The Meeting Room Extension, St Martin of Tours Church, Church Road,

Chelsfield, Orpington,

London Borough of Bromley

A POST EXCAVATION ARCHAEOLOGICAL ASSESSMENT REPORT

COMPASS ARCHAEOLOGY

February 2007

ST MARTIN OF TOURS CHURCH,
CHURCH ROAD,
CHELSFIELD, ORPINGTON,
LONDON BOROUGH OF BROMLEY.

A POST EXCAVATION ARCHAEOLOGICAL ASSESSMENT REPORT

SITE CODE: MTC 06

NGR: TQ 4795 6402

PLANNING REF: DC/00/03405/FULL1

COMPASS ARCHAEOLOGY LIMITED
5-7 Southwark Street
London SE 1 1RQ

Telephone: 020 7403 9660
Facsimile: 020 7403 9661
mail@compassarchaeology.co.uk

February 2007

Abstract

This report details the results of a multi-phased archaeological project involving excavation, preservation in situ and watching brief works undertaken between March and June 2006 by Compass Archaeology within the churchyard of the Church of St Martin of Tours, Chelsfield, London Borough of Bromley. In total 135 medieval and post-medieval burials were recorded and 116 skeletons assessed. The works were commissioned by the PCC of the Church of St Martin of Tours, Chelsfield. The archaeological work was required in advance of the construction of a single storey extension on land within the historic graveyard and on the northern side of the nave wall of the church. The excavation followed on from the partial evaluation of the site by the Orpington and District Archaeological Society in 2001. Faculty had been granted for the development of this site, as had full planning permission (Planning Ref: DC/00/03405/FULL1) subject to certain conditions.

In consultation with English Heritage the project formed a combined programme of excavation and the preservation in situ of buried archaeological deposits, including human burials on this site. The project followed a complex multi-phase design, which in summary, principally involved two distinct phases of excavation, each followed by a comprehensive on-site review by English Heritage and the Diocesan Archaeological Advisor. The project also incorporated phases of foundation redesign to minimise the impact on areas of known archaeological deposits as they became apparent and a final phase of a watching brief and excavation.

The archaeological fieldwork was carried out in accordance with current guidance on best practice for burial archaeology and in close consultation with English Heritage, who were consulted at every stage of the project and whose advice was implemented on-site.

This document forms the Phase 3 Assessment report, as outlined in MAP2, which states the academic potential of the data in the site archive and forms an updated project design, which sets out whether further work is considered necessary to fulfil this academic potential. This MAP 2 assessment refers solely to archaeological works carried out by Compass Archaeology Ltd.; the Church additionally appointed their own independent human osteologist, Kate Brayne of the Rudyard Consultancy. The osteological report is presented as an appendix to this report and the results of this report are analysed and incorporated into this MAP 2 assessment where they inform on the archaeological assessment.

Contents page

List of figures

Appendices

1. Introduction

This report details the results of a multi-phased archaeological project involving excavation, preservation *in situ* and watching brief works undertaken between March and June 2006, by Compass Archaeology, within part of the churchyard of the Church of St Martin of Tours, Chelsfield, London Borough of Bromley. The works were commissioned by the PCC of the Church.

The archaeological work was required in advance of the construction of a single storey meeting room extension to the church, on land within the historic graveyard and located on the northern side of the nave wall of the church (see Fig 1). The excavation followed on from the partial evaluation of the site by the Orpington and District Archaeological Society in 2001.

Compass Archaeology were not commissioned to undertake any work in relation to the proposed alterations to the interior of the church or to the church walls in relation to the new extension; this assessment refers to the archaeological work that was required within the footprint of the proposed new church extension building in accordance with the grant of planning permission.

This document forms the Phase 3 Assessment report, as outlined in MAP2, which states the academic potential of the data in the site archive and forms an updated project design, which sets out whether further work is considered necessary to fulfil this academic potential. This MAP 2 assessment refers solely to archaeological works carried out by Compass Archaeology Ltd. and retained external specialists; the Church additionally appointed their own independent human osteologist, Kate Brayne of the Rudyard Consultancy. The osteological report is presented as an appendix to this report and the results of this report are analysed and incorporated into this MAP 2 assessment.

2. Acknowledgements

Compass Archaeology is grateful to the PCC of the Church of St Martin of Tours for funding the archaeological excavation and report and to the following individuals:

Bobby Lawes, Church Warden
Canon Lesley Virgo, Rector
The Bishop of Tonbridge, the Rt. Rev. Dr Brian Castle
Mark Stevenson, English Heritage Greater London Archaeology Advisory Service
Jane Sidell, English Heritage Archaeological Science Advisor
Ken Whittaker, Diocesan Advisory Committee (Archaeological Advisor)
Adrian Cox, Adrian Cox Associates
Elaine Wren, Clague Architects
Colin Reid, Compass Archaeology, stratigraphic analysis
Kate Brayne, Human Osteologist, the Rudyard Consultancy
The members of the Orpington and District Archaeological Society and in particular, Dr Alan Hart and Mrs Brenda Rogers
Hilary Major, metalwork analysis
Paul Blinkhorn, pottery analysis
Bill Yendall, metal detecting.

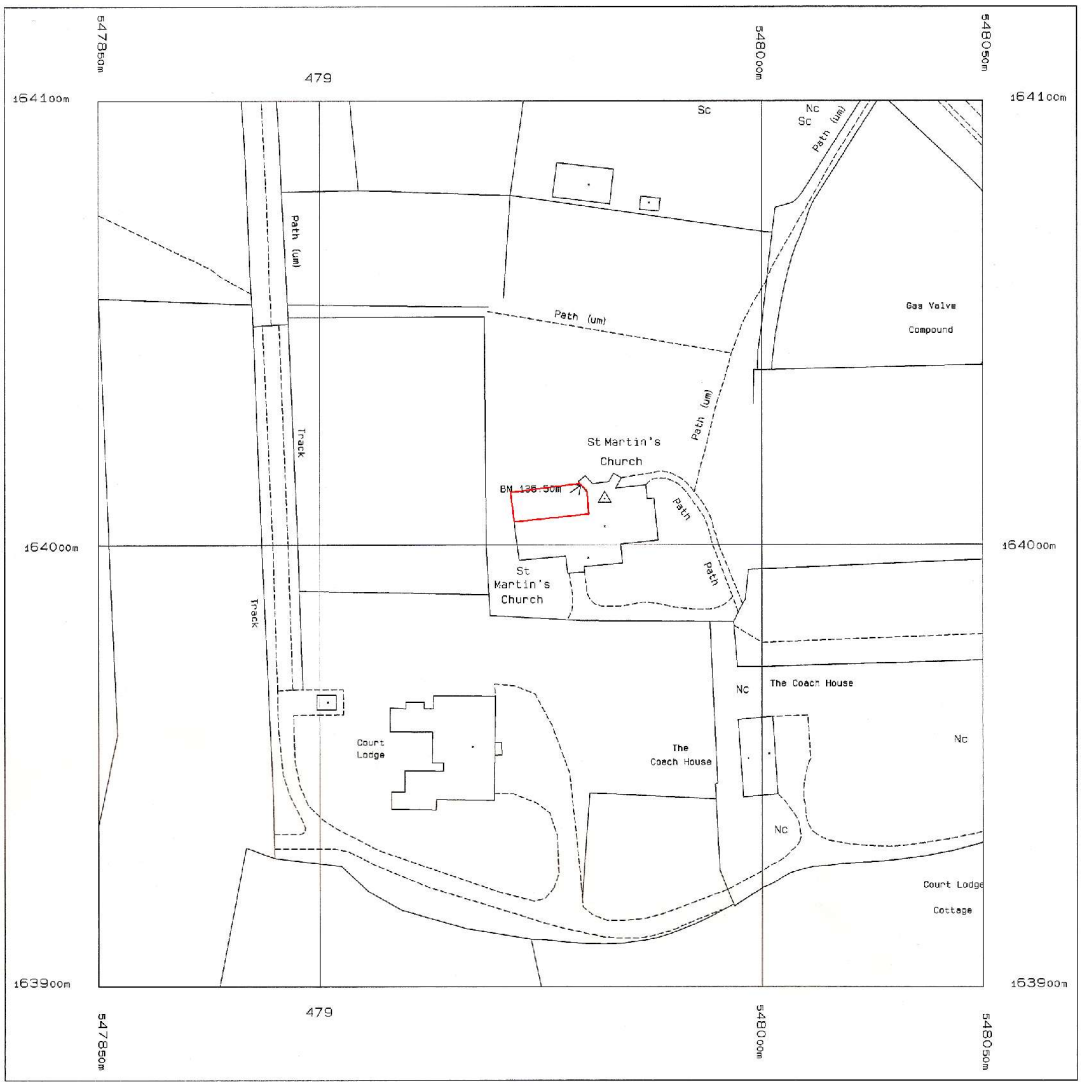

Fig 1 Site location, showing the footprint of the proposed extension, and thus the area of archaeological investigation, outlined in red.

Reproduced from the Ordnance Survey Superplan 1:1250 with the permission of the Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office © Crown Copyright (Compass Archaeology Ltd, 5-7 Southwark Street, London SE1 1RQ).

3. Site Background

3.1 The Planning Position

Faculty had been granted for the proposed development works, as had planning permission (Planning Ref: DC/00/03405/FULL1) subject to certain conditions. Condition 9 of the permission stated:

'*Unless otherwise agreed in writing by or on behalf of the Local Planning Authority, no part of the development hereby permitted shall take place within the application site until the applicant has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation by an archaeological organisation approved in writing by or on behalf of the Local Planning Authority. Access shall be permitted to the site at all reasonable times for the carrying out of investigations including making necessary records of items of interest and finds*'. The permission also notes that '*The site is of archaeological interest and detailed investigations should be undertaken to enable consideration to be given to preservation in situ and/or recording of items of interest in compliance with Policy E.9 of the Unitary Development Plan'*.

In the absence of a project brief[1] and in response to consultation by the Parochial Church Council (a meeting was held at English Heritage's offices on Wednesday 22nd February 2006), English Heritage recommended that a phased approach should be applied to this project and that the initial phase should be an additional phase of further evaluation of the site (following on from the evaluation by the Orpington and District Archaeological society in 2001), it was agreed that the results of this would lead to further archaeological mitigation options being considered and the approved works carrying on immediately on site. Compass Archaeology drew up a written scheme of investigation (WSI) for the second evaluation (denoted Phase I) and this was submitted to English Heritage and approved by them in writing, on behalf of the Local Planning Authority, on 24th March 2006[2]. Working with English Heritage the project planning comprised a flexible approach, including mitigation strategies to minimise the disturbance of remains; which is a specific consideration of the current guidance on burial archaeology (2005)[3].

[1] Mays, S. 2005 'Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England' Church of England and English Heritage. Paragraphs 46, Annexe S2, 211
[2] King, G. (March 2006) 'St Martin of Tours Church, Church Road, Chelsfield, Orpington, London Borough of Bromley. Specification for an Archaeological Excavation Phase I' Compass Archaeology in-house report.
[3] Mays, S. 2005, paragraph 38, p11.

The evaluation began on Monday 24th March and following the positive results of this evaluation and further consultation with English Heritage the work progressed to an excavation phase of the groundbeam and pile locations, and a second written scheme of investigation (WSI) for this further phase of work was submitted in April 2006[4]. English Heritage approved this second WSI in writing on 7th April 2006.

The two written schemes were drawn up in accordance with current English Heritage guidelines (in particular, *Standards and Practices in Archaeological Fieldwork, Guidance Paper 3*) and in order to ensure that the Compass Archaeology field and post-excavation work would be carried out in accordance with the standards of the Institute of Field Archaeologists and the requirements of MAP 2[5].

The WSI's were also drawn up with reference to the current Church of England and English Heritage guidance paper 'Guidance on best practice for treatment of human remains excavated from Christian burial grounds in England', by the Association of Diocesan and Cathedral Archaeologists dated 2005 and this assessment document should be read in conjunction with this guidance paper[6].

The WSI's referred solely to archaeological works carried out by Compass Archaeology Ltd and this report forms the MAP 2 post-excavation assessment report'. This report will set out a programme of post excavation works through to completion of a 'Full Report' and 'Publication' of the findings, if necessary.

3.2 The Legal Position

The Law and Burial Archaeology

The consecration of land according to rites and ceremonies of the Church of England usually has the effect of bringing it and everything in it or on it within the Ecclesiastical Jurisdiction of Faculty. The on-site archaeological works were carried out under the terms of the Faculty, although the Church had to seek a dispensation on the Faculty for the post-excavation osteological elements of the project.

[4] King, G. (April 2006) 'St Martin of Tours Church, Church Road, Chelsfield, Orpington, London Borough of Bromley. Specification for an Archaeological Excavation Phase II' Compass Archaeology in-house report.
[5] English Heritage, 1991 'The Management of Archaeological Projects 2'.
[6] Mays, S. 2005 'Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England' Church of England and English Heritage. This document amalgamates earlier guidance such as 'Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England'; the Association of Diocesan and Cathedral Archaeologists Guidance Note 1, 2004; 'Archaeological requirements for work on churches and churchyards' English Heritage and the Council for the Care of Churches 2004 and the findings of the 'Church Archaeology Human Remains Working Group Report'. www.cofe.anglican.org/news/prt1205.html (see also bibliography).

The current situation (2005) with regard to the law and burial archaeology is detailed in the English Heritage Guidance Paper and will not be repeated here, however, the following general points are noted for reference to this project[7]. Currently, the law relating to human remains is complex, and most of it was not drafted with archaeological work in mind[8]. Government policy, outlined in Planning Policy Guidance (PPG) 16: Archaeology and Planning, is that archaeological remains should not be 'needlessly or thoughtlessly destroyed'. In making decisions within the planning system, when development of a site is proposed the acknowledged desirability of preserving archaeological remains is weighed against the likely benefits of the proposed new use of the site. There is no specific provision for human remains in PPG16[9].

Personal items, coffin furniture and finds from burial contexts

The law with regard to personal items found within graves is also interpretive and given the nature of Christian burial practice, grave finds generally consist of coffin fittings or shroud pins rather than personal possessions of the deceased, although these may on occasion be found. There is no theological position on the long-term fate of coffin fittings and other grave furnishings. In Christian theology, interred personal items have no import for the afterlife of the deceased, but one of the project aims was to treat clothing and personal possessions discovered in burial deposits which have obviously been buried with the individual and may well have had some sentimental attachment to them, differently from aspects of grave or coffin structure such as shroud pins, wood fragments, nails or coffin handles. However, the excavation works did not in this instance uncover any sensitive personal items in association with the burials[10].

The relevant guidance states that 'if any human remains are to be left *in situ* [as is the case on this site] on a site where development is to take place, care is needed in order that the procedure complies with relevant legislation[11]. The Church ensured that the contractors' methodology accommodated the protection of *in situ* remains within the development scheme.

The reinterrment of human remains

When the disturbance of human remains on land under Church of England jurisdiction is required, to make way for building development or other works, the Church, like the secular planning system, is required to balance the need to disturb remains against the perceived benefits of a new development. The law of the Church of England is protective and encompasses a presumption against disturbance, and any disturbed remains should be reinterred in consecrated ground as close as possible to their original resting place within a specified

[7] Mays, S. 2005, p8 following and annexe L1, 17.
[8] Mays 2005, p 6.
[9] Mays 2005, 40 p11.
[10] Mays 2005, 15 and 78
[11] *ibid* p38 222 and Annexe LI

time, even when a period of research is allowed. Pastoral issues are also more prominent, as public sensitivities tend to be greater when remains from churches or churchyards in active use are exhumed than in excavations of disused burial grounds[12]. The burials from this project were reinterred by the Church, within the consecrated area of the graveyard, on 22nd December 2006. The reinterrment was accompanied by a church service conducted by the Bishop of Tonbridge, the Rt. Rev. Dr Brian Castle.

The project written scheme of investigation clearly stated that the '*project design does not include carrying out the reinterrment works, which will be undertaken by the Church, using their appointed officers*', while adding that '*the methodology for the reinterrment of the human remains must, however, include provision for normal archaeological procedures for identifying, cleaning and recording burials, which will ensure due care and respect and be in accordance with current guidance*', the written scheme did also originally state that '*Skeletons will be bagged separately and placed in the pit(s) as individuals rather than intermingled*'[13].

3.3 Historical Background

The church of St Martin of Tours is in the early English style and probably has its origins in the twelfth century. Historical records for the church that currently stands on the site and the surrounding graveyard are now mainly lost.

The Domesday Monachorum is an ancient book in the archives of Canterbury Cathedral. It was compiled on the orders of Archbishop Lanfranc when he came into office in 1070. This book contains a list of churches which paid a 'Chrisom Fee' to their diocesan bishop for the 'consecrated oil' he supplied for use during Christenings. Parishes with a resident priest were listed as Churches and those without a priest were listed as Chapels to the parish where the priest resided. 'Faernberga' (Farnborough) paid 6d as 'Chrisome fee' as a Chapel to Chelsfield. Research has shown that the list in the Domesday Monachorum is a Saxon list, hurriedly found and copied out to meet the instructions of the Archbishop (many churches known to have existed in 1070 are missing). Bishop Gundulf became Bishop of Rochester in 1077 and recorded in his Chronicle that he received the Tithes from both Chelsfield and Farnborough. The Parish of Chelsfield being in the ancient manor of (Ciresfil) Chelsfield. He also recorded that Tithes had been bestowed on the Bishoprick by Arnulf of Chelsfield, who appears in the Domesday Book of 1085 as Arnulf of Hesdin, Lord of the Manors of Chelsfield and Farnborough. In 1085, the income of the Manor of Chelsfield was some twenty times larger than that of the Manor of Farnborough, so Arnulf would have made his headquarters at Chelsfield with his Priest residing there. However, neither Chelsfield nor Farnborough are recorded as having a church in Domesday times[14].

[12] This paragraph extracted from Mays 2005, p31
[13] King, G March 2006, Section **2**. p4.
[14] This paragraph extracted from Farnborough (Kent) Parish History, The Church Guide Book, 2003 author unknown.

It appears that the small parish church of St Martin of Tours is first documented in the Textus Roffensis of 1122; the Textus Roffensis was a collection of legal documents that detailed the laws of King William I of England and recorded ownership of land, etc.[15].

At St Martin of Tours elements of the nave and chancel are probably of at least early Norman date, with later alterations such as the south aisle and square tower being of 13th century date[16]. It is apparent that the church has undergone several other phases of restoration/alteration during its lifetime.

The North West Kent Family History Society (NWKFHS) have searched the original registers for this ancient parish church and it is apparent that parish registers and cemetery registers (baptisms and burial registers) once existed dating from at least 1558, however, further research by NWKFHS shows that now only part of the index survives and unfortunately this does not cover this part of the graveyard[17].

There are detailed parish and manorial records that do survive, but they do not materially inform on the date and location of the grave plots to the north of the nave wall. Geoffrey Copus' 'Chelsfield Chronicles: Annals of a Kentish parish, 1450 – 1920', published in 2003 is perhaps the best local account of the history of Chelsfield parish[18].

Thirteenth century charters and many other references such as census publications (mainly 19th century) survive at Bromley Public Libraries, Local Studies and Archives and at Canterbury Cathedral Archives: Diocese of Canterbury. Several references at Canterbury refer to the church and churchyard (for example Dcb/E/F/Chelsfield, St Martin of Tours 2 (1892) and DcB/E/F/Chelsfield, St Martin of Tours/1 (1893)) however again they do not materially inform on the study area

Farnborough Church's original paper Register in which, apart from the required entries, information was recorded of the change of Kings and Rectors and other interesting facts, is still in existence and this has some references to Chelsfield. For example by 1576, Farnborough Parish and Chelsfield Parish constituted a Combined Benefice, a long-standing arrangement which continued almost to the end of the 19th century. This meant that the revenues of both parishes were paid to the same priest, who was Rector of both Parishes, each having its own Registers, Churchwardens and Parish Officers. George Smith, named here in the Register, was the first of three generations to be Rector of both parishes, being succeeded by his son, George Smith II, and by his grandson, George Smith III, who died in 1650 during the time of the Commonwealth (1640-1660). On his

[15] Hart, A. 2002 Trial excavations in the churchyard of St Martin of Tours, Chelsfield *Archives of the Orpington & District Archaeological Society* **24** (2) 21-31, 2002.
[16] Newman, J. 1969 'West Kent and the Weald' in *The Buildings of England*, Pevsner, N. (ed.) 1969 pp.200-201
[17] Transcript published by NWKFHS (Microfiche Ref. **F7**) on their web-site www.nwkfhs.org.uk/chel_c01.htm.
[18] Geoffrey Copus 2003 'Chelsfield Chronicles: Annals of a Kentish parish, 1450 – 1920'

death, Parliament installed John Montague as Rector of Farnborough and Robert Miller as Rector of Chelsfield. On Charles II's Accession in 1660, all the Acts of the Commonwealth Parliaments were declared non-existent and the two parishes once more became a combined benefice, with its previous patron, and Robert Miller became the Rector of both parishes[19].

As Farnborough was the poorer of the two parishes, the Rectors spent most of their time in Chelsfield, some having left not even a signature in the Parish Registers, the parish work being left to the Curate they had appointed. Thus it reveals that Robert Jegon, who was Curate for many years in the 18th century, recorded in the Parish Register that he had paid the Duty up to date to Thomas Jones, the official collector. This Duty was a Tax which in 1694 was 2 shillings for every birth registered, 4 shillings for each funeral and 2 shillings and 6 pence for each wedding, plus annual tax of 1 shilling on each bachelor and widow living in the parish. The Tax was simplified in 1794, with a charge of 3 pence for every entry in the Church Register.

The Rector in 1753 was Charles Meetkirke who had been presented to the bishop by his cousin Adolphus Meetkirke, who had obtained the Avowson (the right to present a new Rector to the parish when the living became vacant) from Thomas Norton, Lord of the Manor of Chelsfield. The Avowson had been held with the Lordship of the Manor of Chelsfield since the time of the Norman Conquest. Charles Meetkirke was invested in 1751 and succeeded by Adolphus who, soon after, disposed of the right of presentation to All Soul's College, Oxford, who were to provide future incumbents for some time.

John Edward Tarleton became Rector in 1834, and in 1840 a tithe survey was carried out. George William Hingston became Rector in 1876 and over the next few years many changes were to take place. However it was not until 1938, that part of the Farnborough Parish to the south of Shire Lane was detached to form, along with part of the Parishes of Chelsfield and Knockholt, the new Parish of Green Street Green. This was probably the first change in the boundaries of the Parish of Chelsfield since it came into being. The parishes of St.Giles the Abbot Farnborough, St.Mary's Green Street Green, Christchurch Orpington were all formed from lands originally in the Parish of Chelsfield. In the 19th century it stretched from Horns Green Cudham in the South West, Richmore Hill and Birthday Wood Halstead in the South East, Godrington Manor (Avalon Road) in the North and The Green Farnborough in the West.

In 1848 the parish contained 1541 inhabitants and comprised 4692 acres, of which 578 are woodland. The living was a rectory, valued in the king's books at £24. 14. 2., and in the patronage of All Souls' College, Oxford: the tithes were commuted for £820, and the glebe comprised 53 acres, with a glebe-house[20].

[19] This paragraph and the following four are extracted from Farnborough (Kent) Parish History, The Church Guide Book, 2003 author unknown.
[20] From 'Chedgrave - Cheltenham', A Topographical Dictionary of England (1848), pp. 562-69. http://www.british-history.ac.uk/report

Geoffrey Copus in his Local History Researches of Chelsfield has done extensive research into the wills of Chelsfield parishioners and has studied all the Chelsfield wills in the Prerogative Court of Canterbury and indexed in the National Archives (formerly the Public Record Office) he has studied 115 wills in the period 1383-1858 for Chelsfield. The testators range widely across the social scene, at the top end are Lords of the Manor, wealthy 18th and 19th century Rectors and well-off landowners, while at the other extreme are wills of farm labourers. The value of wills to family historians is of course enormous, and a complex network of relationships in the parish shows up well in the many wills of yeomen and small farmers[21]. Many of these individuals are buried in the graveyard of St Martin of Tours Church.

In 1926 the Orpington by-pass was constructed which effectively separated the church from the village of Chelsfield. This isolation of the church has meant that it is desirable to have good communal facilities on the church site and the new extension would provide a meeting room and toilet and kitchen facilities. This would enable the church to provide hot meals and other practical assistance to members of the community (see Figure 2).

3.4 Site Location

The area of proposed redevelopment is a rectangular plot of land to the north of the nave and west of the tower, measuring 17m east-west x 7m north-south, a total area of 119 square metres (Figure 2). This area is part of the historic graveyard and, although there remain no surface indications of burial locations (the area having been cleared of all grave markers at some stage in the past), would most probably have contained some of the earliest burials associated with the church. Existing legible grave markers to the north of the area bear dates from the early 19th century, but earlier burials should be anticipated, primarily because of their proximity to the church but also because many of the surviving graves stones are illegible and may be of much earlier date. Visually the redevelopment area looks disturbed in antiquity, and a build up of banked deposits has formed against the drain on the nave wall. It was anticipated that a significant number of burials would be encountered in this area.

[21] Extracted from an article/discussion on the Kent Archaeological Society website by Geoffrey Copus, November 2005.www.kentarchaeology.org

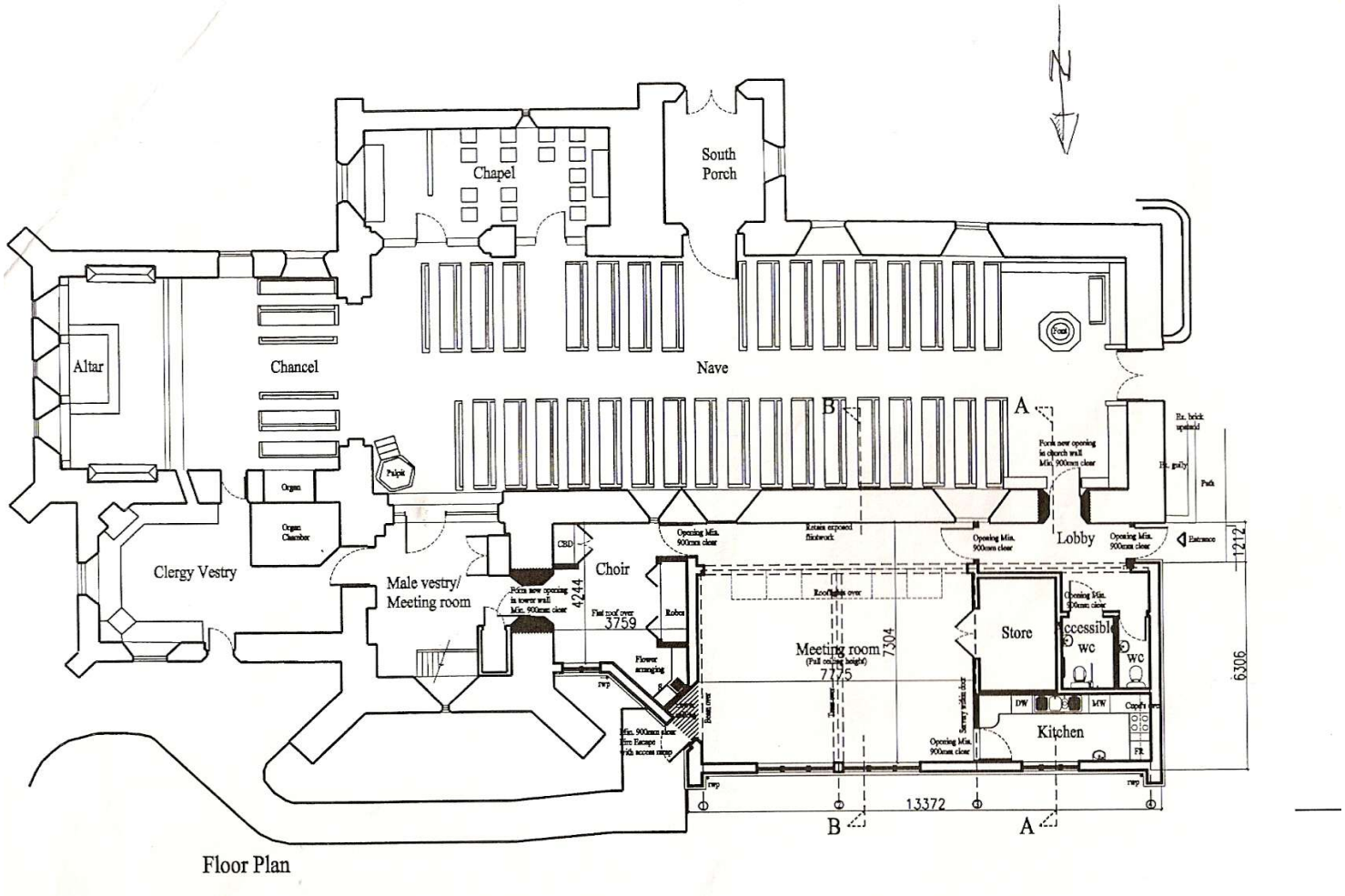

Fig 2 The proposed redevelopment, reproduced from the architects (Clague) drawing 5687A/01 (not to scale). The new extension can be seen to the north of the nave wall. © Clague.

3.5 Geology and topography

St Martin of Tours Church lies on Blackheath Beds (sands and pebbles, and locally clayey,) on ground that gently slopes down to the east. The underlying stratum is Upper Chalk[22]. The plot lies at a height of about 135m OD, and is approximately centered at NGR TQ 4795 6402. A geotechnical investigation has taken place on the site in the form of a trial pit and borehole (annotated TP/BH A on Figure 3) and a further borehole (Borehole 1). Test Pit A was located against the western wall of the bell tower and revealed madeground to a depth of 1.2m (*circa* 133.8m OD), this overlay natural sand (Blackheath Beds) over chalk. Borehole 1 (see Figure 3 for approximate location) revealed only 0.5m of madeground overlying a natural sand-clay-sand profile (Blackheath Beds) to a depth of 4.8m (*circa* 130.2m OD) when natural chalk was encountered. No burial deposits were observed in the two locations.

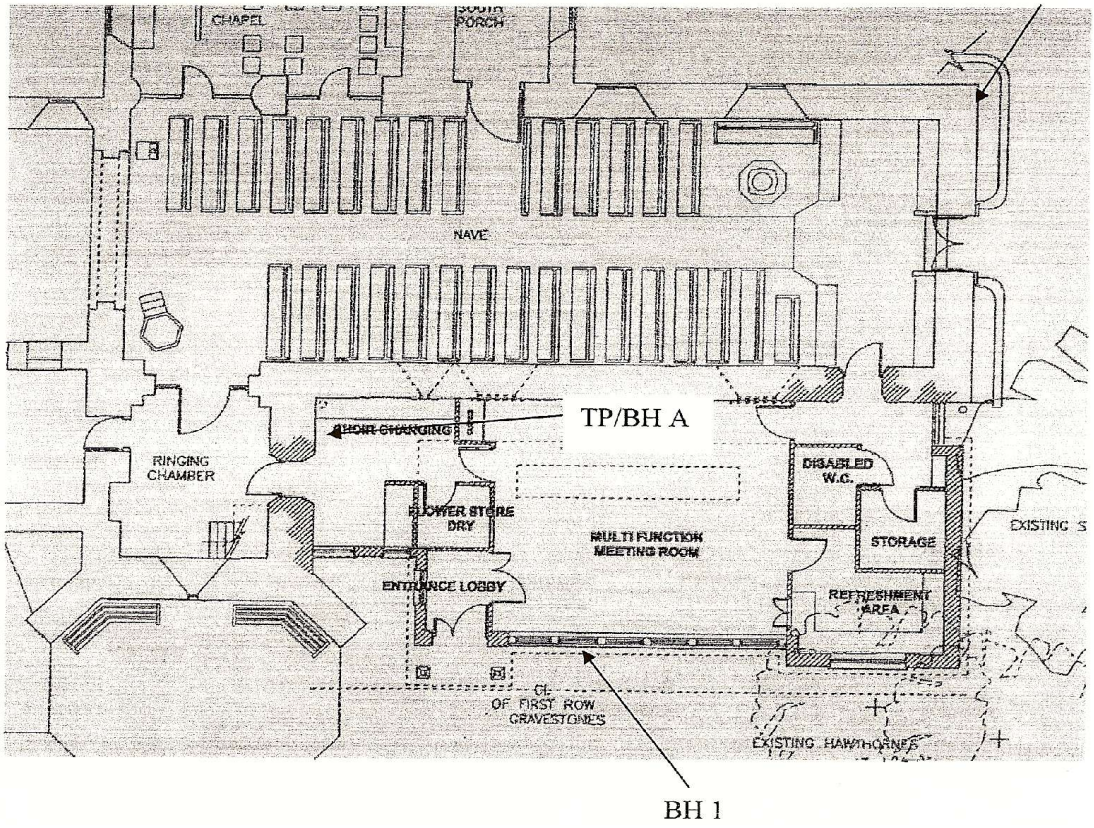

Figure 3 Extract from G L Martin Ltd, Consultant Geotechnical Engineer, Report no. 9054/GLM/csk, showing the location of the geotechnical work (not to scale). © G L Martin Ltd.

[22] British Geological Survey. *Dartford. England and Wales Sheet 271. 1:50,000 series*

4. MAP 2 Project factual data

This section forms the MAP 2 Factual Summary: characterising the quantity and perceived quality of the data contained in the site archive (5.8/5.9). It is also a brief chronological history of the project, showing the relationship of the two.

4.1 Chronological summary of the archaeological works

In consultation with, and following the advice of, English Heritage the project formed a combined programme of excavation and preservation *in situ* of buried archaeological deposits, including human burials on this site. This was confirmed at a project planning meeting at English Heritage's offices on Wednesday 22nd February 2006. The project followed a complex multi-phase design, which in summary, principally involved two distinct phases of excavation, each followed by a comprehensive on-site review by English Heritage and the Diocesan Archaeological Advisor. The project also incorporated phases of foundation redesign to minimize the impact on areas of known archaeological deposits as they became apparent and a final phase of a watching brief of the removal of a brick drain, adjacent to the nave wall, and of the 1m wide strip immediately adjacent to the tower wall footings; followed by full excavation of archaeological deposits affected by the new build in this area.

The archaeological work was carried out in accordance with the aims, objectives and methodology set out in the WSI's for the project[23]. The archaeological work is recorded in this section following the chronological development of the project and each phase is described in the text and by photograph below. Additionally, this assessment report also includes information on the evaluation carried out by the Orpington and District Archaeological Society in 2001 (although the archive for this work will be deposited separately).

Fig 4 Principal members of the ODAS field-team on site 2001, Dr Alan Hart, Site Director, took the photograph.

[23] *ibid* footnote 1 and 2. WSI 1 was approved by English Heritage on 24th March 2006 and WSI 2 on 7th April 2006.

