cast light on the use of this feature, and radiocarbon dating of which may help to refine its date.

#### **3.5 Charred and Waterlogged Plant Remains**

Only limited amounts of poorly preserved charred plant remains were recovered, comprising grains and other plants/weeds that are typical cereals for this period. The waterlogged remains from Period 1 well/water-pit G2 are consistent with this interpretation of the feature's function. The assemblage has already been fully catalogued and analysed, and has no further analytical potential.



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## 4. UPDATED PROJECT DESIGN

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### 4.1 Introduction

Following evaluation of the Thorn Turn site, a set of research aims was identified prior to its excavation (see Section 1.4). Examination of the datasets has shown them to have little potential to address these objectives, partly because the excavated remains were mostly earlier than the Roman ones that were anticipated. The contextual evidence does provide information on the layout of medieval fields, however, while the identification of late Bronze Age to early Iron Age fields and trackways contributes to a synthetic picture of the wider area.

Further research will focus on the late Bronze Age to early Iron Age well/water-pit G2, which was the best preserved feature on site, has potential to allow its date to be refined, and also contains evidence for activities that may have been ritual in nature.

### 4.2 Analysis

#### 4.2.1 Analysis of contextual data

The provisional phasing of the site, described in this report, will be rigorously checked using stratigraphic and artefactual data, but no changes are envisaged. Documentary records will be consulted to seek comparable examples to the Period 1 well/water-pit G2 that may throw light on its function, and detailed structural illustrations of it will be produced for publication.

#### 4.2.2 Analysis of non-ceramic artefacts

The single nail will be x-rayed, and petrological identification of the possible quern from Period 1 well/water-pit G2 will be confirmed by Dr Jill Eysers.

#### 4.2.3 Radiocarbon dating

Two samples from the partial sheep skeleton recovered from Period 1 well/water-pit deposit G2.02 will be selected and submitted for radiocarbon dating.

### 4.3 Publication

This report will be uploaded to the Archaeology Data Service's Online Access to the Index of Archaeological Investigations (OASIS ref: albionar1-224456). In addition, a short, synthetic article focusing on the late Bronze Age to early Iron Age remains and incorporating the additional analysis will be submitted for publication in the *Bedfordshire Archaeology* journal.

### 4.4 Archiving

Following approval of this document by the CBCA, the archive of materials (subject to the landowner's permission) and accompanying records will be deposited with Luton Culture (entry no. LTNMG 1160).





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## 6. APPENDIX 1: ARTEFACTS

### 6.1 Ceramics

Jackie Wells

The pottery assemblage totals 82 sherds (576g), representing approximately 54 vessels. Most date to the late Bronze Age / early Iron Age and derive from Period 1 features (Table 2); a small quantity of Roman, medieval and post-medieval pottery was also identified. All sherds are highly abraded and fragmentary, demonstrated by a low mean weight of 7g. Pottery was collected from thirty-one discrete deposits, only one of which contained more than 100g.

Period	Group	No. Sherd	Wt. (g)
1	G1 Trackside ditches	5	12
	G2.04 Sub-oval area east of pit	3	3
	G2.07 Redeposited chalky clay natural	2	7
	G2.14 Final fill of pit G2	6	43
	G2.15 Fill of re-cut curvilinear ditches	1	1
	G4 Two pits	1	9
	G5 Three post-holes and a pit	2	7
	G6 Pit/post-hole cluster	19	94
	G7 Rooting	2	16
	G8 Pit cluster	6	29
	G10 Field and associated pit	4	12
	G14 Possible trackway	2	15
	G22 Small ditch	1	2
	G23 Junction of two ditches	1	6
	G25 Enclosure ditch	3	14
	G27 Re-cut of enclosure ditch	1	2
G30 Ditch	5	12	
2	G32 Re-cut of southern trackside ditch	3	162
	G38 Palaeochannel fan	2	48
3	G42 Furrows	1	3
4	G45 Field boundary	1	3
5	G51 Alluvium	4	6
	G52 Subsoil	7	70
<b>Total</b>		<b>82</b>	<b>576</b>

**Table 2:** Pottery quantification by Period and Group

#### 6.1.1 Period 1: late Bronze Age to early Iron Age

Sixty-four handmade sherds (284g) derived from Period 1 settlement features, with ditches and pits representing the main foci of deposition. The largest assemblage (94g) was recovered from pit/post-hole cluster G6. Characteristic of the period, flint-tempered fabrics are dominant, with a smaller number of wares containing admixtures of shell, sand and grog (Appendix 1). With the exception of a single upright tapering rim, the assemblage entirely comprises undiagnostic body sherds, precluding identification of vessel forms.

#### 6.1.2 Period 2: Roman

Early Roman pottery collected from re-cut G32 of trackside ditch G31 and from palaeochannel G38 comprises three shell-tempered sherds (162g) from an everted-rim



jar and an abraded coarse grey-ware base (7g). G38 also contained a highly abraded grog-and-sand-tempered body sherd (41g) of probable middle to late Iron Age date.

