# BUTTERFIELD GREEN LUTON

# ASSESSMENT OF POTENTIAL AND UPDATED PROJECT DESIGN

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#### **Preface**

Every effort has been made in the preparation of this document to provide as complete an assessment as possible, within the terms of the project design. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

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The fieldwork was undertaken under the management of Mike Luke (Project Manager) assisted by Tracy Preece (Project Officer). Matt Smith undertook the day to day responsibility for the first stage of the excavation, with Ian Turner being responsible for the northern part of the excavation area. On-site investigation and recording were undertaken by Zoe Clarke, Mick Garside, Phil Henderson, Laura Hill, James Newboult, Victoria Osborn, Kathy Pilkinton, Caroline Pudney, Anna Rebisz, Ewen Rutter and Chris Swain.

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## Keywords

Throughout this document the following terms or abbreviations are used:

CAO County Archaeological Officer of Bedfordshire County Council

BCC Bedfordshire County Council

Consultant Waterman CPM
Client Easter Group

IFA Institute of Field Archaeologists

LPA Local planning authority: Luton Borough Council

LPA Archaeological Advisor CAO

Procedures Manual Document: The Albion Fieldwork Procedures Manual (2001)

## Structure of the report

After the introductory Section 1, this report presents the aims and objectives of the investigations (Section 2). Section 3 provides a provisional summary of results. In the subsequent section the various types of evidence (data) are discussed individually (Section 4). The potential of the data to address the original research objectives is discussed in Section 5 prior to the presentation of the updated project design (Section 6). Section 7 is the bibliography.

Appendices at the back of this report present detailed method statements for the analysis (Appendix 1 and 3) and the project team (Appendix 2).



## Non-Technical Summary

This report presents an assessment of the results of archaeological investigations undertaken in advance of development at Butterfield Green, Luton (TL 1095/2510), in 2005 and 2006 by Albion Archaeology

Prior to these investigations, an evaluation was carried out between January and March 2005 which identified evidence for early-middle Iron Age activity. Partly as a result of these discoveries one of the conditions of the planning permission was the implementation of a programme of archaeological investigation, analysis and publication. This was in accordance with Luton Local Plan Policy E5 and guidance contained in Planning Policy Guidance Note 16 Archaeology and Planning. The fieldwork stage of this, open area excavation, was undertaken in two parts. Approximately 75% of the area was examined between August and September 2005 with the remainder in January 2006.

The preliminary assessment of the results suggests the following chronological framework for the archaeological remains and artefacts recovered from these investigations:

- Late Bronze Age-Iron Age: pottery sherds of late Bronze Age-early Iron Age date were recovered, all residual within later features.
- Early-middle Iron Age: the earliest firm evidence for human activity was a farmstead. This comprised domestic foci in the form of two ditched enclosures and an unenclosed area. These contained settlement-type features, including evidence for two roundhouses, other structural features, stone surfaces, water pits etc. The majority of the pottery and struck flint assemblages were recovered from these areas. Away from the domestic foci were areas containing evidence for dispersed activity e.g. pits, water pits etc but these only produced a small number of artefacts. In addition to the pottery and struck flint assemblages, fired clay, fuel ash slag and loomweights were also recovered. Although ecofactual material in the form of animal bone and charred plants remains were recovered in small quantities, assessment suggests that they are of little analytical value.
- Late Iron Age-early Romano British: evidence for activity during this phase was limited to field boundaries and a water pit. These were presumably peripheral to a currently undetected Romano-British settlement on adjacent land.

The most significant evidence identified is the early-middle Iron Age settlement. With further analysis of the structural and artefactual data it will be possible to determine in more detail the origins, development and status of the settlement.

These remains have the potential to contribute to a number of county, regional and national-based research objectives for the early-middle Iron Age period. Therefore, it is proposed that this evidence justifies further analysis and publication in the county archaeological journal. The methodologies and resources required to complete the project in this way are detailed in the Updated Project Design and appendices at the back of this report.





## 1. INTRODUCTION

# 1.1 Planning background

Luton Borough Council has granted planning permission for development at Butterfield Green, Luton.

A condition of the planning permission required the investigation, analysis and publication of archaeological remains on the site in advance of development. This was in line with Planning Policy Guidance Note 16 *Archaeology and Planning* and in accordance with Local Plan Policy E5.

## 1.2 Site location (Figure 1)

The development area is located on the north-eastern outskirts of Luton adjacent to the A505 (Hitchin Road). It is bounded to the SE by the A505, to the SW by Vale Cemetery, and to the N by open fields. The investigations reported on here (c. 1ha) were located in the eastern part of the development area centred on NGR TL1095/2510. The land had previously been under arable cultivation.

# 1.3 Landform, geology and soils

Topographically, the site lies within a wider landscape of gently rolling chalk downs. The land surface slopes down gradually from NW to SE, between 177m OD and 168m OD. Within the Butterfield area as a whole, the underlying geology is characterised by clay-with-flints with some areas of sand and gravel.

#### 1.4 Archaeological background

The development area is set within a landscape that is rich in evidence of prehistoric and Roman occupation. Two ancient trackways are known in the general vicinity: the Icknield Way and the Edeway. A number of ritual and funerary monuments of the earlier prehistoric periods are known within the wider landscape.

An adjacent archaeological investigation, in advance of the Innovation Centre, located evidence for late Neolithic/early Bronze Age, late Bronze Age/early Iron Age, Romano-British and medieval activity (Albion 2005b). However, the majority of the evidence comprised either isolated artefacts such as struck flint or dispersed features in the form of boundaries and waterholes, perhaps associated with fields adjacent to a settlement.

## 1.5 Nature of the archaeological investigations

#### 1.5.1 Evaluation

An evaluation was undertaken comprising geophysical survey, field artefact collection and trial trenching. The geophysical survey (WYAS 2004) and field artefact collection did not identify any firm concentrations of archaeological remains. However, of the ten trenches investigated between January and March 2005 by Cambridgeshire County Council Archaeology unit, six contained archaeological remains (AFU 2005):



- Trench 1- four parallel ditches, all roughly N-S alignment, no finds.
- Trench 2- single posthole, no finds.
- Trench 4- three ditches, not parallel, all produced early-middle Iron Age pottery.
- **Trench 6** six ditches, broadly parallel on NE-SW alignment, two of the ditches produced early-middle Iron Age pottery.
- Trench 8- two postholes, one ditch and a pit. Only the latter contained finds which comprised early-middle Iron Age pottery and worked flint.
- **Trench 9-** a single N-S ditch, no finds.

Two hundred and fifty-seven pottery sherds, weighing 1.2kg were recovered. With the exception of five sherds, all this material can be broadly dated to the early-middle Iron Age (c. 650-350BC). The worked flint assemblage was largely undiagnostic. However its limited technological attributes suggest it includes pieces of Mesolithic-early Neolithic and Bronze Age dates.

The nature of the majority of the features and artefact assemblage indicated the presence of early-middle Iron Age settlement.

## 1.5.2 Mitigation

The evaluation demonstrated that archaeological remains were present and therefore a mitigation strategy was required. Following discussions between the Consultant and Luton Borough Council's archaeological advisor (CAO), it was agreed that open area excavation, focused on that part of the development containing archaeological remains, would be undertaken to discharge the planning condition pertaining to archaeology.

### 1.5.2.1 Open area excavation

A specification was produced by the Consultant and agreed by the CAO. It detailed the requirements of open area excavation (CPM 2005). This aimed to record the extent, condition, nature, character, quality and date of any archaeological remains encountered.

For more detailed information see Section 4 of the specification.

## 1.5.2.2 Implementation

Albion Archaeology was commissioned to undertake the investigations on 21<sup>st</sup> July 2005 and a Method Statement was produced on 25<sup>th</sup> July 2005 (Albion 2005a). This was approved a week later.

Due to the logistical constraints of spoil storage, the open area excavation was undertaken in two parts:

- The southern part (75% of the entire area) was undertaken between August and September 2005.
- The northern part (25% of the entire area) was undertaken in January 2006.



The investigations were monitored by the CAO on three occasions ( $30^{th}$  August,  $20^{th}$  September 2005 and  $27^{th}$  January 2006). Fieldwork was completed on  $28^{th}$  September (southern part) and on  $31^{st}$  January 2006 (northern part).

#### 1.5.2.3 Assessment

Albion was commissioned to undertake the Assessment and Updated Project Design on  $17^{\rm th}$  October 2006.





## 2. AIMS AND OBJECTIVES OF THE INVESTIGATION

#### 2.1 Introduction

Based on the results of the evaluation and the adjacent investigations it was known that archaeological remains of the Iron Age period would be encountered within the development area. Any of the remains discovered would have the potential to contribute to a number of national and regional research agendas associated with Iron Age settlement.

# 2.2 Overall aims of the investigation

The overall aim of the archaeological investigations was to fully define and record the extent, condition, nature, character and quality of any archaeological remains encountered so as to elucidate the types of activity undertaken, their date, form and function.

# 2.3 National, regional and county-based research frameworks

Although archaeological remains are a material consideration in the planning process, there is no single, "easy-to-use" guide to assessing potential aims and objectives that archaeological investigations may be able to address.

#### 2.3.1 National research frameworks

At a national level, English Heritage's criteria for prioritising archaeological "sites" are evolving. Its funding criteria for rescue projects, as set out in *Exploring our past* (English Heritage 1991), were similar to those it uses to define a "site" as being of schedulable quality. These included period, rarity, group value, survival/condition, fragility/vulnerability and potential.

More recently a draft Research Agenda (English Heritage 1997) built upon the earlier criteria, with the aim of developing an approach reflecting 'the greater determination to pursue research themes' and 'wider interests (e.g. in landscapes)'. These include goals such as advancing understanding of England's archaeology, supporting the development of national, regional and local research frameworks and promoting public appreciation and enjoyment of archaeology. Although the Research Agenda was intended for projects seeking English Heritage resources, i.e. not those undertaken within the PPG 16 framework, its goals and objectives can be considered when the archaeological resource of the development area is being assessed.

