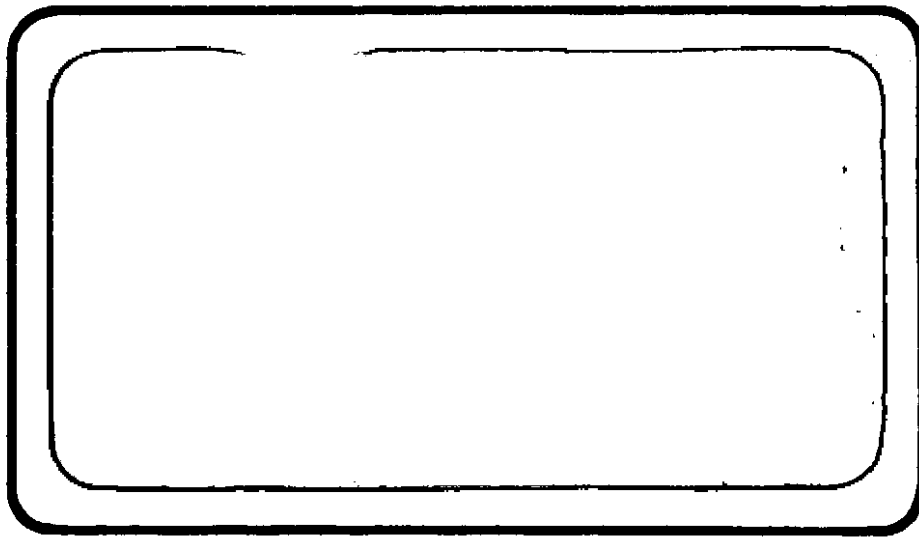


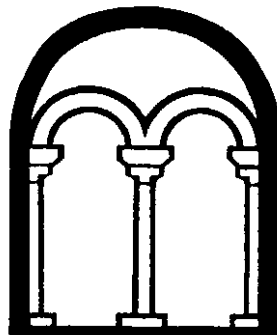
Bedfordshire County Council
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WARREN VILLAS QUARRY EXCAVATIONS
BEDFORDSHIRE

Part 2 Updated Project Design

Planning Department
Bedfordshire Archaeology Service

May 1995

Report 95/4

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1 INTRODUCTION

1.1 The Updated Project Design deals directly with the English Heritage funded area at Warren Villas. However the analysis of the English Heritage archive will be integrated with the results of the Developer funded excavation to the west (see p5 of the Assessment). Integration is reflected in several aspects of the Updated Project Design:

- In the research aims
- In the method statement
- In the publication proposals
- In the archive arrangements

The integration of the Developer sites does not have any cost implications for the English Heritage analysis. The costs of analysis reflect the conditions of excavations and the work carried out during assessment of the English Heritage area alone.

2 AIMS AND OBJECTIVES

This section outlines the specific research aims to be addressed during analysis of the Warren Villas Quarry excavations and their contribution to local, regional and national research priorities. The aims listed below represent a synthesised version of the research aims examined in the Assessment of Potential. They are not identical to those aims but gather together both existing aims and new aims identified during assessment of the English Heritage site and the potential of the Developer funded sites. The impact of the Developer sites is most significant for the areas where settlement evidence was recovered dating to the Romano-British and medieval periods.

Research frameworks

The principal aim of the post excavation analysis is to report the excavated evidence as the basis for analysis of the broader research issues defined in the assessment of potential for analysis and discussed below.

The assessment identified investigation of landscape development as the principal aim of the project, with environmental and site formation processes investigated within an established temporal framework. The analytical focus will be the Romano-British and medieval periods but the environmental data will contribute significantly to the early prehistoric and later periods. The site archive notably contains data relating to several important episodes of transition from the late Iron Age to late medieval periods.

The national framework for the analysis of the Warren Villas site can be found in a series of summary papers covering the late Iron Age, the Roman and early medieval periods (Fulford and Nichols 1992). Research frameworks for the later (Saxo-Norman) landscape were recently the subject of extensive survey (Lewis, Fox, Dyer 1992, Dyer, Fox 1993). The environmental framework was discussed by Robinson (Needham and Macklin 1992) in whose opinion the site is of national importance (EH 1991, Section 7.2 *Wet and waterlogged sites*).

Regional studies covering each of the main periods of activity at Warren Villas vary in the focus of their analysis. Little synthetic work on the prehistoric period has taken place. For the Bronze Age and Iron Age there are several regional studies, the most significant of which (Simco 1973; Knight 1984) are now dated (EH 1991, 16), although there are summary reports presently being prepared for inclusion in the Archaeology of the Ouse Valley (Dawson, Oake and Shotliff forthcoming).

The Roman period has been subject to more intensive study: a regional study by Simco (1984) describes the landscape, whilst the area around Sandy and the town's development has been summarily investigated (Dawson forthcoming). From Warren Villas itself a kiln and its products have been published (Slowikowski & Dawson 1995).

The early Saxon period was discussed in a paper prepared for publication by Wingfield (forthcoming) which focused upon artefactual evidence, whilst the most extensive landscape study remains that of Bilikowski (1980). Development during the early Saxon period was discussed in the context of the early development of Biggleswade where rising water tables were suggested to be responsible for the growth of the town as the line of the Roman road was lost (Dawson 1994).

The framework for the development of the Saxo-Norman landscape is complex. Excavations at Stratton and proposed work by the Leverhulme Project in Northill, Old Warden and Southill together with limited documentary research in Upper Caldecotte and excavation at Motwards (BAS, 1993) are providing a regional framework in which continuities are prominent. However discontinuities causing abandonment and marginalisation of some areas are also a constant theme (Dyer 1991).

The evidence from Warren Villas therefore provides the basis for a significant study of changing land usage in an area which has seen occupation in the Roman and medieval periods and which has been subject to changes in the environment brought on by rises in the river level.

The frameworks for ceramic studies has been addressed recently by English Heritage through the *Survey of Roman Pottery Studies* (Fulford and Huddleston 1991) and *Medieval Ceramics Studies in England* (Mellor 1994)

1. To generate a chronological framework for the site.

The chronological framework for the site created as part of the Assessment of Potential for Analysis needs to be confirmed as the basis for subsequent analysis and consideration of broader research issues (**Tasks A1-9**). This will include the integration of the phasing with that of the Developer funded areas.

Assessment has shown the period from the late Iron Age to the 14th century to be of particular significance. The structural sequence, when fully analysed, will contribute to the regional study of the Ivel Valley and address national research objectives such as the transition to the Roman period, and the transition from Roman Britain to Saxon England (EH 1991) (**Tasks A10-13**).

Other aspects of the chronology of the site can be addressed including the earlier prehistoric activity on the riverside associated with the ring ditch and possible ritual deposition of flint material. The flint assemblage spans the Mesolithic to early Bronze Age periods.

The examination of the full chronological range of pottery, from the prehistoric to the post-medieval periods (**Tasks B5.1, B5.5, B7.6**), will help to determine the chronological evolution of the site. In the Roman period the analysis and distribution of dated samian pottery from relatively undisturbed contexts (**Task B7.8**) will help to refine the dating of these contexts. The detailed analysis of the condition of the pottery, and the ratio of sherds to vessels and weight (**Task**

B7.7), will help to define the levels of residuality, thereby determining the relationship of pot to feature and helping in the refinement of the phasing for the site as a whole. The distribution of the post-Roman pottery (**Task B5.5**) will contribute to the dating of this period linking the main core of the settlement area with the peripheral activity in Area 1.

The chronological range of the registered artefacts mirrors that of the ceramics. Full name identification (**Tasks C1-10**) will assist in refining the provisional phasing (**Tasks C11 and 12**) and this along with distribution analysis (**Task C13**) will contribute to generating a chronological framework for the site. In addition the analysis of the relationships between, and the construction techniques employed, in the 19 hurdle-lined tanks (**Tasks C14, C18**), in combination with the dendrochronological dates obtained from some of the structures, will help refine the chronology for the medieval period.

2. To generate an environmental history for the site.

The site archive has considerable potential to create an environmental history of the site, based on soil micromorphology (**Task E**) and plant macrofossil data (**Task D1-5**) related to the site stratigraphy. With the contextual data supplying a framework for the environmental history the focus of the study will be the late Iron Age and Romano-British periods. In these phases the Romano-British plough marks and the early Roman waterlogged deposits will provide detailed evidence of the wider environment. Peat horizons in the post Roman period will contribute to the regional pattern already examined through evidence from Biggleswade (Dawson 1994) where rising watertables were responsible for changes in the settlement pattern of the Ivel Valley (**Tasks D1-5**). Deposits in the later Saxo-Norman period will provide data relative to pits/tanks which may have only a marginal contribution to make to the wider environmental history of the site, but will provide detailed information on the function of the tanks themselves.

The analysis of the wood species by phase will indicate the species growing in the area and possible changes in the environment (**Tasks C5,12, 14, 18**). In particular this analysis will contribute to establishing the type of woodland being exploited in the 11th/12th century.

In concert with the chronological sequence established above and the extensive environmental data base the site has considerable potential to generate an environmental history of the site.

3. To identify discrete activity areas.

Discrete activity areas have been identified as the necessary preliminary to analysis of the wider pattern of land use (Research Aim 4). This research aim focuses attention on specific activities carried out within the major period subdivisions provided by the phasing (**Tasks A1-4**). The Developer funded sites will contribute data on settlement and land division in the Romano-British and

medieval periods, providing a focus for this aspect of the analysis and ultimately the integrated discussion (**Tasks A5-13**).

Distribution plots of functional categories of artefact (**Task C13**) will assist in establishing both the presence and location of discrete activity areas. Analysis of wooden objects (**Task C6**) associated with the hurdle lined tanks will aid in determining whether the tanks were used for flax retting and identification of lead and stone weights allows the inclusion of fishing activity in the pattern of activities at the site (**Task C1, 11**). As with the previous research aim the environmental evidence will contribute detail (**Tasks D1-5**), especially in the areas of Romano-British and Iron Age ploughing and the medieval tanks.