### 6.1.3 Periods 3–4: medieval/post-medieval

Period 3 furrows G42 and Period 4 field boundary G45 respectively yielded single sherds of early medieval sandy ware (3g) and 19th-century transfer-printed earthenware (3g). Fragments of post-medieval roof tile (333g) and Gault clay pavioir (183g) were collected from possible hollow-way G48 and field boundary G45. The latter also contained two pieces of modern brick (421g).

### 6.1.4 Period 5: undated

Eleven abraded sherds (76g) were collected from alluvium G51 and subsoil G52. Nine are late Bronze Age / early Iron Age flint- and/or sand-tempered wares, comparable with the pottery associated with Period 1. Single sherds of early Roman samian ware (a possible Form 27 cup) and late medieval oxidised sandy ware were also identified. An abraded fragment of post-medieval roof tile (23g) derived from subsoil G52.

### 6.1.5 Pottery type series

Pottery fabrics are summarised in Table 3 in accordance with the Bedfordshire Ceramic Type Series. All are previously published wares, for which detailed descriptions are available in the archive.

Fabric Code	Common Name	Date range	No. Sherd	Wt. (g)
<i>Prehistoric</i>				
F01A	Coarse flint	LBA / EIA	19	114
F01B	Fine flint	LBA / EIA	22	71
F01C	Flint and quartz	LBA / EIA	14	70
F03	Grog and sand	Iron Age	1	41
F16	Coarse shell	Early Iron Age	1	2
F17	Grog	Early Iron Age	5	12
F18	Sand and shell	Early Iron Age	2	7
F28	Fine sand	Early Iron Age	1	2
F29	Coarse sand	Early Iron Age	4	40
F32	Sand and flint	Early Iron Age	4	16
<i>Roman</i>				
R01	Samian ware	1st–2nd century	1	18
R06B	Coarse grey ware	2nd century+	1	7
R13	Shelly ware	2nd century+	3	162
<i>Medieval and later</i>				
C59A	Early medieval coarse sand	12th–13th century	1	3
E02	Late medieval oxidised ware	14th–15th century	1	6
P03	Black-glazed earthenware	17th century+	1	2
P45	Transfer-printed earthenware	19th century	1	3

**Table 3:** Ceramic Type Series

## 6.2 Non-Ceramics

Holly Duncan

### 6.2.1 Methodology

Each object was assigned a preliminary identification and functional category and was quantified by number and/or weight. This data was entered into the project database.



### 6.2.2 Quantification

Fifteen non-ceramic artefacts were recovered. Quantities by material are set out in Table 4. Five of the items were recovered via environmental sample processing; the remainder were hand-excavated.

Material	Quantity	Weight (g)
<b>Registered finds</b>		
Iron	1	-
Glass	5	-
Stone	2	-
Flint	5	-
<i>Total</i>	<i>13</i>	<i>-</i>
<b>Bulk finds</b>		
Ferrous slag	-	163
Burnt stone	-	872

**Table 4:** Quantification of the non-ceramic artefact assemblage by material

The objects were assigned to one of eighteen categories, most of which relate to the function the objects performed (Table 5).

Finds category	Material	Broad term	Quantity	Weight (g)
Fasteners and Fittings	Iron	nail	1	-
Household	Glass	Vessel	1	-
Household	Stone	Burnt stone	-	872
Crafts and Industry	Slag	Ferrous smelting slag	-	163
Subsistence	Stone	Rubbing stone	1	-
Subsistence	Stone	Quern?	1	-
Prehistoric	Flint	Flake	4	-
Prehistoric	Flint	Core	1	-
Uncertain	Glass	Fragment	3	-
Uncertain	Glass	Burnt droplet	1	-

**Table 5:** Non-ceramic artefact assemblage by functional category

### 6.2.3 Date range

Amongst the small assemblage of flint is a small single-platform bladelet core which is likely to be of Mesolithic date. The remaining assemblage comprises flakes. Three of these are patinated and comprise single examples of primary, secondary and tertiary flakes. Although two of the patinated flakes lack proximal ends, making ascription to a general time period (Mesolithic / early Neolithic or later Neolithic / Bronze Age) problematic, the secondary flake does retain narrow blade-like removal scars, suggesting a Mesolithic to early Neolithic date. The primary flake has a prominent bulb of percussion and a hinge fracture, possibly indicating a late Neolithic to Bronze Age date. A single unpatinated secondary flake possesses a thick butt and prominent bulb of percussion, indicating that it was hard-hammer-struck and is likely to date to the late Neolithic to Bronze Age.

The remaining assemblage is not closely datable. The nail and the ferrous smelting slag, although not predating the Iron Age, could have derived from activity anywhere between the Iron Age and the modern era. By its very nature, the rubbing stone cannot be dated. The possible quern fragment is burnt and heavily eroded (Sarcen?); although it does retain one worn surface, the absence of other diagnostic traits makes it difficult to be certain if it formed part of a saddle quern. If the identification proves correct



(petrological identification may assist in this determination), it could date from the Neolithic to early/middle Iron Age.