4.2 Brief summary of project phases (to date)

In summary, the combined programme of excavation and preservation *in situ* of buried archaeological deposits, including human burials on this site, involved eleven separate phases of the project, (twelve including the 2001 ODAS evaluation) as follows:

1. Initial evaluation by Compass Archaeology, machine reduction and careful hand archaeological excavation to either the first archaeological horizon or new build formation level (500mm below nave floor level) if possible. This work began on the 20th March and was completed by 5th April 2006.
2. Review by all parties of results of Phase 1, including possible redesign or local adjustment of the foundation proposal to facilitate preservation *in situ* where possible. This review took place on-site with Mark Stevenson and Robert Whytehead of EH on 4th April 2006.
3. Redesign of the foundation layout to minimize groundbeam and pile locations and to relocate lateral beams to accommodate a central area of preservation.
4. Second phase of archaeological excavation, of areas where preservation cannot be achieved (Phase 2). This was in the form of excavation of the groundbeam and pilehole locations. This work began on the 4th April 2006 and was completed on the 25th May 2006.
5. Further minor redesign of the foundation layout to minimize pile locations and to ensure that areas of preservation *in situ* were protected.
6. Review by all parties to assess the level of further on-site work and post-excavation work required on burial deposits and the finds assemblage. This was in the form of an on-site meeting in the nave on 18th May 2006, with the PCC, project team, English Heritage, and the DAC (Archaeological Adviser).
7. Watching brief of the removal of the brick drain, adjacent to the nave wall, and of the 1m wide strip immediately adjacent to the tower wall footings, with adequate provision for archaeological excavation and recording (see Section 4.2.6).
8. Dispensation on Faculty for removal of bone for osteological analysis by the Rudyard Consultancy
9. Preparation of data for Compass Archaeology MAP 2 assessment report and completion of the Rudyard Consultancy human bone assessment.
10. Reinterrment of all human remains within the churchyard of St Martin of Tours.
11. Submission of Compass Archaeology Map 2 assessment report.

4. 3 Detailed chronological framework of the project

4.3.1 Evaluation by ODAS (2001).

The Orpington and District Archaeological Society (ODAS) undertook an archaeological evaluation of the proposed extension area in 2001 and the results were published in May 2002[24]. The evaluation is briefly summarised below, but the ODAS report should be read in conjunction with this specification, as it offers a much more detailed account of the evaluation findings[25].

The evaluation took the form of four small hand dug trial trenches approximately in the four corners of the new build footprint (see Fig 6 for locations). The aim of the evaluation was to determine the presence or absence of burials and to excavate to a depth of 600mm below the nave floor level. The nave floor is calculated to lie at approximately 134.4m OD, therefore the evaluation went to a depth of *circa* 133.8m OD. The brief stated that if any burials were encountered these were to be preserved *in situ* and evaluation was to cease.

© Alan Hart, ODAS

Fig 5 Brenda Rogers beginning excavation of Trial Pit 4.

[24] Hart, A. 2002 Trial excavations in the churchyard of St Martin of Tours, Chelsfield *Archives of the Orpington & District Archaeological Society* **24** (2) 21-31, 2002
[25] *ibid*.

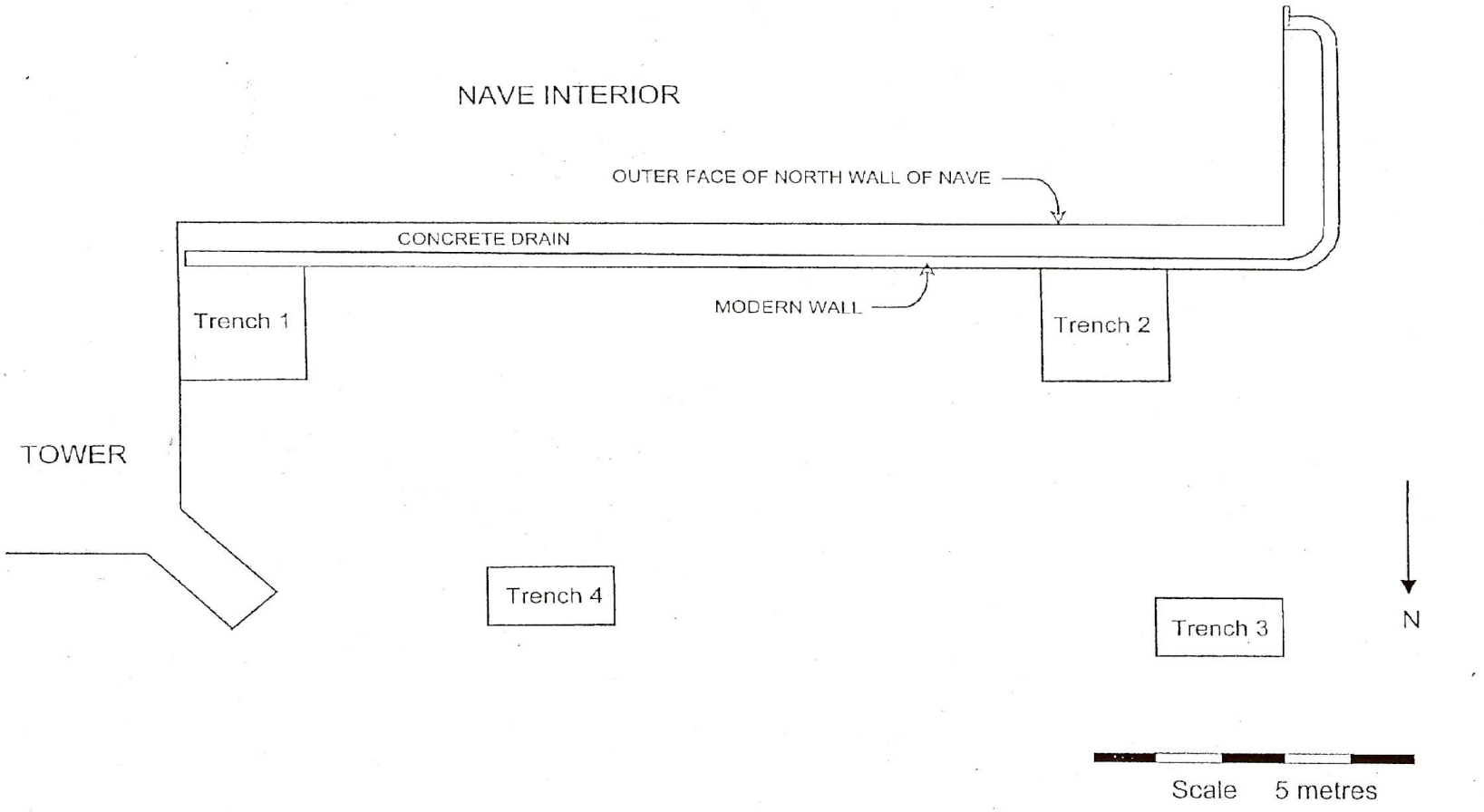

Figure 6 Extract from the ODAS evaluation report, Figure 1, showing the location of the four trial pit trenches of the archaeological evaluation (not to scale).© ODAS.

The results of the four trial trenches are outlined below.

Trench 1 (2m x 2m). This trench was adjacent to the west wall of the tower and appears to have been disturbed to a depth of 1.10m (*circa* 133.9m OD) and below. It contained good information about the construction of the tower wall. No articulated human bone was encountered, but there were many fragments of residual human bone throughout the trench (4.34kg).

© Alan Hart, ODAS

Fig 7 Trench 1, adjacent to the Bell Tower west wall under excavation (looking east). The pipe drain runs from the down pipe adjacent to the nave wall and had to be removed during the ODAS evaluation, however, this led to flooding of the excavation area early on in the 2006 excavations and the drain had to be replaced as the excavation advanced (see Fig 31).

© Alan Hart, ODAS

Fig 8 The west wall of the Bell Tower (looking east), after excavation of Trench 1, showing the medieval foundations.

© *Alan Hart, ODAS*

Fig 9 Trench 1 fully excavated, looking north-east the trench was 1.1m deep and no burials were encountered.

Trench 2 (2m x 2m). This trench was adjacent to the nave wall by the western entrance and contained 500mm of grey sandy soil, which appears to represent dumping from the construction of the modern walled drain. Under this at *circa* 134.5m OD a possible buried turf line was seen, perhaps representing the true pre-drain ground surface. Below this was a brown sandy soil with frequent disarticulated human bone fragments (6.91kg) and possibly two vertical grave cuts. In the southern section of the trench was an undisturbed articulated skeleton at approximately 134.18m OD. The burial was only partly visible in section, but was supine and facing east. There were no traces of a coffin or coffin furniture, no personal items and no convincing grave cut.

© *Alan Hart, ODAS*

Fig 10 Trench 2 under excavation, looking south-west.

Fig 11 Trench 2, fully excavated (looking south-east) and showing skeleton [105] partially visible under the baulk remaining adjacent to the nave wall and under the drain. The black deposit in section was revealed at the excavation stage to be part of a modern drain. The lower deposit is the graveyard subsoil, denoted context [103] in the excavation phases.

Fig 12 Trench 2 looking south towards the nave wall, the brick and concrete drain construction can be seen at the top of the section.

Trench 3 (2m x 1m). This trench was excavated to a depth of 1.2m (*c*. 133.8m OD) and produced three distinct soil profiles. The area was disturbed by an old service run for the original electricity supply to the church. Again disarticulated human bone was discovered throughout the trench (3.14kg). This trench contained finds of post-medieval pottery and medieval roof tile fragments.

© Alan Hart, ODAS

Fig 13 Trench 3 fully excavated (looking north), this trench was less deep as the surface morphology sloped down to the north.

Trench 4 (2m x 1m). This trench produced a similar profile to Trench 3 with distinctly stratified soil profiles and medieval and post-medieval ceramic and tile fragments again quantities of disarticulated human bone were encountered (0.75kg).

© Alan Hart, ODAS

Fig 14 Trench 4 after excavation (looking east), again no burial deposits were evident in this area at the maximum depth of the evaluation.

In summary, therefore the evaluation revealed an overburden layer relating to the construction of the drain and other later disturbances, beneath this was a compacted brown sandy loam, containing post-medieval finds and probably dating to the later 18th century. It is within this deposit [103] that many of the 18th century and earlier burials were dug, most of which appear to lie at a deeper level than that exposed in the evaluation. Initially at this stage of the project it was suggested that there was no grave digging in this area after *circa* 1750, however, the excavation phases have revealed that burial continued in this area probably for a significant time after this. What remains unknown is when the gravemarkers were removed from the excavation area and the area subsequently leveled and landscaped.

A number of finds were also recovered from the ODAS evaluation including: sherds of pottery (ranging in date from one sherd of 1200 to several of late 18th century); building materials (roof tile, floor tile and stonework); clay pipe fragments; a worked bone handle; four fragments of lead (window cames); one animal bone; two buttons and copper alloy and iron nails. This assemblage is very similar to that evident from the excavation phases for the upper deposits and represents a mixture of late post-medieval and modern material, with some residual earlier finds, and simply reflects the excessively reworked nature of the upper levels of the burial ground.

No further assessment or post-excavation work is proposed on the finds from the ODAS evaluation and the residual bone which had been discovered during the evaluation (and bagged and reburied on-site, then discovered again in he excavation phases) has been reinterred without any further analysis within the assemblage collected from the excavation, in accordance with current guidance[26].

The depth of the ODAS evaluation works was predetermined, because at this time (2001) this was believed to be the depth of the groundworks for the redevelopment. The foundation proposal, however, changed and any archaeological excavation would need to go deeper in places than was originally hoped in 2001. The approximate general limit of the redevelopment groundbeams was 1.3m below the nave floor level in certain places, other floor areas were 500mm below nave floor level and the pile locations extended into the chalk.

[26] Mays 2005, 244 p43

4.3.2 Phase 1: Evaluation and excavation by Compass Archaeology (April 2006)

In early April, following approval of the first WSI, a machine based evaluation by Compass Archaeology took place to reduce the overburden within the excavation area and expose the highest surviving archaeological horizon[27]. This approach was implemented as the burial revealed in the ODAS evaluation had had little evidence of a clear grave cut, within the broadly homogenous made ground deposits denoted context [103]. This work was completed by 5th April 2006.

The archaeological fieldwork was carried out in close consultation with English Heritage, who were consulted at every stage of the project and whose advice was implemented on-site. Throughout all the excavation phases Compass Archaeology were assisted by volunteers from the Orpington and District Archaeological society, co-ordinated by Mrs Brenda Rogers.

Fig 15 View of the initial stages of the site reduction and hand clearance Phase 1 works, looking west from the corner of the bell tower. The long shadow cast over the site by the nave is evident in this photograph, but even in the best light and after careful hand cleaning, no clear grave cuts were discernable in the homogenous upper layer denoted [103].

This phase was particularly designed to inform on the level of the survival of human remains and to see how many burials survived above the proposed finished floor level of the new build. It was proposed to fully excavate the proposed footprint of the new extension to the depth of the impact of the proposed groundworks, or to the top of the first archaeological horizon, whatever was encountered first. The results of this Phase 1 works were vital for the project planning to determine the nature and extent of further archaeological works on the site. The results would allow further mitigation strategies to be explored, such as redesign of the lateral/ internal groundbeams (where possible) to be reformed above the level of the archaeological deposits. The information gained during the Phase 1 works would also inform on each specific pile

[27] King, G. April 2006

location and any external groundbeams, which would have an impact on archaeological deposits, and would thus need to be fully excavated in the later phases of the project. Where no burials were encountered above the finished floor level and where no foundations were needed then these areas of the site could potentially be preserved *in-situ* beyond this level, with the appropriate preservation materials (the specification for which was confirmed following discussion with English Heritage).

Fig 16 A similar view to Fig 15, but looking west towards the bell tower, the archaeologist in the foreground is re-excavating ODAS evaluation Trench 2.

The general level of excavation for this phase was to a depth of 1.3m below the existing nave floor level (*circa* 133.1m OD). The floor formation level was under review and there was the potential for formation levels to rise to avoid archaeological strata, once the Phase 1 works had been completed.

Fig 17 Phase 1 clearance in the area of ODAS Trench 3.The cut for Trench 3 can be seen, as can the cut for the modern electrical cable which was discovered crossing the site, part of the yellow warning cover being just visible.

As the ground surface was higher outside the church, but sloped down to the north, as shown in Fig 16, this potentially involved ground reduction by 1.7m adjacent to the nave wall falling to *circa* 1.3m or less below ground surface on the northern perimeter of the new build footprint.

Fig 18 Detail of one of the relatively recent drainage features discovered adjacent to the nave wall, other similar features were recorded in the Phase 1 reduction evaluation, for example an area of 20th Century disturbance in the centre of the excavation area to form a rough soakaway structure for surface water from the nave drain. The large pipe from the nave wall leading to this soakaway can be seen in this photograph.

Fig 19 A member of ODAS assisting with the hand clearance in the north east corner of the site. It was in this area that the remains of a font were discovered, the design on the greensand accords with published records of the old church font and the font was lifted by ODAS and will be displayed in the churchyard.

Fig 20 A view of the fragments of the old font, as it was first exposed, in the northeast corner of the site.

During the Phase 1 evaluation it became apparent that some burials did survive at a height above the general formation level, although no grave cuts were clearly evident (see Fig 30).

4.3.3 Phase 2: Review by all parties of results of Phase 1

This review took place on 5th April 2006 and involved a meeting on site in the vestry with Robert Whytehead and Mark Stevenson of English Heritage, Bobby Lawes the PCC Project Manager; Adrian Cox, Structural Engineer and Gillian King, Compass Archaeology Project Manager.

This review was designed to explore mitigation strategies, including possible redesign or local adjustment of the foundation proposal to facilitate preservation *in situ* where possible, in line with current guidance, as follows:

216 *A number of methods are available for evaluating the extent and density of burial within the footprint of an area affected by development….Evaluation trenches may be dug in order to confirm estimates of the extent and density of burials, and also to determine the degree of skeletal preservation; in such interventions, lifting of human remains should be kept to the minimum compatible with adequate evaluation.*

218 *It is sensible to plan a separate stage of archaeological work to mitigate the impact of the proposed scheme. Construction can then proceed unhindered.*

219 *Where possible, avoidance of disturbance is the preferred option. Otherwise, the strategy should be to keep disturbance to a minimum.*

221 *Using shallow raft foundations for buildings may avoid the need to disturb burials, or at least keep the degree of disturbance to a minimum*[28].

The review concluded that a specific number of inhumations had been identified surviving above the finished floor level and these would need to be excavated in the next phase of excavation (Phase II) but that once these were lifted a programme of foundation redesign would allow specific areas of the site to be preserved *in situ* (see Figs 21 and 22).

4.3.4 Phase 3 Foundation redesign

The foundation design had undergone several changes during the course of the Phase 1 works and following the review two lateral groundbeams were removed to accommodate the preservation *in situ* of archaeological remains (see Fig 21 and 22).

Any further changes to the foundation design were discussed early on in the archaeological fieldwork, in order to redesign and gain the necessary approvals by all parties, especially English Heritage. Wherever possible archaeological remains, in this case human burials, were preserved *in situ*.

The original foundation design is shown on Fig 21, and it was proposed that the new extension would be founded on 18 no. micropiles supporting groundbeams. Fig 22 shows the final foundation design where finished levels are deeper and also areas where preservation *in situ* might be achieved, the location of the groundbeams and pileholes is also shown on this plan. The foundation design was drawn up by Adrian Cox Associates with the flexibility that once areas of archaeological significance were established (during the excavation fieldwork Phase 1), a review of the foundation design could take place to avoid or reduce the impact upon buried archaeological remains (Phases 3 and 4 in this report. This was in the form of reducing the number of piles or relocating piles and/or lifting or redesigning groundbeams locally. It was also possible to implement an alternative product to Cellcore Type CC in pile locations, which slightly reduced the depth of groundworks and still provide the same anti-heave protection to the new build. In pile/foundation locations where redesign was not possible, it was agreed that full archaeological excavation would take place to natural deposits (Phase II: excavation).

[28] Mays 2005, Annexe S2 Minimum standards for site assessment, evaluation and mitigation 216 p37ff

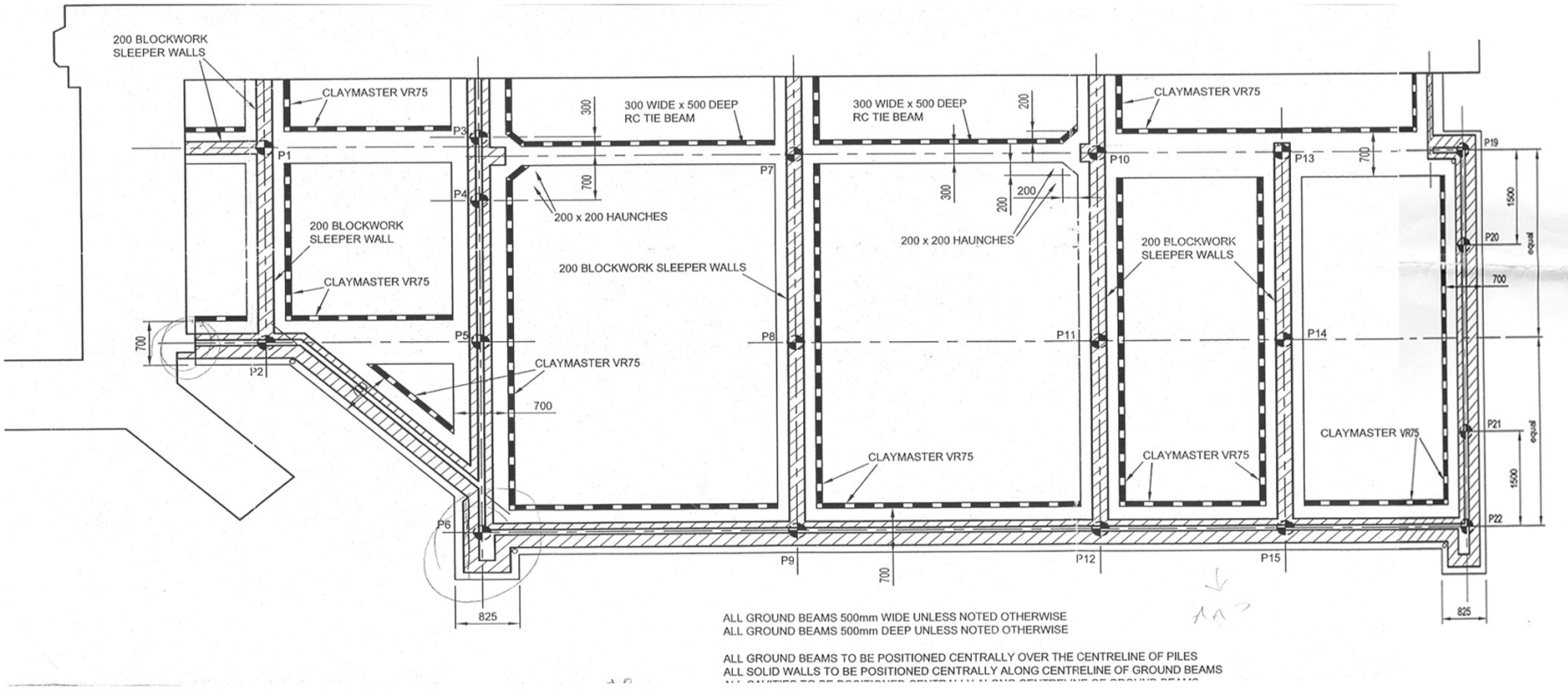

Fig 21 The original foundation design as presented in the Phase 1 WSI (extract from Adrian Cox Associates drawing no 773/02, showing a general view of the foundation proposal. This figure is indicative only, to show how the new build was later redesigned to accommodate preservation *in situ*, see Fig 22 (not to scale, north is at the top of the figure). © Adrian Cox Associates.

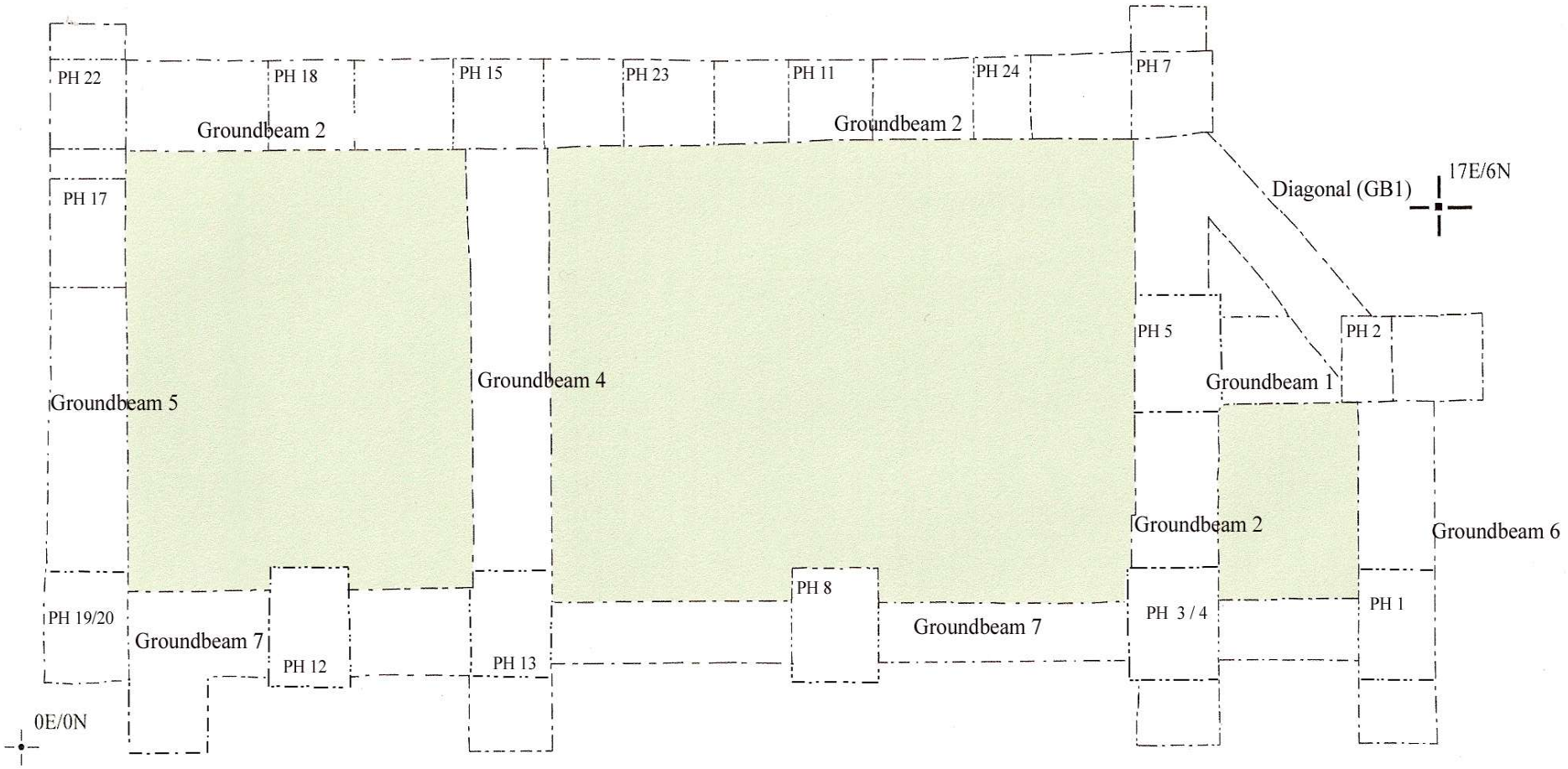

Fig 22 The final foundation redesign removing two lateral groundbeams and relocating piles and identifying areas of preservation *in situ* shown in green. (not to scale, north is at the top of the figure).

4.3.5 Phase 4: Second phase of archaeological excavation, of areas where preservation could not be achieved (Phase 2).

The second phase (Phase 2) of archaeological excavation, of areas where preservation could not be achieved, continued directly from the first phase. A separate WSI was submitted to English Heritage for this phase of work and approved in writing by them on 7th April 2006[29].

This phase had three objectives:

1. to clean, record and lift all burials which survived across the site area above the proposed finished floor level, which was set at a safe level of +135m OD.
2. to ensure the preservation *in situ* of all burials which were not in areas of impact by the proposed development
3. to clean, record and lift all burials in areas affected by the proposed development.

The principal graves surviving outside of groundbeam or pilehole locations and at a higher level across the general area of the site (i.e. above 135m OD) were Graves 1 to 11, all other high graves were excavated as part of the groundbeam and pilehole excavations. These burials are discussed below:

Grave 1 containing skeleton [105] which was supine, extended and aligned east–west. The skeleton was 85% complete and in good condition, although the left lower arm and hand were missing. This skeleton was also partially exposed during in the Orpington and District Archaeological Society evaluation. The individual was probably male and age at death was between 17 and 22 years; which explains in part why the bones were more robust. This individual also had a developmental abnormality and sacrialization of the 5th lumbar vertebrae was noted at the osteological assessment. There was no evidence of a coffin (see Section 5 and Appendix 1 for detailed analysis, see also Fig 46 for locations of Graves 1 to 10).

Fig 23 The re-excavation of Grave 1, skeleton [105] which had been exposed in the ODAS evaluation (see Figs 11 and 12).

[29] King, G. (April 2006) 'St Martin of Tours Church, Church Road, Chelsfield, Orpington, London Borough of Bromley. Specification for an Archaeological Excavation Phase II' Compass Archaeology in-house report.

Grave 2 contained infant skeleton [108] and infant skeleton [109], both were supine, extended and aligned east–west, although significant slumping had taken place. The skeleton [108] was approximately 10% complete and in moderate condition; the child being probably about 12 to 18 months old. Skeleton [109] was about 30% complete but the bones were in poor condition and it could not be closely dated, but was also an infant. There was no evidence of a coffin (see Section 5 and Appendix 1 for detailed analysis).

Fig 24 Detail of Grave 2, Skeleton 109.

Grave 3 contained skeleton [112] and was supine, extended and aligned east–west. The skeleton was approximately 70% complete and in moderate condition; the individual was male and probably over 55 years of age (see Section 5 and Appendix 1 for detailed analysis). The feet were missing and had, apparently been accidentally cut away during excavation of the ODAS trench 2. No grave cut was clearly visible, but frequent patches of rust staining indicated that a coffin had once been present.

Fig 25 Grave 3 Skeleton 112

Grave 4 (not illustrated) contained skeleton [115] and was supine, extended and aligned east–west. The skeleton was approximately 45% complete, but in excellent condition; construction for a reasonably modern drain had truncated this burial at the waist. The skeleton was male and aged between 45 and 55. Two sherds of pottery dating to the late 12th century were found in the grave fill (114). There was no evidence of a coffin (see Section 5 and Appendix 1 for detailed analysis).

Grave 5 contained skeleton [118] and was supine, extended and aligned east–west. The skeleton was approximately 90% complete, and in good condition at the assessment stage, however, this skeleton was difficult to excavate on-site and appeared to have been crushed at some stage in antiquity (perhaps by the weight of the soil deposits above it) and was difficult to lift without causing damage to the epiphyses. The individual was male and aged *c*. 30 to 40 years old; construction for the modern drain had also slightly truncated this burial. Areas of metal staining indicated that a coffin had once been present (see Section 5 and Appendix 1 for detailed analysis).

Fig 26 Grave 5 Skeleton 118

Grave 6 contained skeleton [121] and was supine, extended and aligned east–west. The skeleton was approximately 75% complete, and in good condition at the assessment stage. However, as with Grave 5 this skeleton seemed quite friable at the excavation stage and the body appears similarly to have been crushed at sometime in antiquity. The individual was female and aged *c*. 45 to 55 years old; construction for the modern drain had also slightly truncated this burial. Metal staining indicates that a coffin was once present, and two sherds of 19th century pottery were recovered from the grave fill [120] (see Section 5 and Appendix 1 for detailed analysis).

Fig 27 Grave 6 Skeleton [121].

Grave 7 (not illustrated) contained skeleton [124] and was supine, extended and aligned east–west. The skull was visible in the east facing section at the southwestern edge of the site. The skull was not excavated and the whole skeleton was preserved *in situ*. There was no evidence of a coffin (see Section 5 and Appendix 1 for detailed analysis).

Grave 8 (not illustrated) contained skeleton [127] and was supine, extended and aligned east–west. The skull was visible in the east facing section at the southwestern edge of the site. The skull was not excavated and the whole skeleton was preserved *in situ*. There was no evidence of a coffin (see Section 5 and Appendix 1 for detailed analysis).

Fig 28 Grave 9 Skeleton [130]

Grave 9 contained skeleton [130] and was supine, extended and aligned east–west. This skeleton had been heavily truncated by Grave 10, cut [135] and by another unknown activity. The skeleton was approximately 40% complete, and in moderate condition. The individual was male and aged over 55 years old. There

was no evidence of a coffin (see Section 5 and Appendix 1 for detailed analysis).

Grave 10 contained three skeletons [133], [134] and [136] and all were supine, extended and aligned east–west. These skeletons had been heavily truncated and [133] and [134] were only approximately 40% complete, skeleton [136] was 20% complete. Skeleton [133] was in poor condition and [134] and [136] were in a moderate condition. Skeleton [134] could be identified as male and aged over 50 years old; skeleton [133] could not be aged and sexed, although it was adult. Skeleton [136] was aged 18 to 25. There was no evidence of a coffin (see Section 5 and Appendix 1 for detailed analysis).

Grave 11 contained skeleton [138] was supine, extended and aligned east–west. The skeleton was female, aged between 48 to 72 and 95% complete and in good condition. A ring probably from a button <8> was found in the grave fill [137]. A quantity of metal nails was recovered from the fill indicating a coffin. This grave was excavated early in the excavation programme although it was actually lower lying than many of the skeletons described above and the button ring may suggest an earlier date for this burial (see Section 5 and Appendices 1 and 2 for detailed analysis).

Fig 29 Grave 11 skeleton [138].

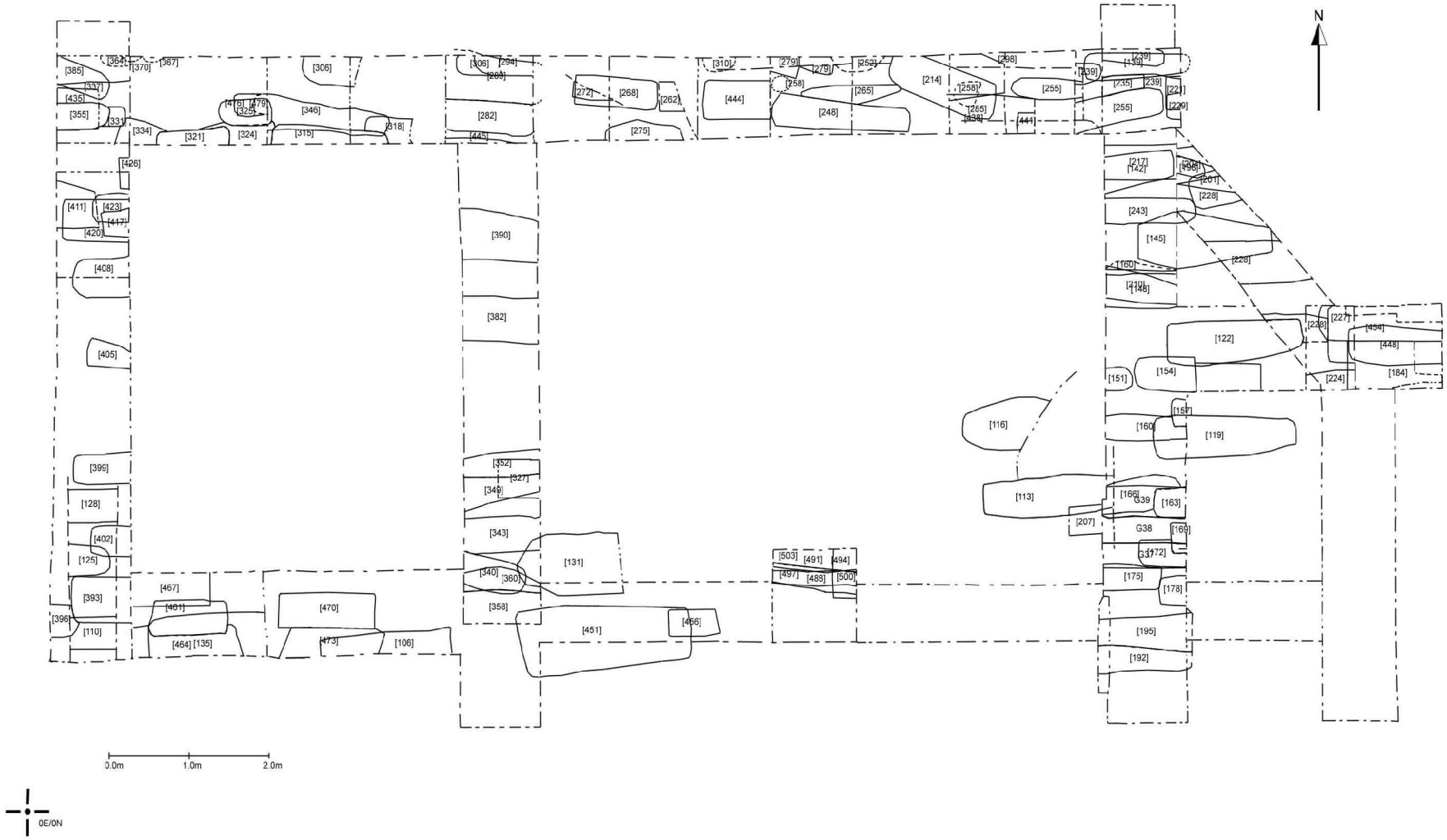

Fig 30 General site plan, showing the numerous overlying and inter-cutting burial deposits, see Section 5 for discussion of this. The numbers shown on this plan refer to archaeological context cut numbers and not individual grave numbers.

