MARSH LEYS FARM
INDUSTRIAL DEVELOPMENT
KEMPSTON, BEDFORDSHIRE
PHASE 1

Written scheme for archaeological resource management

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Project: MLF662

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Produced for:
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Contents

Non technical summary

This document represents the Written Scheme of Archaeological Resource Management (WSARM) concerning the Phase 1 development at Marsh Leys Farm.

Archaeological evaluation has demonstrated that a late Iron Age/Roman farmstead underlies the development. The County Archaeological Officer (CAO) had deemed this to be a significant archaeological site with the potential to address national and regional research agendas.

The archaeological remains cannot be preserved coherently within the development and will be destroyed. Therefore, in line with the Brief *issued by the* CAO, *an archaeological investigation will take place in advance of development. This is in line with Bedford Local Plan Policy HA2 and guidance contained in PPG16* Archaeology and Planning. *This WSARM establishes the objectives of the investigation and the methodology in achieving them. The archaeological remains will therefore be 'preserved by record'.*

The national and regional research frameworks of relevance to the investigations include the Iron Age to Roman transition, rural settlement/economy and burials. The specific objectives of the investigation of the farmstead include:

- *Establishing a chronological framework*
- *Form and development*
- *Society and economy*
- *Environment*

Although an outline excavation strategy is described in this document the fundamental framework of this is the completion of a pre-excavation plan. This will be a key stage in the project for all subsequent hand excavation will be focused on features/deposits that are likely to address specific project objectives.

An essential part of the excavation strategy is the ability for rapid feedback of artefact/ecofact information. This is possible due to BCAS' integrated computer system. It will enable a continual review of the project objectives throughout the fieldwork. Adjustments to the strategy can therefore be made, in discussion with the CAO, while the fieldwork is taking place.

In addition to the objectives and strategies this document also details the resources and the anticipated programme of this project, with detailed appendices at the back.

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Preface

Every effort has been made in the preparation of this Document to provide as complete a Project Design as possible, within the terms of The Brief. All statements and opinions in this document are offered in good faith. Bedfordshire County Archaeology Service (BCAS) 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.

Mike Luke (Project Officer) and Drew Shotliff (Project Manager) have prepared this document. Comments/suggestions by Mark Maltby (animal bones), Mark Robinson (charred plant remains) and Pete Murphy (ecofacts) have been incorporated as appropriate.

Keywords

Throughout this document the following terms or abbreviations are used:

CAO	County Archaeological Officer of *BCC*
BCAS	Bedfordshire County Archaeology Service
BCC	Bedfordshire County Council
Client	Old Road Securities Ltd
LPA	*Local planning authority:* Bedford Borough Council
The Brief	Document: *Brief for the management of the archaeological resource at Marsh Leys Farm, Kempston, Bedfordshire*
WSARM	Document: *Written scheme of archaeological resource management*

Structure of this document

This document is presented in two parts. The project specific sections 1 to 6 describe various elements of this particular project, with the appendices providing a greater level of detail.

Section 1 introducing the project in terms of planning and archaeological background, location of the development and the approach to be taken with the archaeological resource. The aims and objectives are outlined in Sections 2. The fieldwork strategy is presented in Section 3 linked to the aims and objective, with a general outline of the post-fieldwork stages of the project in Section 4. Details of the resources to be dedicated to this project is presented in Section 5, with details of the project team. The provisional programme is given in Section 6.

Detailed appendices at the back of this document present an excavation method statement (appendix 1), post-fieldwork analysis and reporting (appendix 2) and project staff CV's (appendix 3).

1. INTRODUCTION

1.1 Planning background

In 1998 the *LPA* granted outline planning permission (98/00992/OUT) for industrial development centred on Marsh Leys Farm. One of the conditions (no. 22) required the implementation of a programme of investigation. The first stage of this, known as an evaluation, was designed to assess the extent, nature and date of the archaeological remains within the development area. After the completion of the four stages of evaluation condition no. 22 was revised to state:

> **No development shall take place within the areas of the site marked A-D on Figure 1 of the *Brief for the Management of the Archaeological Resource at Marsh Leys Farm, Kempston, Bedfordshire* (23 September 1999) until the applicant or developer has secured the implementation of a programme of archaeological investigation and management of sites preserved *in situ*, in accordance with a written scheme of investigation and management, which has been submitted to and approved in writing by the Local Planning Authority.**

This condition is in line with Local Plan policy HA2 and the guidance contained in PPG 16 *Archaeology and Planning.*

1.2 Location of Phase 1

The phase 1 development is situated to the north of Marsh Leys Farm. It will comprise the re-routing of the A421, including the construction of a new roundabout. An access road to the industrial development area will feed off this to a second roundabout. The Phase 1 industrial facility is situated to the north of this roundabout. Approximately 2.8 ha of the Phase 1 development are situated within Archaeologically Sensitive Zones A and C (*Brief*, Fig 1).

1.3 Project background

This document has been prepared at the request of the Client and represents a written scheme of archaeological resource management (WSARM) for the Phase 1 development. It has been prepared to conform to the *Brief* issued by the *CAO*. Where possible the details within that document are not repeated, unless deemed specifically necessary.

1.4 Archaeological background

1.4.1 Knowledge prior to evaluation

BCC has a catalogue of archaeological sites and historic buildings, the Historic Environment Record (HER), in which all known discoveries in Bedfordshire are recorded. One large HER site (HER 9600) was known to be centred on Marsh Leys Farm based solely on cropmarks indicative of archaeological features visible on aerial photographs (see Fig 1 of [1]).

[1] BCAS 1999 Marsh Leys Farm Archaeological Field Evaluation Stages 1, 2 and 3 (Report 99/01)

1.4.2 Results of the archaeological evaluation

The evaluation[2] demonstrated that two late Iron Age/Roman farmsteads were situated within the development area. The extent of these was determined by the evaluation and are shown on Fig 1 of the *Brief*. Both farmsteads (areas A and B) comprise a "core" area of settlement and periphery activity (area C). It is possible the two farmsteads (which appear to be contemporary) are linked by a trackway.

The Phase 1 development is situated over the entirety of farmstead A and includes a large proportion of the peripheral activity C. Concentrations of features within trial trenches and geophysical anomalies suggest there may have been three foci of occupation within the farmstead. It is uncertain if these foci are contemporary or represent shifting occupation foci. Features such as pits and postholes, along with a possible gravel surface were present. Large quantities of Roman pottery and animal bone, along with some iron and bronze objects were recovered from the feature fills.

