

# Late Iron Age to Roman funerary activity, enclosures and medieval settlement at 

 M1 Junction 12, Toddington, Central Bedfordshire Spring 2011Report No. 15/9
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Illustrators: Jim Brown, James Ladocha and Amir Bassir


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## OASIS REPORT FORM

| PROJECT DETAILS | OASIS No: molanort1-217982 |
| :--- | :--- |
| Project name | Late Iron Age to Roman funerary activity, enclosures and medieval settlement at M1 <br> Junction 12, Toddington, Central Bedfordshire |

Excavations were conducted by Northamptonshire Archaeology (now part of MOLA) at M1 Junction 12 of the M1 motorway, Toddington, Bedfordshire, during spring 2011.

A small late Iron Age rural settlement was probably established on a north-facing spur of the valley from the 1st century BC. A principal boundary ditch extended along the ridge of the spur and a cemetery containing Cremation burials was established at one end in a loose circular arrangement. On the opposite side of the valley a pyre was raised, burnt and a small cairn of stones was raised on top.

Two rectangular early Roman enclosures were created to either side of the principal boundary from the mid-1st century AD. The cemetery continued in use, but Cremation burials were laid out in rows. Occupation on the opposite south-facing side of the valley began after this time. As settlement began to expand in the early 2nd century the enclosures gradually began to encroach upon the cemetery, and later Cremation burials lay further to the south. The final use of the cemetery and its adjacent enclosures was in the late 2nd century. Occupation on the south-facing side of the valley continued and pottery from a single boundary ditch suggests that use of this slope may have continued into the 4th century.

Medieval occupation comprised a potters' working area of the 12th century on the south-facing side of the valley. A large jar was sunk into the ground to provide a cistern for water and a substantial pot bank of wasters was created nearby. After the 15th century the pot bank was flattened and spread across a wide area. A cob wall was built forming the southern boundary of occupation with a building on its north side. This initial post-medieval building was probably demolished by the 17th century.

A later structure had a stone foundation for an inglenook fireplace, perhaps from the early 18th century, but also incorporated re-used brick within its fabric that suggested 19th-century additions. This post-medieval settlement was abandoned before the 1st edition Ordnance Survey maps were produced in 1882.

| Project type | area excavation and watching brief |  |
| :---: | :---: | :---: |
| Site status | none |  |
| Previous work | Stage 1 assessments (Acer 1994; BCAS 1992; 1993; 1995), Stage 2 assessments (Mudd 2006a-b; HA 2007; Burrow 2008; Butler 2008), Trial trench excavations (Walker 2010) |  |
| Current land use | public highway with adjoining fields and verges |  |
| Monument type/period | late Iron Age, Roman, medieval and post-medieval |  |
| Significant finds | flint, pottery, tile, glass, coins and other metal finds, animal bone, human remains, flots and charcoal |  |
| PROJECT LOCATION |  |  |
| County | Central Bedfordshire |  |
| Site address | M1 Junction 12 improvements, Toddington |  |
| Study area | 21.35ha |  |
| OS NGR | cemetery TL 01965 29823; medieval settlement TL 0182630078 |  |
| Height a OD | c90-100m above Ordnance Datum |  |
| PROJECT CREATORS |  |  |
| Organisation | Northamptonshire Archaeology (now part of MOLA) |  |
| Project brief originator | Martin Oake, Central Bedfordshire Council |  |
| Project Design originator | Iain Williamson, URS (now part of AECOM) |  |
| Director/Supervisor | Jim Brown and Jason Clarke, MOLA |  |
| Project Manager | Jim Brown, MOLA |  |
| Sponsor or funding body | Costain Carillion Joint Venture for The Highways Agency |  |
| PROJECT DATE |  |  |
| Start date | February 2011 |  |
| End date | April 2011 |  |
| ARCHIVES | Location (Accession number) | Content |
| Physical | Luton Museum <br> LUTNM 2010.67 | flint, pot bone, hum |
| Paper |  | context photogr |
| Digital |  | client pd |
| BIBLIOGRAPHY | Journal/monograph, published or forthcoming, or unpublished client report |  |
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## Contents

## 1 <br> INTRODUCTION

2 ARCHAEOLOGICAL BACKGROUND
2.1 Historic Environment Record (HER)
2.2 Historic map evidence
2.3 Aerial photographs
2.4 Topography and geology

3 EXCAVATION STRATEGY
3.1 Research objectives
3.2 Methodology

4 NEOLITHIC AND BRONZE AGE FLINT by Yvonne Wolframm-Murray
5 LATE IRON AGE AND ROMAN FUNERARY ACTIVITY WITH NEARBY ENCLOSURE BOUNDARIES
5.1 Summary of the late Iron Age and Roman chronology
5.2 A funerary pyre and stone cairn
5.3 The cremation cemetery and adjacent ditches
5.3.1 Late Iron Age (1st centuries BC to AD)
5.3.2 Late Iron Age to Roman (mid-1st century AD)
5.3.3 Roman (late 1st to early 2nd centuries AD)
5.3.4 Roman (early to mid-2nd century AD)
5.3.5 An undated inhumation burial
5.4 Roman enclosure boundaries
5.4.1 An undated curvilinear ditch, Site C
5.4.2 The late 1 st-century $A D$ ditches, Site $C$
5.4.3 A boundary ditch of the late 1st century AD, Site B
5.4.4 Changes to boundaries in the early to mid-2nd century AD, Site C
5.4.5 Features between the boundary ditches, Site C
5.4.6 Late Roman activity in the 4th century AD, Site C
5.5 Late Iron Age and Roman finds
5.5.1 The pottery
by Jane Timby
5.5.2 Other Iron Age and Roman finds
by Tora Hylton
5.5.3 The coins
by lan Meadows
5.5.4 The building materials
by Pat Chapman
5.5.5 The querns and worked stone
by Andy Chapman
5.5.6 The metalworking debris
5.6 The human bone
by Andy Chapman
5.6.1 The cremated remains
5.6.2 The inhumation burial
5.7 Environmental and faunal remains
5.7.1 The plant macrofossils
by Val Fryer
5.7.2 The charcoal
5.7.3 The animal bone
by Dana Challinor
5.7.4 The radiocarbon determinations
5.8 Discussion of late Iron Age and Roman remains
5.8.1 The late Iron Age and Roman funerary evidence
5.8.2 Other late Iron Age and Roman features
6
MEDIEVAL AND POST-MEDIEVAL SETTLEMENT REMAINS
6.1 Summary of the medieval and post-medieval chronology
6.2 Medieval potters' working area and contemporary ditches
6.2.1 A potter' water cistern, Site C
6.2.2 A midden heap, Site C
6.2.3 Contemporary ditches, Site B
6.3 Post-medieval buildings and a cob wall
6.3.1 Building 1, 15th-17th centuries AD
6.3.2 Cob wall 7004, 15th-19th centuries AD
6.3.3 Building 2, 18th-19th centuries AD
6.4 Post-medieval land use
6.4.1 Ridge and furrow cultivation
6.4.2 Post-medieval field boundaries
6.5 Medieval and post-medieval finds
6.5.1 The pottery by Paul Blinkhorn
6.5.2 The post-medieval finds by Tora Hylton
6.5.3 The building materials by Pat Chapman
6.6 Environmental and faunal remains
6.6.1 The plant macrofossils by Val Fryer
6.6.2 The animal bone by Laszlo Lichtenstein
6.7 Discussion of the medieval and post-medieval settlement6.7.1 The medieval midden waste
6.7.2 Post-medieval buildings
7 OTHER FEATURES AND STRUCTURES
7.1 The historic hedgerow
7.2 Summary of building recording for the M1 Junction 12 overbridge
7.3 Summary of the watching brief at Leagrave, Luton
8 CONCLUSION
8.1 Publication
BIBLIOGRAPHY
APPENDIX 1: GAZETTEER OF CREMATION BURIALSby Jim Brown, Pat Chapman and Amir Bassir
APPENDIX 2: M1 OVERBRIDGE, LEVEL 2 BUILDING RECORDING REPORTby Tim Upson-Smith
APPENDIX 3: LEAGRAVE ARCHAEOLOGICAL WATCHING BRIEF REPORT

## Tables

Table 1: Historic Environment Record data
Table 2: Vertical aerial photographs held at the National Monument Record
Table 3: Late Iron Age and Roman site chronology, Sites A-C
Table 4: Cremation burials of the 1 st centuries $B C$ to $A D$
Table 5: Cremation burials of the mid-1st century AD
Table 6: Cremation burials of the 1 st to early 2 nd centuries AD
Table 7: Cremation burials of the early to mid- 2 nd century AD
Table 8: Context data: ditches, Site C (late 1st-century AD)
Table 9: Context data: ditches, Site C (mid-2nd-century AD)
Table 10: Context data: pits 7023 and 7018, Site C
Table 11: Context data: boundary ditch 7039, Site C (4th-century AD)
Table 12: Quantification of later Iron Age to early Roman pottery fabrics
Table 13: Summary of vessels present from each burial
Table 14: Summary of forms from the burials
Table 15: Finds associated with Cremation burials by phase
Table 16: Quantification of late Iron Age and Roman fired clay
Table 17: Weights ( g ) and sieved fraction weights ( g ) for the Cremation burials
Table 18: Weight (g) of identified skeletal elements
Table 19: Summary count of Roman features containing plant macrofossil remains
Table 20: Charcoal analysis for non-cremation features
Table 21: Charcoal analysis for cremation-related features
Table 22: Charcoal taxa
Table 23: Taxonomic dominance in charcoal assemblages from Cremation burials with pyre debris
Table 24: Species present in the animal bone assemblage by fragment count, Site A
Table 25: Species present in the animal bone assemblage by fragment count, Site C
Table 26: Ageing data for cattle teeth in the Roman period
Table 27: The radiocarbon determinations
Table 28: Medieval and post-medieval site chronology, Sites B-C
Table 29: Pottery fabrics present amongst the non-kiln assemblage
Table 30: Jar rim form occurrence by type, in EVE, and as a percentage of the rim form assemblage
Table 31: Bowl rim form occurrence by type, in EVE, and as a percentage of rim form assemblage
Table 32: Jug rim form occurrence by type, in EVE, and as a percentage of the rim form assemblage
Table 33: Handle forms by count, expressed as a percentage of the population
Table 34: Pottery occurrence by grid square, kiln waste only, by weight (g)
Table 35: Quantification of medieval and post-medieval roof tile
Table 36: Quantification of post-medieval brick
Table 37: Quantification of fired clay from the medieval and post-medieval spread
Table 38: Charred plant remains from medieval features
Table 39: Species present in the medieval animal bone assemblage by fragment count
Table 40: Index of Cremation burial details

## Figures

Front: Roman Cremation burial 15, context 4127, under excavation, Site A
Fig 1: Site location showing excavation and watching brief areas
Fig 2: Historic Environment Record data
Fig 3: Historic maps
Fig 4: Cropmarks, OS/73060, April 1973, frame 363
Fig 5: Cremation cemetery and adjacent enclosures, Site A
Fig 6: Roman enclosures and medieval/post-medieval settlement, Sites B-C
Fig 7: Ploughed-out remains of stone cairn 5016, Site B, looking south
Fig 8: Late Iron Age funerary pyre and stone cairn
Fig 9: Pre-Roman late Iron Age Cremation burials and spread, Site A
Fig 10: $\quad$ Sections through boundaries, Site A
Fig 11: Late Iron Age to early Roman Cremation burials and enclosures, Site A
Fig 12: Late 1st to early 2nd-century Roman Cremation burials and enclosure, Site A
Fig 13: Early to mid-2nd-century Cremation burials and enclosure, Site A
Fig 14: Roman features, Sites B-C
Fig 15: Sections through Roman features, Site C
Fig 16: Sections through Roman boundaries, Site C
Fig 17: Roman pottery, 1-8
Fig 18: The iron disk (SF81) from Cremation burial 31, showing the double notches, top, and the X-ray image showing the central rivet and the notches, top left
Fig 19: The iron disk (SF81), close-up views of the pair of semicircular notches
Fig 20: Mirror, copper alloy, incomplete and broken into seven pieces
Fig 21: Percentage presence of charcoal taxa in samples from pits and postholes
Fig 22: Taxonomic composition of charcoal from Cremation burials
Fig 23: Taxonomic diversity of charcoal assemblages by feature type
Fig 24: Pottery 'cistern' jar, SF135, being excavated within pit 7161, Site C
Fig 25: Midden spread 7006 showing grid sampling at 1.0 m intervals, Site C
Fig 26: Medieval and post-medieval settlement, Site C
Fig 27: $\quad$ Section through Building 1, Site C
Fig 28: Cob wall foundation 7004 cutting the surface of medieval deposits, Site C
Fig 29: Stone fireplace 7180 , Site C, looking south-west
Fig 30: Furrows on similar alignment to the allotments mapped in 1581
Fig 31: Furrows in the HSR soil storage area
Fig 32: Kiln waste fabric, c20x magnification (original sherd, $c 4.5 \mathrm{~mm}$ thick)
Fig 33: Jar rim diameter occurrence in 20 mm diameter groups, in EVE
Fig 34: Jar rim occurrence for decorated rims in 20mm diameter groups, in EVE
Fig 35: Bowl diameter occurrence, in 20 mm diameter groups, in EVE
Fig 36: Jug diameter occurrence, jug rims, in 20mm diameter groups, in EVE
Fig 37: Rim forms of medieval jars, bowls and jugs
Fig 38: Large, near-complete jar, fill 7160, pit 7161
Fig 39: Medieval pottery, 1-5
Fig 40: Medieval jug handles, 1-7
Fig 41: Medieval jug handles, 8-15
Fig 42: Medieval jar rims and cistern, 1-4
Fig 43: The historic hedgerow, looking north-west towards Long Lane
Fig 44: Section across the historic hedgerow, Trench A, looking south
Fig 45: Section across the historic hedgerow, Trench B, looking south-east
Fig 46: Sections through historic hedgerow
Back: Sampling of medieval midden deposit 7006, Site C, looking north-east

# Late Iron Age to Roman funerary activity enclosures and medieval settlement at M1 Junction 12, Toddington Central Bedfordshire Spring 2011 


#### Abstract

Excavations were conducted by Northamptonshire Archaeology (now part of MOLA) at M1 Junction 12 of the M1 motorway, Toddington, Bedfordshire, during spring 2011.

A small late Iron Age rural settlement was probably established on a north-facing spur of the valley from the 1st century BC. A principal boundary ditch extended along the ridge of the spur and a cemetery containing Cremation burials was established at one end in a loose circular arrangement. On the opposite side of the valley a pyre was raised, burnt and a small cairn of stones was raised on top.


Two rectangular early Roman enclosures were created to either side of the principal boundary from the mid-1st century AD. The cemetery continued in use, but Cremation burials were laid out in rows. Occupation on the opposite south-facing side of the valley began after this time. As settlement began to expand in the early 2nd century the enclosures gradually began to encroach upon the cemetery, and later Cremation burials lay further to the south. The final use of the cemetery and its adjacent enclosures was in the late 2nd century. Occupation on the south-facing side of the valley continued and pottery from a single boundary ditch suggests that use of this slope may have continued into the 4th century.

Medieval occupation comprised a potters' working area of the 12th century on the south-facing side of the valley. A large jar was sunk into the ground to provide a cistern for water and a substantial pot bank of wasters was created nearby. After the 15th century the pot bank was flattened and spread across a wide area. A cob wall was built forming the southern boundary of occupation with a building on its north side. This initial post-medieval building was probably demolished by the 17th century.

A later structure had a stone foundation for an inglenook fireplace, perhaps from the early 18th century, but also incorporated re-used brick within its fabric that suggested 19th-century additions. This post-medieval settlement was abandoned before the 1st edition Ordnance Survey maps were produced in 1882.

Between February and April 2011, Northamptonshire Archaeology, now part of MOLA (Museum of London Archaeology), carried out a series of archaeological excavations in the vicinity of M1 Junction 12 of the M1 motorway, near Toddington, Central Bedfordshire (NGR TL 0188 3016; Fig 1). The work was carried out on behalf of the Costain-Carillion Joint Venture (CCJV) for The Highways Agency in advance of motorway junction improvements.

A series of Environmental Impact Assessments had been undertaken since 1992. Initially fieldwalking was undertaken in advance of the Environmental Statement for the former modified preferred route of the M1 widening, Junctions 10-15 (Acer 1994; BCAS 1992; 1993; 1995). This was followed by a desk-based study and detailed walkover in support of Stage 2 Assessment for a modified preferred route. Northamptonshire Archaeology (NA) conducted fieldwalking and geophysical surveys in 2006 for a further Stage 3, Detailed Assessment that was undertaken to support the Environmental Statement for the M1 widening, Junctions 10-13 (Mudd 2006a-b; HA 2007). Stage 3 reviewed all documentary and desk-based study evidence, the archaeological analysis of LiDAR data (HA 2007), and was subsequently updated with the results of additional fieldwalking and geophysical surveys by NA (Burrow 2008; Butler 2008).

Following these preliminary investigations Central Bedfordshire Council (CBC), as archaeological advisors to the planning authority, required that a further programme of archaeological evaluation be undertaken prior to development. A Written Scheme of Investigation (WSI) was prepared by URS (now part of AECOM) on behalf of CCJV for The Highways Agency outlining the requirements of the work (HA 2010), and the subsequent trial trench excavations were undertaken by Northamptonshire Archaeology (Walker 2010). The work was monitored by URS to ensure adherence to the agreed specification, in conjunction with CBC.

Archaeological trial trench evaluation confirmed the presence of important remains and it became apparent that further archaeological investigations would be required to mitigate the impact of the road improvements. An updated WSI was prepared by URS outlining an archaeological mitigation design that was approved by Central Bedfordshire Council (HA 2011). The mitigation strategy made specific provision for detailed archaeological excavation of significant archaeological sites, targeted watching briefs, historic hedgerow recording and building recording of the 1960s motorway structure. Method statements were prepared by NA and approved by both CCJV and URS in advance of the fieldwork (Brown 2011; Walsh 2011). The Accession code, LUTNM 2010.67, was assigned by Luton Museum in agreement for the receipt of the archive at the end of the project in accordance with their deposition requirements (BM 2010).

Three areas of detailed archaeological excavation were undertaken where archaeological remains of regional significance, dating to the Romano-British (Sites AC), medieval (Sites B-C) and post-medieval periods (Site C) had been located by the evaluation. Five areas of targeted watching brief (TWB) were undertaken where sparse or dispersed archaeological remains had been identified. Following the discovery of structured deposits comprising medieval potters' waste and associated post-medieval building deposits at TWB3, an updated site-specific excavation strategy was implemented (URS 2011). In addition, a section of historic hedgerow, identified in the Cultural Heritage chapter of the Environmental Statement, was recorded before its removal (HA 2009), and building recording was conducted to English Heritage Level 2 standard on the M1 motorway overbridge prior to dismantling (EH 2006b; Upson-Smith 2012). A small-scale watching brief was conducted at Ch5850-6600 of the southbound carriageway, near Leagrave, Luton (Brown 2012).

An Updated Project Design (UPD) was compiled in consultation with URS and CBC in order to closely manage the post-excavation process (Clarke 2012). This report represents a synthesis of the final stage of archaeological work and will be revisited in order to compile two period-specific and site-specific articles for submission to the Bedfordshire Archaeology journal.



MOLA is a registered organisation with the Chartered Institute for Archaeologists (CIfA). This report has been prepared in accordance with the Management of Research Projects in the Historic Environment (EH 2006a; 2008), the expectations of CBC, and the appropriate national standards and guidelines, as recommended by the Institute for Archaeologists (IfA 2008a-e), now the ClfA. All work has been monitored by URS for CCJV and The Highways Agency, in consultation with CBC.

## 2 ARCHAEOLOGICAL BACKGROUND

### 2.1 The Historic Environment Record (HER)

The following period information was initially summarised from the background given in the updated WSI and from the trial trench evaluation at M1 Junction 12 (Walker 2010; HA 2011). This has been updated and expanded with additional information from a recent search of the Central Bedfordshire Historic Environment Record (Table 1; Fig 2).

Table 1: Historic Environment Record data

| Period | HER Ref Event or monument |  |
| :---: | :---: | :---: |
| undated | 3635 | roughly oval mound, no previous investigations known |
|  | 13489 | ditch, east of Long Lane, identified by geophysical survey, E41 |
|  | 16589 | cropmarks, NW of New Manor Farm, four parallel curving features |
| prehistoric | 15300 | flint flakes found at Frost Barrow, Toddington |
|  | 15837 | cropmarks, Neolithic, Bronze Age \& Iron Age finds, E803 |
|  | 16087 | flint scatter at Poplars Nursery, fieldwalking E803 |
|  | 16088 | flint scatter, west of M1 Junction 12, fieldwalking E803 |
|  | 16089 | flint scatter and medieval pottery, Redhills Farm, fieldwalking E803 |
| Iron Age | 12925 | early-middle Iron Age pit found during watching brief, E797 |
| Roman | 101 | villa site with Roman \& Anglo-Saxon cemeteries, evaluation E377 |
| Anglo-Saxon medieval | 11255 | cremation urns and spearheads at Rectory Glebe, Toddington |
|  | 788 3355 | site of Wadlowes Manor, moated site; placename associated with Anglo-Saxon burial 'Wada's Hlaw', suggesting a burial mound |
|  | 3355 | ridge and furrow earthworks on aerial photographs |
|  | 5116 | Deer Park recorded from 1292 to 1791 |
|  | 8760 | Deer Park shown on Agas map of 1581 |
|  | 12106 | Nuppings Green, enclosed village green shown on map of 1581; Iron Age features also found during trenching, E803 |
|  | 12109 | site of demolished building, possible hunting lodge |
|  | 16239 | pottery, 10 sherds, including 6 rims and 2 jug handles |
| post-medieval | 10127 | site of gallows known as Gallows Knock or Knoll |
|  | 12037 | gravel pit beside Long Lane and within Gravelpitt Close |
|  | 12108 | sand extraction pits on aerial photographs |
| C15th-18th | 5317 | Old Park Farmhouse, Grade II Listed Building |
| C16th-20th | 6629 | Redhills Farmhouse, Grade II Listed Building |
| C17th-19th | 1142 | Mill Farmhouse and adjoining watermill, Grade II Listed Building |
|  | 3146 | site of windmill shown on maps of 1765 and 1826 |
| C20th | 12107 | quarry, cropmark of disused quarry site |
|  | 12110 | quarry, earthwork remains |
|  | 15656 | Three Pier Bridge, former M1 Junction 12 motorway structure |
| recent | E377 | archaeological evaluation at Maskell's Quarry, Harlington |
|  | E40 | archaeological fieldwalking for M1 Stage 3 assessment |
|  | E41 | geophysical surveys for M1 Stage 3 assessment |
|  | E803 | archaeological fieldwalking for M1 Stage 3a assessment |
|  | E797 | archaeological watching brief for Sundon Landfill, Harlington |

## Undated

An undated ditch was discovered by geophysical survey, east of Long Lane (HER13489). Trial trench evaluation at M1 Junction 12 found an undated ditch in Trench 22, which was subsequently sought by targeted watching brief in TWB4 (Fig 1; Walker 2010; Clarke 2012). The ditch does not appear on 19th-century or later maps.

Cropmarks are noted from aerial photographs to the north-west of New Manor Farm (HER16589). Based on the description of four parallel, slightly curving, linear features; they may well be the product of former cultivation.

## Neolithic to Bronze Age

Worked flint scatters were identified by fieldwalking during the M1 Stage 3 assessments in the vicinity of Nuppings Green, Frost Barrow, Poplars Nursery and at Redhills Farm. Two further pieces of worked flint were recovered during trial excavation (Walker 2010). The absence of settlement evidence placed the identification of activity represented by flint scatters as a high priority for CBC (HA 2011, 5-6). Further flints were recovered during excavation, but no contemporary features were present.

Trial excavation of a boundary ditch in Trench 26, to the east of the M1, contained pottery possibly dating to the Bronze Age or Iron Age (Walker 2010). However, subsequent watching brief works during the construction of the HSR soil storage area did not identify its further extent largely owing to masking ridge and furrow cultivation.

## Early to middle Iron Age

Early to middle Iron Age settlement was identified to the east of the M1 by trial trench excavation (BCAS 1995). Pottery indicated settlement continued until the 3rd century $B C$. Aerial photographic evidence suggested that cropmarks produced by former enclosures and settlement features may extend over a wider area and there was also a stray pottery find to the north (HER12106; E803). However, trial trench work prior to mitigation did not encounter such features in the area between Site B and TWB5 (Walker 2010).

Possible later prehistoric field systems and occupation in the form of linear ditches, enclosures and ring ditches were suggested by geophysical survey, immediately south of the Harlington Road (Butler 2008). The larger extent of these probably lay outside the road improvements, beyond the extent of TWB1, and have also been identified with cropmarks (Fig 4).

A watching brief for the Sundon Landfill access haul road identified an isolated early to middle Iron Age pit (HER12925), which indicates how isolated occurrences can be found.

## Late Iron Age and Roman

A walkover survey of the site by Scott Wilson for earlier M1 widening proposals noted the presence of a large fragment of Roman pottery, west of the M1, south of Long Lane Farm (HA 2007). Trial excavations identified evidence of potential 1st to 2nd-century AD occupation in the vicinity of Sites A and TWB3 (Walker 2010). The current report examines these remains in more detail. The initial view of dark charcoal-rich spread deposits at Site A as industrial waste has been revised, following discovery and excavation of the cremation cemetery during mitigation. However, ditches examined in TWB3 are thought to be boundary ditches situated some distance from the settlement and belonging to late 1st to 4th-century AD Roman occupation.

A large Roman villa site is located $c 600 \mathrm{~m}$ to the east of M1 Junction 12 at Sheepwalk Hill, upon its upper slopes, and commands a view across the valley from which Site A can be seen (HER101). The villa was not only a Roman settlement of some affluence, but was also a focus for later Anglo-Saxon burial. A Roman burial containing Samian ware vessels was found in the adjoining field between 1844 and 1885. In the early 1990s evaluation and excavation at Wickhern, in response to material found during quarrying, uncovered a further eleven Roman Cremation burials, dating from the late 1st to early 2nd centuries AD (HER E377). Late Iron Age material was also found in association with cremated bone, but much of this was retrieved from the quarry spoil heaps. Structural remains of Roman date, consisting of postholes and stakeholes were also found, along with ditches containing domestic rubbish. It seems likely that a late Iron Age settlement acquired wealth and prosperity under Roman rule, adopting Roman lifestyles and leading to the development of a substantial structure, probably a villa, represented by a concrete floor.

## Anglo-Saxon

The villa site on Sheepwalk Hill became a focus for Anglo-Saxon burial into the 6th century. Between 1844 and 1885 at least seventeen skeletons were found on Sheepwalk Hill, accompanied by grave goods such as pottery, beads and other jewellery, knives and personal items (HER101). One of the skeletons was found lying on the concrete floor of the villa building. In an adjoining field called Wickhern, cremation urns were exhumed. Anglo-Saxon pits were found in close proximity to the former villa site. An 8th-9th-century gilded harness mount was recovered a short distance to the north of this during a watching brief on the quarry access haul road (HER12932, not illustrated).

Another possible Anglo-Saxon funerary site that may have had Roman origins is alluded to at Rectory Glebe, north of Toddington, and to the west of Site A, across the valley slope (HER11255). The information in the HER is a reference by the local Reverend FA Adams and is not entirely accurate. The HER has investigated the reference and observes that it may also refer to the Anglo-Saxon cemetery on Leighton Road (TL 0100 2960; HER2857), or possibly another site on the Harbett Estate (TL 0112 2954; HER11954), in either event the description of 'human remains with spearheads and cinerary urns' is more likely to be Saxon than Roman.

A further funerary reference lies to the north-east of M1 Junction 12 and is suggested by the placename at Wadlowes Manor, possibly derived from Wada's Hlaw, meaning the burial mound of an Anglo-Saxon called Wada (HER788).

## Medieval

Nuppings Green lay to the east of Long Lane (HER12106). Pottery and ceramic building materials were recovered here during fieldwalking, comprising mainly basic cooking and storage vessels (BCAS 1992; Burrow 2008). This was tested by trial trench excavations, Trenches 10-11 (Walker 2011). What was thought to have been a cobbled surface was probably a flattened cairn covering a pyre deposit that has since been radiocarbon dated to the late Iron Age (Site B). Other burnt material spreads were excavated and found to be associated with medieval ditches and the dumping of 12thcentury material within them (Site B). This material included a large amount of cereal grain with very few associated weed seeds or chaff, suggesting it was at a late stage in crop processing. No medieval or later settlement was identified at Site C at this time.

A domestic settlement, perhaps a small potters' workshop, is thought to have been present at Nuppings Green from the 12th century until the mid-14th century. The pottery from fieldwalking was interpreted as a manuring scatter. Ridge and furrow has been identified in the wider area from aerial photographs and geophysical survey plots
(HER3355; Butler 2008). This was particularly evident south of the Harlington Road and in fields to the north (Site A, TWB1-2 and the HSR spoil storage areas; Fig 1). Medieval pottery has been recovered from the nearby fields, but its exact find location is not known (HER16239). Nuppings Green has been the subject for further excavations at Sites B-C, which is examined in more detail by the current report.

A roughly oval mound is located due west of Site C (HER3635). No work has been conducted on the monument, but it may represent a pillow mound or disused windmill mound associated with Nuppings Green.

The site of Wadlowes Manor was identified when traces of a moat were observed in 1922 by Gurney in his notebook (BLARS X325/66), which suggested this as the site of a moated manor (HER788).

There are two deer parks recorded to the east of M1 Junction 12 (HER5116; 8760). Little is known about them. Both appear on the historic maps, one is recorded by the Victoria County History, Volume III (Page 1912, 381), and amongst historical documents held by Bedfordshire and Luton Archives and Records Service (BLARS CRT100/36; MA45,1810; X21/527,1825). Their exact extent is a little uncertain. A building marked on Agas' map of 1581, but not shown on the enclosure map of 1797, is thought to have been a possible hunting lodge (HER12109).

## Post-medieval

The placename for Nuppings Green is amongst those examined in the local history of Toddington by J H Blundell (1925), indicating that the settlement was long-lived and occurs variously in documents as Nuppinges (1581), Nuppins Green (1741-1800), Nobbins (1765), Napkins (1796), Nubbins (1800) and Nappins Green (1925).

A number of post-medieval buildings are noted in the area. Old Park Farmhouse, Redhills Farmhouse and Mill Farmhouse with its adjoining watermill, are all Grade II Listed Buildings. They originate from the 15 th to 17 th-centuries and carry a variety of modifications through succeeding centuries to the present (Table 1). A former windmill is depicted by historic maps (HER3146).

To the north of Site C lay Gravelpitt Close, thought to be a former quarry (HER12037). Other quarries are shown by a variety of aerial photographs and will also have been mainly for sand and gravel, many of them of late post-medieval use and extending into the early 20th century (HER12107-8; 12110).

A possible brick wellhead was identified by geophysical survey and the subsequent walkover survey to the north of Mill Farm, Toddington, and south-west of M1 Junction 12 (Butler 2008; Burrow 2008).

Trial excavations in advance of the M1 Junction 12 mitigation works identified ditches in TWB4-5 and the HSR spoil storage area (Fig 1; Walker 2010; Clarke 2012). These parliamentary enclosure field boundaries were excavated in Trenches 26 and 27, and can be traced on the 1882 Ordnance Survey maps.


## Modern

An archaeological watching brief in advance of the M1 Junction 10-13 construction compound revealed extensive modern disturbance associated with the construction of the original motorway (HA 2011, 8).

The M1 was constructed in the 1950s. Structures were planned and designed by Sir Owen Williams who experimented with the aesthetic possibilities of using concrete as a utilitarian material. As the country's first motorway scheme the significance of these structures has been noted by English Heritage (HA 2011, 8). An original three pier motorway overbridge at M1 Junction 12 was the subject of a Level 2 Building Recording survey prior to dismantling (Upson-Smith 2012, Appendix 2).

### 2.2 Historic map evidence

Maps were examined in detail at both the Central Bedfordshire HER and at the Bedfordshire \& Luton Archives \& Record Service (BLARS). There are a fairly large number of maps for the parishes of Toddington, Harlington, Tingreth and Westoning. This summary highlights those maps which revealed some useful and relevant information (Fig 3). Not all the images can be reproduced either owing to copyright or the poor condition of the original map. They have been redrawn using the originals to illustrate principal changes. The resultant diagrams are not to a uniform scale.