After full recording and lifting of these generally higher skeletons the excavation progressed to recover all the burials within the groundbeam and pile hole locations (Fig 30). In the course of the excavation a total of 135 medieval and post-medieval graves were recorded and 116 inhumations were removed from the site for osteological assessment. Additionally, 421 archaeological contexts were recorded [100] to [521] and numerous plans, sections and photographic records amassed. It is not practical to discuss every grave in detail in this report, and Graves 1 to 10 are given as an example. Context specific statistical data is presented in Section 5 of this report and in the appendices. Fig 30 illustrates the mass of spatial and stratigraphic relationships between the contexts, owing to the inter-cutting of the graves and this is also discussed in Section 5. The site actually did not contain complex stratigraphy and all stratigraphic relationships were clearly determined on-site, however, when presented as a graphic it does not look as easily interpretable, for this reason the site is presented as four different phased plans in Section 5, although these do not represent stratigraphic or chronological sequences, but are rather a sensible way to present complex site data in a visually comprehensible manner (see Section 5 Figs 46 to 51).

When studying the stratigraphic analysis in Section 5 please bear in mind that each burial was assigned a discreet ***Grave Number (i.e. Grave 1)****, this number would incorporate a series of archaeological* ***Context Numbers*** *generally the fill, skeleton coffin and cut i.e.* ***Grave 1*** *is made up of archaeological* ***Contexts [104]*** *grave fill****, [105]*** *skeleton****, [106]*** *grave cut. The stratigraphic material is presented in a manner where these numbers are comprehensively used throughout, the matrices use Grave Numbers only and the phase plans used Archaeological Context Cut numbers only. The context register refers to context numbers although the individual grave number is also shown. Please bear this in mind when studying this data*.

4.3.5(i) Research framework and methodology for the Phase II excavation.

The excavation works were carried out in accordance with the following site specific and general objectives and considerations**:**

The protection of archaeological sites is a material planning consideration (DOE Circular 8/87). Current guidance notes that the initial evaluation should be designed to provide all parties, particularly the Local Planning Authority, with sufficient material information upon which to base informed decisions, incorporating adequate heritage safeguards. Where an evaluation produces positive results safeguards will be applied; these would normally consist of either design modifications to preserve archaeological remains *in situ* or, where this is not achievable, archaeological rescue excavation in advance of development. The excavation WSI referred to archaeological excavation with provision for preservation *in situ* where possible.

The general methodology is set out in DOE Planning Policy Guidance 'Archaeology and Planning' No.16, November 1990 (PPG16).

Archaeological research questions

Research objectives for the project were outlined in the WSI as follows:

- *Is there any evidence for usage of the site prior to the foundation of the Church? How does this relate to other finds made in the vicinity?*
- *What demographic evidence can be determined from examination of the skeletal remains on-site? Can the age at death, and sex of the individual be determined?*
- *What demographic evidence can be determined from examination of the skeletal remains off-site after washing? Can the age at death, and sex of the individual be determined?*
- *What evidence can be determined from assessment of the skeletal remains on and off-site to determine patterns of disease?*
- *What can the finds material and grave deposits tell us about the individuals buried on this site?*
- *What can the site tells us of Christian burial practices to inform on beliefs and social organisation*

The excavation also hoped to address the following general excavation questions:

What date are the burials in this area of the churchyard?

What can the excavation tell us of the individuals represented on this site?

See Section 7.1 for the assessment analysis of the project potential, aims and objectives.

Methodology

The detailed methodology is outlined in the WSI but certain specific points are reiterated here.

Following initial clearance archaeological deposits and features were excavated and recorded in stratigraphic sequence by the on-site archaeologists and the human osteologist as appropriate, in order to gain sufficient information to determine if further phases of excavation were required and to allocate areas for preservation *in situ*.

Archaeological contexts were recorded on *pro-forma* sheets by written and measured description, and where necessary drawn in plan and/or section. The trench positions were be surveyed by the groundworks contractor and recorded on a general site plan, and related with appropriate accuracy to the Ordnance Survey grid. The fieldwork record was supplemented by photography as appropriate (digital photography or 35mm colour transparency and/or monochrome print).

Where burials needed to be lifted, each burial was given a unique Grave Number and a series of archaeological context numbers, dug by hand, with a basic plan and a photograph of each inhumation, and a written description of its deposition, survival, the grave fill and other pertinent aspects. This included heights with respect to Ordnance Datum for key points in each grave and on each skeleton. Finds in graves were

photographed and planned or 3D located (as applicable, some finds were associated with the burial while others could be residual in the grave fill).

Articulated portions of skeletons, which could not immediately be assigned to their counterparts, were planned accurately and given a unique context number; to facilitate refitting if possible at the assessment stage. Current guidance states that 'human burials should not normally be 'chased' beyond the limits of the current work area or excavation', this was generally upheld but a case-by-case approach was adopted on site[30].

Disarticulated, redeposited bone was given a different context number and bagged separately from any *in situ* articulated bone. Redeposited finds material in the grave fill was retained until the results of the fieldwork had been assessed. The principal aim of this was to provide the maximum retrieval of contextual information relating to the human remains and to ensure that those remains were presented in a fit state for the osteologist at the assessment phase.

The *in-situ* articulated bones were carefully lifted. Different skeletal areas and bones from the left and right sides were bagged separately and placed in the same large bag. Normal separation was: skull; torso; left arm; right arm; left leg; right leg; left hand; right hand; left foot; right foot. Durable labels giving the site code and context number were placed in the bags.

Grave structures, coffin stains and associated features within the grave were measured in on plan and photographed *in situ* where necessary. Some required context recording in their own right.

The recording system used followed the MoL Site Manual for on-site work. By agreement the recording and drawing sheets used were directly compatible with those developed by the Museum.

Appropriate secure private storage for human materials was provided in the bell tower of the church.

The field excavation was carried out in accordance with the Construction (Health, Safety & Welfare) Regulations, and safe-working conditions were assessed during the course of the excavation. The excavation area was screened from public view with 6 ft 2 high heras-type fencing backed with tarpaulin and there was no public access to the excavated area, to the site office where human remains are assessed or to the secure lockable storage area for the human remains.

All works were carried out in a manner appropriate to the continued usage of the church, and works ceased for church services and functions at the discretion of the Rector.

Treatment of finds

Finds were treated on-site in accordance with the appropriate guidelines, including the Museum of London's *'Standards for the Preparation of Finds'*. All identified finds and

[30] Mays, S. 2005 pp40, 228

artefacts were retained and bagged with unique numbers related to the context record. Appropriately qualified staff undertook the assessment of finds.

A review of finds material was held with English Heritage following the completion of Phase 1 of the project.

4.3.5(ii) The chronological structure of the excavation of the groundbeams and pilehole locations

On the 6th April a short service of blessing by the Bishop of Tonbridge was held on the excavation site for the graveyard works and to mark the beginning of the building of the St Martin's extension.

The locations of the groundbeams and pilehole were surveyed on the site by the PCC architects and marked out on the ground. The locations of the various groundbeams and pileholes are shown on Fig 22. To allow access, excavation began in the eastern area of the site adjacent to the bell tower and Groundbeam 2 was initially examined, with Groundbeam 1 and the small adjacent diagonal groundbeam (also called GB1, see Fig 22) adjacent to the tower following shortly after. Excavation immediately adjacent to the medieval church was not undertaken at this time (Groundbeam 6, see Section 4.3.6). It was soon after this time that a period of inclement weather hit the site and progress in the early stages of the project was slow.

Fig 31 Periods of very poor weather and flooding of the site in early April 2006 (see front cover), looking south along the partially reduced cut for Groundbeam 2.

However, as the spring-like weather arrived, excavation conditions became much more favourable and the moist clays soils allowed the removal of bone with better survival levels than had the clay been drier. The excavation progressed westwards across the site digging each groundbeam and pilehole in turn and preserving areas between pileholes as part of the ongoing progress. The project team are grateful to C. J. Gray (Plant Hire) for all their assistance with the laying of the *terram* and preservation materials across the site.

Fig 32 General view along Groundbeam 2, looking south to the nave wall, skeleton [144] can be seen under excavation midway along the trench.

Fig 33 General view of Groundbeam 1, looking east towards the bell tower from midway along Groundbeam 2, grave cuts [154] and [181] can be seen to the right of the scale. Grave cut [181] actually cut grave [154], but was preserved *in situ* as the groundbeam was higher in this area, however, the earlier burial in [154], skeleton [153] had to be excavated as it lay within the area of the lower groundbeam 2. This female adult skeleton was of interest as it had evidence of specific individual pathologies in the form of butterfly vertebrae (see Appendix 1).

Fig 34 Groundbeam 1 from the Bell Tower looking west, the two grave cuts discussed in Fig 33 are now on the left of the scale, other grave cuts are visible in Groundbeam 2 [160], [151], [148].

Fig 35 view along the diagonal groundbeam towards the tower after excavation, the gravecuts still visible are below the level of the groundbeam excavation, the pilehole adjacent to the tower was still to be fully excavated to natural deposits, but did not contain many deeper burials, however on the western perimeter of the site some of the pileholes were excavated to a depth of over 3m below current ground surface. It was in the area adjacent to the Bell Tower that the (probably) earliest burials were recovered

[229], [446] and [453], they are known to be at least medieval as they have been truncated by the construction of the tower, which took place in the 13th century.

Owing to the small areas excavated at depth in the pilehole locations it was very often the case that only parts of inhumations could be recorded and lifted. This is shown in Figs 36 to 39 below.

Fig 36 Excavations in Groundbeam 2 between pileholes 5 and 4. The lower half of skeleton [165], Grave 20, is exposed. The remains above the pelvis were preserved in-situ beyond the eastern baulk of the groundbeam trench.

Fig 37 Excavations at depth in pilehole 4 (Groundbeam 2). The individual here, Grave 23,skeleton [174], was a juvenile 15-30 years old and half of the body was preserved *in situ*.

Fig 38 Excavations at depth again in pilehole 4. Grave 28 (uppermost on this image) containing adult Skeleton [191] which has been cut by Grave 29 containing female skeleton [194].

Fig 39 Excavations at depth in diagonal Groundbeam 1 showing the partial nature of many of the burials at depth. Only 30% of child skeleton (*c*. 6 years) [203] in Grave 32 could be lifted as the skeleton had been truncated to the east and was preserved *in situ* to the west.

Other interesting elements of the Phase II excavation works were the presence of coffin material and Grave 66 containing skeleton [284] had perhaps the most interesting find, being an illegible but decorated metal plate (or more likely escutcheon), probably surviving from the top of the coffin. This burial and several other in the immediate area (Groundbeam 3) also had partly surviving escutcheons and metal coffin fittings and furniture (see Appendix 3).

Fig 40 Grave 66 Skeleton [284], showing the poorly preserved metal escutcheon on the chest, surviving from the top of the coffin which has long since deteriorated. This was made of sheet iron with white metal coating or possibly stamped white metal, probably tin. No design or script was visible on the metal surface.

Fig 41 Grave 118, within cut [451] and containing female skeleton (age over 55 years) [450], infant skeleton (4 to 6 years) [457] (top of picture), and infant skeleton (4 to 6 years) [458] (to the right of the adult's right knee and only partially excavated at this stage).

It was not possible to determine family relationships between burials, but the burials in cut [451] present an interesting group, being a female and two small children (Fig 40).

However, simple osteological analysis shows the female skeleton to be above childbearing age and stratigraphic analysis shows that although these three burials are apparently within one large cut, they are not within the same grave stack, which would be expected in a multiple burial. Stratigraphic analysis also shows that Skeleton [457] has been truncated by what once must have been a cut for burial [450] and has slumped into the grave. Therefore, no specific relationships can be postulated for the three burials in cut [451] and it must be assumed that the original separate burial cuts have been obscured by the phases of re-cutting in this area.

Fig 42 Detail of skeletons [450] adult and [458] infant, note that skeleton [450] has the feet touching heel to heel and both hands are beneath the pelvic lobes.

Fig 43 Detail showing skeletons [450] adult and [457] infant.

Fig 44 Grave 55 skeleton [247] under excavation. This female skeleton in Groundbeam 3 was between 27 and 49 years of age and was one of the best preserved on the site and is seen here during excavation. The body had slumped down to the north and west but was 99% complete and in excellent condition.

Following completion of the Phase II excavation works the project progressed to phase 7 in the project programme (see Project Summary Section 4.2)

4.3.6 Phase 5: Further foundation design

At the end of the project there was a further appraisal of the foundation layout to clarify where areas of preservation *in situ* were and to ensure that the groundworks contractor had the necessary inform to build the protection of the buried archaeology into their designs for the new build.

4.3.7 Phase 6: Project review by all parties

The WSI for the project stipulated that a review would take place by all parties towards the close of the excavation works in order to clarify mitigation strategies for the post-excavation elements of the project. The WSI recommended that the review would assess the level of further on-site work and agree a strategy for the post-excavation work required on the burial deposits and on the finds assemblage. The WSI did not state that another written scheme would be compiled for any further works, as these would be agreed at the meeting and the project would progress accordingly. The review meeting took place on-site in the nave on 18th May 2006, between Bobby Lawes of the PCC, Gillian King and Colin Reid of Compass Archaeology, Jane Sidell and Mark Stevenson of English Heritage, Ken Whittaker Archaeological Advisor to the DAC and Kate Brayne, Human Osteologist of the Rudyard Consultancy.

The review discussed numerous mitigation strategies and agreed a post-excavation programme that is presented in this assessment report and in the 'enhanced assessment' works carried out by the Rudyard Consultancy (Appendix 1). The review finalised site specific arrangements for the assessment works and agreed that the Church would apply

for an order on faculty to remove the bone assemblage off-site for the works to take place.

4.3.8 Phase 7 The watching brief of excavation adjacent to the medieval church

Adrian Cox, the project structural engineer had shown that in the area adjacent to the bell tower the flint footings extend to a depth of 1.25m from the top of the geotechnical pit ground surface. The new extension had been specifically designed to be away from the medieval church by 1m on both sides (east and south), and although linking the two buildings it was completely structurally independent of the church. It is possible that the foundations for the northern wall of the nave were much earlier in date and would not be as robust as those designed to support the tower. Therefore, as a health and safety requirement archaeological excavation did not extend below one metre adjacent to the medieval walls, but an enhanced watching brief of this area was accommodated in the construction programme with sufficient time allocated for the rescue excavation of burial deposits and the detailed recording of the structural phasing of the exterior of medieval and later foundations (Phase 7 of the excavation programme).

Careful consideration was given to the effects of trenching to depth adjacent to the church in order to assure its stability. Removal of the drain adjacent to the church was carried out by a suitably qualified construction professional appointed by the Church, these works were supervised by Compass Archaeology

The nave wall had an exterior brick walled drain running alongside it (east to west). This drain extended down to a depth of approximately the nave floor or slightly higher. The drain extended approximately 700mm from the nave wall. The foundation design for this area, adjacent to the nave wall showed the main groundbeams away from the medieval wall at a distance of approximately 1m. It was proposed to only reduce this area by 500mm below nave floor level in most places and this project design proposed to leave the existing drain in place for the duration of the excavation. This was in order to ensure that that there was no loss of support to the foundations of the church, especially as the Blackheath Beds, on which the church is founded, are constructed of sandy gravelly deposits with pockets of clay and are therefore unstable.

A second concern was that if the drain was dismantled at an early stage of the project, then the excavation area would be open to significant flooding which would be extremely detrimental to preservation *in situ* and thorough excavation, especially as sieving of grave fills was to be a significant element of the excavation programme (however, the wet conditions and thick clay soils revealed sieving to not be a viable option).

Fig 45 Phase 7 Excavation of the drain adjacent to the nave wall.

5 Stratigraphic data and detailed analysis of the cemetery deposits

5.1 Summary

As has been discussed in Section 4.3.5 a total of 135 medieval and post-medieval graves were recorded and 116 inhumations were removed from the site for osteological assessment. Additionally, 421 archaeological contexts were recorded [100] to [521] and numerous plans, sections and photographic records amassed. The primary records for this project are stored at Compass Archaeology and will be deposited as part of the archive in the London Archaeological Archive (LAARC).

5.2 Stratigraphy

Context specific statistical data is presented in the context register below to which osteological and finds data has been synthesised. Figs 46 to 50 illustrate the locations of all the grave cuts across the site and the four matrices show the stratigraphic relationship of each grave group (by Grave numbers, not Context numbers). Although, many graves were intercutting or overlying each other the site did not actually contain complex stratigraphy and all stratigraphic relationships could be clearly determined on-site.

All stratigraphic relationships are recorded, but little can be determined about stratigraphic phasing or stratigraphic grouping of contexts. We may know whether a grave pre- or post-dates another grave, but beyond that little statistical information can be gathered. A slight change in burial rite is evident across the site and those graves with coffin fittings and furniture indicate an 18th century or later depositional date. Some other graves (where stratigraphically appropriate) having no grave furniture may be earlier in date.

The phased plans Fig 46 to 50 do not represent stratigraphic or chronological sequences, but are rather a sensible way to present complex site data in a visually comprehensible manner.

When studying the stratigraphic analysis in this section please note that each burial was assigned a discreet **Grave Number (i.e. Grave 1)**, this number would incorporate a series of archaeological **Context Numbers** generally the fill, skeleton coffin and cut i.e **Grave 1** is made up of archaeological **Contexts [104]** grave fill**, [105]** skeleton**, [106]** grave cut. The stratigraphic material is presented in a manner where these numbers are comprehensively used throughout, the matrices use Grave Numbers only and the phase plans used Archaeological Context Cut numbers only. The context register refers to context numbers although the individual grave number is also shown.

5.3 Context descriptions for the cemetery

The contexts recorded (briefly summarised) were:

Context no.	Description	Grave no.	Trench no.
101	Topsoil and turf layer – initial stripping by machine	_	All trenches
102	Dump layer in southwest corner of site. Probably related to the construction of a modern wall and drain.	_	_
103	Graveyard subsoil. Finds include three metal coffin escutcheons	_	All trenches
104	Fill of Grave 1. A loose greyish brown sandy clay. Contained charnel remains from disturbed burials. There was no remains or evidence of a coffin.	1	_
105	Skeleton within Grave 1. Supine, extended and aligned east – west. The skeleton was 85% complete and in good condition. Was partially exposed during trial trenching by ODAS (Orpington & District Archaeological Society). The skeleton was possibly male aged between 17 to 22 years and had a developmental abnormality in the form of sacralization of the 5th lumbar vertebra.	1	_
106	Cut of Grave 1, aligned east west. The Grave cut was revealed during initial ground reduction and was not located within a specific trench.	1	_
107	Fill of Grave 2. A loose greyish brown humic sandy clay. Contained charnel remains from disturbed burials. There was no remains or evidence of a coffin.	2	_
108	Infant skeleton within Grave 2 aged 12 to 18 months. Supine, aligned east – west. Approximately 10% complete, the bones were in a moderate condition.	2	_
109	Second infant skeleton within Grave 2, age uncertain. Supine, aligned east – west. Approximately 30% complete, the bones were in a poor condition	2	_
110	Cut of Grave 2, aligned east – west. The Grave cut was revealed during initial ground reduction and was not located within a specific trench. The Grave contained two infant inhumations (108) and (109). The Grave cut was uncovered during initial ground reduction	2	_
111	Fill of Grave 3. A firm greyish brown sandy clay. Contained charnel from disturbed burials and frequent patches of rust staining indicating the remains of coffin nails.	3	_
112	Male skeleton aged +55 years within Grave 3. Supine, extended and aligned east – west. The skeleton was 70% complete and in moderate condition.	3	_
113	Cut of Grave 3, aligned east – west. The Grave was located in the centre of the site and was uncovered during initial ground reduction work.	3	_
114	Fill of Grave 4. A soft brownish grey clayey sand. Contained charnel from disturbed burials. There was no evidence for a coffin or coffin furniture. The fill contained two sherds of late 12th century pottery.	4	_

Context no.	Description	Grave no.	Trench no.
115	Male skeleton aged 45 to 55 years within Grave 4. Supine, extended and aligned east – west. The skeleton was 45% complete and in excellent condition. A modern drain appears to have truncated the skeleton.	4	_
116	Cut of Grave 4, aligned east – west and truncated by a modern drain. The Grave was located in the centre of the site and was uncovered during initial ground reduction	4	_
117	Fill of Grave 5. A loose greyish brown sandy clay containing charnel remains from disturbed burials and some metal staining indicating the remains of coffin nails.	5	_
118	Male skeleton aged 30 to 40 years within Grave 5. Supine, extended and aligned east – west. The skeleton was 90% complete and in good condition. Possibly truncated by a modern drain	5	_
119	Cut of Grave 5, aligned east – west. The Grave was located in the centre of the site and was uncovered during initial ground reduction. Possibly truncated by a modern drain.	5	_
120	Fill of Grave 6. A loose greyish brown sandy clay containing metal staining which is an indicator of the presence of coffin nails. The fill also contained two sherds of 19th century pottery.	6	_
121	Female skeleton aged 45 to 55 years within Grave 6. Supine, extended and aligned east – west. The skeleton was 75% complete and in good condition. Possibly truncated by a modern drain.	6	_
122	Cut of Grave 6, aligned east – west. The Grave was located in the centre of the site and was uncovered during initial ground reduction. Possibly truncated by a modern drain.	6	_
123	Fill of Grave 7. A loose greyish brown sandy clay containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	7	_
124	Skeleton within Grave 7. Skull visible in east facing section in southwest extremity of site. The skull was not excavated and the skeleton was preserved *in situ*.	7	_
125	Cut of Grave 7, aligned east – west. Located in southwest corner of the site. Approximately 0.4m length of the cut is visible, the cut continued into the east facing section.	7	_
126	Fill of Grave 7. A loose greyish brown sandy clay. There was no evidence for a coffin or coffin furniture.	8	_
127	Skeleton within Grave 8. Skull visible in east facing section in southwest of site. The skull was not excavated and the skeleton was preserved *in situ*.	8	_
128	Cut of Grave 8. Majority of the cut is preserved *in situ* within the east facing section of the site.	8	_
129	Fill of Grave 9. A loose mid brown silty sand containing charnel remains from disturbed burials. There was no evidence for a coffin or coffin furniture.	9	_

Context no.	Description	Grave no.	Trench no.
130	Male skeleton of +55 years within Grave 9. Supine, extended and aligned east – west. This skeleton has been heavily truncated by [135] and by other unknown activity. The skeleton was approximately 40% complete and in moderate condition.	9	_
131	Cut of Grave 9, aligned east – west. The Grave was located in the southwest of the site and was uncovered during initial ground reduction. Has been truncated by Grave [135] to the south and other unknown activity to the east.	9	_
132	Fill of Grave 10. A loose greyish brown sandy silt containing some tile fragments. There was no evidence for a coffin or coffin furniture.	10	_
133	Adult Skeleton 1 within Grave 10. Supine, extended and aligned east – west. Only 40% of the skeleton was recovered and was in poor condition, some of the skeleton was lifted and some preserved *in situ*.	10	_
134	Adult male Skeleton aged about +5o years. This was the second skeleton within Grave 10. Supine, extended and aligned east – west. Only 40% of the skeleton was recovered and was in moderate condition, those remains not lifted were preserved *in situ.*	10	_
135	Cut of Grave 10, aligned east – west. The Grave was located in the southwest of the site and was uncovered during initial ground reduction.	10	_
136	The third Skeleton within Grave 10, age at death being 18 to 25 years. Supine, extended and aligned east – west. The skeleton had been disturbed by unknown activity and only 20% of the remains were recovered. The bones were in a moderate condition.	10	_
137	Fill of Grave 11. A loose brownish grey clayey silt containing charnel remains from disturbed burials. This grave contained a ring from a button <8>.A quantity of metal nails was recovered from the fill indicating the presence of a coffin (see context [189]).	11	GB2
138	Female skeleton aged 42 to 72 years within Grave 11. Supine, extended and aligned east – west. The skeleton was 95% complete and in good condition.	11	GB2
139	Cut of Grave 11, aligned east – west. The Grave was located in Ground Beam 2.	11	GB2
140	Fill of Grave 12. A loose brown silt with 25% redeposited natural yellow sand. The fill contained two sherd sof late 12th century pottery. There was no evidence for a coffin or coffin furniture.	12	GB2
141	Juvenile skeleton aged 12 to 15 years within Grave 12. Supine, extended and aligned east – west. 20% of the skeleton was recovered, and was in good condition. Those remains not lifted were preserved *in situ* within the west facing section beyond the limit of excavation.	12	GB2

Context no.	Description	Grave no.	Trench no.
142	Cut of Grave 12, aligned east – west. The Grave was located in Ground Beam 2. Approximately 25% of the Grave cut was visible in plan; the remainder was preserved *in situ* beyond the eastern limit of excavation.	12	GB2
143	Fill of Grave 13. A loose greyish brown clayey silt with 20% redeposited natural sand. There was no evidence for a coffin or coffin furniture.	13	GB2
144	Male skeleton aged 45 to 55 years within Grave 13. Supine, extended and aligned east – west. The skeleton was 95% complete and in moderate condition.	13	GB1/GB2
145	Cut of Grave 13, aligned east – west. The Grave was located at the junction of Ground Beam 1 and 2 and was completely exposed.	13	GB2
146	Fill of Grave 14. A loose brownish grey with 20% redeposited natural yellow sand. There was no evidence for a coffin or coffin furniture.	14	GB2
147	Juvenile skeleton within Grave 14. The remains were in an advanced state of decay; approximately 5% of the skeleton was recovered.	14	GB2
148	Cut of Grave 14, aligned east – west. The east and west ends of the Grave were preserved *in situ* beyond the trench limit of excavation.	14	GB2
149	Fill of Grave 15. A loose dark brown sandy silt. There was no evidence for a coffin or coffin furniture.	15	GB2
150	Adult skeleton within Grave 15. 10% of the skeleton was recovered, and the bones were in a poor condition.	15	GB2
151	Cut of Grave 15. The Grave had been heavily truncated by later unknown activity leaving only the west end of the cut undisturbed.	15	GB2
152	Fill of Grave 16. A loose dark brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	16	GB2
153	Adult female skeleton within Grave 16 suffering from butterfly vertebrae (see Appendix 1). Supine, extended and aligned east – west. Approximately 45% of the skeleton was removed. The lower half of the skeleton was preserved *in situ* beyond the western limit of excavation.	16	GB2
154	Cut of Grave 16, aligned east – west. The western half of the Grave cut was preserved *in situ* beyond the trench limit of excavation.	16	GB2
155	Fill of Grave 17. A loose dark brown silt with 20% redeposited natural sand. There was no evidence for a coffin or coffin furniture.	17	GB2
156	Adult skeleton within Grave 17. Supine, aligned east – west. Only the skull from this burial was recovered, the remaining bones were preserved *in situ* beyond the trench limit of excavation.	17	GB2

Context no.	Description	Grave no.	Trench no.
157	Cut of Grave 17, aligned east – west. Approximately 10% of the cut is visible in plan, the rest being preserved *in situ* beyond the western limit of excavation.	17	GB2
158	Fill of Grave 18. A loose dark brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	18	GB2
159	Skeleton within Grave 18. The skeleton itself was below the required excavation depth and was therefore preserved *in situ*.	18	GB2
160	Cut of Grave 18, aligned east – west. The east and west ends of the Grave cut were beyond the trench limit of excavation. The cut itself was not excavated as it was below the required excavation depth.	18	GB2
161	Fill of Grave 19. Not excavated – preserved *in situ*.	19	GB2
162	Skeleton within Grave 19. Not excavated – preserved *in situ.*	19	GB2
163	Cut of Grave 19. Not excavated – preserved *in situ.*	19	GB2
164	Fill of Grave 20. A loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	20	GB2
165	Adult skeleton within Grave 20. Supine, extended and aligned east – west. The skeleton was 25% complete and in moderate condition. The remains above the pelvis were preserved *in situ* beyond the eastern limit of excavation.	20	GB2
166	Cut of Grave 20, aligned east – west. Approximately 30% of the cut was visible in plan; the remainder was preserved *in situ* beyond the eastern limit of excavation.	20	GB2
167	Fill of Grave 21. A loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	21	GB2
168	Adult skeleton within Grave 21. Only the skull was recovered, the remains were preserved *in situ* beyond the eastern limit of excavation.	21	GB2
169	Cut of Grave 21. Approximately 10% of the Grave cut was visible in plan; the remainder of the cut was preserved *in situ* beyond the eastern limit of excavation.	21	GB2
170	Fill of Grave 22. A loose mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	22	GB2
171	Adult skeleton within Grave 22. Only the skull was recovered, the remains were preserved *in situ* beyond the eastern limit of excavation.	22	GB2
172	Cut of Grave 22. Approximately 10% of the Grave cut was visible in plan, the remainder of the cut was preserved *in situ* beyond the eastern limit of excavation.	22	GB2
173	Fill of Grave 23. A loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	23	GB2

Context no.	Description	Grave no.	Trench no.
174	Skeleton within Grave 23 aged 15 to 20 years. Supine, extended and aligned east – west. Approximately 50% of the remains were recovered and were in a moderate condition. Those remains not lifted were preserved *in situ* beyond the trench limit of excavation to the east and west.	23	GB2
175	Cut of Grave 23. Approximately 60% of the Grave cut was visible in plan, the remainder of the cut was preserved *in situ* beyond the trench limit of excavation.	23	GB2
176	Fill of Grave 24. A loose dark brown sandy silt. There was no evidence for a coffin or coffin furniture.	24	GB2
177	Upper skeleton within Grave 24, male and aged +55 years. Supine, aligned east – west. 15% of the skeleton was recovered and was in good condition. The remains not recovered were preserved *in situ* beyond the trench limit of excavation to the east.	24	GB2
178	Cut of Grave 24. Approximately 25% of the cut was visible in plan; the remainder of the cut was preserved *in situ* beyond the trench limit of excavation to the east.	24	GB2
179	Fill of Grave 25. A loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	25	GB2
180	Skeleton within Grave 25. Not excavated – preserved *in situ.*	25	GB2
181	Cut of Grave 25. Not excavated – preserved *in situ.*	25	GB2
182	Fill of gave 26. A loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	26	GB1
183	Infant skeleton aged 3 to 4 years within Grave 26. Supine, extended and aligned east – west. Approximately 40% of the skeleton was recovered and in a moderate condition. The remainder of the skeleton has been truncated by a later burial (Grave 46).	26	GB1
184	Cut of Grave 26, aligned east – west. The Grave cut was heavily truncated by a later burial.	26	GB1
185	Fill of Grave 27. A moderately compact dark brown sandy silt. There was no evidence for a coffin or coffin furniture.	27	GB2
186	Adult skeleton within Grave 27. Only 2% of the skeleton was recovered, those remains not lifted were preserved *in situ*	27	GB2
187	Cut of Grave 27. Approximately 10% of the Grave cut was visible in plan; the remainder was preserved *in situ* beyond the trench limit of excavation.	27	GB2
188	Lower adult skeleton within Grave 24. 10% of the skeleton was recovered and was in a moderate condition. Those remains not lifted were preserved *in situ* beyond the trench limit of excavation to the east.	24	GB2
189	Coffin nails recovered from Grave 11	11	GB2
190	Fill of Grave 28. A loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	28	GB2

Context no.	Description	Grave no.	Trench no.
191	Adult skeleton within Grave 28. Supine, extended, aligned east – west. 20% of the skeleton was recovered. The upper and lower portions of the skeleton were preserved *in situ* beyond the east and west limits of excavation.	28	GB2
192	Cut of Grave 28, aligned east – west. Approximately 40% of the Grave cut was visible in plan; the eastern and western ends were preserved *in situ* beyond the trench limit of excavation, while the northern part of the cut has been truncated by later activity.	28	GB2
193	Fill of Grave 29. A moderately loose sandy silt. There was no evidence for a coffin or coffin furniture.	29	GB2
194	Female skeleton aged 34 to 63 years within Grave 29. Supine, extended and aligned east – west. 65% of the skeleton was recovered and was in good condition. Those remains not lifted were preserved *in situ* beyond the trench limit of excavation to the west.	29	GB2
195	Cut of Grave 29, aligned east – west. Approximately 70% of the Grave cut was visible in plan. The west end of the cut was preserved *in situ* beyond the trench limit of excavation.	29	GB2
196	Fill of Grave 30. A loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	30	GB1
197	Infant skeleton within Grave 30. The remains were badly disturbed by root and/or animal activity. 15% of the skeleton was recovered.	30	GB1
198	Cut of Grave 30, aligned east – west. Approximately 30% of the Grave cut was visible in plan; the remainder of the cut was preserved *in situ* beyond the limit of excavation to the west.	30	GB1
199	Fill of Grave 31. Not excavated – preserved *in situ*.	31	GB1
200	Skeleton within Grave 31. Not excavated – preserved *in situ.*	31	GB1
201	Cut of Grave 31, aligned east – west. Not excavated – preserved *in situ.*	31	GB1
202	Fill of Grave 32. A loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	32	GB1
203	Skeleton aged 6 years within Grave 32. Supine, extended and aligned east – west. 30% of the skeleton was recovered and was in a moderate condition. Those remains not lifted were preserved *in situ* beyond the trench limit of excavation.	32	GB1
204	Cut of Grave 32, aligned east – west. Approximately 50% of the Grave cut was visible in plan. The remainder of the cut was preserved *in situ* beyond the trench limit of excavation to the east and west.	32	GB1
205	Fill of Grave 33. A moderately loose mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	33	GB2

Context no.	Description	Grave no.	Trench no.
206	Adult skeleton within Grave 33. Supine, aligned east – west. 15% of the skeleton was recovered and was in a moderate condition. Those remains not lifted were preserved *in situ* beyond the trench limit of excavation to the west.	33	GB2
207	Cut of Grave 33. Approximately 25% of the Grave cut was visible in plan. The remainder was preserved *in situ* beyond the trench limit of excavation to the west.	33	GB2
208	Fill of Grave 34. A moderately loose dark brown sandy silt. There was no evidence for a coffin or coffin furniture.	34	GB2
209	Juvenile skeleton within Grave 34. Supine, extended and aligned east – west. 15% of the skeleton was recovered. Those remains not lifted were preserved *in situ* beyond the trench limit of excavation to the west.	34	GB2
210	Cut of Grave 34, aligned east – west. Approximately 30% of the Grave cut was visible in plan; the remainder of the cut was preserved *in situ* beyond the limit of excavation to the east.	34	GB2
211	Fill of Grave 35. Not excavated – preserved *in situ*.A very partial adult possible burial was recorded from this context.	35	
212	Fill of Grave 36. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	36	GB3
213	Female skeleton aged 34 to 36 years within Grave 36. Supine, extended and aligned east – west. 30% of the skeleton was recovered. Those remains not lifted were destroyed by later truncation.	36	GB3
214	Cut of Grave 36, aligned east – west. Approximately 50% of the Grave cut was visible in plan. The western half of the cut had been truncated by unknown activity.	36	GB3
215	Lower (adult) skeleton within Grave 26. Heavily truncated by the later burial [183]. The skeleton was 10% complete and in a poor condition.	26	GB1
216	Fill of Grave 37. Not excavated – preserved *in situ*.	37	GB2
217	Cut of Grave 37. Not excavated – preserved *in situ*	37	GB2
218	Cut of Grave 35. Not excavated – preserved *in situ*	35	GB2
219	Fill of Grave 44. A moderately compact mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	44	GB3
220	Male skeleton aged +55 years within Grave 44. Only the skull from this burial was recovered and was in a moderate condition. The remainder of the skeleton was preserved *in situ* beyond the trench limit of excavation to the west.	44	GB3
221	Cut of Grave 44. Approximately 25% of the cut was visible in plan; the remainder of the cut was preserved *in situ* beyond the trench limit of excavation to the west.	44	GB3
222	See Grave 117, context duplication as dug in two phases of the excavation works.	45	GB1