The examination of the condition of the pottery (**Task B7.7**) will throw light on the pattern of rubbish disposal. This is particularly relevant to the English Heritage area, which is on the periphery of the settlements. Pottery distributions and analysis by fabric, form and evidence of use (**Tasks B1.1, B5.1-5.2, B5.4, B7.1-7.2**), will indicate activity areas: for example associated with pottery manufacture, domestic food preparation and storage. Analysis of the pottery from the Developer areas will establish the relationship of the settlement to those land areas on its periphery through the distribution of fabric types and forms (**Tasks B5.1-5.2**). Where primary structural evidence is lacking the distribution of daub concentrations (**Tasks B5.7, B7.10**) may indicate locations where structures had once stood. The presence of roof and floor tiles dated to the Roman period indicates the presence of substantial structures in the vicinity. Although the small quantity found in both the English Heritage and Developer sites indicates that they may be some distance away this evidence has clear implications for the regional landscape. Distribution of the building material from the whole site, and analysis of any marks and impressions (**Tasks 5.7, 7.10**), may indicate those structures which used ceramic material in their construction. Similar distributions of the Iron Age brick fragments will indicate the locations of substantial structures such as kilns or hearths, particularly in the Developer funded areas.

4. To identify the changing pattern of land use.

Identifying patterns of land use at Warren Villas will depend upon the integration of all groups of evidence which together have high potential to address this aim. The evidence from the English Heritage area will be considerably enhanced by the results of excavations in the Developer areas. The changing pattern of land use at the site includes both riverbank activities as well as those related to settlement and agriculture on the higher ground.

The changing pattern of land use will be analysed within the chronological framework of the site (see Research aim 1 and **Tasks A1-9**). Environmental assessment has identified five areas of high potential (**Tasks D1-5**) which will make a substantial contribution to achieving this research aim. In addition, analysis of the structural wood assemblage (**Tasks C5, 14 and 18**) will establish the form and nature of aspects of woodland management especially in the medieval period. The analysis will also address issues raised in English Heritage's

survey of Roman pottery where it was noted that 'good coverage of rural settlements is even more limited' than that of urban sites (Fulford and Huddleston 1991, 5.1). The distribution of the dated types of pottery (**Tasks B5.1-5.3**) will help to define the chronological shift in activity across the site, setting the framework for the analysis of changing patterns of land use.

Examination of the condition of pottery and ratios of sherds to vessels and weight, with their relationship to the features on the site, will throw light on the patterns of rubbish disposal. Examination of pottery contemporary with the pottery kiln (**Task B7.4**) will clarify the division of land in relation to the pottery industry, by suggesting which of the features where this pottery was found were in contemporary use.

Artefact analysis, by defining specific activity areas when correlated with environmental, ceramic and structural evidence will contribute to understanding the changes in activity focus. From the prehistoric period these have moved from river bank, possibly ritual activity, through periods of abandonment to mixed medieval farming (culmination of all **Tasks A-H**).

5. To further our knowledge of rural mortuary practice.

Roman burial practice has recently been catalogued (Phillpott 1991) providing a broad framework for further study. At Warren Villas isolated cremations have been found close to field boundaries and on the edge of the flood plain. This phenomenon has not been widely investigated. Research into similar cremation burials of late Iron Age/early Roman date, and their distribution will further our knowledge of rural mortuary practice allowing the Warren Villas graves to be placed in their spatial and temporal context (**Tasks A12**). The analysis of the cremation vessels (**Task B7.9**), by comparison with regional parallels, will help to further this aim.

In addition to the cremations there is a single inhumation from the English Heritage area (prone, undated) and four from more recent excavations. One of the latter was accompanied by an iron knife of possibly Saxon date.

6. To further our knowledge of wood technology.

Full name identification of the wooden objects (**Task C6**), including analysis of form and manufacture, combined with tool mark evidence from the structural timbers (see Assessment Table 5.10; **Tasks C14, 17 and 18**) will reveal much about carpentry techniques of the medieval, and to a lesser extent Iron Age, periods. Analysis of the wood assemblage will establish the range of species in use and the form of woodland management practised at Warren, contributing to understanding the mechanics of timber exploitation in the Ivel valley.

7. To investigate the distribution of the products from the pottery kiln.

The kiln structure and contents, found during excavation of the Developer area, have been published (Slowikowski and Dawson 1995). The presence of pottery from the kiln has been noted in the English Heritage area and this revised aim seeks to place the kiln products in their local and regional context by investigating the distribution of the pottery manufactured at Warren Villas (**Task B7.4**). The Roman small town of Sandy provides a possible marketing focus for the kiln, as do other excavated sites in the region. The fabric, forms and manufacturing techniques serve to characterise the pottery (**Tasks B1.1, B7.1, B7.3**), and these will be examined to determine the presence of the kiln products. Further parallels will be sought (**Tasks B6, 7.4**) from sites within a 20 mile radius of Warren Villas. This figure is based on Hodder's Model 1 for coarse pottery (Hodder 1974 341). This revised aim is consistent with the aims of the survey of Roman pottery studies, which sees the analysis of kiln assemblages and rural assemblages as a priority (Fulford and Huddleston 1991, 5.5, 5.4.3).

8. To determine the economy of the site, including trade and outside contacts.

The broad chronological framework so far determined for all the excavated areas was outlined in Part 1 section 3.1.5. In the early periods of activity at the site the emphasis will be upon environmental analysis. In the later Iron Age a shift in emphasis will occur as analysis of the economy of the site becomes a viable objective. Data gathered in pursuit of land use, activity areas, kiln production and the chronology of the site will contribute to this aim for the late Iron Age, Roman and medieval aspects of the site (**Tasks C1-20**).

In discussion emphasis will be placed upon environmental and artefactual data within the chronological and structural framework (**Task A11**) established through contextual/artefactual analysis. **Tasks C1 - 19** will all contribute towards determining the economic basis of the site, and will be combined with the Developer funded excavations (**Task C20**) to provide a complete analysis of the site.

Assessment of the evidence from the late Iron Age and Roman periods indicates both agricultural and domestic activity. In the Roman period full name identification of the coinage (**Task C2**) and comparison of the coinage profile with those from similar sites of the period may help to establish the economic status of the site. No in situ evidence survives for metalworking so it is likely that the metal artefacts recovered were obtained through trade. Further evidence of external contact is explicit in fragments of Mayen lava quern and a single boxwood comb. These goods may have been obtained through the Roman small town of Sandy. The proximity of Sandy in the Roman period is clearly important in providing an economic focus for the Warren Villas site, and analysis of the integrated ceramics archive will provide the basis for detailed comparison with the Sandy ceramics (see Sandy Assessment of Potential for Analysis).

The analysis of the Warren Villas ceramics in addition to the distribution of the products of the kiln (discussed above and **Task B5.6, B6, B7.4**) will indicate the regional pattern of trade and outside contacts, while the distribution of the regional, national and imported pottery (**Task B5.3**) will demonstrate the site's access to wider trade patterns. The analysis of the imported wares (**Task B7.5**), whether insular or continental, will provide a valuable comparison with the artefacts in determining the status of the site. Comparison of the building material (**Task B7.10**), with fabrics elsewhere in the county, will also indicate patterns of contact.

The discovery of settlement evidence of the medieval period during Developer funded excavations provides the focus for the agricultural and riverine activity found during the English Heritage excavations. The evidence from the Developer funded excavations comprised field boundaries, rubbish pits and a settlement. The evidence from the late eleventh to early twelfth century indicates craft specific activity rather than domestic occupation in the English Heritage area near the river. **Tasks C5-6, 14**, in combination with the environmental evidence, will assist in confirming or denying whether flax retting was being carried out. Fieldname evidence from the sixteenth and seventeenth centuries indicates that flax/hemp was an important crop which was processed locally. It is likely that the fieldname evidence represents survival from earlier times.

A study of the lead and stone weights (**Task C1**) in combination with refined phasing (**Task C11**) will help determine the time frame for fishing activity and establish whether this was associated with any of the excavated settlement evidence.

Ceramics analysis of this period will comprise cataloguing and quantification (**Task B2.1**) prior to integration with the Developer funded areas.

9. To contribute to the development of the Bedfordshire Artefacts Type Series (the Artefacts Typology and the Ceramic Type Series).

The Bedfordshire Artefact Typology (BAT) was established in the first half of 1994, although the basis for this, a county-wide list of 'simple names', was formed in the late 1980s with collaboration between Bedford Museum and the Archaeology Service. The simple name list has been expanded to include over 570 entries and is in use in the two registered museums based in the county (Bedford and Luton).

The BAT was established in order to;

- ensure consistency in cataloguing terminology;
- examine artefacts functionally rather than by material;
- remove duplication of time and effort in researching parallels;
- to operate an integrated system, capable of expansion, with the Museums of Bedfordshire, which will assist external users and artefact researchers.

The English Heritage funded excavation produced a number of new types, the addition of which will enhance the artefact corpus as a whole and contribute to local and regional distribution patterns (**Task C31**). Of particular note is the assemblage of early medieval wooden objects and the copper alloy spearbutt; additional examples of the latter have subsequently been recovered from the Sandy excavations.

The type series for post-Roman pottery in the county has been well established since 1979; that for Iron Age and Roman pottery is still ongoing, with examples being added from major sites in the county. The analysis of the post-Roman pottery (**Task 7.6**), by comparison with parallel examples, will add to the known distribution of this material in the county. The pottery from Warren Villas will be incorporated into the Bedfordshire Ceramic Type Series (**Task 2.2**). English Heritage have recommended the establishment of regional type series as a priority and this revised aim corresponds well with this recommendation (Fulford and Huddleston 1991, 5.4.3).

3 PUBLICATION PROPOSAL

The publication proposal outlined below reflects the integrated analysis of the entire Warren Villas excavation project.

The publication will be divided into two separate sections:

Part 1 The evidence

Part 2 The integrated analysis

The publication proposed below is based on a framework in which the evidence is presented in the first part of the report to establish the basis for integrated discussion. The evidence presented will include all English Heritage and Developer funded material. It will be ordered as laid out below and at this preliminary stage will comprise a succession of descriptive passages and catalogues for all structural and artefactual components. In the second part of the report discussion based on the evidence in part 1 will explore themes which contribute to the development of the site. The latter are represented by Research Aim 4, (The changing pattern of land use), and Research Aim 8, (The economy of the site, including trade).

The practical details of the publication have not yet been finalised. Two separate volumes are a possibility for parts 1 and 2, part 1 comprising text and illustrations and part 2 c.41000 words of text and few illustrations.