The farmstead appears to be located within a rectangular system of ditches. A number of these extend up to 50m away from the farmstead suggesting, some at least, are fields rather than settlement enclosures.

The parallel nature of a number of the ditches to the north-east of the farmstead was suggestive of a trackway. The concentrations of features adjacent to this suggests a zone of unspecified activity away from the core of the farmstead.

Isolated undated features occur within a 50m zone around the farmstead (Area C). These are probably contemporary with the farmstead and may indicate the occurrence of unspecified agricultural activity in this area. It is possible that small scale industrial activity and burials may have also taken place in this area.

1.5 Management of the Phase 1 archaeological resource

The nature of the construction within Phase 1 will destroy much of the archaeological remains. It has therefore been decided that these remains will be investigated in advance of development and 'preserved by record' (*Brief* section 6.5).

This document represent a WSARM which will be approved by the *CAO* prior to the commencement of fieldwork.

[2] BCAS 1999 Marsh Leys Farm Archaeological Field Evaluation Stage 4: trial excavation and synthesis of results (Report 99/23)

2. AIMS AND OBJECTIVES OF THE INVESTIGATION

To maximise the information that can be obtained from the investigation of the archaeological remains within the development it is necessary to consider a range of aims and objectives (*Brief* 8.3) that could be achieved.

National and regional research priorities for the Iron Age and Roman periods have been discussed in some detail in the Stage 4 evaluation report (section 6.2.1). Although this *WSARM* is specifically concerned with the Phase 1 development, the additional area of contemporary settlement south of Marsh Leys Farm is likely to enhance the potential of the entire development area to contribute to the stated research priorities. It is hoped that this will be reflected in a consistent methodological approach to all subsequent phases of investigation.

2.1 National and regional research frameworks

National research priorities have been formalised by English Heritage in *Exploring our Past* and more recently updated in the Archaeology Division's *Research Agenda* (draft 1997). The archaeological sites within the present and subsequent developments will have a particular reference to a number of these:

Processes of change	*Britain into Roman*
	Empire to kingdom
Themes	*Settlement hierarchies and interaction*
	Rural settlement
	Craft and industry (including agriculture

At a regional level research frameworks have been outlined in Glazebrook [3], with research agendas recently published in Brown and Glazebrook[4]. In addition to the national research agenda the following have relevance to the Phase 1 development:

Rural settlement	*Non-villa settlement*
	Complete ground settlement ground plan
	Local landscape context
	Food consumption and production
	Burials

Period-based archaeological surveys of relevance to the Phase 1 farmstead include Haselgrove[5], Hingley[6], and Millet[7]. These discuss many of the broad themes established as national and regional research objectives. However they

[3] Glazebrook, J (ed.), 1997, *Research and Archaeology: A framework for the Eastern Counties, 1. resource assessment*
[4] Brown, N and Glazebrook, J, 2000, *Research and Archaeology: A framework for the Eastern Counties, 2. research agenda and strategy*
[5] Haselgrove, C, 1989, 'The later Iron Age in southern Britain and beyond', in Todd (ed.) *Research on Roman Britain* 1960-89, Britannia Monograph 11.
[6] Hingley, R, 1989, *Rural settlements in Roman Britain*
[7] Millet, M, 1990, *The Romanisation of Britain*

stress the particular importance of achieving a greater understanding of:

- the transition from Briton to Roman- including all issues associated with 'Romanisation' for example agricultural intensification,
- the origins and morphology of rural settlement- were there earlier Iron Age origins?, can agricultural activities be identified etc.

By examining a complete Late Iron Age/Roman period farmstead the investigations within the Phase 1 development will have the potential to address many national and regional issues. Hingley and others have emphasised how poorly understood farmsteads are, especially when compared to higher status villa and urban settlements. Although increasing numbers are being investigated, these have tended to take place within the context of linear projects, such as road or pipeline schemes, where only parts of the overall settlement have been investigated. The Phase 1 development will therefore allow a rare opportunity to investigate an entire farmstead.

The significance of the investigation is greatly enhanced by the presence of a contemporary settlement to the south (within later phases of the development). This will provide a rare opportunity to compare the origins, morphology, development and economy of two adjacent farmsteads. Both can then be compared to nearby partially excavated settlements (those investigated in advance of the construction of the Bedford Southern Bypass and housing development on the Biddenham Loop). Therefore the project will be able to build up an overall picture of the landscape in the late Iron Age/Roman period.

2.2 *Specific objective of the Phase 1 investigation*

Outlined in this section are a series of very specific research questions that can be asked of the Phase 1 farmstead. These provide the framework within which methodologies have been developed. A direct link from objective to methodology has been made explicit in section 3.

All aims and objectives will be reviewed regularly throughout the project to ensure:

- that they are still relevant to the data being uncovered
- that methodologies are still appropriate.

A preliminary key review stage will take place once topsoil has been removed from Area A. It is at this stage that all features will be visible and, once planned, detailed strategies for sample excavation of these will be established.

A number of major themes can be identified such as chronology, 'society and economy' and 'environment'. Specific objectives have been organised into these groups and methodologies developed to address them.

2.2.1 Objective 1: Chronology

The establishment of a chronological framework for the farmstead will be a priority for the investigation. It is through this that the origins and

development of the farmstead can be studied and all associated issues examined.

2.2.2 Objective 2: The form and development of the farmstead

The establishment of a ground plan and sequence of land use development within the farmstead will enable spatial and chronological variation to be identified. This may comprise changes over time, for example in building style, burial practices, agricultural practices etc. These are potentially relevant to a number of research issues such as 'Romanisation', agricultural intensification etc. Evaluation has suggested a number of domestic foci exist. Do these represent a chronological shift, perhaps from the Late Iron Age, or are they an effect of sub-dividing the original farm? Was the farmstead in continuous use until the late Roman period or was there episodic abandonment?