Context no.	Description	Grave no.	Trench no.
223	See Grave 117, context duplication as dug in two phases of the excavation works	45	GB1
224	See Grave 117, context duplication as dug in two phases of the excavation works	45	GB1
225	See Grave 119, context duplication as dug in two phases of the excavation works	46	GB1
226	See Grave 119, context duplication as dug in two phases of the excavation works	46	GB1
227	See Grave 119, context duplication as dug in two phases of the excavation works	46	GB1
228	Cut of Grave 47. Not excavated – preserved *in situ*.	47	GB1
229	Possibly male skeleton aged 25 to 40 years in Grave 47. Only Skull (15%) excavated, the rest was preserved *in situ* truncated to the east by the constuction of the tower.	47	GB1
230	Fill of Grave 51. A moderately compact mid brown silty sand. There was no evidence for a coffin or coffin furniture.	51	GB3
231	Possibly male skeleton aged +55 years within Grave 51. Remains of a disturbed burial, approximately 20% complete and in poor condition.	51	GB3
232	Cut of Grave 51, aligned east – west. Approximately 35% of the Grave cut was visible in plan; the remainder was preserved *in situ* beyond the trench limit of excavation.	51	GB3
233	Fill of Grave 52. A moderately compact sandy silt. There was no evidence for a coffin or coffin furniture.	52	GB3
234	Skeleton aged 45 to 55 years within Grave 52. Approximately 10% of the skeleton was recovered and was in poor condition. The remainder of the skeleton had been truncated by later burials.	52	GB3
235	Cut of Grave 52. Approximately 20% of the Grave cut remains intact, having been heavily truncated by later activity.	52	GB3
236	Fill of Grave 23. A moderately compact mid brown sandy silt. A quantity of metal coffin nails was recovered from the Grave fill.	53	GB3
237	Adult skeleton 1 within Grave 53. The remains were badly disturbed and approximately 5% complete.	53	GB3
238	Skeleton 2 within Grave 53. The skeleton was approximately 20% complete and in a poor condition. The rest of the skeleton had been disturbed by unknown activity, preserved *in situ*.	53	GB3
239	Cut of Grave 53, aligned east – west. Approximately 40% of the Grave cut was visible in plan; the remainder was preserved *in situ* beyond the trench limit of excavation.	53	GB3
240	Fill of Grave 54. Not excavated – preserved *in situ*.	54	GB3

Context no.	Description	Grave no.	Trench no.
241	Fill of Grave 41. A moderately compact sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	41	GB2
242	Infant skeleton aged 4 to 6 years within Grave 41. Supine, extended, aligned east – west. 30% of the skeleton was recovered and was in a moderate condition. Those remains were not totally lifted and the rest were preserved *in situ* beyond the trench limit of investigation	41	GB2
243	Cut of Grave 41, aligned east – west. Approximately 50% of the Grave cut was visible in plan; the remainder was preserved *in situ* beyond the trench limit of excavation to the east and west.	41	GB2
244	Adult male skeleton 3 within Grave 53. Badly disturbed remains, approximately 15% of the skeleton was recovered and was in a good condition.	53	GB3
245	Adult skeleton in Grave 54. Not fully excavated – some preserved *in situ*.	54	GB3
246	Fill of Grave 55. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	55	GB3
247	Female skeleton aged 27 to 49 years within Grave 55. Supine, extended and aligned east – west. The skeleton was 99% complete and in excellent condition.	55	GB3
248	Cut of Grave 55, aligned east – west. The complete Grave cut was visible in plan and excavated in full.	55	GB3
249	Coffin nails and studs recovered from Grave 55	55	GB3
250	Fill of Grave 56. A moderately compact mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	56	GB3
251	Infant skeleton aged 4 to 6 years within Grave 56. Supine, extended and aligned east – west. 60% of the skeleton was recovered and was in moderate condition. Those remains not excavated were preserved *in situ* beyond the limit of excavation to the north.	56	GB3
252	Cut of Grave 56, aligned east – west. Approximately 75% of the cut was visible inn plan; the remainder was preserved *in situ* beyond the limit of excavation beyond the limit of excavation to the north.	56	GB3
253	Fill of Grave 57. A moderately loose mid brown sandy silt. There was no evidence for a coffin or coffin furniture but one piece of roof tile was recorded.	57	GB3
254	Male skeleton aged 25 to 40 years within Grave 57. Supine, extended and aligned east – west. 30% of the skeleton was recovered and was in a moderate condition. Those remains not excavated were preserved *in situ* beyond the trench limit of excavation to the north and east.	57	GB3
255	Cut of Grave 57, aligned east – west. Approximately 45% of the Grave cut was visible in plan; the remainder was preserved *in situ* beyond the northern and eastern limits of excavation.	57	GB3
256	Duplication of context numbers see Grave 115 and contexts [442], [443], [444]	58	GB3

Context no.	Description	Grave no.	Trench no.
257	Duplication of context numbers see Grave 115 and contexts [442], [443], [444]	58	GB3
258	Duplication of context numbers see Grave 115 and contexts [442], [443], [444]	58	GB3
259	General graveyard deposit, not archaeologically distinct from [103] but given a context number to locate the single sherd of Middle to Late 11th century pottery that was recovered from the graveyard deposit (not from a grave fill) in this area of Groundbeam 5.	-	GB3
260	Fill of Grave 59. A moderately compact mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	59	GB3
261	Male skeleton aged 26 to 45 years within Grave 59. Supine, extended and aligned east – west. Approximately 30% of the skeleton recovered and was in good condition.	59	GB3
262	Cut of Grave 59. Approximately 40% of the Grave cut was visible in plan; the remainder was truncated by later activity and also preserved *in situ* beyond the trench limit of excavation.	59	GB3
263	Fill of Grave 60. A moderately compact mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	60	GB3
264	Adult female skeleton within Grave 60. Supine, extended and aligned east – west. The skeleton was 40% complete and in a moderate condition. The upper portion of the skeleton had been truncated by a later burial.	60	GB3
265	Cut of Grave 60, aligned east – west. Approximately 50% of the Grave cut was visible in plan, the remainder was truncated by a later burial	60	GB3
266	Fill of Grave 61. A moderately loose mid brown sandy silt.	61	GB3
267	Possibly male skeleton aged +60 years within Grave 61. Supine, extended and aligned east – west. 30% of the skeleton was recovered. The remainder was truncated by later unknown activity to the west.	61	GB3
268	Cut of Grave 61, aligned east – west. Approximately 45% of the Grave cut was visible in plan; the remainder was truncated by later activity to the west.	61	GB3
269	Coffin nails recovered from the Grave fill.	61	GB3
270	Fill of Grave 62. A moderately loose mid brown sandy containing occasional charnel remains. There was no evidence for a coffin or coffin furniture,. Two pieces of tile were recovered from this context.	62	GB3
271	Adult skeleton within Grave 62. Unfortunately only part of the right hand, right pelvic lobe and part of the right femur were present, but this grave was interesting as the body was definitely in the prone position. This was most likely because of slumping, truncation or moving of the body after burial, than an alteration on standard burial rite. It is possible as there was no evidence of a coffin, that the body was buried in a shroud and possibly accidentally buried upside down, but truncation of the burial is a more likely cause of this. Only 10% of the skeleton was recovered and it was in a moderate condition. The remains had been badly truncated by later activity.	62	GB3

Context no.	Description	Grave no.	Trench no.
272	Cut of Grave 62. Approximately 20% of Grave cut was visible in plan, the remainder was truncated and preserved *in situ.*	62	GB3
273	Fill of Grave 63. . A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	63	GB3
274	Adult male skeleton within Grave 63. 15% complete and in a moderate condition. The remainder was preserved *in situ* beyond the limit of excavation to the south.	63	GB3
275	Cut of Grave 63. The southern half of the Grave cut was preserved *in situ* beyond the limit of excavation to the south.	63	GB3
276	Fill of Grave 64. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	64	GB3
277	Female skeleton aged 20 to 30 years within Grave 64. Supine, extended and aligned east – west. 20% complete and in a moderate condition. The remainder was preserved *in situ* beyond the limit of excavation to the north.	64	GB3
278	Coffin nails recovered from the Grave fill.	64	GB3
279	Cut of Grave 64. Approximately 30% visible in plan, the remainder is preserved *in situ* beyond the limit of excavation.	64	GB3
280	Fill of Grave 65. A moderately compact mid brown sandy silt. There was no evidence for a coffin or coffin furniture.	65	GB3
281	Female skeleton aged 23 to 39 years within Grave 65. Supine, extended and aligned east – west. The skeleton was 20% complete. The remainder was truncated by later activity and also preserved *in situ.*	65	GB3
282	Cut of Grave 65. Truncated by later activity and preserved *in situ* to the south.	65	GB3
283	Fill of Grave 66. A moderately compact mid brown sandy silt. A metal escutcheon [291]clearly survived lying on the chest of the skeleton a quantity of coffin nails and studs were also recovered from the fill.	66	GB3
284	Female skeleton aged 30 to 50 years within Grave 66. Supine, extended and aligned east – west. 25% complete, the remainder was preserved *in situ.*	66	GB3
285	Cut of Grave 66. The eastern half of the Grave cut was preserved *in situ* beyond the limit of excavation.	66	GB3
286	Fill of Grave 67. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the fill.	67	GB3
287	Coffin nails recovered from Grave fill.	67	GB3
288	Adult female skeleton within Grave 67. Supine, extended and aligned east – west. 60% complete, the remainder was preserved *in situ*.	67	GB3
289	Cut of Grave 67, aligned east – west. The eastern and western ends were preserved *in situ* beyond the limit of excavation.	67	GB3
290	Coffin nails recovered from the Grave fill.	67	GB3
291	Grave plate recovered from the Grave fill.	66	GB3
292	Fill of Grave 68. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the fill.	68	GB3
293	Skeleton within Grave 68. Not excavated – preserved *in situ.*	68	GB3

Context no.	Description	Grave no.	Trench no.
294	Cut of Grave 68. Not excavated – preserved *in situ.*	68	GB3
295	Fill of Grave 69. A moderately loose mid brown sandy containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	69	GB3
296	Adult female skeleton within Grave 69. Supine, extended and aligned east – west. 20% complete, the remainder was part truncated and part preserved *in situ.*	69	GB3
297	Cut of Grave 69. Approximately 40% of Grave cut visible in plan; the remainder was truncated and also preserved *in situ.*	69	GB3
298	Cut of Grave 116. Not excavated – preserved *insitu*.	116	GB3
299	Fill of Grave 116. Not unexcavated – preserved *insitu*.	116	GB3
300	Fill of Grave 70. A moderately loose mid brown sandy containing occasional charnel remains. There was no evidence for a coffin or coffin furniture	70	GB3
301	Infant skeleton aged 4 to 5 years within Grave 70. Disturbed, 30% recovered.	70	GB3
302	Cut of Grave 70. Truncated by later activity.	70	GB3
303	Cut of Grave 71. Eastern half truncated by later activity.	71	GB3
304	Skeleton aged 18 to 30 years within Grave 71. Supine, extended and aligned east – west. Evidence of pathological disease in the form of extensive lytic lesions on three adjacent thoracic vertebrae, either as the results of Pott's Disease (tuberculosis) or as a result of malignant neoplastic disease (cancer).	71	GB3
305	Fill of Grave 71. A moderately loose mid brown sandy containing occasional charnel remains containing one tile sherd. There was no evidence for a coffin or coffin furniture.	71	GB3
306	Cut of Grave 72. 35% of Grave cut visible in plan. Truncated by later activity.	72	GB3
307	Adult skeleton within Grave 72. Supine, extended and aligned east – west, evidence of periostitis on the right femur. 20% complete, truncated by later activity to the east, preserved *in situ* to the north.	72	GB3
308	Fill of Grave 72. A moderately loose mid brown sandy containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	72	GB3
309	Stone (clunch) truncated biconical Medieval spindle whorl <4> within fill 308	72	GB3
310	Cut of Grave 73. Heavily truncated, only west end remained undisturbed.	73	GB3
311	Infant skeleton aged 0 to 1 years within Grave 73. Heavily truncated, only the skull remained.	73	GB3
312	Fill of Grave 73. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	73	GB3
313	Fill of Grave 74. A moderately loose mid brown sandy containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill.	74	GB3
314	Adult male skeleton within Grave 74. Supine, extended and aligned east – west. Truncated by surrounding Graves. 35% of the skeleton recovered and was in moderate condition.	74	GB3

Context no.	Description	Grave no.	Trench no.
315	Cut of Grave 74. Truncated to the east and west by later Graves.	74	GB3
316	Fill of Grave 75. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	75	GB3
317	Adult skeleton within Grave 75. 10% of the skeleton was recovered and was in moderate condition.	75	GB3
318	Cut of Grave 75. Truncated to the east and west by later burials, preserved *in situ* to the south.	75	GB3
319	Fill of Grave 76. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	76	GB3
320	Skeleton aged 13 to 15 years within Grave 76. Supine, extended and aligned east – west. 20% of the skeleton was recovered and in moderate condition. The remainder was preserved *in situ*.	76	GB3
321	Cut of Grave 76. The southern half of the Grave cut was preserved *in situ* beyond the limit of excavation to the south.	76	GB3
322	Fill of Grave 77. A moderately loose mid brown sandy containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	77	GB3
323	Adult skeleton within Grave 77. Supine, extended and aligned east – west. 20% complete, truncated to the north, east and west by later burials.	77	GB3
324	Cut of Grave 77. Truncated to the north, east and west by later burials.	77	GB3
325	Fill of Grave 78. Not excavated – preserved *insitu*.	78	GB3
326	Adult possibly female skeleton within Grave 79. Supine, extended and aligned east – west. 30% complete, the remains are preserved *in situ*.	79	GB3
327	Cut of Grave 79. The east and west ends are preserved *in situ* beyond the trench limit of excavation.	79	GB3
328	Fill of Grave 79. A moderately loose mid brown sandy containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	79	GB3
329	Fill of Grave 80. A moderately loose mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	80	GB3
330	Adult skeleton within Grave 80. Heavily truncated by later activity, 10% complete.	80	GB3
331	Cut of Grave 80. Truncated on all sides to the east and west.	80	GB3
332	Fill of Grave 81. A moderately loose mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	81	GB3
333	Adult possibly female skeleton within Grave 81. 20% complete, the remains were preserved *in situ.*	81	GB3
334	Cut of Grave 81. Truncated to the east by later burials, preserved *in situ* to the west.	81	GB3
335	Fill of Grave 82. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill and a piece of clay pipe stem (18th century) .	82	GB3

Context no.	Description	Grave no.	Trench no.
336	Skeleton aged 15 to 18 years within Grave 82. Supine, extended and aligned east – west, fused head of femur. 30% complete, the remainder was preserved *in situ*.	82	GB3
337	Cut of Grave 82, aligned east – west. 70% preserved *in situ* beyond the limit of excavation to the west.	82	GB3
338	Fill of Grave 83. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	83	GB4
339	Adult skeleton within Grave 83. Supine, extended and aligned east – west. 20% of the skeleton was recovered and was in good condition. Those remains not lifted were preserved *in situ.*	83	GB4
340	Cut of Grave 83. Approximately 35% of the Grave cut was visible in plan; the remainder was preserved *in situ* beyond the limit of excavation to the west.	83	GB4
341	Fill of Grave 84. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	84	GB4
342	Adult skeleton within Grave 84. Supine, extended and aligned east – west. 30% of the skeleton was recovered and in moderate condition. Truncated to the north and south and preserved *in situ* to the east and west.	84	GB4
343	Cut of Grave 84. Truncated to the north and south by later burials, preserved *in situ* beyond the trench limit of excavation to the east and west.	84	GB4
344	Fill of Grave 85. A moderately compact mid brown sandy silt. A quantity of coffin nails was recovered from the Grave fill.	85	GB4
345	Skeleton under 12 years of age within Grave 85. Supine, extended and aligned east – west. 80% of the skeleton was recovered and in good condition, the remainder was preserved *in situ.*	85	GB4
346	Cut of Grave 85, aligned east – west. 20% of the Grave cut was preserved *in situ* beyond the western limit of excavation.	85	GB4
347	Fill of Grave 86. A moderately loose mid brown sandy containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	86	GB4
348	Adult skeleton within Grave 86. Supine, extended and aligned east – west. 20% of the skeleton was recovered and was in good condition. The remainder was preserved *in situ.*	86	GB4
349	Cut of Grave 86, aligned east – west. 75% of the Grave cut was preserved *in situ* beyond the limit of excavation to the west.	86	GB4
350	Fill of Grave 87. Not excavated – preserved *in situ.*	87	GB4
351	Skeleton within Grave 87. Not excavated – preserved *in situ.*	87	GB4
352	Cut of Grave 87. Not excavated – preserved *in situ.*	87	GB4
353	Fill of Grave 88. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill.	88	GB3
354	Skeleton aged 13 to 15 years within Grave 88. 30% of the skeleton was recovered and in good condition. The remainder was preserved *in situ.*	88	GB3

Context no.	Description	Grave no.	Trench no.
355	Cut of Grave 88. Approximately 60% of the Grave cut was preserved *in situ* beyond the limit of excavation to the west.	88	GB3
356	Fill of Grave 89. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	89	GB4
357	Adult skeleton within Grave 89. 30% of the skeleton was recovered and was in good condition. The remainder was preserved *in situ*.	89	GB4
358	Cut of Grave 89. Approximately 40% of the Grave cut is visible in plan; the remainder was preserved *in situ* beyond the limit of excavation to the east and west.	89	GB4
359	Fill of Grave 90. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	90	GB4
360	Adult skeleton within Grave 90. Supine, extended and aligned east – west. Truncated to the north and preserved *in situ* to the east and west. 10% of the skeleton was recovered and in was in good condition.	90	GB4
361	Cut of Grave 90, aligned east – west. Approximately 60% of the Grave cut was preserved *in situ* beyond the limit of excavation to the west	90	GB4
362	Fill of Grave 91. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	91	GB4
363	Cut of Grave 91. The majority of the Grave cut was preserved *in situ* beyond the trench limit of excavation with approximately 15% visible in plan.	91	GB4
364	Adults skeleton within Grave 91. 10% complete, the remainder was preserved *in situ.*	91	GB4
365	Fill of Grave 92. Not excavated – preserved *in situ.*	92	GB4
366	Skeleton within Grave 92. Not excavated – preserved *in situ.*.	92	GB4
367	Cut of Grave 92. Not excavated – preserved *in situ.*	92	GB4
368	Fill of Grave 93. Not excavated – preserved *in situ.*	93	GB4
369	Skeleton within Grave 93. Not excavated – preserved *in situ.*	93	GB4
370	Cut of Grave 93. Not excavated – preserved *in situ.*	93	GB4
371	Fill of Grave 94. Not excavated – preserved *in situ.*	94	GB4
372	Skeleton within Grave 94. Not excavated – preserved *in situ.*	94	GB4
373	Cut of Grave 94. Not excavated – preserved *in situ.*	94	GB4
374	Fill of Grave 95. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	95	GB4
375	Adult skeleton within Grave 95. 10% of the skeleton was recovered and was in moderate condition. The remainder was preserved *in situ.*	95	GB4
376	Cut of Grave 95. Truncated to the south and preserved *in situ* to the north and west.	95	GB4
377	Fill of Grave 96. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	96	GB4

Context no.	Description	Grave no.	Trench no.
378	Skeleton within Grave 96. Only the feet were lifted, the remainder of the skeleton was preserved *in situ.*	96	GB4
379	Cut of Grave 96. Approximately 90% of the skeleton was preserved *in situ* beyond the limit of excavation to the west.	96	GB4
380	Fill of Grave 97. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	97	GB4
381	Adult skeleton within Grave 97. Supine, extended and aligned east – west. 15% of the skeleton was recovered and was in a moderate condition.	97	GB4
382	Cut of Grave 97. The east and west ends of the Grave cut were preserved *in situ* beyond the trench limit of excavation.	97	GB4
383	Fill of Grave 98. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	98	GB4
384	Infant skeleton aged 5 to 6 years within Grave 98. Supine, extended and aligned east – west. 40% of the skeleton was recovered and was in good condition. The remainder was preserved *in situ.*	98	GB4
385	Cut of Grave 98. Approximately 65% of the Grave cut was preserved *in situ.*	98	GB4
386	Fill of Grave 38. Not excavated – preserved *insitu*, but two cast iron coffin grips collected..	38	GB2
387	Cut of Grave 38. Not excavated – preserved *insitu*.	38	GB2
388	Fill of Grave 99. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill.	99	GB4
389	Skeleton within Grave 99. Supine, extended and aligned east – west. The skeleton was 30% complete and in moderate condition. The remainder was preserved *in situ.*	99	GB4
390	Cut of Grave 99. The east and west ends of the Grave cut were preserved *in situ* beyond the trench limit of excavation.	99	GB4
391	Fill of Grave 100. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill.	100	GB5
392	Adult skeleton aged +55 years within Grave 100. Supine, extended and aligned east – west. The skeleton was 25% complete and in a moderate condition. The remainder was preserved *in situ.*	100	GB5
393	Cut of Grave 100. The eastern half of the Grave cut was preserved *in situ* beyond the trench limit of excavation.	100	GB5
394	Fill of Grave 101. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill.	101	GB5
395	Adult male skeleton within Grave 101. Heavily truncated by later burials, 20% of the skeleton was recovered and was in a moderate condition.	101	GB5
396	Cut of Grave 101. Truncated to the east, preserved *in situ* to the west.	101	GB5

Context no.	Description	Grave no.	Trench no.
397	Fill of Grave 102. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill.	102	GB5
398	Skeleton aged 16 to 20 years and possibly female within Grave 102. Supine, extended and aligned east – west. 45% of the skeleton was complete and was in moderate condition. The remainder was preserved *in situ.*	102	GB5
399	Cut of Grave 102. The southern half of the Grave cut was preserved *in situ* beyond the limit of excavation to the east.	102	GB5
400	Fill of Grave 103. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill.	103	GB5
401	Adult female skeleton within Grave 103. Supine, aligned east – west. The skeleton was 45% complete and in a moderate condition. The remainder was preserved *in situ.*	103	GB5
402	Cut of Grave 103. The eastern half of the Grave cut was preserved *in situ* beyond the trench limit of excavation.	103	GB5
403	Fill of Grave 104. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	104	GB5
404	Possibly male skeleton aged 20 to 24 years within Grave 104. Supine, extended and aligned east – west. The skeleton was 40% complete and in a moderate condition. The remainder was preserved *in situ.*	104	GB5
405	Cut of Grave 104. The eastern half of the Grave cut was preserved *in situ* beyond the trench limit of excavation.	104	GB5
406	Fill of Grave 105. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill and a bone button ring (textile button) and two fragments of tile.	105	GB5
407	Male skeleton +60 years within Grave 105. Supine, aligned east – west. The skeleton was 45% complete and in a moderate condition. The remainder was preserved *in situ.*	105	GB5
408	Cut of Grave 105. The eastern half of the Grave cut was preserved *in situ* beyond the trench limit of excavation.	105	GB5
409	Fill of Grave 106. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill and four pieces of tile.	106	GB5
410	Adult skeleton within Grave 106, the individual was suffering from ankylosing spondylitis. Supine, extended and aligned east – west. 40% of the skeleton was recovered and was in a moderate condition. The lower half of the skeleton was truncated by a later burial.	106	GB5
411	Cut of Grave 106. The western half of the Grave cut was preserved *in situ* beyond the trench limit of excavation.	106	GB5
412	Fill of Grave 107. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails and a piece of tile were recovered from the Grave fill.	107	GB5

Context no.	Description	Grave no.	Trench no.
413	Female skeleton aged 16 to 20 years within Grave 107. Supine, aligned east – west. The skeleton was 45% complete and in a moderate condition. The remainder was preserved *in situ.*	107	GB5
414	Cut of Grave 107. The eastern half of the Grave cut was preserved *in situ* beyond the trench limit of excavation	107	GB5
415	Fill of Grave 108. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill and one possibly 19th century screw..	108	GB5
416	Female skeleton aged +55 years within Grave 108. Only the skull was recovered, the remainder was preserved *in situ.*	108	GB5
417	Cut of Grave 108. 90% of the Grave cut was preserved *in situ* beyond the trench limit of excavation to the east.	108	GB5
418	Fill of Grave 109. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	109	GB5
419	Male skeleton aged +55 years and suffering from osteoarthritis within Grave 109. . Supine, aligned east – west. The skeleton was 70% complete and in a moderate condition. The remainder was preserved *in situ.*	109	GB5
420	Cut of Grave 109. The eastern end of the Grave cut was preserved *in situ* beyond the trench limit of excavation	109	GB5
421	Fill of Grave 110. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	110	GB5
422	Female skeleton aged 45 to 55 years within Grave 110. Only the skull was removed, the remainder was preserved *in situ.*	110	GB5
423	Cut of Grave 110. Approximately 90% of the Grave cut was preserved *in situ* beyond the eastern limit of excavation.	110	GB5
424	Fill of Grave 111. Not excavated – preserved *in situ.*	111	GB5
425	Skeleton within Grave 111. Not excavated – preserved *in situ.*	111	GB5
426	Cut of Grave 111. Not excavated – preserved *in situ.*	111	GB5
427	Fill within cut 431. A loose yellow silty sand.	-	GB5
428	Fill within cut 431. A moderately compact yellow silty sand with chalk inclusions.	-	GB5
429	Coffin nails recovered from Grave 111.	111	GB5
430	Fill within cut 431. A moderately compact light brown sandy silt.	-	GB5
431	Cut of a pit. In profile the pit measured 0.8m wide by 1m deep. The true dimensions and function was unknown as the feature continues beyond the limit of excavation.	-	GB5
432	Fill within cut 431. A moderately compact mid brown sandy silt.	-	GB5
433	Fill of Grave 112. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill. One piece of tile was also present.	112	GB5

Context no.	Description	Grave no.	Trench no.
434	Adult female skeleton within Grave 112. Supine, aligned east – west. The skeleton was 25% complete and in a moderate condition. The remainder was preserved *in situ.*	112	GB5
435	Cut of Grave 112. The eastern end of the Grave cut was truncated by later activity, the west end was preserved *in situ* beyond the limit of excavation	112	GB5
436	Fill of Grave 113. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill. One piece of tile also present.	113	GB5
437	Adult female skeleton within Grave 113. Heavily truncated by later burials, 10% of the skeleton was recovered.	113	GB5
438	Cut of Grave 113. Heavily truncated by later activity, approximately 20% of the Grave cut was visible in plan.	113	GB5
439	Fill of Grave 114. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	114	GB5
440	Possibly female skeleton aged 18 to 30 within Grave 114. Only the skull was removed, the remainder was preserved *in situ.*	114	GB5
441	Cut of Grave 114. Approximately 90% of the Grave cut was preserved *in situ* beyond the eastern limit of excavation.	114	GB5
442	Fill within Grave 115. A moderately compact mid brown sandy silt containing occasional charnel remains. A quantity of coffin nails was recovered from the Grave fill.	115	GB5
443	Female skeleton aged 18 to 30 years within Grave 115. Supine, aligned east – west. The skeleton was 45% complete and in a moderate condition. The remainder was preserved *in situ.*	115	GB5
444	Cut of Grave 115. The eastern half of the Grave cut was preserved *in situ* beyond the trench limit of excavation	115	GB5
445	Skeleton within Grave 116. Not excavated – preserved *insitu*.	116	GB3
446	Fill of Grave 117. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	117	GB6
447	Female skeleton aged 45 to 55 years within Grave 117. Supine, extended and aligned east – west. The skeleton was 35% complete and was in a poor condition. The remainder was cut by the construction of the Bell Tower in the 13th century..	117	GB6
448	Cut of Grave 117. The east end of the Grave cut was preserved *in situ* beyond the limit of excavation to the east, running under the church bell tower. This dates the burial to pre 13th century.	117	GB6
449	Fill of Grave 118. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	118	GB7
450	Female skeleton aged +55 years within Grave 118. Supine, extended and aligned east – west. The skeleton was 95% complete and in good condition.	118	GB7

Context no.	Description	Grave no.	Trench no.
451	Cut of Grave 118. Contained an adult and two infant burials.	118	GB7
452	Fill of Grave 119. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	119	GB7
453	Possibly female skeleton aged +55 years within Grave 119. Supine, extended and aligned east – west. The skeleton was 45% complete and was in a poor condition. The skeleton was partially truncated by another burial and also truncated by the construction of the Bell Tower in the 13th century.	119	GB7
454	Fill of Grave 120. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	120	GB7
455	Infant skeleton aged 1 to 2 years within Grave 120. Supine, extended and aligned east – west. The skeleton was 60% complete and in good condition.	120	GB7
456	Cut of Grave 120.	120	GB7
457	Infant skeleton aged 4 to 6 years within Grave 118. The skeleton was 70% complete and in good condition.	118	GB7
458	Infant skeleton aged 4 to 6 years within Grave 118. The skeleton was 60% complete and in good condition.	118	GB7
459	Fill of Grave 121. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	121	GB7
460	Infant skeleton aged 3 to 4 years within Grave 121. Heavily truncated, only 5% complete.	121	GB7
461	Cut of Grave 121. Truncated by later activity.	121	GB7
462	Fill of Grave 122. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	122	GB7
463	Possibly male skeleton aged 35 to 56 years within Grave 122. Supine, extended and aligned east – west. The skeleton was 30% complete and in a moderate condition. The remainder was preserved *in situ.*	122	GB7
464	Cut of Grave 122. Approximately 60% of the Grave cut was preserved *in situ* beyond the limit of excavation to the south.	122	GB7
465	Fill of Grave 123. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	123	GB7
466	Possibly male skeleton aged 27 to 49 within Grave 123, presented with evidence of a severe trauma either caused by a fall or possibly rickets. Supine, extended and aligned east – west. The skeleton was 50% complete and in a moderate condition. The remainder was preserved *in situ*	123	GB7
467	Cut of Grave 123. Approximately 60% of the Grave cut was preserved *in situ* beyond the limit of excavation to the north.	123	GB7
468	Fill of Grave 124. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	124	GB7
469	Possibly male skeleton aged 45 to 55 years within Grave 124, presented with a trauma to the right tibia. Supine, extended and aligned east – west. The skeleton was 90% complete and in a moderate condition.	124	GB7

Context no.	Description	Grave no.	Trench no.
470	Cut of Grave 124. Entire cut visible in plan and excavated in full.	124	GB7
471	Fill of Grave 125. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	125	GB7
472	Male skeleton aged 20 to 27 within Grave 125, presented with indications of spina bifida occultay. Supine, extended and aligned east – west. The skeleton was 40% complete and in a good condition. The left side was preserved *in situ.*	125	GB7
473	Cut of Grave 125. The southern half of the Grave was preserved *in situ* beyond the limit of excavation to the south.	125	GB7
474	Fill of Grave 126. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	126	GB7
475	Female skeleton aged +55 years within Grave 126. Only the skull was recovered, the remainder was preserved *in situ*.	126	GB7
476	Cut of Grave 125. 90% of the Grave cut was preserved *in situ* beyond the limit of excavation.	126	GB7
477	Fill of Grave 127. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	127	GB7
478	Adult skeleton within Grave 127. Only the skull was recovered, the remainder was preserved *in situ*.	127	GB7
479	Cut of Grave 127. 90% of the Grave cut was preserved *in situ* beyond the limit of excavation.	127	GB7
480	Fill of Grave 128. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	128	GB7
481	Adult possibly female skeleton within Grave 128. Supine, extended and aligned east – west. The skeleton was 70% complete and in a moderate condition.	128	GB7
482	Cut of Grave 128.	128	GB7
483	Fill of Grave 129. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	129	GB7
484	Child skeleton aged 10 to 12 years within Grave 129. Supine, extended and aligned east – west. The skeleton was 75% complete and in a moderate condition.	129	GB7
485	Cut of Grave 129. The north half of the Grave cut was preserved *in situ* beyond the limit of excavation to the north.	129	GB7
486	Fill of Grave 130. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	130	GB7
487	Skeleton within Grave 130. Supine, extended and aligned east – west. The skeleton was 40% complete and in a moderate condition.	130	GB7
488	Cut of Grave 130. The east and west ends of the Grave cut were preserved *in situ* beyond the limit of excavation.	130	GB7
489	Fill of Grave 131. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	131	GB7

Context no.	Description	Grave no.	Trench no.
490	Adult possibly male skeleton within Grave 131. Supine, extended and aligned east – west. The skeleton was 30% complete and in a moderate condition.	131	GB7
491	Cut of Grave 131. The east and west ends of the Grave cut were preserved *in situ* beyond the limit of excavation.	131	GB7
492	Fill of Grave 132. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	132	GB7
493	Adult possibly male skeleton within Grave 132. Supine, extended and aligned east – west. The skeleton was 40% complete and in a moderate condition.	132	GB7
494	Cut of Grave 132. The east and west ends of the Grave cut were preserved *in situ* beyond the limit of excavation.	132	GB7
495	Fill of Grave 133. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	133	GB7
496	Adult skeleton within Grave 133. 15% complete, heavily truncated by later burials.	133	GB7
497	Cut of Grave 133. Heavily truncated by later burials.	133	GB7
498	Fill of Grave 134. A moderately compact mid brown sandy silt containing occasional charnel remains. There was no evidence for a coffin or coffin furniture.	134	GB7
499	Female skeleton aged +55 years within Grave 134. Only the skull was lifted, the remainder was preserved *in situ.*	134	GB7
500	Cut of Grave 134. 90% of the Grave cut was preserved *in situ* beyond the limit of excavation to the east.	134	GB7
501	Fill of Grave 135. Not excavated – preserved *in situ*	135	GB7
502	Skeleton within Grave 135. Not excavated – preserved *in situ*	135	GB7
503	Cut of Grave 135. Not excavated – preserved *in situ*	135	GB7
504	Cut of Grave 116. Not excavated – preserved *in situ.*	116	
505	*Context error [505] not assigned*.		
506	Fill of Grave 39. Not excavated – preserved *in situ.*	39	GB2
507	Cut of Grave 39. Not excavated – preserved *in situ.*	39	GB2
508	Fill of Grave 40. Not excavated – preserved *in situ.*	40	GB2
509	Cut of Grave 40. Not excavated – preserved *in situ.*	40	GB2
510	Fill of Grave 42. Not excavated – preserved *in situ*	42	GB2
511	Cut of Grave 42. Not excavated – preserved *in situ*	42	GB2
512	Fill of Grave 43. Not excavated – preserved *in situ*	43	GB2
513	Cut of Grave 43. Not excavated – preserved *in situ*	43	GB2
514	Fill of Grave 48. Not excavated – preserved *in situ*	48	GB2
516	Cut of Grave 48. Not excavated – preserved *in situ*	48	GB2
517	Fill of Grave 49. Not excavated – preserved *in situ*	49	GB2
518	Cut of Grave 49. Not excavated – preserved *in situ*	49	GB2
519	Fill of Grave 50. Not excavated – preserved *in situ*	50	GB2
520	Cut of Grave 50. Not excavated – preserved *in situ*	50	GB2
521	Cut of Grave 78. Not excavated – preserved *in situ*	78	GB3

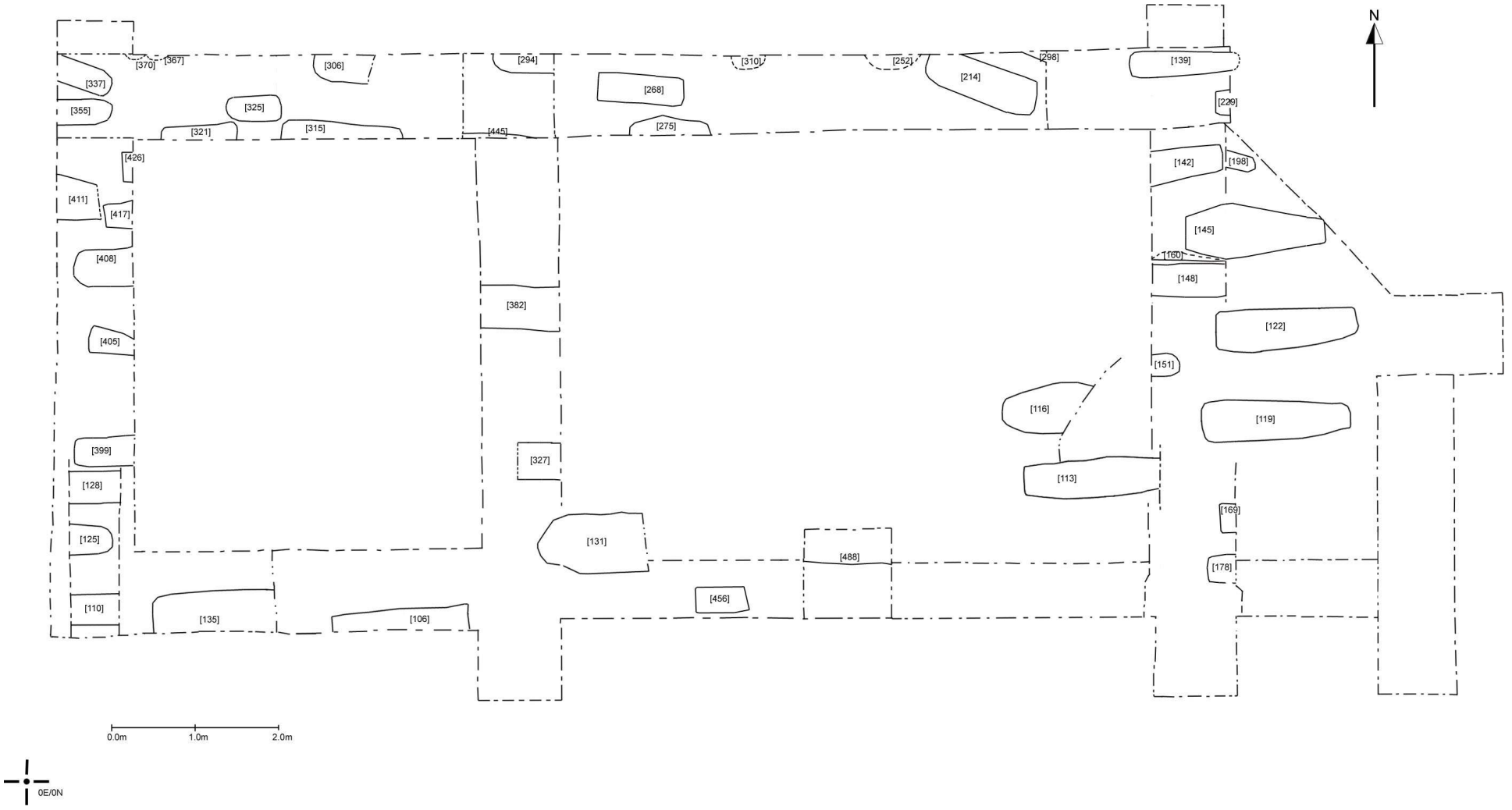

Fig 46 General Site Plan 1: the first of a series of six General Site Plans showing the locations of all the grave cuts (by context cut numbers), this first plan shows many of the higher level graves and graves located outside of the groundbeam locations but above the level of preservation in situ, such as Grave I [106], Grave 3 [113], Grave 4 [116], Grave 5 [119], Grave 6 [122] and Grave 9 [131].