## 1581, map of Toddington Manor by Ralph Agas (BLARS X1.102.I/D)

Much of the area of the road improvements was covered by open fields, including the whole of Site A and all of the TWB areas to the south of the stream. The mapped allotments were largely matched to the alignments of ridge and furrow cultivation (HER3355). These allotments form the Meadow Dole and the two differing principal alignments are separated by the historic hedgerow boundary.

In the vicinity of Sites B-C, two clumps of woodland are depicted to the east of Long Lane, however, much of the land apportioned to Redhills Farm is not shown. An enclosure called Nuppinges Greene is shown bounded by trees and hedgerows but no buildings are depicted within it (Fig 3; HER12106). The south-west corner of the neighbouring enclosure contains a small building that was fenced off from the larger field. Land to the north is Parte of Gravelpitt Close, but this is wooded (HER12037). There is a narrow country lane on the south side of Nuppinges Greene, which led from Long Lane, eastward. The writing is very difficult to discern but may read as Mary's Lane; a possible reference to Lady Mary, the daughter of Lord Wentworth (HER box file). An oval pillow mound is depicted with rabbits and a warren, west of Long Lane (HER3635). Wadilows Manor is labelled as Wadiloes (HER788). A deer park is depicted to the east (HER5116), which includes a building, perhaps a hunting lodge (HER12109).

1610, map of Bedfordshire by John Speed (BLARS maps, not illustrated)
A deer park is depicted between Tuddington and Harlington (HER5116). No other relevant detail is provided.

## 1765, map of Bedfordshire by Thomas Jeffreys (BLARS maps)

Two buildings are depicted to the east of Long Lane at Nobbins Green, one is inside a large rectangular enclosure adjoining the road, the other is outside of it, on the north side and fronting the lane (Fig 3; HER12106). Oddly, the site is depicted at the foot of the hill, north of the stream. There is no sign of Mary's Lane. The nearest road junction is at the top of the hill, to the north where a small crossroad and two buildings called Long Lane House are shown. A group of buildings is depicted in the valley to the east
as Old Park, referring to the former deer park (HER8760). The extent is not shown. A windmill is shown, beside the Harlington Road (HER3147).

## 1772, map of Redhills Farm (Central Beds HER box file, not illustrated)

Three enclosures are shown on the western edge of the farm; plots $I X, X$ and $X I$, through which the M1 carriageway now passes. They lie north of the stream and were bounded by trees and hedgerows. No buildings or lanes were depicted and the land south of the stream was noted as common. The northernmost of these enclosures would have been synonymous with enclosure 126 on the map of 1797 , which bounded Nuppinges Greene and would have contained the site of the building shown on Agas' map of 1581.

## 1797, Enclosure map of Toddington (BLARS MA1/1-2)

Plot 97, formerly called Nuppinges Greene, was referred to as Lady's Ground, perhaps another reference to Lady Mary (Fig 3; HER box file). No buildings were depicted within the enclosure, however, a smaller plot (132) immediately adjacent to the north-east, contained an arrangement of three buildings (HER12106). This plot was part of the wooded area on Agas' map of 1581, no trees are depicted here, or in plot 130, formerly Gravelpitt Close. The fields were crossed by a footpath. An unnamed Private Road, formerly Mary's Lane, led east from Long Lane on the south side of plot 97. The lane did not provide access to buildings within plot 132, but headed eastward into the fields. The site of Wadilows Manor is labelled as Wadilows Close (HER788). The historic hedgerow is shown. Windmill Field is also labelled, east of Toddington (HER3147).

## 1800, map of land belonging to Thomas Conelly (BLARS X21/590)

This map was produced as part of a land auction and is not a complete depiction of the parish (Fig 3). Lady's Ground is marked as SOLD. The enclosure contained no buildings. A single building is depicted outside the enclosure to the north-east, showing a different arrangement to the group in plot 132 from 1797. An unnamed lane is depicted between Long Lane and the fields to the south-east.

## 1806, sale map of land in Toddington (BLARS X1/46, not illustrated)

The whole of the area of the road improvements was covered by allotments and the historic hedgerow was depicted as a boundary stretching between Long Lane and Harlington Road. The area containing Site C lay within Lot 12, but comprised a block of land, including several plots from 1797.

## 1815, Ordnance Survey (Central Beds HER box file)

The topography of the site is well depicted, showing the confluence of the tributary streams and smaller dry valleys south-east of Redhills Farm. Beside Long Lane, in the vicinity of Site C, was a small group of fields and two separate groups of buildings, perhaps smallholdings (Fig 3; HER12106). No lane is depicted and unlike Jeffreys' map of 1765, the land is shown at the top of the hill. However, whilst the configuration of buildings and boundaries is not an exact match to the 1797 and 1800 maps, the southernmost group represents Nuppings Green.

1826, map of Bedfordshire by Arthur Bryant (BLARS maps, not illustrated)
A windmill is shown in Windmill Field (HER3147). No other relevant detail is provided.
1882, 1st edition Ordnance Survey (BLARS Sheet 293, XVV.14)
The 1797 land plots ( 97 and 132) formed a single unit of land, which was open at one end (Fig 3). The configuration of field boundaries indicates little actual change since 1581, despite various other less accurate depictions. No lane is depicted and the
buildings from 1815 had gone, however a trackway led north from here towards Harlington Wood following the 1797 footpath. A building is shown in plot 126, in the same location as that marked in 1581. Two ponds are shown, one inside the enclosure, and one in the enclosure to the south. The historic hedgerow stretches between Long Lane and Harlington Road. A windmill is shown in Windmill Field (HER3147).

## 1901, 2nd edition Ordnance Survey (BLARS Sheet 293, XVV.14)

The 2nd edition depiction is identical, except that the enclosure discussed above was close off to the north, where originally it was open into the next field. The north-south trackway remains. A possible building is recorded in the field to the north, along with quarrying activity. The building is not depicted after 1969.

### 2.3 Aerial photographs

An examination of the aerial photographic images held at the National Monument Record (NMR) in Swindon was conducted in order to check the cropmarks noted by the previous desk-based studies (HA 2007). The prints that were examined are listed in Table 2; all other images are held as negatives, which are not currently available for viewing. Unfortunately it is not possible to reproduce the images to a photographic quality for the present report.

Table 2: Vertical aerial photographs held at the National Monument Record

| Sortie number | Library <br> number | Frame <br> number | Centre point | Date | Scale |
| :--- | :---: | :---: | :--- | :---: | ---: |
| RAF/CPE/UK/2159 | 680 | 4205 | TL 015 298 | 13 JUN 1947 | $1: 9800$ |
| RAF/CPE/UK/2159 | 680 | 4206 | TL 022 299 | 13 JUN 1947 | $1: 9800$ |
| RAF/58/2758 | 2240 | 34 | TL 015 303 | 22 APR 1959 | $1: 8600$ |
| MAL/61464 | 21291 | 89146 | TL 019 289 | 14 MAR 1961 | $1: 10500$ |
| RAF/58/4646 | 2204 | 170 | TL 026 289 | 28 AUG 1961 | $1: 12000$ |
| RAF/58/4646 | 2204 | 171 | TL 017 289 | 28 AUG 1961 | $1: 12000$ |
| RAF/58/4646 | 2204 | 175 | TL 027 314 | 28 AUG 1961 | $1: 12000$ |
| RAF/58/4646 | 2204 | 176 | TL 018 314 | 28 AUG 1961 | $1: 12000$ |
| RAF/58/4646 | 2204 | 177 | TL 009 313 | 28 AUG 1961 | $1: 12000$ |
| OS/73060 | 10446 | 363 | TL 026 298 | 03 APR 1973 | $1: 8000$ |
| OS/73060 | 10446 | 364 | TL 019 298 | 03 APR 1973 | $1: 8000$ |
| OS/73060 | 10446 | 365 | TL 013 298 | 03 APR 1973 | $1: 8000$ |
| OS/74172 | 12056 | 115 | TL 022 297 | 21 JUL 1974 | $1: 10400$ |
| OS/74172 | 12056 | 116 | TL 014 297 | 21 JUL 1974 | $1: 10400$ |
| OS/92354 | 14156 | 559 | TL 019 308 | 14 JUN 1992 | $1: 8250$ |
| OS/92354 | 14156 | 560 | TL 019 302 | 14 JUN 1992 | $1: 8250$ |
| OS/92354 | 14156 | 561 | TL 019 294 | 14 JUN 1992 | $1: 8250$ |

## June 1947, frame 4205

A small group of enclosures on the east side of Long Lane are those in the vicinity of Nuppings Green. The boundaries are those depicted by the 1882 Ordnance Survey (Fig 3). The curved hedgerow of the field to the north (plot 130) has been removed, the ditch remains as an earthwork and formed the perimeter to the quarry site at Gravelpitt Close (HER12037). The small building shown in the south-east corner of plot 126 has been demolished. The image shows clearly the erosion where the corner of the field has been turned into an access route. The alignments of the allotments in the Meadow Dole, depicted on the map of 1581, can be seen as cropmarks (HER3355).

## June 1947, frame 4206

The shadow of the quarry sites near Harlington can be seen clearly (HER12107-8). Ridge and furrow earthworks are present in the region of Wadlowes Manor (HER788), forming two distinct units, divided by a track. The track looks like a modern farm track, but may follow an older hollow-way.

## April 1959, frame 34

The M1 is shown under construction and a swathe of topsoil has been stripped bare along the road corridor. This image provides a useful orientation for the location of Site C in relation to the map evidence and HER data. The excavated evidence lay within the fields to the south of Nuppings Green, and would have been on the south side of Mary's Lane, depicted in 1581. Most of the cropmarks to either side of the road corridor at this point are of a geological nature. The field drains are visible as a hatched pattern on the east side, towards the north end of Site B. A possible structure lies on the west side, close to Long Lane and in the north-west corner of the field, well beyond the present excavated areas. The cropmark is regular and forms a rectangular horseshoe, much like three wings of a building. Whilst this could be the product of field drains, the pattern is limited in extent and very different to those visible on the east side of the M1.

## August 1961, frame 171

Possible cropmarks are visible in the vicinity of TWB1, but are very indistinct. A clustered group of three to five circular features occur close to the east boundary of the field and directly south of the extent of the TWB1 soil strip. Possible ditches are indicated to the west of these, further into the field, forming rectangular enclosures. The northernmost extent of these ditches might have been expected within TWB1, but were not observed.

## August 1961, frame 175

Ridge and furrow earthworks are visible as cropmarks at Wadlowes Manor (HER788). The field to the north of Harlington Road has a cross-shaped cropmark at the northern edge of the field which may have been a landing strip for light aircraft.

To the north of Redhills Farm the fields are visible before the hedgerows were removed for intensive agriculture. One of the fields has a particularly regular, well-rounded, north-east corner. Inside the field are distinct cropmarks which seem to extend into the fields to the west and south. The cropmarks are linear, there appears to be a central east-west axis, with other linear features extending from it at the ends and on diagonals towards the corners of the field. The pattern is not perfect and is asymmetrical, with a possible rectangular enclosure forming part of the pattern and extending into the field to the south. At the east end of the field are two large dark rounded areas, perhaps quarries. The north-east corner was called Cheneys at the end of the 18th century. The cropmarks may be subdivisions of a 12th to 13th-century assart block, but this has yet to be tested (Coleman, pers comm).

Comparison between this image and earlier images indicates clearly how much of the Nuppings Green enclosure group was lost to the motorway. All of the 1797 buildings depicted on maps were obliterated in the cutting (Fig 3). The only possible mapped structures to survive might be those shown by Jeffreys in 1765. The map is inaccurate; however, the date ties in well to the excavated evidence for Building 2, Site C.


## April 1973, frame 363

There are very indistinct cropmarks within the corner of the field where Site A was located (Fig 4). The pattern is distorted by the gas main, which runs across the features and the scale is very small. There appear to be two small rectangular enclosures in the area that was excavated and there is a correlation with the excavated ditches. The Roman cremation cemetery lay outside of these enclosures, on their west side. To the north, there is the suggestion that a third, larger, rectangular enclosure adjoined them. However, it is hard to distinguish this as it is on the same alignment as the ridge and furrow, which may be misleading.

## July 1974, frames 115-116

The allotments shown on the 1581 map appear as cropmarks, confirming the alignment of ridge and furrow. Many of the hedgerows have been removed to create larger fields, a process that was far advanced by 1992, by which time nearly all of the smaller fields had been subsumed by larger areas.

### 2.4 Topography and geology

The road improvements covered an area between Toddington and Harlington, mainly on the north-west side of M1 Junction 12. The city of Luton is $c .11 \mathrm{~km}$ to the south-east. The site comprised arable fields either side of the motorway prior to construction. The ground level arose gently to the north and south of a small tributary valley, between $c .90-100 \mathrm{~m}$ above Ordnance Datum. The various archaeological sites and targeted watching brief areas were located on the slopes, ridges and in the base of this valley (Fig 1). Site A was located on the lower spur of the valley ridge with a tributary confluence to the north-east. Sites B and C were located on the upper slope and ridge, across the valley from Site $A$, to the north-west.

The bedrock geology is mudstone, sandstone and limestone of the Gault and Upper Greensand Formations and the superficial geology is composed of diamicton (Anglian till) deposits (BGS 1996; 2001; 2009). The soils are mainly of the Ashley association, which are characterised by chalky till and comprise fine loamy over clayey soils with slowly permeable subsoil and slight seasonal waterlogging (LAT 1983).

## 3 EXCAVATION STRATEGY

### 3.1 Research objectives

The overall purpose of the mitigation scheme was to provide a detailed permanent record of all archaeological remains and deposits that would be lost during the construction of the M1 Junction 12 improvements (HA 2011, 15-16). The mitigation work sought to achieve this by undertaking detailed archaeological excavation and targeted watching brief investigations where surviving features and deposits had been identified by trial trench evaluation (Walker 2010).

This work comprised five elements, as outlined in the WSI and its associated figures (HA 2011, appendix B) and the method statement (Brown 2011):

- Detailed archaeological excavation of Romano-British features at Site A;
- Detailed archaeological excavation of multi-period features at Site B;
- Detailed archaeological excavation of medieval and post-medieval midden deposits at Site C;
- Targeted controlled archaeological watching brief areas, TWB1-5;
- Topographical survey and archaeological investigation of the historic hedgerow to the west of Site A.

The principal objectives of the WSI and method statement have been reviewed and revised in light of the fieldwork and preliminary assessment of the site archive, and as part of the assessment report and Updated Project Design (UPD) (Clarke 2012).

## Specific aim of archaeological excavation

Detailed archaeological excavations (Sites A-C):

- Record the extent, density, character, form, function, type, date, longevity and regional context of occupation/settlement density;
- Record the presence/absence, extent, type and date of any processes or activities at the site, whether industrial, funerary or otherwise;
- Recover a sufficient assemblage of crop processing waste, industrial waste or funerary residues to understand the processes undertaken, sources of raw material, products, activities and the social or economic roles of the sites within their respective period context;
- Record the type, form and date of surviving structural or building remains associated with any surfaces and burnt timber;
- Recover a sufficient environmental assemblage from sealed contexts to inform the understanding of the economy, agricultural regimes and cereal crop processing of the sites.


## Targeted watching brief areas:

- Record the extent, density, form, function and type of the known archaeological features across the wider landscape;
- Recover suitable dating material in order to place such archaeological features within the chronology of the sites;
- Record any previously unknown associated archaeological features revealed during ground reduction activities.


## Historic hedgerow and building recording:

- Preserve by record the extent, form, date, context and setting of the historic hedgerow and M1 overbridge;
- Provide an accurate measured record of the surface and detail of the historic hedgerow bank and ditch;
- Provide a permanent photographic record and detailed account of fixtures, fittings and architectural details for the overbridge, where visible and accessible, to English Heritage Level 2 standard (EH 2006).


## Research themes

The research themes for Central Bedfordshire and the East of England are drawn from criteria published within the regional research agendas (EH 1997; Glazebrook 1997; Brown and Glazebrook 2000; Oake et al 2007; Medlycott and Brown 2008; Medlycott 2011). Some themes address elements which are relevant to the current project, and were used to guide the UPD (Clarke 2012). The following items were subsequently targeted for research:

## Undated features/deposits, which might potentially be prehistoric

A large deposit of entirely oak charcoal was recovered, believed to be pyre debris from Site B, which was submitted for radiocarbon dating.

## Romano-British

The regional research agendas recognise a need for greater synthesis of evidence to provide understanding of how Roman rural communities interacted and functioned. Further work will contribute to a better understanding of how settlements developed over time and investigate how they functioned in the wider landscape. This is addressed in the current project through the following:

- Using the results of previous works and information from aerial photographs to determine the full extent and character of the settlement;
- The settlement is related to the wider Roman landscape settlement patterns and land use in the region;
- Further analysis undertaken on the Roman pottery identified phases of cemetery development;
- Work sets the cremation cemetery within its wider context and examines its relationship with non-funerary features;
- Discussion compares and contrasts with other cremation cemeteries, with specific reference to those within Bedfordshire, supported through the pottery and human bone studies.


## Medieval and post-medieval

Following the identification of pottery-kiln wasters and structures at Site C the following research objectives were implemented:

- Analysis of previous work, historic maps and aerial photographs to determine the full extent and character of the settlement;
- Further specialist analysis of the pottery recovered from the midden deposit;
- Further establishing the relationship between the medieval features and the nearby settlement of Nuppings Green and its wider medieval landscape;
- Discussion will address settlement interaction within the wider landscape and its economic role within society.

Whilst further work on the charred cereal grains and processing waste from Site B was originally highlighted by the UPD to gain an insight into the stages of crop processing (Clarke 2012), it is the opinion of the specialist undertaking the work that insufficient quantitative data was available to meet this as an objective (Fryer, pers comm).

## 3.2

## Methodology

The detailed archaeological excavations and targeted watching briefs were conducted in each area as the ground became available for investigation, prior to development (Fig 1). A total 3.0ha out of the overall 21.35ha of land covered by the Highways Agency Compulsory Purchase Order (CPO) was subject to archaeological works (c.14\%). Open area excavations comprised 4,247sqm of the archaeological works, which was $c .2 \%$ of the area within the CPO.

Each of the archaeological areas, including targeted watching brief areas, was plotted and marked out with coloured pegs by CCJV engineers using their own survey grade GPS system. The detailed archaeological excavations were planned to scale at 1:100 or $1: 50$ by hand on a local grid and set against the Ordnance Survey base map using a combination of the Northamptonshire Archaeology survey grade GPS (Leica System 1200 ) and digitised hand-drawn permatrace sheets.

Topsoil and subsoil deposits were removed to the surface of the significant archaeological level using a tracked $360^{\circ}$ mechanical excavator, fitted with a toothless ditching bucket and operating under archaeological direction. Excavation proceeded to the surface of the significant archaeological horizon or, where this was absent, the natural substrate. Spoil was initially stacked separately adjacent to the excavation and was later removed using dumper trucks. Movement of machinery during site preparation was conducted in such a manner as to avoid impact on the archaeology.

Each excavation area was cleaned sufficiently to enable the identification and definition of archaeological features. All archaeological deposits and artefacts encountered during the course of excavation were fully recorded. The recording followed the standard NA context recording system with context record sheets using unique numbers drawn from a central register for each feature or deposit, cross-referenced to scale plans, section drawings and photographs in digital, and both 35 mm monochrome and colour film (NA 2006). Deposits were described on pro-forma record sheets to include measured and descriptive details of the context, its relationships, interpretation and a checklist of associated finds. Archaeological sections of sampled features were drawn at scale $1: 10$ or $1: 20$, as appropriate, and all levels were related to Ordnance Survey datum. Spot heights were measured in across the site.

Representative samples of all exposed archaeological features were excavated using sections of between 1-3m length and allowing them to weather to expose smaller variations within them. All structural features were fully excavated, pits were $50 \%$ excavated and a representative portion of all linear boundaries were excavated to a minimum of $20 \%$. Greater sampling was undertaken where features contained deposits or artefacts of particular value or were likely to hold significant artefact or environmental assemblages. The features containing the Cremation burials were $100 \%$ excavated, the Cremation burials were lifted intact, and fully excavated under controlled conditions indoors. The cremated remains were lifted under the requisite Ministry of Justice Licence for the Removal of Human Remains (11-0023) in accordance with section 25 of the Burial Act of 1857. Intersections were investigated to establish stratigraphic relationships and sections of linear and curvilinear features were also excavated away from intersections with other features or deposits, to obtain unmixed samples of material. Features such as furrows or tree throws were investigated to characterise their form and function.

An updated excavation and sampling strategy was applied following the discovery of the medieval midden deposit at Site C (URS 2011). This strategy maintained the same principals as the overall WSI, however, it established a method for excavation of the spread deposits using a sampling grid comprising 1.0 m alternating squares (back cover image). Bulk soil samples were collected for archaeobotanical remains from principal
contexts and from all cremated deposits in accordance with recommended guidelines (EH 2011). Sample sizes were 40 litres for non-funerary features or the entire context for smaller deposits, and $100 \%$ for all funerary deposits including pyre debris. Soil was stored in sealable buckets from securely stratified deposits considered to have the minimal risk of contamination. Bulk soil for archaeobotanical remains were processed at Northamptonshire Archaeology by specialist staff using the flotation technique to retrieve seed, charcoal and other remains. The resultant residues were hand sorted to retrieve bones and other finds.

Artefacts were collected by hand and recovered from sieved samples. Spoil and the surface of archaeological features were scanned with a metal detector to ensure maximum finds retrieval. Metal artefacts were assigned a unique register number and recorded as part of the context where they were found. The field data has been compiled into a site archive with appropriate cross-referencing in accordance with best practise (CIfA 2008d; MGC 1992; BM 2010) and the finds have been prepared for long term storage in a stable environment (Walker 1990; Watkinson and Neal 2001).

Nine pieces of worked flint were recovered as residual finds from Roman ditches and Cremation burials, and a medieval spread. They comprise nine flakes, of which one was broken. The condition of the assemblage is good, and the flint shows little postdepositional edge damage. The raw material is mid grey-brown and honey-coloured vitreous flint. Cortex is typically light to mid brown in colour with a generally smooth, rolled and weathered surface. The raw material was likely to have been derived from local gravel deposits. The worked flints are not directly dateable but their technological characteristics suggest a broadly Neolithic to Bronze Age date. Two pieces of burnt natural flint, weighing 13g, were recovered from a pyre deposit and a Roman ditch.

## LATE IRON AGE AND ROMAN FUNERARY ACTIVITY WITH NEARBY ENCLOSURE BOUNDARIES

The natural substrate upon the upper slopes and ridges across the development comprised greyish-white chalky clay (Anglian till). The archaeological and surface deposits were distributed above this geological horizon, with principal features cut into the till. In the valley bottom and on the lower slopes the till was overlain by up to 0.40 m mid to dark orange-brown alluvial and colluvial sandy clay. The modern stream cuts through this deposit, indicating that it is the successor of a much older watercourse. No archaeological features were identified below this natural deposit.

The late Iron Age and Roman remains were distributed to either side of the stream valley, with the development aligned roughly north to south across the valley (Fig 1). There were three principal locations where these features were investigated:

- $\quad$ Site $A$, a cremation cemetery with adjacent enclosure boundaries on the northfacing spur of the valley;
- Site B, a funerary pyre and stone cairn on the south-facing slope of the valley, east of the motorway development;
- $\quad$ Site C , boundary ditches aligned across the south-facing valley slope, west of the motorway development.

The evidence is presented as a chronology in Table 3.



### 5.1 Summary of the late Iron Age and Roman chronology

Table 3: Late Iron Age and Roman site chronology, Sites A-C

| Period |
| :--- |
| Pre-Roman late Iron Age |
| (1st centuries BC to AD) |
| (Figs 5-9) |
|  |
|  |
|  |
| Transitional late Iron Age to early Roman |
| (mid-1st century AD, AD40-65) |

## Nature of activity

A small rural settlement was established with a principal boundary ditch extending south-west to terminate within Site A
A substantial pyre was raised and burnt on the hilltop at Site B, after burning the charred material was buried and a small cairn of stones laid upon top A small cemetery was established at Site A with an initial interment of at least eleven cremations in a loose circular arrangement

Transitional late Iron Age to early Roman (mid-1st century AD, AD40-65)
(Figs 5-6, 11 and 14)

Roman, Flavian/Flavo-Trajanic
(late 1st to early 2nd centuries AD)
(Figs 5-6, 12 and 14)

Roman, Hadrianic/Antonine
(early to mid-2nd century AD)
(Figs 5-6 and 13-14)

Roman
(mid- to late 2nd centuries AD)
(Fig 14)
Late Roman
(3rd-4th centuries AD)
(Fig 14)
A rectangular enclosure (E1) was created on the south-east side of the principal boundary ditch, another rectangular enclosure (E2) was added on its north-west side
Eleven Cremation burials were added to the cemetery, scattered in different locations, using late Iron Age pottery fabrics
A further nine Cremation burials were added to the cemetery using pre-Flavian Roman pottery
Occupation of the hillside settlement at Site C, on the opposite side of the valley, began after this time

The western boundary of enclosure E2 was redefined, encroaching on the cemetery, and its southern corner showed evidence of some ancillary activity with the disposal of burnt material
Twelve Cremation burials were interred in a cluster towards the southern edge of the cemetery
Pottery was deposited within the ditch fill of the enclosures at Site C

The boundary of enclosure E2 was recut again, encroaching further onto the cemetery as the burial practise migrated southwards
In the final phase of the cemetery five Cremation burials were added in a tight group within its southern extent
Ancillary features were incorporated with the enclosures at Site C

Occupation and use of the enclosures and cemetery at Site A had ceased, whilst occupation near Site C continued

The principal enclosures of the 2nd century had been abandoned, one boundary at Site C was recut and accumulated 4th-century coins in its fill

### 5.2 A funerary pyre and stone cairn

Remains of a late Iron Age funerary pyre were excavated and bulk soil samples were taken during investigation of Site B (Figs 1 and 6). The remains of a stone cairn were evident, which had been raised above the site of the pyre, however, this had subsequently been flattened and largely destroyed by later ploughing. Sufficient stone remained to preserve the charred evidence from being ploughed away and this provided good information on the nature of the funerary activity.

Above the surface of the natural clay was a layer, 0.12-0.24m thick, of firm mottled mid-greyish-orange silty clay, 5017, that had been stained with charcoal from above. The deposit seems to have been a former soil layer, possibly a cultivation soil, and would date before the pyre from whence the charcoal staining originated.

The soil layer had been cut by pit 5019 , which was a narrow elongated cut, aligned roughly east-west, which tapered at its west end (Fig 6, inset and Figs 7-8, S53). The pit was 1.2 m long by 0.35 m wide by 0.23 m deep. The base of the pit was fairly level and tapered gradually up to the top of the cut at either end, but across its width the sides were steep and near vertical, with a narrow trough forming the base in a rounded scoop. The fill comprised dark black charcoal rich silty clay loam, 5018 , and within the fill small fragments of burnt bone and clay were visible, including a tiny piece of skull, most of which was concentrated at the east end within the deepest part of the pit. The whole of the fill was retained for sample analysis, totalling c100litres of bulk soil, which contained 385 g of cremated human bone, probably from an adult female (see 5.6.1; Table 17). The quantity of charcoal was substantial, with over 1,000 large chunky fragments, weighing $1,126 \mathrm{~g}$ (see 5.7.2). The whole of this charcoal deposit comprised oak, including sapwood and roundwood, radiocarbon dated to the late Iron Age (Cal. BC90-80 \& Cal. BC50-Cal. AD60, 2010 $\pm 30$ BP, Beta -343280 ), contemporary with the cremation cemetery at Site A.


Ploughed-out remains of stone cairn 5016 , Site B, looking south Fig 7
It appears likely that pit 5019 was the remains of a bustum, used to introduce oxygen into the base of the pyre to get the fire burning to maximum efficiency and ensure that it burned at its highest temperature. Examples from Court Drive, Dunstable were larger, more regular in plan, but less plough-truncated (Edwards 2010, 241). The western end of the pit was the opening of the flue and the slightly deeper east end sat beneath the middle of the pyre, thus collecting small pieces of burnt bone that dropped into the aperture as the pyre finally burned out. Small pieces of burnt clay in the deposit may indicate that wattle and daub was included in the construction of this pyre, although not in substantial quantities and perhaps as part of the flue, as a covering or as a platform.


Section 53
100.16 maOD




#### Abstract

Above the pyre deposit, 5018, and overlying the surrounding soil layer, 5107, was a concentration of large stones, 5016 (Figs 7-8). The area of the surviving concentration was roughly 2.0 m long by 1.5 m wide by 0.25 m thick, with less densely scattered stones surrounding it within a radius of 3.0 m . The stones were of three main types; large reddish-brown sandstone glauconite $<220 \mathrm{~mm}$ in size were the most abundant, yellowish-brown pebble flint <180mm in size was less abundant, and chalky limestone fragments $<160 \mathrm{~mm}$ in size were least abundant. The stones were all naturally rounded nodules, many appear to have been gathered from a river, or amongst the glacial till, and were water worn. A few of the stones had been scorched, but these were in the minority. The stones were used to raise a cairn over the pyre site. The incorporation of burnt stone is not necessarily related to the pyre. At a later date the cairn was ploughed flat.


### 5.3 The cremation cemetery and adjacent ditches

The cemetery lay within Site A and was concentrated within an area roughly 20 m long by 15 m wide, comprising a scattered group of small pits, the majority of which contained pottery urns holding cremated bone, many with associated accessory vessels. The pits containing the pottery vessels were cut into the substrate, with the top of the pottery vessel situated just below the ploughsoil. Preservation was variable, a majority of the pots were complete but many had cracked, collapsed and fragmented, largely due to the impact of arable land use. The variation in survival may be partially attributed to the differing impact of ridge and furrow strip cultivation where cremations along the base of a furrow were severely truncated, whilst those below the ridges were more intact. The excavations exposed the full extent of the cemetery, and ditches that were identified on the RAF aerial photographs from April 1973, frame 363 (Fig 4).

The cemetery developed over time with its origins in the pre-Roman late Iron Age, continuing until its last burial in the mid-2nd century. The cemetery probably served a local rural community and contained the remains of 57 individuals in 48 burials; 45 were adults, four were juveniles and eight could not be aged with confidence. A detailed illustrated gazetteer of the Cremation burials is presented in Appendix 1. Analysis of the pottery from the cemetery indicated four key phases of development, which tie in closely with the development of the adjacent enclosures.

A single undated Cremation burial, Burial 41, contained un-urned cremated remains of indeterminate age or gender, weighing 24 g (Fig 9). The Cremation burial was set apart from the other main datable groups and does not easily tie into any single period since it was not accompanied by other finds.

### 5.3.1 Late Iron Age (1st centuries BC to AD)

## The cremation cemetery

The cemetery was established in the late Iron Age prior to the arrival of Roman authority in Britannia. Ten Cremation burials were interred within close proximity to one another, fairly evenly distributed, and with most spaced at 1.0-2.0m intervals (Fig 9). A summary of the Cremation burials is included in Table 4. There was a roughly circular arrangement to part of the grouping formed by Burials 13, 24, 25, 26, 27 and 36. The whole arrangement encircled a single posthole, 4212, located at the centre, which may have held a post. Four other Cremation burials; Burials 21, 31, 33 and 42; lay slightly to the south-west of the others.


Posthole 4212 was 0.38 m wide by 0.07 m deep, it had steep sloping sides and a flat base that was filled by friable dark greyish-orange silty clay and charcoal. The tree taxon within this sample was exclusively oak and the presence of heartwood with either none or a faint ring curvature indicated that much of the oak came from mature trunkwood. No other samples from Site A were as unique. This posthole may have contained an oak post forming the focus for the placement of the Cremation burials.

Table 4: Cremation burials of the 1st centuries $B C$ to $A D$

| Burial no. | Age/gender | Urn/or <br> without | Accessory <br> vessels | Grave goods |
| :--- | :--- | :---: | :---: | :--- |
| 13 | 1x individual | 1 | - | Fe nails x2 |
| 21 | 1x adult | 1 | - | - |
| 24 | 1x individual | 1 | 3 | - |
| 25 | 2x adults, one was male | 2 | - | - |
| 26 | 1x adult | 1 | 1 | - |
| 27 | 1x adult male | 1 | 1 | - |
| 31 | 1x adult male | 1 | - | Fe disc |
| 33 | 2x adults, one was female | $1 / 1$ | 3 | Fe fragment |
| 36 | 1x individual | 1 | - | - |
| 42 | 1x individual | 1 | - | - |
| Totals | 12x individuals | $\mathbf{1 2 / 1}$ | $\mathbf{8}$ |  |

Burial 24 cut through an earlier pit, 4183, which had either contained a single accessory vessel or had possibly been an earlier burial that was exhumed at the time Burial 24 was interred.