Possible title: *The ancient landscape of Warren Villas, Lower Caldecotte Part 1*

Title	No Words (EH)	Tables	Ills	No Words (Dev)
Chapter 1: Introduction and background				
1 Reasons for excavation	500			500
2 Geology	250		1	250
3 Topography and contemporary land use	250		1	250
4 Archaeological context	500			500
5 Cropmark evidence	250		1	250
6 Methods	500			500
7 Presentation of results: phasing and chronology	1000	1		
Chapter 2: The structural evidence				
1 Early prehistoric evidence	500	1	1	
2 Neolithic activity	500	1	1	
3 Ring ditch	500	1	1	
4 Later Prehistory and Roman	3000	1	1	3000
5 Early -Mid Saxon	-		1	2000
6 Medieval	3000		c10	3000

Chapter 3 Ceramic artefacts	No Words (EH)	Tables	Ills	No Words and Figs	No ill (Dev)
1 Type series and descriptions incl samian	12000		4	1000 wds	12 figs
2 Discussion: forms, sources, date, parallels etc	4000	6+ 8 distr		500 wds + 2 tables	
3 Building material: description	500		1	500 wds	1 fig
4 Discussion: forms, sources, date, parallels etc	1500	1+ 1 distr		500 wds	
Chapter 4 Non-ceramic artefacts					
1 Prehistoric	1350	1	2 pgs + 1 dtbn	900 words	1 pg fig
2 Fastenings and Fittings	300			75 words	
3 Household	1500		1 pg	450 words	
4 * Craft and Industry	4800		8 pgs	450 words	
5 Multi-purpose blades & sharpeners	600		0.5 pg	150 words + 0.25 pg fig	$\frac{1}{4}$ pg fig
6 Written Commun	75		0.125 pg		
7 Commerce	600	1	1	300 words	
8 Transportation and Animal Trappings	600		0.25 pg		
9 * Agriculture and Horticulture	1250		1 pg	300 words	$\frac{1}{2}$ pg fig
10 * Weaponry and Hunting	2250		2.5 pgs	75 words	
11 Personal Adornments	3100		4 pgs	250 words	$\frac{1}{4}$ pg fig
12 Toiletry	200		0.25 pg	75 words	$\frac{1}{4}$ pg fig
13 Wide ranging uses	600		0.5	75 words	

* word/figure allocation dependent upon word analysis

Possible title: *The ancient landscape of Warren Villas, Lower Caldecotte: Part 2*

Section	Subjects (see research aims)	No of words (EH)	No words (Dev)	Ills
Prehistory (Meso/E Neo/ L Neo/BA/Mid Iron Age)	Development of the area based on artefacts, environmental and structural data addressing the research aims. Structured discussion of site development leading to landscape development and regional context for the earliest period of human activity.	Structural 1000 Ceramics 750 Artefacts 1800	Structural 250 Ceramics - Artefacts 300	2 - -
Late Iron Age and Roman period	Transition from marginal landscape to agricultural use and the development of settlement. Investigation of environmental constraints on development and responses to these. Discussion of land use and site economy, assessment of site in comparison with region during this period. Particular emphasis on ceramics in this period. Rural burial practice.	Structural 2000 Ceramics 7500 Artefacts text 2700	Structural 2000 Ceramics 500 Artefacts 330	1 2 -
Early - Mid Saxon (Fifth century AD to mid Saxon Period)	Discussion based on re-occupation of the site in the Saxon period. Discussion will include the Saxon cemetery evidence.	Structural - Ceramics 750	Structural 3000 Ceramics 750 Artefacts 450	1 2 -
Medieval (Late Saxon - late medieval)	Discussion will focus on the Saxo-Norman period occupation of the site and land use activities such as 1) woodland management; 2) function, construction; repair of tanks; 3) activity/occupation areas. Discussion will also broaden to consider the period context of the site and its relationship with the development of the medieval landscape. Exploring the site economy will rely on the integration of all artefactual areas.	Structural 1000 Ceramics 100 Artefacts 5400	Structural 1000 Ceramics 4500 Artefacts 400	1 - -

4 METHOD STATEMENT FOR STRUCTURAL ANALYSIS

Assessment of the evidence from excavation has identified nine research aims. Sample landscape groups have been prepared for the major site elements and an outline phasing prepared (see Assessment of Potential for Analysis, section 3). During analysis the phasing will be confirmed in the light of artefactual and ceramic evidence, and the structural groups will be extended to form further landscape groups.

4.1 Confirmation of structural groups (Task A1)

The sample structural groups identified during the assessment, c.25% of the total, will be critically appraised and other new groups will be added. Plans, sections, photographs and contextual data will be used to examine stratigraphical relationships. A structural group may comprise an Iron Age round house or an enclosure or ring ditch; a sub-group may comprise features such as hearths, partitions or ditch segments. Each group will be recorded on standard forms and then a descriptive text will be prepared.

4.2 Confirmation of landscape groups (Task A2)

The identified structural groups will be collated into landscape groups using stratigraphical data. At this stage inferences regarding orientation, similarity of silting patterns and location relative to other structures will be introduced. The landscape groups will be built up through detailed examination of context records, concentrating on stratigraphic, physical and spatial patterning and relevant ceramic spotdating evidence. This process has already been tested and areas of ploughing and hurdle lined pits defined within the site sequence. Each landscape group will be recorded on standard forms.

4.3 Database update and plan digitising (Task A3)

Throughout Tasks A1-4 the relational database set up for Warren Villas since 1990 will be updated to include both landscape and structural group elements. The 164 plans will be digitised and converted to Geosys as follows:

Task A3.1 All plans will be checked for clear grid points, labels, standard line types that neighbouring plans match and features are clearly defined. Rate anticipated 50 plans/day.

Task A3.2 Digitisation of all plans through Auto CAD. Rate 175 features/day.

Task A3.3 Checking all complex plans, by plotting out 1:20 CAD drawings as overlays for originals (sample of 30% at 56 plans/day).

Task A3.4 Convert all CAD plans to same grid.

Task A3.5 Labelling in Geosys of feature numbers. Rate 420 features a day.

Task A3.6 Final checking : all features are closed polygons; all labels are correct; feature numbers equate to feature numbers on structural database.

Task A3.7 Convert any co-ordinate systems (such as registered finds) on structural database.

4.4 Confirmation of phasing (Task A4)

The detailed confirmation of phasing will be carried out at a round table discussion to integrate chronological information for all the excavated areas. It will include chronological data from the ceramics and artefactual archives. This will lead to the development of a final model for the chronological evolution of the site. The confirmation of the phasing marks the first step in the definition of a dated sequence for **research aim 1**.

4.5 Circulation of phasing data to specialists (Task A5)

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

4.6 Research for comparative data (Task A6)

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 and topographic locations.

4.7 Analysis of structural data (Task A7) leading to draft technical report (Task A8)

The technical report (part 1) will describe each structure in terms of structural components, internal features, peripheral elements and the evidence of disuse. Interpretative discussion will cover both structural groups and landscape groups. This will be the basis for discussion of the Romano-British and Saxo-Norman settlement and activity areas. Text will be arranged by period (see proposed publication layout UPD section 3) based on the phasing framework in section 3.1.5 of the Assessment Report.

4.8 Illustration (Task A9)

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.

4.9 Liaison with specialists (Task A10)

A round table meeting will be held to discuss issues raised by specialist work prior to the commencement of research leading to the draft integrated synthesis.

4.10 Integration of structural, artefact and ecofactual data (Task A11)

The technical report will present the evidence on which discussion of the broader research aims will be based. Artefactual, ecofactual and structural analysis will be integrated. Identification of relationships between artefact distributions and structural or landscape groups will be the first stage in providing the basis for discussing the chronological evolution of the site and the process of site formation. The analysis will be conducted under chronological headings which will be reflected in the report.

4.11 Research for comparative data (Task A12)

In a second stage the patterns identified above will be the basis for regional and comparative discussion, by period and process. These analyses will require some comparative research before considered conclusions can be drawn on the landscape and ritual practice (deposition and burial location), and the economic status of the site at different periods and its regional and national context.

In order to make regional and national comparisons it is necessary to establish the geological and topographical context of the site at Warren Villas. A description will be prepared as part of the draft technical report. After the integration of the artefactual and ecofactual data, this evidence will be reviewed for its potential to contribute to the discussion of the broader research aims.

4.12 Preparation of draft integrated report (Task A13)

The draft integrated report is the culmination of tasks from the draft technical report to the analysis of the broader research aims (**research aims 2-6**).

4.13 Preparation of mock-ups (Task A14)

A draft illustrated text will provide the basis for discussion as to whether to proceed to publication (MAP 2 *Proceed to dissemination* fig 1).

4.14 Text to HBMC (Task A15)

This key stage involves submitting the draft report to English Heritage.

4.15 Publication (Tasks A16-18)

These include pasting up illustrations, checking captions, and editing and cross-referencing text prior to submission to a publisher.

4.16 Creation of a paper archive (Task A19)

The creation of a paper archive will be undertaken at all stages of post-excavation analysis in order to provide security copies of all documents.

4.17 Transfer of archive (Task A20)

Transfer of site archive to Bedford Museum using pre-agreed accession numbers.

Table 4.1 Task list for structural analysis and report completion

Task number	Description	Aim	Quantity	Staff	Duration (days)
A1	Confirmation of structural groups	All	1440 contexts	AM	24
A2	Confirmation of landscape groups	All			17
A3	Database update and plan digitising	All	1440 contexts 164 plans	AM Asst	4 18
A3.1	Checking original site plans				(4)
A3.2	Digitisation				(8)
A3.3	Check digitised plans				(1)
A3.4	Conversion to common grid				(1)
A3.5	Labelling in Geosys				(4)
A3.6	Final checking				(2)
A3.7	Conversion of co-ordinate systems on other databases				(2)
A4	Confirmation of phasing	All	Estimated at 14 phases	MD AM	1 12
A5	Circulation to specialists	All		AM	1
A6	Research for comparative data	All		AM MD	8 8
A7	Analysis of structural data for technical report	All		Asst	5
A8	Draft technical text	All		AM MD	8 4
A9	Illustration	All	Taken from 228 plans & sections	CAM	45
A10	Liaison with specialists	All		MD	4
A11	Integration of structural, artefactual and ecofactual data	1,5		MD AM	11 11
A12	Research for comparative data			MD AM	20 1
A13	Draft integrated synthesis	All		MD	25
A14	Mock ups	All		CAM	8
A15	Text to HBMC referee	All			
A16	Paste ups	All		CAM	8
A17	Captions and checking	All		CAM MD	3 5
A18	Editing, cross referencing	All		MD *Prof Ed	6 6
A19	Creation paper archive	All		AM	4
A20	Transfer archive	All		AM	4
	<i>General Project Management</i>				
A21	Management time	All		MD	15
A22	English Heritage Monitoring		7 meetings / half day each	MD	3.5

*Professional editor

5 METHOD STATEMENT FOR CERAMICS ANALYSIS

As a result of the fieldwork and assessment stages the following preliminary tasks have been completed for Area 1 only:

- identification of fabric types
- quantification by vessel, sherds and weight
- recording of attributes (forms, abrasion, manufacture, evidence of use, decoration)

5.1 Type Series refinement (Task B1)

5.1.1 Identification of established types from Area 1 will be confirmed. This will include the checking of borderline types by the microscopic examination of their fabric. The pottery from non-English Heritage funded areas of the site will be incorporated into the preliminary type series already established for the site.