More specific questions include:

A. The drop off in features within the evaluation trenches suggests the farmstead will be entirely contained within the excavation. It should therefore be possible to ascertain the complete ground plan. How extensive is the ditched enclosure system? (*see* Stage 4 evaluation report Fig 13).
B. The results of the evaluation suggested that only minor alterations to the enclosure system had taken place. Does excavation confirm this? Do the minor alterations and sub-divisions suggest a continuous small-scale development within an established framework? Or does the excavated evidence indicate phases of more wholesale re-organisation?
C. Concentrations of domestic features and debris were located within the evaluation trenches. Do these represent different domestic foci within the farmstead? Can different zones of specific activity within the farmstead and periphery be identified? Can other specific activity areas be defined (e.g. yards, crop-processing or craft areas) and how was movement through the settlement organised and controlled?
D. Can the pattern of artefact/ecofact disposal across the farmstead be reconstructed? Does this help in our understanding of spatial organisation, for example specific areas of middening activity? (see objective 3c)
E. Apart from the south-west to north-east trackway the evaluation produced only limited evidence for activity beyond the enclosure system. Is this correct or is there evidence for low intensity peripheral activity, perhaps of agricultural, industrial or burial nature, within Area C?
F. Do key assemblages, e.g. from features with critical stratigraphic positions, buildings etc., contain suitable dating evidence? If not do these features contain suitable material for radiocarbon or archaeomagnetic dating?
G. Is there any evidence for an earlier Iron Age origin for the farmstead?

2.2.3 Objective 3: Society and economy

A. Do deposits survive to reconstruct the economy of the farmstead? What was the mix between arable and stock, and did this change over time, perhaps associated with "Romanisation"? Did butchery practices change over time and do they display any evidence of "Romanisation"? Are other

economic activities represented? Is it possible to identify activities representative of subsistence or market-driven production?

B. Do artefacts indicate economic or social contacts with groups at a local, regional, national or international level? In particular, how long-lasting were native Iron Age (British) traditions into the Roman period and can Romanising influence be identified?

C. Does evidence survive for the structured deposition of artefacts or ecofacts? Waite[8] and more recently Hill[9] have demonstrated how the deposition of artefacts in ditches and pits might be the result of structured social behaviour rather than opportunistic dumping.

D. Although no burials were identified during evaluation of the Phase 1 farmstead, the likelihood of individual graves or cemeteries is high. Is there any evidence for burial and did the practices change over time? The identification of a cemetery will provide important information on the pathology and burial rites of the inhabitants of one individual farmstead. If present what is the significance of their location? For example Bevan[10] has suggested burials were often placed near trackways so the dead could travel along this route to the other world.

2.2.4 Objective 4: Environment

A. Do deposits contain evidence to indicate the local ecology and environment of the site?

B. The evaluation identified only a limited quantity of carbonised material within feature fills. These are likely to provide the best indicator to any cereal crops grown and other wild plants. What evidence is there for the economy of the farmstead? Animal bone species will also provide a valuable indicator of the pastoral economy, and possibly the utilisation of wild animals.

C. No waterlogged deposits were located with the evaluation. However, given the low-lying location of the farmstead, these may survive within deeper features such as pits and wells. If so they are likely to provide additional information on the local environment and possibly the economy of the farmstead.

2.2.5 Objective 5: Methodological development

A. What is the range of post-depositional processes that have acted on the site and how have these combined to affect the preservation of archaeological remains and interpretations of those remains?

B. Can sampling strategies be developed to better target areas with high potential? Should some areas of the site be more fully excavated than others?

C. How does the resultant farmstead ground plan compare with that suggested by evaluation? Are certain feature types more or less likely to be located by evaluation? With the benefit of hindsight could the trial trenches have been better located?

D. Can the pottery assemblage improve the ceramic type series for the

[8] Wait, G, 1985, *Ritual and religion in Iron Age Britain*
[9] Hill, JD, 1995, *Ritual and rubbish in the Iron Age of Wessex*
[10] Bevan, B (ed.), 1999, *Northern exposure*

region? The preponderance of locally produced coarse wares using local raw material in the Iron Age makes precise dating difficult.

E. Although the artefact recovery rate from the evaluation was relatively low, full excavation and systematic metal detecting will increase the potential of artefact recovery. Comparison with the nearby farmsteads investigated on the Biddenham Loop and the Southern Bypass should go some way to contributing to identifying an artefact profile for farmsteads. This will enable them to be placed within the wider context of the more widely investigated villa and urban forms.

3. FIELDWORK STRATEGY

3.1 Introduction

This section outlines the different methodological approaches and their purpose (linked to the project objectives). It also sets out the methodological standards, health and safety and quality assurance. The detailed method statement required by the *Brief* (section 7.1) are presented in Appendix 1.

3.2 Methodological standards

Throughout the project the standards set out in the following documents will be adhered to:

- IFA's *Codes of Conduct* and *Standard and Guidance for Archaeological Excavations*;
- English Heritage's *Management of Archaeological Projects* (1991);
- Bedfordshire County Council's *Procedures Manual: Volume 1 Fieldwork* (1997).
- *Preparing Archaeological Archives for Deposition with Registered Museums in Bedfordshire*

3.3 Mechanical removal of overburden (Task 2.1)

3.3.1 Area A

The evaluation trial trenches demonstrated that archaeological remains were deeply buried (500mm of topsoil and subsoil is present). Therefore 250mm of topsoil/subsoil will be removed by a combination of D7 and 360° tracked excavator in Area A.

Once this is complete the lower 250mm of subsoil will be removed by a 360° tracked excavator, fitted with a ditching bucket operating under constant archaeological supervision, down to sensitive archaeological levels or to the upper surface of undisturbed drift geology.

At Biddenham Loop small groups of isolated features were identified within a *c.* 10m wide concentric zone around the Roman farmsteads. Beyond that radius their density declined significantly. Open area machine stripping in Area A will cease if there is an absence of archaeological features within *c.* 15m of the farmstead's core. Sample transects of similar density to those in Area C will be opened.

The removal of overburden will reveal the complete ground plan of the farmstead (objective 2a). This will enable other objectives such as 2b and c to be addressed. Earthmoving will commence from the west due to the *Client's* construction programme (*see* section 6).

3.3.2 Area C

A system of 4m wide transects will be opened by a 360° tracked excavator.

These will cover an area up to a maximum of 4% of Area C. The location of these will be determined based on the feature alignment/distributions within Area A. Initially only the western part (the road corridor) of Area C will be examined. The remainder is likely to be undertaken once open area excavation within Area A is complete. A proposal will be submitted to the *CAO* separately for this fieldwork.

The 360° machine will be fitted with a ditching bucket operating under constant archaeological supervision, down to sensitive archaeological levels or to the upper surface of undisturbed drift geology.

Based on the evaluation results Area C may be largely devoid of archaeological features. However, the identification of localised areas of peripheral activity to the farmstead, for example agricultural processing, industrial activity, burial etc., is crucial to understanding the layout and economy of the farmstead (objectives 2).