Over the last five years a number of period-based resource assessments and agenda have been published. Of particular relevance to the development area are those for the Iron Age (Haselgrove *et al.* 2001).

#### 2.3.2 Regional and county-based research agendas

On a more regional level, the County Archaeologists of East Anglia have published a resource assessment (Glazebrook 1997) and a subsequent research agenda and strategy (Brown and Glazebrook 2000) for the eastern counties. This study covers the adjacent counties of Cambridgeshire and Hertfordshire, rather than specifically Bedfordshire. Nevertheless, topographical and historical



similarities (at a regional level) between these counties make the document a useful tool for assessing the significance of the archaeological remains within the development area.

Of particular relevance for this investigation were the chapters on the Iron Age (Bryant 1997; 2000). These noted that it was likely that 'most Iron Age settlements were farmsteads' but considered that these site-types are still underrepresented in the archaeological record. Regionally the extent and distribution of farmsteads is considered 'to represent only a small fraction of the true number of sites' (Bryant 2000, 14). This is likely to be because the majority of farmsteads were small and, therefore, difficult to detect.

A draft resource and research agenda for Bedfordshire has been produced (Oake forthcoming). In this, Dawson has highlighted that the distribution of investigations in the county has largely been restricted to valley sites or gravel deposits and, therefore, less is known on the hills in the south of the county.



# 3. PROVISIONAL SUMMARY OF RESULTS

#### 3.1 Introduction

A total of 716 contexts (units of archaeological recording) were identified during the investigations (Figure 2). These represent components of individual features, for example a ditch "cut" and its "fills".

A <u>rapid scan</u> of the context records, undertaken as part of this assessment, has allowed many of these to be provisionally assigned to a chronological period (referred to as phases), spatial activity areas (referred to as land use areas) and components (referred to as groups). The phases correlate to broad chronological periods from the late Bronze Age-early Iron Age through to the late Iron Age-early Romano British period (Table 1).

Phase	Chronological period	Activity Type	Evidence
1	Late Bronze Age-early Iron Age	Dispersed activity, possibly on periphery of settlement	Pottery (residual in later features)
2	Early-middle Iron Age	Farmstead comprised of ditched enclosures, buildings, structures, drainage gullies and water pits	Ditches, pits, water pits, postholes, gullies  Artefacts and ecofacts
3	Late Iron Age-early Romano British	Boundaries possibly on periphery of settlement	Ditches, pits, water pits  Artefacts and ecofacts

**Table 1:** Summary of provisional phasing

The sequence of and nature of development on the site is presented by Chronological period in the following sections. It is based on the rapid scan undertaken as part of the contextual assessment.

It should therefore be borne in mind that it is only a provisional summary produced prior to any detailed analysis.



## 3.2 Phase 1: Late Bronze Age-early Iron Age

A small pottery assemblage comprising 15 sherds (197g) of late Bronze Ageerly Iron Age date was recovered. These were all recovered from features which contained later pottery and are therefore considered to be residual. There were no significant concentrations in their distribution.

# 3.3 Phase 2: Early-middle Iron Age (Figure 3)

The earliest firm evidence for settlement is dated by pottery to the early-middle Iron Age. It comprised two probable enclosed domestic foci L2 and L3, separated by an unenclosed domestic focus L5. Although these produced similar pottery, it is unclear if they are two enclosed foci within the same settlement or are actually of slightly different dates and therefore not associated at all. Situated away from the domestic foci were areas of unenclosed activity L4 and L6, which contained large water pits, smaller pits, postholes and gullies.

It is clear that not all this activity was contemporary because of stratigraphical relationships recorded between features during fieldwork. However, for the purposes of the assessment they are treated as belonging to the same phase because the artefacts have not been subject to detailed analysis.

## 3.3.1 Northern enclosed domestic focus (Figure 4)

The northern domestic focus comprised enclosure L2. This contained a roundhouse L1, structural slots and drainage gullies. The circular nature of one of the latter suggests that a second roundhouse may have existed in this space, although no evidence for this was found. Not all the features were contemporary, e.g. roundhouse L1 was truncated by a water pit, two of the curvilinear ditches truncated each other etc.

The infilling deposits of these features contained significant quantities of domestic debris, including 319 sherds of pottery, fired clay and a tiny quantity of animal bone. A number of deposits also contained charcoal.

#### 3.3.1.1 Enclosure L2

Enclosure L2 appears to have been rectangular in shape, although its boundaries on all sides were not determined. It is at least 2100sqm in size. The southern and part of the eastern sides were defined by ditches **G30** and **G31**. A gap in these at the SE corner of the enclosure suggests a 1.5m wide entrance in this location.

Two curvilinear ditches **G2** and **G4** were located within the enclosure. These appear to be contemporary with the ditches of L2 because they both had SE entrances and curvilinear ditch G4 appeared to respect main enclosure ditch G30. The entranceways were linked by structural slots **G44**. They defined a smaller area that contained initially a water pit **G36** and then roundhouse L1 (see below).

To the west were two ditches **G38** and **G53** aligned approximately N-S, which may have defined this activity or may represent a trackway. Other features included two post pits **G45** located close to the enclosures southern and eastern sides.



Groups within L2	
G2	Curvilinear ditch
G4	Curvilinear ditch
G30	Enclosure ditch
G31	Enclosure ditch
G36	Water pit
G38	Boundary ditch
G44	Two structural slots
G45	Two post pits
G53	Boundary ditch

#### *3.3.1.2 Roundhouse L1*

L1 comprised a roundhouse defined by a pennanular drainage gully G1 with an internal diameter of c. 12m. A 3m wide gap on the western side corresponded with two postholes G56 strongly suggesting the location of the doorway. Just outside were two structural slots and a posthole G42 that may have formed a short fence. Further structural slots G40 and G43 located close to the roundhouse may have been dug to hold timber fencing.

The infilling of the features associated with the roundhouse contained nearly 81 sherds of pottery.

Groups within L1	
G1	Pennanular drainage gully
G40	NW-SE aligned curvilinear slot
G42	Two structural slots and a posthole
G43	Two structural slots
G56	Two postholes

#### 3.3.2 Southern enclosed domestic focus (Figure 5)

The southern domestic focus comprised a single enclosure L3 which contained pits and postholes. Not all the features were contemporary, e.g. a number of the ditches were redug, ditches truncate pits etc.

Although no buildings were identified, the presence of pits, charcoal-rich fills, 298 sherds of pottery and a possible loomweight suggests it was associated with domestic activity.

#### 3.3.2.1 Enclosure L3

Only part of enclosure L3 was within the excavation area. It appeared to be curvilinear in shape and was over 450sqm in extent. Ditches **G6** and **G9** formed its boundary to the north and east. These terminated providing a 2.5m wide entrance located on its north side. Curvilinear gully **G7** truncated enclosure ditch G6, suggesting the boundary was maintained over a period of time.

The interior may have been sub-divided as indicated by internal ditches G13, G14 and its recut G15. The main area of the interior contained a scatter of small (G11 and G54) and large (G12) pits. Another pit G8 was located on the outside of the northern enclosure ditch close to the entrance.

Groups within L3		



G6	Enclosure ditch
G7	Curvilinear gully
G8	Pit
G9	Enclosure ditch
G11	Three small pits
G12	Three large pits
G13	Internal ditch
G14	Internal ditch
G15	Internal ditch, recut of G14
G54	Two small pits

#### 3.3.3 Central unenclosed domestic focus L5 (Figure 6)

Situated between the two enclosed domestic foci L2 and L3 was an area which contained settlement-type features but no buildings. Although no buildings were identified the presence of pits, structural features and 248 sherds of pottery, loomweights suggests this area was associated with domestic activity. It contained water pits, slots, postholes and gravel surfaces. The activity was bounded to the south by slot G22

Two water pits G23 and G48 were identified based on their size and steep sides. A number of structural slots G22, G24, G28, G29 and G55 of various lengths were identified; they could be the remnants of fencelines.

To the west was an external stone surface **G52** and possible associated slot **G47**. Immediately to the north of these were two curvilinear gullies **G46** that could have been associated with a roundhouse. This is possibly supported by the presence of loomweights (RA 4 and 5) from this area. Several small pits **G26** and postholes **G49** were identified which may have formed another structure.

Groups within L5		
G22	E-W aligned structural slot	
G23	Water pit	
G24	N-S aligned structural slot	
G26	Five pits	
G28	N-S aligned structural slot	
G29	ENE-WSW aligned structural slot	
G46	Curvilinear gullies	
G47	NE-SW aligned structural slot	
G48	Water pit	
G49	Three postholes	
G52	Stone surface	
G55	NE-SW aligned structural slot	

#### 3.3.4 Peripheral areas to domestic foci

The nature of the features adjacent to the domestic foci and the small artefact assemblage they contain suggest that these were not used for domestic activity.

#### 3.3.4.1 Unenclosed activity L4 (Figure 6)

Located between enclosure L3 and unenclosed activity L5, L4 represents an area of fairly dispersed activity.



In the vicinity of an entrance into enclosure L3, was a water pit G17. This was typical of the other large and steep-sided water pits. A small number of postholes G18 and pits G19 and G10 were also present.

Another water pit **G20** and an associated gully **G21** were located close to the eastern limit of the excavation. The water pit contained an area of cobbling, seemingly deposited deliberately adjacent to the deeper part of the pit to assist access to the water. To the south was an area of pitting **G3**.

The fills in this area contained only 23 sherds of pottery.

Groups within L4	
G3	Eight pits
G10	Pit
G17	Water pit
G18	Two postholes
G19	Two pits
G20	Water pit
G21	Gully

## 3.3.4.2 Unenclosed activity L6 (not illustrated)

To the east of enclosure L2 was another area of fairly dispersed activity.

It comprised two water pits G32 and G33, two smaller pits G51 and two structural slots G34.

The fills of these features contained only 11 sherds of pottery.