5.1.2 Thin-sections of the four new types identified on Area 1 (marked with an asterisk * in section 4.1.3 of the assessment) will be done to determine the presence of geological characterisers and thereby pinpoint possible sources (eight samples). In addition samples of kiln material from Warren Villas 2 will be compared with pottery that has been identified visually as coming from that kiln (six samples). The currently indistinguishable Iron Age/Saxon pottery will be compared to define its geological characteristics to try and define them. If an identification is determined by this method, these same samples can be used to define whether the same sources of raw material were being used (six samples). This will be done by Alan Vince at the City of Lincoln Archaeological Unit.

5.1.3 If the thin sections are inconclusive in the determination of the Iron Age/Saxon pottery, two samples will be sent for thermoluminescence analysis, to be done by Dr M.Tite at the Oxford Archaeological Research Laboratory.

5.2 Completion of recording (Task B2)

5.2.1 Quantification of confirmed identifications of Iron Age/Saxon types and recording of attributes as listed above will be done at this stage. The quantification of rim percentages will be added for the wheel thrown pottery, in accordance with the recommendations of the survey of Roman pottery (Fulford and Huddleston 1991). Quantification of the pottery from the non-English Heritage funded areas of the site will be comparable with that done for Area 1.

5.2.2 Fabric types not in the Bedfordshire Ceramic Type Series, which comprises sample sherds, fabric record sheets and form corpus cards, will be incorporated into it. This is only relevant to the new Iron Age, the ?Saxon and the Roman types; the Iron Age, medieval and post-medieval type series are well established. This is in accordance with the recommendations of the survey of Roman pottery.

5.3 Database manipulation (Task B3)

This task involves the input of data collected in 5.2.1 above, updating and editing the record to include the building materials. All links, sorts and queries are included in this task.

5.4 Liaison (phasing) (Task B4)

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. Discussions will invariably include the whole site, although only the time allocation for Area 1 is in the task list.

5.5 Distributions (Task B5)

Distributions are a major part of the analysis and report, and will inform all aspects of the analysis. They are used to identify patterns or concentrations of pottery on the site to determine chronology, function and status. In the case of Warren Villas 1 the primary purpose of these distributions is the determination of any patterns of disposal or dumping, and the determination of any chronological shift across the site. Distributions across the site will be done for the following groups of pottery, by phase where relevant:

- fabric types by chronological group
- distinguishable forms
- imports both regional and continental
- vessels with evidence of use
- post Roman pottery
- kiln products (this will include regional distributions)
- building material, particularly the daub/fired clay

5.6 Research (comparanda and parallels) (Task B6)

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 from the site in question. The pottery from major sites within a 20 mile radius of Warren Villas will be examined to determine the presence of kiln pottery. The relevant pottery specialists in the area will be consulted beforehand to determine the presence of pottery likely to be identified as such. The pottery will be examined in conjunction with research into comparative material.

The following repositories of pottery assemblages or regional collections will be visited:

- Northampton -to examine the pottery type series, both Iron Age and Roman, north of the county and the pottery on the northern edge of the 20 mile radius;
- Towcester - to examine the pottery on the western edge of the 20 mile radius;
- Aylesbury - to examine the pottery type series, Iron Age, Roman and Saxon west of the county;
- Cambridge - to examine the pottery type series for the area east of the county, in the process of being set up, and the pottery on the eastern edge of the 20 mile radius;
- Portsmouth - to examine the Iron Age and Roman pottery from Stanwick, Northants;
- Oxford - to examine the pottery type series, both Iron Age and Roman, for the area west of the county;
- St Albans - to examine the Roman pottery type series for the area south of the county, in the process of being set up, and to examine pottery within the 20 mile radius;
- Hertford - to examine the Roman pottery type series for the area south of the county, and Baldock in particular; to examine the pottery on the southern edge of the 20 mile radius;
- Milton Keynes - to examine the Iron Age pottery from Bancroft, and Pennylands and Hartigans. With the demise of the Milton Keynes unit the Roman pottery type series is now held by BCAS and therefore its examination will not involve any travel.

5.7 Analysis (Task B7)

Analysis of the site assemblage will be based on the various computer sorts obtained from the manipulation of the database. Included in this will be an examination of the following:

- forms - these will be analysed by fabric, including distributions and associations, both structural and artefactual;
- the evidence of use - this will include the analysis of the physical evidence of use, sooting, wear marks and holes, in relation to fabric, form, and site distribution;
- manufacturing techniques - these will be analysed in conjunction with fabric and form as additional characterisers of particular types;
- the kiln material - this will include an analysis of the fabric, forms, decoration and manufacturing techniques, as well as site and regional distributions;
- imports - this will include both regional and continental imports, their distributions and associations;

- post-Roman pottery - this will include an analysis of the distributions and associations, both structural and artefactual; this is of little relevance to Area 1;
- sherd size, condition, ratios - this will be based on the manipulation of the database;
- samian pottery - in view of the limited potential of the samian for dating purposes, and the fragmentary nature of the decorated sherds, the analysis will comprise a complete archive, table of forms, discussion of the identified potters' stamps and a brief summary of the assemblage;
- cremations - this will include regional parallels and comparative material;
- building material - this will include a quantification and analysis of the impressions in the daub;

5.8 Illustration (Task B8)

5.8.1 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 and 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

For the whole site there will be 150-200 drawings, although this figure may decrease when the selection from the non-English Heritage funded sites has been made. The number of illustrations from Area 1 alone, however, is likely to be in the region of 50.

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

5.8.3 Illustrations will be reduced and pasted up in preparation for camera-ready copy.

5.9 Correlation of specialist reports (Task B9)

Any specialist reports will be integrated into the text and this will include any tabular or graphic representation. This will include the thin section and thermoluminescence reports, the reports on the prehistoric pottery and the samian, and any additional comments made by other specialists.

5.10 Draft technical text (Task B10)

The draft report for the 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 single type series and description for both Area 1 and the non-English Heritage funded excavation, and include a single series of illustrations. All tables will include data from the whole site.

5.11 Liaison (integration) (Task B11)

Time is set aside for liaison specific to the preparation of the integrated synthesis. Discussion between the structural, ceramic, non-ceramic and environmental analysts will jointly arrive at the integration of both the structure and content of this section of the report.

5.12 Draft integrated synthesis (Task B12)

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 B10**. 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.

5.13 Editing (Task B13)

Time has been set aside for word processing 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.

5.14 Archiving/accessioning (Task B14)

5.14.1 This task consists of the sorting and systematic ordering of the paper and computer record, ensuring copies are made using archivally stable materials.

5.14.2 Final publication drawing numbers will be added to the illustrated pottery. Any pottery originally laid aside for illustration but not chosen for the final publication will be replaced into its context bag.

5.14.3 Lists of box contents will be prepared in readiness for accessioning by the recipient museum. The museum box storage grant applicable to Warren Villas 1 will be applied for by the relevant museum. The total of 21 boxes will increase to c.25 when the illustrated pottery has been boxed separately.

5.14.4 Transfer of archive.

Table 5.1 Task list for ceramics analysis

Task no	Task description	Aim	Quantity	Staff	Time
B1	<i>Type series refinement</i> 1 Type confirmation 2 Thin sections 3 Thermoluminescence	all	20 boxes pot + 1 box daub c.20 2 samples	YP EM AV MT	2 3 over period of 30 dys over period of 40 dys
B2	<i>Completion of recording</i> 1 Quantification 2 Beds Type Series	all	27 fabric sheets c.15 form cards	YP AMS EM	5 5 5
B3	Database manipulation	all		EM	5
B4	Liaison (phasing)	all		AMS/YP	10/2
B5	<i>Distributions (site based/regional)</i> 1 Fabric types (chronological groups) 2 Forms 3 Imports 4 Evidence of use 5 Post-Roman pottery 6 Kiln products 7 Building material	 1; 3; 4 3; 4 3; 8 4 1 8 4	c.20	AMS YP CAM	2 1 10
B6	Research	all	including 9 visits	AMS/YP	7/8
B7	<i>Analysis</i> 1 Forms 2 Evidence of use 3 Manufacturing techniques 4 Kiln material 5 Imports 6 Post-Roman pottery 7 Sherd size, condition, ratios 8 Samian 9 Cremations 10 Building material	 4; 7 4 7 3; 7; 8 8 1; 9 1; 3; 4 1 5 4; 8		AMS YP EM BD	5 15 5 2
B8	<i>Illustration</i> 1 Drawing 2 Checking 3 Paste-ups	all	c.50	CAM AMS CAM	10 1 1
B9	Correlation of specialist reports	all		AMS	2
B10	Draft technical text	all		YP/FSup	10/10
B11	Liaison (integration)	all		AMS	10
B12	Draft integrated synthesis	all		AMS	20
B13	Editing	all		AMS	5
B14	<i>Archiving/accessioning</i> 1 Ordering the archive 2 Illustrated pottery/copying 3 Box lists 4 Transfer	all	100-120 21 boxes	AMS EM EM Driver	1 3 1 0.25
B15	<i>General project management</i> 1 Management	all	4 meetings	AMS	7

6 METHOD STATEMENT FOR REGISTERED AND NON-CERAMIC BULK ARTEFACTS

6.1 Introduction

As a result of the fieldwork and assessment stages, the registered artefact assemblage has been allocated to simple name categories. There are categories which cannot contribute to the overall aims and objectives of a project (e.g. strips, fragments, sheets, which at Warren number 30) and these will not be the subject of analysis.

6.2 Stages of Analysis

The registered and bulk non-ceramic artefacts analysis will consist of the following stages:

Full name identification

Registered Artefacts (excluding wood)

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 (Task C1) 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.