The glass assemblage comprises small fragments all retrieved from environmental samples. Two pieces are soda glass; one of clear colourless glass is likely to be modern. The second piece is a yellow-green sherd from a vessel; this could be of Roman date or later medieval to post-medieval. The remaining tiny sherds are all heat-affected, colours ranging from olive-green to yellow-green to grey-white. None can be closely dated.

#### **6.2.4 Provenance**

Non-ceramic artefacts were recovered from three of the six phases identified; one object (ferrous smelting slag) was also recovered from the topsoil. Assemblages by Period are discussed below.

##### **6.2.4.1 *Period 1: late Bronze Age to early Iron Age***

Nine items were recovered from Period 1 deposits, all from well/water-pit G2. The initial fills G2.01 contained a burnt, sub-oval sandstone cobble with worn smooth surfaces; this could have served as a rubbing stone used in conjunction with a saddle quern. A burnt and heat-cracked sandstone 'slab' was also found.

Soil samples from this deposit produced a droplet of burnt glass and a translucent yellow-green sherd of vessel glass. Although Bronze Age glass beads of low-magnesium, high-potassium glass (LMHK) have been found at Stotfold, Bedfordshire (Paynter 2013), glass is rarely found in Britain from Bronze Age contexts, and glass vessels are unknown. It is, therefore, highly likely that both sherds of glass are intrusive. The secondary and tertiary fills of the pit (G2.02 and G2.03) also produced small sherds of glass, one comprising clear colourless glass that is likely to be of modern date. These small sherds of intrusive glass may have been introduced by worm action, or by animal activity (*e.g.* possible badger burrows G2.05).

A fragment of a burnt quern was identified amongst the large quantity (over 250kg) of burnt stone which formed the backfill of the pit (G2.06). The fragment comprises a rounded outer edge and a worn smooth grinding surface and may have derived from a saddle quern. Petrological identification will be able to assist in determining the source of stone, and hence identifying trading contacts. Fill G2.07, a chalky clay possible capping deposit, contained a hard-hammer-struck secondary flint flake which is likely to be residual.

##### **6.2.4.2 *Period 4: post-medieval***

Subsoil deposits overlying the excavated area yielded three patinated flint flakes — one possibly of Mesolithic to early Neolithic date, one of later Neolithic to Bronze Age date, and one undated — and a nearly complete flat rectangular-headed iron nail.

##### **6.2.4.3 *Period 5: undated***

Alluvial deposits G51 contained a small, single-platform bladelet core, which is likely to be Mesolithic in date.



## 7. APPENDIX 2: ECOFACTS

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### 7.1 *Plant Remains*

John A Giorgi

#### 7.1.1 Methodology

Eleven samples were collected from five pits, four ditches and a well/water-pit, all of which dated to the late Bronze Age to early Iron Age (Period 1). A Siraf-style type flotation tank was used to process c. 10 litres from each sample, with mesh sizes of 0.3mm and 1mm used for the recovery of the flot and residue respectively. A smaller mesh size (0.25mm) was used to recover the flots from two potential organic samples. All the flots were dried with the exception of the two containing 'waterlogged' plant remains, which were kept wet in order to limit the decay of any organic material.

All the charred remains (except cereal grain fragments smaller than 1mm, charcoal and indeterminate items) were sorted from the flots and quantified, while the organic flots were scanned wet and estimates made of their frequencies. The remains were identified using a binocular microscope (magnification up to x40), modern and charred reference material, and reference manuals (Cappers *et al.* 2006; Jacomet 2006).

#### 7.1.2 Results

The charred and waterlogged plant remains are shown in Tables 6 and 7 respectively. Taxonomic order for the wild plants follows Stace (2005), which was also used for ecological data together with Ellenberg (1988), Hanf (1983) and Wilson *et al.* (2003). All but one sample produced occasional or small amounts of charred plant remains while rich 'waterlogged' botanical assemblages were present in well/water-pit F7320.

##### 7.1.2.1 Charred plant remains

The charred plant remains from the site amounted to just 111 quantified items, consisting mainly of cereal grains (60% of the total) in nine samples, cereal chaff (20%) in four, and wild plants / weed seeds (20%) in seven.

The identifiable cereals consisted of wheat (*Triticum*), represented in four samples by a few grains and small amounts of chaff, with evidence for hulled emmer/spelt wheat (*T. dicoccum/spelta*) in four samples, including possibly emmer (*Triticum cf dicoccum*) in pit F7323. There was also a single grain of free-threshing wheat (*T. aestivum/turgidum* type) in ditch F7260. Barley (*Hordeum vulgare*) was the other identifiable cereal, represented by occasional grains including evidence for hulled barley in two samples, and a twisted hulled grain in well/water-pit F7320 indicative of six-row hulled barley. The majority (almost 80%) of the cereal grains, however, could not be identified because of their poor preservation and fragmentary condition.