Groups within L6				
G32	Southern water pit			
G33	Northern water pit			
G34	Two slots			
G51	Two pits			



## 3.4 Phase 3: Late Iron Age-early Romano-British (Figure 7)

Evidence for the late Iron Age-early Romano-British period comprised two discrete areas of activity located 78m apart. To the north were a series of boundary ditches L7 while to the south was an area of pitting L8. It is possible that some elements of the previous phase continued in use during this period.

Features were assigned to this phase on the basis of the presence of late Iron Age/early Romano-British pottery.

#### 3.4.1 Boundaries L7

Three ditches **G37**, **G39** and **G41** were identified in the northern part of the excavation area. Although stratigraphically later, two of these G37 and G39 followed a similar alignment to the early-middle Iron Age Phase 2 enclosure ditches. At the southern extent of these ditches was a short length of curvilinear ditch **G41**.

The ditches fills contained 53 sherds of pottery of which approximately half was dated to the late Iron Age-early Romano British period.

Groups within L7				
G37	N-S aligned boundary ditch			
G39	N-S aligned boundary ditch			
G41	NE-SW curvilinear ditch			

#### 3.4.2 Pits L8

At the southern extent of the excavation area was a sub-circular water pit **G5** and a smaller pit **G16** located 15m apart. Both these features truncated Phase 2 ditches but only the water pit contained a small quantity of late Iron Age-early Romano-British pottery.

Groups within L8		
G5	Water pit	
G16	Pit	



## 4. DATASET SUMMARY AND DISCUSSION

#### 4.1 Introduction

For the following discussion the data-sets recovered during the investigations have been divided into three main classes: structural, artefactual and ecofactual.

**Structural** data relate to the identification of individual events such as the digging of a ditch, primary infilling *etc*. These have been recorded as **context** records during the open area excavation. All contexts will have a detailed record sheet and many will have a plan and section drawing along with photographs.

*Artefactual* data comprise human-made objects recovered during the open area excavation. These have been divided for ease of discussion into **pottery** and **other artefacts**.

*Ecofactual* data comprise natural materials found within excavated deposits. These may be able to contribute on the nature of past human activity and its environmental setting and include information obtained from the **animal bone** assemblages and **ecofactual samples** (which may for example contain charred plant remains).

In the following sections, contextual data is discussed first as this has provided the framework for the summary of results and the subsequent data-set discussions. The methodological approach taken with each data-set is discussed, followed by sections dealing with quantification, provenance (spatially and chronologically) and also condition. All these factors are important in deciding the potential of the material for analysis.

Much of the data-set discussion refers to the preliminary phases and land use areas to which contexts have been assigned.



## 4.2 Structural data

## 4.2.1 Quantity of records

Table 2 presents a breakdown of the total quantity and type of structural records. These comprise the written description/interpretation of a deposit/feature (context sheets), a map-like drawing showing the location and inter-relationship between features (a plan), a profile drawing through a feature and its fills (section) and photographs.

Record type	
Contexts	716
Plan Sheets	43
Sections	217
Photographs	411

Table 2: Quantity of site structural records

## 4.2.2 Context types

Table 3 presents the different feature types that were identified during the excavation and the subsequent number of contexts assigned to them.

	Pits	Structural features	Water pits	Ditches
Number of features	44 (1)	50 (9)	13	162 (16)
Number of contexts	101 (6)	122 (3)	40	390 (33)

Note 1. natural/modern features and layers, along with topsoil contexts are not included Note 2. numbers in brackets represent features/contexts in evaluation trenches

**Table 3:** Contexts by feature type

#### 4.2.3 Methodological approach to assessing contexts

The structural data was rapidly assessed in order to establish whether it would provide a coherent chronological framework. This proved to be the case and therefore, within the chronological framework, the contexts were assigned to "preliminary" land use areas.

These assignments were based on the following criteria:

- Do the contexts form a coherent spatial unit, e.g. ditch length, pit group, etc?
- Do the contexts represent key positions within the stratigraphic sequence?
- Do the contexts contain suitable dating material?

The total number of contexts assigned to "preliminary" land use areas was 599 (Table 4).

Much of the discussion in Section 3 and of the following data-sets is based on these phase and land use assignments.



Phase	Description	Land use area	Description	No. contexts
2	Early-middle Iron Age	L1	Roundhouse	66
		L2	Enclosed domestic foci	157
		L3	Enclosure domestic foci	85
		L4	Unenclosed activity	46
		L5	Unenclosed domestic foci	135
		L6	Unenclosed activity	19
3	Late Iron Age-early L7		Boundary ditches	81
	Romano-British	L8	Pits	10
Total				599

**Table 4:** Phase and Land use area descriptions with a count of assigned contexts

#### 4.2.4 Survival and condition of features

The survival of archaeological features is dependent on the nature and intensity of previous land use. Larger features, such as ditches and pits, often survive well but it is the smaller features, such as postholes, that are often the most vulnerable to truncation. Within the excavation area, both large and small features were present and therefore truncation (and the loss of features) has not been too excessive.



# 4.3 Pottery

## 4.3.1 Methodology

Pottery from each context was scanned by eye and fabric type, minimum sherd count and weight were recorded. Unless otherwise stated, all quantitative statements are based on sherd count. Pottery was spotdated based on individual fabric type with the date of the latest sherd used in the provision of an overall context spotdate. The latter has been used to assist in the establishment of the provisional phasing structure (see Table 1).

A total of 954 sherds, weighing 9.1kg were recorded, the majority deriving from features associated with early-middle Iron Age settlement activity (Phase 2).

## 4.3.2 Range and variety: the pottery type series

Fabrics are listed below (Table 5) in chronological order, using common names and type codes in accordance with the Bedfordshire Ceramic Types Series, maintained by Albion Archaeology on behalf of Bedfordshire County Council. No new fabric types were identified. Bracketed figures represent total percentage for each chronological period.

Fabric Type	Common Name	Sherd No.
Late Bronze Age/early Iron Age (1.5%)		
Type F01A	Coarse flint	1
Type F01B	Fine flint	4
Type F01C	Flint and quartz	10
Early to middle Iron Age (89.4%)		
Type F03	Grog and sand	151
Type F04	Organic	1
Type F16	Coarse shell	10
Type F19	Sand and organic	138
Type F20	Limestone inclusions	1
Type F28	Fine sand	212
Type F29	Coarse sand	139
Type F35	Micaceous	120
Type F	Non-specific Iron Age	124
Late Iron Age/early Roman (3.7%)		
Type F06B	Medium grog	4
Type F06C	Coarse grog	9
Type F09	Grog and sand	24
Roman (0.3%)		
Type R05A	Orange sandy	1
Type R06C	Fine greyware	2
UNID (5.1%)	Miscellaneous undatable ware	51

**Table 5:** Pottery Type Series

#### 4.3.3 Provenance and condition

The pottery displays a date range spanning the late Bronze Age to the early Roman periods. Composition of the assemblage suggests the material was subject to some post-deposition disturbance, evidenced by a high incidence of



abrasion and fragmentation (average sherd weight 9g). Eighty-two features (81% of contexts producing pottery) contained less than 100g and only two features (1.9%) yielded in excess of 1kg. Sixty-one features (60%) yielded less than five sherds.

Phase	Land use area	Group	Description	Sherd no:wgt (g)
2	Roundhouse L1	G1	Penannular drainage gully	18:77
		G40	NW-SE aligned curvilinear slot	14:66
		G42	Two slots and a posthole	20:76
		G43	Two slots	28:128
		G56	Two postholes	1:1
	Enclosure L2	G2	Curvilinear enclosure ditch	30:327
		G4	Curvilinear enclosure ditch	4:30
		G30	Enclosure ditch	27:125
		G31	Enclosure ditch	2:5
		G36	Water pit	11:50
		G38	Boundary ditch	1:2
		G44	Two slots	30:185
		G45	Two post pits	1:2
		G53	Boundary ditch	132:1205
	Enclosure L3	G6	Enclosure ditch	185:2865
		G9	Enclosure ditch	19:135
		G11	Three small pits	4:12
		G12	Three large pits	52:473
		G13	Internal ditch	14:147
		G14	Internal ditch	18:83
		G15	Internal ditch	4:303
		G54	Two small pits	2:8
	Unenclosed activity L4	G3	Eight pits	8:32
		G20	Water pit	15:48
	Unenclosed domestic focus L5	G24	N-S aligned slot	6:24
		G26	Five pits	24:131
		G28	N-S aligned slot	18:171
		G29	ENE-WSW aligned slot	23:159
		G47	NE-SW aligned slot	136:1454
		G48	Water pit	30:194
		G52	Stone surface	11:39
		G55	NE-SW aligned slot	
	Unenclosed activity L6	G33	Water pit	10:61
		G34	Two slots	1:22
3	Boundaries L7	G37	N-S aligned boundary ditch	24:223
		G39	N-S aligned boundary ditch	10:84
		G41	NE-SW curvilinear ditch	19:148
	Pits L8	G5	Water pit	4:51

Table 6: Pottery totals by land use area and group

#### 4.3.3.1 Phase 1: Late Bronze Age/early Iron Age

Pottery of late Bronze Age/early Iron Age date occurs entirely as residual material in later features and comprises 15 sherds (197g), representing four vessels in flint tempered fabric types F01A, B and C. Sherds are generally small with an average weight of 13g, although not particularly abraded.

#### 4.3.3.2 Phase 2: Early to middle Iron Age

Nearly 90% of the pottery derives from features assigned to Phase 2, and comprises 896 sherds, weighing 8.6kg. Despite a low average sherd weight, a number of vessels are represented by more than single sherds.



Fabric types are predominantly sand tempered (F28, F29, F35, F03, F19), reflecting the influence of local geology upon pottery manufacture. A small proportion of sherds containing calcareous and organic temper also occur (types F16, F20 and F04 respectively). All sherds are hand-made and generally well-fired, although those containing shell are extensively leached.