External expertise will be required to establish the full name and date range of selected categories. These categories of artefact were identified during the fieldwork and assessment stages and each category will form a separate task within the analysis programme. The overall methodology of carrying out these specialist tasks will, however, be as outlined above. External specialists will be utilised for the following:

- Coinage (Task C2);
- Leatherwork (Task C3);
- Petrology of registered artefacts, to identify material and source (Task C4).

Registered Wood - structural samples and objects

The wood assemblage can be subdivided into structural samples and objects. Species identification of the remaining ten structural samples will be undertaken by R Gale (Task C5). This work is carried out in the following manner:

- thin sections, to show the transverse, tangential longitudinal and radial longitudinal planes are made of each sample;
- these are then mounted on microscope slides and examined using a transmitted light microscope;
- the anatomical structure is matched to authenticated reference material;

- the diameter, number of annual growth rings and, where possible, the season of cutting/felling is noted.

Prior to the commencement of simple name allocation and full-name identification of the wooden objects, the conservation programme must be completed (see Assessment Section 5.1.4). Completion is presently scheduled for early 1995.

Full-name identification and date range of the 39 objects (plus one handle from a composite object) will be undertaken by C Morris and R Darrah (**Task C6**) and will include consideration of:

- species and source;
- manufacture methods including conversion, carpentry techniques and tool marks;
- condition, including wear patterns;
- form and function;
- parallels.

One object has tentatively been identified, prior to conservation, as a shoe patten. If this proves to be the case, liaison between the wood artefact and leather artefact specialists will take place. Time for this has been included in the relevant specialist's timings.

Liaison with each specialist (**Task C7**) 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, at Warren these include flint and nails, from a phased context will be allocated a type and, where applicable, a date range (**Tasks C8-9**). 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.

Up-dating of artefact databases

Once full name identification has been completed for each simple name category, this information will be added to the artefact database(s) (**Task C10**). It is the policy of Bedfordshire 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.

Phasing liaison

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 (**Task C11**). This is done in consultation with the structural and ceramics analysts.

Dissemination of information to external specialists

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) (**Task C12**).

Distribution plots

Distribution plots of the artefactual assemblage will be undertaken once the site phasing has been finalised (**Task C13**). This is essential in order to identify patterns or concentrations of artefacts of specific function and phase.

Liaison meeting to integrate wood assemblage evidence

A liaison meeting between the project's external wood specialists (R Darrah, R Gale and C Morris) and senior in-house project staff (MD, AMS, HBD) will be held in order to integrate all aspects of this assemblage. The meeting (**Task C14**) will examine evidence for:

- the type of woodland being exploited;
- the exploitation of wood species by phase, including evidence for, and change over time in, woodland management;
- conversion and carpentry techniques and evidence for different tools in use by phase;
- the functional use of the objects and the hurdle-lined tanks;
- refinement of the chronology of the tanks by examining techniques used in construction, absolute and associational dating evidence and stratigraphic relationships.

It is envisaged that, due to the quantity of evidence, this meeting will span a two-day period.

Specialist's reports

Following the meeting draft reports on the wood artefacts and structural samples will be prepared incorporating the results of the liaison meeting (**Tasks C16-17**). Technical reports on the coin, leatherwork and flint assemblages will be prepared by the relevant specialists (**Tasks C15-16, 19**).

Integration of developer-funded evidence

At this point the assemblages from both the English Heritage and developer funded excavations will be integrated and analysed as part of the overall Warren Villas project (**Task C20**). This will be possible at this juncture because the artefactual assemblage from the Developer funded excavations will have progressed to the same level of identification.

Preparation of technical catalogue and text

A draft catalogue will be prepared (Task C21). This will be organised in the following hierarchy;

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

and will address function, date range, site distribution and parallels for the artefact assemblage. The time allocated to this task includes integration of specialists' reports.

Illustration

Selection of artefacts for publication standard illustration is made at this juncture (Task C22). Illustration is carried out by the Illustrator in consultation with the relevant artefact analysts (Task C23) and mock-ups of the publication figures completed (Task C24).

Synthesis and discussion of artefact assemblage

Whilst illustration is proceeding, the draft artefacts discussion will be undertaken (Task C25). The discussion 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 the site. Any interpretations are considered in light of general availability of materials, technological innovations, trade patterns and prevailing fashions of each of the project's phases.

Integration of analysed data-sets

The artefacts discussion will be integrated with the complementary evidence provided by structural, ceramic, environmental and documentary evidence (Task C26). This is achieved through discussion amongst all the relevant specialists.

Preparation of integrated text

An integrated draft report addressing the aims and objectives of the project will be prepared (Task C27). Ensuring adequate cross-referencing, editing and proof-reading of this integrated text is essential (Task C28). Final paste-up of illustrations will proceed at the same time (Task C29). Time has also been allocated for writing of captions and checking of the paste-ups (Task C30).

Archive preparation

Preparation of the paper and material artefacts record (**Task C31**) 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.

Table 6.1 Registered and bulk non-ceramics artefacts task list

Task	Description	Aim(s)	Quantity	Staff	Days
	<i>Full name identification</i>				
C1	Full name identification - in-house registered artefacts	1, 3, 8	122	HBD	4
C2	Full name identification - coinage	8	42	PG	1
C3	Full name identification - leatherwork	8	7	QM	1
C4	Full name identification and report- petrology	8	14	DW	1
C5	Full name identification of remaining 10 samples - wood species	2, 3, 8	10	RG	1
C6	Full name identification - wood objects	3, 6, 8	39	CM RD	4 2
C7	Liaison with external specialists	8		HBD	4
C8	Full name identification - flint assemblage	8	243 [plus axe]	EM RH	4 1
C9	Full name identification - nails	8	12	HBD	0.25
C10	Up-dating artefact databases	8		HBD	2
C11	Phasing Liaison	all		HBD	10
C12	Dissemination of information to external specialists	1, 2, 8		HBD	2
C13	Distribution plots	1, 4, 8		CAM	5
C14	Liaison meeting for wood assemblage	1-3, 6, 8		RD RG CM HBD	2 2 2 2
	<i>Specialist Reports</i>				
C15	Specialist report - coinage	8	42	PG	1
C16	Specialist report - leatherwork	8	39 [103 fragments]	QM	2
C17	Specialist report - wood objects	6, 8	39	CM RD	2 1
C18	Specialist report - structural wood	1-3, 6, 8	383	RD RG	4 7
C19	Specialist report - flint	8	243 [plus axe]	EM RH	5 1
C20	Integration of developer-funded evidence	4, 8		HBD	5
C21	Preparation of technical catalogue	all		HBD	15
	<i>Illustration</i>				
C22	Selection of objects for illustration	all		HBD	2
C23	Illustration, including liaison with artefact analyst	all		CAM HBD	45 3
C24	Mock-ups of figures	all		CAM	3
C25	Synthesis and discussion of artefact assemblage	all		HBD	15
C26	Integration of analysed datasets	1, 2		HBD	10
	<i>Preparation of integrated text</i>				
C27	Draft integrated text	all		HBD	20
C28	Cross-referencing, editing and proof-reading	all		HBD	5
C29	Paste-ups	all		CAM	5
C30	Captions and checking of paste-ups	all		HBD	3
C31	Archive preparation	9		HBD Assist	5 3
C32	Project Management	all		HBD	8.5

7 METHOD STATEMENT PLANT MACROFOSSILS (M R Robinson)

The areas considered in the assessment to have greatest potential comprise:

- 1 The early Roman plough soil
- 2 The floodplain hydrological and environmental sequence
- 3 The rich early Roman carbonised assemblages
- 4 The early Roman waterlogged deposits
- 5 The medieval pits and ditches

Analytical work would take about 40 weeks to complete (including report preparation) if done by a specialist, or about 44 weeks if routine sorting work is done by a technician. The Ancient Monuments Laboratory has requested that the Bedfordshire Archaeological Unit should apply to Conservation Group for funds for this technical assistance. The work can be broken down as follows:

Task	Description	Specialist Time/days	Technician Time/days
D1	Roman plough soil	20	
D2	Floodplain sequence	30	20
D3	Rich carbonised deposits	20	20
D4	Roman waterlogged deposits	10	40
D5	Medieval deposits	10	50
Total		90	130

If it is not possible to devote this much time to the site, it is recommended the number of research themes is reduced rather than that the time spent on each be cut.

Before work can commence, further information on the contexts of the samples will be supplied by the excavator. In particular, it is necessary to know whether the deposits sampled represent fills which accumulated during the primary use of features or are subsequent sediments.

It is envisaged that this work will be completed during the calendar year 1996

8 METHOD STATEMENT FOR SOIL MICROMORPHOLOGY (R McPhail)

8.1 Systematic analysis of the thin sections will permit the definition of Iron Age and Roman soil conditions and the effects of agriculture. This work should combine with grain size and organic matter assays. Unfortunately, most evidence of the soil's ancient nutrient status is likely to have been lost by hydromorphic leaching.

It will be important to closely integrate the soil data with the archaeological and macrobotanical data from this site, to understand better the cultural and environmental aspects. This detailed but essentially small study will also contribute to our database on ploughsoil types and the effects of different implements. As soil micromorphological information from this site will be collected within the context of a well studied part of the Midlands (Robinson 1992), it is anticipated that the new data will permit an improved understanding of mechanisms relating to increases in soil wetness (increasing organic matter preservation, hydromorphic mottling, differing rooting regimes). The study will aid ongoing research at the archaeological sites of Scole-Stuston and Phoenix Wharf and experiments being monitored at Butser Ancient Farm and in Europe. Such databases will aid the identification of arable microfeatures in soils where archaeological features of cultivation are absent - a major topic of research across Europe.

8.2 **Task E** The investigation and its reporting will take three weeks during the period January to March 1996.

9 METHOD STATEMENT FOR ANIMAL BONE ANALYSIS (A F Roberts)

9.1 Introduction The system of recording animal bone will be compatible with other sites in the region. The bones should be examined for: frequencies of species, parts of the skeleton, age at death, pathology and bone change, and measurements of bones and teeth.

Bone recording (Task F 1)

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

Bone analysis (Task F2 leading to F3 and report F4)

Table 9.1 Estimate of time required for analysis and report

Task	Description	Aim (s) number	Quantity of material	Duration (days)
F1 & F2	Recording	3, 8	136kg	15
F3	Integration meeting	3, 8		1
F4	Synthesis & written report	3, 8		15

10 METHOD STATEMENT FOR HUMAN BONE ANALYSIS (T A Jackman)

10.1 Cremations There are 6 cremations dating to the early Roman period which will be analysed as part of the investigation of the late Iron Age and Roman aspects of the site.