This range of cereals is typical for the period: hulled barley and hulled wheat, with occasional finds of free-threshing wheat, are the main grains in both Bronze Age and Iron Age contexts in southern England (Greig 1991, 302; 306). This includes other sites in Bedfordshire, for example hulled wheat (including emmer), six-row hulled barley and free-threshing wheat in late Bronze Age / early Iron Age deposits within the Biddenham Loop just west of Bedford (Luke 2016, 113). It is possible that the one free-threshing wheat grain from the site could be intrusive: recent C14 dating of free-



Group	1	2.01	2.02	2.03	2.14	2.15	6	6	8	10	14
Feature	Ditch	Well/water-pit		Pit		Ditch	Pit	Pit	Pit	Ditch	Ditch
Feature number	7426	7320		7323		7171	7064	7022	7050	7260	7075
Context number	7427	7321	7322	7325	7332	7172	7065	7024	7053	7261	7074
Sample number	109	108	107	106	105	110	102	100	101	104	103
Vol sample (l)	10	10	10	10	10	9	10	10	10	10	10
Vol flot (ml)	3	25	55	38	9	35	14	15	4	19	16
LATIN NAME	ENGLISH										
<b>Cereal grains</b>											
<i>Triticum</i> cf. <i>dicoccum/spelta</i>						1					
<i>T. aestivum/turgidum</i> type										1	
cf. <i>Triticum</i> sp.						1	1				
<i>Hordeum vulgare</i> L.					1						
<i>H. vulgare</i> L.			1								
<i>H. vulgare</i> L.			1							1	2
cf. <i>H. vulgare</i>					1		2			1	
Cerealia			1	1	11		16	11		12	1
Cerealia			1	1	11		16	11		12	1
			+	+	+	+	+	+		+	+
<b>Cereal chaff</b>											
<i>Triticum</i> cf <i>dicoccum</i>					2						
<i>Triticum</i> sp(p).					7	3	1			1	
<i>Triticum</i> spp.					6	2					
<b>Other plant/weed seeds</b>											
<i>Silene</i> sp.										1	
<i>Rumex</i> sp.				1		1					
Fabaceae indet.					1						
<i>Galium aparine</i> L.				1							
<i>Arrhenatherum elatius</i> var <i>bulbosum</i> (Willd.) St-Amans	1					2					
indeterminate						1		3	1		
indeterminate						1	4	2	2		
indeterminate											
	++	+++++	+++++	+++	+++	+++++	+++++	+++++	+++++	++	++
<b>Total</b>	<b>1</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>33</b>	<b>12</b>	<b>20</b>	<b>16</b>	<b>3</b>	<b>17</b>	<b>3</b>
<b>item density (per litre of processed soil)</b>	<b>0.1</b>	<b>-</b>	<b>0.3</b>	<b>0.3</b>	<b>3.3</b>	<b>1.3</b>	<b>2</b>	<b>1.6</b>	<b>0.3</b>	<b>1.7</b>	<b>0.3</b>

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

**Table 6:** The charred plant remains





threshing wheat grains from prehistoric deposits invariably shows these grains to be of a later date (Carruthers *et al.* 2015, 88). Recent contamination could also be implied by the presence of a few uncharred free-threshing wheat rachis fragments in pit F7022 and ditch F7075.

There was only a very small number of charred wild plant / weed seeds: *Silene* (campion/catchfly), *Rumex* (dock) and *Galium aparine* (cleaver), probably from cereal weeds incidentally harvested with the grains, separated by sieving during processing and then burnt as fuel. *Galium aparine* is a weed mainly of winter-sown cereals. Another potential arable weed was represented by a few tuber fragments of *Arrhenatherum var bulbosum* (onion couch) in ditch F7426 and pit F7323; these remains, however, along with a small number of charred tuber and rhizome fragments in three other samples, may be from the uprooting of vegetation for various uses, including a final use as fuel.

The individual charred plant assemblages only contained occasional or small amounts of material, with low concentrations ranging from 0.1 to 3.3 items per litre of processed soil. There was no significant difference in their composition, the remains consisting largely of grains, with chaff in four and weed seeds/ tuber/rhizome fragments in seven.

Most of the charred plant remains consist of debris from the final stages of crop-processing and food preparation: grains which may have been accidentally burnt while being dried before milling or storage and/or during food preparation; chaff from the de-husking of hulled wheats, usually carried out immediately before use; and weed seeds from sieving and separation from the grains also carried out during the latter stages of cleaning. The chaff and weed seeds (along with the tuber/rhizome fragments) were then probably used as fuel. The small amounts of material suggest low-level domestic crop-processing / food preparation activities, which may have been carried out at some distance from these sampled features. All the samples also produced variable, albeit mainly small, amounts of charcoal fragments.