The transects will be widened if the following are located:

- Non linear archaeological features- pits, postholes, burials etc.
- Ditch terminals
- Changes in ditch alignment
- Concentrations of artefact/ecofacts within ditch fills

Excavation and recording will then proceed to the same standard as for Area A. Area C will specifically address objectives 2a, d, e and g.

3.4 Pre-excavation planning/strategy (Task 2.2 and 39)

The identification of archaeological features will be made during machine stripping. These will be marked on the ground to prevent features 'disappearing' (this is a common phenomenon on gravel) and will ensure their location is known.

Pre-excavation planning will be undertaken progressively as the machining moves eastwards (within Area C) or once machining is complete (within the transects).

The pre-excavation plans will be captured digitally and will address objective 1 (specifically c). The overall plan will be used as a framework for the detailed excavation sampling strategy (*see* below). This will be discussed with the *CAO* at the first monitoring meeting.

3.5 Excavation and recording of archaeological deposits (Task 2.2)

All recording numbering sequences (contexts, registered artefacts, environmental samples etc.) will continue those started in the evaluation.

Excavation will be concentrated on features/deposits that are likely to address specific project objectives. Where initial excavation, e.g. half section through a pit or ditch segment, identifies significant artefacts or animal bone the initial excavation will be expanded.

3.5.1 Pits

- Where stratigraphic relationships with other features are uncertain (objective 1)
- Where good quality and quantity of artefact/ecofact material is visible within deposits, often within pits (objectives 1, 3 and 4).
- irrespective of the above, additional hand excavation will take place if insufficient information has been obtained from the above criteria..

3.5.2 Ditches

- Where stratigraphic relationships with other features are uncertain (objective 1)
- Where good quality and quantity of artefact/ecofact material is visible within deposits, often within pits (objectives 1, 3 and 4).
- Within enclosure ditch terminals and changes in alignment where Hill has demonstrated artefact/ecofact material is frequently dumped (objective 3 specifically c).
- irrespective of the above, additional segments will be hand excavated if insufficient information has been obtained from the above criteria.

3.5.3 Postholes

The information recovered from postholes has continuously been demonstrated to be of limited value. Therefore although planned and subject to pre-excavation investigation, only a sample will be excavated. This will concentrate on:

- door posts
- those adjacent to contemporary internal activity
- those with evidence for post-packing
- those with evidence for *in situ* burning
- irrespective of the above, a sampling control from a range of postholes of a range of spatial location, dimensions etc.

3.5.4 Other features

Burials and hearths will be subject to full (100%) excavation, along with other features where this will assist in their understanding, for example water pits. Tree throws will only be investigated if they appear to be contemporary with the farmstead, or have the potential to provide information on the date of clearance and species composition of woodland.

3.7 Artefacts (Task 4)

Artefacts have the potential to address objectives 1, 2c and d and 3. All artefacts revealed during fieldwork will be retained by context, with the exception of those recovered from topsoil (which will only be kept if they are of intrinsic interest). To maximise the metallic artefact assemblage a metal detector will be used routinely, both to check spoil and to locate metal artefacts in advance of the excavation of features.

3.8 Ecofacts (Task 3)

Ecofact information will assist in objectives 2c and d, and 4. Environmental samples will be taken from the following deposits:

- those visibly containing charred plant remains
- those where a significant animal bone assemblage has been recovered
- where waterlogging is possible
- for pollen and soil micromorphology analysis
- irrespective of the above, as a sampling control (from the range of feature/deposit types, stratigraphic and spatial location etc.).

If a group of animal bones appears to be articulated, they will be exposed in their entirety. If appropriate these will be recorded as an "animal skeleton" in line with the *Procedures Manual.*

3.9 Feedback into and adjustment of excavation strategy (Task 39)

BCAS has an established system to ensure that there is a rapid feedback of information on recovered artefact and environmental material discovered during fieldwork in place. This utilises Computer Aided Drawing (CAD), databases and a GIS system (Gsys). It involves:

- digital pre-excavation plan
- the processing of artefact and environmental data concurrently with fieldwork
- the results of processing are entered into the Context Assemblage Database Table
- basic context information will be entered into the Context Database Table
- all input data can be manipulated using the pre-excavation plan as a backdrop using the GIS system.

In summary, this system records basic information about the excavated deposits themselves (context type, feature type, formation process, location *etc.*) and a basic identification/quantification of the processed artefactual and environmental material. It includes a spotdate for the pottery from a context and an overall spotdate for the context itself (taking into account other dated artefact evidence). All this information will be used as a basis for reviewing the excavation strategy. It will also provide the basis for the post-fieldwork assessment of the excavated data.

3.10 Monitoring and decommissioning (Task 39)

The *CAO* will be informed of the commencement and completion of earthmoving. Monitoring arrangements will then be established (*Brief* section 7.8) and the *Client* informed of these in advance. No development can take place until the *CAO* has conducted a final monitoring of the area affected and given agreement in writing.

The *Client* has indicated it would be desirable to commence Roundabout 2 construction of during late September.

To achieve this two stages of land release are proposed (both represent the latest date):

- western third end September
- remainder end of November

Irrespective of the *Client's* attendance at the monitoring meetings interim statements will be faxed to the *Client* every other week.

3.11 Landowner issues (Task 39)

Prior to the commencement of substantive fieldwork BCAS will arrange with the *Client* to receive a letter from the landowner granting permission to undertake the excavation. In line with English Heritage and Bedford museum guidelines, BCAS will aspire to receive 'in principle' agreement from the landowner to donate the recovered artefacts to the relevant Museum (subject to statutory laws concerning human remains and treasure trove). This will ensure the recovered artefacts are ultimately stored in an appropriate publicly accessible location (*Brief* 7.2).

3.12 Health and safety (Task 39)

Bedfordshire County Council's *Health and Safety Policy* (1999) will be adhered to at all times and all work undertaken specifically to the BCAS *Health and Safety Manual* (*Brief* 7.4).

3.12.1 Special requirements

Any special requirements of the *Client*, contractors or utilities concerning safe working will be adhered to. Copies of utilities location maps, emergency contact numbers and procedures will be kept on site.

3.12.2 Risk assessment

A comprehensive risk assessment will be carried out before the start of fieldwork. As part of the Project Briefing all staff will be made aware of their responsibilities and the specific site hazards (identified under the risk assessment). The risk assessment will be reviewed regularly as the project progresses.

3.12.3 Security

All tools and equipment on site will be stored overnight in vandal-proof steel units. The police will be informed of the presence of the excavation site and will be asked to check its security during their patrols.