10.1.1 Method statement

Each cremation will be sorted and identified bone catalogued noting (Task G1):

- colour
- cracking (longitudinal or transverse)
- maximum length -the longest piece of bone in a cremation and what bone it originates from
- parts of skeleton represented
- weight of cremation
- number of individuals present
- age
- sex
- morphology
- pathology

Report preparation (Task G2) and academic liaison (Task G3)

From this information a report will be written including minimum numbers of individuals and demographic and pathological information. Evidence for cremation technique will also be discussed.

Table 10.1 Task list for human bone analysis

Task number	Description	Aim(s) number	Quantity of material	Staff	Duration (days)
G1	Sort, examination and identification	4	6 cremations	TAJ	0.5
G2	Report writing	4		TAJ	1
G3	Academic liaison	4		AS TAJ	1 1
G4	Liaison with project staff	4		TAJ	0.5

AS: Dr Ann Stirland

10.2 Inhumation:

In the English Heritage area there is a single prone inhumation which will be analysed as part of the human bone assemblage from the English Heritage and Developer sites (see research aim 5)

10.2.1 Method statement

The single inhumation will be washed, examined and the following recorded (Tasks H1-7)

- age
- sex
- bones that are present
- condition of the bone
- completeness of the skeleton
- metrics
- non-metrical data
- dentition
- pathology

Any pathological conditions considered worthy will be photographed and appropriate x-rays taken. A report will be written based on the above information.

Task	Description	Aims	Quantity	Specialist	Duration
H1	Washing		1 skeleton	TAJ	1 day
H2	Recording			TAJ	1 day
H3	Photography			TAJ	1hr
H4	X-ray			TAJ	1hr
H5	Liaison			TAJ	1 day
H6	Report			TAJ	1 day

11 RESOURCES AND PROGRAMMING

11.1 Introduction The methods intended to achieve the objectives set out in the Updated Project Design have been detailed above in sections 4-10 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.

11.2 Project Staffing The Warren Villas 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.

Tasks A4, 6, 8, 10, 11, 12, 13, 17, 18, 21, 22

1974-1978	Liverpool Polytechnic BA Business Studies
1978-1980	Univ. College Cardiff BA (Hons) II (i) Archaeology
1980-1981	Research 'Anglo-Saxon domestic metalwork'
1981-1982	Salford College of Further Education, Lecturer Department Humanities, Economics & Communications Studies
1981-1989	Director excavations EM 23 Ulpia Traiana Sarmizegetusa, Romania
1982-83	Clwyd Powys Archaeological Trust, Site Assistant
1983-84	Education Officer
1984	Christ Church Spitalfields, Archaeologist/photographer
1986	<i>Member Institute of Field Archaeologists</i>
1986	Anglo-Bulgarian Expedition to Nicopolis ad Istrum (Univ. Nottingham) Assistant Director
1985-87	Chelmsford Archaeological Trust, Archaeological Field Officer & Post Excavation Assistant
1987- present	Bedfordshire County Council, Archaeology Service, Senior Archaeological Field Officer
1992	<i>Awarded M Phil Univ. Nottingham "The development of towns in Roman Dacia"</i>

Holly Duncan M Litt MIFA

Responsible for non ceramic artefact processing and analysis

Tasks C7, 9, 10, 11, 12, 14, 20, 21, 22, 23, 25, 26, 27, 28, 30, 31.

- 1973-1976 BA (Hons) Anthropology, University of Pennsylvania, Philadelphia PA
- 1977-1982 *M Litt Dept of Archaeology, Univ. of Glasgow 'Aspects of the Early Historic Period in Southwest Scotland: a comparison of the material cultures of Scottish Dalriada and the British kingdoms of Strathclyde and Rheged'*
- 1978-1979 Research Analyst Gellman Research Assoc Jenkintown Pennsylvania
- 1982-1983 Freelance Finds specialist (Dunadd, Castlehill of Strachan)
- 1983-85 Finds Supervisor, Kirkstall Abbey, West Yorkshire Metro County Council
- 1985-present Bedfordshire County Council Archaeology Service. Artefacts Manager (Non ceramics)
- 1993 *Member Institute Field Archaeologists*

Anna Slowikowski M Phil, MIFA, MAAIS

Responsible for ceramic artefacts processing and analysis

Tasks B2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 14,15.

- 1973-76 University of Sheffield, BA (Hons) II (ii) Prehistory/Archaeology & Ancient History
- 1976-77 Sheffield City Polytechnic PGCE
- 1977-78 Nottingham Castle excavations, finds
- 1978 Nottingham Record Office, Archives Assistant
- 1978-1980 Nottingham City Archaeology Section, Finds Assistant
- 1980-87 West Yorkshire Metropolitan County Council Archaeology Service Archaeological Technician (Finds)
- 1990 *Member Institute of Field Archaeologists*
- 1987-present Bedfordshire County Council, Archaeology Service Artefacts Manager (Ceramics)
- 1992 *Awarded M Phil Leeds Univ. "The archaeological evidence for the character and use of Medieval pottery in the lowland region of West Yorkshire"*

Anthony Maull

Responsible for structural analysis

Tasks A1-8, 11, 19, 20

1976-1979	Excavator for Leicester Museums Service
1979-	Excavator at Tintern Abbey for Welsh Office
1979-1980	Supervisor for Trent Valley Archaeological Trust
1981-	Supervisor for Northampton Development Corporation
1981-1984	Excavator for Central Excavation Unit (English Heritage)
1984-85	Grove Priory Bedfordshire County Council, experienced excavator
1985	Supervisor Winchester City Council
1986-	Assistant Field Officer, Bedfordshire Archaeology Service
1994	<i>Certificate in British Archaeology, University of Birmingham December 1994</i>

Cecily Marshall BA, MAAIS

Responsible for draughting and supervision of drawing staff.

Tasks A9, 14, 16, B5, 8, C13, 23, 24, 29

1974-77	BA (Hons) Illustration II(ii) Bristol Polytechnic
1978-79	Museum of London
1980-83	Western Archaeological Trust Bristol, draughts person.
1983-84	Cambridgeshire County Council, draughts person
1985	<i>Member Association Archaeological Illustrators & Surveyors</i>
1985-89	Freelance illustrator (incl Northamptonshire Archaeology Unit, Univ Camb)
1989-	Bedfordshire County Council Archaeology Service. Archaeological Illustrator

Ed McSloy BA, Finds Supervisor

Responsible for flint cataloguing and general assistance with artefact analysis

Tasks B1-3, 7, 14

1987-90	BA Hons History & Archaeology, Winchester
1990	Site Assistant, Stansted Airport (Essex CC)
1991	Site Assistant, Trust for Lincolnshire Arch
1991	Site Assistant, High Street, Chester, Grosvenor Museum
1991-4	Field Technician, Bedfordshire Arch Service
1994-	Finds Supervisor, Bedfordshire Arch Service

External specialist input and advice will be obtained from:

Non Ceramics Analysis	Peter Guest (coins)	PG
	Quita Mould (leather work)	QM
	David Williams (petrology)	DW
	Rowena Gale (wood species identification)	RG
	Carole Morris (wooden objects)	CM
	Richard Durrah (wood structures & hurdles)	RD
	Robin Holgate (flint)	RH
Ceramics Analysis	Yvonne Parminter (R-B pottery)	YP
	Brenda Dickinson (samian)	BD
	Alan Vince (ceramic petrology)	AV
	M S Tite (TL dating)	MT
Ecofactual Data	Mark Robinson (plant macros)	MR
	Richard McPhail (soil micromorphology)	RMc
	Tony Roberts (animal bone)	AR
Human bone	Terry Jackman	TAJ

11.3.1 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 between 1995 and 1998 using the facilities of St Mary's Archaeology Centre.

The project will benefit from the involvement of staff working principally within the same building and the approach to management will be essentially team based with frequent opportunities for discussion and integration. Other in-house staff will include Cecily Marshall, Archaeological Illustrator and a Finds Supervisor. 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 both the overall Gantt Chart for the Project Programme as well as those related to individual aspects of the project.

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

11.3.2 Management tasks (Tasks A21, 22, B15, C32)

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 will appear as separate entries in the project task list. 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 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.

11.4 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 Warren Villas post excavation project will be carried out.

11.5 Material costs and capital expenditure

The Warren Villas project will involve database maintenance and report preparation and will require extensive use of a desktop computer by ceramics, structural and non-ceramics analysis. A word processing facility is essential in the preparation of the draft texts prior to publication. To provide equipment that will be used in the analysis of the database the purchase of a new PC is proposed.

The purchase of a PC will comprise:

486 DX50 8 Mb RAM, 270 Mb HDD, 14" SVGA monitor, 8Mb RAM 420 HDD, NE2000 compatible cards (16 bit).

HP Deskjet 540 Printer

Software MS-Office 4.3

Materials to support the analysis process are costed in Table 12.7

13.6 The Project Programme

Part 1 June 1995 - May 1996

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 in June 1995. 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 in late January and early May 1996.

It is clear from experience of post excavation analysis that many more questions can be addressed in the final publication than emerge during the assessment stage. One of the major advantages of the long approach to the confirmation of the phasing is that any changes in emphasis can be planned for and included in the programme.

Part 2 Nov 1996 - April 1998

Publication Report The integration of all data into the phasing will take place during 1996 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 January/May 1998

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 and once this is in the hands of the publisher.

12 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 and refer to current prices. It should be noted that the Archaeology Service is currently undergoing restructuring and some rates, particularly for assistants, may change.