#### **7.1.2.2 Waterlogged plant remains**

Samples 108 and 107 from, respectively, the primary and secondary fills of well/water-pit F7320 produced good and fairly similar 'waterlogged' plant assemblages; sample 108 had the greater species diversity. Most of the identifiable remains were from plants associated with wetland environments, including both aquatic and bankside/marshland species. Evidence of still/standing water was indicated by records for *Lemna* (duckweed), identified in both samples, while there were frequent seeds of *Ranunculus Batrachium* (crowfoots), an aquatic plant also found in muddy places. Other species such as *Rorippa nasturtium-aquaticum* (water cress), *Mentha aquatica* (water-mint) and *Eleocharis palustris/uniglumis* (spike-rush) may be found in both shallow water and in marshes and wet fields. Other wetland plants included *Bidens tripartita* (trifid bur-marigold), a plant found by ponds, streams, ditches and in marshy fields, and *Juncus* (rush) and *Carex* (sedge), both well represented in the two samples and found in a range of wetland environments.



Group	2.01	2.02
Feature	Well/water-pit	
Feature number	7320	
Context number	7321	7322
Sample number	108	107
Vol sample (l)	10	10
Vol flot (ml)	25	25
LATIN_NAME	ENGLISH	
<i>Ranunculus</i> subgen. <i>Batrachium</i> (DC) A Gray	crowfoots	+++++
<i>R. acris/repens/bulbosus</i>	buttercups	+ +
<i>Urtica urens</i> L.	small nettle	+ +
<i>Atriplex</i> spp.	orache	+ +
<i>Stellaria media</i> (L.) Vill.	common chickweed	+ +
<i>Persicaria</i> spp.	knotweeds	+ +
<i>Rumex</i> spp.	dock	++
<i>Rorippa nasturtium-aquaticum</i> (L.) Hayek	water cress	++
<i>Aethusa cynapium</i> L.	fool's parsley	+ +
<i>Torilis</i> spp.	hedge-parsleys	+ +
<i>Mentha cf aquatica</i>	?water-mint	+ +
<i>Sambucus nigra</i> L.	elder	+ +
<i>Carduus/Cirsium</i> spp.	thistles	+++ ++
<i>Leontodon</i> spp.	hawkbit	++
<i>Sonchus</i> spp.	milk-/sow-thistle	++ +
<i>Bidens tripartita</i> L.	trifid bur-marigold	+ +
<i>Bidens</i> sp.	bur-marigolds	++
<i>Lemna</i> spp.	duckweed	++ ++
<i>Juncus</i> spp.	rush	+++++ +++++
<i>Eleocharis palustris/uniglumis</i>	spike-rush	+ ++
<i>Carex</i> spp.	sedge	++++ ++
Poaceae indet.	grasses (large seeds)	++
Poaceae indet.	grasses (small seeds)	++ ++
indeterminate	-	+ +
indeterminate	wood (small fragments)	++ ++
Bryophyta indet.	moss	+++

**Item frequency:** + = 1–10 items; ++ = 11–50 items; +++ = 51–150; ++++ = 151–250 items; +++++ = >250 items

**Table 7:** The waterlogged plant remains

Some of the sedges and rushes may be from (wet) grassland habitats in the vicinity of the well/water-pit, along with other potential grassland plants including *Ranunculus acris/repens/bulbosus* (buttercup), *Leontodon* (hawkbit) and unidentifiable Poaceae (wild grasses). There was also a small range of plants of disturbed (including cultivated) ground and waste places, particularly in sample 108, including *Urtica urens* (small nettle), *Stellaria media* (common chickweed), *Aethusa cynapium* (fool's parsley), *Torilis* (hedge-parsleys) and *Sonchus* (milk-sow-thistle). These species are found in nitrogen-rich soils which may be indicative of human activities (including waste disposal) and/or potentially grazing animals close-by; the small tree *Sambucus nigra* (elder), represented by occasional records in sample 107, is often found on manured soils. Several of the wetland plants are also indicative of nitrogen-rich soils, including *Bidens tripartite*, while *Lemna* and *Rorippa nasturtium-aquaticum* are found in mesotrophic to eutrophic (medium to nutrient-rich) waters.



### 7.1.3 Summary

The samples only produced limited amounts of poorly preserved charred plant remains indicative of small-scale domestic activities concerned with final processing of the grains (including de-husking) and food preparation. The two main grains in the samples, hulled wheat and hulled barley, are typical cereals for the late Bronze Age to early Iron Age period.

The waterlogged remains from the well/water-pit confirm that this feature contained water, possibly on a seasonal basis. The surrounding area was also probably damp, with areas of grassland and disturbed/waste ground nearby, and nutrient-rich soils that are probably a reflection of human activities and/or grazing animals.

## 7.2 Animal Bone

Jennifer Browning

### 7.2.1 Introduction

A total of 269 animal bone fragments were hand-recovered from nineteen features, and a small number of fragments, mostly indeterminate, were retrieved during sieving of soil samples. The assemblage was primarily associated with the late Bronze Age to early Iron Age (Period 1) remains, with a small number of Roman (Period 2) and post-medieval (Period 4) deposits also containing bones.