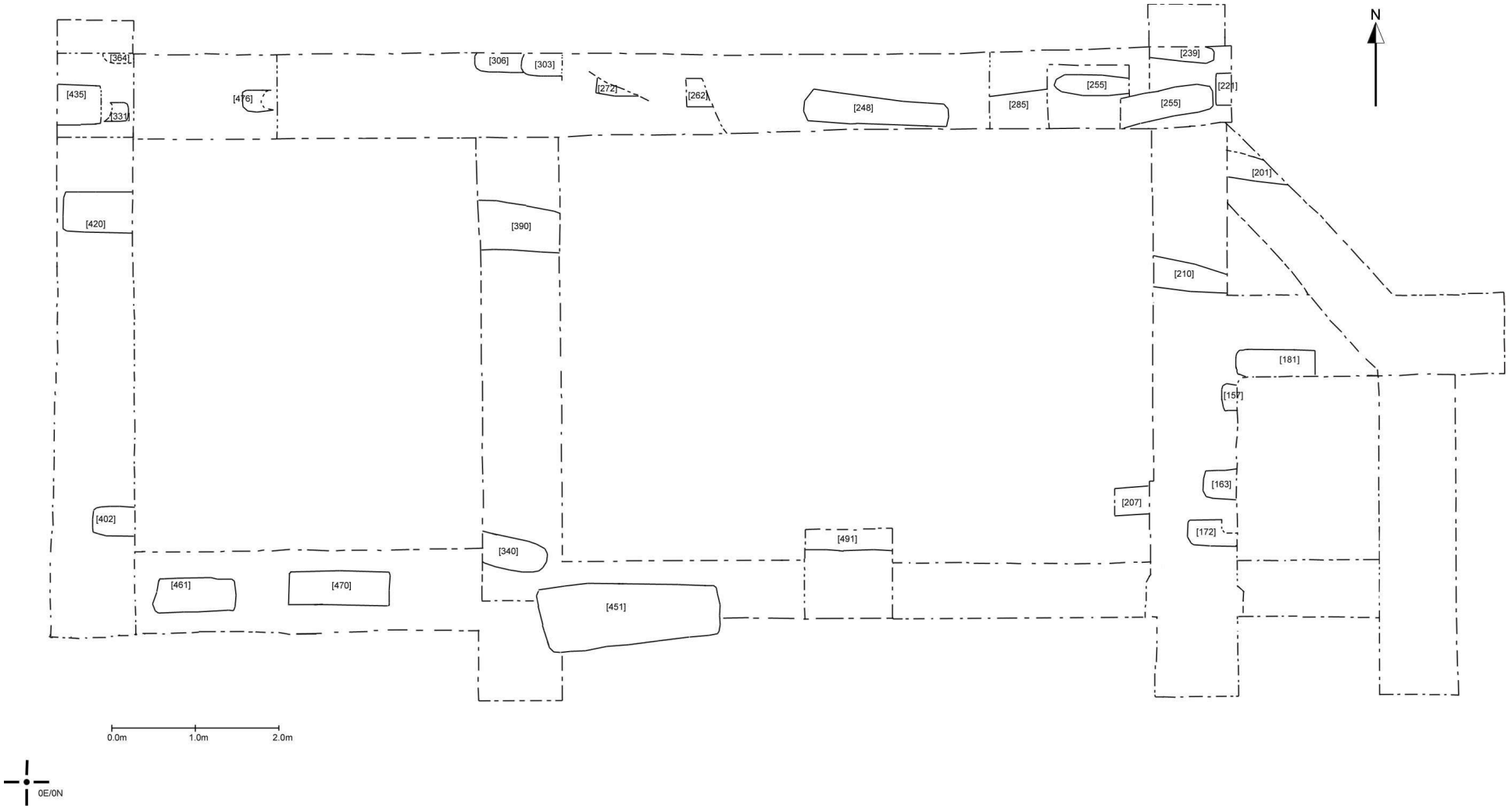

Fig 47 General Site Plan 2: showing the locations of grave cuts.

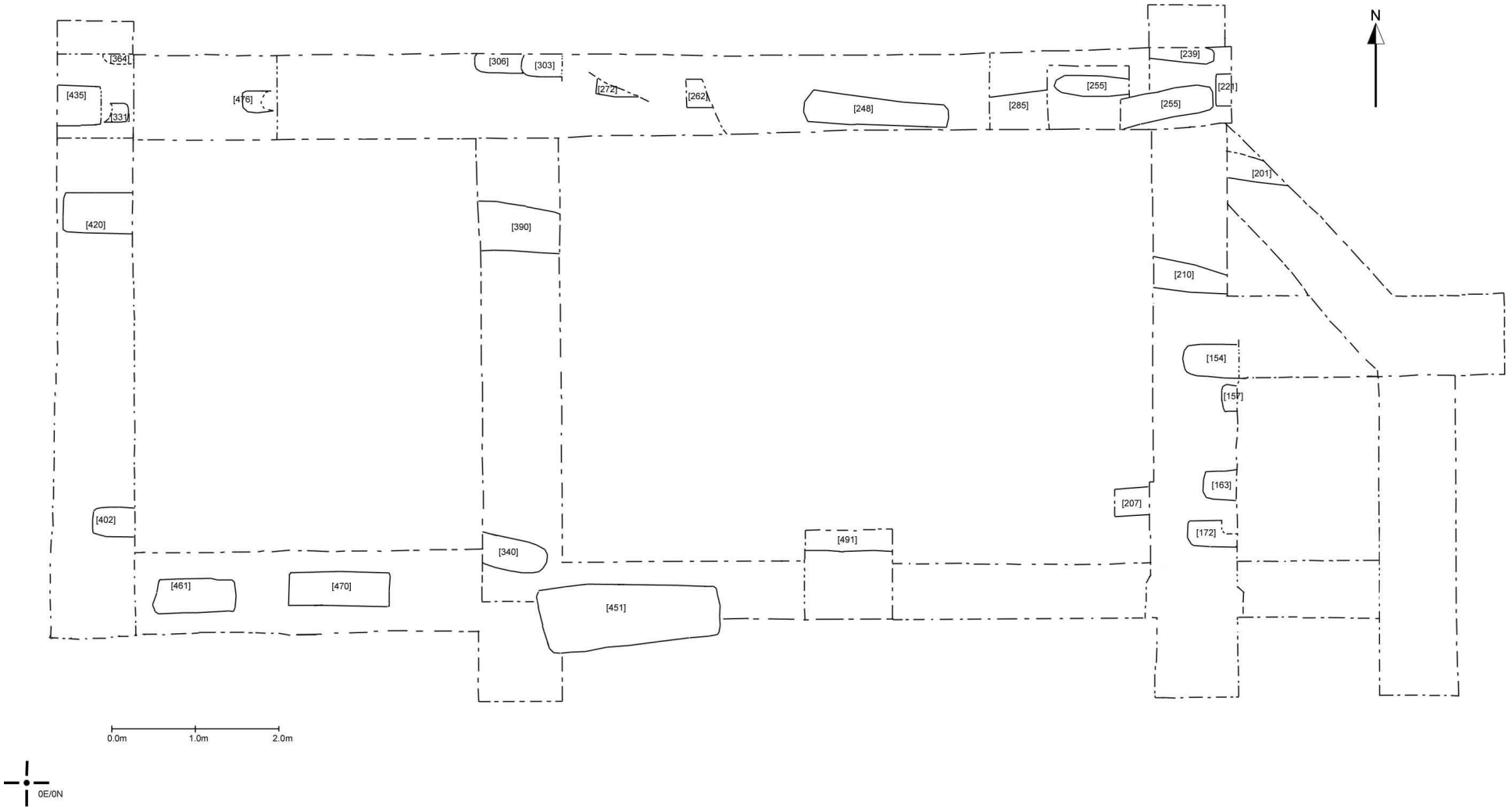

Fig 48 General Site Plan 3: showing the locations of grave cuts.

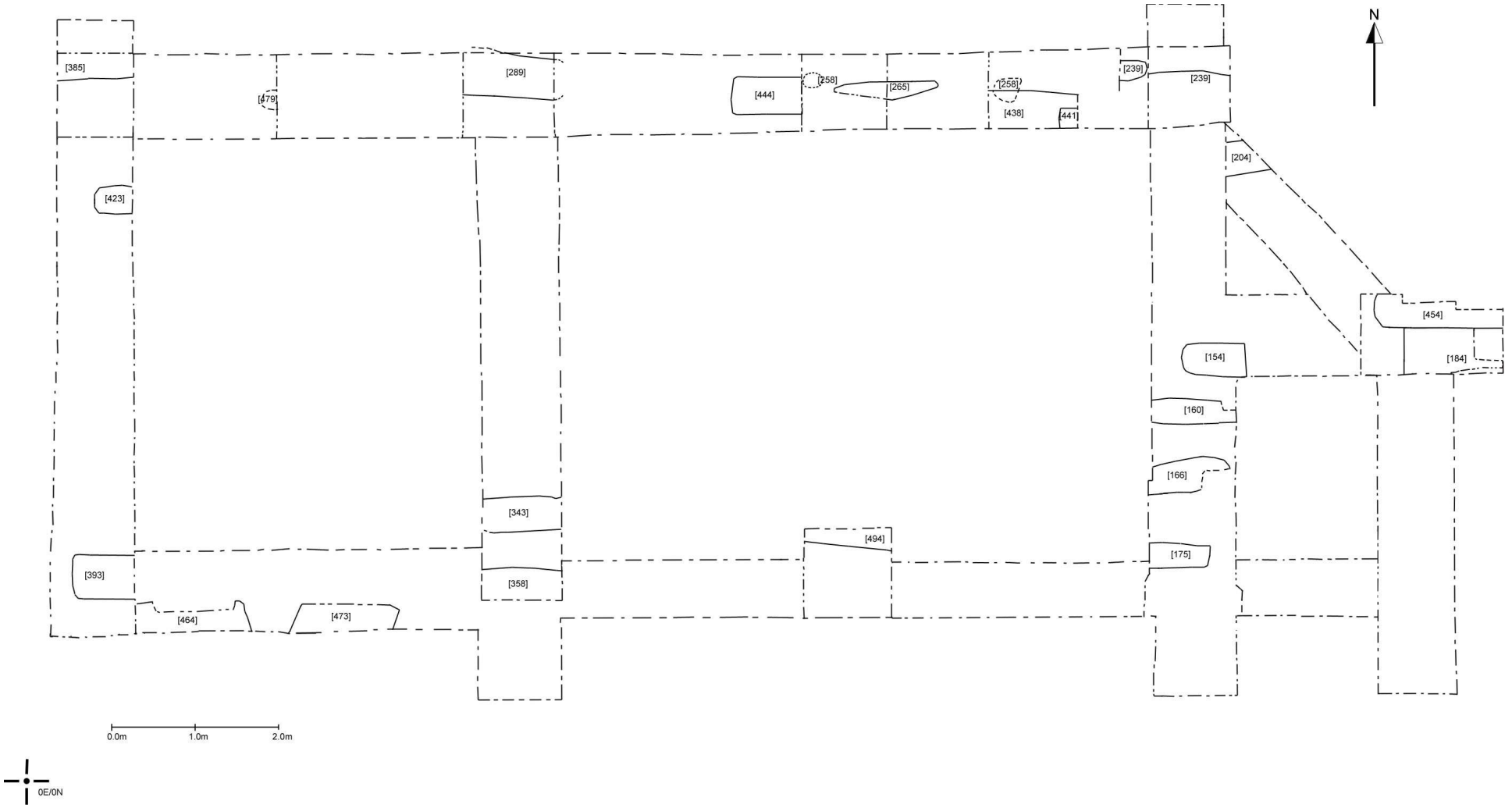

Fig 49 General Site Plan 4: showing the locations of grave cuts

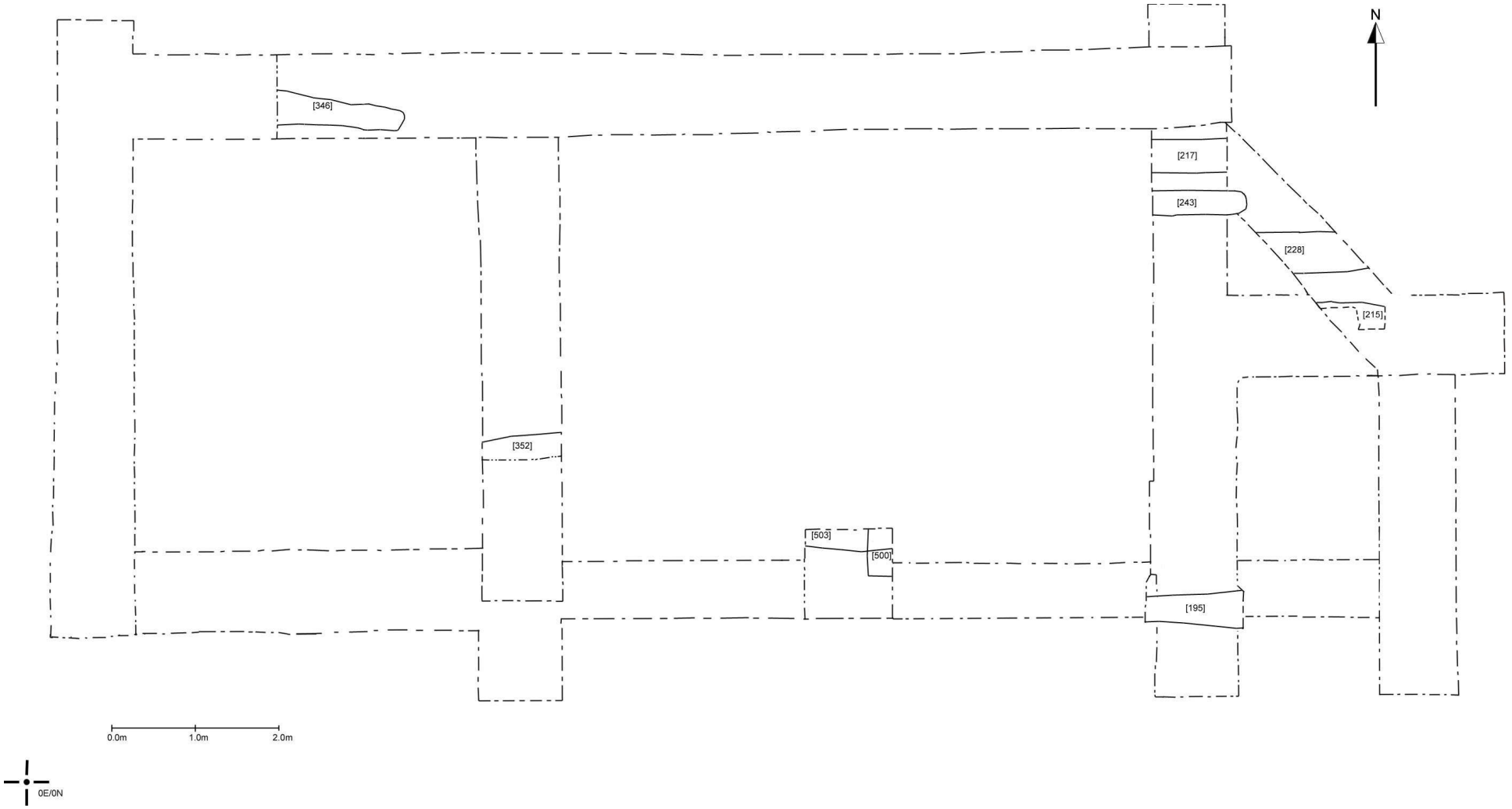

Fig 50 General Site Plan 5: showing the locations of grave cuts.

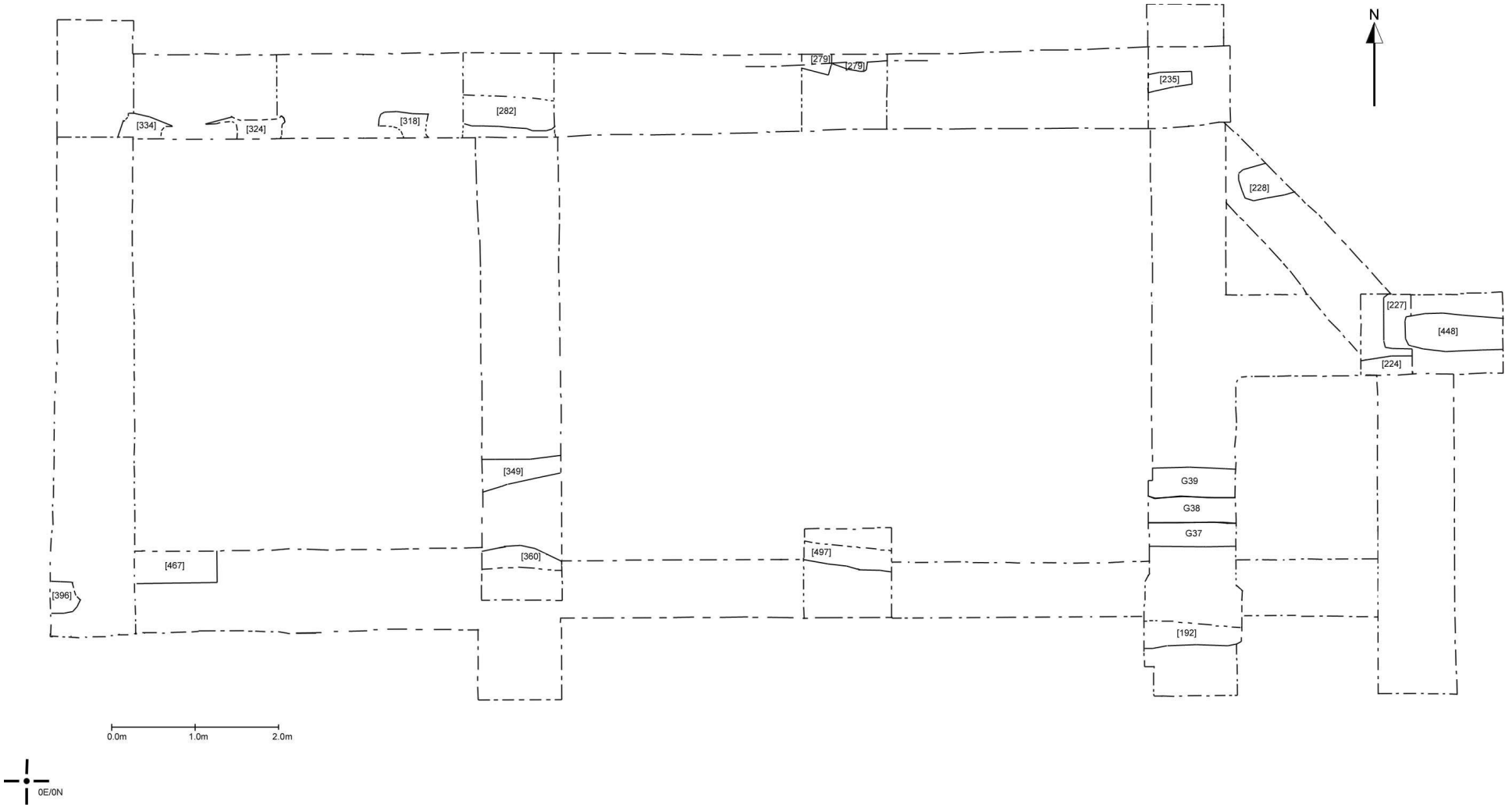

Fig 51 General Site Plan 6, showing the locations of grave cuts.

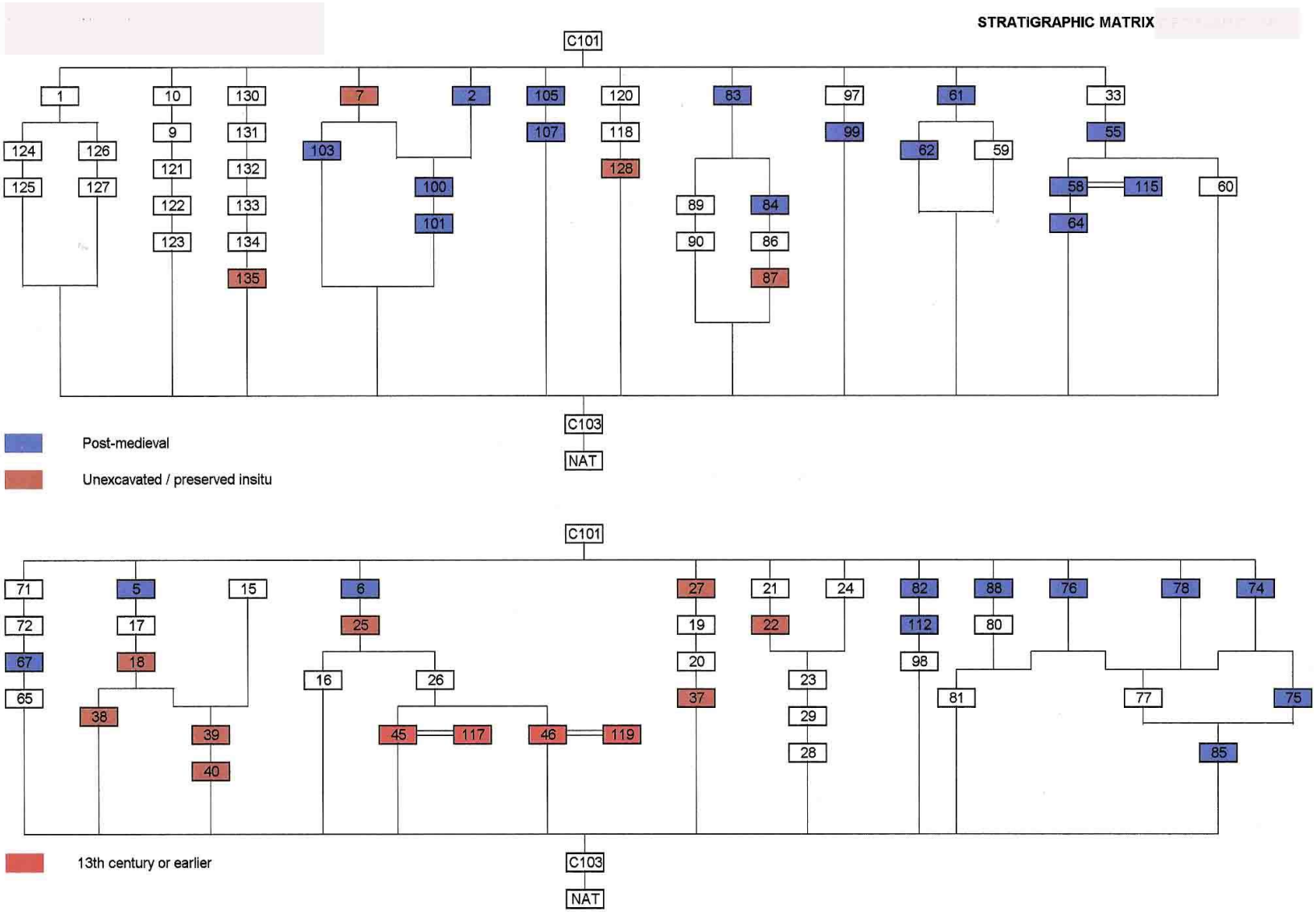

Fig 52 Matrix to show the stratigraphic relationships of graves by Grave Numbers (presented as four adjoining sections, see Fig 53 also).

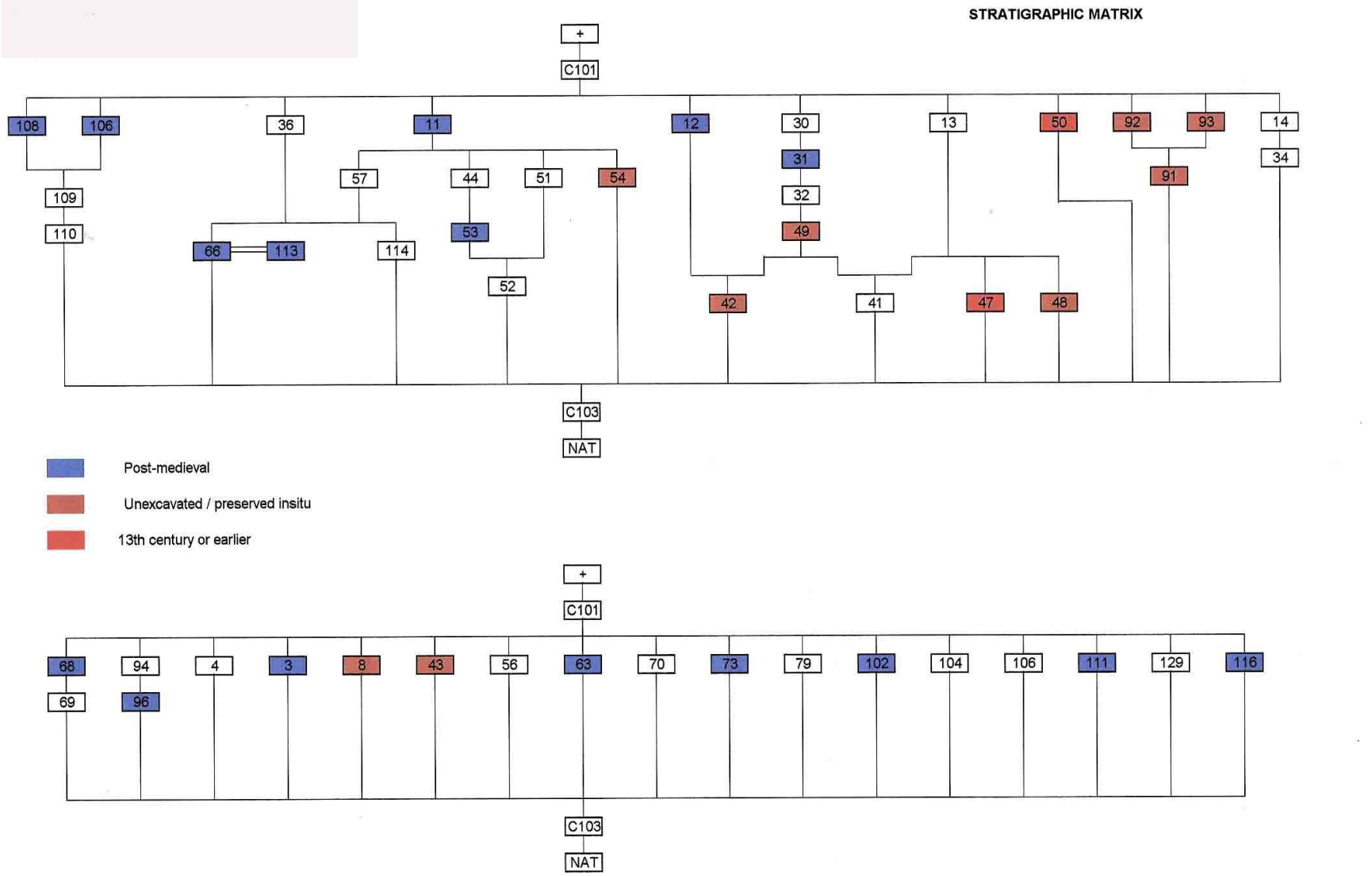

Fig 53 Matrix to show the stratigraphic relationships of graves by Grave Numbers (presented as four adjoining sections, see Fig 52 also)

6. MAP 2 Assessment factual data

MAP 2 states that for each component of the project there should be a statement setting out:

i) The quantity of material and or records
ii) The provenance of material: this should include comments on provisional dating and evidence for contamination or residuality
iii) The range and variety of materials: this should include comment on any bias observed due to collection and sampling strategies
iv) The condition of material: this should include comments on the extent to which an assemblage is likely to be affected by preservation bias, and comment on its potential for long-term storage
v) The existence of primary sources or relevant documentation may enhance the study of site data

This information is detailed below and also forms a quantification of the archive contents, their state and future location.

6.1. Stratigraphic/structural data, preliminary results of the excavation

The stratigraphic material records are listed earlier in the report and are in good condition and are suitable for long-term storage.

Photographic, survey and primary sources and supporting documentation records are suitable for long-term storage. The archive will be deposited in accordance with current archive standards at the London archaeological Archive.

The cemetery does not involve complex stratigraphy, but the lack of secondary dating evidence and finds data does not allow a tight chronology for the site to be confirmed.

The results of the archaeological excavation are assessed as being of local interest.

No significant secondary sources (except finds data) or supporting documentation is available to form part of the site archive, as few historical or documentary records survive relating to this area of the churchyard. Unfortunately, detailed comparisons between this site and other rural graveyard excavations are very limited.

6.2 Artefactual data, preliminary results of the excavation and watching brief

Artefacts were recovered from the excavation area and in total there were 36 registered finds.

All finds are discussed in detail in the specialist reports appended to this report:

6.3 Osteological data, preliminary results of the excavation

The osteological assessment results are included as Appendix 1 of this report.

7 Planning for analysis: updating the project design

In accordance with MAP 2 (6.17) the purpose of this stage is to put forward proposals for work to be carried out in the analysis phase. These proposals will be expressed as an updated project design, which will define the objectives of the analysis phase and the strategies and resources necessary to achieve them. The format of the updated project design is the same as that for the original project design, but with an additional section 'Summary of Potential' which summarises those aspects of the data-collection selected for analysis during the assessment phase.

7.1 Summary of Potential, aims and objectives

MAP 2: statement of the archaeological potential of the data contained in the site archive (MAP 2, 6.1).

The original WSI set out several research objectives for the project (see also Section 4.3.5 Excavation Objectives and Research Objectives, p22ff) and these are individually assessed and discussed below:

- ***Is there any evidence for usage of the site prior to the foundation of the Church? How does this relate to other finds made in the vicinity****?*

There was no evidence for usage of the site, prior to the foundation of the Church. No artefacts of pre-cemetery date were encountered and therefore, this site does not offer any comparisons with early sites and finds in the vicinity. A small pit or anomaly was recorded at depth in Groundbeam 5 [431] and [432], but no dating or artefactual data was evident.

- ***What demographic evidence can be determined from examination of the skeletal remains on-site? Can the age at death, and sex of the individual be determined?***

The human osteologist assessed that little data to fulfil this research objective, could be determined by examination of the skeletal remains on site, however, a minimum number of individuals (MNI) assessment of the charnal deposits could be made on site and the MNI was 70 individuals (Appendix 1). The off-site osteological work provided data towards this research objective.