The pottery vessels were hand-built locally, with jars being the only form for the cremation urn of this period. The majority of the burials from the 1st centuries BC to AD were of single individuals interred in individual urns, whilst Burial 25 contained two urns buried together; both individuals were adult, although it is unclear if both genders were represented. Burial 33 also had two individuals; one of these was un-urned and seems to have been a later addition to the burial. Accessory vessels accompanied four of the urns, all of them included jars, Burial 24 also had a bowl, and with Burial 33 were a jar, pedestal jar or goblet, and a bowl. Iron objects, such as nails, suggest other grave goods may have accompanied some cremation. An iron disc recovered from Burial 31, was not heat affected, suggesting it was placed within the grave with the urn rather than on the body during cremation.

## Gully 4075 and spread 4055

Immediately to the east of the burials lay a curvilinear gully, 4075, the arc of which faced onto the cemetery site. The diameter of the arc was 9.5 m , forming a fairly regular semicircle. The gully was 0.50 m wide by 0.12 m deep with a fill of firm mid-orangebrown and greyish-brown silty sand and clay, rich in charcoal flecks.

Extending from gully 4075 northwards, was a broad spread of friable dark blackish-grey silty sand and clay, 4055 , containing fragmented burnt stone and flint $<90 \mathrm{~mm}$ in size, and with moderate charcoal flecks. The spread formed a sub-rectangular wash of material, 15 m long by 11 m wide, which had travelled down the slope and settled in the natural hollows of the ground surface. The formation of the spread seems to have involved water, which was tipped away down slope carrying with it burnt material, including burnt stone. The deposit was large enough to suggest that the activity was a substantial and integral part of the cemetery activities, although the absence of cremated material suggests that it did not form part of the cremation process itself.


The spread and gully contained no pottery or other finds that might support a domestic interpretation. There was no animal bone associated with these features and evidence for food consumption was absent. The stratagraphic relationships between deposits place these features at the very beginning of the archaeological sequence, which means that the gully and spread either predate or were contemporary with, the Cremation burials of the 1st centuries BC to AD. Water heating or steam generation may account for the wash of spread material, but the single charred wheat and knotweed seeds within the spread could be from anywhere. The charcoal within the spread was dominated by scrubland taxa, mainly roundwood from Prunus sp. (cherry type) and Maloideae (Hawthorn group), with some oak, blackthorn, field maple and wild privet. These woods; oak, blackthorn and hawthorn, produce high temperatures for long periods, they make very good fuel for fires and braziers. The other taxa appeared in low quantities and may represent burned offerings, some Prunus sp, like cherry and plum; and also the field maple; are quite fragrant woods that are easily worked. Charcoal may not necessarily originate as fuel, but as artefacts.

## Boundary ditch 4008

The cemetery site lay in close proximity to a major boundary ditch, 4008. The boundary continued to the north-east and was amongst those features identifiable on aerial cropmarks (Fig 4). The cropmark evidence suggests that it was part of a wider area of enclosure which was probably lost to the M1 motorway development in 1958-9.

The boundary was frequently recut until the mid-2nd century AD. The fills showed a sequence of silting, in-wash, recuts, additions, extensions, dumping and abandonment. With such a long sequence of deposition, it was the later accumulations that were most prominent (Fig 5). The extent of the earliest cut is less certain, although its proportions indicate a boundary of significance from its establishment onwards. The initial cut was largely truncated by later activity, so its original width is unknown. The ditch had a steeply angled sloping side and the base was 0.53 m deep (Fig 10, S48). The fills comprised firm mid yellowish-brown sandy clay with red tinges from iron salts, largely a combination of silting and in-wash material with no evidence for dumping. Pottery comprised two sherds ( 9 g ) in locally made fabrics (Clarke 2012, table A2.2).

### 5.3.2 Late Iron Age to Roman (mid-1st century AD)

## Further use of the cemetery

The cemetery continued to develop into the early Roman period, AD40-65, with a further twenty Cremation burials added to the cemetery (Fig 11; Table 5). These fall into two groups, defined by their pottery; those that exhibited local late Iron Age fabrics and forms (11 burials) and those with specifically pre-Flavian Roman fabrics and forms (nine burials). There was no physical pattern to distinguish the separate arrangement of these pottery groups within the cemetery development as a whole.

The Cremation burials were roughly aligned north-west to south-east. The burials possibly formed two lines with a majority of the burials at the north end in pairs. The arrangement appears quite deliberate and organised, suggesting that the layout had a meaningful progression with specific Cremation burials being interred in certain parts of the plot accordingly. Quite how this was determined is speculative and a variety of demographic elements may have been of importance in determining the specific burial location.


The pottery vessels used as cremation urns were mainly jars, the exceptions being Burials 23 and 44, which also utilised butt beakers. Three burials (1, 22 and 28) contained accessory vessels interred near to their respective cremation, but in a separate pit, so it is uncertain to which individuals they related. The majority of the burials from this period were of single individuals interred in individual urns, whilst there were three examples where two individuals were buried together (Burials 19, 32 and 37 ) and two examples of possible family groups (Burials 2 and 23). Few of these burials could be assigned by gender (Table 5).

Table 5: Cremation burials of the mid-1st century AD

| Burial no. | Age/gender | Urn/or without | Accessory vessels | Grave goods |
| :---: | :---: | :---: | :---: | :---: |
| local late Iron Age pottery |  |  |  |  |
| 1 | accessory vessels only | - | 3 | - |
| 17 | 1 x adult female | 1 | 1 | - |
| 19 | 2 x adults, one of each gender | 1 | 2 | - |
| 22 | accessory vessel only | - | 1 | - |
| 23 | 4 x individuals, one was 1-2 yrs | 3/1 | - | Cu alloy brooch |
| 28 | accessory vessels only | - | 3 | - |
| 29 | 1x adult | 1 | 1 | - |
| 40 | 1 x adult | 1 | - | - |
| 44 | 1x adult | 1 | 5 | Fe fragments |
| 46 | 1 x adult | 1 | 2 | - |
| 49 | 1 x adult | 1 | - | - |
| pre-Flavian Roman pottery |  |  |  |  |
| 2 | $3 x$ individuals, two were male | 3 | - | Cu alloy frag. |
| 3 | 1x adult | 1 | 3 | Bronze mirror Cu alloy brooch Fe nails $x 4$ Fe frags $x 2$ |
| 5 | 1x adult | 1 | - | - |
| 32 | 2 x adults, one was female | 1/1 | 2 | Fe brooch |
| 34 | 1x adult | 1 | 1 | ceramic disc |
| 37 | 2 x adults | 1 | 3 | Cu alloy brooch |
| 43 | 1x adult | 1 | - | Fe nail |
| 47 | 1x juvenile | 1 | 1 | - |
| 50 | 1x juvenile | 1 | - | - |
| Totals | 25x individuals | 21/2 | 28 |  |

The larger possible family Cremation burial, Burial 23, comprised four individuals, including an infant of 1-2 years; two of these were interred in pottery urns, one of them in a butt beaker and the fourth was an adult, buried un-urned and accompanied by a brooch. The un-urned burial seems to have been a later addition. The other family burial, Burial 2, had three adults, two of whom were male, one older and one younger; all of them in separate urns and perhaps representing the mother, father and son. Where two individuals were interred together there may have been either partners or siblings; Burials 19 and 37 were examples where two individuals occupied the same urn, whereas a third example, Burial 32, held one urned individual and one un-urned female.

Accessory vessels were by no means a requirement of the funerary process; seven graves were without accessories, including both family burials. The most heavily furnished grave was for a single adult, Burial 44, contained in a beaker urn and accompanied by five accessory vessels; a platter, jar and three beakers. A collection of iron fragments was also present. The transitional nature of the cemetery was exemplified where a pre-Flavian style urn, Burial 47, and a locally produced beaker lay together. Other finds also supported this: Burial 34 contained a flagon from Verulamium and a small ceramic disc, possibly a gaming counter. The remains of an adult, Burial 3,
were accompanied by three accessory vessels; a platter, jar and flagon from Verulamium, along with a brooch and a mirror. Burials 23, 32 and 37 also contained brooches. The growing number of accessory vessels and personal effects may be taken as a reflection of increased affluence of the cemetery occupants from their predecessors.

## Formation of nearby enclosures (E1-2)

The settlement was probably close to the cemetery site, and from the mid-1st century AD onwards the margins of that settlement began to expand significantly. The late Iron Age boundary ditch, 4008, was extended, recut 4006 and side branches may have bounded two rectangular enclosures laid out to either side (Fig 11). It is likely that the enclosures supported agricultural practises associated with the settlement, although since the instances of animal bone were fairly low, with none of them providing evidence for butchery, the enclosures were still peripheral to domestic occupation. Similarly, charred seeds were few, and no evidence for crop processing was recovered to support either arable or pastoral land use.

The boundary ditch recut, 4006, was 1.97 m wide by 0.53 m deep, with widely splayed $40^{\circ}$ sloping sides and a broad flat base (Fig 10, S48). The fill comprised firm mid-yellowish-brown sandy silt and clay with greyish-red mottled tinges, a combination of silting and in-wash material. Other than a few burnt stones there was little evidence for dumping, with five sherds (116g) of pottery recovered (Clarke 2012, table A2.2).

## Enclosure E1

On the south-east side of ditch 4006 there was a small rectangular plot, roughly 30 m long by 27 m wide and, according to aerial photographic images, perhaps twice the size of the area exposed within the excavation. Ditch 4006 formed its north-west boundary, whilst the south-west side was formed by ditch 4004 . This less substantial boundary was 0.95 m wide by 0.29 m deep and roughly V -shaped, its upper and lower boundaries having been slightly eroded into rounded edges (Fig 10, S45). The fill comprised firm mid-brown silty sand and clay with occasional stone or chalk nodules, mottled with red tinges from iron salts; the likely source of this is a mixture of silting and in-wash material. The disuse of the ditch was marked by a dump of 1st to 2nd-century pottery in the upper fill, 51 sherds (357g), suggesting these ditches were filled by this date (Clarke 2012, table A2.2).

Within the enclosure was a narrow gully, 4012, aligned north-west to south-east, 0.40 m wide by 0.08 m deep (Fig 10, S46). The gully had a shallow curved dish-like profile, filled by firm mid-orange brown sandy clay, with red tinges. The gully was perhaps a minor enclosure partition. The gully produced one sherd $(13 \mathrm{~g})$ of undiagnostic pottery (ibid).

A large pit, 4014, lay adjacent to the north, and continued beyond the edge of excavation (Fig 10, S49). The pit was roughly oval, 5.45 m long by over 2.0 m wide and 1.04 m deep, orientated with its long axis down slope, allowing it to overflow into the adjacent ditch. The sides of the pit were fairly gentle, descending at $30-35^{\circ}$ into a broad rounded base. The basal fills comprised sequential layers of firm mid-greyish-brown clay, gradually becoming darker and more silty towards the surface. Reddish-orange flecks from iron panning were concentrated towards the base. The pit was left open and gradually accumulated this material through in-wash. The pit was then filled in with firm mid-orange brown sandy loam, which contained four sherds (15g) of late Iron Age pottery, and had a distinct boundary horizon between contexts. The pit may have been for clay extraction, but does not seem to have been filled in any hurry and, whilst it appeared too deep and steep for animals to drink from, it collected water easily and could have been used as a well to fill a trough.

## Enclosure E2

On the north-west side of ditch 4006 was another enclosure area, although its true extent was much harder to discern from aerial photographs. The size of the area exposed within the excavation was perhaps one third of its total area, and the aerial images suggest a similar size to enclosure E1. Ditch 4006 formed its south-east boundary, whilst the south-west side was formed by ditch 4010. The ditch extended to the north-west and was 1.45 m wide by 0.37 m deep, its sides were widely splayed and eroded at the upper edge, whilst the base was broad and flat (Fig 10, S51). The fill comprised firm mid-greyish-brown silty sand and clay with occasional pebbles, mottled with yellow chalk; the likely source of this is a mixture of silting and in-wash material. A single sherd (168g) of late Iron Age pottery was recovered (Clarke 2012, table A2.2).

### 5.3.3 Roman (late 1st to early 2nd centuries AD)

## The extension of the cremation cemetery

The cemetery continued to develop in the late 1st to mid-2nd centuries with the addition of 12 Cremation burials (Fig 12; Table 6). The distribution was mainly clustered in the southern area of the cemetery, indicating a distinct migration of burial focus, which was perhaps a response to the gradual encroachment of the neighbouring enclosures and a continuation of the mid-1st-century linear arrangement.

South Gaulish samian dishes occurred amongst five groups of accessory vessels, with a couple of date stamps providing well dated periods for the potters' work; Paulus, AD70-95 (Burial 8) and Calvus, AD65-90 (Burial 38).

The remains of the adult within Burial 38 were un-urned, although the distribution of the cremated remains within the pit suggested they were interred within a wooden box. A single casket burial was also found at Court drive, Dunstable (Edwards 2010, 243). The accessory vessels were a South Gaulish dish, a beaker and a Verulamium-region flagon. The pit was cut into an earlier Cremation burial (Burial 49), but did not disturb the earlier objects, suggesting that it may have been placed to add to the previous burial, perhaps indicating a social or kindred link between the individuals.

Table 6: Cremation burials of the 1st to early 2nd centuries AD

| Burial no. | Age/gender | Urn/or <br> without | Accessory <br> vessels | Grave <br> goods |
| :--- | :--- | :---: | :---: | :--- |
| 4 | 1x adult male | 1 | 2 | Fe nails x4 |
| 6 | 2x adults, male and female | 2 | 3 | - |
| 7 | 1x adult male | 1 | 1 | - |
| 8 | 2x individuals, one young adult | 1 | 1 | - |
| 10 | 1x adult | 1 | 2 | - |
| 12 | 1x adult | 1 | 2 | - |
| 14 | 1x adult | 1 | 0 | - |
| 16 | 1x young adult | 1 | 3 | - |
| 18 | 1x adult female | 1 | 0 | - |
| 38 | 1x adult | $0 / 1$ | 3 | - |
| 39 | 1x adult female | 1 | 3 | - |
| 45 | accessory vessel only | 0 | 1 | - |
| Totals | 13x individuals | $\mathbf{1 1 / 1}$ | $\mathbf{2 1}$ |  |

The majority of the Cremation burials for this period had the remains of a single individual. Burial 6 had two adults, male and female, buried together in separate urns, which seemed to have been interred at the same time. Burial 8 had two adults, one slightly younger but of unknown gender, buried in the same urn. Two individuals were young adults. It is possible that Burials 6 and 8 may represent couples or siblings.


The quantity of accessory vessels placed within burials was significantly higher overall, although two burials had no accessory vessels. There was only one instance where the accessory vessel was buried separately.

## Redefinition of the nearby enclosure boundaries

The ditches that formed the boundaries of enclosure E1 had been filled, and it seems to have gone out of use. Enclosure E2, however, was redefined and the boundary alignment shifted south-west towards the cemetery (Fig 12).

Ditch 4065 formed this boundary between the enclosure and the cemetery, joining with ditch 4006 at its south-east end. The older boundary, 4010, which was no longer in use, had accumulated silt and in-wash material. Ditch 4065 was 1.24 m wide by 0.62 m deep, the sides were steeply sloped and met with a fairly narrow flat base (Fig 10, S78). The basal fill comprised mid- to dark grey silty sand, 0.17 m thick, with occasional charcoal flecks, a combination of silting and in-wash from activity nearby. This was overlain by friable reddish-brown silty sand, 0.14 m thick, with light yellow patches and charcoal flecks. The accumulation still appeared to have been silt and in-wash, but the variation in colour comes as a result of less charcoal content. The uppermost fill material, friable dark greyish-brown silty clay loam, was 0.31 m thick, and contained a greater proportion of small stones, together with charred material and pottery as part of an episode of backfill. The pottery comprised 42 sherds ( 414 g ), with the majority distributed at the southern end of the ditch (Clarke 2012, table A2.2).

## Pits and postholes

The southern corner of enclosure E2 was occupied by a dense concentration of smaller features (Fig 12). Two gullies closed off the corner of the enclosure. Gullies 4050 and 4052 were relatively shallow, no more than 0.09 m deep and their profiles had a gentle flat-bottomed dish-like form to them that varied from $0.39-0.69 \mathrm{~m}$ wide. The surrounding area was quite indistinct with the fill materials, firm dark greyish-brown sandy clay, also forming an amorphous spread with frequent charcoal flecks and occasional burnt stones. When cleaned the area also revealed nine postholes; two square and seven circular, which concentrated as a group, 4015, towards the east terminal of gully 4050. The postholes were mainly within the range of $0.18-0.32 \mathrm{~m}$ wide and $0.11-0.27 \mathrm{~m}$ deep. As a whole they exhibited steep, near vertical sides with rounded bases. The fill materials were greyish-orange sandy clay, stained black with charcoal flecks and with over half of them containing small fragments of burnt stone. The postholes did not form an explicit arrangement indicative of a structure; they appeared instead to represent various posts inserted at the corner of the main enclosure perhaps to support temporary barriers such as wattle panels. The soil samples from the posthole group indicated very little in the way of charred plant remains and the charcoal taxa were from a mixture of largely shrubby trees that are more commonly found where wood has been gathered for small fires or occurs as the result of clearance. It is likely that much of this burnt material was residual from fires in the vicinity and carried within the fill material when the posts were removed.

Associated with the group by proximity were three pits; 4028,4048 and 4057 . The pits were rounded with the largest, 4028, slightly triangular and with dimensions of 1.80 m long by 1.50 m wide and 0.50 m deep. The other two pits were smaller, less than 1.0 m wide by 0.30 m deep. The sides were fairly gentle and opened out to create a large bowl shape with a rounded base. There was no evidence for scorching, although the fill constituents were obviously the remains from a fire and comprised firm light greyishbrown silty with small rounded mixed gravels, charcoal flecks and moderate burnt stones. Charred plant remains were largely absent and the bulk of charcoal was of a similar shrubby origin to that found amongst posthole group 4015 and is probably from the same source.

### 5.3.4 Roman (early to mid-2nd century AD)

The final use of the cremation cemetery
The final period of cemetery development seems to have been a short episode with the addition of five Cremation burials clustered together in the south of the cemetery (Fig 13; Table 7).

Table 7: Cremation burials of the early to mid-2nd century AD

| Burial no. | Age/gender | Urn/or <br> without | Accessory <br> vessels | Grave <br> goods |
| :---: | :--- | :---: | :---: | :--- |
| 9 | 1x adult | 1 | 2 | - |
| 11 | 1x adult female | 1 | 2 | Fe nails x2 |
| 15 | 2x individuals, adult and juvenile | 1 | 2 | Fe nails x2 |
| 20 | 1x adult female | 1 | 1 | - |
| 30 | 1x adult | 1 | 2 | - |
| Totals | 6x individuals | $\mathbf{5}$ | $\mathbf{9}$ |  |

Burial 30 was the only intervention within the group that was not cut by another burial; it consisted of the cremated remains of an adult within a jar urn accompanied by a samian dish and flask as accessory vessels. The other burials seemed to exhibit the addition of later remains to accompany earlier cremations; Burial 11 cut the edge of the primary interment of Burial 15, this suggests the addition of an adult female to join an unsexed adult and child. Burial 20 cut the edge of Burial 9, again the addition of an adult female to join the burial of an unsexed adult. In both cases the later addition was placed on the west side of its earlier counterpart, taking care to avoid disturbing the earlier remains. The quantity of accessory vessels across the group is consistent with the late 1st to 2nd centuries AD.

This latest period of Cremation burial included the accompaniment of three Central Gaulish samian dishes, one of which carried the stamp of the potter Avitus, dating from AD120-150. The cemetery site appears to have been disused in the late 2nd century.

## Further redefinition of the nearby enclosure boundaries

The south-west boundary of Enclosure E2 was shifted further across, clipping the edge of the cemetery and maximising the land-take available (Fig 13). This may be an indication of increased pressure for land at a time when even marginal areas were being exploited. The boundary was marked by ditch 4071, and was subsequently recut by ditch 4026, indicating that further encroachment on the cemetery was not desirable (Fig 10, S82). Ditch 4071 was $c 1.30 \mathrm{~m}$ wide by 0.53 m deep; it had fairly steep sloping sides with a broad and slightly rounded base. The fills comprised firm light greyishbrown silty clay with gravel, burnt stone and charcoal flecks; a mixture of silting and inwash material with periodic dumps of waste, including two sherds $(7 \mathrm{~g})$ of residual late Iron Age pottery, animal bone and ironworking slag. The increase in finds also suggests an increased pressure on land, and that the boundary was no longer as peripheral as it had seemed a century before. The recut, 4026, was slightly narrower and with steeper sides with dimensions 0.88 m wide by 0.60 m deep. However, the fill constituents remained consistent, indicating no identifiable change in the nearby land use. Dumps of material contained a higher volume of pottery, 73 sherds $(564 \mathrm{~g})$, dating from the middle of the $2 n d$ century AD, and indicating that the ditch went out of use around this time (Clarke 2012, table A2.2).


The southern portion of the principal boundary was partially cleaned out and recut at this time, forming ditch 4237 (Fig 10, S120). The remainder of the boundary to the north exhibited no further recuts and was perhaps slower to accumulate fill, and so needed less maintenance. Ditch 4237 was 1.0 m wide by 0.43 m deep; it had steeply angled sloping sides and narrow rounded base, with some signs of vegetative disturbance. The fill comprised friable mid-greyish-brown sandy clay with orange tinges and occasional chalky flecks, which appeared to be a gradual silt and in-wash accumulation.

### 5.3.5 An undated inhumation burial

The cemetery contained a single inhumation burial, 4250, located to the north-west (Fig 13). The grave was 1.05 m long by 0.50 m wide by 0.08 m deep, sub-rectangular and aligned north to south. The grave cut through a late Iron Age Cremation burial, Burial 36, at its south end. The fill comprised firm mid-brown clay with occasional small stones and charcoal flecks, but had an indistinct edge owing to truncation by postmedieval and later ploughing. Only a single femur was recovered, the rest of the lower part of the body was visible as a shadow soil mark between the pelvis and lower calf. No artefacts were found amongst the remains and insufficient collagen survived within the bone to enable a radiocarbon date to be determined. The inhumation could belong to any period of cemetery use. However, where inhumations were found accompanying cremated remains at Court Drive, Dunstable, these are thought to have been of the 1st century AD on the basis of the 'Belgic' style pottery that accompanied one of the graves (Edwards 2010, 243). Nonetheless, given that the grave was heavily truncated it seems to have lain higher in the soil than most of the Cremation burials.

### 5.4 Roman enclosure boundaries

The upper slope of the south facing hillside overlooking the stream, to the west of the M1 motorway, was exposed in the excavation area of Site C (Fig 14). The southern end of the site revealed ditches and pits that produced an assemblage of pottery, animal bone and other finds from the 1st century AD onwards. The 1st-century material was limited to principal ditches, whilst the majority of mid- to late 2nd-century finds came from smaller ancillary features between major boundaries and from upper ditch fills. A single sherd of 3rd-century pottery was recovered from the subsoil and one later ditch produced coinage dating to the 4th century. Although no domestic structures were evident, the forms and types of pottery indicated an assemblage comprising mainly jars and bowls that probably originated from a small settlement outside of the excavated area. A possible building, indicated on the RAF aerial photographic image from April 1959, frame 34, lies to the west.

The ditches were probably the boundaries for larger enclosures that stretched across the slope and may have contained within them smaller ancillary features. The interior areas between boundaries contained few features. The animal bone assemblage was largely dominated by cattle bones, although sheep/goat, pig and horse bones were also present in smaller quantities. Charred plant remains were limited in quantity, there was little evidence to support crop processing and the few individual grains that were present appeared to be from scattered detritus incorporated within the fills from general occupation in the vicinity. The exception to this were the fills of pit 7018, which contained sufficient charred cereal grains and burnt bone to suggest that it may have originated as hearth waste.



### 5.4.1 An undated curvilinear ditch, Site C

A single curving ditch, 7173, lay at the northern end of Site C (Fig 14). This was amongst the earliest features present and had been heavily truncated by medieval and post-medieval activity. The ditch was 0.33 m wide by 0.17 m deep, forming the east side of an arc that continued beyond the excavated area. The fill comprised firm orangebrown silty clay, but was otherwise devoid of finds and it is its stratigraphic relationship with ditch 7165 that indicates a date of 1st-century AD origin or earlier.

### 5.4.2 The late 1st-century AD ditches, Site C

The Site C area was crossed, west to east, by three main ditch alignments, set out at widely spaced intervals (Figs 14-15, S125; S128; S143). Ditches 7165, 7040 and 7030 probably formed the main boundaries for enclosures that lay across the hillside. However, there is no aerial photographic evidence or geophysical survey data to corroborate the extent and layout of the boundaries. The distance between the two most substantial and contemporary southern ditches was 57 m , and a further ditch lay 35 m to the north. In the late 1st century AD there was no evidence of internal ancillary activity in the excavated area between these boundaries, although the ditches themselves produced a moderate assemblage of finds. Contextual details are provided in Table 8.

The southernmost of these boundaries, ditch 7030/7036, was aligned slightly more to the north-east and comprised a short break with two adjacent ditch terminals, 7169 and 7187. The distance between them was less than 1.0m, too narrow to represent an entry way, but sufficiently large to suggest that the boundaries were not necessarily for drainage and that they were probably created piecemeal over a short period of time.

Table 8: Context data: ditches, Site C (late 1st-century AD)

| Fill / Feature | Width (m) | Depth (m) | Description | Finds |
| :---: | :---: | :---: | :---: | :---: |
| 7164 / ditch 7165 | - | 0.27 | firm mid-brown silty clay, pebbles and charcoal flecks, basal silting with periodic dumped material | pottery |
| cut / ditch 7165 | 0.74 | 0.27 | V-shaped cut, $45^{\circ}$ sides | - |
| 7042 / ditch 7040 | - | 0.65 | firm dark mottled orange-brown silty loam backfill | pottery, bone |
| 7041 / ditch 7040 | - | 0.60 | loose dark mottled orange-brown silty loam, in-wash from south side | pottery, bone |
| 7043 / ditch 7040 | - | 0.65 | firm dark mottled orange-brown silty loam in-wash from north side | pottery, bone |
| 7044 / ditch 7040 | - | 0.25 | compact light mottled greyish-orange brown clay silt, basal silting | - |
| cut / ditch 7040 | 2.50 | 0.90 | steep $70^{\circ}$ sides, broad flat base | - |
| 7026 / ditch 7030 | - | 0.17 | firm mid-brown sandy loam mottled with red and orange, pebbles and charcoal pieces, dumped material | pottery |
| 7027 / ditch 7030 | - | 0.11 | firm reddish-brown sandy loam, pebbles and charcoal flecks, dumped material | - |
| 7028 / ditch 7030 | - | 0.32 | firm dark greyish-brown sandy clay, pebble flint and charcoal flecks, backfill | pottery, bone, slag |
| 7029 / ditch 7030 | - | 0.20 | firm dark reddish-brown sandy silt, basal silting | - |
| 7033 / ditch 7030 | - | 0.44 | firm mid-reddish-brown sandy silt, basal silting and in-wash from north | - |
| cut / ditch 7030 | 1.66 | 0.80 | eroded steep-sided cut, asymmetrical, $40^{\circ}$ and $70^{\circ}$ sides with narrow flat base | - |



### 5.4.3 A boundary ditch of the late 1st century AD, Site B

In close proximity to the late Iron Age stone cairn, 5016, and enclosing the concentration of stone within its arc, was the curvature of ditches 5010 and 5023 (Figs 6 and 14). The full extent of the ditches lay outside of the excavation area and despite extensive cleaning in the wet clay it was not possible to trace its western extent. The top of the M1 embankment had already been heavily disturbed by machinery during the removal of hedgerows, rutting was considerable and wet ground made further definition impossible. The general alignment of ditch 5023 and the date of the pottery suggest that it may have extended to meet ditch 7165 , Site C , to the west of the M1.

The elements of ditch 5023 that survived were up to 2.0 m wide by 0.80 m deep. The fill comprised a single compact mottled light to mid orange-yellow and brown silty clay with grey and russet flecks, indicative of the formation of salts through changes in water content. This fill had accumulated gradually through silting, during which it incorporated a small sherd of late 1st-century Romano-British pottery, however, the lack of charcoal in the fill suggests it was created well after the pyre event, which was in close proximity to the south of the ditch.

### 5.4.4 Changes to boundaries in the early to mid-2nd century AD, Site $C$

The mid-2nd century probably brought about changes and modifications to the boundaries between enclosures, but within such a limited area of excavation it was not possible to see how this was done. The principal boundary changes were towards the lower, southern, end of the slope (Fig 14). Ditch 7030 and its counterpart, ditch 7036, were replaced and redefined by ditch, 7048, which turned slightly north at the edge of excavation (Fig 16, S129). A principal boundary was created 15 m to the north of this alignment, ditch 7010, altering the distance between boundaries (Fig 16, S88). Contextual details for the ditches are provided in Table 9.

Table 9: Context data: ditches, Site C (mid-2nd-century AD)

| Fill / Feature | Width <br> (m) | Depth (m) | Description | Finds |
| :---: | :---: | :---: | :---: | :---: |
| 7008 / ditch 7010 | (m) | 0.29 | loose dark greyish-brown silty sand, pebbles and charcoal flecks, dumped material and backfill | pottery, fired clay |
| 7009 / ditch 7010 | - | 0.22 | loose patchy mid-brown and yellow silty sand, pebbles and charcoal flecks, basal silting and in-wash | - |
| cut / ditch 7010 | 4.90 | 0.51 | shallow, gradual $35^{\circ}$ sides, broad flat base, slightly uneven | - |
| 7047 / ditch 7048 | - | 0.45 | firm dark grey silty sandy clay, pebbles and charcoal flecks, basal silting with periodic dumped material | pottery |
| cut / ditch 7048 | 0.90 | 0.45 | U-shaped cut, $60^{\circ}$ sides, eroded upper edges | - |

### 5.4.5 Features between the boundary ditches, Site C

Gully group 7049 and pits 7065, 7067
The western edges of several narrow, winding gullies, 7049, were partially exposed within the excavation area to the north of ditch 7010 (Fig 14). Two main gullies indicated that a small sub-enclosure, perhaps with a wattle fence had been largely truncated away by the 1958-9 motorway cutting, along with any settlement evidence within it. The gullies were found in conjunction with both domestic and ancillary activities and the two large pits nearby, 7065 and 7067, produced a sizable quantity of
domestic waste. One of the gullies also produced a group of six hobnails, which, together with the 88 sherds of mid- to late 2nd-century pottery would suggest that the features lost to the 1958-9 motorway works were probably domestic in origin.

The gullies themselves were perhaps less interesting. As a whole their dimensions varied considerably, in the range of $0.35-0.50 \mathrm{~m}$ wide and up to 0.27 m deep. The profiles were also completely inconsistent coming in a variety of shapes that included; V-shaped cuts, steep sides with rounded and pointed bases, broad gently curving sides that flatten out at the base. The likely reason for this was that gullies of that nature were temporary settlement features, either to provide support for wattle fences, or to facilitate run-off and therefore had little permanency or regularity to their form. Similarly the fills tended to accumulate whatever detritus happened to be within their vicinity, which in this case resulted in predominantly greyish-brown sandy and silt clay in-wash deposits, stained and flecked with charred material, and with casual stray losses or dumps of domestic waste.

The pits, 7065 and 7067 , were quite productive in terms of finds, with pottery and animal bone present in moderate quantities ( 17 sherds and 86 bone elements), alongside fired clay (Fig 15, S136). The vast majority of these animal bones were from cattle and with evidence for both butchery and canid gnawing. Pit 7065 produced the majority of the material; it was an irregular sub-circular depression, 2.30 m long by over 1.0 m wide by 0.24 m deep. The sides were rough and uneven, the base broad and flat. The impression was less of a pit for disposal, and more of a dump and soakaway, connected to one of the gullies and the adjacent ditch, 7040. The fill was largely firm orange-brown sandy silt and clay in-wash that had become mixed with the household detritus and in its final use this merged with an overlying spread of firm mid-brown sandy clay. Pit 7067 cut through both deposits in the creation of a sub-rectangular hole with near vertical sides and a flat base that was over 1.2 m long by 0.62 m wide by 0.42 m deep. The pit contained a single dump of firm greyish-brown sandy loam with pebbles and charcoal flecks, animal bone and pottery. This pit was possibly for the disposal of domestic waste.