### 7.2.2 Methodology

Specimens were identified with reference to comparative modern and ancient skeletal material held at the School of Archaeology and Ancient History, University of Leicester. A *pro forma* spreadsheet was used for recording data on preservation, taxa, bone element, state of epiphyseal fusion, and completeness, to elicit information on species proportions, skeletal representation, age, and taphonomy. Where possible, the anatomical parts present for each skeletal element were recorded using the 'zones' defined by Serjeantson (1996), with additional zones ascribed to mandibles based on Dobney and Reilly (1988). Surface preservation was assessed after Harland *et al.* (2003). The occurrence of burning, gnawing and pathologies was noted and described. Butchery was recorded using simple coding and description. Joining fragments were re-assembled and the resulting specimen counted as a single fragment, although a record of the original number of fragments was retained.

### 7.2.3 Preservation and taphonomy

The bones exhibited both old and modern breakage; noting the presence of conjoining fragments reduced the total from 269 to 191 specimens. The assemblage was highly fragmented, and, with the exception of a partial skeleton, there were no whole bones and few epiphyses. Surface condition was assessed, following Harland *et al.* (2003), and found to be variable (Table 8). The partial skeleton was in excellent condition but the rest of the assemblage was predominantly poor or fair.

Preservation	Good	Fair	Poor	Total
%	2	38	59	100

**Table 8:** Percentage of assemblage in each preservation category, excluding partial skeleton from G2.02



The poor condition of the bones inhibited the identification of butchery, gnawing and pathologies. Gnawing was not observed in the assemblage, possibly indicating that affected bones, which would have been more susceptible to destruction, had not survived. Calcined fragments were present in the sieved assemblage; these indicate exposure to high degrees of heat, but were not diagnostic enough to identify to element or taxon. Bones were also affected by other preservation factors, including some with root etching and others with a rolled/abraded appearance.

Copper-stained bones were noted in deposits (7321) and (7326), both associated with the late Bronze Age to early Iron Age water-pit activity.

The proportion of identifiable fragments was fairly low (22%; n=27), and the sample size is too small to provide information on husbandry and the economy of the site.

#### 7.2.4 Provenance and dating

The bones were recovered primarily from pits, ditches, post-holes and other features dating from the late Bronze Age to early Iron Age (LBA/EIA) field system and well/water-pit. The next largest assemblage was from post-medieval ditches (Table 9).

Period	No of fragments	%
Late Bronze Age / early Iron Age	91	74
Roman	1	<1
Post-medieval	30	24
Undated	2	2
<b>Total</b>	<b>123</b>	<b>100</b>

**Table 9:** Chronological distribution of assemblage

#### 7.2.5 Taxa and carcass representation

Cattle, sheep/goat, horse and dog were represented in the assemblage (Table 10). No birds, fish or small mammal bones were identified, which is probably due to poor preservation.

Taxa	1: LBA/EIA	2: Roman	4: Post-medieval	5: Undated	Total
cattle	13	1	-	-	14
sheep/goat	3	-	-	-	3
dog	3	-	-	-	3
horse	-	-	7	-	7
large mml	61	-	23	2	86
med mml	3	-	-	-	3
indeterminate	7	-	-	-	7
<b>Total</b>	<b>90</b>	<b>1</b>	<b>30</b>	<b>2</b>	<b>124</b>

**Table 10:** Number of identified specimens (NISP)

The late Bronze Age to early Iron Age (Period 1) assemblage was the largest (Table 10), though only nineteen bones were identifiable to taxa (Table 11). Most of these were cattle and comprised a variety of elements. Humerus fragments were commonest, representing a minimum of two individuals. Elements from a cattle skull, including fragments of horncore, were recovered from F7323 within well/water-pit G2. The three identified sheep/goat bones were all recovered from one feature and included a copper-stained metacarpal and fragments of scapula and tibia. It also contained a dog maxilla and skull fragment, probably belonging to the same individual.



A Roman palaeochannel produced a fragment of cattle metapodial shaft. Horse bones were only identified in post-medieval field ditches and consisted of elements from the head and feet.

Taxa	Period				Total
	1	2	4	5	
<b>cattle</b>	<b>13</b>	<b>1</b>	-	-	<b>14</b>
femur	1	-	-	-	1
horncore	1	-	-	-	1
humerus	5	-	-	-	5
metacarpal	1	-	-	-	1
metapodial	-	1	-	-	1
partial skull	1	-	-	-	1
pelvis	2	-	-	-	2
radius	1	-	-	-	1
tibia	1	-	-	-	1
<b>dog</b>	<b>3</b>	-	-	-	<b>3</b>
maxilla	1	-	-	-	1
skull frag	2	-	-	-	2
<b>horse</b>	-	-	<b>7</b>	-	<b>7</b>
1st phalanx	-	-	1	-	1
cheek tooth	-	-	2	-	2
mandible	-	-	1	-	1
metacarpal	-	-	3	-	3
<b>sheep/goat</b>	<b>3</b>	-	-	-	<b>3</b>
metacarpal	1	-	-	-	1
scapula	1	-	-	-	1
tibia	1	-	-	-	1
<b>large mml</b>	<b>61</b>	-	<b>23</b>	<b>2</b>	<b>86</b>
rib	-	-	-	1	1
rib fragment	1	-	-	-	1
shaft fragments	59	-	23	1	83
skull frag	1	-	-	-	1
<b>med mml</b>	<b>3</b>	-	-	-	<b>3</b>
shaft fragments	3	-	-	-	3
<b>indeterminate</b>	<b>7</b>	-	-	-	<b>7</b>
shaft fragments	7	-	-	-	7
<b>Total</b>	<b>90</b>	<b>1</b>	<b>30</b>	<b>2</b>	<b>123</b>