Table 12.1 Costs of structural analysis

Task no	Description	Days	Rate	Staff	Cost £
A1	Confirmation of structural groups	41	82.00	AM	3362.00
A2	Confirmation of landscape groups				
A3	Database update and plan digitising	4	82.00	AM	328.00
		18	82.00	Asst	1476.00
A4	Confirmation of phasing	12	82.00	AM	984.00
		1	102.00	MD	102.00
A5	Circulation to specialists	1	82.00	AM	82.00
A6	Research for comparative data	8	82.00	AM	656.00
		8	102.00	MD	816.00
A7	Analysis of structural data for technical report	5	82.00	AM	410.00
A8	Draft technical report	8	82.00	AM	656.00
		4	102.00	MD	408.00
A9	Illustration	45	83.00	CAM	3735.00
A10	Liaison with specialists	4	102.00	MD	408.00
A11	Integration of structural, artefactual and ecofactual data	11	82.00	AM	902.00
		11	102.00	MD	1122.00
A12	Research for comparative data	20	102.00	MD	2040.00
		1	82.00	AM	82.00
A13	Draft integrated synthesis	25	102.00	MD	2550.00
A14	Mock ups	8	83.00	CAM	664.00
A15	Text to HBMC referee				
A16	Paste ups	8	83.00	CAM	664.00
A17	Captions and checking	5	102.00	MD	1010.00
		3	83.00	CAM	249.00
A18	Editing and cross referencing	6	102.00	MD	1224.00
		6	102.00	Prof Editor	
A19	Creation paper archive	4	82.00	AM	328.00
A20	Transfer archive	4	82.00	AM	328.00
A21	Management time	15	102.00	MD	1530.00
A22	Monitoring meetings	3.5	102.00	MD	357.00
Total					26473.00

Table 12.2 Costs of ceramic analysis

Task Number	Description	Days	Rate	Staff	Cost £
B1.1	Type confirmation	2	100.00	YP	200.00
		3	63.00	EM	189.00
B1.2	Thin sections (x20samples)		30.00	AV	600.00
B1.3	Thermoluminescence (x2 samples)		250.00	MT	500.00
B2.1	Quantification	5	100.00	YP	500.00
B2.2	Beds Type Series	5	99.00	AMS	495.00
		5	63.00	EM	315.00
B3	Database manipulation	5	63.00	EM	315.00
B4	Liaison (phasing)	2	100.00	YP	200.00
		10	99.00	AMS	990.00
B5	Distributions	2	99.00	AMS	198.00
		1	100.00	YP	100.00
		10	83.00	CAM	830.00
B6	Research	8	100.00	YP	800.00
		7	99.00	AMS	693.00
B7	Analysis	5	99.00	AMS	495.00
		15	100.00	YP	1500.00
		5	63.00	EM	315.00
		2	100.00	BD	200.00
B8.1	Drawing	10	83.00	CAM	830.00
B8.2	Checking	1	99.00	AMS	99.00
B8.3	Paste-ups	1	83.00	CAM	83.00
B9	Correlation of specialist reports	2	99.00	AMS	198.00
B10	Draft technical text	10	100.00	YP	1000.00
		10	63.00	EM	630.00
B11	Liaison (integration)	10	99.00	AMS	990.00
B12	Draft integrated synthesis	20	99.00	AMS	1980.00
B13	Editing	5	99.00	AMS	495.00
B14.1	Ordering the archive	1	99.00	AMS	99.00
B14.2	Illustrated pottery	3	63.00	EM	189.00
B14.3	Box lists	1	63.00	EM	63.00
B14.4	Transfer	0.25	63.00	Driver	15.75
B15.1	Monitoring meetings	2	99.00	AMS	198.00
B15.2	Management	5	99.00	AMS	495.00
	Travel:				
	Northampton (40mls)				26.00
	Aylesbury (80mls)				52.00
	Cambridge (30mls)				19.50
	Portsmouth(250mls)				162.50
	Oxford (104mls)				67.60
	St Albans (BR)				7.00
	Hertford (80mls)				52.00
	Milton Keynes (35mls)				23.00
	Llanfechain (290mls) [three journeys]				565.00
	Leeds (300mls)				195.00
Total					17969.35

Table 12.3 Costs of Registered and non-ceramic bulk artefacts

Task	Description	Days	Rate	Staff	Cost £
	<i>Full name identification</i>				
C1	Full name identification - in-house registered artefacts	4	99.00	HBD	396.00
C2	Full name identification - coinage	1	107.00	PG	107.00
C3	Full name identification - leatherwork	1	107.00	QM	107.00
C4	Full name identification and report- petrology	1	EH	DW	0.00
C5	Full name identification of remaining 10 samples - wood species	1	107.00	RG	107.00
C6	Full name identification - wood objects	4	100.00	CM	400.00
		2	100.00	RD	200.00
C7	Liaison with external specialists	4	99.00	HBD	396.00
C8	Full name identification - flint assemblage	4	63.00	EM	252.00
		1	100.00	RH	100.00
C9	Full name identification - nails	0.25	99.00	HBD	24.75
C10	Up-dating artefact databases	2	99.00	HBD	198.00
C11	Phasing Liaison	10	99.00	HBD	990.00
C12	Dissemination of information to external specialists	2	99.00	HBD	198.00
C13	Distribution plots	5	83.00	CAM	415.00
C14	Liaison meeting for wood assemblage	2	100.00	RD	200.00
		2	107.00	RG	214.00
		2	100.00	CM	200.00
		2	99.00	HBD	198.00
	<i>Specialist Reports</i>				
C15	Specialist report - coinage	1	107.00	PG	107.00
C16	Specialist report - leatherwork	2	107.00	QM	214.00
C17	Specialist report - wood objects	2	100.00	CM	200.00
		1	100.00	RD	100.00
C18	Specialist report - structural wood	4	100.00	RD	400.00
		7	107.00	RG	749.00
C19	Specialist report - flint	5	63.00	EM	315.00
		1	100.00	RH	100.00
C20	Integration of developer-funded evidence	5	99.00	HBD	495.00
C21	Preparation of technical catalogue	15	99.00	HBD	1485.00
	<i>Illustration</i>				
C22	Selection of objects for illustration	2	99.00	HBD	198.00
C23	Illustration, including liaison with artefact analyst	45	83.00	CAM	3735.00
		3	99.00	HBD	297.00
C24	Mock-ups of figures	3	83.00	CAM	249.00
C25	Synthesis and discussion of artefact assemblage	15	99.00	HBD	1485.00
C26	Integration of analysed datasets	10	99.00	HBD	990.00
	<i>Preparation of integrated text</i>				
C27	Draft integrated text	20	99.00	HBD	1980.00
C28	Cross-referencing, editing and proof-reading	5	99.00	HBD	495.00
C29	Paste-ups	5	83.00	CAM	415.00
C30	Captions and checking of paste-ups	3	99.00	HBD	297.00
C31	Archive preparation	5	99.00	HBD	495.00
		3	63.00	EM	189.00
C32	Project Management	8.5	99.00	HBD	841.50
	Transportation				
	Burwell - Bedford rtn; 4 journeys of 86 miles		20p@mi		68.80
	Hodnet - Bedford rtn; 4 journeys of 250 miles		35p@mi		350.00
	Andover - Bedford rtn; 3 journeys of 200 miles		40p@mi		240.00
	Dunmow - Bedford rtn; 1 journey of 104 miles		40p@mi		41.60
	TOTAL				21234.65

12.4 Cost of plant macro fossil analysis

Task number	Description	Days	Rate	Specialist	Costs £
D1	Roman plough soil	-			
D2	Floodplain sequence	20	57.00	Tech Univ Mus	1140.00
D3	Rich carbonised deposits	20	57.00	Tech Univ Mus	1140.00
D4	Roman waterlogged deposits	40	57.00	Tech Univ Mus	2280.00
D5	Medieval deposits	50	57.00	Tech Univ Mus	2850.00
Total					7410.00

Table 12.5 Costs of animal bone analysis

Task No	Description	Days	Rate	Specialist	Costs
F1 & F2	Recording	15	85.00	AR	1275.00
F3	Integration meeting	1	85.00	AR	85.00
F4	Synthesis & written report	15	85.00	AR	1275.00
Total					2635.00

Table 12.6 Costs of human bone analysis

Cremations

Task number	Description	Days	Rate	Specialist	Costs
G1	Sort, examination and identification	0.5	65.00	TJ	33.00
G2	Report writing	1	65.00	TJ	65.00
G3	Academic liaison	1	65.00	AS	65.00
		1		TJ	65.00
G4	Liaison with project staff	05	65.00	TJ	33.00
Total					261.00

Inhumation

Task number	Description	Days	Rate	Specialist	Costs
H1	Washing	1	65.00	TJ	65.00
H2	Recording	1	65.00	TJ	65.00
H3	Photography			Photographer	10.00
H4	X-ray			Radiographer	22.50
H5	Liaison	1	65.00	TJ	65.00
H6	Report	1	65.00	TJ	65.00
Total					292.50

Table 12.7 Materials cost for in house analysis

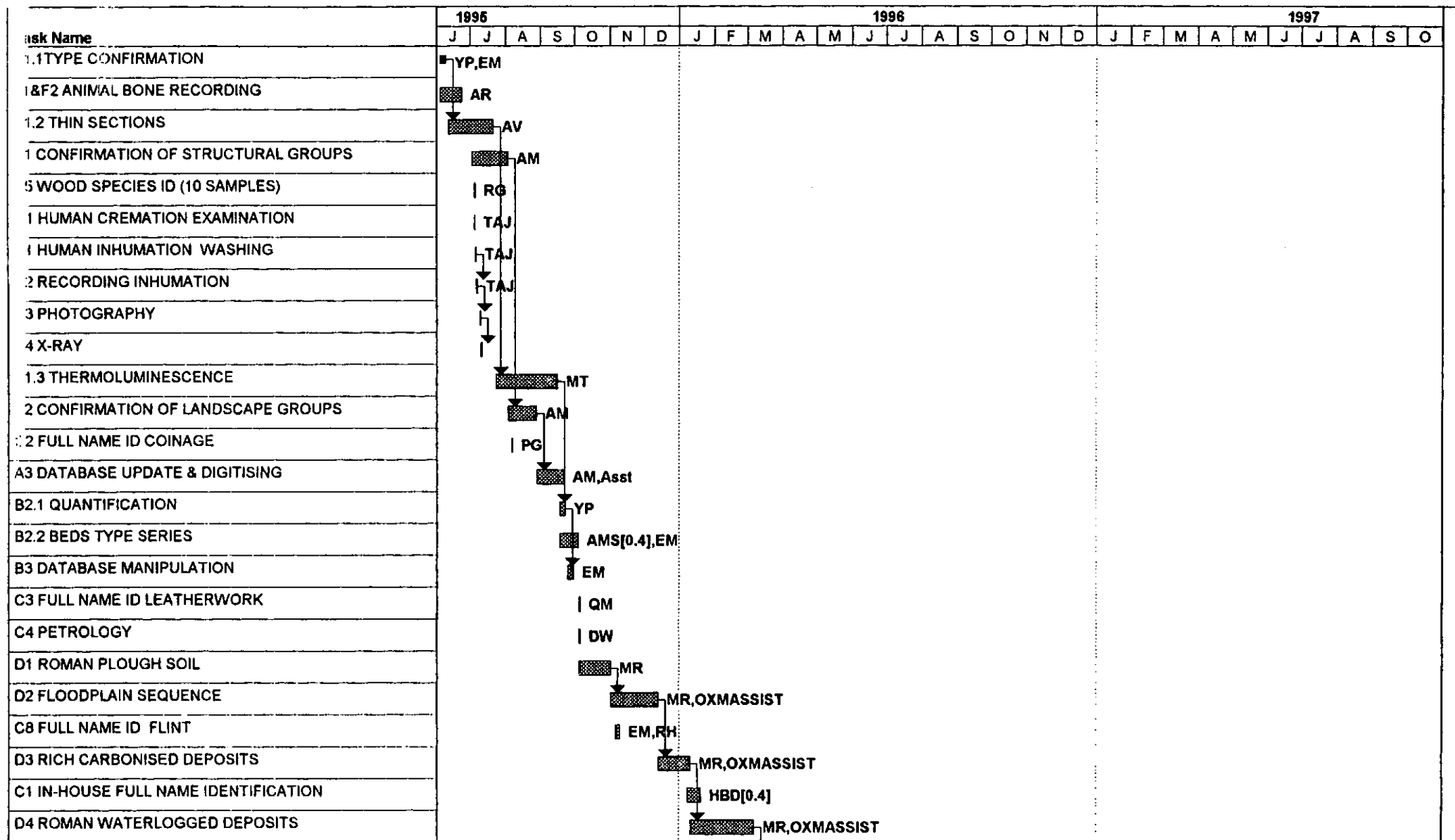
Task number	Description	Costs
A1-20	Stationery	78.75
	Digitising materials	75.00
B1-15		95.00
C1-32		70.00
Total		318.75