Forms comprise round-shouldered vessels and large jars with flat, upright, rounded, bead or slightly tapering everted rims, and flat bases. A partial handle was also identified. Vessels show considerable variation in thickness, ranging between 5-15mm, with an average of 9-10mm. Thin-walled vessels generally occur in finer fabric types (F28 and F35). A number of fine-walled vessels have smoothed/wiped surfaces and some are decorated with rare finger impressions around the rim. Several of the coarser vessels bear scored/incised decoration. Sooty residues noted on a number of vessels indicate their use as cooking pots.

Approximately 12% of the assemblage comprises sherds which are too fragmentary and/or abraded to be assigned more than a generic Iron Age date. The majority of these derive from ecofactual sample residues and each weigh, on average, less than 7g. Although these will be more closely examined during analysis, assessment suggests it may prove impossible to gain further information from this material.

The majority of the Phase 2 assemblage was associated with enclosure L3, which contained over 4kg of pottery. The virtual absence of residual and intrusive material suggests the early to middle Iron Age deposits are largely undisturbed, particularly as many vessels are represented by more than single sherds.

#### 4.3.3.3 Phase 3: Late Iron Age/early Romano-British

The majority of the Phase 3 assemblage comprises residual early to middle Iron Age sherds. However, pottery datable to the late Iron Age/early Roman period comprises 36 abraded grog and grog/sand tempered sherds (types F06B/C and F09), weighing 309g. A rim fragment from a large jar or storage vessel constitutes the sole diagnostic element. The bulk of this material derived from the fills of boundary ditches G37, G39 and G41 (L7). The final infilling of water pit G5 (L8) yielded three undiagnostic sherds (21g) of oxidised and reduced sand tempered coarse ware (types R05A and R06C respectively), datable to the early Roman period, and a late Iron Age/early Roman sherd (30g) in grog/sand fabric (type F09).



#### 4.4 Other finds

#### 4.4.1 Flint

Thirty-five pieces of worked flint (315g) were recovered and are detailed in Table 7.

Phase	Land use area	Group	No:wgt (g)	Comments
2	Roundhouse L1	G1	1:6	Flake
		G40	1:1	Broken flake
		G43	3:4	Flake
		G42	1:1	Broken flake
	Enclosure L2	G2	2:6	Flake
	Enclosure L3	G6	6:41	Flakes; poss core frags
		G9	1:1	Broken flake
		G13	1:22	Poss weight
	Unenclosed activity L4	G20	1:1	Flake
	-	G19	1:101	Poss core testing piece
	Unenclosed domestic focus L5	G29	1:1	Flake
		G47	1:4	Flake
		G52	1:2	Flake
		G55	1:1	Broken flake
	Unenclosed activity L6	G33	3:25	Flake
	-	G34	1:1	Flake
3	Boundaries L7	G37	2:17	Large flake, flake
		G39	4:17	Broken flake, 2 flakes
	Unassigned		2:6	Flake
			1:20	End scraper (RA1)
			1:18	Scraper (RA3)

Table 7: Flint by Phase, Land Use Area and Group

The majority of the assemblage comprises poor quality flakes, several of which are broken and single examples of a core testing fragment, a possible core and a broken blade. Only two tools were present, both end scrapers (RA 1 and 3), one of which is broken. The possibility of flint working continuing into the Iron Age cannot be discounted (Young and Humphrey 1999). The use of low quality raw material and a limited range of diagnostic tools are two of the characteristics which have been suggested as possibly indicative of later Bronze Age and Iron Age flint-working (ibid.).

The primary fill of ditch G13 (L3) yielded a naturally formed cylindrical flint nodule (RA 2), weighing 110g. The piece has a natural central perforation which may have been enlarged at the top and bottom to facilitate use as a weight. Eight pieces of unmodified burnt flint (190g) were also recovered.

#### 4.4.2 Fired clay

Fired clay comprises 98 abraded amorphous fragments, weighing 1.8kg, the majority deriving from the fill of Phase 2 early-middle Iron Age enclosure ditch G30 (L2). Fabrics are predominantly sand tempered, with a small proportion occurring in a coarse sand and flinty fabric. In many cases, fragments have oxidised surfaces and reduced cores. A piece of slab or brick and a daub fragment with a wattle impression 17mm in diameter comprise the more diagnostic elements of the assemblage. All are redeposited but their distribution may indicate the location of hearths/ovens.



Fragments of two fired clay loomweights were recovered from Phase 2 early-middle Iron Age unenclosed domestic activity focus L5. One from stone surface G52 appears to be part of a late Bronze Age cylindrical loomweight (RA 4) and the other from structural slot G47 was of more Iron Age triangular form (RA 5). Fragments of a third possible loomweight (RA6) of indeterminate form derived from enclosure L3.

## 4.4.3 Fuel Ash Slag

Fuel ash slag weighing 1.5kg was recovered from features assigned to Phase 2 early-middle Iron Age enclosure L3 and domestic activity focus L5, and Phase 3 late Iron Age/Romano-British boundaries L7 (principally the fills of ditch G41 which contained 1.3kg). This material is not evidence for any specific industrial process. It indicates a fire at high temperatures, and probably represents residues from domestic hearths.



#### 4.5 Animal bone

#### 4.5.1 Methodology

The assessment aimed to evaluate the potential of the faunal assemblage to provide information about the diet of the inhabitants of the site, the exploitation of animals and the deposition of their remains throughout the different phases and areas of activity.

#### 4.5.2 Results

A total of 81 fragments were hand-collected from only two features. The preservation of the bone was poor and the absence of bone within most deposits and the ecofactual samples suggests that soil acidity was not conducive for animal bone survival.

Bone only survived in Phase 2 early-middle Iron Age enclosure ditch G13 (L3) and the Phase 3 late Iron Age-early Romano-British water pit G5 (L8). Although in different phases, both these features were located at the southern extremity of the excavation area where the soil was probably more neutral. The only species that could be identified were cattle and horse.

Enclosure ditch G13 contained the fragmentary remains of a cattle lower molar that belonged to an immature animal. The primary fill of the water pit G5 contained most of the cheek teeth, an incisor and fragmentary parts of bone of a pair of adult horse mandibles. It is possible that these mandibles represent deliberate deposition at the base of the pit. However, it is impossible to be certain that this was a votive offering or the result of more casual disposal.

The small size of the assemblage from each phase severely limits the potential for meaningful and reliable conclusions concerning the role of animal species at the site.



## 4.6 Ecofactual samples

#### 4.6.1 Sampling strategy

A total of 22 ecofactual samples, between 10 and 30 litres in size were taken. The strategy for taking of ecofactual samples comprised deposits that visibly looked to contain ecofactual material which resulted in 10 samples based on the presence of charred plant remains (CPR). In addition, 22 "control" samples were taken from a range of features located spatially across the site.

## 4.6.2 Processing methods

The samples were floated onto a 0.3mm mesh. The residues were sieved down to 1.0mm, the fraction above 5.6mm being sorted, and the fractions below 5.6mm being retained for possible laboratory analysis. The flots were scanned and the presence of any charcoal and charred seeds were recorded.

#### 4.6.3 Results

All of these samples derived from deposits that have been assigned to Phase 2 early-middle Iron Age. The results are summarised in Table 8.

Land use area	Group	Feature	Context	Sample	Sample	Charcoal	Charred
		Type			type		seeds
Roundhouse L1	G40	Ditch	419	10	CPR	sparse	none
	G1	Slot	373	21	CPR	occasional	none
Enclosure L2	G30	Ditch	174	2	CPR	abundant	abundant
	G43	Slot	348	6	Control	occasional	occasional
	G38	Ditch	391	7	Control	sparse	none
	G53	Ditch	403	8	CPR	sparse	occasional
	G53	Ditch	417	9	CPR	none	occasional
	G38	Ditch	457	12	Control	sparse	none
	G2	Ditch	336	20	Control	sparse	none
Enclosure L3	G6	Ditch	79	1	CPR	abundant	abundant
	G13	Ditch	247	5	CPR	sparse	occasional
	G6	Ditch	20	14	Control	occasional	none
	G9	Ditch	114	15	CPR	occasional	none
Unenclosed activity L4	G3	Pit	17	13	Control	sparse	none
	G20	Water pit	602	22	CPR	abundant	occasional
Unenclosed activity L5	G26	Pit	72	3	Control	abundant	occasional
	G28	Pit	225	4	CPR	occasional	occasional
	G23	Water pit	121	16	Control	sparse	none
	G26	Pit	288	17	Control	sparse	none
	G47	Ditch	312	18	Control	sparse	none

CPR= Charred plant remains

Table 8: Ecofactual samples by land use area, all from Phase 2

A small number of plant remains were present in 10 of the samples (Table 9). However, only four of these contained charred plant remains. The other six all contained plant remains but as these were neither from waterlogged deposits, nor preserved through carbonisation or mineralization, it was concluded that they represented modern contamination.



Land use area	Sample	Plant Remains
Enclosure L2	2	1 x Cerealia indet
	6	1 x Chenopodium sp., 1 x Sonchus asper
	8	2 x Cerealia indet, 1 x Poaceae sp.
	9	1 x cf. Brassicaceae
	12	1 x cf. Brassicaceae
Enclosure L3	1	4 x Atriplex patula (Common orache),
		3 x Chenopodium album (Fat Hen)
3	14	1 x Sonchus asper, 1 x cf. Asteraceae
Unenclosed activity L4	22	1 x Fabaceae sp. (small)
Unenclosed activity L5	3	1 x Polygonaceae sp.
	4	1 x cf. Brassicaceae, 1 x Asteraceae sp.

Table 9: Results of the processed ecofact samples, all from Phase 2

The charred plant remains included cereal grains which, although unidentified, may be from cultivated species such as wheat. The other remains included grasses and wild plants, the latter associated with disturbed ground or arable land. Although limited, the evidence would appear to indicate that the features from which the samples were taken were not primarily associated with cereal/plant food processing.