4 POST-FIELDWORK ASSESSMENT, ANALYSIS AND PUBLICATION

4.1 *Assessment and updated Project Design (Tasks 5-18)*

Following completion of the fieldwork and consolidation of the archive, the excavation results will be assessed in order to establish the potential of the data for further analysis. It is intended that a specialist meeting will be held to discuss the project during this assessment stage. An Updated Project Design (UPD) based on English Heritage's Management of Archaeological Projects will then be produced. Familiarity with both the procedures and types of material will ensure that BCAS is able to accomplish this important task both expeditiously and cost effectively.

4.2 *Analysis (Task 19-36)*

To ensure there is no loss of momentum/programming of the project it is proposed the analysis stage of the project takes place directly after the completion of the UPD. It will therefore be necessary to obtain the agreement of the *CAO* at the earliest opportunity. Analysis will proceed up until to the completion of the specialist texts and site narrative tasks (Tasks 24). At this stage it is hoped the development programme will be known. This will affect the decision as to whether future stages of the development should be integrated into the higher level analysis and publication (desirable).

4.3 *Academic publication*

The UPD will contains a publication proposal designed to encompass the results from all stages of investigations at the Marsh Leys development. It is intended that all post-excavation analysis will lead to a single monograph volume, either in the Bedfordshire Archaeological Council's or *BCAS* monograph series. The published report will consist of two parts. Part 1 will provide a synthesis of the development of the landscape, comparing the Marsh Leys evidence to the wider picture provided by the topographic unit of the Ouse valley and beyond. It is this part which will discuss the research objectives. Part 2 will be the technical section of the report, containing detailed descriptions of farmsteads, artefacts, environmental data etc., on which Part 1 is based.

4.4 *Dissemination*

Analysis and publication is a lengthy process but does not preclude the dissemination of preliminary information to the general public or archaeological profession.

4.4.1 General public

Although not costed into this project, BCAS is committed to the wider dissemination of the fieldwork results. Given the location of the development on the outskirts (gateway) of Bedford, improvements to the adjacent road system, and the known level of public interest in Roman remains, the investigation provides an excellent opportunity for good publicity. However, the timing of any press releases will require careful consideration due to the

sensitive nature of the development and the threat posed by treasure hunters/vandals on archaeological sites. The potential benefits of good publicity to the *Client* and Developer as a means of "free" advertising cannot be under estimated.

In terms of wider dissemination of the results of the project, St Mary's Archaeology Centre is used for displays and presentations, to which the general public have access on a daily basis. In addition, temporary exhibitions are regularly set up at a number of venues within Bedfordshire, including libraries, schools, council offices and the recent river festival. The results of the project will also be incorporated into the on-going educational work, carried out in local schools by members of staff from St Mary's Archaeology Centre. This work is carried out as part of BCAS' service to the public and does not constitute an extra cost on the development.

4.4.2 Archaeological profession

Interim summaries of the work will appear in *Britannia* (the journal of the Roman Society) and the *Council for British Archaeology Region 9 Annual Report*.

4.5 Archive deposition

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

5. RESOURCES

5.1 Company profile

Bedfordshire County Archaeology Service (BCAS) was established in 1974. In keeping with its commitment to the maintenance of the highest standards of professional practice, it has been a Registered Organisation with the Institute of Field Archaeologists since August 1997. BCAS offers a comprehensive service to local and national government, statutory bodies, and the private sector.

BCAS staff combine expertise in archaeology with project management skills to provide a high quality service for all our stakeholders, including both clients and the public. BCAS is committed to:

- delivering a first class service to clients;
- developing the highest professional standards;
- disseminating rapidly the results of archaeological projects.

5.2 Relevant experience

BCAS has undertaken all four stages of archaeological evaluation on the land at Marsh Leys Farm. The core team members engaged on this project worked either on the evaluation, or sites of a similar period and type in the vicinity, for example Bedford Southern Bypass and Biddenham Loop. They have detailed knowledge of field and analytical procedures. This local expertise will ensure that this project can be carried out in a thoroughly efficient and cost-effective fashion.

5.3 The BCAS project team

The team involved in the fieldwork stage is likely to comprise:

Init.	Name	Job title	Responsibility
DS	Drew Shotliff MA MIFA	Project Manager	responsible for overall management, quality control, setting of research goals;
ML	Mike Luke BSc	Project Officer	responsible for the day-to-day management of the Project;
TW	Tony Walsh BA	Archaeological supervisor	responsible for day to day on site supervision of the project
AS	To Be Confirmed	Archaeological supervisor	responsible for assistance with on site supervision and checking of site records
JW	Jackie Wells MA	Artefacts Officer	responsible for day to day processing and analysis of all artefacts
AT	To Be Confirmed	Archaeological technicians	investigation and recording of archaeological features/deposits, and processing of artefacts/ecofacts
JL	Joan Lightning BA	CAD technician	Digital capture of site data specifically drawings

Table 1: BCAS fieldwork stage project team

More detailed CVs of BCAS Team members are enclosed as Appendix 3. Staff in the following posts will also support the Project Team: Illustrator, Computing Officer and Administrative Officer/Assistant.

BCAS will recruit additional Archaeological Technicians and Supervisors, if required, to carry out this Project. BCAS uses a thorough recruitment procedure, including job descriptions, person specifications and references to ensure that only suitably qualified staff are employed. They will receive a comprehensive procedural and Health and Safety induction on starting.

5.4 *Specialists*

In compliance with rule 1.4 of the IFA's *Code of Conduct* all members of the project team are adequately qualified to undertake the tasks assigned to them. All sub-contractors used by BCAS are established and well respected in their respective fields of expertise. Each has a proven track record of providing quality services within set deadlines. *Pro forma* contracts are used to ensure work is correctly specified and delivered to time and budget. BCAS continually reviews the quality of work received from sub-contractors and continually seeks competitive quotes in order to avoid over-reliance on a single sub-contractor.

5.4.1 Archaeological specialists

The following specialists will be used on this Project as required.

Initials	Name	Organisation	Specialism
AMS	Anna Slowikowski M Phil	BCAS	Ceramic artefacts
GC	Dr Gill M Cruise	INDE	Pollen
HBD	Holly Duncan Mlitt	BCAS	Non-ceramic artefacts
JM	Jacqueline McKinley	Wessex Archaeology	Human remains
MLSS	Museum of London	MLSS	Artefact conservation
MM	Dr Mark Maltby	Univ. Bournemouth	Faunal remains
MR	Dr Mark A Robinson	Univ. Mus Oxford	Plant, insect and mollusc remains
PG	Dr Pete Guest	Capitol Archaeology	Coins
RMP	Dr Richard I Macphail	Institute of Archaeology	Soil micromorphology

Table 2: Archaeological specialist

5.4.2 Technical specialists

A surveyor from Mouchel Property Services will establish the site grid.

