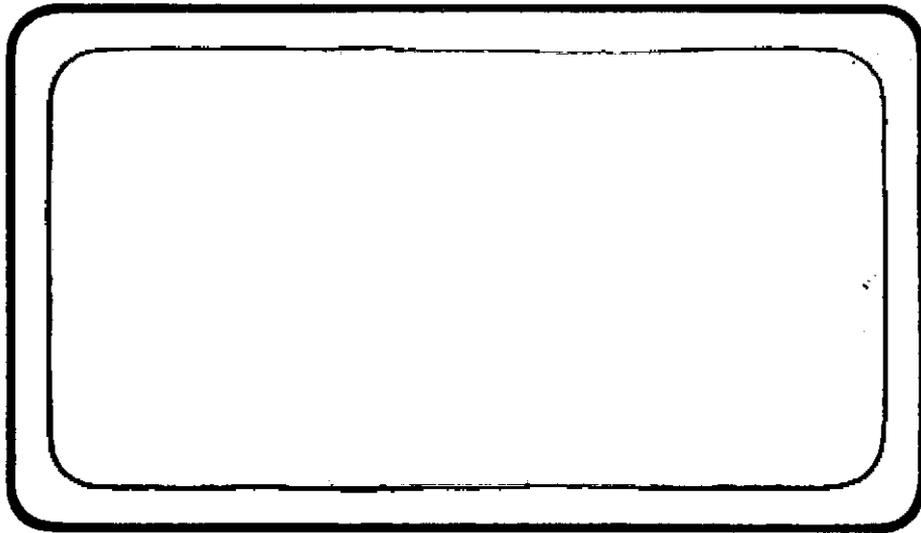


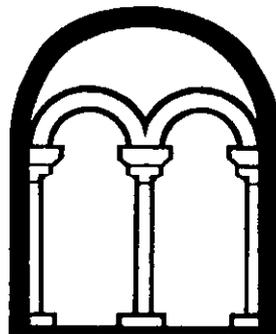
Bedfordshire County Council  
Planning Department

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**BEDFORDSHIRE  
ARCHAEOLOGY SERVICE**

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The Roman Small Town at Sandy  
Bedfordshire

Part 2  
Updated Project Design

Bedfordshire County Archaeology Service

February 1996

Report 95/32

# THE ROMAN SMALL TOWN OF SANDY, BEDFORDSHIRE

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## 1. THE PROJECT AIMS

The assessment of Sandy's potential for post excavation analysis has been explored in Part 1 of this report. During the assessment stage both original project aims and aims identified part way through the project have been examined. Some of the early project aims, such as confirming the possible presence of a *mansio*, clearly cannot be pursued for lack of positive evidence, whilst in some areas new aims have been identified. Throughout the assessment as ideas have developed regarding the potential of the excavated data, the opportunity to clarify and amalgamate some of the objectives has been taken. The following section is based on the revised aims and objectives and presents the academic arguments for pursuing them.

### 1.1 To analyse the nature of and determine the relationship between Sandy Roman Small town, its hinterland and the wider region.

The relationship between town and country in the Roman period has formed the basis of several British studies, notably Collingwood (1936), Rivet (1964) and Todd 1970. However until the mid 1980s (Going 1987, Fulford 1982) no analytical work had been carried out, and today considerable debate is focused on the role of towns as centres of distribution, redistribution and whether in the Roman period they acted as free markets, or were more closely controlled through networks of patronage (Whittaker 1994).

In other areas of the empire (Leveau 1984) landscape studies have begun to address the extent of relationships between town and country in terms of settlement densities. In Britain this approach has focused on the concentration of villas around urban settlements (Millet 1991).

Although a small town, Sandy occupies a significant location astride one of the major Roman roads of East Anglia, between the small towns of Baldock and Godmanchester. It is also in an area which recently has seen several large scale excavations: Warren Villas; Kempston; Ruxox, which may be used as the basis for comparisons of artefact assemblages and the enhancement of a Bedfordshire/regional ceramic type series and database. Furthermore the late Iron Age and Roman period landscapes are undergoing preliminary analysis (Dawson forthcoming) and this will form the basis of further comparative spatial analysis.

It is proposed, therefore, to address the role of Sandy and its relationship to the hinterland and wider region through analysis of the artefact assemblages recovered during the excavation of Sandy.

#### *Function, origin and distribution*

The approach will be hierarchical. Initial definition of artefact distributions will focus on the site to determine activity areas (Task 22); secondly individual artefacts will be related to regional distributions to determine their origins.

Investigative conservation (Task 14) and full name identification (Tasks 15-18) will enable confirmation of object type and date range which will assist in confirmation of the site chronology (Task 22). Full name and functional category analysis (Tasks 26-27) will enable an artefact profile of the site to be established. This profile and individual artefacts can then be compared with assemblages from other areas to determine their origin (Task 24.4).

As with full name identification of non-ceramic artefacts, Task 13 forms the basis for all ceramic analysis: defining the types (Task 13.1), their relative proportions on the site as the basis for site chronology, and interpretation of activity areas. This part of the analysis will provide the basis for comparison with ceramic assemblages from other sites.

### *Hinterland and region*

Once the origin of artefacts has been determined the nature of the relationship between Sandy and its hinterland and the wider region will be explored (Task 24.2).

A number of large scale excavations in the county have produced significant assemblages of pottery and artefacts which have been assimilated into the evolving Bedfordshire Ceramic Type Series, and Bedfordshire Artefact Typology and are, therefore, readily available for comparison. These are mainly rural sites and cemeteries, thus providing good examples for contrast with a small town (Dawson, Oake, Shotliff forthcoming). In particular thin sections of the pottery from Sandy will be compared with samples from the Warren Villas kiln. Thin-sections of shelly tile from Sandy will be compared with samples from the Harrold production centre. This is a likely source for both pottery and building materials, as its products were widespread in the 4th century (Task 13.2).

### *Manufacturing and Marketing*

The third focus of interpretation will be to determine whether Sandy was a centre of distribution or re-distribution, or whether it was part of an integrated rural/urban economy with similar artefact profiles to villas and other sites. In this third tier of interpretation the artefact assemblages from Sandy will be crucial in making comparisons with other sites. Influences such the road linking Baldock and Godmanchester will be examined and the examination of the pottery by specialists with in-depth knowledge of the ceramics from the wider region will contribute to the analysis of Sandy ceramics in their wider context.

#### **1.2. To explore the transition from the Iron Age to the Romano-British period.**

In the study of Roman small towns the transition from late Iron Age is considered of crucial importance. At centres such as Braughing and Mildenhall (Burnham & Wachter 1990) the Iron Age trajectory towards urban development seems to have resulted in the translation of settlement. In these examples the proximity of an Iron Age settlement has been seen as the precursor of the Roman period settlement. At Sandy

the potential to examine the transition period has been shown to lie with structural evidence, ceramics, and particularly coins. The location of the hillforts above the town site may have been influential in the location of the Iron Age settlement which lies beneath the Roman town but there is otherwise no direct link as the 'forts' have only produced evidence of occupation in the early to middle Iron Age (Dyer 1976, Dawson 1995).

Full name identification of non-ceramic finds (**Tasks 15-18**) will assist in refining and clarifying both the chronology of the site (**Task 22**) and any continuity of occupation from the late Iron Age into the Roman period. The nature of that occupation may be derived from examination and analysis of the Iron Age coin assemblage (**Tasks 14, 15.1 and 26.3**) using both data from the present excavations and the Index of Celtic Coins at the Institute of Archaeology, Oxford. Both the recovery pattern of coin types and the evidence for minting at or near Sandy will be significant components of the analysis.

The principle ceramic task which addresses the transition from the Iron Age to Roman period is **Task 24.4**. Distributions of chronologically diagnostic fabrics and/or forms across the site will determine the presence of pre-Roman activity, and, combined with stratigraphic data, will help to assess its longevity. Comparative examination of ceramics found prior to the present excavations, and now in Bedford Museum and the Fitzwilliam Museum, Cambridge, will further help determine the extent of evidence for Iron Age and Romano-British activity (Dawson 1995).