Pits 7023 and 7018
A steep-sided sub-circular pit, 7023, lay to the south of ditch 7010, within which a sequence of sandy and clayey sand fills had been dumped (Figs 14-15, S124). The pit had then subsequently been cut by a later pit, 7018, which was rectangular with vertical sides. The pit had then been filled with a sequence of sandy and clayey sand fills (Table 10). The frequency and similarity of thin sandy fills, and their distinct difference to the fills in contemporary ditches, indicated that its reinstatement was a gradual and deliberate process. The material from fill 7013 was sampled and produced the only meaningful assemblage of Roman charred cereal grain from the excavations. In conjunction with a fragment from a rotary quern and other charred remains, this is likely to have been hearth waste. A similar filling process is often observed in latrines where a dump of soil, in this case sand, was cast into the pit between uses. However, in this instance it was not possible to identify cessy material within the samples.

Table 10: Context data: pits 7023 and 7018, Site C

| Fill / Feature | Lengt (m) | Width <br> (m) | Depth <br> (m) | Description | Finds |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 7011 / pit 7018 | - | - | 0.15 | firm dark black-grey silty sand, pebbles and charcoal flecks | pottery, bone |
| 7012 / pit 7018 | - | - | 0.16 | firm mid-yellowish grey sandy clay with charcoal flecks | - |
| 7013 / pit 7018 | - | - | 0.08 | friable dark greyish-black silty sand, pebbles and charcoal flecks, sampled for charred plant remains | pottery, bone, fired clay, quern, hearth waste |
| 7014 / pit 7018 | - | - | 0.10 | firm mid yellowish-orange sandy clay with charcoal flecks | - |
| 7015 / pit 7018 | - | - | 0.16 | friable dark grey silty sand with charcoal flecks | pottery |
| 7016 / pit 7018 | - | - | 0.08 | firm mid yellowish-grey sandy clay, pebbles and charcoal flecks | pottery, quern |
| 7017 / pit 7018 | - | ${ }^{-}$ | 0.06 | friable mid-yellowish brown silty sand, pebbles and charcoal flecks | pottery |
| cut / pit 7018 | 1.55 | 0.88 | 0.65 | vertical sides and flat base | - |
| 7019 / pit 7023 | - | - | 0.17 | firm mid-brownish-orange clayey sand, pebbles and charcoal flecks | - |
| 7020 / pit 7023 | - | - | 0.24 | firm mid-grey clay, pebbles and charcoal flecks | - |
| 7021 / pit 7023 | - | - | 0.20 | friable mid-brownish-orange clayey sand, pebbles and charcoal flecks | - |
| 7022 / pit 7023 | - | - | 0.30 | firm mid-yellowish-orange clayey sand with charcoal flecks | - |
| cut / pit 7023 | 1.68 | 1.20 | 0.65 | near vertical sides and flat base | - |

### 5.4.6 Late Roman activity in the 4th century AD, Site C

The southernmost boundary ditch, 7039, seems to have been the longest lived amongst all of the Roman boundaries at Site C (Fig 14; Table 11). This may well have been the southern extent of Roman hillside occupation on this side of the valley, with the low meadow beside the stream unenclosed. It is likely the previous ditch silted up by the end of the 2nd century, however, its alignment was reinstated in the late 3rd or early 4th centuries with ditch 7039 (Fig 16, S129). Since the alignment survived when the earlier ditch did not it suggests that the boundary itself was still perpetuated in the period between. Little other activity was indicated and after this period the hillside occupation was abandoned.

Table 11: Context data: boundary ditch 7039, Site C (4th-century AD)

| Fill / Feature | Width <br> $\mathbf{( m )}$ | Depth <br> $\mathbf{( m )}$ | Description | Finds |
| :--- | :--- | :--- | :--- | :--- |
| $7037 /$ ditch 7039 | - | 0.56 | firm dark brownish-grey silty sandy clay, <br> pebbles and charcoal flecks, backfill <br> firm mid greyish-brown silty sand, basal | SF128, coin <br> pottery, coin <br> silting and in-wash |
| 7038 / ditch 7039 | - | 0.22 | U-shaped cut, 45-55 ${ }^{\circ}$ sides, eroded uppe <br> edges |  |
| cut / ditch 7039 | 1.84 | 0.78 | SF129 |  |

### 5.5 Late Iron Age and Roman finds

### 5.5.1 The pottery by Jane Timby

Two groups of later prehistoric and Roman pottery were recovered during excavation. One assemblage is from Site A; a small cremation cemetery comprising some 50 burials with associated features. The other assemblage is from Site C, which contained pits and ditches belonging to a wider distribution of settlement activity.

The pottery was examined macroscopically and sorted into fabrics based on the principal inclusions present in the clays and quantified by sherd count and weight. The fabrics have been coded following the Bedfordshire Ceramic Type Series. Descriptions of the fabrics have been extensively published elsewhere (e.g. Slowikowski 2001; 2004; 2005), so they are not described in detail here but are summarised in Table 12. Known, named regional traded Roman wares are additionally coded following the National Roman fabric reference collection (Tomber and Dore 1998).

## The cremation cemetery (Site A)

Some 48 Cremation burials were uncovered, all except Burial 41 were accompanied by pottery vessels either as the containers for the cremated remains or as accessory vessels (Table 13). For a full catalogue, see Appendix 1. The condition of many of the pots was poor, with extremely fragmented sherds and in many cases only the lower parts of the vessel surviving. Thus the most diagnostic part of the vessel, the rim, which often permits closer dating, was generally missing. Whilst a significant number of the vessels are too fragmented to allow reconstruction for drawing there are a small number of less traumatised pots which can be reconstructed to allow profiles to be drawn or conjectured. There are also seven complete or almost complete surviving vessels.

Chronologically the cemetery appears to span the later Iron Age through to the early to mid-2nd century. The vessels are a mixture of hand-built, wheel-turned and wheelmade vessels predominantly made in local fabrics. Grog-tempered wares (fabrics F09, F17); grey sandy wares (fabric R06) and black sandy wares with a red core (fabric R07) dominate, effectively accounting for 63.5 \% of the recorded vessels. A maximum 131 vessels have been recorded from the burial contexts although these are in various states of completeness so it is sometimes unclear if a few of the sherds are accidental incorporations into the grave fills. Alternatively, the inclusion of additional broken sherds could be a deliberate act as part of the burial ceremony. These have been labelled as stray sherds in the catalogue. If these are removed the total figure reduces to 114 vessels either used as containers for cremations or as accessory vessels.

Of the 47 burials with pottery (Tables 13-14), fourteen produced single vessels, twelve of which were jars used to hold the cremated remains and in two cases, Burials 22 and 45 , only accessory vessels were present. Ten burials had two vessels, of which nine comprised the burial urn and one accessory vessel and one example, Burial 25 , had two urns. Ten examples had two accessory vessels and a further ten had three accessory vessels. Five burials were un-urned. Cremation burial 6 had two urns and at least three accessory vessels along with various stray sherds. Cremation burial 44 seems to have had five accessory vessels. Minute quantities of bone also occurred in non-urn vessels from pyre material within the pit fills, Burials 10-11.

Six of the cremation urns were lid-seated vessels and the others were necked, suggesting the possible use of organic or stone lids and covers. At least three vessels used in the graves could be regarded as wasters with very thin bases which had cracked on firing (Burials 4, 11, 31). Some vessels are sooted, perhaps suggesting they had had a role in the domestic sphere before being selected for burial. One platter, Burial 3 , has a heavily scorched base.

The accessory vessels are typical of those found in many accompanied burials of this date with an emphasis on forms connected with the drinking, serving or the eating of food (Table 14). These include handmade platters copying imported forms; various small jars or beakers, flasks or flagons, one bowl and seven cases of samian dishes. There are in total ten flagons, all products of the Verulamium and London pottery industries, mainly white wares but at least two red sandy wares. In addition there is a white butt beaker, Burial 19, also from the same source.

## Cemetery chronology

The cemetery appears to span the pre-Roman Iron Age through to the first half of the 2nd century. The earliest graves date to the later Iron Age and at least ten cremations can be identified potentially belonging to this phase of use. The graves are scattered across the northern half of the cemetery area loosely forming a ring perhaps respecting a central focus. Five of the burials comprise single vessels (Burials 13, 21, 31, 36, 42), whilst a seventh (Burial 25), contained two cremations in two jars. In all cases the vessels are handmade jars with six in grog-tempered fabrics, two in sandy wares, one in a grog and sandy ware and one in a shelly ware. The vessel from Cremation burial 31 has a slight pedestal foot. Two of the graves have single accessory vessels (Burials 26, 27), in both cases there were jars, with that from Cremation burial 26 having a pedestal foot. Cremation burial 24 produced three accessory vessels; two jars and carinated bowl. Cremation burial 33 also has three possible accessory vessels: a small pedestal jar or goblet, a second jar and the fragments of another jar or bowl.

The second phase of burials belongs to the later Iron Age and early Roman period, broadly the period AD40-65. Many late Iron Age forms tend to continue with little apparent change into the early post-conquest period in rural areas so certain flexibility has to be built into the dating. At least eleven burials seem to belong to this phase of use and show a scattered distribution across the cemetery area (Burials 1, 17, 19, 22, $23,28,29,40,44,46,49$ ). Two graves had a cremation urn with no accessory vessels (Burials 40, 49). Two burials contained an urn accompanied by one accessory vessel each (Burials 17, 29), a jar and a beaker respectively; five burials have a total of three vessels (Burials 1, 19, 23, 28, 46); and one produced six vessels (Burial 44). Four graves had platters as accessory vessels (Burials 1, 28, 44, 46); two in grog-tempered fabrics and two in sandy ware and all broadly imitating the imported moulded terra nigra form Camulodunum type 8 (Hawkes and Hull 1947, 219), which was imported into Britain from the Augusto-Tiberian period through to the Neronian period. Contemporary with this form are copies of butt beakers in local fabrics often with combing imitating the rouletting found on imported types. Locally made butt beakers were used as cremation urns (Burials 23 and 46) and as accessory drinking vessels (Burials 19, 29 and 44).

Broadly contemporary with this group are a further nine burials which contain vessels more specifically Roman but probably pre-Flavian in date (Burials $2,3,5,32,34,37$, 43,47 and 50 ). Four graves just contained the cremation urns (Burials 2, 5, 43, 50); two had single accessory vessels (Burials 34, 47); one had two accessory vessels (Burial 32) and two had three accessory vessels (Burials 3, 37). Four of these burials had flagons, three of which are in Verulamium region white ware.

Table 12: Quantification of later Iron Age to early Roman pottery fabrics

| BCTS | Description (NRFC) | SITE A cemetery |  |  | SITE A other features |  |  | SITE C |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | No of vessels | Wt (g) | EVE | No of sherds | Wt (g) | EVE | No of sherds | Wt (g) | EVE |
| F01 | flint-tempered | 0 | 0 | 0 | 4 | 19 | 0 | 0 | 0 | 0 |
| F04 |  | 0 | 0 | 0 | 3 | 7 | 0 | 0 | 0 | 0 |
| F05 | Grog and shell | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 0 |
| F06 | Grog-tempered (Late Iron Age) | 0 | 0 | 0 | 2 | 3 | 1 | 89 | 592 | 27 |
| F09 | Grog and sand | 10 | 5067 | 193 | 0 | 0 | 0 | 51 | 267 | 27 |
| F11 | sandy ware | 1 | 407 | 6 | 0 | 0 | 0 | 11 | 97 | 0 |
| F17 | Grog | 25 | 9319 | 546 | 9 | 266 | 8 | 156 | 2377 | 48 |
| F22 | Grog and organic | 1 | 1328 | 13 | 3 | 14 | 5 | 0 | 0 | 0 |
| F29 | coarse sand | 5 | 1797 | 52 | 12 | 283 | 33 | 54 | 510 | 21 |
| F30 | sand and calcareous inclusions | 1 | 1506 | 3 | 0 | 0 | 0 | 7 | 390 | 62 |
| F35 | micaceous, grey, fine sandy matrix | 1 | 226 | 35 | 0 | 0 | 0 | 0 | 0 | 0 |
| R01A | Central Gaulish samian (LEZ SA) | 3 | 887 | 234 | 1 | 18 | 0 | 3 | 40 | 21 |
| R01B | South Gaulish samian (LGF SA) | 7 | 1052 | 334 | 0 | 0 | 0 | 1 | 0.5 | 0 |
| R03A | Verulamium-typewhite ware (VER WH) | 9 | 4039 | 193 | 0 | 0 | 0 | 2 | 36 | 0 |
| R03C | fine white ware | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 18.5 | 3 |
| R03 | miscellaneous white wares | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 91 | 26 |
| R03var | Verulamium oxidised ware (VER OX) | 2 | 584 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| R05 | orange sandy ware with iron pellets | 6 | 1701 | 224 | 0 | 0 | 0 | 4 | 145 | 0 |
| R05A | orange sandy ware | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 125 | 16 |
| R05B | fine orange sandy ware | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 23 | 19 |
| R05 var | orange sandy ware with occasional organic inclusions | 1 | 449 | 15 | 0 | 0 | 0 | 0 | 0 | 0 |
| R05var | white-slipped oxidised | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 16 | 0 |
| R06 | grey ware | 18 | 3584 | 314 | 0 | 0 | 0 | 83 | 976 | 70 |
| R06A | Nene Valley grey ware | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 13 | 0 |
| R06C | fine grey ware | 3 | 193 | 100 | 0 | 0 | 0 | 21 | 30 | 13 |

Table 12: Quantification of later Iron Age to early Roman pottery fabrics

| BCTS | Description (NRFC) | SITE A cemetery |  |  | SITE A other features |  |  | SITE C |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | No of vessels | Wt (g) | EVE | No of sherds | Wt (g) | EVE | No of sherds | Wt (g) | EVE |
| R06H | white-slipped grey ware | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 0 |
| R07 | sandy black ware | 29 | 14911 | 964 | 154 | 1045 | 152 | 98 | 563 | 46 |
| R08 | micaceous black ware | 0 | 0 | 0 | 1 | 56 | 0 | 0 | 0 | 0 |
| R11E | Oxfordshire white ware (OXF WH) | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 74 | 0 |
| R13 | shelly ware | 9 | 5158 | 200 | 6 | 32 | 0 | 143 | 1841 | 153 |
| R32A | British lead glazed ware | 0 | 0 | 0 | 1 | 13 | 0 | 0 | 0 | 0 |
| R38 | miscellaneous colour-coated ware | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 |
| TOTAL |  | 131 | 52208 | 3426 | 196 | 1756 | 199 | 800 | 8251 | 552 |

Table 13: Summary of vessels present from each burial

| Burial no. | Urns | Accessory <br> vessels | Stray <br> sherds | Subtotals |
| :--- | :---: | :---: | :---: | :---: |
| 1 | 0 | 3 | 0 | 3 |
| 2 | 3 | 0 | 1 | 4 |
| 3 | 1 | 3 | 0 | 4 |
| 4 | 1 | 2 | 0 | 3 |
| 5 | 1 | 0 | 0 | 1 |
| 6 | 2 | 3 | 3 | 8 |
| 7 | 1 | 1 | 0 | 2 |
| 8 | 1 | 1 | 1 | 3 |
| 9 | 1 | 2 | 0 | 3 |
| 10 | 1 | 2 | 2 | 5 |
| 11 | 1 | 2 | 0 | 3 |
| 12 | 1 | 2 | 0 | 3 |
| 13 | 1 | 0 | 0 | 1 |
| 14 | 1 | 0 | 0 | 1 |
| 15 | 1 | 2 | 0 | 3 |
| 16 | 1 | 3 | 0 | 4 |
| 17 | 1 | 1 | 0 | 2 |
| 18 | 1 | 0 | 2 | 3 |
| 19 | 1 | 2 | 0 | 3 |
| 20 | 0 | 1 | 0 | 2 |
| 21 | 3 | 1 | 0 | 1 |
| 22 | $\mathbf{1}$ | 0 | 0 | 1 |
| 23 | $\mathbf{2 7}$ | $\mathbf{3 4}$ | 0 | 3 |
| 24 | $\mathbf{6 6}$ | $\mathbf{1 2}$ | $\mathbf{7 2}$ | $\mathbf{1 3 1}$ |
| Subtotals | $\mathbf{1 7}$ |  |  |  |


| Burial no. | Urns | Accessory <br> vessels | Stray <br> sherds | Subtotals |
| :--- | :---: | :---: | :---: | :---: |
| 25 | 2 | 0 | 0 | 2 |
| 26 | 1 | 1 | 0 | 2 |
| 27 | 1 | 1 | 0 | 2 |
| 28 | 0 | 3 | 1 | 4 |
| 29 | 1 | 1 | 0 | 2 |
| 30 | 1 | 2 | 0 | 3 |
| 31 | 1 | 0 | 0 | 1 |
| 32 | 1 | 2 | 1 | 4 |
| 33 | 1 | 3 | 0 | 4 |
| 34 | 1 | 1 | 0 | 2 |
|  | 1 |  |  |  |
| 36 | 1 | 0 | 0 | 1 |
| 37 | 0 | 3 | 0 | 4 |
| 38 | 1 | 3 | 0 | 3 |
| 39 | 1 | 0 | 0 | 4 |
| 40 | 1 | 0 | 0 | 1 |
| 42 | 0 | 0 | 1 |  |
| 43 | 1 | 5 | 0 | 1 |
| 44 | 1 | 1 | 1 | 7 |
| 45 | 1 | 2 | 0 | 1 |
| 46 | 1 | 1 | 1 | 4 |
| 47 | $\mathbf{1}$ | 0 | 0 | 2 |
| 49 |  | $\mathbf{3 3}$ | 0 | 1 |
| 50 | 1 |  |  | 1 |

Table 14: Summary of vessel forms from the burials

| Burial no. | Urns | Accessory vessels | Date | Burial no. | Urns | Accessory vessels | Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | none | jars x2, platter | late Iron Age | 25 | jar x2 | none | late Iron Age |
| 2 | jars x3 | none | early Roman | 26 | jar | ? jar | late Iron Age |
| 3 | jar | platter, collared rim flagon, jar | pre-Flavian | 27 | jar | jar/bowl | late Iron Age |
| 4 | jar, beaker | beaker | C1/C2 | 28 | none | jar, beaker, platter | pre-Flavian |
| 5 | jar | none | early Roman | 29 | jar | butt beaker | pre-Flavian |
| 6 | jars x2 | SG dish, ring-neck flagon beaker | C1/C2 | 30 | jar | flask, CG dish | TrajanicHadrianic |
| 7 | jar | beaker | Flavian-Trajanic | 31 | jar | none | late Iron Age |
| 8 | jar | SG dish | Flavian | 32 | jar | flagon, jar | pre-Flavian |
| 9 | jar | flagon, CG dish | Trajanic | 33 | jar | jar, jar/goblet, jar/bowl | late Iron Age |
| 10 | jar | flagon, dish | C1/C2 | 34 | jar | flagon | pre-Flavian |
| 11 | jar | flask, beaker | C2 |  |  |  |  |
| 12 | jar | jars x2 | C1/C2 | 36 | jar | none | late Iron Age |
| 13 | jar | none | late Iron Age | 37 | jar | flagon, beaker/small jar x2 | pre-Flavian |
| 14 | jar | none | C1/C2 | 38 | jar | flagon, SG dish | Flavian |
| 15 | jar | beaker, CG dish | Hadrianic | 39 | jar | flagon, ?beaker, SG dish | Flavian-Trajanic |
| 16 | jar | flagon, SG dish, beaker | pre-early <br> Flavian | 40 | jar | none | pre-Flavian |
| 17 | jar | jar | early Roman | 42 | jar | none | late Iron Age |
| 18 | jar | none | C1/C2 | 43 | jar | none | pre-Flavian |
| 19 | jar | butt beaker x2 | pre-Flavian | 44 | beaker | butt beaker; beaker x2, platter, jar | pre-Flavian |
| 20 | jar | beaker | Flavian-Trajanic | 45 |  | beaker | Flavian-Trajanic |
| 21 | jar | none | late Iron Age | 46 | butt beaker | jar, platter | pre-Flavian |
| 22 | none | jar | Iron Age/Roman | 47 | jar | beaker | early Roman |
| 23 | jar, 2x butt beakers | none | pre-Flavian | 49 | jar | none | late Iron Age |
| 24 | jar | bowl; ?jars x2 | late Iron Age | 50 | jar | none | early Roman |

The third phase of use belongs to the Flavian or Flavio-Trajanic period and comprises some twelve burials which are mainly clustered in the southern part of the cemetery (Burials 4, 6, 7, 8, 10, 12, 14, 16, 18, 38, 39, 45). Two graves contained just the urn (Burials 14, 18) and two just the accessory vessels (Burials 38, 45). Within the group the three earliest graves appear to be Cremation burials 8,16 and 38 , all with Flavian period South Gaulish samian dishes. Cremation burial 8 had a Dragendorf 18 dish stamped by the pottery Paulus, which dates from AD70-95; Cremation burial 16 had a Dragendorf 15/17 dish with an illegible stamp, but the form dates from the pre-Flavian period and was losing popularity by the Flavian period. In addition, Cremation burial 16 was furnished with a Verulamium region flagon and black sandy ware beaker. Cremation burial 38 contained a South Gaulish samian Dragendorf 18 dish, stamped by the potter Calvus, who has a production date of AD65-90. This burial also had a Verulamium region flagon and a jar. Cremation burial 39 also produced a South Gaulish Dragendorf 36 dish which had been broken in half and repaired with three lead rivets. Two graves produced single accessory vessels in addition to the cremation urn (Burials 7, 8); whilst three produced two vessels (Burials 4, 10, 12). Four burials produced three accessory vessels (Burials 6, 16, 38, 39). In most cases these comprised table wares for drinking or consuming food, for example, flagons, flasks, dishes and beakers. In the case of Cremation burial 12 the grave produced two additional jars.

The fourth and last phase dates to the early to mid-2nd century for which five burials were distinguished in a tight group in the southern part of the area (Burials 9, 11, 15, 20, 30). At least two of the graves cut others in the group: Burial 15 was cut by Burial 11, and Burial 9 was cut by Burial 20. Three of the graves contained Central Gaulish samian dishes. Cremation burial 9 contained a Dragendorf 18/31 dish stamped by the potter Avitus, active in the period AD120-150. Cremation burial 15 contained a Curle 23 dish with a pitted interior and badly abraded rosette stamp, suggesting a Hadrianic or even early Antonine date. Cremation burial 30 contained a Dragendorf 18/31 dish and two pieces of a second vessel of Dragendorf $18 / 31$ or 31 . The former was originally stamped but this has spalled away, these vessels also suggest a Hadrianic or early Antonine date. Three of the graves contained a flask or flagon (Burials 9, 11, 30), and three other graves contained a beaker: a plain poppyhead beaker (Burial 15); a small black sandy ware everted rim beaker (Burial 11) and a fine grey ware beaker decorated with barbotine dots (Burial 20).

## Modifications to vessels

Unfortunately the condition of the pottery makes it difficult to assess to what degree some vessels may have been modified prior to burial. At least two vessels have holes drilled through the walls after firing (Burials 35, 37). One samian dish was broken prior to burial and repaired with three lead rivets. Whether this was done as a deliberate act for the burial ritual or was a reused old vessel is uncertain, it can be paralleled at the cemeteries at Dunstable (Wild 2010, 252) and Harlington (Dickinson 2001, 29). At least three of the complete or semi-complete vessels have a small portion of rim missing. One flagon is complete apart from its handle. The absence of a lower attachment scar might suggest this too could have been a waster.

## Regional parallels

A number of small cemeteries spanning the later pre-Roman Iron Age into the early Roman period have been investigated in the region, most notably King Harry Lane, Verulamium (Stead and Rigby 1989) and Hinxton Rings, Cambridgeshire (Hill et al 1999). Within Bedfordshire contemporary rural cemeteries are known at Salford (Dawson 2005), Dunstable (Edwards 2010), Biddenham Loop (unpublished), Kempston, Harlington (Dawson 2001) and a single rich burial at Stotfold (BCAS 1997).

The two cemeteries excavated at Court Drive, Dunstable and at Harlington show some overlap in terms of chronology and burial practice to the M1 cemetery. At Court Drive there were twenty cremations of which sixteen were urned. The chronological range is similar with the M1 cemetery, falling out of use in the 2nd century. Similarly, most of the vessels were in a local sandy ware accompanied in nine cases by accessory vessels including both South and Central Gaulish samian all of which was stamped. Like the M1 burials one samian vessel had been broken and repaired. Verulamium region vessels were found in two burials and two local platters copying imported moulded Gallo-Belgic forms were present although in different fabrics to the M1 examples. The dominant sandy fabric is not the same as the M1 group, suggesting slightly different local ceramic traditions in terms of the sandy wares in the early Roman period, but there is some overlap for the earlier grog-tempered vessels and the shelly wares. The selection and range of vessel forms are directly comparable.

The Harlington cemetery is smaller in size, with around thirteen cremations producing a total 37 pottery vessels with a suggested chronology from the Flavian through to the Trajanic/Hadrianic period (Dawson 2001, 37). The range of pottery suggests a community of slightly higher status compared to the M1 burials, if the vessels selected for burial can be seen as an indicator of such. At least twelve samian vessels were used as accessory vessels ranging in date from the Claudian to the Trajanic or early Hadrianic periods. In addition there were at least two Gallo-Belgic white wares; a butt beaker and a flagon; a stamped terra nigra platter, and a glazed Central Gaulish flagon. The three Gallo-Belgic vessels came from one burial. The grave with the GalloBelgic vessels and one with two grog and sand tempered jars could be pre-Flavian in date.

A small cremation cemetery at Salford (Dawson 2005) comprising four burials each with two vessels, appears to predate the M1 cemetery, being dated to the end of the 2nd to mid-1st centuries BC (Dawson 2005, 79). However, the pottery, all of which is grog or grog and sand-tempered in fabrics F09 and F06B, together with the brooches, suggests that at least two could date to the early 1st century AD.

The rural character of the cemetery is further emphasised in comparison with the cemetery at King Harry Lane, Verulamium, which is again broadly contemporary, but furnished with a far greater number of imported continental fine wares (Stead and Rigby 1989).

## Boundary features near the cremation cemetery (Site A)

A number of ditches and at least one pit were located adjacent to the cemetery that produced a moderately small assemblage of some 196 sherds $(1,756 \mathrm{~g})$ and with an EVE of 1.99. Apart from a possible residual sherd of coarse calcined flint-tempered ware from ditch 4071, these features appear to be broadly contemporary with the use of the cemetery, and the material spans the later Iron Age through to the 2nd century.

Pottery was recovered from thirteen features and the subsoil. The distribution of material is quite sparse with the largest assemblage from ditch 4026 comprising 73 sherds $(564 \mathrm{~g})$, which is $37 \%$ of the total assemblage by sherd count.

Pit 4014 appears to be one of the earlier features with just four sherds; three fine flinttempered wares and one grog-tempered sherd. Probably contemporary with this were ditch 4084/4010; with just four sherds (182g) from a thickened-rim grog and organictempered jar and a grog-tempered storage jar; and ditch 4071 with just two grogtempered sherds, weighing 7 g .

The large boundary ditch to the south of the area, ditch 4021/4006/4008, produced just fifteen sherds of pottery; none featured, with a mixture of shelly, grog-tempered and sandy wares and probably suggesting a later Iron Age or early Roman date. The southern extension, ditch 4245 , produced 36 sherds ( 367 g ) from a single everted rim, cordoned jar in black sandy ware which may be a disturbed cremation vessel of probable early Roman date (Fig 17, 3). Similarly multiple sherds from ditch 4026 are part of a bifid rim jar in a black surfaced, pink sandy local ware that may have been once associated with the cemetery (Fig 17, 2). Other sherds from this feature, mostly wheel-made sandy wares suggest a 2nd century date. Pottery from ditches 4004 (Fig 17,1 ) and 4077 would also intimate an early Roman date in the later 1st or early 2nd centuries, although the evidence is sparse. Ditch 4012 produced a single glazed sherd which is probably of British manufacture and dating to the early 2nd century.

The incidence of material is quite low, suggesting that the focus of settlement activity lay outside the investigated area. The character of the pottery suggests a fairly modest rural settlement nearby from the later 1st century BC or early 1st century AD, which continued into the early Roman period before being abandoned.

## Ditches and pits close to settlement (Site C)

The features excavated in Site C produced a slightly larger assemblage of 434 sherds $(7,058 \mathrm{~g})$ with an EVE of 5.52 . The material is not that well-preserved with an average sherd weight of 10.3 g , which may be a reflection of the soft nature of the fabrics.

Pottery was recovered from nineteen features; pits, gullies and ditches and appears to broadly span the early 1 st to later $2 \mathrm{nd} / 3 \mathrm{rd}$ centuries. Most of the wares are local with grog-tempered sherds accounting for 37\% (fabrics R05, R06, R09 and R17); 17.9\% are shelly wares, $14 \%$ are pre-Roman sandy wares and $36.7 \%$ are Roman wares (excluding shelly wares). Imports are present but rare and are confined to a single sherd of South- and three sherds of Central Gaulish samian, Verulamium region white wares and an Oxfordshire white ware mortarium sherd. A general lack of diagnostic material or datable imports prevents close dating. Jars dominate the form repertoire with several lid-seated and rolled rim types as might be expected from a rural assemblage of this date. Storage jars are also present.

The earlier features are characterised by a moderately high proportion of grogtempered or related wares and include ditches 7030,7036 and 7165 , which date to the latest pre-Roman Iron Age or early pre-Flavian Roman period (Fig 17, 5-6). Ditch 7040 produced 122 sherds, including the substantial part of a squat bowl (Fig 17, 4), which also appears to be broadly of pre-Flavian date. One of the larger and later assemblages ( 86 sherds, 1,333g) came from pit 7018, which included cross-fits between the fill layers, suggesting a fairly rapid fill from the same source. Amongst the vessels are flagons, a large flat-topped bowl (Fig 17, 8), jars and an indented beaker which might suggest a date in the second half of the 2nd century or later. There are no grog-tempered wares present and few shelly wares. Ditch 7010 may similarly be one of the later features on the site. Gully group 7049 collectively produced some 71 sherds $(809 \mathrm{~g})$ although quite fragmented in condition. Again the group suggests a provisional abandonment date in the mid to late 2nd century.

Other vessels of note include part of a triple vase in a fine white ware from gully 7051 (Fig 17, 7). The same feature produced the only sherd of Oxfordshire white ware mortaria from the site indicating a likely 2nd century date at the earliest.


## Illustrated pottery (Fig 17)

1 Lid seated jar, handmade, wide-mouthed, fabric F29, fill 4003, ditch 4004
2 Jar, wheelmade, bifid rim, narrow-mouthed, fabric R07, fill 4025, ditch 4026
3 Jar, wheelmade everted rim with shoulder bulge, fabric R07, fill 4243, ditch 4245
4 Bowl, squat, everted rim, fabric F30, fill 7041, ditch 7040
5 Bowl or cup, small hemispherical, fabric F09, fill 7168, ditch 7169
6 Lid-seated jar, fabric R13, fill 7168, ditch 7169
$7 \quad$ Part of a triple vase, fabric R03C, fill 7050, gully 7051
8 Large flat rim bowl decorated with a burnished line lattice, fabric F29, fill 7013, pit 7018

### 5.5.2 Other Iron Age and Roman finds by Tora Hylton

The excavations produced a small collection of finds dating from the late Iron Age through to the 2nd century AD. The majority of finds (20) were recovered from the cremation cemetery (Site A), while a smaller number (8) were located in deposits associated with the Hillside Settlement (Site C). The assemblage is dominated by nails, some presumably related to the remains of pyre debris or goods. Of particular interest is the presence of a range of unburned items buried as grave goods, which had been placed with the remains of the calcined bones. These grave offerings are mainly items of personal ornament.

## Items from the Roman cremation cemetery (Site A)

There are twenty individual or group registered finds from thirteen Cremation burials. These have been sub-divided by period (Table 15). With the exception of an iron disc from a pre-Roman late Iron Age cremation (Burial 31), all finds, including iron nails and miscellaneous fragments, were recovered from early Roman Cremation burials (Burials $3,23,32,34)$.