Table 12.8 Capital expenditure

Task number	Description	Costs £
All areas	486 DX50	989.00
	HP 4L Laserjet	357.00
	Software MS-Office 4.3 (Extra Licence)	60.00
Total		1406.00

Table 12.7 Summary of project costs

Tasks	Description	Costs £
A1 - A22	Contextual/structural analysis	26,473.00
B1 - B15	Ceramics analysis	17,969.35
C1 - 32	Registered artefacts	21,234.65
D1-5	Plant macrofossil analysis	7410.00
E (no cost implications)	Soil Micromorphology analysis	
F1 - F4	Animal bone analysis	2,635.00
G1 - G4	Cremation analysis	261.00
H1 - H6	Inhumation analysis	292.50
	Material costs	318.75
	Overheads @ 15%	11,489.14
Capital expenditure		1,406.00
Total		89,489.39



Project: WARREN VILLAS I (EH)
Date: 11/04/95

Task

Progress

Milestone



Summary

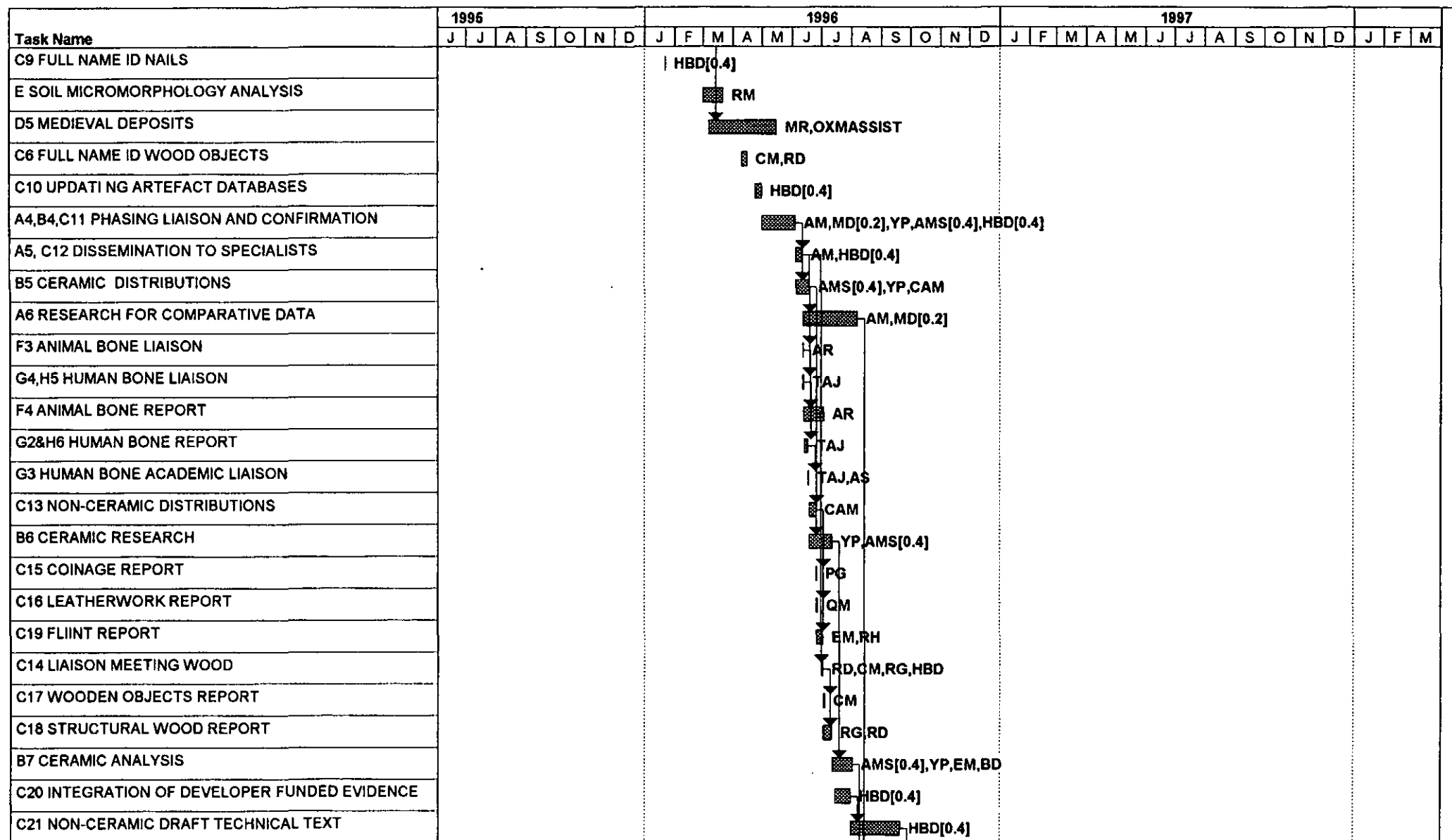
Rolled Up Task

Rolled Up Milestone



Rolled Up Progress





Project: WARREN VILLAS I (EH)
Date: 11/04/95

Task

Progress

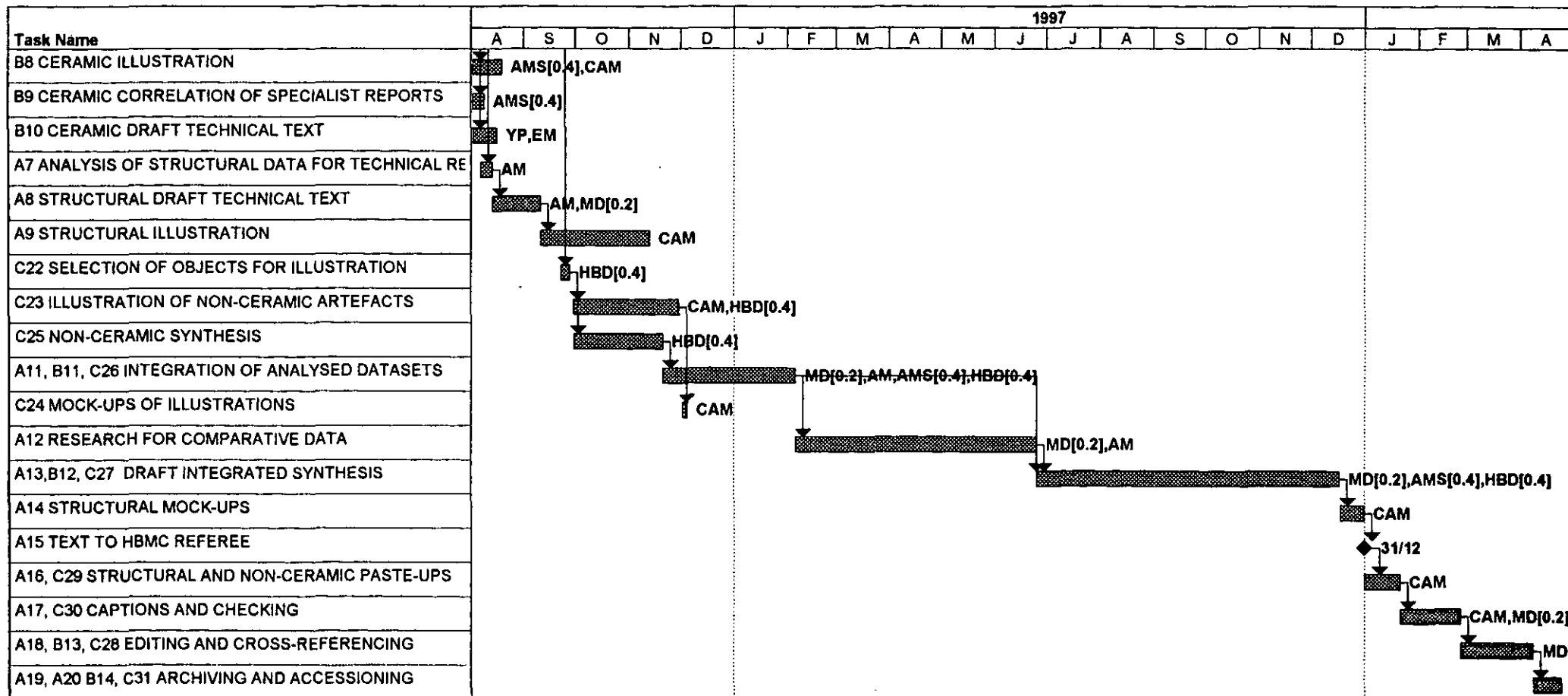
Milestone

Summary

Rolled Up Task

Rolled Up Milestone

Rolled Up Progress



Project: WARREN VILLAS I (EH)
Date: 11/04/95

Task

Progress

Milestone

Summary

Rolled Up Task

Rolled Up Milestone

Rolled Up Progress

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