### **1.3. To analyse the burial customs found at Sandy and confirm their date.**

Burial in the classical period has been recently re-appraised emphasising the variety of causes which led to the adoption of specific burial rites (Morris 1994). Burial evidence from towns of the Roman period has been extensively catalogued site by site as the basis for wider survey, providing comparative material (Philpott 1991). The burials at Sandy represent 3rd-4th century practice and will be assessed in the context of other small towns and contrasted with wider Romano-British practice, as well as regional cemeteries such as Dunstable, Bletsoe and Kempston.

Many of the Sandy burials had ceramics accompanying them, and together with full name identification and analysis of non ceramic grave goods (**Tasks 15 and 26**), will assist in refining the dating of burials and in determining whether patterns exist between burial type and goods. Comparison of such patterns with other burial groups, will be invaluable in determining the place of Sandy within regional and national traditions, ultimately contributing to a greater understanding of Romano-British burial customs (**Task 24.4**).

#### **1.4 To examine the floral and faunal evidence of activity and environment in the town.**

The floral and faunal history of the Ivel Valley is being developed in a series of studies based on sites excavated over the past decade (Scaife forthcoming). A significant gap in determining the history of the valley has been the Roman period. Studies at Little Paxton, Cambs (Jones 1993) have begun to establish the type of agricultural practice which characterise rural settlement, and Sandy provides the opportunity to examine a contrasting environment.

With the analysis of the ceramics providing a chronological framework for analysis of environmental evidence from the site (**Tasks 13-25**), the study of plant macrofossils, the animal bone assemblage, and functional category analysis (**Task 27**) of objects associated with agriculture and horticulture (category 10), will contribute to understanding the nature of agricultural processing in the town, enabling comparisons with finds from other local and roadside settlements (Smith 1987, 91-2) and with processes evident in the hinterland.

#### **1.5 To develop the Bedfordshire artefact databases including both the Ceramic Type Series and non-ceramic artefacts typology (BAT).**

The range, quantity and quality of the registered artefact assemblage from Sandy is such that it will form the foundation of the Roman section of BAT (**Tasks 14-15, 26-27, 38**) and will make a major contribution to Roman artefact studies in Bedfordshire and beyond. The addition of this material to BAT will facilitate both future Roman artefact-based studies and comparisons between site assemblages both on a local and regional basis.

The principal ceramic tasks addressing this research aim are **13.1** (Pottery Type Definitions); **13.2** (Thin-sections); **13.3** (Bedfordshire Ceramic Type Series); **24.2** (Parallels Research) and **31** (Illustration).

In 1991, Fulford and Huddleston, in their survey for English Heritage of the state of Romano-British pottery studies in England, recommended that the establishment of ceramic type series, either county-based or regional, be regarded as a priority. Since 1976, the medieval pottery type series for Bedfordshire has been established and actively curated. With the excavation at Odell and Newnham Marina a Romano-British type series has been in existence since 1972. It has evolved since then, and, as with the medieval type series, needs constant updating with each new site excavated. The pottery from Sandy still remains the largest stratified assemblage of Romano-British pottery found in the county. It will make an important contribution to the type series, due to the wide date range and variety of fabrics and forms.

This fits into the BCAS county and regional research frameworks. The development of a ceramic type series, which, although primarily county-based, can form the core of a regional type series, will help the understanding of ceramic distribution and trade within and without the region; facilitate comparisons between site assemblages, and aid

future ceramic research. Sites across the county such as Odell, Harrold, Newnham Marina, Kempston and Ruxox, excavated by BCAS, and sites within Dunstable and Toddington villa, excavated by the Manshead Archaeological Society, already partially integrated into the type series, will be fully incorporated as described in 4.2 (Task 13).

The Bedfordshire Ceramic Type Series is primarily a county-based assemblage. However, the recent acquisition of the Milton Keynes type series, on the demise of the Archaeological Unit, allows for the establishment of the core of a regional type series. The keying in of the Milton Keynes pottery series with those of its neighbouring counties has been pinpointed as a desirable aim, 'as and when work takes place' (Fulford and Huddleston 1991, 34).

## 2 PUBLICATION PROPOSAL

The report on excavations at Sandy will form part of the Bedfordshire Archaeology Monograph Series. It will be published in A4 format in one or two volumes.

### Part 1: The Evidence

<i>Title</i>	<i>No words</i>	<i>Tables</i>	<i>Figs</i>
<b>Chapter 1: Introduction and background</b>	4000		1
<b>Chapter 2: The structural evidence</b>			
1 Phasing Introduction	2000		
2 Description by phase	8000		20
<b>Chapter 3: Ceramic artefacts</b>			
1 Type series and descriptions	12500	20	38
2 Discussion: forms, sources, date, parallels	6000		
3 Building material: description	1000	2	5
4 Discussion: forms, sources, date, parallels	1500		
<b>Chapter 4: Non-ceramic artefacts</b>			
Buildings and Services	1200	2	1.5
Fastenings and Fittings	3450	1	2
Household	7800	1	6
Craft and Industry	5400	1	4
Multi-Purpose Tools	1300		2
Commerce	4050	4	1
Communications	900		0.5
Pastimes	450		0.5
Animal Trappings and Transportation	1350		2
Agriculture and Horticulture	900		1.5
Weaponry (military and hunting)	1125		1
Personal Adornment and Dress	5000	1	6
Toilet, Surgical or Pharmaceutical	2250		2
Religious and Political Beliefs	1350		1
Wide-ranging or Unknown uses	1800		2
	38325		33

## Part 2: The Synthesis

<i>Title</i>	<i>No words</i>	<i>Figs</i>
<b>Section 1:</b> The nature of, and the relationship between, Sandy Roman small town, its hinterland and the wider region	Structural: 5000 Ceramics: 5000 Non-Ceramics: 5400	Structural: 2 Ceramics: 5 Non-ceramics: 3
<b>Section 2:</b> The transition from the Iron Age to the Romano-British period	Structural: 5000 Ceramics: 2000 Non-ceramics: 2700	Structural: 3 Ceramics: 1 Non-ceramics: 2
<b>Section 3:</b> The burial customs at Sandy	Structural: 3000 Ceramics: 3000 Non-ceramics: 1800 Ecofactual: 1500	Structural: 5 Ceramics: 5 Non-ceramics: 3
<b>Section 4:</b> Floral and faunal evidence of activity and the environment in the town	Structural: 1000 Ceramics: 200 Non-ceramics: 300 Ecofactual 5000	Structural: 0 Ceramics: 0 Non-ceramics: 0 Ecofactual 3

## **3 METHOD STATEMENT FOR STRUCTURAL ANALYSIS**

### **3.1 Introduction**

Assessment of the evidence recovered during excavation has identified five research aims of which four are specifically based on the framework provided by structural analysis. So far the provisional phasing of the contextual data has provided the framework for assessment but neither associational, structural nor landscape groups have been prepared for this site. Once defined these will lead to re-appraisal of the phasing as outlined in the assessment.

### **3.2 Stages of Analysis and Publication**

The analytical system which will be used for Sandy is one which is being developed for all sites in Bedfordshire. The system is hierarchical based on sub-group, group and landscape groups and makes maximum use of computerised database systems. This system is integrated with a graphics data base currently being used successfully in the analysis of Stratton, Kempston, Ruxox and other substantial sites in the county.

#### *Definition of associational sub-groups (Task 22.1)*

In analysis the context evidence will be examined to establish in detail relationships between groups of contexts. At the primary level associational sub-groups will be assembled consisting of one or more contexts which are closely related both stratigraphically and interpretatively. During this process use will be made of both stratigraphic and spatial information; in the case of isolated features finds data will be considered.

On an urban site, such as Sandy, the sub groups will comprise a range of interpretative events. For instance a series of post hole cuts which comprise a building will form a sub group, as will a single pit cut. A key determinant in the analysis of sub-groups will be the identification of common formation processes: construction, use or disuse.

The output of this stage of analysis will be the identification of sub-groups on a context data base and the production of sub-group text. The text will include two elements: a description of the physical constituents and an interpretative section setting out the rationale behind the identification of the sub-group.