Table 15: Finds associated with Cremation burials by phase

| Period/date | Burial no. | Context | Description (SF) |
| :---: | :---: | :---: | :---: |
| pre-Roman late Iron Age (1st centuries $B C$ to $A D$ ) | 13 (indet.) | 4119 | Fe nails $\times 2$ (SF145) |
|  | 31 (adult ?m) | 4172 | Fe disc (SF81) |
|  | 33a (adult) | 4186 | misc. Fe frag (SF142) |
| Transitional late Iron Age to early Roman (mid-1st century AD, AD40-65) | 23 (group x3) | 4143 | Cu brooch (SF150) |
|  | 2 (adult ?m) | 4068 | misc. Cu frag (no SF) |
|  | 3 (adult) | 4080 | Bronze mirror (SF13) |
|  |  |  | Cu alloy brooch (SF14) |
|  |  |  | nails (SF16, 17, 137, 144) |
|  |  |  | misc. Fe frags (SF18, 15) |
|  | 32 (adults x2) | 4173 | Fe brooch (SF143) |
|  | 34 (adult) | 4200 | ceramic roundel (SF149) |
|  | 37 (adult ?) | 4204 | Cu alloy brooch (SF151) |
|  | 43 (adult) | 4217 | Fe nail x 1 (SF152) |
| Roman, Flavian/Flavo-Trajanic (late 1st to early 2nd centuries AD) | 4 (adult ?m) | 4095 | Fe nails x 4 (SF146) |
| Roman, Hadrianic/Antonine (early to mid-2nd century AD) | 11 (adult ?f) | 4111 | Fe nails x2 (SF139) |
|  | 15 (adult, juv) | 4127 | Fe nails x2 (SF140) |

Iron disc
With the exception of two nails and an undiagnostic fragment, just one object was recovered from the pre-Roman late Iron Age cremations, a perforated iron disc from Cremation burial 31, thought to be that of an adult male (Figs 18-19).


The iron disk (SF81) from Cremation burial 31, showing the double notches, top, and the X-ray image showing the central rivet and the notches, top left (Scale 10mm)


The iron disk (SF81), close-up views of the pair of semi-circular notches (Scale 10mm)

Fig 19
The disc had been placed beside the accessory vessel and on top of the cremated bone which had been deposited in the base of the burial pit. There are no signs to indicate that it had been burnt, suggesting that it had been placed in the pit as a grave offering. The presence of mineral-preserved organics on one side of the disc, suggests that it had either been placed next to or was attached to an item of wood. Identification of the disc is somewhat problematic, but similar objects have been recovered from cremation deposits of late Iron Age date. The disc appears to taper slightly towards the outside edge, forming a 'circular blade' and the edge of the perforation is slightly thickened, suggesting a need for reinforcement. At the centre of the perforation there is a miniscule hole, $c .1 \mathrm{~mm}$ in diameter, suggesting that a tubular rod (up to 5 mm thick) may have been present, rather like that described by Lavender (1991, 206-208). On one side of the disc there are two adjoining semi-circular notches, $7-8 \mathrm{~mm}$ wide and 6 mm apart, a feature noted on examples recovered from late Iron Age cremations at Biddenham Loop, Bedfordshire (Duncan 2008, fig 9.13, RA118) and Monkston Park, Milton Keynes (Wardle et al 2006, fig 17, 1.3). The latter example is damaged, so only a vestige of the notch survives. These discs have not been found in large numbers, less than fifteen have been recovered from domestic and cremation deposits in an area south of the Wash and the Severn (Duncan 2008) and complete examples range in recorded diameter from 45-

89 mm . Although their function is unknown, previous suggestions include a razor or belt fitting (Hill et al 1999, 257), a rotating knife for craftwork (Wardle et al 2006, 18), or a measuring device or knife for specialised use (Duncan 2008).

## Brooches

There are four brooches and all were recovered from pre-Flavian Cremation burials dating to c.AD40-65. Three of the brooches are copper alloy and were recovered from Cremation burials 3,23 and 37. There is one iron brooch from Cremation burial 32. With the exception of the brooch from Burial 3, which lay beside the primary and accessory vessels together with part of a mirror and a small group of nails, the other brooches had been placed on top of the calcined bone which had been collected and placed in the primary urn. Although damaged or in some cases badly corroded, none of the brooches displayed signs of having been burnt, indicating that they had not been placed on the pyre, but had been left as a grave offering.

The earliest datable primary urn recovered with a brooch was a locally produced butt beaker of late Iron Age form. The Colchester brooch that had been placed with it is plain and may be paralleled with Mackreth's type 2b (2011, plate 22, 211), which dates to the mid-1st century AD. The other two brooches which had been placed on the top of primary urns are Nauheim derivative brooches, a simple one-piece brooch forged from a rolled or folded sheet and dating to the mid-late 1st century AD. One is made from copper alloy and is simply decorated with a shallow groove down the front of the bow and the other is made from iron. Finally, a Colchester derivative brooch decorated with a zig-zag motif and representing Mackreth's type 1.a.1.b (2011, plate 31, 1127), which also dates to the mid-late 1st century AD had been placed outside the vessel, possibly in a small box or casket.


Mirror, copper alloy, incomplete and broken into seven pieces (Scale 10mm)
Fig 20

## Mirror

Part of a polished bronze mirror was recovered from Cremation burial 3, it lay beside the primary urn and accessory vessels and was recovered with a copper alloy brooch, nails and miscellaneous iron fragments. Although incomplete, and in seven pieces, when reconstructed to form a single fragment, the remains of the mirror measure 73 mm by 60 mm , equivalent to $c .320 \mathrm{~mm}^{2}$ (Fig 20). It is difficult to determine the original size of the mirror, but the presence of two straight edges at right angles to each other, indicate that it represents a simple rectangular mirror, the most popular form in the Roman world (Lloyd-Morgan 1983, 106). The mirror measures just 1 mm thick and like other excavated examples it has been manufactured from an alloy with a high percentage of tin bronze which helps to prevent it from breaking (Lloyd-Morgan 1977, 330). The upper surface of the mirror is highly polished and the underside is matt/pitted; the edges of the mirror are slightly bevelled and would presumably have been inserted into a wooden frame or box, but no evidence survived, unlike a complete example from Towcester which retained much of its original wooden frame (ibid 1983).

## Ceramic roundel/counter

A ceramic roundel was recovered from the top of the primary urn from Cremation burial 34. The roundel has been made from a reused body sherd of pottery with the underside slightly concave and originating from a locally produced grog-tempered ware vessel (either fabric F09 or F17). The edges of the sherd have been pared down to form a disc measuring 29 mm in diameter, 4 mm thick and weighing 3.6 g . Pottery roundels are common finds on Roman sites and their function has been discussed by Crummy (1983, 93). Given that wear is evident on the surface of the disc, in the form of a faint sheen and feels smooth, a gaming piece seems the obvious possibility; however, Crummy also suggests that small counters like this example may be weights for use in the kitchen.

Nails
There were fifteen nails in total and two rod fragments, presumably representing shanks, recovered from cremation deposits. Where possible the nails have been classified according to Mannings typology (1985, fig 32). With the exception of one nail with a wedge-shaped head, all appear to represent Mannings type 1b, with flat sub-circular heads and tapered square-sectioned shanks. Eight nails are complete and range from $25-30 \mathrm{~mm}$ in length. Those representing the smaller size range have heads measuring $c .7 \mathrm{~mm}$ in diameter, while the large examples have heads measuring $c .10-11 \mathrm{~mm}$ in diameter. With the exception of two nails from Cremation burial 3 (SF10, 17), all the others were recovered from deposits inside ceramic vessels and presumably represent the remains of pyre debris. Four nails, from Cremation burials 4 (SF146), 11 (SF139), 15 (SF140) and 43 (SF152), had fragments of calcined bone adhering to corrosion deposits, while a further two nails from Cremation burial 3 (SF137, 144) appear to have mineral preserved organics, probably wood, adhering to their surfaces. Two of the nails from Cremation burial 4 are distinctly well preserved, there is little if any corrosion adhering to the surface of the nails, this may be due to the preservative action that high temperatures can have on iron at $200^{\circ} \mathrm{C}$. The nails from cremations would have had numerous applications; they may have been used in the manufacture of caskets or coffins, through to a range of offerings or pyre goods.

## Items from Site C

With the exception of two 4th-century copper alloy coins recovered from ditch 7039 (see 5.5.3), only eight registered finds were recovered. A group of six hobnails, presumably for use with shoes, were recovered from gully 7051. Two undiagnostic fragments, one possibly a shank from a large nail, were recovered from ditch 7040.

### 5.5.3 The coins by lan Meadows

Two coins, dating to the early to mid-4th century, were recovered from primary fill 7038 within ditch 7039, the final phase in a sequence of Roman boundary ditches in Site C.

## SF128

A much corroded coin, 18 mm diameter, the reverse type of which appears to be VOT X within a wreath, the surrounding legend and mint mark are not legible. This issue ceased to be produced at western mints, except Ticinum, prior to November AD324. The obverse face clearly bears a bust from the House of Constantine but again the detail and surrounding legend are too corroded. At one point around the circumference of this coin a short slightly thicker sprue is present indicating this coin is a contemporary cast forgery.

## SF129

This is a partial flan of a coin of Constantius. The surviving fragment has a maximum dimension of 15 mm . The reverse bears the distinctive two soldiers double standard of the GLORIA EXERCITVS issue of AD330-335, the legend and the mint mark are missing owing to erosion of the flan. The obverse bears part of the bust and the end of the legend, -VSNOBC , indicating it was Constantius.

### 5.5.4 The building materials by Pat Chapman

The Roman building materials were sparse, found only in Site C (Table 16).

## Tile

One small sherd from a box flue tile was residual in medieval layer 7006/7081. It is made from a hard sandy orange fabric, the combing design is of a concentric square made with widely spaced narrow incisions. There is also one small possible floor type tile body sherd from Roman boundary ditch 7048, made from a slightly soft fine orangepink fabric.

Table 16: Quantification of late Iron Age and Roman fired clay

| Context / feature | No | Wt (g) | Comment |
| :---: | :---: | :---: | :---: |
| 7008 / ditch 7010 | 7 | 104 | reddish-brown clayey silt - badly-made brick? |
| 7013 / pit 7018 | 49 | 259 | orange-brown silty sand and grey flat surfaces-daub |
| 7016 / pit 7018 | 1 | 6 | red-brown silty sand |
| 7026 / ditch 7030 | 7 | 111 | silty white, pink surfaces, flattish to 15 mm thick; orange-brown silty sand and grey flat surfaces-daub |
| 7028 / ditch 7030 | 4 | 80 | orange-brown silty sand and grey flat surfaces-daub |
| 7029 / ditch 7030 | 21 | 270 | slightly soft red-brown to light brown silty sand, occasional smooth but uneven surfaces |
| 7037 / ditch 7039 | 2 | 37 | orange-brown silty sand and grey flat surfaces-daub |
| 7038 / ditch 7039 | 14 | 557 | red-brown clayey sand similar to brick, surfaces irregular, largest $c .115 \times 70 \times 32 \mathrm{~mm}$ |
| 7047 / ditch 7048 | 3 | 82 | 1-as brick; 1 orange-brown silty sand and grey flat surfaces-daub; 1 possible Roman soft orange-pink |
| 7050 / gully 7051 | 6 | 26 | as brick |
| 7064 / pit 7065 | 26 | 113 | very hard red-brown, flat c 10mm |
| 7168 / ditch 7169 | 14 | 136 | 5 - small flat light brown, black surface <br> 8 - tiny red-brown with brown surface <br> 1 - orange-brown with brown surface top and side, tile/brick fragment c. $75 \times 80 \times 30 \mathrm{~mm}$ |
| Totals | 154 | 1781 |  |

## Fired clay

There are 154 fragments, which weigh c.1.78kg, from Roman contexts. Amongst this material 101 fragments are daub from ditches 7030, 7039, 7048 and pit 7018. They are typically made from fine silty sand orange-brown, red-brown or white and pink, often with flat grey surfaces. Whilst these could be structural fragments, they have no wattle or other impressions.

### 5.5.5 The querns and worked stone by Andy Chapman

All of the quern and millstone fragments come from Roman features in Site C. There are fragments from three pieces of worked stone from fills 7013 and 7016, both within pit 7018.

There is a small block of fine-grained sandstone, up to 50 mm thick by 168 mm wide, with a worn slightly concave surface. The stone is 115 mm long but this is only the end of a much larger piece, its incompleteness leaves its original function unclear, but it was probably utilised as a grinding/polishing stone.

Also from fill 7013, there is a fragment from the circumference of an upper stone from a rotary quern in sandstone, $56-60 \mathrm{~mm}$ thick, with a circumference of $c .700 \mathrm{~mm}$. The grinding surface is concave, and there are dimpled tool marks around the circumference of the stone. The size is at the upper limit of hand querns.

Within fill 7016 there was a small irregular fragment of Millstone Grit, 50 mm thick, from a quern or millstone.

### 5.5.6 The metalworking debris by Andy Chapman

There is a small piece of tap slag, weighing 77 g , from fill 4070 of ditch 4071 in Site A . While tap slag derives from iron smelting, the presence of only a single small piece does not necessarily indicate that it was being carried out particularly nearby, as the process produces very substantial quantities of debris that can be widely dispersed.

There are two very small pieces of undiagnostic ferrous slag, weighing 32g, from fill 7028 of ditch 7030 in the southern area of Site C.

### 5.6 The human bone by Sarah Inskip

### 5.6.1 The cremated remains

Cremated deposits with accessory vessels were excavated and analysis suggests that there are 57 individuals from 48 burials, of whom 45 were adults, four were juveniles and eight were of unknown age. Four deposits contained two individuals (Burials 8, $15,19,37$ ), which in one case, was that of an adult and a juvenile (Burial 15), and in another was a male and a female (Burial 19). Nine possible males and nine possible females were identified. Little was observed in terms of pathology, however, osteoarthritis of the spine was evident in seven instances. The fragmentation, colour and elemental representation accorded well with those cemeteries identified at Court Drive in Dunstable (Melikan 2010) and at Harlington (Jackman 2001), which may suggest a standard method of cremation in this region at the time.

The bones were received at Southampton University for osteological reporting. The cremated deposits were quantified both in terms of weight and fragmentation levels.

The colour of the bone was used as an indicator of pyre conditions. Each deposit was assessed for age, sex and pathology.

## Archaeological background

The cremated deposits date from the late Iron Age (1st century BC) to early Roman (2nd century AD). Each cremated deposit was placed in a shallow pit which sometimes contained more than one urn and may have been originally overlain by an organic cover which has since disintegrated, permitting soil to enter the urns, and ultimately leading to the collapse of some of the vessels (Chapman 2012). Bearing this in mind, it is possible that some of the skeletal material from the cremated deposits may have been lost and in a few instances post-medieval ploughing has taken the top off the cremation deposits. The urns were removed from the site using bandages until they could be processed through a 3.5 mm mesh sieve over a 1 mm sieve in a controlled environment. Some of the cremated deposits contained grave goods that included iron brooches, nails, a ceramic disc and animal bone, see Appendix 1 for details. Pyre debris was also recovered from several deposits.

Comparison was made to two nearby cemeteries at Court Drive in Dunstable (Melikan 2010) and at Harlington (Jackman 2001). General comparisons were made with the Romano-British cemetery at Westhampnett in Sussex (McKinley 1997) and two inhumation cemeteries in Dunstable (Matthews 1981; Gardner 2004).

## Methodology

The cremated deposits were examined following the Chartered Institute for Archaeologists' and English Heritage guidelines (Brickley and McKinley 2004; Mays, Brickley and Dodwell 2002). As such, the following paragraphs focus on the cremation process through analysis of quantity by weight (g), level of fragmentation and bone colour. The individual characteristics of each cremation were assessed by preservation, age, sex, and pathology.

## Fragmentation

The material was received washed and dried. Large fragments of extraneous material were removed. The cremated deposits were weighed before being passed through $10 \mathrm{~mm}, 5 \mathrm{~mm}$ and 2 mm sieves. Each sieved fraction was then recorded and weighed to the nearest gram using a digital scale. The material was then sorted into groups; skull, long bones (upper, lower and unknown), axial skeleton, hands/feet and unidentifiable elements. The largest fragment for each was measured to the nearest 1 mm .

## Pyre conditions

The colour of cremated bone is indicative of pyre conditions with white bone produced at temperatures in excess of $900^{\circ} \mathrm{C}$ with ample oxygen (Bonucci and Graziani 1975; Shipman et al 1984). Temperatures below this create varying shades of grey, blue and brown fragments. Black and brown bone is produced by poor oxygen levels and temperatures around or below $350^{\circ} \mathrm{C}$ (Mays 2010, 322). Variation in pyre conditions over the body may be detected through variation in fragment colour throughout the skeleton. As such, the colour of each cremated deposit was recorded as a whole, and also by elemental group.

## Age

Age was estimated using a number of methods, which were selected based on the skeletal development of the individual, preservation and completeness. For immature remains, methodologies rely on assessing the progressive development of bones and teeth. Accordingly, skeletally immature individuals were identified through the
presence of unfused epiphyses, and were aged based on data from Scheuer and Black (2000). No identifiable deciduous dentition was identified. Skeletally mature individuals were aged using the progressive degeneration of the skeleton, including examination of the auricular surface, as well as the degree of epiphyseal closure of late fusing skeletal elements (Buikstra and Ubelaker 1994; Brickley and McKinley 2004).

## Gender

The human skeleton is sexually dimorphic. Hormonal differences create variation in skeletal tissue, and testosterone is largely responsible for the development of male characteristics (Cox and Mays 2000, 117). The two regions that demonstrate greatest sexual dimorphism are the os coxae and the skull. Buikstra and Ubelaker (1994) outline five regions of the skull which demonstrate variation between males and females. As no substantial fragments of pelvis survived in the cremated deposits, sex estimation focused on the cranial remains. Attention was paid to the overall size and robusticity of the remains.

## Number of individuals

It is not unusual to have multiple individuals in a single cremated deposit. Duplication of skeletal landmarks, which appear once per bone, were used as an indicator of multiple individuals. For example, identification of the left petrous pyramid of the temporal bone or the axis dens.

## Results

## Preservation

Due to the loss of the organic component of bone during the cremation process, cremated bone tends to preserve well (Mays 2010). This was certainly the case for the material examined here. Spongy bone, such as that of the femoral head was fragile McKinley (1997, 245). As such, the absence of spongy bone areas should be considered with caution, as it is unknown how much these areas could have disintegrated during burial and excavation.

## Fragmentation

McKinley suggests that the number of skeletally distinguishable elements relates to the level of fragmentation; the bigger the fragments, the more that can usually be identified (1997, 69). Table 17 displays the level of fragmentation as sorted by sieve fraction. Excluding deposits with less than 100 g of material, the quantity of remains in the 10 mm and 5 mm sieves ranges from $22.98-86.71 \%$, with an average of $72 \%$. This is a figure consistent with undisturbed burials, and those of urned cremations, where protection is offered to the remains (McKinley 1997, 251). Accordingly, many skeletal elements were identified (Table 18). The level of fragmentation was similar to that at Court Drive (Melikan 2010) and at Harlington (Jackman 2001), and fits within the normal ranges identified for cremated deposits which have not been truncated. This, therefore, suggests no deliberate fragmentation of the remains after cremation and the impact of the post-medieval ploughing has been low to minimal on the actual cremations themselves.

Table 17: Weights $(\mathrm{g})$ and sieved fraction weights (g) for the Cremation burials

| Cremation burial | Weight (g) |  |  |  |  |  |  | Gender | No of individuals | Largest fragment (mm) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Context | Vessel | Total | 10 mm | 5mm | 2mm | Age |  |  |  |
| Site B pyre | 5018 | - | 385 | 139 | 173 | 74 | adult | ???female | 1 | 40 |
| 2a | 4068 | 1 | 140 | 28 | 75 | 32 | adult | ? male | 1 | 30 |
| 2b | 4068 | 2 | 17 | 0 | 6 | 11 | young adult | ?male | 1 | 6 |
| 2c | 4068 | 3 | 5 | 1 | 0 | 4 | indeterminate | indeterminate | - | 23 |
| 3 | 4072 | 12 | 57 | 15 | 28 | 13 | adult | indeterminate | 1 | 38 |
| 4 | 4095 | 20 | 633 | 241 | 261 | 131 | young adult | ?male | 1 | 53 |
| 5 | 4097 | 23 | 682 | 251 | 288 | 143 | adult | indeterminate | 1 | 42 |
| 6 a | 4091 | 29 | 1042 | 378 | 418 | 250 | adult | ?female | 1 | 52 |
| 6 b | 4091 | 30 | 1094 | 422 | 426 | 246 | adult | ??male | 1 | 61 |
| 7 | 4096 | 24 | 915 | 348 | 362 | 204 | adult | ?male | 1 | 69.5 |
| 8 a | 4114 | 40 | 161 | 0 | 37 | 122 | indeterminate | indeterminate | 1 | 15 |
| 8 b | 4114 | 40 | 369 | 186 | 132 | 50 | young/middle adult | indeterminate | 1 | 33 |
| 9 | 4110 | 33 | 862 | 283 | 313 | 266 | adult | indeterminate | 1 | 55 |
| 10 | 4109 | 32 | 1638 | 502 | 659 | 459 | middle adult + | indeterminate | 1 | 54 |
| 11 | 4111 | 36 | 902 | 294 | 354 | 254 | adult | ?female | 1 | 40 |
| 12 | 4118 | 41 | 948 | 322 | 347 | 239 | adult | indeterminate | 1 | 62 |
| 13 | 4126 | 46 | 118 | 27 | 67 | 25 | indeterminate | indeterminate | 1 | 41 |
| 14 | 4123 | 44 | 495 | 227 | 176 | 91 | adult | indeterminate | 1 | 61 |
| 15 | 4127 | 47 | 1038 | 345 | 409 | 286 | juvenile + adult | indeterminate | 2 | 57 |
| 16 | 4130 | 55 | 1128 | 480 | 425 | 223 | young/middle adult | indeterminate | 1 | 53 |
| 17 | 4149 | 57 | 718 | 232 | 284 | 202 | middle adult+ | ?female | 1 | 48 |
| 18 | 4147 | 50 | 426 | 155 | 158 | 113 | adult | ??female | 1 | 59 |
| 19 | 4168 | 73 | 1200 | 454 | 446 | 299 | adult | ?female + ?male | 2 | 71 |
| 20 | 4156 | 59 | 967 | 503 | 279 | 186 | adult | ??female | 1 | 54 |
| 21 | 4148 | 56 | 686 | 119 | 212 | 130 | adult | indeterminate | 1 | 63 |
| 23a | 4167 | no urn | 57 | 0 | 0 | 57 | adult | indeterminate | 1 | 5 |
| 23b | 4143 | 70 | 217 | 60 | 113 | 47 | indeterminate | indeterminate | - | 33 |
| 23c | 4143 | 71 | 242 | 86 | 95 | 61 | 1-2 years | indeterminate | 1 | 49 |
| 23d | 4143 | 72 | 122 | 49 | 51 | 22 | indeterminate | indeterminate | - | 44 |
| $\underline{24}$ | 4184 | 85 | 57 | 17 | 31 | 10 | adult | indeterminate | 1 | 39 |


| Cremation burial | Weight (g) |  |  |  |  |  |  | Gender | No of individuals | Largest fragment (mm) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Context | Vessel | Total | 10 mm | 5mm | 2mm | Age |  |  |  |
| 25a | 4196 | 86 | 954 | 448 | 313 | 227 | middle adult+ | ??male | 1 | 76 |
| 25b | 4197 | 87 | 212 | 40 | 113 | 59 | adult | indeterminate | 1 | 54 |
| 26 | 4166 | 68 | 397 | 203 | 140 | 53 | adult | indeterminate | 1 | 50 |
| 27 | 4169 | 78 | 780 | 322 | 268 | 189 | adult | ? male | 1 | 84 |
| 29 | 4161 | 62 | 191 | 77 | 84 | 31 | adult | indeterminate | 1 | 50 |
| 30 | 4181 | 76 | 424 | 148 | 198 | 79 | adult | indeterminate | 1 | 43 |
| 31 | 4172 | 80 | 321 | 118 | 108 | 95 | adult | ?male | 1 | 40 |
| 32a | 4176 | 84 | 368 | 112 | 159 | 96 | adult | indeterminate | 1 | 50 |
| 32b | 4175 | no urn | 980 | 373 | 368 | 337 | adult | ??female | 1 | 46 |
| 33a | 4186 | 89 | 250 | 56 | 113 | 83 | adult | indeterminate | 1 | 35 |
| 33b | 4185 | no urn | 130 | 32 | 71 | 27 | adult | ?female | 1 | 28 |
| 34 | 4200 | 93 | 691 | 316 | 230 | 142 | adult | indeterminate | 1 | 87 |
| 36 | 4189 | 92 | 28 | 13 | 10 | 5 | indeterminate | indeterminate | 1 | 21 |
| 37 a | 4204 | 98 | 474 | 154 | 191 | 129 | adult | indeterminate | 1 | 45 |
| 37 b | 4204 | 98 | 748 | 181 | 303 | 242 | middle adult+ | indeterminate | 1 | 44 |
| 38 | 4240 | no urn | 222 | 103 | 87 | 33 | adult | indeterminate | 1 | 42 |
| 39 | 4231 | 105 | 692 | 325 | 275 | 93 | middle adult+ | ?female | 1 | 45 |
| 40 | 4202 | 97 | 308 | 99 | 159 | 122 | adult | indeterminate | 1 | 40 |
| 41 | 4205 | no urn | 24 | 10 | 11 | 3 | indeterminate | indeterminate | 1 | 30 |
| 42 | 4207 | 101 | 33 | 9 | 19 | 5 | indeterminate | indeterminate | 1 | 33 |
| 43 | 4217 | 104 | 374 | 121 | 140 | 113 | adult | indeterminate | 1 | 43 |
| 44 | 4216 | 103 | 561 | 218 | 200 | 142 | adult | indeterminate | 1 | 45 |
| 46 | 4227 | 110 | 547 | 186 | 182 | 57 | adult | indeterminate | 1 | 65 |
| 47 | 4226 | 113 | 834 | 395 | 252 | 185 | ? juvenile | indeterminate | 1 | 55 |
| 49 | 4235 | 118 | 909 | 374 | 333 | 203 | adult | indeterminate | 1 | 74 |
| 50 | 4248 | 122 | 313 | 139 | 127 | 50 | juvenile | indeterminate | 1 | 67 |

Table 18: Weight (g) of identified skeletal elements

| Cremation burial | skull | teeth | upper limb | lower limb | ? limb | axial | hands/feet | unknown |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| pyre debris | - | - | - | - |  | - | - | - |
| 2a | 20 | - | 10 | 2 | 47 | 1 | - | 80 |
| 2b | 1 | - | - | - | - | - | - | 16 |
| 2c | - | - | - | - | 1 | - | - | - |
| 3 | - | - | - | - | - | - | - | 57 |
| 4 | 69 | - | 40 | 144 | - | 50 | 32 | 298 |
| 5 | 70 | - | 102 | 187 | 79 | 38 | 5 | 201 |
| 6a | 153 | 1 | 109 | 130 | 144 | 55 | 18 | 360 |
| 6 b | 83 | 0 | 81 | 321 | 100 | 54 | 11 | 444 |
| 7 | 156 | 1 | 85 | 142 | 129 | 47 | 6 | 349 |
| 8 a | - | - | - | - | - | - | - | 162 |
| 8b | 64 | - | 51 | 69 | 70 | 23 | 5 | 87 |
| 9 | 106 | - | 68 | 154 | - | 71 | 14 | 448 |
| 10 | 116 | 6 | 127 | 209 | 206 | 81 | 18 | 875 |
| 11 | 87 | - | 86 | 141 | 96 | 34 | 36 | 500 |
| 12 | 74 | - | 72 | 226 | 107 | 63 | 11 | 343 |
| 13 | - | - | - | - | 58 | 2 | 2 | 57 |
| 14 | 47 | 1 | 58 | 139 | 31 | 15 | 6 | 169 |
| 15 | 114 | 1 | 114 | 172 | 62 | 64 | 22 | 481 |
| 16a | 22 | - | 18 | 33 | 18 | 15 | 9 | 198 |
| 16b | 136 | - | 119 | 209 | 36 | 43 | 34 | 159 |
| 17 | 134 | 1 | 41 | 58 | 20 | 58 | 28 | 377 |
| 18 | 48 | - | 71 | 80 | 21 | 2 | 5 | 197 |
| 19 | 94 | 1 | 101 | 313 | 97 | 47 | 9 | 1337 |
| 20 | 157 | - | 129 | 170 | 39 | 24 | 22 | 432 |
| 21 | 104 | - | 84 | 99 | 21 | 61 | 14 | 304 |
| 24 | 6 | - | - | - | - | - | - | 6 |
| 23a | 4 | - | 3 | 29 | 9 | 12 | - | 65 |
| 23b | 16 | - | 34 | 60 | 17 | 3 | 3 | 85 |
| 23c | 58 | 1 | 24 | 38 | 2 | 17 | 4 | 144 |
| 23d | 2 | - | - | - | - | - | - | 2 |


| Cremation burial | skull | teeth | upper limb | lower limb | ? 1 limb | axial | hands/feet | unknown |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 25a | 97 | - | 104 | 256 | 67 | 29 | 16 | 485 |
| 25b | 8 | - | 23 | 37 | 41 | 4 | 2 | 96 |
| 26 | 94 | - | 30 | 86 | 97 | 18 | 3 | 160 |
| 27 | 193 | - | - | - | 240 | 48 | 2 | 297 |
| 29 | 26 | - | 29 | 47 | 21 | 8 | 4 | 82 |
| 30 | 37 | 1 | 48 | 116 | 16 | 19 | 6 | 184 |
| 31 | 45 | - | 16 | 77 | 23 | 9 | 2 | 102 |
| 32a | 31 | 1 | 45 | 111 | 22 | 7 | 3 | 148 |
| 32b | 67 | 3 | 109 | 167 | 21 | 26 | - | 592 |
| 33a | 46 | - | 13 | 40 | 6 | 2 | 2 | - |
| 33b | 40 | 0.5 | - | - | 36 | 2 | - | - |
| 34 | 72 | 1 | 90 | 178 | 48 | 31 | 14 | 218 |
| 36 | 1 | - | - | - | 17 | 1 | 1 | 8 |
| 37a | 60 | 1 | 24 | 130 | 5 | 9 | 1 | 244 |
| 37b | 64 | 1 | 81 | 146 | 23 | 13 | 10 | 364 |
| 38 | 43 |  | 28 | 67 | 8 | - | - | 118 |
| 39 | 127 | 1 | 122 | 176 | 51 | 5 | 24 | 195 |
| 40 | 46 | - | 23 | 55 | 33 | 12 | 1.8 | 166 |
| 42 | 6 | - | - | - | 12 |  | - | - |
| 43 | 46 | - | 64 | 57 | 41 | 26 | 2 | 137 |
| 44 | 58 | - | 75 | 111 | 43 | 46 | 13 | 214 |
| 46 | 32 | - | 75 | 266 | - | 20 | 11 | - |
| 47 | 88 | 1 | 120 | 178 | 82 | 32 | 7 | 326 |
| 49 | 144 | 1 | - | 226 | 64 | 102 | 8 | 485 |
| 50 | 62 | - | 32 | 81 | 10 | 11 | 2 | 114 |

## Completeness

Modern studies demonstrate that a complete cremated adult skeleton should produce well in excess of 1 kg of bone (Mays 2010, 326; McKinley 2000, 404) and juveniles around 0.5 kg (Trotter and Hixon 1973). As such, it appears that many of the cremated deposits are incomplete (Table 17). As cremated bone is more resistant to digenesis than unburnt bone and tends to preserve well, the cremated deposits that appear underweight have been affected by something other than taphonomy, particularly as it is thought that they were not disturbed. Alternative causes include incomplete recovery from the pyre, or the significant loss of spongy bone, as discussed above.

## Skeletal element representation

An interesting feature of the deposits was the variation in the proportions of different elemental groups. Considering only deposits with over 200 g of remains, cranial elements made up between $3.8-23.9 \%$ of the deposits. The upper limb comprised between 5.0-14.4\%, whereas lower limbs made up $8.1-50.5 \%$ of the deposits. The axial remains represented between $0-11.2 \%$ of the deposits. Rather than representing a preferential recovery of the skull and mandible, the inflated proportions of cranial fragments can be explained by the high number of identifiable features on the skull. McKinley suggests that all Cremation burials are in fact 'token' and that the entire deposition of remains was not a critical aspect of burial $(1998,19)$. If this was the case, we might expect to see more uniformity in cremated deposit quantities and element representation.