- ***What demographic evidence can be determined from examination of the skeletal remains off-site after washing? Can the age at death, and sex of the individual be determined?***

  This research objective is examined and discussed in detail in the osteological report (Appendix 1), especially with regard to the fact that not all of the bones were washed for the assessment stage. Because only sections of the site were excavated and a tight chronology could not be established for the project (three (possibly four) individuals are of medieval date or earlier, two date to the nineteenth century, a further twenty seven were probably interred during the 18th century, and another seven interred at some point during the post medieval period) it was not possible to derive any definitely statistically meaningful information relating to the changing demographic profile of the population, or the usage of this area of the cemetery through time. Therefore, the first part of this research objective could not be fulfilled, however, evidence toward the age at death (60% of the assemblage), and sex of the individual (49%) could be established in the approximately half of the assemblage; the determination of both these factors was not affected by the bone being unwashed.

  However, the osteological report did indicate that the assemblage from the churchyard of St Martin of Tours displayed a demographic profile suggesting that an approximately equal number of men and women were buried in this area, however, as only a percentage of the area was excavated these profiles must be viewed with caution. All one can say is, that based upon the available evidence, it is suggested that burial in this part of the churchyard was not determined by sex, and that the assemblage represents a living population with an approximately even ration of men and women, as is to be expected.

  The age-at-death profile of the assemblage differs from a model life table for a stable population with moderate life expectancy, because there are very few infant burials, but again the partial excavation of the site must be considered. This may have been because infants were not buried in this area of the churchyard, or because the infants skeletons were not preserved, either through chemical or mechanical impacts. The number of juvenile burials is typical of a population with moderate life expectancy. Because so many of the adult skeletons could not be assigned to age categories, but were simply recorded as "adult", it was not possible to assess the percentages of adults in different age at death categories. However, it was noted that there were more adults in the age-at-death-categories of 46+ and 60+ than there were in the age-at-death categories of 17-25 and 25-46, so as a broad generalization it could be stated that adult life expectancy was moderately high; however, again this must be viewed with caution as only a percentage of the area was excavated[31].

[31] See Appendix 1.

- ***What evidence can be determined from assessment of the skeletal remains on and off-site to determine patterns of disease?***

  The osteological report shows that the dentition of many of the individuals recovered presented with caries, periapical abscesses, calculus and periodontal disease. These are all indicators that in general dental hygiene was poor. Thirty-one of these individuals presented with enamel hypoplasia, reflecting high levels of stress factors in early childhood which could have included fevers and periodic malnutrition.

  In general fairly low levels of pathologies were identified in this population. Although the bone was unwashed, the osteologist is confident that pathologies characterised by gross lesions on the skeleton have been identified, it is probable that pathological conditions such as osteoarthritis which causes less substantial lesions, particularly on the axial skeleton and the epiphyses of the long bones, have been under-recorded. Because every bone was washed on which a pathological lesion was suspected, in general it is believed that most pathological conditions present in the assemblage were recorded. Pathological conditions which cause gross lesions on the bones were easily identifiable, even on unwashed bone. However, the recorded prevalence of osteoarthritis in this assemblage was very low, and this was specifically because the unwashed state of the bone made it difficult to identify lesions typical of degenerative change. It is noteworthy that in general the shafts of the long bones were fairly clean, and it was the epiphyses of the long bones and the axial skeleton which were most obscured by being unwashed. Therefore, conditions which affected the long bones (such as trauma or periostitis) were readily identified. Changes to the gross shape of the bones of the axial skeleton and the epiphyses of the long bones (such as the marginal lipping of degenerative joint disease) could be readily seen, but more discrete lesions on the surfaces of the bones, such as porosity and eburnation caused by osteoarthritis, were obscured. No examples of porotic hyperostosis on the cranial vault, or cribra orbitalia in the eye sockets were observed in this assemblage, and these lesions may also have been obscured by the unwashed state of the bone[32].

- ***What can the finds material and grave deposits tell us about the individuals buried on this site?***

  There were very few personal items recovered from the site and little dateable finds material that could tell us about the individuals on this site or their social status. The small finds assessment has shown that besides the coffin furniture, there were few other objects from the graves. Two graves contained a single dressmaker's pin, possibly used to fasten the burial clothes, though possibly residual, and two contained buttons. A stone spindlewhorl from Grave 72 is probably medieval, and therefore possibly residual in its context[33]. The pottery recovered from the site also does not really add any information with regard to

[32] *Ibid*.
[33] see Appendix 3 the small finds assessment by Hilary Major

this research objective[34]. Several fragments of tile were also recorded and these are noted in the context lists, but apart from offering a date after the 13th century this does not add much clarity to the finds assemblage.

The lack of personal items does fit the most probable social model for the people buried here, i.e. that they were from a small rural community, probably deriving their living mainly from farming and whose requirement for burial was that it be in a simple and inexpensive manner in the graveyard of their parish church in accordance with the rites of the Church and the wishes of the deceased and their family. Some coffin furniture is present, but this does no inform greatly on social status of the group, but rather reflects the development of burial styles over the periods represented[35].

- ***What can the site tells us of Christian burial practices to inform on beliefs and social organisation?***

There was no evidence of any deviation or adaptation of the anticipated burial practice for a small rural graveyard such as this.

The excavation also hoped to address the following two general excavation questions:

1) What date are the burials in this area of the churchyard?

During the evaluation works, ODAS reported that there were no detailed parish records for this area of the graveyard and subsequent searches have also failed to locate burial records. As the area has been cleared of all grave markers at an unknown time in the past, the facility to accurately date the burials from secondary sources was virtually removed. The only dating information available would be from stratigraphic context relationships combined with finds analysis. However, as the total area was not excavated, the stratigraphic and spatial relationships that might have been able to have been recorded were significantly compromised. It must be stated that from the outset it was unlikely that any form of tight chronology for the burial deposits could have been obtained.

The assessment has shown that out of 116 individuals represented in the group, 37 (35% of the total assemblage) were determined to have been interred during the post medieval period. This was evidenced either by the presence of datable artefacts within the grave fill, or by analysis of the coffin furniture associated with the skeleton, or by stratigraphic analysis of the grave cuts. Of these 37 individuals, 27 were determined to have probably been buried during the course of the 18th century, based on the style and materials of the coffin furniture. In addition, a further two of these individuals were determined to have been buried in the nineteenth century. The other eight individuals were buried in the post medieval period, but it was not possible to assess more exactly during which century. Five individuals were identified as being probably interred in the medieval period, probably in the 11th or 12th centuries. The graves of three of these individuals ([229], [447] and [453]) and had been truncated by the foundations of the Bell Tower, which was known to have been constructed in

[34] See Appendix 2 the pottery assessment by Paul Blinkhorn
[35] See Appendix 3

the 13th century. The other individual (Grave 72 [307]) had a 12th century stone spindle whorl in the grave fill. Although this may have been a residual artefact, the skeleton was in very poor condition, and it is possible that this was a contemporary deposit.

From the 18th century onward, coffin plates bearing the name of the deceased were sometimes used, so in burial grounds from this date remains of individuals of known identity may be encountered. (Occasionally, pre-18th century burials may be identified by memorial stones, but it is often difficult to be certain of individual identity in such instances as gravestones are often moved)[36]. There were no coffin plates from the assemblage, and should they have survived soil conditions would most probably have meant that they would not have been legible, some escutcheons were present, but these contained no datable information.

The assessment concludes that the cemetery was in use from before the construction of the square Bell Tower in the 13th century until sometime before the clearance of the grave markers in this area. The presence of two identifiable screws in context [386] (fill of Grave 38) gives a *terminus post quem* of the 19th century. The use of wrought iron for some of the coffin grips, and the simple forms present suggest an 18th century date for most of the burials.

2) What can the excavation tell us of the individuals represented on this site?

As there was no Desk Based Assessment for this project and no Diocesan Archaeological Advisors (DAAs), Cathedral Archaeological Consultants (CACs) or English Heritage (EH) brief for these works, it was difficult to anticipate what site specific social data could be retrieved from the excavation, beyond that available through osteological assessment, burial ritual and finds analysis[37].

As current guidance states 'a key factor in the successful undertaking of fieldwork on human remains lies in forward planning. If any work requiring a faculty, planning permission, or scheduled ancient monument consent is envisaged, a desk-based assessment (DBA) of the likely archaeological impact is recommended. It eases risk management and allows realistic financial planning'[38]. Unfortunately, in this instance a DBA or brief for the project was not recommended, a DBA may have made it possible to compare the likely extant archaeological deposits with the scale and scope of the proposed work, and summarise the potential impact[39].

In conclusion, the excavation at St Martin of Tours has shown that excavated human remains and their context (including monuments, coffins and grave

[36] Mays, S. 2005 **20**

[37] Mays, S. 2005 **211** pp37, 211 '*All archaeological fieldwork should be carried out by suitably qualified organisations to briefs drawn up for the work by Diocesan Archaeological Advisors (DAAs), Cathedral Archaeological Consultants (CACs) or County Archaeologists (CAs)'.*

[38] *Ibid* **212**

[39] Ibid **213**

goods) are an important source of direct evidence about the past, providing a range of information including evidence for:

- Demography (limited in this instance) and health
- Diet, growth and activity patterns
- Burial practice, and thus related
- Beliefs and attitudes[40].

The excavation works remind us that human remains are the most direct evidence available on how people lived in the past and human osteology, the scientific study of human skeletal remains, is a key component of modern archaeology[41].

The results of the excavation enable the site objectives to be refined, and for these to be addressed during the assessment stage of work. With regard to the 'Summary of Potential' and updated project design the assessment analysis does not suggest that any further additional research objectives need examination.

7.2 Artefact and osteological specialist support

In accordance with MAP 2 (6.10) artefact and osteological specialists have been briefed concerning all aspects of the project, particularly with regard to: the updated project design; copies of site, osteological, and finds summaries (see appendices); specific information on the individual contexts from which the material referred to them for assessment comes (including: context type; position in the stratigraphic sequence, and/or relationships); approximate date where known, or details of how this is to be derived; degree of contamination or residuality and recovery method. They also have been given sufficient data to allow contexts to be grouped together to provide useful and appropriate analytical units for study.

7.3 Assessment and selection of material for further study

In accordance with MAP 2 (6.12) assessment and selection of artefactual and osteological material for further study has been made, based upon specialist advice. Assessments have been made of the individual classes of data and the results have been integrated (MAP 2 6.13). This is the stage at which all the strands of evidence can be brought together and their combined potential considered. All the material category assessment reports have been made available to all members of the project team, so that the full potential of the site archive can be explored.

The skeletal material has not been selected for further study and has been reinterred in the graveyard of the Church of St Martin of Tours, in an appropriate and respectful manner. The reinterrment was accompanied by a short church service, conducted by the Bishop of Tonbridge, the Rgt. Rev Dr Brian Castle.

[40] Mays 2005, Annexe S1, p10.
[41] *Ibid* Annexe S1, **197** ff, p35

7.4 Potential value of the data-collection to local, regional and national research priorities

The results of the archaeological excavation are assessed as being of local interest. The potential value of the site to local research priorities is noted. The site will be of some interest to research with regard to rural churchyards, however as has been shown it has little value for research priorities because of the lack of a dating framework for the site.

8. Conclusions

The current guidance state that the scientific value of excavated human remains depends on a number of criteria, including their identity, date, condition, completeness, group value, rarity, and association with other features or finds[42]. These criteria have been judged dispassionately and in the whole.

The minimum standards for post excavation assessment states that the assessment stage of an archaeological investigation is usually a team effort, with contributions from a number of specialists and usually takes the form of a written report summarising the current state of knowledge of the group (date, stratigraphic and artefactual associations, and condition), along with the legal and administrative framework in which they were excavated, and recommendations for their future (ranging from immediate reburial to long-term retention for research purposes)[43].

The aim of the post-excavation analysis phase of an archaeological project is to carry out the work recommended at the assessment phase. It should result in the production of a publication report and a research archive. In the analysis phase, the recommendations made at assessment are implemented and the work written up into publishable text.

8.1 Revised Project Design for post-excavation analysis and publication

In line with current archaeological practise the project will now proceed straight to the post-assessment analysis for the further work recommended by this report. Following this the work will proceed to publication in an appropriate journal in accordance with current guidance and the objectives set out in this report.

Therefore, it can be seen that this whole assessment report forms the revised project design for post-assessment analysis, publication and archiving of this project.

[42] Mays 2005 Annexe S6, **241**
[43] Mays 2005 Annexe S4, **242-243,** p43

8.2 Potential for post-excavation analysis and publication

The results of the assessment show that this site does not fulfil the criteria to merit further detailed post-excavation analysis. It is recommended that an article be compiled for publication in the local journal the *Orpington and District Archaeological Society Archives* and additionally in the *London Archaeologist* round-up and the archive be prepared for deposition in the Museum of London's Archaeological Archives.

The site is deemed to be of local archaeological interest and an appropriate publication text will be prepared for inclusion in the local journal the *Orpington and District Archaeological Society Archives*; a pamphlet version of this report additionally being deposited at the Borough Museum and libraries.

9. Archiving and Storage

MAP 2: recommendations on the storage and duration of the data contained in the site archive, and the timescale on which this should be achieved.

Compass Archaeology Ltd presently holds all on-site records, excluding those assembled during the ODAS evaluation; the site code is MTC 06. The stratigraphic material records are in good condition and are suitable for long-term storage. Photographic, survey, artefactual and primary sources and supporting documentation records are also in good condition and suitable for long-term storage. The archive will be deposited in accordance with current archive standards.

10. Publication Synopsis (MAP 2, 6.21)

It is proposed that an appropriate publication text will be prepared for inclusion in the *Orpington and District Archaeological Society Archives*; an off print or pamphlet version of this report additionally being deposited at the Borough Museum and libraries. Additionally an entry will be prepared for publication within the excavation round up of the journal the *London Archaeologist*. This will summarise the significant findings of the excavation. Initial contact has been established with Editors of the proposed publication outlets.

In accordance with MAP 2 (6.20) the planning for the analysis phase aims to meet the following two objectives, namely the production of a research archive and of a brief report for publication.

When establishing the resources needed for analysis therefore, allowance has been made for the cost of synthesising the research archive and of producing a brief report for publication (6.21).

10.1 Academic or post-excavation research design.

The archive will be deposited in an appropriate manner to allow the following academic matters to be taken into consideration and primary data to be available to others for further research:

i. The specific research aims to be addressed during analysis, and the contribution which they are expected to make to archaeological knowledge, in the context of the current framework of local, regional, and national research priorities
ii. Details of the specific elements of the data-collection which will be the subject of analysis, and the academic objectives to which they are expected to contribute
iii. Deposition of the archive in a manner allowing it to be used and integrated into a separate project, such as existing archaeological research for example funded by the SERC, a university or another body, if this were to occur funding would be provided by these bodies.
iv. Likely possibilities for future research (by others) which may emerge from the project
v. Opportunities for experimental work (by others)

11. Resources and programming

Staffing and equipment

Compass Archaeology will project manage the post excavation work and will write and submit the publication text and deposit the archive. Geoff Potter, Director of Compass Archaeology and a full member of the Institute of Field Archaeologist will undertake overall management of the project, the work will be in accordance with current guidance.

Timetable

The finished publication text will be submitted to the Local Planning Authority and English Heritage as a full draft for approval within one year of the date of the submission of the assessment report. Compass Archaeology cannot guarantee that *Orpington and District Archaeological Society Archives* will accept and publish the article within this timespan, but we can guarantee that the article will be written and submitted in a manner suitable for its immediate inclusion.

12. Brief bibliography of principal reference texts

Association of Diocesan and Cathedral Archaeologists Guidance Note 1, 2004 'Archaeological requirements for work on churches and churchyards'

Brickley, M and McKinley, J (eds) 2004 Guidelines to the Standards for the Recording of Human Remains. Reading: British Association for Biological Anthropology and Osteoarchaeology/Institute of Field Archaeologists

British Geological Survey, 1998 *Dartford. England and Wales Sheet 271. Solid and Drift Geology 1:50 000*

Church of England and English Heritage guidance paper 'Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England'

Copus, G 2003 'Chelsfield Chronicles: Annals of a Kentish parish, 1450 – 1920' ISBN 1 872886 01 9.

English Heritage and the Council for the Care of Churches 2004 'Church Archaeology Human Remains Working Group Report'

English Heritage 1991 Management of Archaeological Projects. London: English Heritage

English Heritage 1998 Exploring Our Past 1998: Implementation Plan. London: English Heritage

Garratt-Frost, S. 1992 The Law and Burial Archaeology *The Institute of Field Archaeologist Technical Paper* **11**

Hart, A. 2002 Trial excavations in the churchyard of St Martin of Tours, Chelsfield *Archives of the Orpington & District Archaeological Society* **24** (2) 21-31, 2002

Mays, S 1991 Recommendations for Processing Human Bone from Archaeological Sites (AML Report 124/91). London: English Heritage.

Mays, S 1998 The Archaeology of Human Bones. London: Routledge

Mays, S 1991 Recommendations for Processing Human Bone from Archaeological Sites (AML Report 124/91). London: English Heritage

Mays, S. 2005 'Guidance for best practice for treatment of human remains excavated from Christian burial grounds in England' Church of England and English Heritage www.cofe.anglican.org/news/prt1205.html

Newman, J. 1969 'West Kent and the Weald' in *The Buildings of England*, Pevsner, N. (ed.) 1969 pp.200-201

APPENDIX 1

Report on the Skeletal Assemblage from MTC 06

NGR: TQ 4795 6402

Report Prepared for the Parish of St Martin of Tours by Kate Brayne

February 2007

TABLE OF CONTENTS

TABLE OF FIGURES

Introduction

Scope and Purpose of the Report

This report comprises an "enhanced" osteological and palaeopathological assessment of the human bone assemblage recovered during the archaeological excavation at St Martin of Tours Church, in Chelsfield, London Borough of Bromley, Kent, by Compass Archaeology in Spring 2006. The excavation was in accordance with a condition on the planning permission for "a programme of archaeological work' relating to planning application DC/00/03405/FULL1, for a single storey rear extension within the churchyard.

This Assessment Report is unusual in that it does not follow the recommendations of Management of Archaeological Projects 2[1]. Usually, the post-excavation procedure would be to produce an Assessment of Potential report on the human bone assemblage, which would summarize the potential of the assemblage to provide further information, and would recommend if any further analysis of the assemblage was required, in line with the overall strategic research aims of the project. However, at the post-excavation review meeting on 18th May 2006 with Mark Stephenson and Jane Sidell from English Heritage, Ken Whittaker of the Diocesan Advisory Committee (Archaeological Advisor), and representatives of the Parish Council of St Martin of Tours, Gill King from Compass Archaeology, and myself, in order to ensure that a Faculty be applied for and granted, so that the articulated human remains recovered during the excavation could be removed from the site and studied, the following methodology was agreed:

1. The disarticulated skeletal material (charnel deposits) would not be studied by the osteologist, but would rather be subject to a brief calculation of the minimum number of individuals present (achieved by counting the number of left femurs in the assemblage), and then re-interred.
2. The articulated human skeletons would not be washed, but would be laid out in anatomical position individually, and would be subjected to scrutiny by the osteologist.
3. Rather than full-scale osteological and palaeopathological reporting in a purpose-built osteological database, each skeleton would be recorded in the form of tick boxes on a spreadsheet (the author is grateful to Dr Jane Sidell for her recommendations and guidance on this methodology).

It was accepted that this solution was not ideal in two particular respects:

1. The amount of information which can be obtained from an unwashed skeleton is profoundly limited by the restricted visibility of skeletal features and pathological lesions.
2. With no detailed record keeping, it will not be possible for future researchers to test the statements presented within this report against primary recorded information.

[1] English Heritage, 1991 *Management of Archaeological Projects* HBMC 2nd Edition

However, it was also agreed that the alternative; that this assemblage would be re-interred with no osteological or palaeopathological analysis at all, was even more unsatisfactory.

The research aims of the Assessment Report are:

1 To create a record of the demography and palaeopathological profile through time of the parish of St Martin of Tours, as represented in this small sample of articulated skeletal material recovered during the excavations in the churchyard.

2 To analyse usage of this area of the Churchyard, in order to identify if individuals were particularly selected for burial in this area (for example, it is sometimes cited that the north wall of a church is historically particularly favoured for infant and neonate burials), and if this changed through time.

Excavation and Recovery of the Assemblage

All skeletons were assigned an individual context number, and were recorded on a purpose designed context sheet. Skeletons were manually cleaned of the surrounding burial matrix, and were planned and photographed *in situ*. If elements of the skeleton extended beyond the edges of excavation these were left in the ground. Only skeletons which were threatened by the intended development were lifted. Those which could be preserved *in situ* were unexcavated.

All skeletons were lifted with care and the bones placed in labelled plastic bags, in accordance with current guidance[2]. Site assistants were encouraged to bag and label skull, mandible, shoulder bones, limbs, ribs, vertebrae and pelvis separately, and to note on the label which side of the body each bone came from. Where possible, hand and foot bones were separated according to side, but this frequently proved difficult in the field, and had to be checked during post-excavation analysis.

[2] Mays S., Brickley M. and Dodwell N. 2004 *Human Bones From Archaeological Sites* English Heritage and Brickley, M. and McKinley, J 2004 *Guidelines to the Standards for Recording of Human Remains* British Association for Biological Anthropology and Osteoarchaeology / Institute of Field Archaeologists

ASSESSMENT

Methodology

For each identified skeleton, the bagged bones were laid out in anatomical position and subjected to inspection. Although the skeletons in general were not washed, specific individual bones were washed as necessary. In particular, all mandibles and maxillae were washed, because so much information on ageing and pathology can be obtained from the teeth. In addition, all pubic symphyses were washed, because they were crucial for ageing, as were all cranial sutures. All individual bones were washed when a pathological lesion was observed or where a pathology was suspected. Please see the Discussion at the end of this report for further comment.

For all individual skeletons, the following information was recorded:

Individual Identity
Skeleton Number
Grave Number
Phase (approximate time period) of burial
Dating provided by associated finds or grave furniture

Completeness
This was expressed as a percentage, with 100% being a fully complete skeleton

Quality of Osteological and Pathological Data Provided
This was expressed as a star rating, as follows:

0 No data available except an inventory of bones present.

* Limited quality of data available: age category, and limited pathological information based on very poor levels of completeness and/or condition.

** Moderate quality of data available: sex, age category and limited pathological information, based on poor levels of completeness and/or condition.

*** Good quality of data available: sex, age band, stature, and pathological information, based on moderate levels of completeness and condition.

**** Very good quality of data available: sex, age band, stature, and pathological information, based on good levels of completeness and condition.

***** Excellent quality of data available: sex, age band, stature, and pathological information, based on excellent levels of completeness and condition.

Condition
This assessed the level of chemical and physical degradation of bone quality. The condition was expressed as excellent, good, moderate or poor.

Age
A variety of criteria were employed to assign age-at-death to the skeleton. Age was estimated using a combination of factors, in order to minimize inaccuracy. As a general rule, the younger an individual was at death, the more possible it is to assign a precise age. Senile adults are particularly difficult to age with any precision, and it is

probable that, in general, aged individuals are consistently underaged in osteological reports.

It is possible to age juveniles fairly precisely using a combination of dental development, diaphyseal length of long bones and degree of epiphyseal fusion. Subadults can be aged using dental development and extent of epiphyseal fusion. Once all the epiphyses have fused (at approximately 28 years) age estimation is possible by assessing the degree of dental attrition; identifying morphological characteristics of the pubic symphyses and, to a lesser extent, by examining the degree of fusion of the cranial sutures.

The accuracy of adult age estimation depends largely on the completeness and extent of preservation of the individual skeleton. The dentition is often the best preserved feature. Although Lovejoy's attritional aging scheme (1985) is based on prehistoric native American populations, the age estimates I have obtained from its application have closely corresponded with the figures from morphological features, where these were available.

The Suchey-Brookes system of age estimation using the pubic symphyses is a moderately reliable means of estimating the age of adults, but unfortunately cannot be used to age individuals below the age of approximately 18.

The extent of cranial suture fusion has been used as a means of aging adults, but the technique has been criticized as there is considerable variation between individuals. Therefore, I have recorded cranial suture fusion, but have only utilized it as a means of identifying broad age bands.

The following schemes of assessing age were applied:

Dental Development	(based on the dental ageing scheme of Ubelaker (1978))
Dental Attrition	(based on Lovejoy's Attritional Ageing Scheme (1985))
Diaphyseal length	(based on Scheuer et al (1980) and Hoppa (1991))
Epiphyseal Fusion	(based on Flecker (1942), as presented in Mays (1998))
Pubic Symphysis	(based on the Suchey Brookes system for ageing from the male and female *os pubis* (Katz and Suchey (1986) and Suchey *et al* (1988))
Fusion of Cranial Sutures	(based on Masset (1989))

Wherever possible multiple ageing techniques were applied, and an average age at death taken from the results of all the different schemes. This approach minimises the inherent inaccuracies of all of the various ageing schemes.

Each individual was placed into one of the following Age Categories (for the purpose of demographic analysis):

1	Fetus	9 – 40 weeks gestation *in utero*
2	Neonate	(1st month of life)
3	Infant	Birth to one year old
4	Juvenile	One year to approximately 16 years (the epiphyses are partially or almost completely unfused)
5	Subadult	Approximately 14 to 18 years old (has not yet got full dentition or all the epiphyses fused.
6	Young Adult	17-25 years old
7	Middle Adult	26 – 45 years old
8	Mature Adult	46 years+
9	Senile Adult	Probably 60 years+

Sex

The sex of each skeleton was assigned according to morphological criteria; in particular by assessing features of the pelvis and skull, which display the most sexual dimorphism in humans.

No attempt was made to assign sex to juveniles, as secondary sexual characteristics do not manifest themselves until puberty (Bass, 1987:19) and are not fully expressed until young adulthood.

The sex of adult individuals was determined by observation of morphological differences between males and females in the following skeletal features:

Pelvis:

- sciatic notch
- auricular surface
- pubic region
- ischium

Cranium and Mandible:

- temporal line
- nuchal area
- mastoid process,
- mandibular angle
- glabellar profile and supraorbital ridges
- orbits
- chin

In addition, the size and robusticity of the post cranial skeleton was recorded. However, in the absence of the pelvis and/or skull and mandible, assessment of post cranial robusticity was not in itself sufficient to determine the sex of an individual.

Wherever possible, the sex of individuals was determined using multiple morphological criteria, because most individuals display morphological characteristics

of both sexes in different skeletal elements, and it is necessary to assign the sex represented by the majority of elements.

Individual skeletons were assigned a sex according to the following criteria:

Male	All or most relevant morphological features displayed male characteristics
Male?	There were more male characteristics than female, but there was some ambiguity.
Female	All or most relevant morphological features displayed female characteristics.
Female?	There were more female characteristics than male, but there was some ambiguity.
0	There were no sexually dimorphic features present, or there were insufficient features present to be confident of making an accurate assessment of the sex.

Pathology

The presence or absence of the following pathologies or types of pathology were also recorded. Additional descriptive notes and photographs were also taken for individuals who presented with significant pathological conditions.

Caries

Caries, commonly known as "tooth decay" is the most commonly found pathology in post medieval skeletal assemblages.

Periapical Abscess

A periapical abscess is an infection at the apex of the tooth root, subsequent to a cavity being created by a caries or by plaque.

Enamel Hypoplasia

Enamel hypoplasia is a defect in enamel matrix formation, and appears as either one or many grooves on the sides of the crowns of the teeth.

Calculus

Calculus is mineralized bacterial plaque, which has not been removed by regular brushing.

Periodontal Disease

Periodontal disease is inflammatory change to the alveolar bone of the gums, caused by accumulation of calculus on the teeth when oral hygiene is inadequate

Developmental Abnormalities

Congenital malformations attributable to faulty development, although not necessarily pathological which are present at birth.

Trauma

This includes fractures, dislocations and deliberate skeletal manipulation such as skull binding.

Degenerative Disease

This encompasses those changes of the skeleton and joints which are associated with the ageing process.

Infectious Disease

Non-specific: the pathological manifestations are common to a wide range of pathogenic organisms, and the specific agent cannot be identified from the lesions present.

Specific: the specific disease-causing organisms can be identified from the lesions on dry bone. In particular this include the mycobacterium (tuberculosis, leprosy) and the treponemal bacteria, which cause, amongst other things, venereal syphilis.

Metabolic Disease

This encompasses those diseases which result from a disturbance of the normal processes of cell metabolism, and include vitamin deficiency diseases such as rickets and scurvy.

Neoplastic Disease (Cancers)

Neoplasm literally means "new growth". A neoplasm is, by definition "an abnormal mass of tissue, the growth of which exceeds and is uncoordinated with that of the normal tissues and persists in the same excessive manner after cessation of the stimuli which evoked the change"

This class is subdivided:

Benign Neoplasms: these are cohesive expansile growths which remain localized to their site of origin

Malignant Neoplasms: these are progressive growths, invasive and destructive of surrounding tissues, and which spread and create secondary lesions in distant sites in the body.

Results

Quantification of Assemblage

The assemblage consisted of 116 individual inhumations. These are inventoried in the Annexe. As can be seen from the graph below, the majority of this assemblage offered limited data quality, with only a total of 18 individuals (15.5% of the assemblage) presenting good, very good or excellent data for analysis. Three factors contributed to this:

1. Much of the bone showed evidence of post-depositional damage, skeletons having frequently been truncated by later graves.
2. St Martin of Tours Church lies on Blackheath Beds (sands and pebbles, and locally clayey). The underlying stratum is Upper Chalk[3]. The clay-rich local burial environment was acidic, and therefore hostile to bone. As a consequence, much of the bone showed exfoliation of the periosteal (outer) surface, and the spongy bone was in general poorly preserved. The chemical damage to the bone also made it more liable to fragment whilst it was being excavated.
3. The nature of the excavation, with skeletons being excavated from narrow trenches, meant that many individuals were incomplete, as skeletal elements extended beyond the extent of excavation and were left *in situ.*

[3] British Geological Survey. *Dartford. England and Wales Sheet 271. 1:50,000 series*

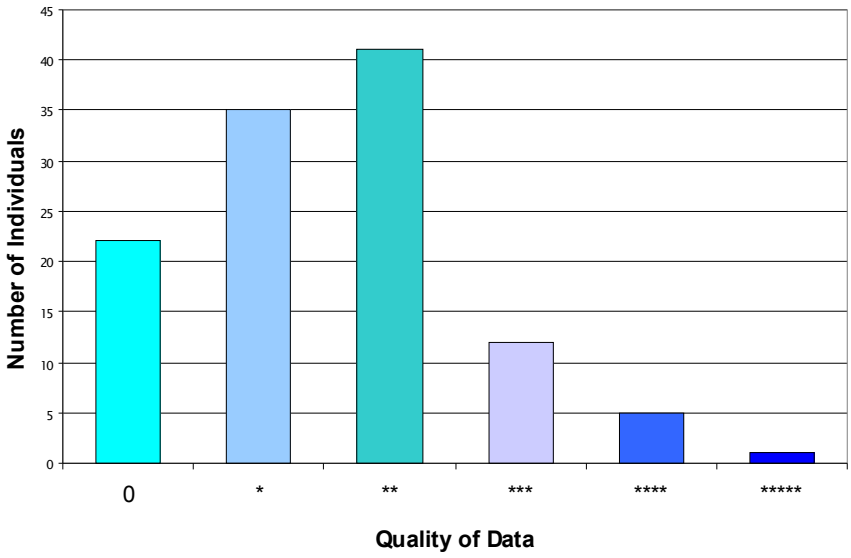

Figure 1: Quality of Osteological and Palaeopathological Data Generated by the Skeletal Assemblage from MTC 06

Dating of the Assemblage

Out of 116 individuals, 37 (35% of the total assemblage) were determined to have been interred during the post medieval period. This was evidenced either by the presence of datable artefacts within the grave fill, or by analysis of the coffin furniture associated with the skeleton, or by stratigraphic analysis of the grave cuts. Of these 37 individuals, 27 were determined to have probably been buried during the course of the 18th century, based on the style and materials of the coffin furniture. In addition, a further two of these individuals were determined to have been buried in the nineteenth century. The other 8 individuals were buried in the post medieval period, but it was not possible to assess more exactly during which century. Three individuals were identified as being interred in the Medieval period, probably in the 11th or 12th centuries. The graves of two of these individuals (447 and 453) had been truncated by the foundations of the bell tower, which was known to have been constructed in the 13th century. The other individual (307) had a 12th century stone spindle whorl in the grave fill. Although this may have been a residual artefact, the skeleton was in very poor condition, and there is no reason to believe that this was not a contemporary deposit.

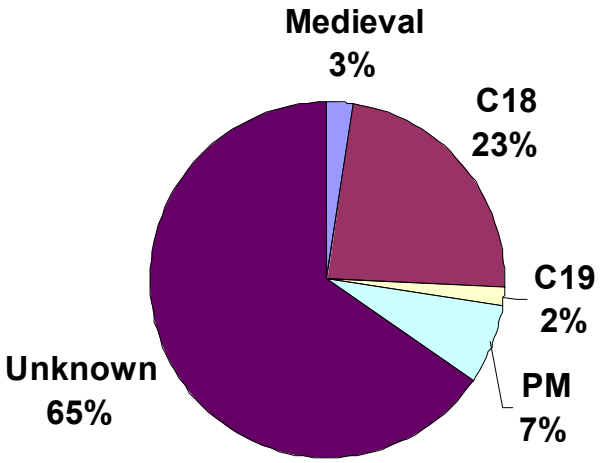

Figure 2: Chart to Show Proportion of Interrments by Date

Potential to Fulfil Research Aims

There were relatively few dateable finds associated with this skeletal assemblage, some of which were residual (such as fragments of medieval pottery in a grave which also contained fragments of 19th century china). In addition, most artefacts were items such as iron coffin handles of probable 18th date, which could not be tied down to a more precise time frame. In addition, the fieldwork basically mirrored the development proposal, ie, a series of groundbeam trenches and localised deeper pile pits. There was therefore much less stratigraphic continuity than one would have on an open area excavation, and thus much less opportunity to use the few datable finds to fix the date of other graves in the same stratigraphic phase.

Having assessed the skeletal assemblage utilizing dating information obtained from stratigraphic and artefact analysis, it has been concluded that no meaningful statistical information can be derived that would fulfil the proposed research aims of this report. Therefore, the osteological and palaeopathological profile of this assemblage will be presented as if these inhumations derive from a single time period.

Determination of Sex

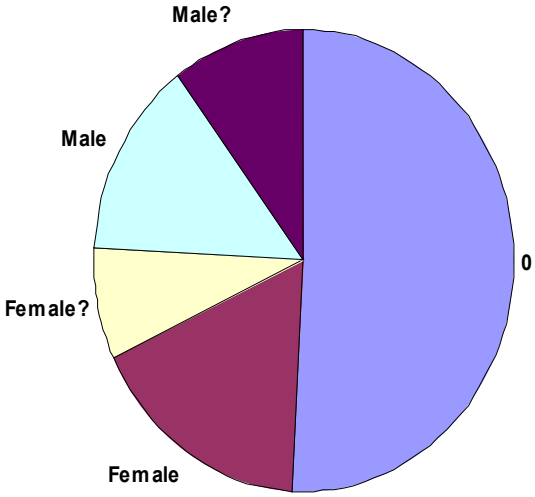

Figure 3: Chart to Show the Sex of Individuals from MTC 06

It was not possible to assign a sex to 51% of the skeletons in the assemblage. There were various reasons for this:

- The individual was an infant or juvenile.
- The skull and pelvis were not recovered, or were so fragmentary that it was not possible to observe any sexually dimorphic characteristics
- The individual displayed morphological features characteristic of both sexes, and there was no dominant expression of male or female features.