#### *Definition of structural groups (Task 22.2)*

In the second stage of analysis associational groups will be assigned to a single structural group representing a higher level of interpretation. The group allocation will be entered onto the context database. This procedure will lead to the identification of groups defined by processual relationships: for instance buildings in which modifications have taken place, road surfaces which have been repaired or pit groups. Finds data will be integrated with the structural analysis at this stage.

The output of this stage of analysis will be a group matrix, a group discussion and plans at appropriate scale. It is envisaged that plans will be produced by GeoSys interpreting digitised data in AutoCAD. The group discussions will form the basis of the structural contribution to the technical component of the report.

#### *Definition of landscape groups (Task 22.3)*

In the third stage of structural analysis the results of grouping contexts into structural groups outlined above will be taken a stage further and landscape groups defined. These may comprise the remains of structures and associated enclosures, industrial zones or other contemporary features such as 'eaves drip' burials.

#### *Review and confirmation of phasing (Task 22.4)*

The detailed confirmation of phasing will be carried out at a round table discussion to integrate chronological information from the ceramics and artefactual data with the results of structural group analysis. This will lead to the development of a final model for the chronological evolution of the whole site. The confirmation of the phasing marks the final step in the definition of a dated sequence which underpins all the research aims.

#### *Database update (Task 22.5)*

At the initiation of tasks 22-4 a processual database will be established for the Sandy project (Access for Windows) which will allow for the interrogation of context and finds data. Concurrently all the drawn data will be digitised in AutoCAD and tagged/labelled to allow finds distributions and phase data to be interrogated through GeoSys. In the project programme the completion of both databases is co-terminus with the confirmation of phasing. The output at this stage will be a database of digitised site plans and a database of context/group information. The form of database employed will be the same as that established for Salford (initiated 1990, and Stratton 1994) and in common usage by BCAS.

#### *Circulation of phasing data to specialists (Task 22.6)*

Following final confirmation of phasing this data will be forwarded to specialists in report form to facilitate the production of draft technical reports.

#### *Research for comparative data (Task 22.7)*

At this stage data from other similar sites and structures will be added to the structural record to facilitate its interpretation in the light of comparisons with other structural units in Roman small towns.

#### *Analysis of structural data (Task 22.8) leading to draft technical report.*

The technical report produced for circulation (Task 22.7) will be enhanced, and each structure further defined in terms of structural components, internal features, peripheral elements in the context of other Romano-British examples. Interpretative discussion will cover both structural groups and landscape groups. This will be the basis for discussion of building types and constructional techniques in the Roman settlement. Text will be arranged by period based on the phasing framework.

#### *Illustration (Task 36)*

In the light of analysis carried out, technical illustrations of structures and landscape groups (by phase) will be identified and prepared to publication standard, at this and subsequent stages as appropriate.

#### *Liaison with specialists (Task 34)*

A round table discussion will be held between specialists and in house staff prior to the commencement of research leading to the draft integrated synthesis.

#### *Integration of structural, artefactual and ecofactual data (Task 35)*

The technical report provided in Task 22.8, will present the evidence on which discussion of the broader research aims will be based. Artefactual, ecofactual and structural analysis will be integrated and the relationships between artefact distributions and structural or landscape groups will provide the first stage in discussion of the regional analysis of settlement organisation, ritual practice (deposition and burial practice), the social and economic status of the site and its regional and national context.

**Table 3.1 Task list for structural analysis and report completion**

Task number	Description	Aim	Quantity	Staff	Duration (days)
22.1	Definition of sub- groups	All			
22.2	Definition of groups	All	30 contexts /day	Asst	101
22.5	Database update	All	c3222 contexts	Asst	10
	Checking plans				11
	Digitisation		100/day		16
	Checking CAD				2
	Conversion plans to OS grid				1
	Labelling GeoSys		1500 polygons		8
	Checking & corrections				6
	Conversion of Database to OS grid				3
22.4	Confirmation of phasing	All	Estimated at 13 phases	Asst	10
				MD	4
22.6	Circulation to specialists	All		Asst	1
22.7	Research for comparative data for groups	2,5		Asst	8
				MD	8
22.8	Analysis of structural data for technical report & draft technical text	All		Asst	5
36	Illustration	All	Based on 183 plans	CAM	65
34	Liaison with specialists	All		MD	10
35.1	Integration of structural, artefactual and ecofactual data	1,5		MD	40
35.2	Research for comparative data	2,3,4,6		MD	27
35.3	Draft integrated synthesis	All		MD	20
36	Mock ups	All		CAM	10
37.1	Assemble report			MD	20
37.2	Text to HBMC referee	All		Asst	1
37.3	Changes resulting from referees comments			MD	10
				CAM	10
37.4	Paste ups	All		CAM	10
37.5	Captions and checking	All		CM	3
				MD	5
37.6	Editing, cross referencing	All		MD	18
				*Proof Ed	10
38	Creation paper archive	All		Asst	4
39	Transfer archive	All		Asst	4
	<i>General Project Management</i>				
40	Management time	All		MD	10
40.1	English Heritage Monitoring		7 meetings / half day each	MD	3.5

## 4 METHOD STATEMENT FOR CERAMICS ANALYSIS

### 4.1 Introduction

As a result of the fieldwork and assessment stages the following preliminary tasks have been completed:

- identification of broad fabric groupings for pottery;
- identification of fabric types for building materials;
- quantification of building material by sherd;
- recording of attributes (forms, abrasion, manufacture, evidence for use) on the building material.

The following outlines the tasks required to complete the analysis of the Sandy Cemetery excavation. In common with other areas of analysis, the generic task list used by BCAS provides the numbering system by which each task is numbered.

### 4.2 Stages of Analysis and Publication

#### *Completion of quantification and recording (Task 13)*

##### 13.1 Pottery type definitions

Broad fabric groupings have been identified for purposes of assessment and large contexts have been subdivided by these groupings. Further, more detailed subdivisions will have to be made before the pottery can be recorded. This will include the laying out of the pottery by group in order to see as much of the pottery together as possible for ease of pottery type definition and the bringing together of sherds from the same vessel group.

##### 13.2 Thin sections

Thin-sections of new types will be done to determine the presence of geological indicators and thereby pinpoint possible sources. Those already identified at the assessment stage are marked with asterisks \*\* in section 4.1.3 of the assessment. In addition samples of pottery from the kiln at Warren Villas, c1km away from Sandy, to be taken as part of that project, will be compared with pottery that has been identified visually as possibly originating from there. Samples of building material will be compared with material from Harrold, to ascertain a possible source. An estimate of 40 pottery and 6 tile samples will be sectioned in total, to be done by Alan Vince.

##### 13.3 Bedfordshire Ceramic Type Series

Eighteen fabric types new to the Bedfordshire Type Series (marked with asterisks \*\* in section 4.1.3 of the ceramics assessment) have been identified so far. These will be incorporated into the county wide type series, according to the recommendations of English Heritage's survey of Romano-British ceramics in England (Fulford and Huddleston 1991, 52) and the research frameworks for the county and region as discussed in section 1.5. The type series comprises sample sherds, fabric record sheets

and form corpus cards. The drawings of the different forms will be added to the corpus cards after all illustrations have been done (task 31).

#### 13.4 Recording

Levels of recording will be those fully described by Fulford and Huddleston (1991, 44) and the Prehistoric Ceramic Research Group (1992). The minimum level of quantification (sherd count and weight by fabric and form) will be carried out for all stratified contexts. Unstratified groups, such as general machining layers and topsoil, will not be quantified. They do, however, have some value in that a scan will indicate any different fabric types or forms, or better examples of these, not present elsewhere on the site. A higher level of quantification (a vessel count/EVEs) will be carried out for those contexts assessed as 'fair-good' on ceramic grounds, as well as those that are assessed as 'good' on stratigraphic grounds. The former number 528 (49% of the total number of contexts containing pottery) and the latter, principally the cut features, number 724 (67% of the total number of contexts containing pottery). Attributes will be recorded and coded by fabric and form, including manufacture, decoration, abrasion, evidence of use. The specialist pottery will be added to the record so that a full quantified ceramic record will be available for study.

#### 13.5 Database input and editing

The ceramic record will be computerised using Access for ease of data manipulation. This task involves the input of data collected in C13.4 above, updating and editing the record. This task includes the inputting of the building materials data which has already been collected at the assessment stage.