The low quantity of the axial elements has been noted in many Romano-British cremated deposits, and this has been linked to the high proportion of cancellous bone in this area (McKinley 1997). For example, the vertebral bodies, sternum, the sacrum and the os coxae are largely formed of cancellous bone. In addition, the scapula is extremely fragile and prone to considerable fragmentation. As such, the lack of axial elements should not be cause for concern. In a similar fashion, the low percentage of carpals and tarsals is also likely to be due to their high cancellous bone content.

## Colour

The majority of the remains were buff or white in colour (c.85\%+). This is indicative of full oxidation of the bone and therefore, the loss of the organic component (Shipman et al 1984). In burning experiments, white and buff colouration can be associated with temperatures in excess of $900{ }^{\circ} \mathrm{C}$ (Bonucci and Graziani 1975, Shipman et al 1984). In the same experiments, light grey, grey and blue colouration was associated with temperatures above $550^{\circ} \mathrm{C}$. This demonstrates that high temperatures were reached within the pyres. As these results are consistent with the deposits recovered from Court Drive and Harlington, there was local consistency in the pyre method used.

When considering variation in colour across the body, there was little to suggest favoured burning of certain skeletal regions. In some cases, skeletal areas had less burning than others. For example, in Cremation burial 10, the elbow region was grey, while the remainder of the skeleton was buff. In Cremation burial 32 the lower limbs had significant patches of grey and black bone. This may reflect localised variations in pyre temperature, differences in weather conditions or the presence of other items now not observable in the deposit such as incinerated grave goods. In general, the lower limbs had more grey surfaces than the upper limbs, and this is probably related to differences in bone thickness. In some cases the periosteal surfaces of long bones and ectocranial vault fragments were white and buff in colour, whereas the endosteal and endocranial fragments were grey. Internal surfaces would initially be protected from heat by the external bone, but become exposed as the cremation progresses and bones fragment open. An additional observation was that some of the long bone
fragments were not the same colour through the bone matrix. While external surfaces were white or buff, the internal bone was sometimes grey or black. This was particularly notable for the lower limb bones, which are thicker than the upper limb bones. This may suggest a short, but high temperature burn with ample oxygen. As there was little colour variation between deposits, this is also indicative of a consistent standard of cremation.

The bone identified during trial trench evaluations from Trench 11, fills 1112 and 1114, had many white fragments ( $60 \%$ ) which may infer a longer exposure to heat or a higher temperature (Walker 2010). However, brown and black fragments were also present that are consistent with fragments falling to other areas of the pyre which maybe hotter or cooler. The colour of the remains within the pyre debris from pit 5019 , Site B, was similar to the cremated deposits overall.

## Demography

The number of individuals was calculated at a maximum of 62, although excluding the small deposits and pyre debris, only 57 individuals were well represented. Four deposits contained two individuals. Cremation burial 15 contained the remains of an adult and juvenile. Cremation burial 19 contained the remains of two adults, probably a male and a female, as evidenced by a discrepancy in size and the presence of two right temporal bones.

## Age

Forty-six ( $80 \%$ ) individuals were adults, four (7\%) were juvenile and seven (12.2\%) were of unknown age. This distribution is similar to that at Court Drive in Dunstable where $5 \%$ of the remains were that of children. It was possible to give age ranges for nine of the adults. This was largely based on the presence of auricular surface fragments, the degree of cranial suture close and the presence of osteoarthritis. It is extremely difficult to give precise estimates due to the limited amount of evidence. As such the categories given were wide. There were two young adults (<25 years), two young to middle aged adults (21-45 years) and five middle or older adults (45 years +). Four immature individuals were identified (Burials 15, 23c, 47 and 50). It was only possible to be specific on the age of the individual in Cremation burial 23c. The spinal column progressively fuses together during early childhood. In this individual, the neural arches were fused, but the bodies of the vertebra were not fused to the arches. As such this makes the individual around 1-2 years of age (Scheuer and Black 2000).

## Gender

Sexing cremated remains is problematic as the os coxae and pelvic traits fail to survive. This was the case in the remains examined in this report. As such, gender estimation relied on identifying cranial traits, and considering general size. Examination identified nine possible males and nine possible females. This demonstrates that there was no bias towards either gender. The Court Drive and Harlington cemeteries ageing and sexing data was limited, and it was therefore not comparable to the remains discussed here. However, the inhumation cemeteries at Friary Fields (Gardner 2004) and at Dunstable (Matthews 1981) had equal numbers of males and females.

## Pathology

The destructive nature of the cremation process usually prevents the analysis of pathology, however, some observation of osteoarthritis could be made in this case. Seven individuals had evidence of osteoarthritis in the spine. Three manifestations were identified. Six cremated deposits had osteophytes (Burials 2a, 10, 25a, 27, 37, 39). Three individuals had osteophyte development on the axis dens (Burials 10, 25a and 39). Apophyseal facet osteoarthritis was identified in Cremation burials 5, 10, and
25. The remains of the two individuals in Cremation burial 37 showed degenerative disk disease in the cervical region. As the most common pathology identified in archaeological remains, it is unsurprising that osteoarthritis was observed and was also recorded at Court Drive and Friary Fields (Mays 2010; Matthews 1981). There was no evidence for extra-spinal osteoarthritis for any of the observable joint surfaces. This probably reflects the poor survival of cancellous bone in cremated deposits rather than a lack of the disease.

Cremation burial 37 also had evidence for periostitis on a fragment of tibia shaft. This may indicate the presence of an infection or a localised trauma. Due to the fragmentation of the material, it is not possible to speculate further on the lesion. Periostitis of the tibia is extremely common in archaeological remains and its presence is unsurprising (Roberts and Cox 2003). Finally, one individual was identified as have antemortem tooth loss, again another common pathology.

## Discussion and Conclusion

The trends identified for the burials fit extremely well with others of the period and within the local region. It is extremely common to find Roman burials, both inhumation and cremated deposits, along roads. Burial in settlement boundaries was generally forbidden (Jupp and Gittings 1999). The predominant method of burial in England up until the mid-2nd century was cremation. The presence of animal bone, nails and other grave goods is another common feature and parallels can be made with the other sites both locally and further afield (Melikan 2010; Jackman 2001; McKinley 1997). Although the cremation process is ultimately destructive, much can be learnt from the analysis of cremated bone. This includes both details on the individuals, as well as the cremation process. In both cases there was great similarity between the remains examined here and that of nearby Court Drive, Dunstable (Melikian 2010) and at Harlington (Jackman 2001).

When considering the pyre conditions and the recovery of the remains, there was particular similarity between the colour and fragmentation. This may suggest that there was a standard method of cremation in the local region. All deposits demonstrate a high temperature was achieved and ample oxygen was present. In the case of the remains from Site A, the inconsistent colour identified in the bone cross section may infer a high temperature, but a short burn time in some cases. In general, there was no evidence that one area of the skeleton or elemental group was preferentially burnt. Where colour variation was present, the colours of the elemental groups were consistent with a normal burning pattern. That is, the thicker bones have colouration more consistent with lower temperatures or less exposure. In a similar fashion, inner bone surfaces (endocranial and periosteal) were more often grey than the outer surfaces (ectocranial and periosteal). Only in a two cases was there evidence for uneven burning (Burials 10, 32).

Like many cemeteries with cremated deposits, individualisation of the person being interred was inhibited by the destructive nature of the cremation process. While it was possible to tell whether the individuals were adult or juvenile in fifty instances, only ten could be given a more specific age estimate. Four juveniles, young and middle aged adults were identified. In terms of gender estimation, eighteen adults could be identified; nine possible males and nine possible females. The demography of the site was consistent with the other cemeteries in the region, and suggested that all members of the population were included in the cemetery. The presence of osteoarthritis and periostitis in the population also fits with trends identified at the cemetery at Court Drive and at Harlington. Overall, the cemetery may be considered to have held a good sample cross-section of individuals and there was nothing unusual amongst the
remains to indicate anything other than a small funerary plot serving a local rural population over 4-6 generations.

### 5.6.2 The inhumation burial

A single femur was recovered from inhumation burial 51, the other remains were too poorly preserved for exhumation. The femur was highly fragmented, possibly due to truncation, but despite this had $75 \%+$ of the cortical bone remaining. The bone, however, has been subject to rodent gnawing. Due to the loss of the epiphysis, it was not possible to assess the age the femur but the size of the bone suggests that it is either a teenager ( $15+$ years) or an adult of smaller stature. There were no pathological changes of note and due to the fragmentation it was difficult to make further statements upon the individual.

### 5.7 Environmental and faunal remains

### 5.7.1 The plant macrofossils by Val Fryer

Samples for the retrieval of the plant macrofossil assemblages were taken, seventy-six were submitted for assessment; five of these were medieval, the remainder were of late Iron Age and Roman date.

The samples were processed by the author using manual water flotation/washover. The flots were collected in a 300 micron mesh sieve and air dried prior to sorting. The dried flots were scanned under a binocular microscope at magnifications up to $\times 16$ and the plant macrofossils and other remains noted are summarised below in Table 19 and are listed within the site archive as part of the assessment. Identifications were made by comparison with modern reference specimens, and nomenclature within the tables follows Stace (1997). All plant remains were charred. Modern roots, seeds and arthropod remains were also recorded.

As none of the assemblages contained a sufficient density of material for quantification (100+ specimens), full analysis was not undertaken. This report is, therefore, an update of the plant macrofossil assessment.

## Sample composition

Plant macrofossils other than fragments of charcoal/charred wood were generally scarce, occurring within only $38 \%$ of the overall assemblages studied. Preservation was mostly very poor; many of the grains and seeds were very fragmentary and were also puffed and distorted, possibly as a result of combustion at high temperatures. In addition, the material within many of the assemblages was heavily impregnated with minerals and coated within fine silt and grit. This almost certainly prevented full retrieval of the smaller and lighter macrofossils during processing and, in some instances, may have precluded the accurate identification of the few remains which were recovered. Similar concretions were also recorded on some fragments of cremated bone, thereby masking their presence within some assemblages.

Oat, barley and wheat grains were noted along with a number of other cereals which were too poorly preserved for close identification. Chaff was very scarce, but emmer and spelt wheat glume bases were noted within the assemblages from postholes 4042, 4059 and from pit 7018.

Weed seeds were extremely scarce, occurring within only eleven assemblages. All were of common segetal and grassland taxa including brome, small legumes, goosegrass, ribwort plantain and knotgrass.

Charcoal/charred wood fragments were present at varying densities throughout. A number of assemblages were relatively sparse, except pyre deposit 5018, which was large and almost entirely composed of fragments $>5 \mathrm{~mm}$ in size. Other plant macrofossils occurred infrequently, but included pieces of charred root or stem, an indeterminate thorn and a possible tuber fragment.

The fragments of black porous and tarry material, which were recorded within $42 \%$ of the assemblages studied, were all probable residues of the combustion of organic remains at very high temperatures (including cereal grains and, in the case of the cremations, the bodies of the deceased). Other remains included pieces of burnt or fired clay, burnt stone fragments, small sherds of pottery and small pieces of coal. The latter were almost certainly intrusive from 19th-century steam powered farm machinery.

Table 19: Summary count of Roman features containing plant macrofossil remains

| Feature type | Burial pits | Pyre deposit | Pits | Spread | Postholes | Ditches/ gullies | Midden |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cereals and seeds |  |  |  |  |  |  |  |
| Avena sp. (grains) | $\begin{gathered} 2 \\ (4 \%) \end{gathered}$ | - | - | - | - | - | - |
| Hordeum sp. (grains) | $\begin{gathered} 1 \\ (2 \%) \end{gathered}$ | - | - | - | - | - | 1 |
| Triticum sp. (grains) | - | - | - | 1 | - | 2 | 1 |
| Triticum sp. (chaff) | $\begin{gathered} 2 \\ (4 \%) \end{gathered}$ | - | - | - | 2 | - | 1 |
| Cereal, indeterminate (grains) | $\begin{gathered} 8 \\ (15 \%) \end{gathered}$ | - | - | - | - | 3 | 1 |
| Seeds | $\begin{gathered} 5 \\ (10 \%) \\ \hline \end{gathered}$ | - | 1 | 1 | - | 1 | 1 |
| Other material |  |  |  |  |  |  |  |
| Charcoal <2mm | 52 (100\% | 1 | 3 | 1 | 8 | 5 | 1 |
| Charcoal >2mm | 38 (73\%) | 1 | 3 | 1 | 8 | 2 | 1 |
| Charcoal $>5 \mathrm{~mm}$ | 12 (23\%) | 1 | 3 | - | 5 | 1 | 1 |
| Charcoal >10mm | - | 1 | - | - | - | - | - |
| Charred root/stem | 16 (31\%) | 1 | - | 1 | 7 | 1 | 1 |
| Black porous and tarry residues | 22 (42\%) | 1 | - | - | 1 | 4 | 1 |
| Burnt bone | 26 (50\%) | 1 | - | - | - | 4 | 1 |
| Burnt/fired clay | 15 (29\%) | 1 | - | - | - | - | 1 |
| Burnt organic concretions | $\begin{gathered} 1 \\ (2 \%) \end{gathered}$ | - | - | - | - | - | - |
| Burnt stone | - | 1 | 1 | - | 5 | - | - |
| Average flot size | <0.1 | 1.9 | 0.4 | <0.1 | 0.1 | 0.1 | <0.1 |
| \% of flot sorted | 100\% | <12.5\% | 25\% | 100\% | 100\% | 100\% | 100\% |

## Discussion

## The Roman cremations

Fifty-two burial pit fills were submitted for assessment along with one sample from pyre deposit 5018. With rare exceptions, the assemblages from the burial pits were all extremely small (less than 0.1 litres) and sparse, with some containing only occasional flecks of charcoal. Bone fragments were particularly scarce, having been separated early in the sample processing. The few charred cereals and seeds which are recorded
were almost certainly present as either accidental inclusions or relicts of plants burnt in situ beneath the pyres.

The assemblages from Cremation burials 45 and 46 contained a far higher density of charcoal/charred wood than any of the other funerary deposits studied. In this respect, they were similar to the assemblage from pyre deposit 5018, which was both comparatively large (c.1.9 litres) and almost entirely composed of large ( $>5 \mathrm{~mm}$ ) fragments of charcoal. It is therefore tentatively suggested that these assemblages may also be derived from small deposits of pyre debris, with the cremated remains of the deceased being interred elsewhere within the cemetery.

## The other Roman features

Eighteen assemblages are from a midden, a pit, a posthole and ditch/gully fills of probable Roman date. Again, they are mostly small and sparse, and only rarely is it possible to speculate about the taphonomy of the deposits. Cereals, chaff and weed seeds are present within the assemblage from pit 7018, and these, along with a small number of bone fragments (including some burnt pieces), may indicate that in this instance, the material is derived from a small deposit of hearth waste. The presence of possible cereal processing refuse within such a context is not unusual; similar material is known to have been used as either fuel or tinder within domestic, industrial and funerary contexts in Roman Britain (van der Veen 1999). The assemblage from burnt spread 4055 may also contain a very small quantity of hearth waste, although in this instance, the evidence is somewhat sparse. It is, perhaps, more likely that these remains, along with those from ditches 7040, 7165 and gullies 7053,7057 , are derived from scattered or wind-dispersed refuse, some or all of which was accidentally incorporated within the feature fills.

With the exception of four wheat glume bases, the eight assemblages from posthole group 4015 contain little other than charcoal/charred wood fragments. However, five of the eight assemblages do contain small pieces of burnt stone, which were rarely seen elsewhere.

## Conclusions

Although a comprehensive strategy of plant macrofossil sampling was followed, the potential of the recovered assemblages was low; most were very sparse and preservation was generally very poor. Although it has not been possible to reach any comprehensive conclusions about the site or its component features, the following general points were observed:

## Roman cremation deposits

Wood appears to have been the main fuel used for the cremation pyres. Although there was some indication that dried plant materials and small roundwood may have been utilised as kindling, this evidence was sparse, largely because of the poor rate of macrofossil retrieval resulting from the heavy mineralization and encrustation of the remains. The few seeds recorded within the cremation deposits appear to indicate that grassland conditions were locally prevalent. There does not appear to be any evidence for the deposition of food offerings within the pyres.

## Other features of Roman date

These assemblages were a little unusual as plant remains were generally very scarce. The close association of some features with the cremation cemetery may, in part, explain the paucity of remains, although even in this instance, it is assumed that such an important ritual focus would have been served by other features and structures. However, it is very unlikely that any waste generated by such ancillary activities would
be typical of that seen, for example, within either domestic or agricultural contexts. Some evidence for midden deposits is recorded but is not surprising, as those constructing the pyres and conducting the ceremonies would almost certainly have left some subsidiary waste.

### 5.7.2 The charcoal by Dana Challinor

Following assessment of the charred plant remains (Fryer 2012), it was determined that the charcoal associated with the early Romano-British cremation cemetery merited further work. Of the fifty Cremation burials excavated in Site A, most produced only small quantities of charcoal, but it was considered important to examine all available material to provide a larger dataset for interpreting the use of wood fuel in cremation. Thirty-eight cremation-associated samples were examined; comprising material from cremation urns, the backfill of burial pits, an un-urned burial and a pit containing probable pyre debris from Site B, pit 5019. To provide comparative data for noncremation activities, a selection of twelve samples from postholes and pits were also analysed.

## Methodology

Samples with less than twenty fragments were not examined, with the exception of those within cremation urns and a few burial pits where the identifiable charcoal was less than initially thought. Where possible, 30-50 fragments from each sample were analysed, but consideration of the condition and diversity meant that full quantification was not deemed appropriate. In general, the analysis aimed to build up a picture of the most frequently utilised resources rather than to provide a complete list of species.

The charcoal was fractured and sorted into groups based on the anatomical features observed in transverse section at x7 to x45 magnification. Observations were made on the maturity and type of wood used or any other interesting features such as radial cracks and insect damage. Representative fragments from each group were then selected for further examination in longitudinal planes using a Meiji incident-light microscope at up to $x 400$ magnification. Identifications were made with reference to Schweingruber (1990), Hather (2000) and modern reference material, whilst the classification and nomenclature follow Stace (1997).

## Results

The results by fragment count are presented in Tables 20-21. The smaller cremation samples (with <20 identifiable fragments) have not been included in Table 21, but the results are referred to in the discussion below.

The condition of the charcoal was particularly poor, with a high degree of sediment infusion and friability. A number of the samples contained a comparatively high diversity of taxa, including genera which are anatomically similar and can be difficult to distinguish, especially in poor material. The distinction between the Maloideae, Ligustrum and Euonymus, for instance, was not certain when the key characteristics in longitudinal sections were not readily visible. It is also likely that additional species would have been identified if more fragments had been examined and it is quite plausible that more than one species of the Maloideae and the Prunoideae were represented. The cremation-related samples, in contrast, were generally better preserved, often with larger fragments, and the relatively restricted taxonomic range meant that the identifications were quicker and more secure. Notes on the taxa are provided in Table 22. There were no indications that exotic species were present, and it is assumed that only native species are represented.

Table 20: Charcoal analysis for non-cremation features

| Feature number | 4028 | 4046 | 4212 | 4030 | 4032 | 4034 | 4036 | 4036 | 4038 | 4042 | 4058 | 4055 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Context number | 4027 | 4045 | 4211 | 4029 | 4031 | 4033 | 4035 | 4035 | 4037 | 4041 | 4059 | 4055 |
| Sample number | 14 | 15 | 118 | 90 | 91 | 92 | 93 | 97 | 94 | 96 | 98 | 18 |
| Quercus sp. oak | 2 r | - | 29h | - | 1 | 1 | - | - | 1 r | 2 r | 1 | 1 |
| Alnus glutinosa alder | - | - | - | - | - | - | - | - | - | - | 1 | - |
| Corylus avellana L. hazel | - | - | - | - | - | - | - | - | - | 5 | - | - |
| Alnus/Corylus alder/hazel | - | - | - | 1 | - | - | 1 | - | 2 | - | - | - |
| Rosa sp. roses | - | - | - | - | 1 r | 1 r | - | - | 1 | - | - | - |
| Prunus spinosa L. blackthorn | - | 6 r | - | - | - | - | - | - | - | 1 | - | 1 |
| Prunus sp. cherry type | 9 r | 10 r | - | 12r | 6 | 4 | 6 | 13 r | 6 r | 11 r | 5 | 5 r |
| Maloideae hawthorn group | 12 r | 10r | 1 | 17 r | $22 r$ | $15 r$ | 13 r | 7 | 7 r | 9 r | $20 r$ | $20 r$ |
| Euonymus europaeus spindle L. | - | - | - | - | - | 3 r | - | - | - | - | - | - |
| cf. Euonymus europaeus | - | - | - | - | - | - | - | 1 r | - | - | - | - |
| Acer campestre L. field maple | $5 r$ | - | - | - | - | - | - | - | - | - | 3 r | 2 |
| Hedera helix L. ivy | - | - | - | - | - | - | - | - | - | 2 | - | - |
| Ligustrum vulgare L. wild privet | 2 r | 4 r | - | - | - | - | - | - | - | - | - | - |
| cf. Ligustrum vulgare | - | - | - | - | - | - | - | - | - | - | - | 1 |
| cf. Sambucus nigra L. elder | - | - | - | - | - | 1 | - | - | - | - | - | - |
| Indeterminate diffuse porous | - | - | - | - | - | 5 | 10 | 9 | 7 | - | - | - |
| Totals | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 24 | 30 | 30 | 30 |

r=roundwood; h=heartwood

Table 21: Charcoal analysis for cremation-related features

| Cremation burial |  | 2 | 8 | 19 | 35 |  | 5 |  | 46 |  | - |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Feature type |  | backfill of burial pit | cremation urn | backfill of burial pit | cremation urn | backfill of burial pit | backfill of burial pit | cremation urn | ancillary vessel | backfill of burial pit | pit |
| Feature number |  | 4069 |  | 4136 |  | 4219 | 4219 |  |  |  | 5019 |
| Context number |  | 4068 | 4114 | 4135 | 4184 | 4218 | 4223 | 4220 | 4220 | 4222 | 5018 |
| Sample number |  | 17 | 38 | 72 | 85 | 121 | 122 | 123 | SF111 | 119 | 12 |
| Quercus sp. | oak | - | - | 1 | 50sh | 44s | 48s | - | - | 6 | 50sr |
| Corylus avellana L . | hazel | - | 1 | - | - | - | - | - | - | - | - |
| Prunus sp. | cherry type | 2 r | - | 3 r | - | - | - | - | - | - | - |
| Maloideae | hawthorn group | 8 r | - | 11r | - | 6 | 2 | - | - | 3 | - |
| Fraxinus excelsior L. | ash | 18 | 49rs | - | - | - | - | 50s | 50sr | 41r | - |
| Indeterminate | diffuse porous | 2 | - | 5 | - | - | - | - | - | - | - |
| Totals |  |  | 30 | 50 | 20 | 50 | 50 | 50 | 50 | 50 | 50 |

[^0]Table 22: Charcoal taxa

| Family | Genus/species | Notes |
| :---: | :---: | :---: |
| Fagaceae | Quercus spp. (oak) | Large tree, two native species, not distinguishable anatomically. |
| Betulaceae | Alnus glutinosa Gaertn. (alder) <br> Corylus avellana L. (hazel) | Tree, sole native species. Corylus has a very similar anatomical structure to Alnus and could not often be confidently distinguished. Shrub or small tree, sole native species. |
| Rosaceae | Rosa spp. (roses) | Shrubs, several native species. |
|  | Prunoideae: <br> P. spinosa L. <br> (blackthorn) <br> $P$. avium L. <br> (wild cherry) <br> P. padus L. <br> (bird cherry) | Trees or shrubs, native species. The condition was generally too poor to distinguish species, but it is likely that more than one species was represented as differing ray widths were noted. When large rays widths were confirmed, the identification has been given as $P$. spinosa type, but it is acknowledged that this species is anatomically indistinguishable from the Roman introduction P. domestica (plum). |
|  | Maloideae: <br> Pyrus cordata Desv. <br> (Plymouth pear) <br> Malus sylvestris Mill. <br> (crab apple) <br> Sorbus spp. <br> (rowan, service, whitebeam) <br> Crataegus spp. <br> (hawthorn) | Subfamily of various shrubs/small trees rarely distinguishable by anatomical characteristics. It is possible that more than one species was represented as some variability was recorded (such as occasional presence of spiral thickenings). |
| Celastraceae | Euonymus europeaus L. (spindle) | Shrub or small tree, native. |
| Aceraceae | Acer campestre L. (field maple) | Tree, sole native species. |
| Araliaceae | Hedera helix L. (ivy) | Woody climber, sole native species. |
| Oleaceae | Fraxinus excelsior L. (ash) | Tree, sole native species. |
|  | Ligustrum vulgare L. (wild privet) | Shrub, sole native species. |
| Caprifoliaceae | Sambucus nigra L. (elder) | Shrub or small tree; native. The identification, based upon a single fragment could not be confirmed as the charcoal was very friable. |



Percentage presence of charcoal taxa in samples from pits and postholes (based upon 12 samples)

Fig 21

## Discussion

Samples from pits and postholes
With the exception of sample 94, all of the charcoal produced assemblages of 60+ fragments, $>2 \mathrm{~mm}$ in size. Not all of this was identifiable, however, due to the poor state and condition. Twelve taxa were positively identified, with an average of 4.5 taxa per sample, and it is likely that this figure is an under-representation of the taxonomic diversity. Two taxa were especially dominant (both in fragment count and presence analysis), and were present in all but one sample; hawthorn and cherry and/or blackthorn (Fig 21). Presence analysis suggests that oak was fairly common; it was present in most samples, but usually as one or two fragments in every 30, the exception being pit 4212, where this taxon was dominant. Pit 4212 contained the only non-Cremation burial deposit to produce a large quantity of this taxon, and the presence of heartwood with either none or a faint ring curvature indicated that much of the oak came from mature trunkwood. The other samples produced a fair quantity of roundwood, with a moderate to strong ring curvature. There were no complete stems with pith and bark, and sizes were generally too small to estimate maturity, but the general impression was that many fragments derived from branch or small trunk wood.

The general character of the wood types in these assemblages discounts the possibility that any of the charcoal in posthole group 4015 represents burnt posts. Any structural remains are unlikely given the dominance of shrubby type taxa. Other possible origins include pyre debris from the cremation cemetery and associated activities such as feasting, or spent fuel wood from domestic hearths. There is no conclusive evidence, but the apparent contrast between these pit or posthole assemblages and the cremation samples suggests that this material is not pyre debris, or at least not exclusively (Fig 23). Additionally, a number of the assemblages were relatively large, comprising several hundred fragments, which suggests some deliberate dumps rather than just windblown dispersed material.

A particularly notable characteristic of these assemblages is the dominance of hedgerow or scrub type taxa such as Prunus, Maloideae, Euonymus, Ligustrum, Sambucus and Rosa. This makes it tempting to speculate that the charcoal represents burnt trimmings from hedgerows. In any case, it appears that the wood was sourced from an open landscape; a picture which is indicated at other Romano-British
settlements in the region near Bedford (A421, Challinor 2007a; Burton Latimer, Challinor, in prep). Pollen evidence from a sequence at Ruxox, (near Flitwick) suggested that much of the oak and hazel woodland had been cleared by the Romano-British period, which showed strong evidence for open conditions of waste ground, grassland or pasture, and cereal cultivation (Scaife 2004, 281).


Taxonomic composition of charcoal from Cremation burials
(based upon 450 fragments)
Fig 22

## Samples from Cremation burials and related features

In contrast to the relatively high diversity of the non-cremation features, the samples associated with cremations had a low taxonomic diversity, with only five taxa identified. Where the overall quantity and condition of charcoal in a sample was adequate to establish dominance, it is apparent that oak and ash dominated the assemblages (Fig 22). This also shows that the possible pyre debris from pit 5019 in Site B was entirely dominated by oak. The sample was extremely rich, with very large well preserved fragments of oak, $>40 \mathrm{~mm}$ in transverse section, and comprising much sapwood and roundwood. No tyloses were noted, nor were whole stems, but some moderate or strong ring curvature suggests immaturity. Growth rates appeared quite fast, with 13+ rings. Other samples did not have the preservation to be conclusive, but in general there appeared to be little evidence for heartwood, with few tyloses observed.

Interestingly, the two samples with significant quantities of hawthorn, 4068 and 4135, were both from the backfill of Cremation burials. An analysis of taxonomic diversity shows that the backfill samples tended to be more diverse than the urn fills, and that the non-cremation assemblages were significantly distinct (Fig 23). The assemblages include all thirty-seven cremation-related samples, excluding the possible pyre debris pit in Site B, but including those with fewer fragments. Although this may introduce a bias of preservation, it is interesting to note that more of the cremation urns contained better preserved and larger fragments of charcoal than the burial back-fills, independently of sample size. This suggests several possible hypotheses:

- The charcoal in the burial urns was collected post-cremation, presumably accidentally, with the larger fragments of human bone and the smaller charcoal fractions are missing.
- The samples from the backfills of the burial represent redeposited pyre debris, including all the small ashy material, and suffered additional fragmentation through its journey from pyre to deposition.
- The backfill material may include charcoal from more than one cremation event, hence higher taxonomic diversity.
- The single taxon dominance in the urns may represent fragmentary remains of a single length of wood, rather than overall dominance of fuel.


Taxonomic diversity of charcoal assemblages by feature type
Fig 23
The latter point is an important one, especially given the evidence from Cremation burial 46 , where the excavator suggested that a plank from the pyre was laid on top of the cremated bone (Chapman 2012, Appendix 4). Both the samples from the main cremation urn and the accessory vessel of Cremation burial 46 were dominated by ash charcoal. Other cremation urns with potential deliberately placed pyre debris also appear to have a dominance of one taxon in the urn sample and occasional additional species in the backfill samples (Table 23). The use of ash or oak, then, might relate to the bier structure rather than just fuel, as suggested at the late Iron Age and early Romano-British cremation cemetery at West Hampnett, Sussex (Gale 1997, 82). In general, Romano-British cremation assemblages are commonly dominated by oak and/or ash, such as at Court Drive, Dunstable (Austin 2010), Bedford (Challinor 2008) and further afield at the A120, Essex (Challinor 2007b) and Pepper Hill, Kent (Challinor 2006) .

Here, oak is generally more frequent in the cremation assemblages than ash (oak $30 / 38$, ash $8 / 38$ ). Whether this represents any deliberate selection of fuel relating to the age or gender of the deceased cannot be established. The burials listed in Table 23 were probably all adults, but the bone dataset for these burials was too incomplete to provide gender (Chapman 2012). There is also no apparent pattern of change in fuel wood selection between the late Iron Age burials and the late 1st- to early 2ndcentury Roman burials.

Table 23: Taxonomic dominance in charcoal assemblages from Cremation burials with pyre debris

| Cremation burial | 8 | 20 |  | 24 |  | 33 |  | 35 |  |  | 46 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Feature type | urn | backfill | urn | backfill | urn | backfill | urn | backfill | urn | urn | ancillary vessel | backfill |
| Context number | 4114 | 4137 | 4137 | 4145 | 4145 | 4177 | 4186 | 4182 | 4184 | 4220 | 4220 | 4222 |
| Sample number | 38 | 60 | SF59 | $\begin{aligned} & 63 \\ & 74 \end{aligned}$ | $\begin{gathered} 71 \\ \text { SF65 } \end{gathered}$ | 85 | 87 | 84 | 85 | 123 | SF111 | 119 |
| Quercus sp. (oak) | - | x | x | X | X | x | X | x | X | - | - | X |
| Alnus/ <br> Corylus <br> (alder/hazel) | X | X | - | - | - | - | - | - | - | - | - | - |
| Prunus sp. (cherry) | - | - | - | - | - | - | - | X | - | - | - | - |
| Maloideae (hawthorn) | - | - | - | X | - | - | - | x | - | - | - | X |
| Fraxinus excelsior (ash) | X | - | - | - | - | - | - | - | - | X | X | X |

This charcoal offers an interesting distinction between the cremation burial samples which are characterised by low taxonomic diversity with dominance of oak and occasionally ash, and the non-cremation burial samples which exhibit higher taxonomic diversity, dominated by shrubby and hedgerow type taxa. The dominance of a single taxon in early Romano-British cremation assemblages is relatively common and the apparent scarcity of oak, or absence in the case of ash, from the domestictype assemblages suggests a preferential selection of wood for cremation. This is consistent with the interpretation at Dunstable, where Austin proposes that oak was preferentially selected for cremation, as it would not have grown well on the thin, calcareous soils that cover much of the area (Austin 2010, 263). The evidence from Toddington suggests that the wood utilised for non-cremation fuel was small diameter roundwood sourced from hedgerow and scrub habitats indicative of an open landscape.