Bulk earthmoving is likely to be undertaken by Buckingham Plant or Callanans, both of whom have provided similar services to BCAS in the past. HF Bull & Sons Ltd (BULL) will undertake small-scale earthmoving, including assistance in deep excavation. They have all provided similar services on BCAS projects for more than 15 years.

Maxion or Speedy Hire will supply on-site accommodation. It will comprise one anti-vandal unit for offices and a smaller secure tool store. Accom Ltd will supply one unisex portaloo.

6. PROGRAMME

6.1 Introduction

It is anticipated that on site archaeological excavation and recording, including earthmoving will last for a maximum of 5 months (this includes a two-week allowance for slippage due to adverse weather).

The provisional programme is as follows:

Date	Area	Activity	Task no.
18th June	A and C	agreement of Project Design, surveying and general site set up	**1 and 39**
July	A and C (west)	earthmoving	**2.1**
August-September	A and C (west)	archaeological investigation	**2.2, 3 and 4**
1st October	A and C (west)	decommissioning approval from the CAO and handover of required area to developer	**39**
October	A (east)	archaeological investigation may continue	**2.2, 3, 4 and 39**
Early October	C (east)	earthmoving	**2.1**
October	C (east)	investigation	**2.2, 3 and 4**
30th November*	A (east) and C (east)	decommissioning approval from the CAO and handover of remaining area to developer (BCAS will aim to achieve the earliest possible date of handover)	**39**
December	All	record checking and consolidation	**6, 8, 7.1, 7.2**
March	All	assessment and UPD	**9, 11, 16, 17 and 18**

* Two week's slippage time for bad weather or other avoidable occurrences should be anticipated.

Table 3: The project programme (up to completion of UPD)

6.2 Task breakdown

The task breakdown presented overleaf includes task numbers used in BCAS Time Recording System. Team members initials are presented in tables Table 1 and 2).

Task	Description	Staff	Qty	Days
1	**Site set up**			
	Preparation and agreement of Project Design	ML/DS	1	5
	Co-ordination of site set up and preliminary works	ML/AS	1	3
	Setting out and site grid	AS/SUR	2	2
	Portacabin, portaloo	MAX, ACCOM	1	40
2.1	**Supervision of machining**			
	Machining (hymac, moxeys)	HEW	1	20
	Supervision	AS	1	10
	Additional machining during fieldwork (1 day)	BULL	1	2
2.2	**Excavation and recording**			
	Fieldwork	AS	2	50
		AT	8	50
	Specialist consultancy	VAR	3	2
	Project Officer management (on site)	ML	1	5
3	**Environmental sample processing (inc. CAT)**			
		AT	1	3
4	**Finds processing (inc. CAT)**			
		JW/AT	1	10
5	**Non-ceramic artefacts (Broad Term ID)**			
		JW	1	1
6	**X-rays and emergency conservation**			
		MLSS		
7.1	**Digitisation and tagging of site drawings**			
		JL	1	5
7.2	**Inputting of records into database (inc. CAT)**			
		AS	1	1
8	**Context record checking and inputting**			
		AS/AT	1	5
9	**Structural assessment**			
		AS	1	3
		ML	1	1
11	**In-house Narrow Term Identification (preliminary)**			
		JW/HBD	1	1
12	**External Narrow Term Identification (preliminary)**			
		TBC	1	1
16	**Environmental assessment (external)**			
		VARIOUS	4	1
18	**Assessment and UPD**			
		HBD/AMS/DS	1	1
		AS/JW	2	5
		ML	1	5
37	**Archive preparation**			
		HBD	1	1
		AT	1	1
39	**Project Management**			
		HBD/AMS/DS	1	1
		ML	1	5

Table 4: Task list for archaeological investigation

7. APPENDIX 1: DETAILED EXCAVATION METHOD STATEMENT

7.1 Standards

Excavation will be undertaken in line with the *Brief*, this WSARM, the IFA *Standard and Guidance for Excavation*. The details of the recording system are contained in the BCAS *Procedures Manual* and these are not repeated here. Specifically it will involve the following:

7.2 Survey grid

The location of Areas A and C will be marked out in advance of machine stripping. Once a sufficient area has been cleared a site grid will be established at 20m intervals based on the OS grid.

7.3 Mechanical removal of topsoil

1 In Area A an 250mm of topsoil will be removed by combination of D7 and 360° tracked excavator. Subsequent to this 250mm of subsoil or onto the upper surfaces of archaeological features/deposits will be removed by a 360° tracked excavator, fitted with a ditching bucket, operating under constant archaeological supervision
2 A stripping sequence in Area A will ensure that cleared areas are not subsequently driven over.
3 Spoil from Area A will be transported by moxeys and stockpiled outside the areas of archaeological significance.
4 Where possible topsoil and subsoil from Area A will be stockpiled separately.
5 Transect excavation (4m wide) in Area C will be undertaken by a 360° tracked excavator, fitted with a ditching bucket operating under constant archaeological supervision. Topsoil and subsoil will be stored on either side of the transects.
6 No backfilling will be undertaken by BCAS within either Area A and B.

7.4 Hand excavation and recording

1 All recording number sequences will continue those used during the evaluation stage of the project.
2 Archaeological features identified during machining stripping will be marked on the ground by spray paint.
3 Pre-excavation planning will commence at the earliest opportunity.
4 The pre-excavation plans will be digitised and used as the basis for the excavation strategy.
5 Adhering to the strategy but for project momentum and management reasons investigations will proceed from west to east within planning area.
6 The excavation of linear features will be standardised in 1m segments. Excavation will be concentrated where ditches are associated with domestic activity (up to 20% by length), with a smaller quantity of excavation where ditches represent field boundaries (up to 5% by length). These will be targeted on terminals, changes in alignment, where significant artefactual/ecofactual material is visible, and to establish relationships if required. Additional or extensions to segments may be undertaken in the event of significant artefactual/ecofactual material being discovered or adjacent to contemporary activity.
7 All isolated pits will be half sectioned, but those occurring in groups will be sampled. Where the understanding of the character of a pit or where significant artefactual/ecofactual require full excavation, this will be undertaken.
8 Deep features such as water pits and wells will be investigated to their base.