**Table 11:** Distribution of taxa and element within the assemblage (raw count-fragment count)

Faunal remains were recovered from three Period 1 soil samples. Sample 102, from pits/post-holes G6, and sample 105, from the upper fill G2.14 of well/water-pit G2, produced fragments of indeterminate species, both calcined and unburnt. Sample 107 contained part of a sheep femur from the partial skeleton in deposit G2.02 near the base of well/water-pit G2.

### 7.2.6 Age structure

Analysis of age at death is normally carried out using tooth eruption and wear as a guide, supplemented by the state of epiphyseal fusion of post-cranial bones. The small sample size here precludes detailed analysis and provides little evidence for husbandry practices. It should be noted that juvenile bones, which are more susceptible to destruction than those of adults, are likely to be under-represented in the assemblage.



No mandibles with ageable teeth were present in the Period 1 late Bronze Age to early Iron Age assemblage, with the exception of the partial sheep skeleton (see below).

All four cattle bones with epiphyses (proximal pelvis, proximal radius, distal tibia and distal humerus) were fused. These are all early-fusing bones and also particularly robust elements. A sheep/goat scapula was fused and a distal metacarpal was unfused. All of the horse bones from the post-medieval field ditches were fused.

### 7.2.7 Measurements

Measurements taken are recorded in Table 12. While there are insufficient numbers to use for intra-site comparisons, they could potentially contribute to wider studies.

Group	Period	Context	Taxon	Element	Measurements
2.14	1	7335	cattle	radius	bp=73.4
2.07	1	7328	cattle	tibia	bd=61.6
47	4	7213	horse	cheek tooth	p2. l=33.2, b=13.4, h=24.9,
45.01	4	7242	horse	metacarpal	bd=57.0; dd=42.3
45	4	7448	horse	metacarpal	bp=48.1; dp=31.7;
47	4	7213	horse	metacarpal	bd=44.3, bd=31.2

**Table 12:** Measurements taken on bones and teeth, after von den Driesch (1976)

### 7.2.8 Butchery

Butchery was rarely observed, most probably due to poor surface preservation. A rib which appeared to have been sawn transversely was recovered from G2.04, associated with well/water-pit G2. It is unusual for a saw to have been used on a bone of this period, except during bone-working, suggesting that this fragment could be intrusive.

### 7.2.9 Articulated bones

The partial skeleton of a sheep was recovered from G2.02, a waterlogged deposit near the base of well/water-pit G2 (Table 13). The bones were in excellent preservation, compared with the assemblage from drained deposits. The remains included the skull, from the orbits through to the occipital condyle; the front part was absent. Parts of both maxillae and mandibles were recovered. Limb bones included the left and right radii, proximal ulnae and right pelvis, left and right tibiae, and both calcanea. All the post-cranial bones were fused. The cervical vertebrae were mostly absent, but many of the thoracic and lumbar vertebrae were recovered, including the sacrum. The ribs were also well represented. Tooth eruption and attrition suggest that the animal was adult, with all three molars in wear (MWS= ggf, after Grant 1982). Tooth attrition suggests that animal was aged between two and four years, when compared with modern data (Moran and O'Connor 1994). A thoracic vertebra exhibited pathology on the tip of spinous process, suggesting a healed break.

The carcass had been systematically butchered with a fine-bladed knife. Transverse cut marks were present on the basal part of the occipital condyle, resulting from removal of the head. The animal had been horned, but these had been removed. Cut marks were noted on the maxilla above the tooth row, possibly as a result of severing the masseter muscle. Transverse cut marks on either side of the spinous process on thoracic vertebrae and the lateral processes of lumbar vertebrae and the sacrum probably resulted from removal of the tenderloin. There were also transverse and oblique cut marks on rib shafts, indicative of filleting. Cut marks were also noted on



cranial processes of thoracic vertebrae, which are likely to have occurred during segmenting of the vertebral column. Cut marks on the proximal tip of the ulna may indicate disarticulation. The fact that the bones were deposited in a semi-articulated state suggests that the animal may have been butchered for nearby consumption during a single event.

Element	Measurements (mm)
Radius x 2	bp=26.8, 27.2; bfd=19.8, 19.8; gl=141.5, 141.2; Withers est: 0.74m
Tibia x2	bp=34.1, 35.1; bd=21.5, 21.8; gl=190, 191, Withers est: 0.74m
Pelvis	LAR=24.0
Calcaneum x 2	gl=23.9, 24.2,
Lower 3rd molar	L20.8l and B8.3.