### 5.7.3 The animal bone by Laszlo Lichtenstein

The animal bone was identified using Northamptonshire Archaeology's vertebrate reference collection, and further guidelines from Schmid (1972), von den Driesch (1979), Sisson \& Grossman (1953) and Feher (1990, 25-108). The anatomical similarities between sheep and goat the criteria set out by J Boessneck (1969) were used to separate the two species. Ageing data and tooth eruption and wear were categorised according to Hillson (2005) with the identification of juvenilis after Amorosi (1989).

Species, anatomical element, fragmentation, side, fusion, cut- or animal teeth marks and sex (where applicable), were recorded for each bone. Bones that could not be identified to species were, where possible, categorised according to the relative size of the animal (large ungulate: cattle/horse, small ungulate: sheep/goat/pig). Ribs and
vertebra were not identified to species, except the vertebrae of cattle. All fragments were recorded.

## Site A

A total of $52(175 \mathrm{~g})$ hand-collected animal bone elements and fragments were recovered from ditches 4021, 4026 and 4071. Employing standard zooarchaeological procedures seven specimens ( $13.5 \%$ of the total NISP) were identified to taxa and parts of anatomy, representing cattle and sheep.

The bones were generally in very poor condition, with the bone surface severely abraded and flaking away because of the highly acidic soil conditions. The fragmentation was very high with 91.5 \% being less than 50 mm in size. No complete long bones were recorded because the proximal and the distal ends were damaged. Roughly $50 \%$ of fragments showed signs of recent breaks. No evidence for burning, butchery or bone working was observed.

Due to the high fragmentation of the assemblage, only $18.2 \%$ were identified to species (Table 24). The majority of bones came from cattle ( $16.4 \%$ ).

Table 24: Species present in the animal bone assemblage by fragment count, Site A

| Species | MNI | NISP | Percentage (\%) |
| :--- | :---: | :---: | :---: |
| Cattle - Bos taurus L. (Linné 1758) | 2 | 9 | 16.4 |
| Sheep - Ovis aries L. (Linné 1758) | 1 | 1 | 1.8 |
| Large ungulate size | 1 | 20 | 36.4 |
| Small ungulate size | 1 | 25 | 45.4 |

Little ageing data was available from the tooth wear and eruption data. A cattle third molar was from an adult individual, younger than five years. One slightly worn down first molar of sheep was from a juvenile animal.

## Site C

The Roman material was recovered from fills of ditches 7030, 7040 and 7187; gullies $7053,7055,7059$ and 7067 ; and pit 7065.

A total of $621(6,443 \mathrm{~g})$ hand-collected animal bone elements and fragments were analysed and 302 specimens ( $48.5 \%$ of the total NISP) were identified by taxa and parts of anatomy, representing cattle, horse, sheep/goat and pig species (Table 25). The majority of bones came from cattle (40\%). No avian, fish, amphibian or small mammalian bones were recovered.

Table 25: Species present in the animal bone assemblage by fragment count, Site C

| Species/Taxa | MNI | Count | Percentage (\%) |
| :--- | :---: | ---: | :---: |
| Cattle - Bos taurus L. | 6 | 249 | 40.0 |
| Horse - Equus caballus L. | 2 | 37 | 5.9 |
| Sheep - Ovis aries L. | 2 | 7 | 1.1 |
| Sheep/Goat - Ovicaprid | - | 4 | 0.7 |
| Pig - Sus scrofa domesticus B. | 1 | 5 | 0.8 |
| Large ungulate size | 1 | 240 | 38.7 |
| Small ungulate size | 1 | 39 | 6.3 |
| Unidentified | - | 40 | 6.5 |
| Totals | $\mathbf{1 3}$ | $\mathbf{6 2 1}$ | $\mathbf{1 0 0 . 0}$ |

The bones were generally in good condition, but the fragmentation was high with the majority ( $57.2 \%$ ) being less than 50 mm in size. No complete long bones were recorded because the proximal and the distal ends were damaged. Taphonomic factors affecting the material were recorded including gnawed, butchered and recently broken bones (more than $50 \%$ showed signs of fresh breaks), and 22 fragments had been affected by butchery (3.5\%).

Canid gnawing was seen on six fragments of bone (1\%). The presence of canid gnawing on bones suggests that they were left within access of dogs before being buried, an indicator that dogs were present on the site despite none of their bones being recorded in the faunal assemblage.

Ageing data was available from the cattle teeth and bone fusion (Table 26). The most epiphysical fusion was recorded for cattle bones; although the majority of these animals (at least four individuals) were mature at death.

Table 26: Ageing data for cattle teeth in the Roman period

| Context/feature | Years |
| :--- | :--- |
| $7041-7044$ / ditch 7040 | One individual younger than 2 years |
| $7041-7044$ / ditch 7040 | 2x individual adults |
| 7052 / gully 7053 | Older than 15 years |
| 7064 / pit 7065 | One individual younger than 2-2.5 years <br> 7064 / pit 7065 |

Horse teeth and bone were part of a mature animal. In only one case can the sex be determined: where the size of a pig canine indicates that this individual was an adult female.

## Conclusions

More animal bone was recovered from the Roman contexts than from later contexts. The fragmentation was very high and $48.5 \%$ of the assemblage could be identified to species. The assemblage is dominated by cattle, followed by lower numbers of horse and sheep/goat. The pig remains are moderate percentages for the Roman period. The dog gnawing was of relatively low frequency (1\%). None of the bone was burnt and only $3.5 \%$ had been affected by butchery.

### 5.7.4 The radiocarbon determinations

The Updated Project Design outlined two items for radiocarbon analysis in order to address specific questions of dating (Clarke 2012).

Dating was required for the substantial charcoal pyre deposit in pit 5019 , Site B, to determine whether it may have been related with similar funerary activities at Site A. Since the deposit was entirely oak, only sapwood and roundwood was selected, in order to give the closest possible date range. The result has placed the burning event in the 1st centuries BC to AD and is therefore contemporary in use to the late Iron Age and Roman cemetery at Site A (Table 27).

An attempt was made to date inhumation burial 51, in order to compare the date of its interment with those of cremated burials, however, no collagen survived to make such dating possible.

Table 27: The radiocarbon determinations

| Laboratory \& Sample No. | Context | Sample <br> Details (weight) | C13/C12 | Conventional Radiocarbon Age BP | Cal BC/AD 68\% confidence 95\% confidence |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{aligned} & \hline \text { Beta-343280 } \\ & \text { M1J12-5018 } \end{aligned}$ | 5018 <br> charcoal rich fill pit 5019 | charcoal oak (quercus) 3 g | -25.9 | $2010 \pm 30$ | Cal BC40-Cal AD20 <br>  <br> Cal BC50-Cal AD60 |
| $\begin{aligned} & \text { Beta-343607 } \\ & \text { M1J12-B51 } \end{aligned}$ | $\begin{gathered} 4251 \\ \text { Burial } 51 \end{gathered}$ | human bone 14 g | -- | no collagen | -- |

Laboratory: Beta Analytic, Miami, Florida, USA
Analysis: Standard AMS, Calibration: INTCAL09 Radiocarbon Age Calibration

### 5.8 Discussion of the late Iron Age and Roman remains

### 5.8.1 The late Iron Age and Roman funerary evidence

The cemetery was located within an open landscape of grassland, already cleared before use, it appears to have served a small rural community over a period of about 150 years, this equates to about 4-6 generations. The cemetery occupied a northfacing slope on a valley spur and lay directly opposite a pyre burning site on the other side of the valley, demonstrated by the recovery of contemporary radiocarbon dated charred oak charcoal from the bustum beneath the pyre, and accompanied by the cremated bone of a probable adult female, weighing 385 g . Similar features were excavated at Court Drive, Dunstable, in close proximity to a cemetery of 20 cremations and seven inhumations (Edwards 2010, 241). This suggests that there could be a cremation cemetery on both sides of the valley, and that pyres may well have been burned in close proximity to the excavated remains at Site A. Roman cemeteries were often located along main roads at the edge of settlement, however, topography may also play a role in this instance.

The use and abandonment of this cremation cemetery provides an opportunity to examine this closely datable group of funerary deposits over a period spanning almost two centuries. The cemetery developed over time with its origins in the pre-Roman late Iron Age, continuing until its last burial in the mid-2nd century AD, and is a much larger cemetery than either of the previously investigated local and contemporary sites at Court Drive (Edwards 2010) or Harlington (Dawson 2001). The cemetery comprised 57 cremated individuals in 48 burials with four key phases of development, sometimes with multiple occupants, and inclusive of all age categories. The initial layout was circular and seems to have contained a central focus with evidence for an oak timber post and other possible funerary activity, during the 1st centuries BC to AD. From the mid-1st century AD onwards the cemetery was arranged in rows. A similar observation was made at Court Drive, Dunstable, where the rows of burials extended from an earlier central cluster, and were aligned on nearby streets (Edwards 2010, 263). This linear arrangement was extended south as the cemetery proceeded into the early 2nd century. The addition of later cremated remains to earlier graves, especially those in the final period of use, may support an argument for continuity between family members and couples. Accidental disturbance was largely absent and even the oldest Cremation burials seem to have retained their individuality, suggesting that grave markers were probably used for a time. However, the form and layout of the cemetery and the gradual encroachment of the neighbouring enclosure indicated that specific
burials were forgotten once they passed beyond living memory and the lack of disturbance of the earliest graves is perhaps more due to chance than design. The development of the cemetery with a fairly consistent number of additions in each period may indicate that it served an extended family from a nearby community, whose origins were of the native late Iron Age and subsequently gained affluence and adopted Roman lifestyles in later centuries.

The charcoal offers a distinction between the cremation samples which are characterised by low taxonomic diversity with dominance of oak and occasionally ash, and the non-cremation samples which exhibit higher taxonomic diversity, dominated by shrubby, hedgerow type taxa. The dominance of a single taxon in early RomanoBritish cremation assemblages is relatively common and the apparent scarcity of oak from other assemblages suggests a preferential selection of wood for cremation. This is consistent with the interpretation at Court Drive, Dunstable (Austin 2010, 263). There is some indication that dried plant materials and small roundwood may have been utilised as kindling but there does not appear to be any evidence for the deposition of food offerings within the pyres.

The artefactual development is clear and shows off the changes in culture. Initially, in the late Iron Age, the pottery vessels were handmade locally, with jars being the only form used for cremation urns. They conform to what is often coined as the 'Belgic' style (Matthews 1989), utilising a variety of grog-based fabrics. This is similar to the solitary coarseware jar used as an urn and recovered from Fancott, c. 1 mile to the south, in 1858, and accompanied by a beaker and two squat jars as accessory vessels (Pollard 1991, 103). At Court Drive, Dunstable, the dominant choice for urns were jars in harsh sandy ware (fabric R14; Edwards 2010, 243). This is notable by its complete absence from the M1 Junction 12, where a range of fabrics were used, with the most common choices being grog (fabric F17, 10 examples) and then later, sandy black ware (fabric R07, 14 examples). Neither fabric was present at Harlington (Dawson 2001, 26-29) or Court Drive (Slowikowski 2010, 247, table 3). Dawson draws a distinction in the sourcing of pottery at Harlington from the south (Dawson 2001, 37). Whereas the M1 Junction 12 assemblage is more consistent sites north of the greensand ridge, where pottery was sourced from the east and west.

Only $40 \%$ of the initial burials in the 1st centuries BC to AD contained accessory vessels, of which $20 \%$ had three vessels. By the middle of the 1st century AD a combination of locally made pottery and recognisably pre-Flavian Roman fabrics were in use. Burial 47 contained both a pre-Flavian jar as the cremation urn with a locally produced beaker as an accessory vessel. It is thought that older pottery styles remained popular in the local region well into the 2nd century AD (Slowikowski 2010, 245). This was also the main period in which the choice of funerary vessel varied with the use of beakers or butt beakers in place of jars. The quantity of accessory vessels was greatly increased, with $65 \%$ of burials containing at least one vessel and $25 \%$ of burials with three vessels or more. There was also a notable imbalance of funerary artefacts between burials; of those burials containing locally made urns, over $72 \%$ contained accessory vessels, but only one of these had a brooch and another some iron fragments. By stark comparison, of those burials containing pre-Flavian Roman urns there were only $56 \%$ that contained accessory vessels. However, these burials had a rich array of other artefacts, which included a bronze mirror, three brooches, a game counter, five nails and some other unidentified metal fragments. Typically we see this broad overall rise in grave goods as the product of economic growth and greater affluence amongst the local population; however, this is also the product of an increasing trend in burial practise towards making votive offerings and in different ways. Urns that were made in a local tradition were accompanied with accessory vessels as the primary choice of offerings, which were not necessarily personal
artefacts, but may have been used for the consumption of food and drink during the funeral. These were instead replaced with a greater number of items that are recognisable as personal artefacts when accompanying Roman style urns, either of the mourner or the deceased, such as the mirror and the brooches. Of particular interest in this period was the addition of the un-urned adult to Burial 23, which is marked by a brooch, the only instance where a personal jewellery item was found with locally made urns. None of the pottery or brooches exhibited evidence of being deliberately broken prior to burial, and the mirror could easily have broken post-deposition. This is in contrast to the artefacts and pottery from Court Drive, Dunstable, which are claimed to have been 'ritually killed' prior to burial (Edwards 2010, 243, 264), similarly no observation of this was made at Harlington (Duncan 2001, 31-35). Given that all these burials were close to contemporary there seems to have been a respect between two cultural traditions that were used side by side for the period of one or two generations, which is not too surprising when some families may choose to adopt Romanised lifestyles quicker than others. Both traditions are, however, consistent in that they seem to make deeply personal statements about the identity of the individual or that of the mourners.

However, from the late 1st century onwards, the burial tradition changed again, and returned to a low level pattern of artefact deposition with no jewellery, no adornments, and a far less personal element to the burial. A single instance of a Cremation burial within a casket (Burial 38) showed the only clear variation from the use of Roman jars as urns. Over $83 \%$ of the burials now had accessory vessels and fully one third had three vessels or more, which is a distinct rise overall. If these vessels were indeed for the consumption of food and drink during the funeral, then the practise had remained and grown more significant. A single burial contained a group of nails to suggest a wooden artefact. The value of the accessory vessels was clearly greater, since $42 \%$ of the burials contained fine imported South Gaulish samian dishes, and other more regional, but distinctive pottery, such as a Verulamium flagon. This is a proportion comparable to that observed at Harlington (Dickinson 2001, 29). By the middle of the 2nd century AD all of the burials contained accessory vessels, and over half of these had fine imported Central Gaulish samian dishes, also noted at Harlington (ibid). Two burials contained nails suggesting an accompanying wooden artefact. The possibility of wooden artefacts is not clearly explicable but the size of the nails, $25-30 \mathrm{~mm}$ long, suggests that grave markers may be one explanation. None of the nails exhibited the pristine condition associated with heat from the pyre seen at Court Drive, Dunstable (Duncan 2010, 256).

Whilst burial practise, viewed through the artefacts, seems to change considerably over time, the method of interment did not. In total, $72 \%$ of cremations ( 41 individuals) were interred in individual urns and this was fairly evenly balanced across all periods. There were only five instances of un-urned cremations, one of which appeared to be in a casket (Burial 38), and four instances where two individuals were buried in the same urn. None of these are ascribed to a single period. At Court Drive, Dunstable, every individual was buried separately; 16 in urns, three un-urned and one in a casket (Edwards 2010, 243), all adults, except for one neonate cremated with an adult male (ibid, 264). At Harlington there was greater diversity in the range of ages with at least two out of 13 cremations (in 11 burials) containing juvenile remains and at least one teenager or young adult (Dawson 2001, 23-26). One of the juveniles was buried together with an adult in an un-urned cremation, five contained one individual per burial, the others could not be ascertained (Jackman 2001, 35). Five of the burials were un-urned and none were identifiable by gender.

Of the remaining $28 \%$ of cremations ( 16 individuals), all of these were buried in pairs or as family groups. Amongst these there is one instance that suggests a couple of
marital age (Burial 6, separate urns) and one that suggests a parent and child (Burial 15 , same urn). There is insufficient information to interpret the other pairs, which could represent couples, siblings or close relatives. Again, there is nothing to ascribe this practise to a single period. The burial of more than one individual together suggests that the nature of death should be influential upon the time of cremation. Two individuals cremated and interred in the same urn suggest they shared some kind of bond, given that the overwhelming common practise was to inter individuals in separate urns. Burial 15 was probably for a parent and child. When they died, they were burned at the same time, which suggests they died together, and which occurred amongst $50 \%$ of pairs (eight individuals). Instances where they might be buried together in separate urns we might expect to be more common, and yet only $37 \%$ of the pairs showed evidence that they were interred at different times, with the remaining $13 \%$ having been interred at the same time. This suggests two things; that $63 \%$ of pairs were cremated at the same time, and that there may be an important distinction of social status between those who were buried in separate urns (perhaps non-blood relatives) as opposed to those buried in the same urn (perhaps blood relatives). The apparent high instance of death amongst people living in close proximity during an age of poor sanitation and hygiene is perhaps not particularly surprising. This latter hypothesis is also reflected by the potential family burials.

There are $14 \%$ of cremations (eight individuals) divided between two potential family groups in the mid-1st century AD. There were no other potential instances of family burials in any other period and the ashes of all of these individuals were clearly separated. Family burials interred at the same time, we would expect to be uncommon, but again these seem to have been largely interred together. Burial 23, comprised four individuals, including an infant of 1-2 years; two of these were interred in pottery urns, one of them in a butt beaker and the fourth was an adult, buried un-urned and accompanied by a brooch, which was added later. The other family burial, Burial 2, had three adults, two of whom were male, one older and one younger; all of them in separate urns and perhaps representing the mother, father and son. Relationships between the urns had been disturbed by a land drain, but not wholly ruined, so it is thought they were interred at the same time.

What is apparent, but perhaps not wholly explicable or understood from such a small cemetery (and yet the largest to be found locally), is that there are signs that certain trends may have existed on how funerary practise was carried out and how burials were interred; which do not necessarily remain consistent between cemeteries and should not be considered as hard rules but more explicably as acceptable common social practises.

Of particular curiosity are comparisons with the Harlington cemetery (Dawson 2001), where the occupation of the site continued beyond the use of the cemetery with the evolution of a Roman villa on the south facing slope of Sheepwalk Hill (HER101). By this time many settlements in the north hinterland of Durocobrivae (Dunstable) had been abandoned, like those at Puddlehill (Matthews and Warren 1992), Court Drive and M1 Junction 12. What appears likely is that from the 2nd century onwards there was a significant change in the way land was apportioned to the north of the town, and in such a way that some settlements were to continue or relocate their activities, whilst others did not.

### 5.8.2 Other late Iron Age and Roman features

The disuse of the cemetery appears to have been consistent with the disuse of the neighbouring enclosures and it is probable that both settlement elements were abandoned at the same time in the middle or later part of the $2 n d$ century AD. This is consistent with observations at Puddlehill (ibid), Queensway Hall (Mudd 2004) and Court Drive (Edwards 2010), all in or north of Dunstable. There was no evidence for a break of occupation around 43 AD, when the Roman legions arrived, or around 61 AD, during the Boudican revolt when Verulamium (St Albans) was sacked, which are both cited as possible causes in the break of settlement at Puddlehill during the 1st century AD (Matthews and Warren 1992, 38-39).

Activity within the enclosures adjacent to the cemetery (Site A) is hard to define, but based on the accumulated fill material within ditches there seems to have been an overall lack of charred cereal or cereal processing waste. This suggests that crop processing and domestic processing of cereals was not being undertaken at these locations. The survival of charred material elsewhere makes it clear that the absence is not due to preservation conditions and it may be supposed that the fields were perhaps of a pastoral nature. A gradual increase in stray finds, pottery and animal bone, into the 2nd century AD indicated that the domestic focus was increasingly closer to the enclosures and adjacent to cemetery. Between the beginning of the 1st century $B C$ and the end of the 1st century AD only 61 sherds $(747 \mathrm{~g})$ were deposited in features, compared with 135 sherds $(1,009 \mathrm{~g})$ by the middle of the 2nd century AD. However, this quantity of material is far less than would be expected a few yards from habitation and there was little animal bone throughout ( 52 elements, 175 g ). In the late 1 st to early 2 nd centuries burnt material that did not originate from pyre debris was deposited in pits nearby and a number of postholes indicated the possible use of wattled fences. The pits did not contain the organic refuse otherwise associated with domestic activity, crop processing or the disposal of animal bedding; they simply seemed to be from clearing vegetation. This clearance was a short-lived event and the character of the enclosures did not otherwise change significantly.

On the opposite side of the valley, at Site C , the boundary ditches that lay across the south-facing hill slope produced slightly more material, with several individual features producing material that could be directly related to habitation in close proximity. There was a general absence of late Iron Age material, and it is clear the site did not become occupied until the middle of the 1st century AD, by which time the cemetery at Site A was entering its second phase of use. Pottery deposition and disposal of animal bone was greater over time, 167 sherds $(2,826 \mathrm{~g})$ were deposited in ditches during the 1st century AD, rising to 228 sherds $(3,406 \mathrm{~g})$ from ditches, pits and gullies in the 2nd century AD. This dropped rapidly thereafter, with only 12 sherds ( 320 g ) of 3rd-4th century date, and the remaining 27 sherds $(506 \mathrm{~g})$ being recovered from medieval layers. The animal bone followed the same pattern of disposal as for the pottery, with 621 elements $(6,443 \mathrm{~g})$ of material providing greater confidence that domestic waste disposal was present. The only evidence for charred cereal grain from M1 Junction 12 is from fill 7013 of pit 7018, which also contained quern fragments and is thought by the specialist to represent hearth waste (Fryer pers. comm.). The narrow curving gullies in group 7049, together with the adjacent pits and their fairly high overall finds content, suggests that these features would have been within a few yards of habitation. Indeed the gullies themselves may represent the west side of ring ditches for the smaller ancillary type structures, many of which would still have been built in wattle and daub, and which would be expected to accompany a lower status 2nd-century farmstead, the location of which has yet to be defined.

## 6 MEDIEVAL AND POST-MEDIEVAL SETTLEMENT REMAINS

The quantity of datable artefacts recovered during the targeted watching briefs was fairly low, except in TWB3 where the discovery of an extensive medieval and postmedieval midden deposit brought to light the remains of two successive buildings. This area was subsequently designated for detailed archaeological excavation as Site C, using an updated sampling methodology (URS 2011).

The features and deposits that comprised these remains are summarised in Table 28, below. The larger part of Site C was occupied by a midden deposit. The midden had been created alongside a potters' workshop, the only remains for which was a large buried vessel, used as a water cistern. The pottery in the midden indicated production in the 12th-13th centuries, possibly terminating in the 14th century, after which it was levelled in the 15th century. To the east of the M1 motorway, at Site B, two boundary ditches accumulated pottery sherds within their fill at around the same time as the pottery production.

Following the flattening of the midden, or pot bank, a cob wall divided the area between north and south. The cob wall was raised after the 15th century. Building 1 was built on its north side, but it is unknown at what date, or what function it performed. This building was, however, demolished by the mid-17th century. Building 2 replaced the earlier structure from the late 18th century and contained within its fabric a stone inglenook fireplace with two hearths back to back, suggesting a domestic dwelling, or possibly two adjoining cottages. This building does not appear on 19th-century maps and is likely to have been demolished before 1882.

### 6.1 Summary of the medieval and post-medieval chronology

Table 28: Medieval and post-medieval site chronology, Sites B-C

| Period | Nature of activity |
| :--- | :--- |
| Medieval | A potters' working area was in use at Site C, a large <br> (12th to 14th centuries) <br> (Fig 26) |
|  | was sunk into the ground to provide a cistern for a substantial pot bank was created <br> nearby with wasters indicating the kiln was nearby <br> Two ditches at Site B produced pottery indicating |
| that these boundaries were broadly contemporary |  |
| with 12th-century activity at Site C |  |

### 6.2 Medieval potters' working area and contemporary ditches

Given the extent of post-medieval activity within the area, smaller features of earlier periods such as stakeholes and timber posts had not survived. There were no medieval features buried beneath the midden deposit, except for a single pit, 7161, containing a single large 12th to 13th-century vessel made from Hertfordshire greyware fabric, similar to those recovered amongst the midden deposits in the immediate vicinity (Figs 24 and 26).


Pottery ‘cistern' jar, SF135, being excavated within pit 7161, Site C Fig 24

### 6.2.1 A potters' water cistern, Site C

The pit, 7161, was roughly circular and had been created in a manner just large enough to fit the pot inside, whole (Figs 24; 38; 42, 4). The pit was 0.5 m in diameter and 0.32 m deep. The base was flat, forming a level surface for the pot and the sides mirrored the profile of the pot up to its widest point and then became vertical, allowing the pot to nestle within the earth without room for movement. The upper edge was packed in around the pot with firm dark reddish-brown silty clay. It was suggested by the medieval pottery specialist, Paul Blinkhorn, that the vessel was buried and used as a cistern for holding water. Similar pots have been found for the period seated within stone-lined pits at Lyveden, Northamptonshire (Steane and Bryant 1975, 14-15). These were in association with a potters' working area. The pot did not contain any residues or signs of abrasion, liming, heating or caustic damage. The pot had later filled with dark greyish-brown silty clay and charcoal similar to the spread of the pot bank, 7006, indicating that it is likely that the midden was flattened out by hand, spreading material from a single pot bank across a wider area, and at a time shortly after the cistern ceased to be used. It is probable that the pot bank was located above the largest concentration of pottery, immediately south-east of the cistern, a midden aligned northeast to south-west, which was pushed over and spread across the ground on its north-
west side (Fig 26). The potters' working area was replaced by a cob wall, 7004, which was built after the 15th century and demolished by the mid-17th century.


Midden spread 7006 showing grid sampling at 1.0 m intervals, Site C Fig 25

### 6.2.2 A midden heap, Site C

A midden had built up close to where the cistern was found and accumulated a substantial quantity of pottery comprising 10,581 sherds (c.58kg) amongst other organic refuse (Figs 25-26). The midden material was largely firm dark greyish-brown silty clay, 7006, stained black with charcoal and soot, lightly flecked with chalk and contained scattered small stones $<80 \mathrm{~mm}$ in size. The original height and dimensions of the midden are not known owing to its late medieval period of redeposition, however, the extent of the spread covered an area that was $c .11 \mathrm{~m}$ long by 6 m wide and angled slightly north-west to south-east. The deposit was sampled using a 1.0 m grid and retrieved finds by grid location within the spread in an attempt to identify its depositional composition (Fig 25). As it turned out, the whole of the spread was of undifferentiated soil types, as it had been flattened after its disuse to a maximum of 0.35 m thick, mixing the deposits together. However, within the layer the distribution of pottery was examined by sherd weight ( g ) and a concentration was determined. The reason for choosing sherd weight rather than sherd count is that larger sherds, which weigh more, are less likely to have been broken through redeposition, whilst redeposited sherds are likely to be smaller and might be more heavily fragmented. The heavier portion of the assemblage, where grid squares produced over 1 kg of pottery sherds, lay across the grid from north-east to south-west, an area no more than 10 grids long and less than 2 grids wide (Fig 26). The wider extent of the midden produced less bulky material, within a secondary concentration, where grid squares produced over $500-1,000 \mathrm{~g}$ of pottery sherds, on the north-west side of the pot bank and overlying the cistern.

The pottery assemblage comprised largely wasters in a heavily sand tempered fabric that is similar to the South Hertfordshire greywares of the 12th-13th centuries. Although the pottery may also derive from the 14th century, this tradition had largely drawn to a close by c.AD1350 (Blinkhorn, pers comm). The assemblage has been examined in detail by form, which shows that there was also dominance in the production of particular jar and bowl forms (see 6.5.1). It may therefore be supposed that the potter produced the bulk of his goods to serve a specific part of the domestic and utilitarian market, and did not spend time on more elaborate or fine quality work.

The contents of the midden were also examined for environmental remains. The soil samples produced few cereal grains and mainly weed seeds. Charcoal and charred wood was predominant suggesting that the organic component of the midden had been generated by regular burning of wood fuel which was dumped upon the pot bank. Animal bone was relatively low in quantity as this was not primarily a domestic midden.

Overall, the evidence for a potters' working area was fairly substantial, although without the structural components for lightweight timber frames such as an airy drying shed or the kiln itself. The burnt material in the midden contained both herbaceous charred seed and wood charcoal, perhaps derived from the sweepings of a kiln fire box or a small domestic fire. However, the location of the kiln was probably outside the excavated area and would have logically been extremely close to both the midden and the cistern such as those at Lyveden, Northamptonshire (Steane and Bryant 1975, 1415). A post-medieval pottery scatter was identified during fieldwalking to the north of Site C (Mudd 2006, fig 9), but the site of the potters' midden and the vicinity of the kiln waste were not identified at that time. The area was not covered by earlier geophysical surveys so it is not possible to tell whether the kiln lies to the west of the excavated area or whether it was lost to the 1958-9 motorway works (Burrow 2008; Butler 2008). There has been no fieldwork attempting to identify the location of the kiln.

### 6.2.3 Contemporary ditches, Site B

Two ditches were identified on the east side of the motorway that produced small quantities of pottery, roughly datable to the 12th century, since coarse sand tempered wares were found together with the more ubiquitous shelly coarseware (Fig 6; Clarke 2012). The ditches appeared to form two sides of a medieval close (a small paddock, usually close to settlement), although much of the land would have been open fields.

Ditch 5006 was aligned west to east, c. 1.0 m wide by 0.32 m deep, and had shallow slightly uneven sloping sides at $20-30^{\circ}$ that curved gradually into a flattish base. The fill comprised firm mottled greyish-brown and russet silty clay with charcoal flecks that comprised largely in-wash material. This had been recut by ditch 5004 along the same alignment, although slightly deeper to 0.54 m , with steep sloping sides at $60^{\circ}$ and with a rapid break of slope to a narrow flat base. The fill was firm dark greyish-black silty clay loam, smeared with russet streaks, charcoal flecks and containing burnt stones $<50 \mathrm{~mm}$ in size. This fill contained sufficient charred waste to indicate that a dump of material had been cast into the ditch from cereal processing nearby, the presence of datable pottery sherds suggested it had derived from a midden of mixed waste.

A larger ditch, 5008 , slightly to the north of ditch 5006 , was 1.88 m wide by 0.84 m deep and aligned north-east to south-west. The two ditches probably joined to the west of the excavated area before being lost to the motorway in 1958-9. Ditch 5008 had steep sloping sides at $50-70^{\circ}$ which showed signs of erosion towards the upper edge, but shared the rapid break of slope and narrow base of ditch recut 5004. Similar fill materials, comprising firm dark greyish-brown silty clay loam with russet flecks, had been dumped into the ditch.



### 6.3 Post-medieval buildings and a cob wall

The earlier midden heap at Site C was flattened and its material was spread over an area that was $c .11 \mathrm{~m}$ long by 6 m wide and up to 0.35 m thick. During the process of flattening, this material acquired fragments from the base of a mid-15th-century Cistercian ware cup and a 13th to mid-14th-century sherd in Mill Green ware from a jug, coated with a copper speckled glaze (Blinkhorn 2012, 46).

### 6.3.1 Building 1, 15th-17th centuries $A D$

The remains of a robbed-out wall footing, 7147, cut the natural clay on the east side of Site C (Fig 26). The feature extended from the limit of excavation by 1.4 m and formed a $90^{\circ}$ corner, with its southern length extending a further 2.4 m . The robber trench was 0.32 m wide by 0.14 m deep, the sides were ragged and irregular. The fill comprised mixed dark greyish-brown sandy loam carrying a variety of residual pottery.