25% of the entire assemblage were determined to be female or female?. and 24% of the assemblage were determined to be male or male? This indicates an approximately even distribution of males and females, and suggests that burial in this area of the churchyard was not determined by sex.

Determination of Age

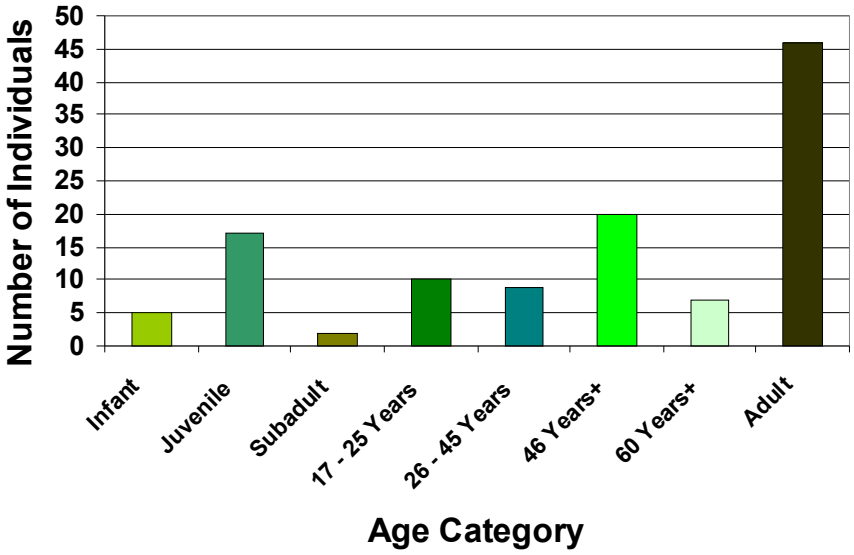

Figure 4: Chart to Show Age-at-Death of the Skeletal Assemblage from MTC 06

There were five infant skeletons in the assemblage, which is equivalent to approximately 4% of the total number of individuals. This is lower than the levels of infant mortality that would be expected in a model life table of a stable population with a moderate life expectancy at birth[44], and there are three explanations for this:

- Infants were not buried in this area of the Churchyard at St Martin of Tours. This contradicts the frequently held view that the north wall of a parish church is a particularly favoured site for infant burials.
- The acidic, clayey soil of the churchyard was hostile to the preservation of the infant skeletons, which are less mineralized than adult bones, and therefore tend not to survive the burial environment so well. In addition, infants' skeletons are smaller and are less resistant to bioturbation (disturbance by animals and plants).
- Children's graves are smaller and tend to be less elaborate, and their remains are less easily recognised than adult skeletons. Therefore, they are more likely to have been disturbed by later graves, and the bones lost. If either of the latter two explanations are correct, the number of infant skeletons recovered may not represent the actual number of infants buried in this area of the churchyard.
- There were seventeen juveniles (aged one to sixteen), and two subadults (aged fourteen to eighteen). This represents approximately 16% of the total assemblage, which is about the proportion which would be anticipated in a stable population with a moderate life expectancy.

It was not possible to determine the age band in which approximately 40% of the adults in the assemblage should have been placed, because skeletal elements which can be used to assess the age of an individual were not present, or were in fragmentary

[44] Chamberlain, A. "Problems and Prospects in Palaeodemography in Cox and Mays (eds) 2000 "Human Osteology in Archaeology and Forensic Science"

condition. These individuals were assigned a broad age category of "adult" based on the fact that all the epiphyses were fully fused.

Therefore, I have not used percentages in the following discussion of adult age at death, because the high proportion of adults who could not be accurately aged would skew the sample too much.

There were ten young adults (aged 17-25) and nine middle adults (aged 25-46) in the assemblage. There were twenty adults aged at least 46+, and seven who were aged 60+. Bearing in mind the likelihood that many of the adults in the younger age categories may have been under-aged (owing to the problems in accurately estimating age in older individuals), this is a population which had a moderately long life expectancy at birth. Certainly, a higher proportion of adults died in later life than in their early adult years.

These percentages tell us that if an individual was able to survive childhood, they stood a good chance of enjoying a reasonable life expectancy into their five decade or beyond.

Pathology

Before discussing the pathological conditions displayed among the skeletal assemblage from St Martin of Tours, it is cautionary to note the limitations of palaeopathological diagnosis. The vast majority of pathologies which afflict the human body do not affect the bones. In other words, many conditions which were present in the population will not be visible palaeopathologically at all. Additionally, many of the conditions which can affect the bones do not do so in all cases. Therefore, in any skeletal assemblage, the prevalence of a condition in terms of skeletal manifestation may not represent the *in vivo* prevalence in the population.

In any one skeleton it is impossible to tell how long the individual had a pathological condition, or at what stage of that condition the individual died (Rogers and Waldron, 1995). Indeed, it is not possible to state categorically that an individual died as a direct consequence of any pathological condition they display. With the exception of certain traumatic events, the cause of death can never be established in an archaeological skeleton from the bones alone. Additionally, caution should be exercised when describing a condition as "severe", as there is no means of knowing from the bones how much pain or inconvenience an individual suffered from any pathology during life.

The following pathological conditions were recorded in the skeletal assemblage:

Dental Caries

Caries, (also known as "tooth decay") are caused by bacteria in the mouth metabolizing sugars, resulting in the production of an acid which causes the demineralization of tooth enamel (Craig, pers. comm.), and eventual production of cavities in the tooth. The two most significant factors in the presence of caries are consumption of sugar combined with inadequate dental hygiene.

Twenty six individuals presented with dental caries, which means that at least 25% of the individuals whose dentition was recovered suffered from tooth decay. As many individual's dentition was not recovered, the proportion of the population affected by

dental caries would probably actually have been considerably higher. This indicates that sugar was probably widely available to this population, and dental hygiene was generally poor. Fourteen individuals had lost all of their teeth a long time before their deaths (they were "adentulous") or had lost significant numbers of teeth. This was probably also due to tooth decay and poor brushing habits, although periodontal disease (see below) is also implicated in premature tooth loss.

Periapical Abscess

A periapical abscess is a focus of bacterial infection at the apex of a tooth root, causing pus to accumulate which may drain out through a hole in the bone cortex. The bacterial infection can invade the tooth apex through the cavity created by a caries or from bacterial plaque. If the infection spreads from the abscess in the blood stream, meningitis and haematogenous osteomyelitis can develop (Ortner and Putschar, 1985).

Figure 5: SK 284 Showing Periapical Abscess on Right Maxilla

A total of eleven individuals presented with periapical abscesses. All of these individuals also had dental caries

Enamel Hypoplasia

Enamel hypoplasia is a defect in enamel matrix formation caused by severe nutritional deficiency or disease, usually during the first few years of life, when the permanent teeth are forming. If enamel hypoplasia is present in the deciduous teeth this indicates that the stress occurred when the child was *in utero*, owing, for example, to maternal rubella infection or congenital syphilis (Craig, *pers. comm*.). Enamel hypoplasia appears as either one or many grooves on the sides of the crowns of the teeth.

Thirty one individuals presented with enamel hypoplasia. In an age before antibiotics, when acute childhood illnesses were common, and also when the quality and quantity

of food available for small children may not always have been dependable, the fact that at least 27% of the assemblage display these stress markers should not be surprising.

Calculus

Plaque is a film which develops on teeth within hours of them being brushed, and consists of a colony of oral bacteria, which feed on proteins deposited on the tooth surface from the saliva. If plaque is not removed by brushing every day, the bacterial components change, and the adjacent gingivae (gums) will start to display signs of inflammation (gingivitis). Eventually, if the plaque is left to accumulate it will become mineralized, and it is known as calculus. There are two types of calculus, and they are recognized according to their location:

Supra-gingival Calculus: this is located above the gingival margin around the necks of the teeth, and is preferentially deposited in relation to the openings into the mouth of certain major salivary gland ducts.
Sub-gingival Calculus: this is located below the level of the gingival margins, and its distribution and extent correlate with the presence and severity of inflammatory periodontal disease (see below)

Twenty three individuals presented with calculus. This, like the prevalence of dental caries, is an indication that dental hygiene was not a priority for this population.

Periodontal Disease

Periodontal disease is a term used to describe inflammatory changes in the alveolar bone of the gums, caused by accumulation of calculus on the teeth when oral hygiene is inadequate (Craig, *pers.comm*.). Eventually, the alveolar bone begins to recede and the teeth loosen in their sockets and ultimately are lost.

Periodontal disease is one of the most common dental diseases in both modern and archaeological populations, and a major cause of tooth loss in individuals aged 40+ (Roberts and Manchester, 1995).

Ten individuals presented with periodontal disease. It is probable that many of the individuals who presented with antemortem tooth loss may have been affected by periodontal disease as well as by caries, but once the teeth are lost and the alveolar bone of the jaw has remodelled so that the tooth cavity has closed up, it is no longer possible to establish the cause of the tooth loss.

Trauma

Trauma can be defined as any bodily injury or wound (Roberts and Manchester, 1995). Fractured bones are one of the most common pathological conditions found in skeletal assemblages. Although it is possible to identify at what stage in the healing process of any fractured bone an individual died, if a bone is fully healed, it is not possible to determine how long *ante mortem* the fracture was sustained.

There are three major causes of fractures: acute injury (in the form of accidental injury or intentional violence), underlying disease (in which case a fracture is termed "pathological"), and repeated stress (Roberts and Manchester, 1995).

SK 466 presented with lesions which were typical of severe trauma. The head of the left femur was displaced to the inferior. There was new bone growth on the inferior aspect of the left acetabulum, which had created a large lip. The neck of the femur appeared shortened, and the head of the femur was flattened. There were multiple exotoses on the dorsal aspect of the joint. The left acetabulum was enlarged and extended to the upper dorsal aspect. There were multiple spicules of new bone, surrounding a cleft in the rim at the upper dorsal aspect of the acetabulum. The lower dorsal aspect of the acetabulum has a large hole behind the acetabular notch.

The shaft of the right femur presented with a pronounced curvature in the dorsal-ventral plane. There was no evidence for a fracture elsewhere on the femur – sometimes when a femur is fractured, and not set promptly or well, the contraction of the muscles at the back of the thigh can pull the bone backwards so that it does not heal straight. However, there was no obvious explanation for the curvature on this femur.

Trauma to the pelvis and femur is unusual, and fractures are usually caused by direct vertical impact, such as falling from the roof of a house.

The joint surface of both the head of the femur and the acetabulum were porous, and there were areas of eburnation. This is indicative of degenerative osteoarthritis, caused by damage to the cartilage so that the two bones rubbed together. The degenerative osteoarthritis was secondary to the trauma, and could have been caused either by damage to the cartilage directly from the trauma, or by changes to the gait consequent on the trauma to the hip.

This individual presented with other unusual lesions. The coronoid process of the left ulna was considerably extended to create a large shelf. In addition, the muscle attachments on the left radius were enlarged. No obvious explanation presents itself for these lesions. Also, the right ulna presented with pronounced curvature in the medial lateral plane.

It is possible that the curvature of the femur and the ulna were lesions associated with childhood rickets (vitamin D deficiency). Vitamin D is essential in the mineralization process of osteoid, the organic matrix of bone (Ortner and Putschar, 1985), and a lack of the vitamin in childhood leads to “soft” bones, which can become bent under the pressure of muscle contraction or weight bearing during walking or crawling.

Figure 6: Head of Left Femur and Acetabulum of SK 466 Showing Traumatic and Arthritic Lesions

Figure 7: Left Pelvis of SK 466 Showing the Disruption in the Acetabular Rim

SK 469 presented with a healed transverse fracture of the distal shaft of the right tibia. Although the fracture had healed well, with no evidence of infection, the bone was misaligned, suggesting that it had not been reduced (re-aligned) effectively before it was splinted

Figure 8: Healed Fracture of Distal Shaft of Right Tibia of SK 489

Degenerative Joint Disease

Joint disease comprises most of the evidence for pathology in skeletal assemblages (Roberts and Manchester, 1995). In modern society it appears to be an almost inevitable feature of age-related degenerative change. In America, it has been estimated that up to 85% of the population over the age of 45 are afflicted by joint disease (Cotran et al, 1989).

Degenerative disc disease has an almost universal prevalence among aging individuals: it is a consequence of the recurrent stresses put on the spine during everyday activity. Bony changes occur when the gelatinous internal *nucleus pulposus* of the intervertebral disc bulges out of its fibrous capsule, the *annulus fibrosus* (Roberts and Manchester, 1995). Colloquially this condition is called a "slipped disc". It causes growth of bone around the anterior margins of the vertebrae (osteophytes), roughening and porosity of the end plates of the vertebral body, and indentations known as Schmorl's Nodes on the vertebral end plates (Rogers and Waldron, 1995). Individuals which display these bone changes may have experienced stiffness, lack of flexibility, and possibly pain.

Eleven individuals presented with lesions typical of degenerative disc disease. As the lesions typical of degenerative disc disease (the osteophyte growth and flared vertebral body margins) are easily identifiable, it is believed that this is an accurate reflection of the prevalence of this condition within the assemblage.

Osteoarthritis is the most common form of joint disease in both ancient and modern populations. Its prevalence increases with age, and it appears to affect women more than men (Rogers and Waldron, 1995). The cartilage which separates the bones in a synovial joint becomes degraded, so that the bones rub together, ultimately creating an ivory-like surface. This process is known as eburnation . Prior to a joint surface becoming eburnated it may be porous. There may also be bone growth around the margins of the joint. Pain, restricted movement and joint deformity are clinical symptoms associated with osteoarthritis, but some studies indicate that there is not a

clear-cut association between the severity of bony changes and physical symptoms (Roberts and Manchester, 1995).

Five individuals presented with lesions typical of osteoarthritis. This is an extremely low number, and far less than the author would have anticipated in an assemblage of this size. It is hypothesized that this is not representative of the genuine prevalence within this cemetery population, but rather is factor of lack of visibility of the lesions because the bone was unwashed.

Specific Individual Pathologies

Sagittal Cleft Centrum

Skeleton 153 presented with two thoracic vertebrae (probably the 6th and 8th thoracic vertebrae), which had cleft vertebral bodies, known as "butterfly vertebrae". The bodies were cleft in a narrow bifurcation on the posterior aspect. The neural arch was not affected in either case. This is a rare defect, which usually only affects one vertebra, and is caused when the embryonic notochord fails to recede from a developing vertebral segment. The reduction in height of the vertebral body is compensated for by an increase in the depth of the vertebral disc tissue. The condition may be associated with visceral defects in the gastrointestinal tract or central nervous system, which are not visible on dry bone. Minor manifestations of the condition may be asymptomatic. The adjacent intervertebral disc spaces may be narrowed. Heavy lifting or carrying can cause severe back pain (Barnes, 1994)

Figure 9: Two Butterfly Vertebrae from SK153

Tuberculosis

Tuberculosis is a chronic infectious disease caused by *Mycobacterium tuberculosis*, which can be caught from other humans and from cows. The route of infection from other humans is usually through the respiratory tract, although less commonly it can be caused by ingestion of infected cow's milk or beef. In most cases, the primary complex heals without leading to the chronic disease. However, if the primary complex fails to heal, tuberculous bacilli may disseminate through the blood stream to the organs, bones and tissues, and if the infected individual develops a compromised

immune response, even years later, owing to malnutrition or other disease, the tuberculous infection can flare up, and possibly prove fatal. Tuberculosis is largely an urban disease, and was extremely common in the crowded towns of Post-Medieval Europe. It has been estimated that in the seventeenth century, tuberculosis was responsible for 20% of all deaths in London in non-plague years (Clarkson, 1975). However, only approximately 3% of individuals suffering from tuberculosis display any skeletal involvement (Ortner and Putschar, 1985). The most common site of bone infection is in the spine (where the disease manifests as a characteristic collapse of one or several vertebral bodies, known as Pott's Disease).

Skeleton 304 presented with extensive lytic lesions in three adjacent thoracic vertebrae. One vertebral body had collapsed, with a resulting wedge-shape. The superior surface of the first affected vertebra was unaffected. The spinous processes and articular surfaces of the vertebrae were unaffected. No new bone growth was associated with the lytic lesions. Flaring and shelf-like bony extensions from the posterior aspect of the affected vertebral bodies may represent the presence of a paravertebral abscess or fistula. Alternatively, these lesions might be caused by malignant neoplastic disease – probably a secondary rather than primary bone lesion. A third alternative diagnosis might be a fractured vertebra, but this would not explain the lytic lesions on the adjacent vertebral bodies, or the complete lack of healing.

Figure 10: Thoracic Vertebrae Displaying Lytic Lesions and Collapsed Vertebral Body from SK 304

Periostitis

The word "periostitis" is used both as a general term to describe certain bone changes, and as the name of a specific disease process (Ortner and Putschar, 1985). The pathological changes appear as new growth on the periosteum (the outer layer of the bones). Initially, this new growth is porous and disorganized and appears as greyish plaques on the bone surface. Eventually, this new bone may become incorporated into the underlying bone, and the healed periosteal lesion is recognized as a swollen area on the bone shaft, which may show horizontal striations.

Periostitis usually develops as a response to either infection or trauma. It is uncommon as an isolated disease process in modern populations, but non-specific

periosteal lesions, especially on the tibiae, are very common in archaeological skeletons. This may be because the periosteal bone reaction is part of the expression of a specific disease process which is not otherwise recognizable on dry bone, but it also may be a reaction to soft tissue trauma (Ortner and Putschar, 1985). Therefore, if a skeleton has periosteal lesions but there is no evidence for a specific disease or trauma, the periostitis tends to be described as "idiopathic".

Skeleton 307 presented with gross thickening of proximal right femur shaft, associated with profuse periosteal new bone, laid down in sheets and spiculated. This was most pronounced on the anterior aspect, but also affected the posterior muscle spur, which had spicules of new bone. The appearance of the distal femur and the knee joint was normal. The head of the femur was also normal in appearance. There was some excess bone growth on the greater and lesser trochanters, which might be associated with stress on the muscle attachements owing to soft tissue injury. The lesion didn't appear to be associated with a fracture, but may have been caused by soft tissue trauma and secondary infection.

Figure 11: Right Femur from SK 307 Displaying Periostitis

Slipped Capital Epiphysis

The primary pathology of a slipped capital epiphysis is a stress fracture between the growth plate on the head of the femur, and the neck of the femur. This allows medial, posterior and downward displacement of the head of the femur. The disease is uncommon, and occurs more frequently in boys than girls. It arises between the ages of 10 to 16 When the fracture has healed, the head of the femur is united with the neck in the slipped position, and the neck is short and thick, because normal growth has not occurred for a few years.

Skeleton 336 presented with a head of right femur which was grossly flattened and mushroom shaped, with inferior exotosis.. The head of the right femur was fused, unlike all the other epiphyses present. This fusion had taken place recently – the fusion line was still visible. It is suggested that this represents the line of the healed fracture, rather than a usual fused epiphysis. The fovea was absent, and there was a cleft in the superior aspect of the head at the distal margin. The tibiae and the calcaneii were poorly preserved and incomplete, so it was not possible to identify any

secondary effects of the gait that this individual must have utilized. However, the right fibula displays pronounced curvature to the medial at the proximal end. This may have been the result of the changed gait demanded by the pathology at the hip. Had this individual survived into adulthood, they would have been affected by severe degenerative arthritis with an early onset (Ortner and Putschar, 1981).

Figure 12: Slipped Capital Epiphysis of Right Femur of SK 336

Ankylosing Spondylitis

Ankylosing spondylitis is a progressive inflammatory disease of unknown aetiology, primarily affecting the diarthrodial joints of the spine, the costovertebral joints and the sacroiliac joints. It mostly affects males, with a ratio of about 1:9. The disease usually begins in the 20s or 30s in the lumbar spine and sacroiliac joints, and progressively ascends until the entire spine and all the costovertebral joints are affected. The disease begins as an inflammatory arthritis of the small joints of the spine, leading to bony ankylosis (fusion). The vertebral bodies also begin to fuse through ossification of the ligaments. The peripheral portion of the annulus fibrosus between the vertebrae becomes ossified, bridging the inner portions of the intervetebral discs, which eventually also become ossified. The vertebral bodies lose their concave flare on the outer circumference, and a rigid, so-called "bamboo spine" develops. (Ortner and Putschar, 1981). Symptoms include low back pain, limitation of chest expansion, immobility, weight loss and fever. Other joints including the hip, shoulder, knee, ankle, wrist, hands and feet may also become affected (Roberts and Manchester, 1997).

SK 410 presented with pathological lesions which may represent ankylosing spondylitis. The skeleton presented with fused thoracic vertebrae 5-7 and 10-12 (the lumbar vertebrae and the sacrum and pelvis were not recovered, so it was not possible to examine the sacro-iliac joint, which is diagnostic of ankylosing spondylitis). The vertebral bodies were fused at points around their periphery. The lower vertebrae all had fused costovertebral joints, the higher vertebrae did not (this is typical of the progress of the disease, which ascends the spine). The spinal ligaments were in the process of ossification. There was no bony involvement elsewhere on the elements of the skeleton which had been recovered.

Figure 13: Fused Thoracic Vertebrae 5-7 and 10-12 from SK 410

Discussion

As explained in the Introduction, this bone report did not take the usual format recommended by current guidance[4]. And the human bone assemblage was not subject to the post excavation processing and analysis recommended by English Heritage and the IFA. The author therefore thought that it would be pertinent to discuss the consequences of this, and how the quality of the data obtained from the assemblage, and therefore the quality of the bone report itself, has been affected:

1 The quality of data collected in the categories of % completeness and condition were unaffected by the bone being unwashed.

2 The category of quality of data was affected by the bone being unwashed, as additional data would have been available from some individuals had the bones been cleaned.

3 The determination of age was not affected. This was because the teeth and pubic symphyses were routinely washed, as were the cranial sutures, and the epiphyses of the long bones of subadults if they appeared to be recently fused.

4 The determination of sex was not affected, as the sexually dimorphic features of the skeleton are sufficiently identifiable to be visible on an unwashed skeleton.

5 The identification of dental pathologies was unaffected, because the teeth were washed.

[4] English Heritage, 1991 *Management of Archaeological Projects* HBMC 2nd Edition; Mays S., Brickley M. and Dodwell N. 2004 *Human Bones From Archaeological Sites* English Heritage and Brickley, M. and McKinley, J 2004 *Guidelines to the Standards for Recording of Human Remains* British Association for Biological Anthropology and Osteoarchaeology / Institute of Field Archaeologists

6 Because every bone was washed on which a pathological lesion was suspected, in general it is believed that most pathological conditions present in the assemblage were recorded. Pathological conditions which cause gross lesions on the bones were easily identifiable, even on unwashed bone. However, the recorded prevalence of osteoarthritis in this assemblage was very low, and the author believes that this was specifically because the unwashed state of the bone made it difficult to identify lesions typical of degenerative change. It was noteworthy that in general the shafts of the long bones were fairly clean, and it was the epiphyses of the long bones and the axial skeleton which were most obscured by being unwashed. Therefore, conditions which affected the long bones (such as trauma or periostitis) were readily identified. Changes to the gross shape of the bones of the axial skeleton and the epiphyses of the long bones (such as the marginal lipping of degenerative joint disease) could be readily seen, but more discrete lesions on the surfaces of the bones, such as porosity and eburnation caused by osteoarthritis, were obscured. No examples of porotic hyperostosis on the cranial vault, or cribra orbitalia in the eye sockets were observed in this assemblage, and the author suggests that these lesions may also have been obscured by the unwashed state of the bone.

Conclusion

These conclusions are based on the assumption that the assemblage was interred within a constrained time period. In reality, this assemblage was created over at least six centuries. Two burials are known to be Medieval as they are overlain by the tower which was constructed in the thirteenth century, and the latest burials are 19th century.

However, with only three individuals dated to the Medieval Period, and two dated to the nineteenth century, a further twenty seven probably interred during the 18th century, and another seven interred at some point during the Post Medieval period (16th – 19th centuries) it was not possible to derive any statistically meaningful information relating to the changing demographic profile of the population, or the usage of this area of the cemetery through time. Therefore, the stated research aims of this report could not be fulfilled, and the assemblage has been recorded as though it was interred a single time.period.

The assemblage from the churchyard of St Martin of Tours displayed a demographic profile suggesting that an approximately equal number of men and women were buried in this area. This suggests that burial in this part of the churchyard was not determined by sex, and that the assemblage represents a living population with an approximately even ration of men and women, as is to be expected.

The age-at-death profile of the assemblage differs from a model life table for a stable population with moderate life expectancy, because there are very few infant burials. This may have been because infants were not buried in this area of the churchyard, or because the infants skeletons were not preserved, either through chemical or mechanical impacts. The number of juvenile burials is typical of a population with moderate life expectancy. Because so many of the adult skeletons could not be

assigned to age categories, but were simply recorded as "adult", no attempt was made to assess the percentages of adults in different age at death categories. However, it was noted that there were more adults in the age-at-death-categories of 46+ and 60+ than there were in the age-at-death categories of 17-25 and 25-46, so as a broad generalization it could be stated that adult life expectancy was moderately high.

Many of the individuals whose dentition was recovered presented with caries, periapical abscesses, calculus and periodontal disease. These are all indicators that in general dental hygiene was poor. Thirty-one of these individuals presented with enamel hypoplasia, reflecting high levels of stress factors in early childhood which could have included fevers and periodic malnutrition.

In general fairly low levels of pathologies were identified in this population. However, whereas the author is confident that pathologies characterised by gross lesions on the skeleton have been identified, it is probable that pathological conditions such as osteoarthritis which cause less substantial lesions, particularly on the axial skeleton and the epiphyses of the long bones, have been under-recorded.

Recommendations for Further Work

The stratigraphic limitations of the project and the lack of any precise dating for individuals within this assemblage, made it impossible to fulfil the research aims of this assessment, and lead the author to conclude that there is no potential for further analysis, and that it is not recommended that any further work be done on this assemblage.

Bibliography

Bass, W.M, 1987 *Human Osteology: A Laboratory and Field Manual*. Columbia. Missouri Archaeological Society.

Brickley, M. and McKinley, J 2004 *Guidelines to the Standards for Recording of Human Remains* British Association for Biological Anthropology and Osteoarchaeology / Institute of Field Archaeologists

Brothwell. D. 1981 *Digging up Bones*. London. British Museum (Natural History)

Chamberlain, A. "Problems and Prospects in Palaeodemography in Cox and Mays (eds) 2000 *Human Osteology in Archaeology and Forensic Science*

Cox, M. and Mays, S (eds). 2000 *Human Osteology in Archaeology and Forensic Science* London GMM

English Heritage, 1991 *Management of Archaeological Projects* HBMC 2nd Edition

Flecker, H. 1942 *Time of Appearance and Fusion of Ossification Centres as Observed by Roentgenographic Methods*. American Journal of Roentgenology 47:97-159

Grauer, A.L and Stuart-Macadam, 1998 *Sex and Gender in Palaeopathological Perspective*. Cambridge. Cambridge University Press.

Hillson, S. 1996 *Dental Anthropology*. Cambridge. Cambridge University Press.

Katz, D. and Suchey J.M 1986 *Age Determination of the Male Os Pubis*. American Journal of Physical Anthropology 8: 65-79

Larsen, C.S. 1997 *Bioarchaeology. Interpreting Behaviour from the Human Skeleton*. Cambridge. Cambridge University Press

Lovejoy, C.O, 1985 *Dental Wear in the Libben Population: Its Functional Pattern and Role in the Determination of Adult Skeletal Age at Death*. American Journal of Physical Anthropology 68: 47-56

Masset, C. 1989 *Age Estimation on the Basis of Cranial Sutures*, pp 71-103 in M.Y Iscan (ed) *Age Markers in the Human Skeleton* Springfield Charles C. Thomas

Mays, S. 1998 *The Archaeology of Human Bones*. London. Routledge

Mays S., Brickley M. and Dodwell N. 2004 *Human Bones From Archaeological Sites* English Heritage

McMinn, R.M.H, Hutchings, R.T, Pegington, J. and Abrahams, P. 1993 *A Colour Atlas of Human Anatomy*. Mosby-Year Book Europe Limited.

Ortner, D.J and Putschar, W.G.J, 1985 *Identification of Palaeopathological Conditions in Human Skeletal Remains*. Washington D.C. Smithsonian Institution Press.

Roberts, C. and Manchester, K. 1995 *The Archaeology of Disease*. Stroud. Sutton Publishing Ltd.

Scheuer, J.L, Musgrave, J.H and Evans, S.P 1980 Estimation of Late Foetal and Perinatal Age from Limb Bone lengths by Linear and Logarithmic Regression. *Annals of Human Biology* 7: 257-265

Suchey, J.M, Wiseley, D. V and Katz, D. 1988 *Instructions for the Suchey-Brookes System for Age Determination of the Female Os Pubis*

Sundick, R.L. 1978 *Human Skeletal Growth and Age Determination*. Journal of Human Evolution 29: 231-249

Ubelaker, D. H. 1978 *Human Skeletal Remains: Excavation, Analysis, Interpretation*.. Chicago: Aldine

White, T.D 1991 *Human Osteology*. London. Academic Press Ltd.

Annexe: Skeletal records

Individual Information

Skeleton No.	Grave No.	Date of Interrment	Phase	% Complete	Quality of Data	Condition
105	1			85%	****	Good
108	2	C19		10%	*	Moderate
109	2			30%	*	Poor
112	3			70%	**	Moderate
115	4			45%	***	Excellent
118	5			95%	****	Good
121	6	C19		75%	***	Good
130	9			40%	**	Moderate
133	10			40%	*	Poor
134	10			40%	*	Good
136	10			20%	*	Moderate
138	11	C18	PM	95%	****	Good
141	12	C18	PM	20%	*	Good
144	13			95%	***	Moderate
147	14			5%	0	Poor
150	15			10%	0	Poor
153	16			45%	**	Poor
156	17			10%	0	Poor
165	20			25%	0	Moderate
168	21			5%	0	Poor
171	22			5%	0	Poor
174	23			50%	**	Good
177	24			15%	**	Good
183	26			40%	**	Moderate
186	27			2%	0	Moderate
188	(24)			10%	0	Poor
191	28			20%	0	Poor
194	29			65%	**	Good

Skeleton No.	Grave No.	Date of Interrment	Phase	% Complete	Quality of Data	Condition
197	30			15%	*	Moderate
203	32			30%	**	Moderate
206	33			15%	*	Moderate
209	34			15%	*	Moderate
211				5%	0	Moderate
213	36			30%	**	Moderate
215	26			10%	0	Poor
220	44			15%	**	Moderate
229				15%	**	Moderate
231	51			20%	**	Moderate
234	52			10%	8	Poor
237	53		PM	5%	0	Moderate
242	41			30%	*	Moderate
244	(53)			20%	*	Poor
245	53		PM	15%	0	Good
247	55	C18	PM	99%	*****	Excellent
251	56			60%	***	Moderate
254	57			30%	**	Moderate
257	58		PM	30%	**	Good
261	59			20%	**	Good
264	60	C18		40%	*	Moderate
267	61			30%	*	Good
271	62	C18	PM	10%	0	Poor
274	63	C18	PM	15%	**	Moderate
277	64		PM	20%	**	Good
281	65			20%	**	Moderate
284	66		PM	25%	**	Moderate
288	67	C18	PM	60%	**	Moderate
296	69			20%	*	Good
301	70			30%	*	Moderate

Skeleton No.	Grave No.	Date of Interrment	Phase	% Complete	Quality of Data	Condition
304	71			55%	**	Moderate
307	72	Medieval		20%	*	Poor
311	73	C18	PM	20%	*	Poor
314	74	C18	PM	35%	**	Moderate
317	75	C18	PM	10%	0	Moderate
320	76	C18	PM	20%	*	Moderate
323	77			20%	*	Moderate
326	79			30%	*	Moderate
330	80			10%	0	Poor
333	81			20%	*	Poor
336	82	C18	PM	30%	**	Moderate
339	83		PM	20%	0	Good
342	84	C18	PM	30%	*	Poor
345	85	C18	PM	80%	****	Good
348	86			20%	*	Good
354	88	C18	PM	30%	*	Good
357	89			30%	*	Good
360	90			10%	0	Moderate
363	91			10%	0	Moderate
375	95			10%	0	Moderate
381	97			15%	*	Moderate
384	98			40%	**	Good
392	100	C18	PM	25%	*	Moderate
395	101	C18	PM	20%	**	Moderate
398	102		PM	45%	***	Moderate
401	103	C18	PM	45%	**	Moderate
404	104			40%	***	Good
407	105	C18	PM	45%	**	Good
410	106	C18	PM	40%	**	Moderate
413	107	C18	PM	45%	**	Moderate

Skeleton No.	Grave No.	Date of Interrment	Phase	% Complete	Quality of Data	Condition
416	108	C18	PM	15%	***	Good
419	109			70%	***	Moderate
422	110			25%	**	Good
434	112		PM	25%	*	Poor
437	113	C18	PM	10%	*	Moderate
440	114			20%	**	Poor
443	115	C18	PM	45%	**	Moderate
447	117		PRE C13	35%	**	Poor
450	118			95%	****	Good
453	119		PRE C13	45%	**	Poor
455	120			60%	*	Moderate
457	118			70%	**	Poor
458	118			60%	*	Poor
460	121			90%	***	Moderate
463	122			30%	**	Moderate
466	123	C18		50%	**	Good
469	124			90%	***	Moderate
472	125			40%	**	Good
475	126			20%	**	Moderate
478	127			15%	0	Poor
481	128			75%	***	Moderate
484	129			70%	**	Good
489	?			40%	***	Poor
490	131			30%	*	Moderate
492				20%	*	Moderate
493	132			40%	*	Good
496	133			15%	*	Poor
499	134			20%	**	Good