## 5. POTENTIAL OF DATA

#### 5.1 Introduction

The previous sections have presented a provisional summary of the results (Section 3) and provided a basic quantification/discussion of the various data sets (Section 4). The original aims and objectives, along with the regional and national research agenda were described in Section 2. Based on this assessment it is clear that the original aims and objectives are still relevant and will form the basis for the following discussion of the potential of the data.

# 5.2 Chronology

The assessment has demonstrated that it will be possible to establish a chronological framework for the site. This is likely to comprise three chronological phases: late Bronze Age-early Iron Age, early-middle Iron Age and late Iron Age-early Roman. This will be based primarily on the **structural** data (the stratigraphic/spatial locations of features/deposits), and **pottery** assemblage. In addition, the **loomweights** are forms typical of the Iron Age and when examined in detail will provide complementary dating evidence.

The **flint** assemblage may be associated with the two earlier phases. Although some of the flint is likely to be residual, the continuing use of stone tools into the Iron Age is still debated (Young and Humphrey 1999). The use of low quality raw material and a limited range of diagnostic tools, as in the Butterfield assemblage, are two of the characteristics which have been suggested as possibly indicative of later Bronze Age and Iron Age flint-working (ibid.).

The assessment indicated that there were no features containing purely late Bronze Age-early Iron Age pottery but this cannot be stated with certainty until the pottery is fully quantified. This will also permit spatial analysis to be undertaken which may indicate where the settlement of this period was located. This will clearly assist in determining whether the early-middle Iron Age settlement was a continuation of the earlier settlement. Such continuity between these periods has only rarely been identified. In Bedfordshire, Salford represents the only definite example of continuing occupation of the same site (Dawson 2005, 165). However, some degree of continuity has been noted purely based on the pottery assemblage at Topler's Hill (Luke 2004, 16).

Based on the assessment, the earliest firm evidence for settlement i.e. features, occurred in the early-middle Iron Age. Once the **pottery** has been fully quantified/analysed, it should provide further information on the chronological development of the settlement. In particular, the continuity of pottery types from the late Bronze Age will be examined.

#### 5.3 Form and development of past human activity

As stated above, once the **structural** and **artefactual** data have been analysed it will permit the chronological development of the site to be finalised.



The main evidence comprises an early-middle Iron Age farmstead comprised of two ditched enclosures with associated unenclosed activity. This is slightly unusual because the majority of settlements of this type in the region are unenclosed (Bryant 1997, 25) e.g. Haynes Park (Luke and Shotliff 2004, 117) and Biddenham Loop (Albion forthcoming).

A good range of settlement features was identified and recorded as part of the **structural data**, including buildings, structures, stone surfaces, water pits, small pits, postholes etc. The diameters of the roundhouses, with projected wall diameters of between 8m and 12m, are comparable to those found at Topler's Hill (Luke 2004, 47 and fig 5) and Hinksley Road Flitwick (Luke 1999, 48 and fig 3). Further analysis is required to confirm whether the pennanular gully definitely served a drainage rather than structural function. Drainage gullies are a common element of roundhouses at Topler's Hill (Luke 2004, 47) and Salford (Dawson 2005, 165). Another interesting aspect is the position of the doorway which was clearly facing SW. By contrast, Hill (1995, 54) has suggested that houses would normally have been entered from the direction of the rising sun *i.e.* E to SE.

Although the assessment has demonstrated that features occur in meaningful spatial areas, it is possible that detailed analysis of the **structural** and **artefactual data** will be able to identify what was actually undertaken in particular areas. This may be particularly relevant with regards to the areas of dispersed activity which contained water pits but only small quantities of domestic debris. The spatial plotting of the **pottery**, **flint**, **fired clay** and **fuel ash slag** will provide additional information on the layout of the site. For example, the latter may indicate the locations of domestic hearths for which no other evidence survived.

The **structural** and **pottery data** demonstrate that activity took place in the late Iron Age-early Romano British period. This comprised boundaries and water pits and is, therefore, interpreted as activity on the periphery of an adjacent settlement. This fits a trend whereby surprisingly few early-middle Iron Age settlements are overlain by late Iron Age replacements (Luke and Shotliff 2004, 118).

## 5.4 Society

In keeping with other farmsteads in the region, no metal or personnel objects were recovered. This may be indicative of constant recycling but may also be an indication of relative wealth.

The **loomweights** are the only direct evidence for craft activity and are probably associated with weaving. Craft activities are notoriously difficult to recognise on Iron Age sites, although it is generally presumed that home production satisfied the bulk of the population's needs (Cunliffe 1991, 444). However, the early-middle Iron Age **pottery** appears to be of local manufacture and may have been produced by the inhabitants in bonfire or clamp kilns. The latter usually leave very little sub-surface evidence but once the pottery is quantified/analysed kiln products can sometimes be identified.



The identification in the **animal bone** assemblage of a pair of horse mandibles at the base of the water pit G5 may indicate a votive offering. Further analysis of these bones is required to identify whether there is any trace of cut marks or unusual aspects on the fragments. This will help determine whether this represents a "special" deposit which are often identified on Iron Age sites (Hill 1995).

No formal human burials or isolated fragments of human bone were found during the investigations.

## 5.5 Pottery assemblage

Bryant stated 'the region has few published examples of Iron Age pottery assemblages which have been subject to full analysis and quantification' (2000, 14). It was therefore identified as one of the gaps in our knowledge of the Iron Age in Eastern England. The absence of quantified assemblages severely limits comparisons between different sites. The virtual absence of residual and intrusive material within the deposits at Butterfield Green suggests that the early to middle Iron Age **pottery** assemblage is largely undisturbed. Once published, the pottery will be the first quantified assemblage of this period from the Luton area and will add to the small number available for Eastern England.

# 5.6 Economy

The **ecofactual data** and presence of **loomweights** support the view that the settlement was principally a farmstead, in keeping with the view that 'farming formed the basis of Iron Age societies' (Haselgrove *et al.* 2001, 10). Unfortunately, direct evidence in the form of **charred cereal remains** and **animal bone** was rare and, where present, poorly preserved.

However, the publication of the **animal bone** and **charred plant** assessment results will make a small contribution to the overall understanding of the settlement.





#### 6. UPDATED PROJECT DESIGN

#### 6.1 Introduction

The data sets from Butterfield Green have the potential to contribute to a number of regional and national research objectives for the early-middle Iron Age period. On this basis, analysis, publication and archiving of the results is proposed. Accordingly, the following sections present an Updated Project Design, outlining the revised research objectives, nature of the proposed work, timetable and the project team. Detailed method statements are presented in Appendix 1.

## 6.2 Revised research objectives

The original aims and objectives have been revised. Table 10 provides a summary of these under broad research objectives linked to the analysis.

#### **Chronological framework**

Review and fine tune the provisional chronological framework. This will involve a
detailed examination of the stratigraphic relationships between features/deposits and by
quantification/analysis of the pottery and flint assemblages. The final phasing hierarchy
will underpin all specialist analysis and form the basis of the publication.

#### **Settlement morphology**

- Identify the nature, function and date of individual features or groups of features. This will involve the analysis of contexts which represent boundaries, buildings, structures, water pits, small pits, postholes etc. It will result in their assignment to "subgroup/groups" which will be recorded in the Access Database along with a textual description.
- Determine spatially different activity areas (domestic foci, enclosures etc). This will involve the analysis of "groups" of features and the distribution of pottery, flint, fired clay and fuel ash slag. It will result in their assignment to "land use areas" which will be recorded in the Access Database along with a textual description.
- Establish the morphology of the settlement within each chronological period. This will involve the analysis of "land use areas" and result in their assignment to "phases" which will be recorded in the Access Database along with a textual description. The settlement morphology will be discussed as a section within the synthetic text of the publication.

#### Society

- Attempt to establish the status and cultural associations of the occupants of the settlement. This will mainly involve the quantification and analysis of the pottery assemblage.
- Clarify the nature of any craft activity through the examination of the loomweights and
  pottery. With regard the latter, possible local manufacture has been suggested and
  therefore during quantification the sherds will be examined for firing faults, spalling,
  distortion or cracking.
- Determine whether the horse mandibles represent a 'special' deposit. This will involve the re-examination of the bones and the deposits in which they were found.

#### Pottery assemblage

• Undertake full quantification and publication of this largely undisturbed assemblage to facilitate detailed comparisons with other sites.

## **Economy**

• Although the animal bone and charred plant remains assemblages are insufficient to provide a detailed insight into the economic basis for the settlement, the publication of the assessment results will facilitate comparison with other sites.

Table 10: Summary of revised research objectives



## 6.3 Brief summary of the nature of analysis

This stage of the project involves the detailed quantification, analysis and reporting of the contextual, artefactual and ecofactual data by Albion staff and external specialists. The project team is listed in Appendix 3.

Detailed method statements and task numbers are provided in Appendix 1. Resource levels are indicated in Appendix 3.

#### 6.3.1 Computer-based system of analysis

Albion operates a fully integrated computer-based system of analysis. All structural, artefactual and ecofactual information is entered onto an Access database. Feature/deposit plans are digitised using AutoCAD and all section drawings will be scanned using a HP Scanjet. The databases and digital drawings are interfaced via a GIS system (Gsys) allowing all chronological, spatial and material groupings (and any combination thereof) to be viewed and manipulated. In addition, site photographs are held in a digital format, allowing them to be viewed on screen with database and digital drawings.

The system enables rapid and flexible analysis of the project data sets. It also facilitates the output of a series of text reports, supported by plan and other graphic forms. These will form the basis for the final publication report.

#### 6.3.2 Contextual analysis

The basis for analysis will be the establishment of a structural hierarchy and the assignment of contexts to the relevant level. The hierarchy will comprise:

- S (sub-group)- indivisible units of interpretation, e.g. primary fills of the same ditch excavated in different segments.
- G (group)- interpretative entities, e.g. ditch lengths, concentration of pits etc.
- L (land use area)- a collection of broadly contemporary and spatially coherent G numbers, e.g. a settlement focus, a field system etc.
- P (phase)- broad, chronological divisions, e.g., early-middle Iron Age, late Iron Age-early Romano-British.