#### *Phasing liaison (Task 22.4)*

The time allocated to this task is such that a full discussion between the structural, ceramics and non-ceramics analysts will be possible. The confirmation of the phasing of the features where stratigraphic relationships are weak or absent will depend primarily on the finds, particularly the pottery. This will include discussion of residuality, based on size, condition and ratios of pottery.

#### *Research and analysis (Task 24)*

##### 24.1 Database manipulation

This task includes all links, sorts and queries to provide information for the pottery and building materials reports, distributions, tables and histograms.

##### 24.2 Parallels research

Research into comparative ceramic material can be done, to a certain extent, from published sources. More precise parallels for selected groups of ceramics need to be sought by actually viewing other pottery or by inviting other ceramic specialists in the region to share their knowledge by viewing and discussing the ceramics in question.

The primary purpose of this comparative research will be to define the limits of the distribution of major fabric types, as well as to try and determine the distribution of the fabric types occurring more rarely on the site and in this way to determine the ceramic pattern at different dates within this region. The ceramic influence upon Sandy of the road linking Baldock and Godmanchester will be of particular interest.

The following repositories of pottery assemblages will be visited and regional collections and type series examined:

- Bedford Museum - to examine the late Iron Age and Romano-British pottery from Odell and Harrold in north Bedfordshire;
- Milton Keynes - with the demise of the Milton Keynes Archaeological Unit the Romano-British pottery type series is now held by BCAS and therefore its examination will not involve any travel;
- St Albans - to examine the Romano-British pottery type series for the area south of the county, which is in the process of being set up;
- Hertford - to examine the Romano-British pottery type series for the area south of the county, and Baldock in particular;
- Nottingham (English Heritage stores)- to examine the Romano-British pottery from Green's published excavations at Godmanchester, north-east of Sandy, as a representative sample of the pottery from the town;
- Dunstable - to examine the type series for Dunstable and Tottenhoe villa at the headquarters of the Manshead Archaeological Society;
- A number of large scale excavations have been conducted by BCAS in the county since 1987, among them Ruxox and Kempston villas and cemeteries, and particularly Warren Villas, in Sandy's immediate hinterland. The assemblages are readily available for comparison.

The following ceramic specialists will examine the pottery laid out on BCAS premises: Yvonne Parminter (local wares, particularly from the west of the region); Robin Symonds (imported wares); Chris Going (Hadham wares); Rob Perrin (local wares of the region) and Lindsey Rollo (Nene Valley wares and mortaria). The samian and amphorae have already been largely catalogued by Brenda Dickinson (samian) and David Williams (amphorae). A small number of sherds, totalling one box each, of this specialist pottery emerged during the examination of the coarse wares; these will be added to the catalogues. Kay Hartley will examine the mortaria stamps, of which there are no more than ten.

### 24.3 Tables

This task involves the preparation of tables as an aid in the interpretation of the ceramics as well as a way of presenting the data economically. Some will be presented graphically. The preparation of data in tabular form will enable proportions of different ceramic types, forms and sources to be compared across the site and across the phases, thereby helping directly to determine the relative affluence of the site, the trading and contact patterns and functional differences and similarities to parallel sites.

## 24.4 Distributions

Distributions, of both pottery and building materials, are of prime importance to the ceramic study of this area and will form a major part of the analysis and report. They are used to identify patterns or concentrations of different types of pottery, both on the site and more widely in the region; to determine chronology and any chronological shift across the site; to ascertain function and status of different structures and/or areas, as well as to determine any patterns of disposal or dumping. They are used to ascertain the chronological background for all activities at all periods and determine the shifts and changes that occurred. Distributions of different types of building material, in conjunction with the structural evidence, will determine the presence of any buildings, and the type of building present. These distributions will include site based, regional and national distributions of selected ceramic types, forms or attributes. These will be achieved using AutoCad.

### *Technical text (Task 25)*

The draft technical section of the report can proceed once all research data have been gathered. The technical report will consist of the presentation of ceramic data, including tables, catalogues and descriptions specific to the ceramics. This will include a type series with a series of illustrations. Any specialist reports, or additional comments made by other specialists, will be integrated into the text; this will include any tabular or graphic representation. This will include the thin section report.

### *Illustration (Task 31)*

#### 31.1 Drawing

Pottery for illustration will be a representative sample from the site assemblage chosen to inform the written report. The criteria for choosing which pottery to illustrate will be as follows:

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

Sandy is the largest assemblage of Romano-British pottery excavated in the county in modern times, and it is, therefore, estimated that between 250-300 drawings will be required to adequately illustrate the assemblage.

#### 31.2 Checking

Time has been set aside for liaison and checking of illustrations prior to reduction. This consists of preliminary instructions, which might include sketches, and the checking of pencil drawings prior to inking in.

*Liaison integration (Task 34)*

Time is set aside for liaison specific to the preparation of the integrated synthesis. This will take the place of a round table discussion of findings, with the aim of synthesising results into a thematic interpretation of the landscape. Allocation of sections to individual authorship occurs at this point.

*Integrated synthesis (Task 35)*

Time has been allocated to the writing of the ceramics section of the integrated synthesis. The integrated synthesis will be the interpretation and discussion of the data presented in task 25. It will seek to address the aims and objectives presented here, and will be an integration of all aspects of the site, structural, artefactual and ecofactual.

*Mock up/paste ups (Task 36)*

All drawings will be reduced to an appropriate scale and page mock ups will be produced, where necessary. Paste ups will follow after a final check; numbers and captions will be added at this stage.

*Assemble report (Task 37)*

Time has been set aside for any word processing which may be necessary before forwarding to an academic referee. Editing and proof reading the final draft and page proofs will take place once the decision to publish has been taken.

*Archive preparation (Task 38)*

This task consists of the sorting and systematic ordering of the paper and computer record, ensuring copies are made using archive stable materials. Final publication drawing numbers will be added to the illustrated pottery. Illustrated pottery will be boxed separately by publication number. Any pottery originally laid aside for illustration but not chosen for the final publication will be replaced into its context bag. Lists of box contents will be prepared in readiness for accessioning by the recipient museum.

*Transfer of archive (Task 39)*

This task involves the physical transfer of the total archive to the recipient museum. Time is only costed once (under non-ceramic finds costings).

*Management (Task 40)*

40.1 Monitoring meetings

This task involves attendance at English Heritage monitoring meetings or the preparation of written monitoring reports for those meetings.

40.2 General management

This task involves general progress and budget monitoring of the ceramics component of the project. The time take for this task has been calculated at a rate of 1/4 day per week of non-Artifact Manager (Ceramics) time.

**Table 4.1 Task list for ceramics analysis**

Task no	Task description	Aim	Quantity	Staff	Time (days)
13	<i>Completion of quantification and recording</i> 1 Pottery type definitions 2 Thin sections 3 Bedfordshire Ceramic Type Series 4 Recording 5 Database input and editing	all	251 boxes pottery 67 boxes building materials  2x c.20 fabrics c.30 fabric sheets c.500 form cards	AMS FS AV AMS FS AMS FS FS	1 5 (period of) 60 2 20 10 150 13
22	4 Phasing liaison	all		AMS	10
24	<i>Research and analysis</i> 1 Database manipulation 2 Parallels research  3 Tables 4 Distributions	all	   c.20 c.10	FS AMS LR YP RS CG RP FS CAM	5 20 7 2 2 2 2 10 2
25	Technical text	all		AMS FS BD DW KH	10 20 6 1 1
31	<i>Illustration</i> 1 Drawing 2 Checking	all	250-300 illusts	CAM AMS	50 10
34	Liaison integration	all		AMS	10
35	Integrated synthesis	all		AMS	40
36	Mock up/Paste up	all	c.30 pages	CAM AMS	4 1
37	1 Assemble report 2 Changes resulting from referee's comments	all all		AMS AMS	5 5
38	Archive preparation	all		AMS FS	1 5
39	Archive transfer	all		Driver Asst x5	0.5 2.5
40	<i>Management</i>	all		AMS	18

## 5 METHOD STATEMENT FOR REGISTERED AND NON-CERAMIC BULK ARTEFACTS

### 5.1 Introduction

The Bedfordshire County Archaeology Service operates a unified Project Tasklist itemising each general stage as a project proceeds to publication and accessioning. The task numbers appearing in this method statement refer to this global tasklist.