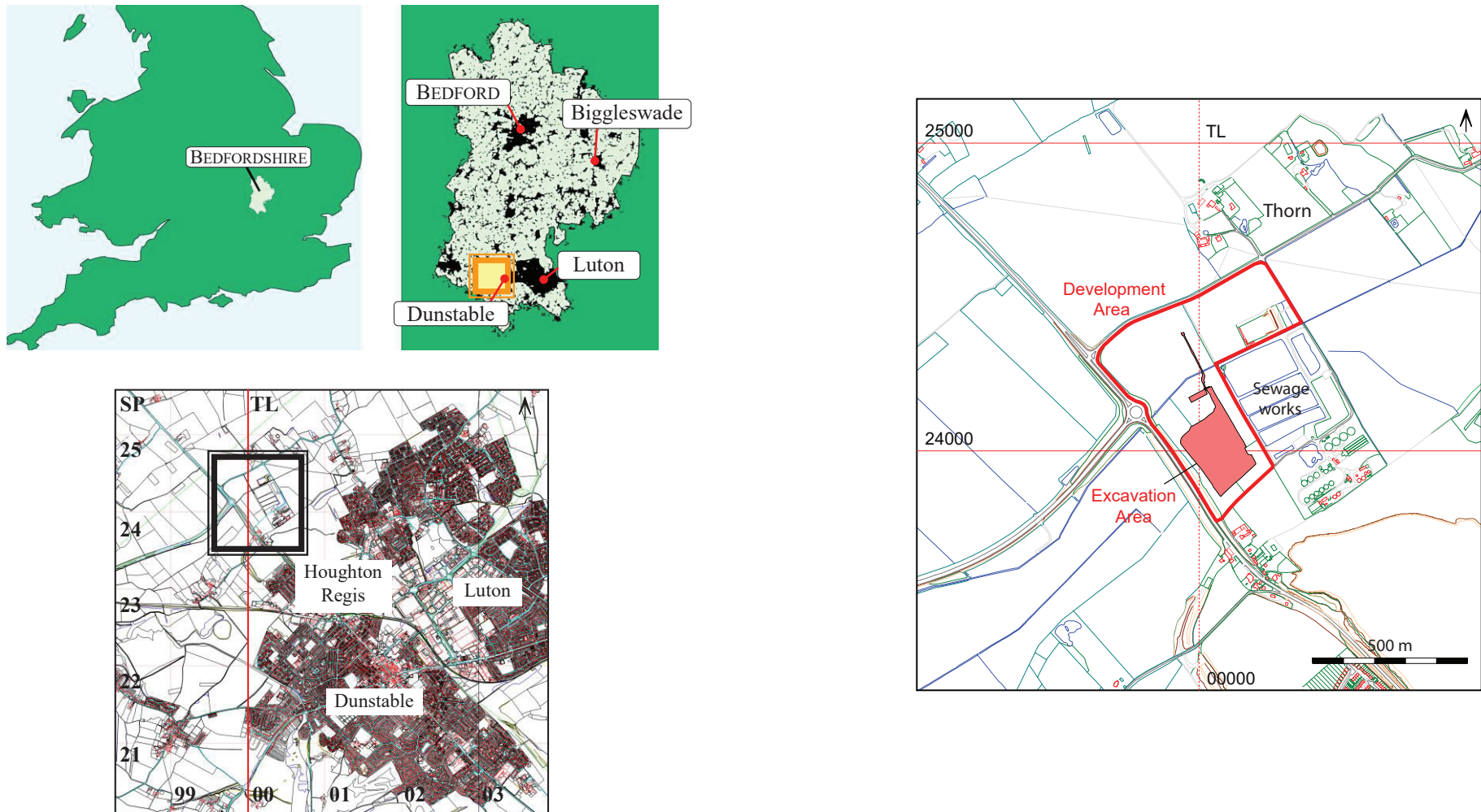
**Table 13:** Measurements taken on the partial sheep skeleton from G2.02, after von den Driesch (1976). Withers estimation after Teichert (1969)

### 7.2.10 Discussion

The assemblage of animal bones dates predominantly to the late Bronze Age to early Iron Age. The identified assemblage was very small, however; cattle, sheep/goat and dog were represented, but there were no remains of wild mammals, small mammals, birds or fish. Given the poor preservation of the assemblage, it is unsurprising that small species are not present. It is also likely that juvenile bones are under-represented, since they are more susceptible to erosion in adverse burial conditions. Cattle bones were most frequent, which may not necessarily indicate the economic and dietary basis of the site but rather reflect their better survival.

Evidence for carcass representation, butchery and age structure was rare, adversely affected by preservation factors. The exception is a well preserved partial sheep skeleton, from a waterlogged deposit near the base of a well/water-pit. This exhibited a number of fine cut marks resulting from butchery of the carcass.

Several horse bones, not articulated, were recovered from post-medieval field ditches, which may reflect the greater role of horses in the agricultural landscape of this period.



**Figure 1: Site location**

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Figure 2: Phased plan of all features



**Figure 3: Period 1 (late Bronze Age to early Iron Age)**

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Albion  
archaeology



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