Where this requires the appropriate use of a machine a strategy will be submitted to the *CAO* for this in advance.

9 Burials and hearth type features will be fully excavated, with the use of cumulative sections as appropriate. On the discovery of human remains, BCAS will liaise with the Home Office and acquire the appropriate Licence.

10 The extent of surfaces will be determined prior to partial excavation.

11 A sample of postholes will be excavated.

7.5 Artefacts and ecofacts

1 Spoil will be scanned for artefacts by both eye and metal detector.

2 Artefacts, including those recovered from spoil heaps, will be assigned to the 'unstratified' context number.

3 Artefact processing will be undertaken concurrently with the investigation.

4 Artefact information will be available during fieldwork and monitoring meetings.

5 A programme of environmental sampling will be carried out in accordance with Murphy and Wiltshire (1994) *A Guide to Sampling Archaeological Deposits for Environmental Analysis*.

6 Ten to twenty litre samples will be taken, as appropriate (see 3.8). With the exception of waterlogged deposits, samples will be disaggregated in water, and the charred material (flot) collected on a 500μ mesh. All flots will be dried, catalogued and curated. The 5.6mm residue fraction will be sorted for artefacts and discarded. Other residue fractions (1mm and 2mm) will be dried, catalogued and curated.

7 Processing will be undertaken at St Mary's Church Archaeology Centre during fieldwork so that the results can help to inform on-site strategies. Specialist advice will be sought as necessary.

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7 Processing will be undertaken at St Mary's Church Archaeology Centre during fieldwork so that the results can help to inform on-site strategies. Specialist advice will be sought as necessary.

8. APPENDIX 2: POST-FIELDWORK ANALYSIS AND REPORTING

8.1 Record checking and consolidation

1 During or immediately after fieldwork all records will be checked and cross-referenced to ensure they are internally consistent.
2 All data acquired during evaluation and excavation including cropmark and geophysical evidence will be integrated.
3 Recording, cleaning and conservation of finds will be undertaken adhering to the IFA *Guidelines for Finds Work.*
4 All environmental samples will be processed and assessed as appropriate.
5 Site drawings will digitised and geo-referenced.
6 Contextual, artefactual and ecofactual data will be entered onto a networked Access database.

8.2 Assessment of results

1 A provisional chronological sequence will be established based on the context/feature spotdating undertaken during fieldwork.
2 This will be discussed in terms of provisional chronological development with any major changes in layout or spatial organisation highlighted.
3 The structural, artefactual and ecofactual data will be assessed (by internal and external specialists) and the results presented within quantifiable groups of information. The potential of each will be discussed, linked to the provisional chronological sequence both in terms of the original project objectives and any new ones that arose during fieldwork.
4 Recommendation for further analysis will be presented. Any data, which is deemed insignificant within the terms of the project objectives, will not progress beyond the assessment stage.

8.3 Updated project design

1 The assessment will determine the potential of the data to address the project objectives and therefore the nature and level of analysis required.
2 A detailed method statement will be presented, linked to the BCAS Time Recording Task numbers.
3 Data analysis will proceed up until the completion of the specialist texts and site narrative tasks (up to Tasks 24). A decision will then be taken whether to wait to integrate data from future developments.

8.4 Analysis, publication and archiving

1 The UPD will present the method statement that will result in the publication and analysis of results.
2 Once publication production is underway the archive will be transferred to Bedford Museum. It is only at this stage that the project can be deemed complete.

9. APPENDIX 3: PROJECT STAFF CVS

Drew Shotliff: Project Manager
Technical qualifications
MA Archaeological Practice, University of Birmingham, 1985
BA (Hons) Modern History, Mansfield College, Oxford, 1980
Member of the Institute of Field Archaeologists
Core skills
Archaeological project management through design and fieldwork to publication. Post-excavation analysis of large urban and rural sites. Development of fieldwork and post-fieldwork analysis methodologies using database, AutoCad and GIS applications. Research interests centre on Saxon and medieval rural settlement. Member of the Service Management Team, with specific responsibility for project programming and finance. Member of the Society of Landscape Studies.
Employment History
1991 to present, Project Manager, BCAS
1991, Consultant to ODA/British Council, Samanalawewa Project, Sri Lanka
1990-1991, Project Officer, Cambridgeshire County Council
1987-1990, Senior Archaeologist, Museum of London
1982-1987, various archaeological employment including, English Heritage, University of Birmingham (Sutton Hoo), and Ecuador, Cyprus and France

Mike Luke: Project Officer
Technical qualifications
BSc (Hons) Archaeology, University of Wales (Cardiff), 1986
Core skills
The management of multiple fieldwork projects. He directed the four stages of evaluation at Marsh Leys and archaeological investigations in the vicinity including the route of the Bedford Western Bypass and the extensive excavations on the Biddenham Loop. Independent of BCAS he has produced an article on the Roman roadside settlement at Alfoldean, West Sussex (due for publication latter this year) and is currently working on an article for *Britannia* (the journal of the Roman Society). He has published the results of excavations on Iron Age/Roman settlement at Flitwick in *Bedfordshire Archaeology* and as a member of the Roman Society regular contributes to the *Sites Explored* sections of *Britannia*.
Employment History. Since 1995 he has worked as a BCAS Project Officer. Prior to this he was employed as a supervisor for BCAS, Cleveland County Council and CADW (Historic Wales).

Antony Walsh: Archaeological Supervisor
Technical qualifications
BA (Hons) History and Landscape Archaeology, University of East Anglia, 1985
Core Skills
Field supervision of a wide range of archaeological projects. Structural analysis and report preparation. Specialist interests include the medieval and post-medieval periods, landscape archaeology, field monuments and standing buildings (particularly churches). Member of the Society for Post-Medieval Archaeology.
Employment History
Professional field archaeologist since 1988, working mainly in Yorkshire, Humberside and Bedfordshire.

Anna Slowikowski: Artefacts Manager (ceramics)
Technical qualifications
M Phil, University of Leeds, 1991
PGCE, Sheffield City Polytechnic, 1977
BA (Hons) Prehistory/Archaeology and Ancient History, Univ. of Sheffield, 1976
Member of the Institute of Field Archaeologists
Member of the Association of Archaeological Illustrators and Surveyors
Core skills
Management and analysis of ceramic artefacts. Specialist knowledge of medieval pottery but with wide experience of Iron Age and Roman ceramics. Responsible for the establishment and maintenance of a regional Ceramic Type Series and provides education and outreach services. Member of the BCAS Service Management Team. Active member of both national and regional specialist ceramic study groups
Employment History
An artefact specialist since 1977, she has published extensively in specialist and county journals and monographs. She has worked in Nottingham and West Yorkshire and abroad in Poland. Past Chair of the Association of Archaeological Illustrators and Surveyors, former committee member of the local group of the Council for British Archaeology, and Council member of the Medieval Pottery Research Group, sitting on their Minimum Standards Working Party.