BCAS has planned an integrated work programme which includes backlog projects. This involves a large number of in-house and external specialists and in order to manage the Sandy project within an acceptable timescale the majority of this assemblage, with the exception of nails and flint, has been allocated to external specialists. The role of the Service's Artefacts Manager (non-ceramic) will, in the main, be to co-ordinate and liaise with all the specialists and to ensure compatibility with the finds systems run by the Bedfordshire County Archaeology Service (**Task 40**).

### 5.2 Stages of Analysis and Publication

#### *Investigative Conservation (Task 14)*

The need for further investigative conservation or stabilisation has been addressed in the assessment. The quantities are summarised in the table below.

Treatment	Quantity of artefacts
Assessment of condition of unseen objects	2825
X-radiography	15 registered finds; c. 124 nails
Stabilisation and investigative cleaning (estimate)	28
compositional analysis (xrf and edxrf*)	3 'mirror' fragments and 52 brooches; c. 30 coins
Further consolidation	1 pewter bowl

\*EDXRF will be carried out at Durham University under the direction of Colin Haslegrove

#### *Full name identification (Tasks 15-17)*

##### *Registered Artefacts*

Each object within a simple name category which has been identified as possessing potential to contribute to the aims and objectives of the project will be assigned a full name identification and, where applicable, a date range. The information will be established by an examination of an object, noting:

- form;
- method of manufacture;
- material and source;
- presence of diagnostic features specific to that simple name group;
- decoration;
- condition, including wear patterns;
- selected parallels from comparable sites, including BAT entries and published excavations.

Classes which, due to their fragmentary survival, were assessed to have low potential to contribute to the aims of the project will be scanned and listed only.

External expertise will be employed to establish the full name and date range of the artefacts. The following external specialists will be utilised:

- Colin Haslegrove - Iron Age coins (**Task 15.1**);
- John Davis - Roman coins (**Task 15.2**);
- Hilary Cool - registered artefacts excluding coinage (**Task 15.3**).

Liaison with each specialist (**Task 15.4**) is essential in order to ensure the exchange of information and project progress.

#### *Bulk non-ceramic Artefacts*

The methodology of analysis of bulk non-ceramic artefacts is broadly similar to that employed for registered artefacts. Each class of bulk artefact, these include plaster, slag, nails and flint, from phased contexts will be allocated a type and, where applicable, a date range (**Tasks 17.1-4**). Dependent upon the specific attributes of the class of artefact, this allocation will result from an examination of:

- material and source;
- manufacture method;
- form;
- condition.

The following external specialists will be utilised;

- Hilary Cool - wall plaster;
- Dave Starley - slag.

#### *Up-dating of artefact databases (Task 18)*

Once full name identification has been completed for each simple name category, this information will be added to the artefact database(s) (**Task 18**). It is the policy of Bedfordshire County Archaeology Service to allocate each simple name category to one of sixteen functional categories (BAT) and these allocations will also be entered into the relevant databases.

#### *Structural Analysis: Phasing liaison and dissemination (Task 22.4)*

Computerised artefact databases will be linked with the phased structural database and sorts (e.g. by phase, full name and functional categories, date range, etc.) carried out. Residual or intrusive elements previously unidentified within the artefact assemblage can be ascertained and provisional phasing refined. This is done in consultation with the structural and ceramics analysts. An information pack will be compiled and disseminated to all external specialists outlining the project background and progress to date (final phasing, artefactual dating, etc).

#### *Full Name Analysis (Task 26)*

Distribution plots, utilising GSys, of the artefactual assemblage will be undertaken once the phasing has been finalised (**Task 26.1**). This is essential in order to identify patterns or concentrations of artefacts of specific date, period or function.

A liaison meeting (Task 26.2) between the project's external specialists and in-house project staff will be held in order to integrate all aspects of the artefact assemblage. Following the meeting reports on the assemblage will be prepared by the relevant specialists (Tasks 26.3-6).

#### *Category Analysis and Discussion (Task 27)*

The draft artefacts discussion will be written (Task 27). This will address fluctuations in -

- rates and types of artefact recovery within each functional category and;
- the presence/absence of functional categories

in relation to both the temporal and spatial framework of specific sites and the landscape as a whole. Any interpretations are considered in light of general availability of materials, technological innovations, trade patterns and prevailing fashions of each of the project's periods. The time allocated to this task includes integration of specialists' reports.

#### *Preparation of technical catalogue and text (Task 28)*

A draft catalogue and technical text will be prepared. This will be organised in the following hierarchy;

- functional category;
- simple name category;
- full name and chronological date range within each simple name category,

#### *Illustration (Task 32)*

Selection of artefacts for publication standard illustration is made at this juncture (Task 32.1). Illustration is carried out by the Illustrator in consultation with the relevant artefact analysts (Task 32.2) and mock-ups of the publication figures completed (Task 32.3).

#### *Integration liaison (Task 34)*

The artefacts discussion will be integrated with the complementary evidence provided by structural, ceramic, and environmental evidence. This is achieved through discussion amongst all the relevant specialists.

#### *Preparation of integrated text (Tasks 35-37)*

An integrated draft report addressing the aims and objectives of the project will be prepared (Task 35). Final paste-up of illustrations will proceed at the same time (Task 36.1). Time has also been allocated for writing of captions and checking of the paste-ups (Task 36.2). Ensuring adequate cross-referencing, editing and proof-reading of this integrated text is essential (Task 37).

*Archive preparation (Task 38-39)*

Preparation of the paper and material artefacts record (**Task 38**) is the final phase of the project and includes:

- relevant BAT entries/up-dates;
- ensuring all selected materials are copied/stored to appropriate archival standards;
- records of transfer are documented, including box catalogues and box labelling.

The site record (both documents and material) is then transferred to the recipient museum (**Task 39**).

**Table 5.1 Registered and bulk non-ceramics artefacts task list**

Task	Description	Aim(s)	Quantity	Staff	Days
14	<i>Investigative Conservation</i>	1,5	ass.2825/171 52 30	AT JB Durham	25 5 2.5
15	<i>Full name identification - External</i> 1.Full name external specialist - I A Coinage 2.Full name external specialist - Roman Coinage 3.Full name external specialist - Registered Artefacts (excluding coinage) 4.Liaison with external specialists	1-3, 5	37 1177 2494	CH JD HC HBD	3 1 55 10
17	<i>Full name identification - Bulk Artefacts</i> 1.Full name bulk artefacts - Plaster (external) 2.Full name bulk artefacts - Slag (external) 3.Full name bulk artefacts - Nails 4.Full-name bulk artefacts - Flint	1,2	17kg c.65kg 2469 27	HC DS HBD EM	5 12 11 0.5
18	<i>Up-dating of Artefact Databases</i>	1,2		HBD	5
22	<i>Structural Analysis</i> 4.Phasing liaison and dissemination	1,2		HC HBD	7 3
26	<i>Full name analysis</i> 1.Distribution plots 2.Specialist liaison meeting  3.Specialist report - I A Coins 4.Specialist report - Roman Coins 5.Specialist report - Registered Artefacts (excluding coinage) 6.Specialist report - Slag	1-3, 5		CAM HC CH JD HBD CH JD HC DS	5 1 1 1 1 4 3 15 3
27	<i>Functional category analysis</i>	1, 5		HC	10
28	<i>Technical catalogue and text preparation</i>			HC	22
32	<i>Illustration</i> 1.Selection of objects for illustration 2.Illustration and liaison between illustrator and artefact analysts 3.Mock-ups of illustrations			HC CAM HC CAM	2 75 3 7
34	<i>Integration liaison</i>			HC HBD	10 2
35	<i>Preparation of integrated text</i>			HC	15
36	<i>Illustration paste-up</i> 1.Paste-ups of publication illustrations 2.Caption and checking of paste-ups			CAM HC	6 2
37	<i>Report assembly (editing, cross-referencing, etc)</i>			HC	5
38	<i>Archive preparation</i>	5		HBD	7
39	<i>Transfer of archive to recipient museum</i>			Driver Assistx5	0.5 2.5
40	<i>Project management</i>			HC HBD	5 3
	<b>TOTAL</b>				<b>354</b>

## 6 PLANT MACROFOSSILS (M R ROBINSON)

### 6.1 Introduction

The macroscopic plant remains from sandy, phases 3, 4, and 5, if analysed in more detail, have the potential to give useful information on three important aspects of the agricultural economy of Sandy.