Further details of these are provided in Appendix 1.

#### 6.3.3 Artefactual analysis

The pottery will be laid out in context order and quantified. All attributes such as decoration, evidence of function (sooting, wear marks etc.), and manufacturing techniques (firing characteristics etc.), will be recorded. Pottery will be recorded by vessel, but the fired clay, struck flint, fuel ash slag and loomweights will be recorded by individual fragment.

#### 6.3.4 Ecofactual analysis

With the exception of the detailed examination of the animal bone assemblage from water pit G5, no further analysis will be undertaken. However, the assessment reports will be incorporated into the publication.



#### 6.4 Publication

The results from Butterfield Green will be published as an article in a future volume of *Bedfordshire Archaeology*.

The chronological phased development of the site will provide the basic structure for the publication. The site narrative will be organised by phase, land use area and group, with artefactual and ecofactual information as appropriate. Detailed artefactual and ecofactual information will be presented separately, but will be referenced to phases, land use areas and groups as appropriate.

The suggested layout for the article is set out below:

#### Summary

#### 1. Introduction

- Site location and background to work
- Archaeological background
- The archaeological investigations
- Structure and terminology of the report/article

#### 2. Results of the Investigation

- Late Bronze Age-early Iron Age
- Early-middle Iron Age
- Late Iron Age-early Romano-British

#### 3. The Artefactual Assemblage

- Pottery
- Flint
- Other artefacts

#### 4. The Ecofacts

- Animal bone (based on assessment report)
- Charred plant remains (based on assessment report)

#### 5. Discussion

#### 6. Conclusions

Acknowledgements References

Although the number and nature of the illustrations cannot be determined at this stage it is likely to comprise the following:

- 1) Site location
- 2) All features plan
- 3) Phase plan for Late Bronze Age-early Iron Age
- 4) Phase plan for early-middle Iron Age
- 5) Detailed plans and sections for specific early-middle Iron Age Land use areas and/or Groups
- 6) Phase plan for late Iron Age/early Romano-British
- 7) Selected pottery



- 8) Selected flint
- 9) Loomweights
- 10) Synthetic plans comparing the settlement and its components to contemporary sites in the region

#### 6.5 Timetable

Following the acceptance by the Client, the Consultant and CAO of the assessment and updated project design, Albion would like to proceed rapidly with the analysis and publication of the results.

Detailed method statements with task numbers are provided in Appendix 1. Table 11 sets out the **five** key stages within the analysis and publication programme. An indication of <u>maximum</u> time required to reach the first four key stages is indicated and these could serve as appropriate monitoring points, if required.

Completion	Description of tasks	Task no.	Time
of			
Key stage 1	Analysis of relevant data-sets	up to task 208.11	8 months
Key stage 2	Report writing for data-sets	up to task 208.22	6 months
Key stage 3	Completion of 1 <sup>st</sup> draft, followed by circulation to Client's Consultant, CAO and referees	up to task 208.29	6 months
Key stage 4	Amendments based on comments received and submission of final draft to Bedfordshire Archaeology	up to task 209.03	4 months
Key stage 5	Publication and archiving	up to task 210.02	*

<sup>\*</sup>Publication, and therefore deposition of the archive with Luton Museum, will be dependent on the editor of *Bedfordshire Archaeology* 

**Table 11:** Provisional timetable to complete the project

#### 6.6 Archiving

On publication of the final report the archive of materials (subject to the landowner's permission) and accompanying records will be deposited with Luton Museum.



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# 8. APPENDIX 1: METHOD STATEMENTS FOR ANALYSIS, PUBLICATION AND ARCHIVING

**NOTE.** This appendix only contains the method statements for tasks proposed to complete this project. The justification for what is proposed here is discussed in Section 5: Potential of Data and Section 6: Updated Project Design.

## 8.1 Analysis of the structural data

#### **8.1.1** Liaison meetings (208.01)

Discussion will take place between the principal members of the project team throughout the analysis and publication stages.

#### **8.1.2** Analysis of HER (Task 208.02)

The Historic Environment Records will be examined to provide background information on known Iron Age and Roman archaeological sites in the vicinity of Butterfield Green.

## 8.1.3 Computerisation (Tasks 208.05 and 208.06)

The quantity of the data-set means it would benefit from computerisation. Albion operates a fully integrated computer-based system of structural analysis using databases (through Access) and a mini GIS (Gsys) for interrogation. Basic contextual information has been entered into a database table and has been successfully utilised within this report.

The digitised all features drawing produced for the assessment will require checking and correcting to ensure it is linked correctly with the contextual database. Once this is complete, the drawings are fully interrogatable and manipulable by any database table. All section drawings will be scanned so they are easily available during structural analysis.

Once achieved, it will be possible to rapidly interrogate data sets within the Gsys programme. For example, it would be possible to plot the distribution of specific find types, or all features which are considered to be contemporary etc. This type of interrogation will greatly enhance the analysis of data and is, therefore, likely to assist in the interpretation of the archaeological remains. It also enables basic publication figures to be produced rapidly.

#### 8.1.4 Sub-group and group analysis (Task 208.07)

All contexts will be processed to sub-group level. Much use will be made of contextual information specifically descriptive (held in the context database) and section drawings (held as scanned images).

Each context will be analysed using the above information and assigned to a single sub-group, consisting of one or more (usually several) contexts that are closely related both stratigraphically and interpretatively. For example, comparable cuts within a single ditch length will be assigned to the same sub-group. Primary, secondary and tertiary fills of ditches will also be kept separate at sub-group level.

Cuts/deposits will be classified as:

- ♦ Construction (post packing and default code for all cuts)
- Naturally derived infilling
- Deliberate infilling

The method of sub-group definition will rapidly identify those sub-groups, which have limited or no further analytical value (e.g. features/deposits of geological and modern origin). These sub-groups will not be subject to any further analysis.



The sub-group allocation for each context will be entered into the contextual database table. A sub-group text will then be written directly into the sub-group database table so that it can be easily accessed. It will contain a factual, descriptive section as well as an interpretative section, setting out the rationale behind the definition of the sub-group. This text will be checked for content, accuracy and spelling/grammar. It is not envisaged that sub-group plans will be routinely produced, but this information will be available, via the relational database tables.

Sub-groups worthy of further analysis will be assigned to a single group representing a higher level of interpretation. It is likely that most groups will comprise multiple sub-groups. The assessment of the features/deposits identified at Butterfield Green suggests that the construction and primary fill sub-groups could be assigned to the following group types:

- Ditch lengths
- Structures
- Pit groups
- Isolated features

Other fill sub-groups, i.e. secondary or tertiary, will be assigned to separate groups to reflect the likelihood that these may be considerably later in date than the construction/primary fill groups and will therefore need to be analysed separately. However, to ensure that their spatial location (for example within a specific pit group) is not lost, they will be issued a group number comprising a decimal point of the "containing" group for example G11.2 is a fill of pit group G11 etc.

The group allocation for each sub-group will be entered into the sub-group database table. A group text will then be written directly into the group database table so that it can be easily accessed. It will contain a descriptive section as well as an interpretative section. This text will be checked for content, accuracy and spelling/grammar. It will form the basis for any detail required in the descriptive section of the publication text. A plan will be produced for each group with the location of all relevant sub-groups marked. If appropriate a group matrix will be produced.

#### 8.1.5 Land use area and phase analysis (Task 208.11)

Each group will be assigned to another, higher level of interpretation known as a land use area. The assessment of the Butterfield Green data suggests that the construction and primary filling groups could be assigned to the following land use area types:

- Enclosures
- Unenclosed activity
- Boundaries

Groups representing secondary or tertiary fills may be considerably later in date than the construction/primary groups and to distinguish these at land use area level they will be assigned to a separate land use area. However, to ensure that their spatial location, *e.g.* within a specific enclosed settlement is not lost, they will be issued a land use area number comprising a decimal point of the "containing" land use area, for example L2.3 is a filling land use area of enclosure L2.

The land use area allocation for each group will be entered into the group database table. A land use area text will then be written directly into the land use area database table so that it can be easily accessed. It will contain a descriptive section as well as an interpretative section. This text will be checked for content, accuracy and spelling/grammar. It will form the basis for the site narrative section of the publication text. A plan will be produced for each land use area with the location of all relevant groups marked.

Each land use area will be assigned the final level of interpretation known as a phase which will probably comprise:



- Phase 1: Late Bronze Age-early Iron Age
- Phase 2: Early-middle Iron Age
- Phase 3: Late Iron Age-early Romano-British

The phase allocation for each land use area will be entered into the land use area database table. A phase text will be written directly into the phasing database table so that it can be easily accessed. It will contain a descriptive section as well as an interpretative section. This text will be checked for content, accuracy and spelling/grammar. It will form the basis for the site narrative section of the publication text. A plan will be produced for each phase with the location of all relevant land use areas marked. If appropriate, a phase matrix will be produced.

The completion of task 208.11 represents a key stage in the analytical programme and is the precursor to the production of publication text and illustrations.

#### **♦COMPLETION OF KEY STAGE 1**

#### 8.1.6 Final phasing/publication liaison (Task 208.12)

Once the provisional final phasing is determined this will be examined in light of the pottery assemblage. When the final phasing is established liaison will take place to inform the various specialists of the phasing hierarchy, format of their publication text (with a guide number of words).

#### 8.1.7 Site narrative text (Task 208.13)

The site narrative will form the basis of the descriptive section of the publication text. It will be organised by phase, land use area and, where appropriate, group.

#### 8.1.8 Analysis plans/graphics (Task 208.14)

The digitised plan and section data will be interrogated via the relational database tables to produce mock-up publication illustrations. Plans will be produced to show all features in each phase with land use area and groups identifiable.