Holly Duncan: Artefacts Manager (non-ceramics)
Technical qualifications
M Litt, Department of Archaeology, University of Glasgow, 1982
BA (Hons) Anthropology, University of Pennsylvania, Philadelphia, 1976
Member of the Institute of Field Archaeologists
Core skills
Management and analysis of non-ceramic artefacts, with specialist knowledge of the post-Roman and medieval periods and substantial experience in the prehistoric and Roman periods. Responsible for the Bedfordshire Artefact Typology (BAT) in conjunction with the two registered museums in the county. Wide network of specialist researchers and conservation specialists.
Employment History
An artefact specialist since 1981, her work has been published in both Scottish and English archaeological journals, and she has conducted research in the United States. She is a member of both the Roman Finds Group; former committee member of the IFA Finds Group, having sat on their Standards and Guidance for Finds Work Working Party.

Jackie Wells: Artefact Officer
Technical qualifications
MA Post-Excavation Studies, University of Leicester, 1990
BA (Hons) Archaeology and History, University of Nottingham, 1988
Core skills
Processing and analysis of ceramic and non-ceramic artefact types. Computer-based artefacts analysis. Establishment and maintenance of County Ceramic Type Series. Jackie has written the ceramic and non-ceramic sections for articles published in *Bedfordshire Archaeology*, the Bedfordshire Monograph Series and over 50 BCAS evaluation reports,
Employment History
Over 8 years postgraduate experience in processing and analysing artefactual assemblages, gained mainly through work in the Peak District (predominantly prehistoric sites), South Wales (Caerwent Roman town) and Bedfordshire (including numerous Roman sites). Independent of BCAS she has analysed the artefacts from the Roman roadside settlement at Alfoldean, West Sussex (due for publication latter year). She is a member of The Study Group for Romano-British Pottery and Roman Finds Group.

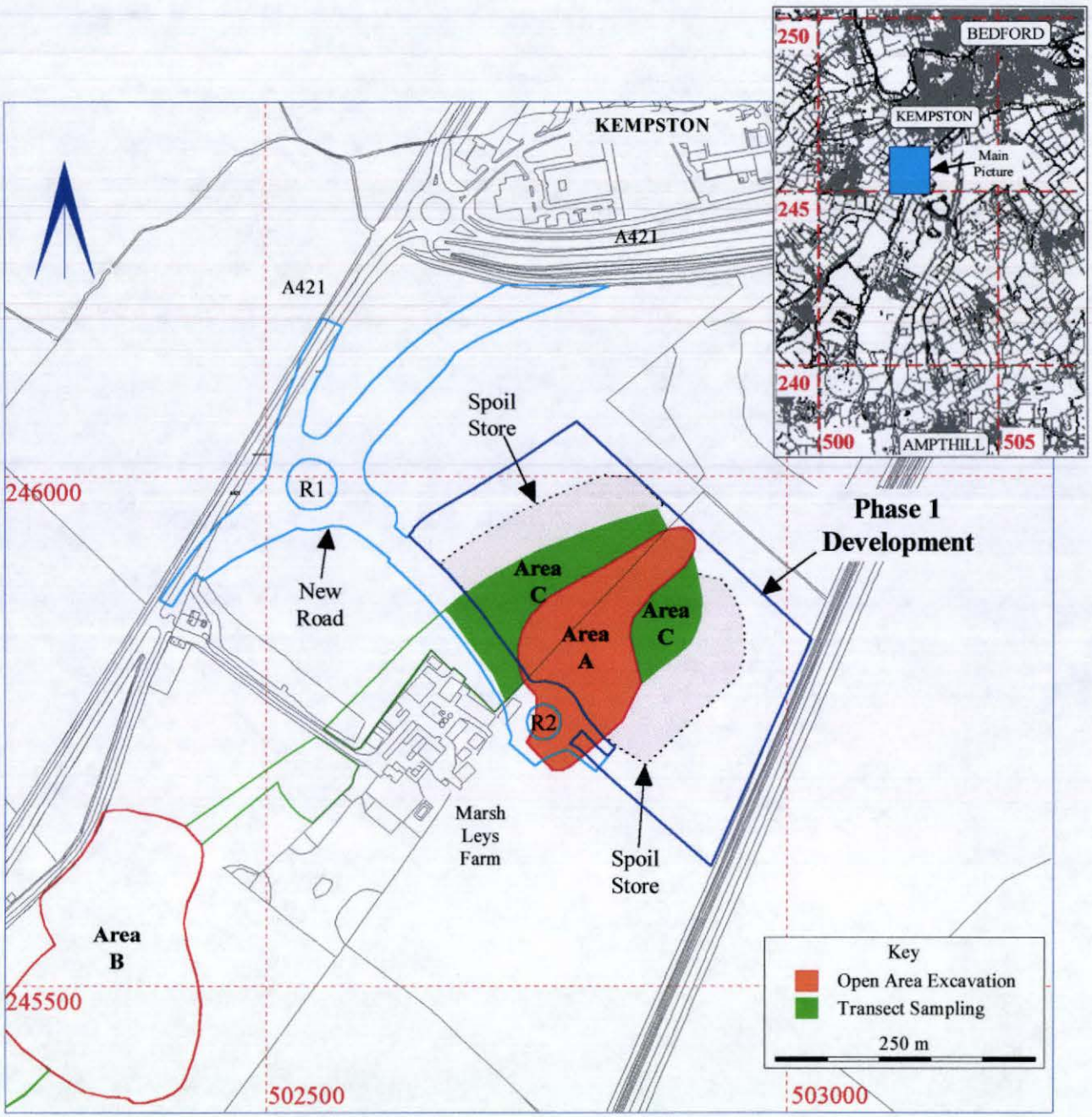
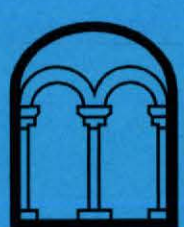


Fig. 1: Areas of archaeological investigation associated with the Phase 1 development.



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