- The nature of crop processing activities in the town
- The soils being exploited (from weed seeds) at different phases and whether the waterlogging of the valley bottom during the Roman period is reflected in the weed flora
- Changes, including perhaps a decline in spelt wheat, in the early 5th century AD

### 6.2 Stage in analysis and publication

Table 7.4 in the assessment gives summary details of the samples with the most interesting assemblages. It is recommended that these samples be analysed in detail for macroscopic plant remains excluding charcoal, with the aim (not possible for all the samples) of recovering several hundred items per sample. The larger assemblages should be sub-sampled as appropriate. In addition it is recommended that 5-10 'typical' assemblages from a variety of well stratified context types from each of Phases 3, 4, 5 be analysed for weed seeds only. The results from the detailed analyses would be combined with the broader results from the assessment in the final report. Only limited work can be recommended on the charcoal.

Time estimates are given below for the work recommended. Following instructions from the Ancient Monuments Laboratory, time for routine sorting work has been estimated for a technician funded by Conservation Group. It is estimated that of the order of 16 weeks is required for the work, which can be broken down as follows:

Task number	Description	Aim	Days
30	Sorting charred flots	4	40
30	Analysis of and reporting on charred remains	4	30
30	Identification of and reporting on charcoal	4	2.5
30	Sorting and identification of, and reporting on silica fragments	4	5

## 7 ANIMAL BONE (A F Roberts)

### 7.1 Introduction

The system of recording animal bone will be compatible with other sites in the region. Species, skeletal representation, age, pathology, butchery, abrasion, gnawing and measurements will be recorded.

### 7.2 Stages in Analysis and Publication

#### *Bone recording (Task 30.1)*

Identification and recording of attributes: species, skeletal representation, age, pathology, butchery.

#### *Bone recording 'occupation' spread (Task 30.2)*

Quantification of fragmentation, liaison regarding taphonomy of 'occupation' spread.

#### *Bone analysis (Task 30.3) leading to draft report (Task 30.4)*

Analysis of animal bone distributions.

**Table 7.1 Task list for the analysis of animal bone**

Task number	Description	Aim	Days
30.1	Species, skeletal representation, age pathology, butchery	3, 4	148
30.2	Bone recording	3	20
30.3	Taphonomy; distributions	3, 4	25
30.4	Draft report		30
30.5	Liaison		3

## 8 HUMAN BONE (T A JACKMAN)

### 8.1 Introduction

Each skeleton should be examined to establish age and sex of the individual following the guidelines recommended by the Palaeopathology Association Skeletal database Committee which set out the minimum data required in analysis.

### 8.2 Method statement

The inhumations will be examined and the following recorded

- age
- sex
- bones that are present
- condition of the bone
- completeness of the skeleton
- metrics
- no-metrical data
- dentition
- pathology

Any patterns relating to the above will be recorded and discussed in the context of the pathology of urban groups in Roman Britain.

Task No	Description	Aim	Days
30	Processing	3	18
30	Examination/report	3	33
30	X radiography	3	.5
30	Photography	3	.5
30	Travel	3	

## **9 RESOURCES AND PROGRAMMING**

**9.1 Introduction** The methods intended to achieve the objectives set out in the Updated Project Design have been detailed above in sections 3-8 under subject headings related to structural, ceramic and non-ceramic artefacts. The management structure of the project, the resources required to achieve the revised research objectives and the overall programme are detailed below.

**9.2 Project Staffing** The Sandy Project will be undertaken by the staff of Bedfordshire County Council's Archaeology Service at St Mary's Church Archaeology Centre, Bedford with some work and storage in the unit outpost. The principal staff will be:

**Michael Dawson M Phil, MIFA**

Responsible for project management and analysis of structural evidence.

**Holly Duncan M Litt MIFA**

Responsible for non ceramic artefact processing and analysis

**Anna Slowikowski M Phil, MIFA, MAAIS**

Responsible for ceramic artefact processing and analysis

**Anthony Maull**

Responsible for structural analysis, to Task 22.

**Cecily Marshall BA, MAAIS**

Responsible for draughting and supervision of drawing staff.

**Ed McSloy BA, Finds Supervisor**

Responsible for flint cataloguing and general assistance with artefact analysis

External specialist input and advice will be obtained from:

<b>Non Ceramics Analysis</b>	Adrian Tribe (conservation)	AT
	Justine Bayley (XRF)	JB
	Colin Haselgrove (Iron Age coins)	CH
	John Davies (Roman coins)	JD
	Hilary Cool (registered finds)	HC
	David Starley (slag)	DS
<b>Ceramics Analysis</b>	Yvonne Parminter (R-B pottery)	YP
	Brenda Dickinson (samian)	BD
	Alan Vince (ceramic petrology)	AV
	Lindsay Rollo Nene Valley mortaria)	LR
	Robin Symonds (imports)	RS
	Chris Going (Hadham)	CG
	Rob Perrin (regional wares)	RP
	David Williams (amphorae)	DW
	Kay Hartley (mortaria stamps)	KH
	Fiona Seeley	FS
<b>Ecofactual Data</b>	Mark Robinson (plant macros)	MR
	Richard McPhail (soil micromorphology)	RMc
	Tony Roberts (animal bone)	AR
	Terry Jackman (human bone)	TAJ

**9.3.1 General Management:** The project management team will comprise a Project Manager, M Dawson, Non-Ceramics Artefacts Manager, H B Duncan, Ceramics Artefacts Manager, A M Slowikowski. The project will be carried out in-house where possible, using the facilities of St Mary's Archaeology Centre.

The project will benefit from a team based approach with project meetings at key stages for discussion and integration. The work of external specialists will be managed by those officers to whose area their work relates.

The project is given a realistic lead time to allow the phasing based on the structural record to be finalised and structural descriptions completed. This is implicit in the overall Gantt Chart for the Project.

Monitoring meetings will take place between the Project Manager and the English Heritage monitor with other members of the project team as necessary.

### **9.3.2 Management tasks (Tasks: 40)**

Each aspect of the project will require a degree of management which includes the following tasks:

- liaison with specialists;
- project meetings and progress reports;
- progress reports for EH monitoring meetings;
- monitoring of time and budgets
- EH monitoring meetings.

Liaison with relevant specialists and EH monitoring meetings form distinct, schedulable tasks and appear as separate entries in the project Gantt Chart. The remaining areas of work will be on-going throughout the duration of the project and are therefore not precisely schedulable. Time has been allocated for these tasks based upon a broad standard formula of approximately a quarter day per person week worked in house on the structural, ceramics and registered artefact programmes. This appears as a single task on the project task list for in-house staff but the costs have been spread throughout the three years of the project programme (see EH style financial summaries).

**9.4 Health and Safety** The Bedfordshire County Council operates a stringent Health and Safety policy in line with that of the County Council. Risk assessment statements have been prepared for areas within which the Sandy post excavation project will be carried out.

## 9.5 Material costs and capital expenditure

The Sandy project will involve the creation of an extensive database as part of analysis leading to the preparation of the report. It will require extensive use of the networked facilities of St Marys Archaeology Centre. The size of the databases anticipated and the age of existing computer facilities has been outlined to EH and two additional purchases are required to maintain the standard of computer analysis. These purchases will ensure not only a word processing facility is available but that equipment used in the analysis of the database will be compatible with existing systems.

### Capital expenditure:

Del Pentium 100 £1848

SSI JTCO A1 digitising tablet & floor stand £2,500

## 9.6 The Project Programme

### Part 1

**Structural Analysis:** The progression of the analysis begins with the structural record and the confirmation of the stratigraphic relationships identified during the assessment. This area will be the responsibility of Michael Dawson with an assistant for structural analysis and has been timetabled to begin as soon as possible in 1996. Concurrently the ceramics assemblage will be fully catalogued, as will the registered and bulk finds.