Age and Sex

Skeleton No.	Age in Years	Age Category	Dental Development	Dental Attrition	Fusion	Pubic Symphysis	Cranial Sutures	Sex	Cranium	Pelvis	Robusticity
105	17-22	6	x	x	x	x	x	Male?	x	0	0
108	12-18 months	3	x	0	0	0	0	0	0	0	0
109	Infant	3	0	0	0	0	0	0	0	0	0
112	55+	8	x	x	x	0	x	Male	x	x	x
115	45-55	8	0	x	x	0	x	Male	x	0	x
118	30 - 40	7	x	x	x	x	x	Male	x	x	x
121	45-55	8	0	x	x	x	x	Female	x	x	x
130	55+	8	0	x	x	0	x	Male	x	0	x
133	Adult	10	0	0	x	0	0	0	0	0	0
134	50+	8	x	x	x	0	x	Male	x	0	0
136	18-25	6	0	0	x	0	x	0	0	0	0
138	48-72	8	x	x	x	x	x	Female	x	x	x
141	12-15 years	4	0	0	x	0	0	0	0	0	0
144	45-55	8	0	x	x	x	x	Male	x	x	0
147	Juvenile	4	0	0	0	0	0	0	0	0	0
150	Adult	10	0	0	x	0	0	0	0	0	0
153	Adult	10	0	0	x	x	0	Female	0	0	x
156	Adult	10	0	0	0	0	0	0	0	0	0
165	Adult	10	0	0	x	0	0	0	0	0	0
168	Adult	10	0	0	0	0	0	0	0	0	0
171	Adult	10	0	0	x	0	0	0	0	0	0
174	15-20	5	0	0	x	0	0	0	0	0	0
177	55+	8	x	x	0	0	x	Male	x	0	0
183	3-4 years	3	0	0	x	0	0	0	0	0	0
186	Adult	10	0	0	x	0	0	0	0	0	0
188	Adult	10	0	0	x	0	0	0	0	0	0
191	Adult	10	0	0	0	0	0	0	0	0	0
194	34-63	7	0	0	x	x	0	Female	0	x	x
197	Infant	3	x	0	0	0	0	0	0	0	0

Skeleton No.	Age in Years	Age Category	Dental Development	Dental Attrition	Fusion	Pubic Symphysis	Cranial Sutures	Sex	Cranium	Pelvis	Robusticity
203	6	4	x	0	x	0	0	0	0	0	0
206	Adult	10	0	0	x	0	0	0	0	0	0
209	Juvenile	4	0	0	x	0	0	0	0	0	0
211	Adult	10	0	0	x	0	0	0	0	0	0
213	34 - 63	7	0	0	x	x	0	Female	0	x	x
215	Adult	10	0	0	x	0	0	0	0	0	0
220	55+	8	0	x	x	0	x	Male?	x	0	0
229	25-40	7	0	x	0	0	x	Male?	x	0	0
231	55+	8	0	0	0	0	0	Male?	0	0	x
234	45-55	8	0	x	0	0	0	0	0	0	0
237	Adult	10	0	0	0	x	0	0	0	0	0
242	4-6 years	4	0	0	x	0	0	0	0	0	0
244	Adult	10	0	0	x	0	0	Male	0	x	0
245	Adult	10	0	0	x	0	0	0	0	0	0
247	27-49	7	0	x	x	x	0	Female		x	x
251	4-6 years	4	x	0	x	0	0	0	0	0	0
254	25-40	7	0	x	x	0	0	Male	x	x	x
257	3-5 years	4	x	0	x	0	0	0	0	0	0
261	26 - 45	7	0	0	x	x	x	Male	0	x	x
264	Adult	10	0	0	x	0	0	Female	0	x	x
267	60+	9	0	0	x	x	0	Male?	0	x	x
271	Adult	10	0	0	x	0	0	0	0	0	0
274	Adult	10	0	0	x	0	0	Male	0	0	x
277	20-30	6	0	0	x	x	0	Female	0	x	x
281	23-39	7	0	0	0	x	0	Female	0	x	0
284	30-50	8	x	0	x	0	0	Female	x	0	x
288	Adult	10	0	0	x	0	0	Female	0	x	x
296	Adult	10	0	0	x	0	0	Female	0	x	x
301	4-5 years	4	x	0	x	0	0	0	0	0	0
304	18-30	6	0	x	0	0	0	0	0	0	0

Skeleton No.	Age in Years	Age Category	Dental Development	Dental Attrition	Fusion	Pubic Symphysis	Cranial Sutures	Sex	Cranium	Pelvis	Robusticity
307	Adult	10	0	0	x	0	0	?	0	0	0
311	0-1 year	3	0	0	0	0	0	0	0	0	0
314	Adult	10	0	0	x	0	x	Male?	x	0	0
317	Adult	10	0	0	x	0	0	0	0	0	0
320	13-15	4	0	0	x	0	0	0	0	0	0
323	Adult	10	x	x	x	0	0	0	0	0	0
326	Adult	10	0	0	x	0	0	Female?	0	x	x
330	Adult	10	0	0	x	0	0	0	0	0	0
333	Adult	10	0	0	x	0	0	Female?	0	x	0
336	15-18	5	0	0	x	0	0	0	0	0	0
339	Adult	10	0	0	x	0	0	0	0	0	0
342	Adult	10	0	0	x	0	0	0	0	0	0
345	<12	4	0	0	x	0	0	0	0	0	0
348	Adult	10	0	0	x	0	0	0	0	0	0
354	13-15	4	0	0	x	0	0	0	0	0	0
357	Adult	10	0	0	x	0	0	0	0	0	0
360	Adult	10	0	0	x	0	0	0	0	0	0
363	Adult	10	0	0	x	0	0	0	0	0	0
375	Adult	10	0	0	x	0	0	0	0	0	0
381	Adult	10	0	0	x	0	0	0	0	0	0
384	5-6 years	4	0	0	x	0	0	0	0	0	0
392	55+	8	0	0	0	0	x	0	0	0	0
395	Adult	10	0	0	x	0	0	Male	0	x	x
398	16-20	6	x	x	x	0	x	Female?	x	0	0
401	Adult	10	0	0	0	0	x	Female	x	0	0
404	20-24	6	x	x	0	0	0	Male?	x	0	0
407	60+ (70+)	9	x	0	x	0	x	Male	x	0	x
410	Adult	10	0	0	x	0	0	0	0	0	0
413	16-20	6	x	x	x	0	0	Female?	x	0	x
416	55+	8	0	0	0	0	x	Female	x	0	0

Skeleton No.	Age in Years	Age Category	Dental Development	Dental Attrition	Fusion	Pubic Symphysis	Cranial Sutures	Sex	Cranium	Pelvis	Robusticity
419	55+	8	x	x	0	0	x	Male	x	0	x
422	45-55	8	x	x	0	0	x	Female?	x	0	0
434	Adult	10	0	0	0	0	0	Female?	0	0	x
437	Adult	10	0	0	0	0	0	Female	0	x	0
440	18-30	6	x	x	0	0	0	Female?	x	0	0
443	18-30	6	x	x	x	0	x	Female	x	0	x
447	45-55	8	x	x	0	0	x	Female	x	0	x
450	55+	9	0	x	0	0	x	Female	x	x	x
453	55+	9	0	x	0	0	0	Female?	x	0	x
455	1-2 years	4	x	0	x	0	0	0	0	0	0
457	4-6 years	4	0	0	x	0	0	0	0	0	0
458	4-6 years	4	x	0	0	0	0	0	0	0	0
460	3-4 years	4	x	0	x	0	0	0	0	0	0
463	35-56 years	8	0	0	x	x	0	Male?	0	x	x
466	27-49	7	0	0	0	x	0	Male?	0	x	x
469	45-55	8	0	x	x	0	0	Male?	x	0	x
472	20-27	6	0	0	x	x	0	M	0	x	0
475	55+	9	0	x	0	0	x	Female	x	0	0
478	Adult	10	0	0	0	0	0	0	0	0	0
481	Adult	10	0	0	x	0	0	Female?	0	x	0
484	10-12 years	4	x	0	x	0	0	0	0	x	x
489	60+	9	x	x	0	x	0	Male	x	x	x
490	Adult	10	0	0	x	0	0	Male?	0	0	x
492	45-55	8	0	x	x	0	0	0	0	0	0
493	Adult	10	0	0	x	0	0	Male?	0	x	x
496	Adult	10	0	0	x	0	0	0	0	0	0
499	55+	9	0	x	0	0	x	Female	x	0	0

Dental Pathologies

Skeleton No.	Caries	Abscess	Enamel Hypoplasia	Calculus	Periodontal Disease	Other
105	0	0	0	x	0	Impacted 3rd molars
108	0	0	0	0	0	0
109	0	0	0	0	0	0
112	x	x	x	x	x	Absent 3rd mandibular molars
115	x	x	x	0	0	0
118	0	0	x	x	0	Impacted maxillary 3rd molars
121	x	0	x	x	0	0
130	x	0	x	x	0	0
133	0	0	0	0	0	0
134	x	x	x	x	x	0
136	0	0	0	0	0	0
138	x	x	0	0	0	Almost all teeth lost antemortem
141	0	0	0	0	0	0
144	x	0	x	x	0	0
147	0	0	0	0	0	0
150	0	0	0	0	0	0
153	0	0	0	0	0	0
156	0	0	0	0	0	0
165	0	0	0	0	0	0
168	0	0	0	0	0	0
171	0	0	0	0	0	0
174	0	0	0	0	0	0
177	x	0	0	0	x	0
183	0	0	0	0	0	0
186	0	0	0	0	0	0
188	0	0	0	0	0	0
191	0	0	0	0	0	0
194	0	0	0	0	0	0
197	0	0	0	0	0	0
203	0	0	0	0	0	0
206	0	0	0	0	0	0
209	0	0	0	0	0	0
211	0	0	0	0	0	0
213	0	0	0	0	0	0
215	0	0	0	0	0	0
220	x	0	0	x	0	Most molars lost antemortem
229	0	0	x	x	0	0
231	0	0	0	0	0	0
234	0	0	x	x	0	0
237	0	0	0	0	0	0
242	0	0	0	0	0	0
244	0	0	0	0	0	0
245	0	0	0	0	0	0
247	0	0	0	0	0	0
251	0	0	x	0	0	0
254	x	x	x	0	0	0
257	0	0	x	0	0	0
261	x	x	x	x	x	0

Skeleton No.	Caries	Abscess	Enamel Hypoplasia	Calculus	Periodontal Disease	Other
264	0	0	0	0	0	Adentulous
267	0	0	0	0	0	0
271	0	0	0	0	0	0
274	0	0	0	0	0	0
277	0	0	0	0	0	0
281	0	0	0	0	0	0
284	x	x	x	0	0	Most teeth lost antemortem
288	0	0	0	0	0	0
296	0	0	0	0	0	0
301	0	0	x	0	0	0
304	x	x	x	x	0	0
307	0	0	0	0	0	0
311	0	0	0	0	0	0
314	0	0	0	0	0	0
317	0	0	0	0	0	0
320	0	0	0	0	0	0
323	0	0	0	0	0	0
326	0	0	0	0	0	0
330	0	0	0	0	0	0
333	0	0	0	0	0	0
336	0	0	0	0	0	0
339	0	0	0	0	0	0
342	0	0	0	0	0	Adentulous
345	0	0	0	0	0	0
348	0	0	0	0	0	0
354	0	0	0	0	0	0
357	0	0	0	0	0	0
360	0	0	0	0	0	0
363	0	0	0	0	0	0
375	0	0	0	0	0	0
381	0	0	0	0	0	0
384	0	0	0	0	0	0
392	0	0	0	0	0	Adentulous
395	0	0	0	0	0	0
398	x	0	x	x	0	Dental crowding
401	0	0	0	0	0	Adentulous
404	x	x	x	x	x	3 lst molars lost antemortem
407	0	0	0	0	0	Adentulous
410	0	0	0	0	0	0
413	x	0	x	x	0	1st and 2nd molars lost antemortem
416	0	0	0	0	0	Adentulous
419	x	x	x	x	x	Dental crowding, all molars lost antemortem
422	x	0	0	0	0	Almost all maxillary teeth lost antemortem
434	0	0	0	0	0	0
437	0	0	0	0	0	0
440	x	0	x	0	0	0
443	x	0	x	0	0	0
447	x	0	x	x	x	Most molars lost antemortem

Skeleton No.	Caries	Abscess	Enamel Hypoplasia	Calculus	Periodontal Disease	Other
450	x	0	x	x	x	0
453	x	x	x	x	0	Many teeth lost antemortem
455	0	0	0	0	0	0
457	0	0	0	0	0	0
458	0	0	x	0	0	0
460	0	0	0	0	0	0
463	0	0	0	0	0	0
466	0	0	0	0	0	0
469	x	0	0	x	0	Most teeth lost antemortem
472	0	0	0	0	0	0
475	0	0	x	x	0	0
478	0	0	0	0	0	0
481	0	0	0	0	0	0
484	0	0	x	0	0	0
489	x	0	x	x	x	Most teeth lost antemortem
490	0	0	0	0	0	0
492	0	0	x	0	0	Congenitally absent 3rd molars
493	0	0	0	0	0	0
496	0	0	0	0	0	0
499	x	0	x	x	x	0

Pathologies

Skeleton No.	Developmental Abnormalities	Trauma	Degenerative	Infectious	Other
105	Sacralization of 5th lumbar vertebra, cleft neural arch	0	0	0	0
108	0	0	0	0	0
109	0	0	0	0	0
112	0	0	0	0	0
115	0	0	0	0	0
118	0	0	0	0	0
121	0	0	Degenerative disc disease	0	0
130	0	0	Degenerative disc disease	0	0
133	0	0	Degenerative disc disease of lumbar vertebrae	0	0
134	0	0	0	0	0
136	0	0	0	0	0
138	0	0	0	0	0
141	0	0	0	0	0
144	0	0	0	0	0
147	0	0	0	0	0
150	0	0	0	0	0
153	Butterfly vertebrae	0	0	0	0
156	0	0	0	0	0
165	0	0	0	0	0
168	0	0	0	0	0
171	0	0	0	0	0
174	0	0	0	0	0
177	0	0	0	0	0
183	0	0	0	0	0
186	0	0	0	0	0
188	0	0	0	0	0
191	0	0	0	0	0
194	0	0	0	0	0
197	0	0	0	0	0

Skeleton No.	Developmental Abnormalities	Trauma	Degenerative	Infectious	Other
203	0	0	0	0	0
206	0	0	0	0	0
209	0	0	0	0	0
211	0	0	0	0	0
213	0	0	0	0	0
215	0	0	0	0	0
220	0	0	0	0	0
229	0	0	0	0	0
231	0	0	0	0	0
234	0	0	0	0	0
237	0	0	0	0	0
242	0	0	0	0	0
244	0	0	Degenerative disc disease of lumbar vertebrae	0	0
245	0	0	0	0	0
247	0	0	0	0	0
251	0	0	0	0	0
254	0	0	0	0	0
257	0	0	0	0	0
261	0	0	0	0	0
264	0	0	Degenerative joint disease in sterno-clavicular joint	0	0
267	0	0	0	0	0
271	0	0	0	0	0
274	0	0	Degenerative disc disease of cervical vertebrae, osteoarthritis of accromio-clavicular joint	0	0
277	0	0	0	0	0
281	0	0	0	0	0
284	0	0	0	0	0
288	0	0	0	0	0
296	0	0	0	0	0

Skeleton No.	Developmental Abnormalities	Trauma	Degenerative	Infectious	Other
301	0	0	0	0	0
304	0	Possible pathological fracture in spine	0	Probable tuberculosis in spine	Possible neoplasm in spine
307	0	0	0	Periostitis on left tibial shaft	0
311	0	0	0	0	0
314	0	0	0	0	0
317	0	0	0	0	0
320	0	0	0	0	0
323	0	0	0	0	0
326	0	0	Degenerative disc disease of lumbar vertebrae	0	0
330	0	0	0	0	0
333	0	0	0	0	0
336	Slipped capital epiphysis	0	0	0	0
339	0	0	0	0	0
342	0	0	0	0	0
345	0	0	0	0	0
348	0	0	0	0	0
354	0	0	0	0	0
357	0	0	0	0	0
360	0	0	0	0	0
363	0	0	0	0	0
375	0	0	0	0	0
381	0	0	0	0	0
384	0	0	0	0	0
392	0	0	0	0	0
395	0	0	Degenerative disc disease of lumbar vertebrae	0	0
398	0	0	0	0	0
401	0	0	0	0	0
404	0	0	0	0	0

Skeleton No.	Developmental Abnormalities	Trauma	Degenerative	Infectious	Other
407	0	0	Marginal lipping of vertebral bodies and shoulder joints	0	0
410	0	0	0	0	Ankylosing spondylitis
413	0	0	0	0	0
416	0	0	0	0	0
419		0	Osteoarthritis (cervical vertebrae and 1st costo-sternal)	0	0
422	0	0	0	0	0
434	0	0	0	0	0
437	0	0	0	0	0
440	0	0	0	0	0
443	0	0	0	0	0
447	0	0	0	0	0
450	0	0	0	0	0
453	0	0	0	0	0
455	0	0	0	0	0
457	0	0	0	0	0
458	0	0	0	0	0
460	0	0	0	0	0
463	0	0	0	0	0
466	0	Healed fracture of left head of femur and acetabulum	Osteoarthritis in left hip joint	0	0
469	0	Healed fracture of lower right tibia shaft	Degenerative disc disease	0	0
472	Spina bifida occulta	0	0	0	0
475	0	0	0	0	0
478	0	0	0	0	0
481	0	0	0	0	0
484	0	0	0	0	0
489	0	0	Degenerative disc disease of lower thoracic vertebrae	0	0
490	0	0	0	0	0

Skeleton No.	Developmental Abnormalities	Trauma	Degenerative	Infectious	Other
492	0	0	0	0	0
493	0	0	0	0	0
496	0	0	0	0	0
499	0	0	0	0	0

Appendix 2
Pottery from St. Martin of Tours church, Chelsfield, Bromley (Site MTC06)

Paul Blinkhorn

The pottery assemblage comprised 7 sherds with a total weight of 40g. The group was all medieval or later, with the earliest sherd being roughly contemporary with the construction of the church.

The fabric codes utilized are those of the Museum of London post-Roman type-series (Vince 1985), as follows:

EMSS: Early Medieval Sand and Shell ware, mid/late11th – late 12th century. 1 sherd, 18g.
LOND: London-type ware, early/mid 12th – mid 14th century. 5 sherds, 21g.
CHINA: 'Ironstone' china, 1800-1900. 1 sherd, 1g.

The pottery occurrence by number and weight of sherds per context by fabric type is shown in Table 1. Each date should be regarded as a *terminus post quem*.

Table 1: Pottery occurrence by number and weight (in g) of sherds per context by fabric type

	EMSS		LOND		CHINA		
Context	No	Wt	No	Wt	No	Wt	Date
114			2	15			L12thC
120			1	3	1	1	19thC
140			2	3			L12thC
259	1	18					M/L11thC
Total	1	18	5	21	1	1	

The sherd of London ware from Grave 6 (context 120) is a bodysherd from a jug with an all-over white slip and mottled green glaze. Such vessels are typical of the late 12th - 13th century London Ware tradition (*ibid*. 44). Two similar sherds which are almost certainly from the same vessel, were recovered from context 140, the fill of Grave 12. If these sherds are from the same vessel, then it would appear that they are residual, and were already deposited when the two graves were initially dug. The presence of the sherd of EMSS dates to the mid/late 11th and the late 12th century, and is thus broadly contemporary with the construction of the church in the 12th century.

Bibliography

Vince, AG, 1985 The Saxon and Medieval Pottery of London: A review. *Medieval Archaeology* **29**, 25-93

Appendix 3

Assessment of the Small Finds

St. Martin of Tours Church, Chelsfield (MTC06)

by Hilary Major

Finds from 33 graves and two other contexts were examined. Most of these graves contained coffin furniture in the form of grips (handles), grip plates and escutcheons. There were no grave plates, on which would have been inscribed the name of the deceased. In most cases, the full complement of coffin furniture does not seem to have been retrieved, as only one or two grips were found.

The grips were decorative rather than functional. They were simple in form, and made from either cast or wrought iron. They probably all had backing plates originally, but in some cases very little has survived, and most of the more complete ones are obscured by earth, making the patterns hard to distinguish. They appear to be florid, and non-figurative. The grip plates were made from sheet iron with white metal coating, or stamped white metal, probably tin. Some had traces of black lacquer.

The escutcheons present were made from stamped white metal, with florid designs, some with black lacquer coating.

A number of the coffins had copper alloy or iron studs. These were generally used as upholstery nails, although only in one case (Grave 108) were there sufficient present to suggest that they had been used to pick out patterns on the coffin. None of the studs had any trace of preserved cloth or other material, so there is no evidence that the coffins were covered in any way. Only four graves had more than ten studs, and it is possible that they were being used as fixing studs for escutcheons, although all those *in situ* in the escutcheons and grip plates are nails rather than studs.

Context 386 contained two screws, and Grave 108 a possible screw. This is suggestive of a 19th century date for these burials. The use of wrought iron for some of the grips, and the simple forms present suggest an 18th century date for most of the burials.

Besides the coffin furniture, there were few other objects from the graves. Two graves contained a single dressmaker's pin, possibly used to fasten the burial clothes, though possibly residual, and two contained buttons. A stone spindlewhorl from Grave 72 is probably medieval, and therefore residual in its context.

The ironwork was generally in fair condition. The white metal plates and escutcheons were generally fragmented, and in poor condition.

Recommendations for conservation

Most of the sheet grip plates and escutcheons are fragmented, and are not worth cleaning. Some of the more complete ones could be cleaned for illustration. The metal is very thin and brittle, however, and conservation may be quite costly. Given

the relatively recent date of the objects and the incompleteness of the grave assemblages, conservation may not be considered cost effective.

Recommendations for further work

Further research on the types of coffin furniture present may refine the suggested dates of burial.

If the excavation is going to be published, selected objects should be illustrated, comprising examples of the various shapes of grip, and any grip plates and escutcheons with visible detail.

Catalogue

Notes

Studs have circular, low domed heads unless otherwise specified.

The following are iron unless otherwise specified.

Context 103

From groundbeam 5

<1> White metal escutcheon, made from stamped thin sheet coated with black lacquer. Incomplete. Florid non-figurative design. One empty nail hole present. 202x *c* 90mm

<2> White metal escutcheon, with the same design as <1> but less complete. One iron nail *in situ*. 187x *c* 90mm

<3> White metal escutcheon, made from stamped thin sheet, incomplete, with the edge missing. In fairly good condition, with parts of two iron nails surviving. Sub-oval central panel with a surrounding florid design, partly obscured by earth. The pattern is different from <1> and <2>. 87x65mm

Grave 38

Fill 386

Four cast iron grips, two of them complete. The two complete examples are thickened in the middle, and have plain terminals at right-angles to the grip, held in ring-headed staples. There are traces of a white metal or tinned iron grip plate. One of the incomplete grips is similar; the other is thinner, with no central thickening, probably similar to the grips from Grave 88. Complete grips: W. 130mm, drop 55mm, max. section 17x13mm; W. 120mm, drop 55mm, max. section 17x12mm;

Six studs. One has white metal coating on the back. Diam. 15mm, L. 14mm.

Seven nails and a nail shaft.

Two screws.

Grave 11

Fill 137

<8> Copper alloy. Ring from a button, with some surviving mineral-replaced textile covering. Diam. 13mm.

Stud, details obscured by corrosion. Diam. *c* 16mm, L. 15mm.

Twelve nails. Eleven are similar, with abundant mineralised wood on their shafts, but the twelfth is a different size, and has no wood on the shaft. The latter nail is probably residual.

Grave 12

Fill 140

Four nails and four nail shafts.

Grave 31

Fill 199

Three grip fragments, probably from two separate grips. Curved, and more delicate than most. Probably wrought iron. Part of an attachment ring is present on one, and there are small fragments of stamped white metal sheet back plates corroded on. L. of fragments 58mm; 62mm; 68mm.

Stud, corroded onto a nail. Diam. 12mm, L. 11mm.

Three nails and two nail shafts.

Grave 55

Fill 246

Five grips. Curved, with the ends held by small ring-headed pins. Two are slightly thickened in the middle. There are fragments of stamped white metal sheet back plates present. W. 135mm, drop 50mm.

Seventeen studs, one corroded onto a nail. Diam. 16mm, L. 15mm.

Four nails and 2 nail shafts.

Grave 60

Context 269

Three studs. Diam. 15mm, L. incomplete.

Two nails.

Grave 62

Fill 270

Grip. Curved, ends obscured. A small part of the stamped white metal sheet back plate survives. W. 140mm, drop 43mm.

Eight studs with white metal coating. Diam. 16mm, L. 13mm.

One nail and two nail shafts.

Grave 63

Fill 273

Grip. Angular, with a thickened middle. One end is incomplete, and the detail of the other end is unclear. Part of a stamped white metal grip plate is present, shape indeterminate. W. *c* 135mm, drop *c* 40mm.

Seven studs. Diam. 17mm, L. 16mm.

Six nails and a nail shaft.

Grave 64

Context 278

Grip. Angular, with a thickened middle. The ends are held by double-spiked loops. W. 126mm, drop 38mm.

Stud. Diam. 14mm, L. 11mm.

Nail and two shaft fragments.

Grave 66

Context 290

Two grips. Curved, and probably thickened in the middle. Most of the detail is obscured by corrosion. One has small fragments of a sheet iron grip plate corroded onto the back. W. 135mm, drop *c* 50mm.

Eleven studs with slightly domed heads. Two have white metal coating surviving on the back. Diam. 15mm, L. 12mm.

Two copper alloy studs. Diam. 15mm, L. 14mm.

Eleven nails and two nail shafts.

Grave 67

Fill 286

<6> Copper alloy. Dressmaker's pin, point missing. Head obscured, probably Caple type C (Caple 1985). L. 19mm

Coffin 287

Twenty-one studs. Iron with white metal coating. Diam. 15mm, L. 16mm.

Grave 72

Fill 308

309 <4> Stone spindlewhorl, probably clunch (hard chalk). Truncated biconical whorl, with a rather eroded surface. Probably residual medieval. Diam. 25mm, ht. 19mm, hole diam. 11mm. Wt. 11g

Grave 73

Fill 312

Seven nails.

Grave 74

Fill 313

Two nails

Grave 75

Fill 316

Two nails

Grave 76

Fill 319

Four studs, all incomplete. Two have traces of black lacquer on the surface. Head diam. 12-16mm.

Two nails and a nail shaft.

Grave 78

Fill 325

Plain grip, ends missing, thicker in the middle. W. 105mm, max. section *c* 14x9mm

Five nails and a nail shaft. Two have fragments of a thin iron sheet escutcheon or grip plate attached.

Grave 82

Skeleton 336

Stud. L. 14mm, head diam. 13mm.

Tack, shank possibly incomplete. L. 15mm, head diam. 7mm.

Grave 84

Fill 341

Four nails

Grave 85

Fill 344

Six studs. There are traces of white metal coating on the backs of some. Diam. 14mm, L. 14mm.

Two nails with slightly domed heads.

Grave 88

Fill 353

Two cast iron grips, shallowly curved, and probably originally coated. The grips have a circular section of constant thickness; the terminals are obscured by corrosion. There are traces of a grip plate or washers, either white metal or with a coating of white metal. One is complete. W. 91mm, drop 30mm, th. 7mm.

Four nails

Grave 99

Skeleton 389

White metal. Stamped sheet escutcheon in about a dozen pieces. It was probably oval or circular, with a beaded border. The detail of most of the decoration is obscured by corrosion. There are two iron nails in place on the edge. Diam. *c* 115mm.

Grave 100

Fill 391

Two plain grips with sheet iron grip plates. Both are fragmentary. The grips appear to be forged rather than cast, and are relatively insubstantial. They were held by ring-headed pins. The plates appear to be lenticular, with a rectangular cross element at either end. Any decoration is obscured by corrosion. The more complete one has a nail or stud either end. Grip W. *c* 100mm, drop *c* 25mm. Plate L. *c* 190mm, W. across middle *c* 60mm, W. across ends *c* 70mm.

Stud, with a flat head. L. 13mm, head diam. 13mm.

Two nail shafts.

Grave 102

Fill 397

Eleven fragments from at least one sheet iron escutcheon or grip plate. The surfaces are heavily concreted with pebbles and soil, and there is very little detail visible. Possibly rectangular. Dimensions at least 130x70mm.

Two nails.

Grave 103

Cut 402

<7> Copper alloy. Dressmaker's pin, point missing. Caple Type C (Caple 1985). L. 9mm

Fill 400

Grip and plate, heavily concreted, with few details visible. The plate is lenticular, with rectangular cross elements at the ends, with white metal coating. The split end of one fixing pin for the grip is visible on the back. The shape of the grip is unknown. Plate L. *c* 210mm, W. *c* 75mm.

Three fragments from similar grips and plates, details obscured by concretion.

Stud, shank incomplete; a possible second stud is corroded onto the head of a nail. One of the nails has a stud shank adjacent to the head, probably part of the incomplete stud. Diam. 13mm.

Five nails.

Grave 105

Fill 406

<5> Bone ring, probably the ring from a textile button similar to <8> (Grave 11), but with no textile surviving. Diam. 14mm, internal diam. 6mm, th. 2mm.

Grip. Curved, with one end missing and the other end obscured by corrosion. Part of the grip plate is present, made from stamped white metal sheet with a black lacquer coating. Grip W. 113mm, drop *c* 50mm.

Grave 106

Fill 409

Fragment from an escutcheon made from stamped white metal sheet. The decoration is unclear, but appears to be non-figurative. Black lacquer coating on the front. *c* 65x45mm.

One nail.

Grave 107

Fill 412

Fragments from an escutcheon made from stamped white metal sheet. The border is corrugated; most of the other detail is obscured by concretions. Shape uncertain. At least 110x40mm.

Four nails and a nail shaft.

Grave 108

Fill 415

Fragments from a grip plate made from stamped sheet, either white metal or with a coating of white metal. Probably had black lacquer coating. The details are obscured by corrosion. Part of a grip is corroded onto one piece.

Five nails.

Possible screw, with a circular-sectioned shank, details obscured by corrosion.

Grave 111

Studded coffin 429

68 copper alloy studs, some *in situ* in preserved wood. They appear to have been attached to bare wood, rather than having been used to fix cloth or leather to the coffin. There is no visible trace of exterior upholstery, even though the wood is quite

well preserved, and some fragments of wood have circular marks where the stud has been hammered in. One flat piece of wood has two studs, 7mm apart. Other pieces of wood with two studs are from the edge of a plank, and show that the studs were placed along adjoining edges of the coffin, although the number examined would not have been sufficient to decorate the whole coffin in this way. Diam. of studs 14mm, L. 12mm

Iron stud. Diam. 13mm, L. 12mm.

Grip, cast iron. It has a straight crossbar, thickened in the middle, and was held by ring-headed pins, now incomplete. L. 150mm, drop 35mm

Fragments of a grip plate in stamped white metal sheet, probably lacquered. The edge is a complex curve, with the original shape uncertain. The details are obscured by concretion, but the design appears to be non-representational.

Three nails.

Grave 113

Skeleton 437

Stud. Diam. 15mm, L. 12mm.

One nail.

Grave 115

Fill 442

Four nails

Grave 116

Cut 298

Six studs. They were probably coated or lacquered originally. There is no trace of any material between the studs and the wood of the coffin. Diam. 17mm, L. 15mm.

Grave 123

Fill 465

Grip, possibly cast iron, with a sheet iron plate. The grip is angled, with a thickened centre. The ends are held in ring-headed pins. Lenticular plate with rectangular cross-elements either end. There is a nail *in situ* either end, and a third in the middle. There is a hole through the plate, partly obscured by concretion. It is unclear whether this was part of the original design, or post-burial damage. Grip W. *c* 120mm, drop 35mm; plate L. 182mm, W. 50mm.

Two similar grips with plates, very heavily concreted, with most details obscured. One has white metal coating on the outer face.

Three studs. Diam. 15mm, L. 12mm.

Two nails, and seven fragments, probably representing about five nails in total.

References

Caple, C., 1985 'The pins and wires from Site S' 47-50 in Cunningham, C.M. and Drury, P.J. *Post-medieval sites and their pottery: Moulsham Street, Chelmsford* Coun. Brit. Archaeol. Res. Rep. 54

Appendix 4 Oasis report

OASIS DATA COLLECTION FORM

Project details

Project name	St Martin of Tours, Chelsfield
Short description of the project	A multi-phased archaeological project involving excavation, preservation in situ and watching brief works undertaken between March and May 2006 by within the churchyard. In total 135 medieval and post-medieval burials were recorded and 116 skeletons assessed. The archaeological work was required in advance of the construction of a single storey extension on land within the historic graveyard and on the northern side of the nave wall of the church. The excavation followed on from the partial evaluation of the site by the Orpington and District Archaeological Society in 2001. The project also incorporated phases of foundation redesign to minimise the impact on areas of known archaeological deposits as they became apparent and a final phase of a watching brief and excavation.
Project dates	Start: 24-03-2006 End: 25-06-2006
Previous/future work	Yes / No
Any associated project reference codes	MTC 06 - Sitecode
Type of project	Field evaluation
Site status	Listed Building
Current Land use	Other 4 - Churchyard
Monument type	BURIAL Medieval
Monument type	BURIAL Post Medieval
Significant Finds	COFFIN FITTINGS Post Medieval
Methods & techniques	'Targeted Trenches','Test Pits'
Development type	Large/ medium scale extensions to existing structures (e.g. church, school, hospitals, law courts, etc.)
Prompt	Direction from Local Planning Authority - PPG16
Position in the planning process	After full determination (eg. As a condition)

Project location

Country	England
Site location	GREATER LONDON BROMLEY ORPINGTON St Martin of Tours
Study area	119.00 Square metres
Site coordinates	TQ 4795 6402 51.3554387154 0.125050570593 51 21 19 N 000 07 30 E Point
Height OD	Min: 131.96m Max: 135.63m

Project creators

Name of Organisation	Compass Archaeology
Project brief originator	English Heritage/Department of Environment
Project design originator	Compass Archaeology
Project director/manager	Geoff Potter
Project supervisor	Colin Reid
Type of sponsor/ funding body	Parochial Church Council
Name of sponsor / funding body	Parochial Church Council

Project archives

Physical Archive recipient	Museum of London archaeological archive
Physical Contents	'Ceramics','Metal'
Digital Archive recipient	Museum of London archive
Digital Contents	'Human Bones'
Paper Archive recipient	Museum of London Archive
Paper Contents	'Ceramics','Human Bones','Metal','Stratigraphic'
Paper Media available	'Context sheet','Drawing','Map','Matrices','Notebook - Excavation',' Research',' General Notes','Photograph','Plan','Report','Section','Unpublished Text'

Project bibliography 1

Publication type	A forthcoming report
Title	St Martin Of Tours Church, Chelsfield
Author(s)/Editor(s)	King, G / Potter, G
Date	2007
Issuer or publisher	Compass Archaeology
Place of issue or publication	Compass Archaeology
Description	A4 in-house developer report, spiral bound, 149 pages

Appendix 5 London Archaeologist Summary

Graveyard of St Martin of Tours Church, Church Road, Chelsfield BR6, Orpington. NGR: TQ 4795 6402. CA (Colin Reid). Excavation. March-May 2006. MTC06

Work was carried out on the site of a proposed extension on the north side of the Church, *c* 17m by 7.3m in plan. Approximately 135 graves were identified and at least partly excavated within groundbeam and pile locations. Graves and skeletal remains that were beyond the limits or depth of the proposed foundations were left *in situ*.

There were up to six phases of burial, although with limited dating evidence for individual graves. The earliest contained few if any coffin nails, and in three cases were partly truncated by the west-facing wall of the 13th century bell tower. Most graves are assumed to be post-medieval, and a number did produce coffin handles and brass decorative studs of probable 18th or earlier 19th century date.

Localised deeper excavation within pile locations exposed natural sand with some silt/clay (Blackheath Beds).