#### **◆COMPLETION OF KEY STAGE 2**



#### 8.2 Analysis of ceramic artefacts

#### **8.2.1** Liaison meetings (208.01)

A discussion will take place with the specialists to outline the work involved and to discuss the analysis of component datasets and the shape and content of the report.

## 8.2.2 Quantification and recording of pottery and fired clay (Tasks 208.08 and 208.09)

Pottery and fired clay will be laid out in context order. Pottery will be quantified by minimum vessel and sherd count, and weight, and fired clay by fragment count and weight. Pottery and fired clay fabrics have already been identified according to the Bedfordshire Ceramic Types Series, and these will be checked. All attributes such as decoration, evidence of function (sooting, wear marks etc.), and manufacturing techniques (firing characteristics etc.), will be recorded. All quantified data will be entered onto the relevant table within the site database.

## 8.2.3 Production of technical text for pottery and fired clay (Tasks 208.15 and 208.18)

Detailed description of the pottery and fired clay recovered, including fabric and form definitions. Selection of pottery vessels for publication standard illustration will be made at this juncture. The criteria for the selection of illustrated pottery vessels will be as follows:

- all fabrics and forms previously unknown in the county and therefore unpublished
- better examples of those types already published
- vessels from specific features or groups of features
- vessels associated with specific structures
- vessels of intrinsic interest

#### **♦COMPLETION OF KEY STAGE 1**

#### 8.2.4 Phasing/publication liaison (Task 208.12)

See structural analysis section 8.1.6.

#### 8.2.5 Pottery overview text (Task 208.16)

A specialist text summarising the pottery assemblage within appropriate chronological periods by fabric type, forms, decoration and attribute will be prepared. The text will refer to comparative assemblages (published or unpublished). In addition, and where appropriate, the pottery assemblage from elements of the structural hierarchy, i.e. land use area and groups, will be discussed.

#### 8.2.6 Fired clay overview text (Task 208.19)

A specialist text summarising the fired clay assemblage.

#### 8.2.7 Illustration of pottery (Task 208.17)

Illustration of the material selected for inclusion in the technical text will be carried out by the Illustrator, in consultation with the artefact analyst.

## **♦COMPLETION OF KEY STAGE 2**



## 8.3 Analysis of other artefacts

This principally involves the flint, but also includes the loomweights and fuel ash slag.

#### 8.3.1 Other artefacts identification (Task 208.10)

Each object will be assigned a narrow term, and where applicable, a date range. This information will be established by an examination of each object, noting;

- form
- method of manufacture
- material and source
- presence of diagnostic features
- condition
- selected parallels from comparable sites
- comparison with ceramic data from the site

## 8.3.2 Other artefacts technical catalogue (Task 208.21)

A selection of registered artefacts will be made for inclusion in the publication catalogue and a draft catalogue prepared. Selection of artefacts for publication-standard illustration will be made at this juncture.

## **♦ COMPLETION OF KEY STAGE 1**

#### 8.3.3 Phasing/publication liaison (Task 208.12)

See structural analysis section 8.1.6.

#### 8.3.4 Other artefacts overview text (Task 208.22)

Following phasing confirmation, the artefact assemblage will be discussed in relation to both the temporal and spatial framework of the site.

#### **8.3.5** Illustration (Task 208.23)

Illustration of the material selected for inclusion in the technical catalogue will be carried out by the Illustrator in consultation with the artefact analyst.

#### **♦COMPLETION OF KEY STAGE 2**



## 8.4 Analysis of the ecofactual data

#### 8.4.1 Animal bone analysis (Task 208.24)

The final publication text will be prepared on the basis of the assessment report and following more detailed examination of the two horse mandibles. The text will reflect the final phasing structure.

## **♦**COMPLETION OF KEY STAGE 2

## 8.4.2 Analysis of Charred Plant Remains (Task 208.26)

The final publication text will be prepared on the basis of the assessment report. The text will reflect the final phasing structure.

## **♦ COMPLETION OF KEY STAGE 2**



#### 8.5 Publication and archiving

#### 8.5.1 Editing publication text including specialist reports (Task 208.28)

The specialist texts, for example on the analysed pottery or the charred plant remains assessment report, will be integrated into the overall publication. Once this has been completed, the entire publication will be read and edited to ensure a consistency in approach.

#### 8.5.2 Synthesis text (Task 208.29)

A synthetic text will be produced discussing the key elements of the site, probably within the major chronological periods. This will attempt to address the updated research objectives.

## 8.5.3 Publication illustration (Task 208.30)

The mock-up plans will be used as the basis for publication figures. These will be created from screen views created in Gsys, before they are transferred to Corel Draw 9 for final illustration work. It is anticipated that a location plan, an overall phase plan, three phase plans and one page of section drawings will be required. The drawings will require checking, correcting and cross-referencing with the site narrative.

#### **♦**COMPLETION OF KEY STAGE 3

#### 8.5.4 Albion refereeing process (Task 209.03)

Albion has a policy of circulating the first draft of publications intended for submission to the Consultant, CAO and any other interested parties. This task includes time for any required discussion with the referees.

## 8.5.5 Amendments resulting from referees comment to publication text and figures (Task 209.04)

Amendments to publication text and figures based on comments received from Albion's refereeing process, prior to the handover of the publication article to the editor of *Bedfordshire Archaeology*.

#### ◆ COMPLETION OF KEY STAGE 4

#### 8.5.6 Printing (Task 209.05)

Cost of typesetting, proof reading, final editing and printing.

#### 8.5.7 Archiving and accessioning (Tasks 209.06 and 209.07)

The final stage in the project will be the preparation of the site records for archiving. This will include all activities leading to the production of a fully accessible archive and its transfer, including cost of transport and liaison, to Luton Museum.



## 8.6 Summary reports and project management

#### **8.6.1** Summary reports (Task 210.01)

Analysis and publication is a lengthy process but does not preclude the dissemination of preliminary information to the general public or archaeological profession. Interim summaries of the work will appear in the *Council for British Archaeology Region 9 Annual Report* and periodbased journals (e.g. *Britannia*, the journal of the Roman Society).

#### 8.6.2 Project management (Task 210.02)

All project tasks have been identified from a generic Albion task list menu. These have been entered onto the Albion Project Management System (PMS) in order that expenditure and resources can be tracked throughout the life of the project. In addition, the project will require a degree of management, undertaken by the Project Manager.



## 9. APPENDIX 2: THE PROJECT TEAM

Name	Init.	Role	Title or organisation
Mike Luke	ML	Overall management and joint author	Project Manager
Tracy Preece	TP	Structural analysis and joint author	Project Officer
Jackie Wells	JW	Artefact quantification and analysis	Artefacts Officer
Mark Maltby	MM	Animal bone quantification and analysis	Bournemouth University
Alistair Hill	AH	Charred plant analysis	University of Leicester
Joan Lightning	JL	Digitisation	CAD supervisor
Cecily Marshall	CM	Illustration	Illustrator

Table 12: The project team





## 10. APPENDIX 3: SUMMARY OF ALL TASKS

No.	Description	STAFF	DAYS
208.01	Liaison		
		ML	2
		TP	1
		JW	1
208.02	Analysis of HER		
		TP	0.5
208.05	Digitising/GIS		
		JL	2
		TP	0.5
208.06	Data inputting		
		TP	1
208.07	Sub-group/group analysis		
		TP	14
		ML	1
208.08	Quantification and recording of pottery		
		. JW	5
208.09	Quantification and recording fired clay		
		JW	0.5
208.10	Other artefact identification		
		JW	1
208.11	Land use area analysis		
		TP	3
		ML	0.5
208.12	Final phasing liaison		
		TP	0.5
		ML	0.5
		JW	0.25
	COMPLETION OF KEY STAGE 1		
208.13	Site narrative		
		TP	5
		ML	2
208.14	Analysis plans/graphics		<del>-</del>
200.14	Analysis plans/grapines	TP	1
		JL	1
208.15	Pottery technical text	JL JL	1
200.15	Pollery technical text	11.07	0.5
000.40	8.4.	JW	0.5
208.16	Pottery overview text		_
		JW	5
208.17	Pottery illustration		
		CM	3
		JW	0.5
208.18	Fired clay technical text		
		JW	0.25
208.19	Fired clay overview text		
		JW	0.5
208.19	Fired clay illustration		
		СМ	0.5
		JW	0.25



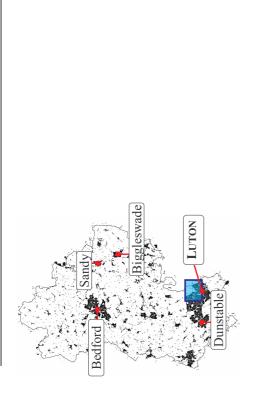
208.21	Other artefacts catalogue	JW	0.5
208.22	Other artefacts overview text	344	0.5
200.22	Other arteracts overview text	JW	0.5
208.23	Other artefacts Illustration		0.0
		CM	0.5
		JW	0.25
208.24	Animal bone quantification and recording		
		MM	0.5
	COMPLETION OF KEY STAGE 2		
208.28	Editing and integration		
		TP	1
		ML	1
208.29	Synthesis		
		TP	3
		ML	3
208.30	Publication illustration	CM	5
		ML	0.5
	COMPLETION OF KEY STAGE 3		
209.03 /209.04	Refereeing and amendments		
,200.0 .	rootoonig and amonamonic	DS	2
		ML	2.5
		JW	0.5
		CM	1
	COMPLETION OF KEY STAGE 4		
209.05	Printing		
	Based on 25 pages @ £50 per page	EXT	25
209.06	Archive preparation		
		TP	1
		AO	2
		ML	0.5
		JW	1
209.07	Archive storage		
	Storage grant based on 6 paper folders and 10 finds boxes @ £50		
210.01	Summary reports		
		ML	0.5
		TP	0.5
210.02	Project Administration		
		DS	0.5
		ML	3
	COMPLETION OF KEY STAGE 5: PROJECT	ΓEND	

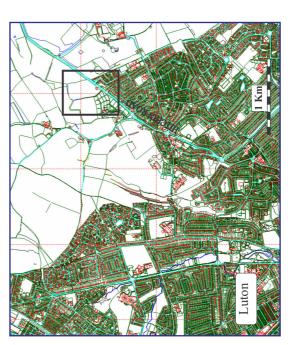




## **Figures**







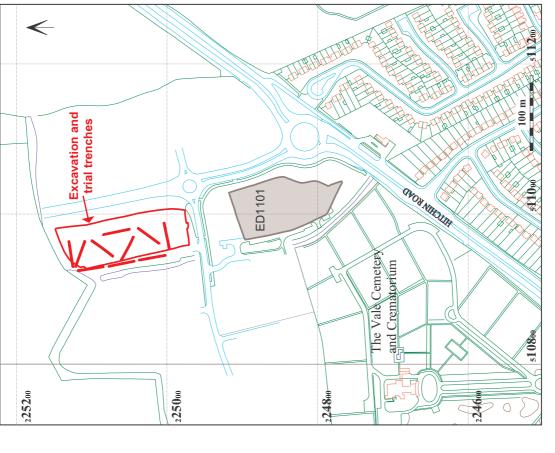


Figure 1: Site location
Base map reproduced from the Ordnance Survey Map with the permission of the Controller of Her Majesty's Stationery Office, by Bedfordshire County Council, County Hall, Bedford. OS Licence No. 076465(LA). © Crown Copyright.