Confirmation of the structural phasing will take place when all three elements are brought together.

### Part 2

**Publication Report** The integration of all data into the phasing will take place during 1997 followed by commencement of the publication text. This will be carried out in accordance with the order of the publication itself and is detailed on the Gantt chart for all areas of analysis. Throughout this period the location of senior members of staff in the same office allows for the easy integration of data at all levels. Informal meetings are therefore a regular part of the post excavation process even if not specifically identified in the Gantt chart.

### Part 3

**Archiving** The third stage of the post excavation process is to pass the site archive to Bedford Museum. This will occur after the completion of the publication report in 1998, once this is in the hands of the publisher.

## 10 Costs of Analysis

**Introduction** The costs presented below are based on projections of costs anticipated during the programme of analysis. The tables are based on the task lists which follow each method statement.

**Table 10.1 Task list for structural analysis and report completion**

Task	Description	Staff	Duration (days)	Rates	Costs £
22.1	Definition of sub- groups				
22.2	Definition of groups	Asst	101	82	8282.00
22.5	Database update	Asst	10	82	820.00
	Checking plans		11	82	902.00
	Digitisation		16	82	1312.00
	Checking CAD		2	82	164.00
	Conversion plans to OS grid		1	82	82.00
	Labelling GSys		8	82	656.00
	Checking & corrections		6	82	492.00
	Conversion of Database to OS grid		3	82	246.00
22.4	Confirmation of phasing	Asst	10	82	820.00
		MD	4	107	428.00
22.6	Circulation to specialists	Asst	1	82	82.00
22.7	Research for comparative data for groups	Asst	8	82	656.00
		MD	8	107	856.00
22.8	Analysis of structural data for technical report & draft technical text	Asst	5	82	410.00
36	Illustration	CAM	35	84	2940.00
34	Liaison with specialists	MD	10	107	1070.00
35.1	Integration of structural, artefactual and ecofactual data	MD	40	107	4280.00
35.2	Research for comparative data	MD	27	107	2889.00
35.3	Draft integrated synthesis	MD	20	107	2140.00
36	Mock ups	CAM	10	84	840.00
37.1	Assemble report	MD	20	107	2140.00
37.2	Text to HBMC referee	Asst	1	82	82.00
37.3	Changes resulting from referees comments	MD	10	107	1070.00
37.4	Paste ups	CAM	10	84	840.00
37.5	Captions and checking	CM	3	84	252.00
		MD	5	107	535.00
37.6	Editing, cross referencing	MD	18	107	1926.00
		*Proof Ed	10	131	1310.00
38	Creation paper archive	Asst	4	82	328.00
39	Transfer archive	Asst	4	82	328.00
	<i>General Project Management</i>				
40	Management time	MD	18	107	1926.00
40.1	English Heritage Monitoring	MD	4	107	428.00
<b>Total</b>					<b>41,532</b>

**Table 10.2 Costs of ceramic analysis**

Task	Task description	Days	Rate	Staff	Cost £
13	<i>Completion of quantification and recording</i>				
	1 Pottery type definitions	1	98.50	AMS	98.50
		5	60.50	FS	302.50
	2 Thin sections	40 samples	30.00	AV	1200.00
	3 Bedfordshire Ceramic Type Series	2	98.50	AMS	197.00
		20	60.50	FS	1210.00
	4 Recording	10	98.50	AMS	985.00
		150	60.50	FS	9075.00
	5 Database input and editing	13	60.50	FS	786.00
22	4 Phasing liaison	10	98.50	AMS	985.00
24	<i>Research and analysis</i>				
	1 Database manipulation	5	60.50	FS	302.50
	2 Parallels research	20	98.50	AMS	1970.00
		7	90.00	LR	630.00
		2	100.00	YP	200.00
		2	169.00	RS	338.00
		2	125.00	CG	250.00
		2	EH	RP	EH
	3 Tables	10	60.50	FS	605.00
	4 Distributions	2	84.00	CAM	168.00
25	Technical text	10	98.50	AMS	985.00
		20	60.50	FS	1210.00
		1	EH	KH	EH
		6	100.00	BD	600.00
		1	EH	DW	EH
31	<i>Illustration</i>				
	1 Drawing	50	84.00	CAM	4200.00
	2 Checking	10	98.50	AMS	985.00
34	Liaison integration	10	98.50	AMS	985.00
35	Integrated synthesis	40	98.50	AMS	3940.00
36	Mock up/Paste up	4	84.00	CAM	336.00
		1	98.50	AMS	98.50
37	1 Assemble report	5	98.50	AMS	492.50
	3 Changes resulting from referee's comments	5	98.50	AMS	492.50
38	Archive preparation	1	98.50	AMS	98.50
		5	60.50	FS	302.50
39	Archive transfer		60.50	Driver x 6	363.00
40	<i>Management</i>	18	98.50	AMS	1773.00
	<i>Travel @ 55p/ml</i>				
	Peterborough (80mls) x 2				88.00
	Llanfechain (290mls) x2				319.00
	Cambridge (30mls) x2				33.00
	Hertford (80mls)				44.00
	St Ives (30mls)				16.50
	London (BR)				10.30
	St Albans (BR)				7.00
	Nottingham (BR)				20.00
<b>Total</b>					<b>36,701.00</b>

**Table 10.3 Materials cost**

<b>Materials</b>	<b>Item cost</b>	<b>Quantity Ceramics</b>	<b>Quantity Non- ceramics</b>	<b>Quantity Structural</b>	<b>Total Cost £</b>
<i>Computer materials</i>					
computer discs	2.00	2	3	3	16.00
ink jet cartridge	18.00	1	2	3	108.00
paper A4 (ream)	2.00	2	3	3	16.00
<i>Stationery</i>					
archival paper	10.00	1	2	3	60.00
pens, pencils, files, pads	30.00	1	1	1	90.00
photocopying	2p/sheet	500	750	1000	45.00
archival box files	4.50/box		5	10	
<i>Finds materials</i>					
plastic bags 8x11	34.37/1000	2000	1000		103.11
plastic bags 4x5 1/2	22.95/1000	1000	1000		45.90
cardboard boxes	1.50	50	30		120.00
plastic box (picnic)	2.26/box		6		13.56
plastic box (cake)	3.34/box		6		20.04
plastic box (giant)	5.10/box		12		61.20
silica gel	5.02/kg		12.5kg		62.75
acid-free tissue	10.00/500 sheets		500 sheets		50.00
<i>Illustration</i>					
CS10 paper	20.00	2	2	2	120.00
Rotring pen nibs	6.50	3	4	4	71.50
Rotring ink cartridges	2.25/per box of 3	2	2	2	4.50
mounting card	2.00/A1	15	10	10	70.00
wax	1.00	2	1	1	4.00
Letraset	13.00	5	7	7	24.70
scalpel blades	1.00/5	5	2	5	3.00
reductions	9.00	30	25	30	765.00
<b>Total</b>					<b>1875.00</b>