Figure 2: All features plan



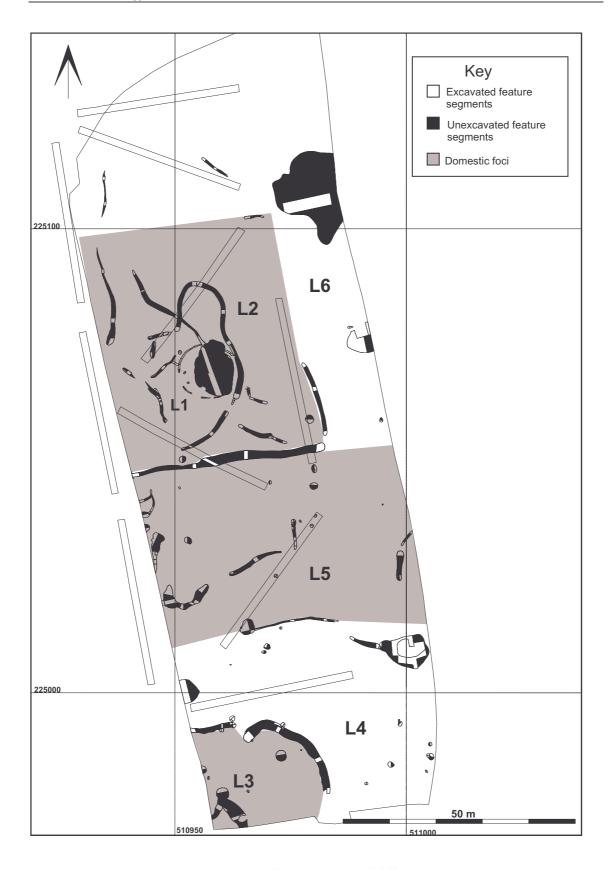


Figure 3: Phase 2; early-middle Iron Age



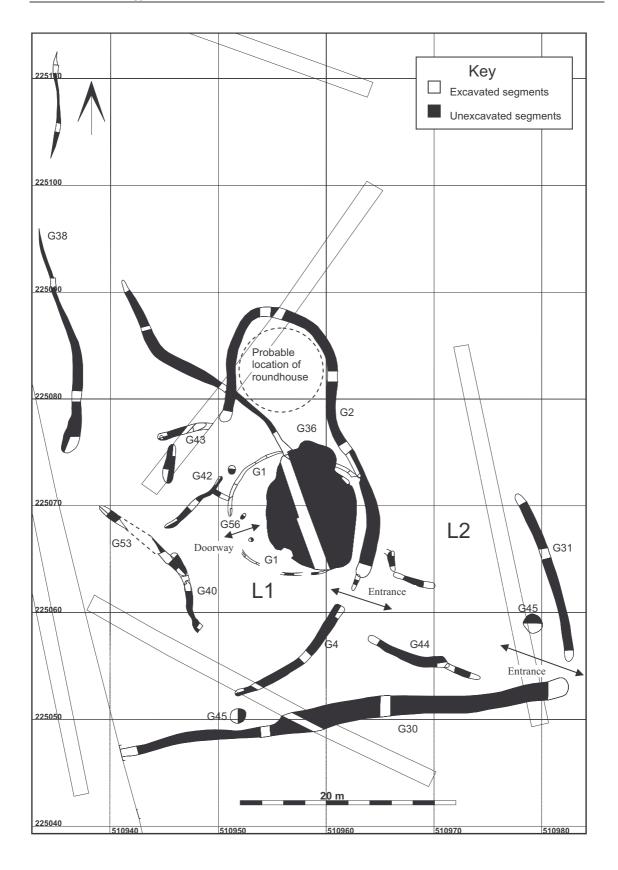


Figure 4: Phase 2; early-middle Iron Age: close up of L1 and L2



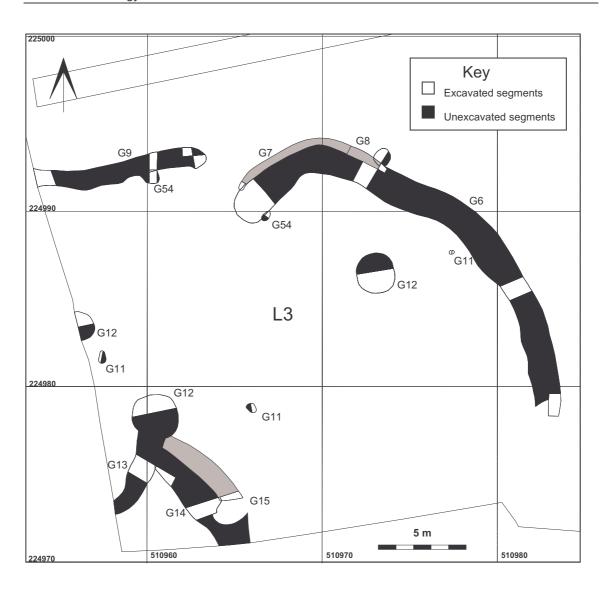


Figure 5: Phase 2; early-middle Iron Age: close up of L3



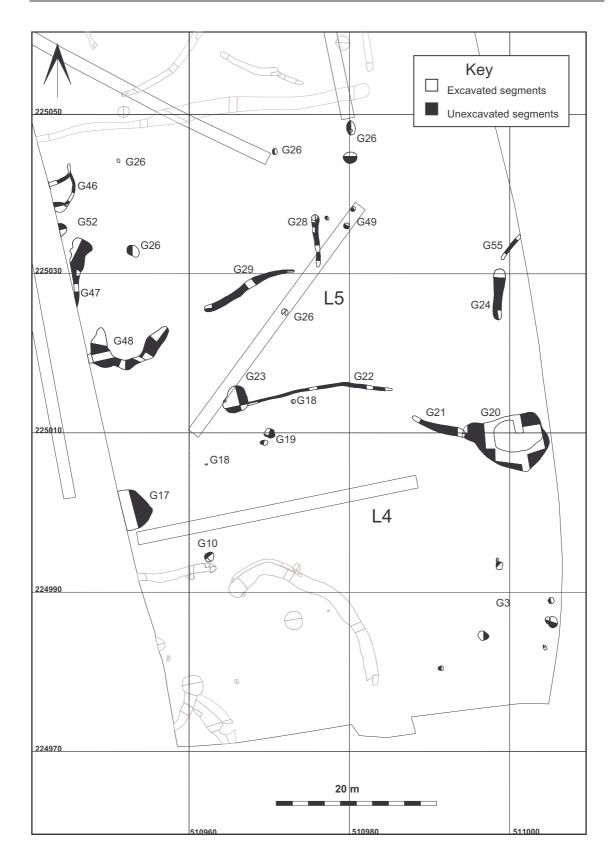


Figure 6: Phase 2; early-middle Iron Age: close up of L4 and L5



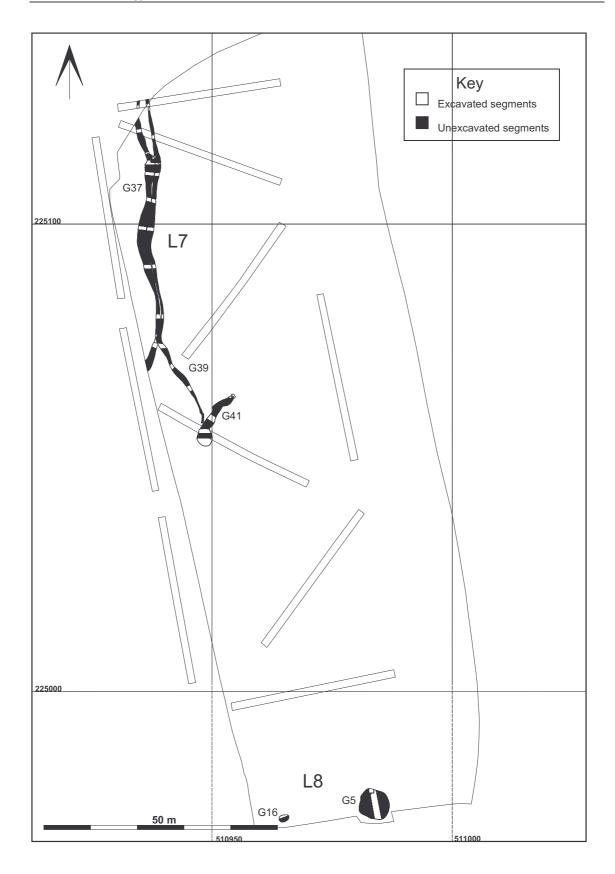


Figure 7: Phase 3; late Iron Age-early Romano-British