**Table 10.4 Costings for Registered and Bulk Non-ceramic Artefacts**

Task	Description	Staff	Days	Rate	Cost £
14	<i>Investigative Conservation</i>	AT	25	EH	EH
		JB	5	EH	EH
		Durham	2.5	90.00	225.00
15	<i>Full name identification -External</i> 1.Full name external specialist - I A Coinage 2.Full name external specialist - Roman Coinage 3.Full name external specialist - Registered artefacts 4.Liaison with external specialists	CH	3	100.00	300.00
		JD	1	90.00	90.00
		HC	55	100.00	5500.00
		HBD	10	98.50	985.00
17	<i>Full name identification - Bulk Artefacts</i> 1.Full name bulk artefacts - Plaster (external) 2.Full name bulk artefacts - Slag (external) 3.Full name bulk artefacts - Nails 4. Full name bulk artefacts - Flint	HC	5	100.00	500.00
		DS	12	EH	EH
		HBD	11	98.50	1083.50
		EM	0.5	60.50	30.25
18	<i>Up-dating of Artefact Databases</i>	HBD	5	98.50	492.50
22	<i>Structural Analysis</i> 4.Phasing liaison and dissemination	HC	7	100.00	700.00
		HBD	3	98.50	295.50
26	<i>Full name analysis</i> 1.Distribution plots 2.Specialist liaison meeting  3.Specialist report - I A coinage 4.Specialist report - Roman coinage 5.Specialist report - Registered artefacts (excluding coins) 6.Specialist report - Slag	CAM	5	84.00	420.00
		HC	1	100.00	100.00
		CH	1	100.00	100.00
		JD	1	90.00	90.00
		HBD	1	98.50	98.50
		CH	4	100.00	400.00
27	<i>Functional category analysis</i>	JD	3	90.00	270.00
		HC	15	100.00	1500.00
27	<i>Functional category analysis</i>	DS	3	EH	EH
27	<i>Functional category analysis</i>	HC	10	100.00	1000.00
28	<i>Technical catalogue and text preparation</i>	HC	22	100.00	2200.00
32	<i>Illustration</i> 1.Selection of objects for illustration 2.Illustration and liaison between illustrator and artefact analysts 3.Mock-ups of illustrations	HC	2	100.00	200.00
		CAM	75	84.00	6300.00
		HC	3	100.00	300.00
		CAM	7	84.00	588.00
34	<i>Integration liaison</i>	HC	10	100.00	1000.00
		HBD	2	98.50	197.00
35	<i>Preparation of integrated text</i>	HC	15	100.00	1500.00
36	<i>Illustration paste-up</i> 1.Paste-ups of publication illustrations 2.Caption and checking of paste-ups	CAM	6	84.00	504.00
		HC	2	100.00	200.00
37	<i>Report assembly (editing, cross-referencing, etc)</i>	HC	5	100.00	500.00
37.1	<i>Report Edit after refs comments</i>	HBD	5	98.50	492.50
38	<i>Archive preparation</i>	HBD	7	98.50	689.50
39	<i>Transfer of archive to recipient museum</i>	Driver	0.5	51.00	25.50
		Assistx5	2.5	51.00	127.50
40	<i>Project management</i>	HC	5	100.00	500.00
		HBD	3	98.50	295.50
	<i>Transportation/Travel</i> Citylink London/Bedford -artefacts to/from Labs Return by car Bedford/Nottingham - artefacts to/from specialist x2 140 mi return x50p per mi Return by train Nottingham/Bedford (HC) x12 Return by train Nottingham/London (HC) x2 Return by car Bedford/London - slag to DS x2 100mi rtn Citylink Durham/Bedford - IA coins returned Return by train Norwich/Bedford (JD to meeting) Return by train Durham/Bedford (CH to meeting) Return by train London/Bedford (DS to meeting)				70.00
		Driver	2	51.00	242.00
					240.00
					56.00
		Driver	2	51.00	152.00
					25.00
					79.50
					142.00
					24.20
<b>Total</b>					<b>30830.45</b>

**Table 10.5 Task list for the analysis of animal bone**

Task	Description	Spec	Days	Rates	Cost £
30.1	Species, skeletal representation, age pathology, butchery	AR	148	85	12,580.00
30.2	Bone recording	AR	20	85	1,700.00
30.3	Taphonomy; distributions	AR	25	85	2,125.00
30.4	Draft report	AR	30	85	2,550.00
30.5	Liaison	AR	3	85	255.00
<b>Total</b>					<b>19,210.00</b>

**Table 10.6 Costs of human bone analysis**

Task	Description	Staff	Days	Rate	Cost £
30	Processing	TAJ	18	65	1170.00
30	Examination/report	TAJ	33	65	2145.00
30	X radiography	TAJ	.5	65	32.50
30	Photography	TAJ	.5	65	32.50
30	Travel				15.00
<b>Total</b>					<b>3,395.00</b>

**Table 10.7 Capital expenditure**

Qty	Description	Cost	Total £
1	Digitising tablet	2,500	
1	Del Pentium 100	1,848	
<b>Total</b>			<b>4,348.00</b>

**Table 10.8 Annual Summary 1996/7**

Year 1996/7	Staff	SC	Per day	Days	Costs	Total £
Project Manager	MD	SO2	107	11	1,177	
Project Officer						
Supervisor (Asst)	tba	Sc5	82	169	13,858	
Finds Manager	HBD	SO1	98.5	11	1,084	
Finds Manager	AMS	SO1	98.5	29	2,857	
Finds Supervisor						
Envir						
Photo						
Drawing Office						
<i>Total salary</i>						18,976
<b>Specialist fees</b>						
	Ceramics		(FS x 188)		11,374	
			(AV)		1,200	
	Investigative Cons				225	
	Artefacts		(HC x 56)		5,600	
			(CH x )		300	
			(JD x 1)		90	
	AML		(AT x 25)			
			(JB x 5)			
						18,789
<b>Non Staff costs</b>						
	Transport				1,568	
	Computer consumables				140	
	Drawing				1,063	
	Materials				672	3,443
<b>Sub Total 1</b>						41,208
Unit overheads @ 15%						6,181
<b>Sub total 2</b>						47,389
Purchase of capital equip						4,348
<b>Gross year total 1996/97</b>						<b>£51,737</b>

**Table 10.9 Annual Summary 1997/8**

Year 1997/8	Staff	SC	Per day	Days	Costs	Total £
Project Manager	MD	SO2	107	92	9,844	
Project Officer						
Supervisor	tba	Sc5	82	13	1,066	
Finds Manager	HBD	SO1	98.5	21	2,068	
Finds Manager	AMS	SO1	98.5	56	5,516	
Finds Super	EM	Sc4	60.5	.5	30	
Envir						
Photo						
Drawing Office	CAM	Sc6	84	167	14,028	
<i>Total salary</i>						32,552
<b>Specialist fees</b>						
	Ceramics		(FS x 35)		2,117	
			(LR x 7)		630	
			(RS x 2)		338	
			(CG x 2)		250	
			(BD x 6)		600	
			(YP x 2)		200	
	Animal bones		(AFR)		19,210	
	Human bone				3,395	
	Artefacts		(HC x 68)		6,800	
			(CH x 4)		500	
			(JD x 4)		360	
	AML		(RP x 2)			
			(KH x 1)			
			(DW x 1)			
			(DS x 12)			
						34,400
<b>Non Staff costs</b>						
	Transport					
	Computer consumables					
	Drawing					
	Materials					
<b>Sub Total 1</b>						66,952
Unit overheads @ 15%						10,042
<b>Sub total 2</b>						76,995
Purchase of capital equip						
<b>Gross year total 1997/8</b>						<b>£76,995</b>

**Table 10.10 Annual Summary 1998/9**

<b>Year 1998/9</b>	<b>Staff</b>	<b>SC</b>	<b>Per day</b>	<b>Days</b>	<b>Costs</b>	<b>Total £</b>
Project Manager	MD	SO2	107	81	8,667	
Project Officer						
Supervisor	tba	Sc5	82	9	738	
Finds Manager	HBD	SO1	98.5	15	1,476	
Finds Manager	AMS	SO1	98.5	58	5,713	
Finds Super						
Driver	Asst	Sc2	51	3	153	
Photo						
Drawing Office	CAM		84	40	3,360	
<i>Total salary</i>						20,107
<b>Specialist fees</b>						
	Ceramics		(FS x 5)		303	
	(Driver)				363	
	Artefacts		(HC x 33		330	
	Proof Ed				1,310	
						5,76
<b>Non Staff costs</b>						
	Transport					
	Computer consumables					
	Drawing					
	Materials					
<b>Sub Total 1</b>						25,383
Unit overheads @ 15%						3,807
<b>Sub total 2</b>						
Purchase of capital equip						
<b>Gross year total 1998/9</b>						<b>£29,190</b>

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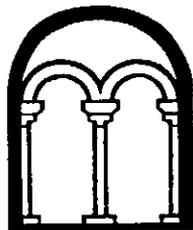
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St Mary's Archaeology Centre  
St Mary's Street  
Bedford  
MK42 0AS

Tel: 0234 270002  
270006  
270009  
Fax: 0234 359287