Within the perimeter of the robbed out wall, 7147, and overlying the natural clay, was a floor level, 7154 (Fig 27). The extent of the floor was confined within the former building footprint and comprised hard compacted orange-grey and brown clay, 50 mm thick. There were no other structural elements present. Above the clay base layer was a coarse compact stone surface, 7143 , that comprised mixed flint and stone gravel $<20 \mathrm{~mm}$ in size, laid 50 mm thick. The hard-wearing surface indicates that this was probably a building intended for heavy use. No floor tiles were recovered from the excavations, so it is thought unlikely to have been a base layer for a tiled surface.

Demolition rubble, 7142, lay above the floor levels forming a dump of mixed, crushed and fragmented stone and sand, 160 mm thick, also containing brick, roof tile and pottery. The pottery was largely residual medieval material; however, several of the handmade bricks were distinctive enough to establish a broadly post-medieval date between the 15th-17th centuries. Above the rubble was an abandonment layer of loose greyish-brown sandy clay loam, 7141 , which was 140 mm thick. The abandonment layer contained a copper alloy buckle of the mid-17th century, more residual pottery, and occasional brick fragments indicating that the shell of the former building became a place for dumping refuse before it was eventually demolished and ploughed over.

### 6.3.2 Cob wall 7004, 15th-19th centuries AD

On the south side of Building 1 lay a perimeter wall marking the southern boundary of the post-medieval settlement (Fig 26). The wall, 7004, was aligned east to west and formed a slight dog-leg along its route. Little physical substance remained of the wall since it had been constructed using cob; a mixture of clay, straw and dung. Such materials survive poorly within the archaeological record; however, the clay base of the wall was identified clearly, cutting across earlier medieval deposits (Fig 28).

The cob wall foundation, 7004 , was 0.6 m wide by up to 0.20 m deep. The sides were sharp, near vertical, and the base was flat. The wall material was compact mid-grey with chalky flecks and completely sterile of finds, which is to be expected when examining a cob wall, since finds are less likely to become incorporated into the mixture at the time of construction.


Cob wall foundation 7004 cutting the surface of medieval deposits, Site C Fig 28

### 6.3.3 Building 2, 18th-19th centuries $A D$

A slightly more substantial building replaced the earlier structure either in the late 17th century or soon thereafter. However, since the only surviving element of Building 2 was the stone and brick fireplace, it is likely that the rest of its fabric was constructed around a timber frame using brick nogging and cob. The surviving element was what is often referred to as an inglenook fireplace, which is essentially an expansive working area beneath the chimney flue where a wide range of kitchen activities could be conducted. Investigation was limited within the area of excavation; however, the arrangement of the fireplace suggests that elements of the building would have extended in both directions to the north-east and to the south-west. Nothing more of the building survived within the excavated area on its north-east side, so the survival beyond the excavated area is likely to be similar. The size is uncertain, but would probably have overlain Building 1 in extent and could have comprised two adjoining cottages or a single cottage over a wide footprint with a central hearth. The lack of other structural features means it is not possible to determine the form or layout of its original extent that can be compared to standing examples. Buildings with fireplaces constructed in this general style are quite common amongst examples of vernacular architecture throughout Eastern England as the materials were cheap, readily available and re-used as much material as possible from demolished structures. Some of the older cottages that survive in the nearby villages of Toddington and Chalton provide useful parallels that are still standing. There are recorded examples that have been published for the local area from Harlington (Kennett and Smith 1980) and Leagrave (Castle 1988), similar to examples in North Bedfordshire (Alcock 1969), such as Mavourn Farm, Bolnhurst (Kennett et al 1986), all of which compare well with rural vernacular architecture further afield, as shown by Vine House, Uppingham, Rutland (Brown 2010).

The fireplace, 7180, comprised two large back-to-back openings that would typically have stood at the centre of the dwelling (Fig 26). The fireplace was 3.2 m wide externally, which would have occupied almost the whole width of the structure, perhaps with a passage down one side or as a partition between two adjoining cottages, or a cottage and outbuilding. The fireplace was 1.9 m wide internally, with the depth of the recess being 1.2 m . The form was irregular, with angles of slightly more or less than $90^{\circ}$, as is typical of older buildings. The fabric of the excavated fireplace comprised a variety of materials that included micaceous glauconitic sandstone, fractured limestone blocks, flint nodules, limestone fragments, chalk, ironstone blocks, re-used brick and tile (Fig 29). This was gathered from a range of available sources, strongly suggesting a squatter-style dwelling. The building materials varied in size, no larger than 296 mm by 185 mm by 65 mm , packed together in a close fitting fashion and loosely bonded with a chalky sand mortar. Amongst these one of the re-used bricks showed signs of having been machine made, so, although the fireplace may be an addition to a late 18thcentury cottage, it was itself clearly 19th century in date and was unlikely to have had any contemporary relationship with Building 1.


Stone fireplace 7180, Site C, looking south-west Fig 29
The structure of Building 2 cut through the earlier medieval midden spread and was founded upon the natural clay (Fig 29). Within the aperture of the fireplace, on its east side only, the natural was overlain by a compact orange-brown clay floor, 7005 , which was 0.10 m thick and had been baked hard, showing a reddish-pink tinge close to the surface that was indicative of heat transfer and indirect scorching. Since the majority of the floor levels and later demolition and abandonment deposits had been truncated, the occupation surface of the dwelling did not survive and only the clay floor base was present. There were no postholes found to indicate an earthfast timber frame or the extent of the rest of the building.

### 6.4 Post-medieval land use

### 6.4.1 Ridge and furrow cultivation

Although ridge and furrow derives from cultivation of the open fields, the use of strip field agriculture in many places continued largely unchanged well into the postmedieval era. In areas of watching brief, TWB2 and the HSR soil storage area, furrow cultivation scars were on clear parallel alignments (Figs 30-31). Furrows had extended across Site A, but were mapped and then removed in order to expose the cremation cemetery. Ridge and furrow earthworks were not mapped in these areas by the Historic Environment Record, although a small section survives to the east of M1 Junction 12 and in fields to the south-west of the development (HER3355; Fig 2). Aerial images showed the alignments of ridge and furrow cultivation across Site A (July 1974, frames 115-116). For the most part the ridge and furrow alignments were identical to the allotments depicted on the Agas map of 1581 (BLARS X1.102I/D). Ridge and furrow was also visible on aerial images at Wadlowes Manor (Aug 1961, frame 175; HER788; Fig 2). The open fields appear to have been farmed in much the same way as they had since their beginning, utilising the medieval strips for the allotments of named individuals on the map. The lack of a physical boundary along the historic hedgerow until more recent times indicates that such allotments were not otherwise defined by ditches, hedgerows or fences until the landholding system was revolutionised by the Act of Parliamentary Enclosure in 1797.

### 6.4.2 Post-medieval field boundaries

A ditch, 2908, was identified during trial trench evaluation in Trench 29, which was later corroborated by the watching brief in HSR spoil storage area (Fig 31; Clarke 2012). Although the ditch produced no datable finds, examination of the section during trial trench excavation clearly indicated that it cut through the furrow cultivation soils (Walker 2010, fig 14). Examination of map evidence suggests that this may also tie in with an enclosure boundary mapped by the Ordnance Survey from 1882 until it was replaced by the hedgerow boundary alongside of the motorway in 1959.

Another boundary at the northern end of Site B also tied in with late 19th-century map evidence but has since been grubbed out to combine two adjacent modern fields (Fig 6 ). Ditch 5014 was 3.2 m wide by 0.78 m deep, with little evidence for truncation. The ditch showed signs of erosion at the top with sharp $45-60^{\circ}$ asymmetrical sloping sides and a flattish base which also looked like it had been cleaned out by machine. The basal fill was largely sedimentary yellowish-grey clay silt. The upper fills were clearly infilled with dark bluish-grey and brownish-orange silty clay loam containing roof tile, modern bottle glass, white earthenware and partially rotted fence posts.


Scale 1:1250
Furrows on similar alignments to the allotments mapped in 1581 Fig 30


### 6.5 Medieval and post-medieval finds

### 6.5.1 The pottery by Paul Blinkhorn

The pottery was initially bulk-sorted and recorded on a computer using DBase IV software. The material from each context was recorded by number and weight of sherds per fabric type, with featureless body sherds of the same fabric counted, weighed and recorded as one database entry. Feature sherds such as rims, bases and lugs were individually recorded, with codes used for the various types. Decorated sherds were similarly treated. In the case of the rim sherds, the form, diameter (in mm ) and the percentage remaining of the original complete circumference were recorded. This estimated vessel equivalent (EVE) was calculated in each case.

The terminology used is that defined by the Classification of Medieval Ceramic Forms and follows recognised standards and practises for the study of ceramics (MPRG 1998; 2001). All the statistical analyses were carried out using a DBase package written by the author, which interrogated the original or subsidiary databases, with some of the final calculations made with an electronic calculator. Any statistical analyses were carried out to the standards suggested by Orton (1998-9, 135-7).

## Fabric

The pottery assemblage comprised 10,632 sherds with a total weight of 64.147 kg . The estimated vessel equivalent (EVE), by summation of surviving rimsherd circumference was 36.07. The bulk of the assemblage comprised kiln waste of the Hertfordshire Greyware tradition, and is provisionally dated to the early-mid 13th century.

## Non-kiln material

The kiln waste aside, all the pottery was processed and recorded using the Bedfordshire County Types Series (Baker and Hassall 1977; Table 29).

Table 29: Pottery fabrics present amongst the non-kiln assemblage

| Beds <br> CTS <br> code | Database <br> code | Name | Date | Sherd <br> count | Wt (g) | EVE |
| :--- | :--- | :--- | :--- | ---: | ---: | ---: |
| B07 | F330 | medieval shelly ware | AD1100-1400 | 7 | 115 | 0.02 |
| C03 | F360 | fine sandy reduced ware | 12th-13th C | 6 | 59 | 0.00 |
| C03a | F361 | fine sand and flint | 12th-13th C | 9 | 97 | 0.10 |
| C57 | F343 | London ware | mid 12th-late 14th C | 2 | 28 | 0.00 |
| C59a | F362 | coarse sandy ware | 12th-13th C | 24 | 239 | 0.14 |
| P06 | F412 | slip-decorated earthenware 17th C | 1 | 8 | 0.00 |  |
| P12 | F404 | Cistercian ware | cAD1470-1550 | 1 | 11 | 0.00 |

## Kiln waste

The kiln waste has been given temporary codes of F300 for the predominantly reduced sherds, and F301 for those which are mainly oxidized. The assemblage comprised 10,581 sherds weighing 58.182 kg (EVE 34.87), and there was also a complete, nonwaster jar in a similar fabric which had been sunk into the ground and probably used as a cistern ( 5.408 kg , EVE 0.90 ). The fabric of the wasters is primarily heavily sandtempered, with moderate to dense sub-angular to sub-rounded clear, reddish-yellowish-brown and black quartz up to 0.5 mm with rare grains up to 1 mm , rare to sparse black iron-rich fragments up to 1 mm , occasional calcareous inclusions up to 1 mm , and sparse voids surrounded by blackened areas caused by burnt-out organic material (Fig 32).


Kiln waste fabric, c.20x magnification (original sherd, c.4.5mm thick)
Fig 32
Both oxidized orange-brown and reduced grey sherds were present, and many were also a brownish-grey. This variation in colour was mainly restricted to surfaces, with the core of sherds almost invariably reduced grey. The vessels appear to have been coilbuilt and finished on a turn-table, with evidence of knife trimming on the lower body. The fabric is similar to South Hertfordshire-type greywares (Blackmore and Pearce 2010, fig 49), fabric C60 in the Bedfordshire County Type Series, such as those from kiln sites at Hitchin (Blinkhorn forthcoming b; ibid, 107). The Hertfordshire tradition is generally dated to the mid-12th to mid-14th centuries. Recently, a number of groups of kiln waste from Hertfordshire, Bedfordshire and Buckinghamshire have been analysed and published (Blackmore and Pearce 2010; Slowikowski 2011).

A number of sherds were spalled or warped, and none showed any sign of use, such as sooting, other than the probable cistern. A small number of broken and spalled, reduced tile fragments were also noted. These may have been made at the kiln, or were perhaps used as packing during pottery firing. All had stabbed backs.

## Chronological summary

The kiln waste is from the earlier part of the medieval period. The fabric has some affinities with the late medieval reduced ware tradition, but the proportion of vessel forms is quite different. Jars predominate here, whereas bowls are much more common amongst other groups of late medieval material. A kiln at Higham Ferrers in Northamptonshire, archaeomagnetically dated to AD1385-1435, produced bowls as by far the major vessel type, with jars the least common (11.3\% by EVE; Blinkhorn 2007). Earlier medieval pottery assemblages generally have a far higher proportion of jars than any other vessel type, and this group conforms to that pattern. The decorated handles from this group are also more typical of the earlier medieval tradition than the post-black death industries. A number of groups of kiln waste in a very similar fabric to
that from this kiln are known from Great Missenden in Buckinghamshire (Ashworth 1983). The most recently excavated group from there is very similar to this (Blinkhorn forthcoming a). The method of manufacture was the same, the vessels were all jugs, bowls and jars apart from a few possible curfew fragments and a single skillet handle, jars were the most common vessel types, and the jug handles are all decorated with thumbing and stabbing or slashing. The assemblage was dated to the mid-12th to mid13th centuries. The range of rim forms from the group is also in keeping with the Hertfordshire-type greyware tradition. Some large, heavy base sherds with thumbed applied strips on the carination were noted here, and are likely to be from the bases of bunghole cisterns, although no bungholes were identified. The other possibility is that they are from the shoulders of curfews. In London both vessel types were part of the Hertfordshire greyware potters' repertoire from the late 12th century onwards (Blackmore and Pearce 2010, fig 135). The style of decoration on the jars, particularly the applied strips, suggests the same date as a terminus post quem (ibid).

Most of the other pottery types in association here are unglazed sandy and shelly coarsewares, which could date to any time in the 12th-14th centuries. The initial cleaning of the top of the pot bank produced a fragment of a base of a Cistercian ware cup, which is unlikely to be earlier than the mid-15th century, but, due to its stratigraphic position, indicates that the kiln waste dates to before that time. The only closely dateable finds from the pot bank are two sherds of abraded London ware, from layers 7081 and 7085 . Both have white-slipped outer surfaces with a patchy green splash glaze. The slip on the larger of the sherds, from layer 7081, appears to be in the form of a painted lattice, a style of decoration typical on London ware Early Rounded jugs of the late 12th to early 13th centuries (Pearce et al 1985, 28, fig 9).

Probably the most chronologically sensitive feature of Hertfordshire-type greyware jugs are the handles, which appear to change consistently over time. The range of decoration on the examples here indicates a date of the early to mid-13th century, and so that the kiln waste is given that date overall.

## Typology

The rim assemblage was limited to jars, bowls and jugs, with jars being the most common (EVE 28.77, 82.3\% of the assemblage), bowls made up 11.8\% (EVE 4.11) and jugs $5.9 \%$ (EVE 2.06). This is similar to the kiln waste from the Bancroft site in Hitchin (Blinkhorn forthcoming b), where jars were the most common (75.5\%), although a greater proportion of jugs were noted (19.9\%), and bowls were relatively scarce (4.6\%). The only other types at Hitchin were a lid (EVE 0.08), the base from a probable pedestal lamp, some probable curfew fragments, and a piece from a possible cheese press. The handles from the Bancroft site were largely thumb-grooved straps with slashing or stabbing, and six examples were noted with a single stripe of white slip running down the thumb-groove. Finger-tip or thumbed decoration was scarce at Bancroft, with just three out of the 75 handle fragments so treated. The differing handle decoration at this site may be chronological; Hertfordshire greyware vessels with slashed and stabbed handles occur in London from the beginning of the 13th century and are most common in the last quarter of the 13th to early 14th centuries (Blackmore and Pearce 2010, 172). Thumbed handles, which make up the majority of the types from here, largely date to the early to mid-13th century (ibid, fig 135).

## Jars

The range of jar rim forms is shown in Figure 37. Fifteen different forms were noted, with most being variations on simple, near-horizontal everted types (Table 30). Only one form was upright (type 112), and only a single sherd had such a form. By far the most common form was type 101, with the bulk of the rest of the assemblage made up
of the closely related forms 102, 104, 105 and 107. The original shape of the complete vessels is difficult to ascertain as it was not possible to reconstruct any vessels to any great degree. The larger rim sherds suggest that there may have been two basic forms; one with a more rounded profile and no discernible neck (Fig 39, 1), the other with a higher neck and more pronounced shoulders (Fig 39, 2). The complete Hertfordshire greyware jars from London suggest that these are common forms (Blackmore and Pearce 2010, figs 74-79).

Table 30: Jar rim form occurrence by type, in EVE, and as a percentage of the rim form assemblage

| Rim form | EVE | Percentage (\%) | Rim form | EVE | Percentage (\%) |
| :---: | ---: | :---: | :---: | :---: | :---: |
| 101 | 13.86 | 48.2 | 108 | 0.81 | 2.8 |
| 102 | 3.11 | 10.8 | 109 | 0.44 | 1.5 |
| 103 | 0.35 | 1.2 | 110 | 0.27 | 0.9 |
| 104 | 3.29 | 11.4 | 111 | 0.11 | 0.4 |
| 105 | 3.15 | 10.9 | 112 | 0.07 | 0.2 |
| 106 | 0.10 | 0.3 | 113 | 0.20 | 0.7 |
| 107 | 3.01 | 10.5 | Total | $\mathbf{2 8 . 7 7}$ |  |

A plot of the jar rim diameter occurrence shows that they had a unimodal distribution in the $160-240 \mathrm{~mm}$ range (Fig 33), with a mean size of 213.6 mm , although a few fragments of much larger vessels were also present. The distribution of the jar rim diameters is very similar to that of those from the Hertfordshire greyware kiln site at Bancroft in Hitchin (Blinkhorn forthcoming b). The mean diameter of the jars from that site was 214.5 mm , indicating a virtually identical range of sizes to here.

Some of the jar rims have decoration on the upper surface of the rim bead, usually stabbing, with a round cross-section tool, although a few examples were noted with combing running around the circumference. The decorated rim sherds in the main had diameters at the larger end of the size distribution (Fig 34), and had a mean size of 287.1 mm , suggesting that they were all from storage vessels. None of the jars from the kiln waste had fingertip decoration on the rim in the manner of the large, near-complete cistern (Fig 39), further indicating that it was made elsewhere. A number of body sherds ( 225 sherds, 2.829 kg ) were noted with applied and/or incised decoration, with the curvature of the sherds suggesting that they all came from large vessels (Fig 39, 34). The decoration in the main comprised variations of shallow, thumbed applied strips and/or combed wavy lines, with the turning marks on the inside of the sherds indicating that most of the applied strips ran horizontally around the body. Hertfordshire-type greywares with horizontal applied strips first arrived in London in the late 12th century (Blackmore and Pearce 2010, 148). A small number of sherds with an incised lattice were also noted, probably all from the same vessel (Fig 39, 4). The decoration of the large cistern, vertical applied strips with stabbing on the top of the shoulder below the neck, was not noted on any of the kiln waste.


Jar rim diameter occurrence in 20mm diameter groups, in EVE Fig 33


Jar rim occurrence for decorated rims in 20 mm diameter groups, in EVE

## Bowls

The range of bowl rim forms is shown in Figure 37. Over half of the assemblage comprises rim form 204 (Table 31), but there appears to be more variation in the other, less common types. The rim diameters indicate a largely unimodal size distribution, with a mean diameter of 321.4 mm (Fig 35). These are a little larger than the bowls from Bancroft, Hitchin, which had a mean diameter of 309.3mm.

Like the jars, some bowls had decoration on the rim top in the form of stabbing, although just two rims were noted with this treatment. This is a similar pattern to the bowls from Bancroft. A few examples were also noted with horizontal applied strips running along the bodies (Fig 39, 5).

Table 31: Bowl rim form occurrence by type, in EVE, and as a percentage of rim form assemblage

| Rim form | EVE | Percentage (\%) | Rim form | EVE | Percentage (\%) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 201 | 0.08 | 1.9 | 208 | 0.10 | 2.4 |
| 202 | 0.19 | 4.6 | 209 | 0.13 | 3.2 |
| 203 | 0.19 | 4.6 | 210 | 0.06 | 1.5 |
| 204 | 2.12 | 51.6 | 211 | 0.09 | 2.2 |
| 205 | 0.11 | 2.7 | 212 | 0.05 | 1.2 |
| 206 | 0.51 | 12.4 |  |  |  |
| 207 | 0.48 | 11.7 | Total | $\mathbf{4 . 1 1}$ |  |



Bowl diameter occurrence, in 20mm diameter groups, in EVE


Jug diameter occurrence, jug rims, in 20mm diameter groups, in EVE Fig 36

## Jars



## Bowls



Jugs


Table 32: Jug rim form occurrence by type, in EVE, and as a percentage of the rim form assemblage

| Rim form | EVE | Percentage (\%) |
| :---: | :---: | :---: |
| 301 | 1.13 | 54.9 |
| 302 | 0.46 | 22.3 |
| 303 | 0.09 | 4.4 |
| 304 | 0.08 | 3.9 |
| 305 | 0.30 | 14.6 |
| Total | $\mathbf{2 . 0 6}$ |  |

The range of jug rim forms is shown in Figure 37. The range of forms is very narrow, and all appear to be variations on a single theme of simple everted beads and nearvertical, slightly out-splayed necks, with half being type 301 (Table 32). The vast majority of the rims are in the $121-140 \mathrm{~mm}$ size range (Fig 36). A single decorated rim, with combed wavy lines on top of the bead, was noted.

## Handles

The range of handles is shown in Figures 40-41. They are mostly variations on flattened rods, which is fairly typical of the Hertfordshire-type greyware tradition, although three different strap types also occurred, (Fig 41, 10, 12, 14). Only one example of each was noted. The range of decoration is again fairly typical of the tradition, consisting of combinations of stabbing, slashing and thumbing, although the material from this site has its own variations which do not occur elsewhere, particularly longitudinal lines of stabbing flanked by thumb impressions, and combination of longitudinal grooves with stabbing. Stabbing is far more common than slashing, which contrasts with the other production centres, where the opposite is usually the case, although general variations on stabbing and thumbing, which covers the majority of the handles found here, suggest a date of the early to mid-13th century (Blackmore and Pearce 2010, fig 135).

Table 33: Handle forms by count, expressed as a percentage of the population

| Form | Count | Percentage (\%) | Form | Count | Percentage (\%) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 3 | 7.9 | 9 | 1 | 2.6 |
| 2 | 8 | 21.1 | 10 | 1 | 2.6 |
| 3 | 4 | 10.5 | 11 | 2 | 5.3 |
| 4 | 1 | 13.6 | 12 | 1 | 2.6 |
| 5 | 5 | 2.6 | 13 | 3 | 7.9 |
| 6 | 1 | 10.5 | 14 | 1 | 2.6 |
| 7 | 4 | 5.3 | 15 | 1 | 2.6 |
|  | 2 |  | Total | 38 |  |

## Bases

All the bases had a sagging profile, with seven having thumb-frilling and eleven with applied thumbed strips to create foot-rings. The thumb-frilled bases were probably from jugs, the foot-ring examples from cisterns.

## Bunghole cisterns

No bungholes were noted, but there were fragments from rims and bases which may be from them. A number of fairly large, heavy duty rims were noted which are much thicker than most of the others from the assemblage (Fig 42, 1). There is also a single example with a very deep lid seat (Fig 42, 2). The only complete Hertfordshire greyware cistern known from London also has a heavy duty rim, although large jars without bungholes occurred with such rims (ibid, 150). More persuasive evidence for the manufacture of bunghole cisterns comes from the presence here of eleven base
fragments with applied thumbed strips running around the carination and acting as foot rings (Fig 42, 3). Most have a large diameter, in excess of 300 mm , and are very similar to London examples of bunghole jars (Blackmore and Pearce 2010, 151-4). These may also be from curfews, which in terms of form, are very similar to inverted bowls, although they tend to have decoration on what would normally be the base (ibid, 1901), and no sherds of that type were noted. Handles with circular vent holes, which only occur on curfews, were also absent from this assemblage, so it seems most likely that the large, frilled foot ring bases and at least some of the heavy duty rims are from bunghole cisterns. Such vessels occur in London from the late 12th to mid-14th century (ibid, fig 135).

## The potters' cistern

A large and near-complete jar occurred in fill 7160 within pit 7161 (Figs 38 and 42, 4). The jar is very large, with a rim diameter of 420 mm , and is $c .260 \mathrm{~mm}$ high. The capacity is in the region of 45 litres. The fabric is similar to that of the kiln waste, and the Hertfordshire greyware industry generally, but the vessel has a much greater rim diameter than any others from the site, and a slightly different style of decoration. The finger-tipping on the rim and shoulder of the vessel has no parallels at this site, and the applied strips are vertical rather than horizontal. There are no parallels amongst any of the greyware kiln waste groups published by Blackmore and Pearce (ibid). Large jars with vertical applied strips are known from domestic sites in London (ibid, fig 76), and some have stabbed rims (ibid, 75), although none of the published examples have the finger-tipping on the rim nor the stabbing on the shoulder that this vessel possesses.


Large, near-complete jar, fill 7160, pit 7161 (Scale 10mm intervals)
Fig 38
The jar had been sunk into the ground and was presumably a water-storage vessel, possibly used in the potting process. In the Toft area at the manufactory at Lyveden, whole pots of the 12th-13th centuries were noted in the top of stone-lined pits which appear to have been clay stores, one of which was a large jar, the other a bowl (Steane and Bryant 1975, 14-15). No obvious parallels in the region could otherwise be found, although a shallow, stone-lined feature near to the potter's workshop at Kings Meadow Lane, Higham Ferrers, may have had a similar function (Blinkhorn and Hardy 2007, 215-6).

## The assemblage in its regional context

The Hertfordshire greyware industry is well documented, with a number of manufacturing centres and groups of kiln waste have been excavated. The tradition
was recently the subject of work showing that kilns making very similar wares are not only known from Hertfordshire, but also Buckinghamshire, Middlesex and Surrey (Blackmoore \& Pearce 2010, 83). With the discovery of this group of kiln waste, Bedfordshire can now be added to the list of sources.

The pottery from this kiln has decorated affinities with both the Limpsfield-type greywares from Surrey and those from Hertfordshire kilns. For example, the thumbed handles show some differences to those from the Hertfordshire industries, whose potters appear to have favoured knife-slashing over pin-stabbing, but are like some of the examples from Clacket Lane, Titsey (ibid, fig 64), and pin-stabbed, thumbed handles were said by Dunning to be typical of the pottery from Vicars Haw, Limpsfield (Prendergast 1974, 58). Jars and bowls with stabbing on the rim are far more common at Titsey than at the Hertfordshire and Buckinghamshire sites (Blackmore and Pearce 2010, fig 64).

The assemblage from this site has similarities with material manufactured in South Buckinghamshire in the Great Missenden area, particularly from the Granary Cottage site (Blinkhorn forthcoming a), and the same comments apply to material from Tyler's Green (Cauvain et al 1989). Thumbed and stabbed handles were also fairly common at Rush Green Denham (Blackmore and Pearce 2010, fig 62). Handles with such decoration are common on domestic sites in London, but examples that also have the longitudinal grooving seen on many examples here, or thumb-impressions flanking lines of stabbed dots are entirely absent amongst the illustrated material, suggesting that the products of this manufactory were not reaching London in quantity, if at all.

Table 34: Pottery occurrence by grid square, kiln waste only, by weight (g)

| Grid Sq | Wt (g) | Grid Sq | Wt (g) | Grid Sq | Wt (g) |
| :---: | ---: | :---: | ---: | ---: | ---: |
| A | 409 | V | 685 | AQ | 2876 |
| B | 1504 | W | 59 | AR | 2181 |
| C | 127 | X | 190 | AS | 26 |
| D | 252 | Y | 1373 | AT | 951 |
| E | 1634 | Z | 1382 | AU | 165 |
| F | 76 | AA | 321 | AV | 106 |
| G | 36 | AB | 502 | AW | 1801 |
| H | 118 | AC | 30 | AX | 2120 |
| I | 2128 | AD | 896 | AY | 3063 |
| J | 26 | AE | 115 | AZ | 28 |
| K | 137 | AF | 1314 | BA | 138 |
| L | 673 | AG | 137 | BB | 384 |
| M | 1238 | AH | 1311 | BC | 293 |
| N | 242 | AI | 1449 | BD | 256 |
| O | 213 | AJ | 1547 | BE | 29 |
| P | 960 | AK | 694 | BF | 146 |
| Q | 497 | AL | 315 | BG | 194 |
| R | 913 | AM | 475 | BH | 11 |
| S | 1331 | AN | 894 | BI | 241 |
| T | 343 | AO | 0 | BJ | 0 |
| U | 758 | AP | 103 | BK | 1393 |



Scale 1:2
Medieval pottery, 1-5
Fig 39




## Illustrated pottery

Figure 39
1 Jar rim, dark grey fabric with uniform orange-brown surfaces, layer 7006
2 Jar rim, uniform light grey fabric, layer 7006
3 Decorated bodysherd with horizontal combed wavy lines and thumbed applied strips, grey fabric with brown surfaces, layer 7099
4 Decorated bodysherd with incised lattice and horizontal thumbed applied strip, grey fabric with brown surfaces, layer 7106
5 Bowl with applied strip decoration on the body, uniform grey fabric with an orange patch on the outer surface, layer 7006

Figure 40
$1 \quad$ Handle type 1, uniform light grey fabric, layer 7087
2
3
Handle type 2, grey fabric with uniform orange-brown surfaces, layer 7102
Handle type 4, uniform grey fabric, layer 7104
Handle type 3, grey fabric with uniform orange-brown surfaces, layer 7104
Handle type 5, grey fabric with brown surfaces, layer 7117
Handle type 6, dark grey fabric with lighter surfaces, layer 7093
Handle type 7, uniform grey fabric, layer 7086
Figure 41
$8 \quad$ Handle type 8, grey fabric with brown surfaces, layer 7086
9
10
11
12
13
14
15
Handle type 9, variegated dark brown and black fabric, layer 7077
Handle type 10, uniform light grey fabric, layer 7073
Handle type 11, uniform grey fabric, layer 7117
Handle type 12, uniform light grey fabric, layer 7120
Handle type 13, grey fabric with browner surfaces, layer 7115
Handle type 14, grey fabric with orange-brown patches on surface, layer 7125
Handle type 15, grey fabric with orange-brown surfaces, layer 7124
Figure 42
$1 \quad$ Heavy duty rim, grey fabric with light grey-brown surfaces, layer 7006
2 Heavy duty rim with deep lid-seating, orange fabric with pale brown-grey surfaces, layer 7124
3 Thumbed footing from a ?cistern, dark grey fabric with browner surfaces, layer 7006
4 Jar, large, near-complete, grey fabric with slightly browner surfaces, evenly sooted below the shoulder on the outer surface, fill 7160, pit 7161

### 6.5.2 The post-medieval finds by Tora Hylton

Two nails, a small strip of iron and an undiagnostic shard of clear glass were recovered from spread layer 7006. A copper alloy trapezoidal buckle frame was recovered from buried soil layer 7141. The frame has pointed ends and a protrusion either side of the strap bar, it would have been used as spur buckle and dates to the mid-17th century (Whitehead 1996, fig 512, 513). The buckle is from buried soil layer 7141, which overlies the demolition material associated with the partly exposed portion of Building 1.

### 6.5.3 The building materials

by Pat Chapman
Roof tile
These 46 roof tile sherds weigh 2.9 kg and the sherds are small, $c .80 \times 60 \mathrm{~mm}$ or less (Table 35). The fabric is typically hard sandy clay in a range of colours from brown to orange-brown and red to red-brown, a few tiles are very hard and brown. Some are grey with a slightly vitrified partially white surface and a few are bloated to almost twice their original thickness, a consequence of over exposure to high temperatures.

Table 35: Quantification of medieval and post-medieval roof tile

| Context / type | No | Wt (g) | Comment (measurements in mm) |
| :---: | :---: | :---: | :---: |
| 5002 / plough soil | 1 | 148 | 14 thick, slight curve |
| 7006 / surface spread | 1 | 121 | 20 thick, overfired grey, stabbed |
| 7006 / east of wall | 1 | 189 | 14 thick, coarse sandy orange-brown, mortar |
| 7006 / midden | 14 | 544 | 12-15 thick: 1-brown stabbed both sides; 3-orange-brown, 1 mortar; 3-orange; 1-dull red with 12 mm square peghole;, 4-red-brown, 1 mortar; 1 white; 1 grey vitrified joins 7006/7099 |
| 7006 / 7069, grid sq A | 1 | 58 | 15 thick, orange to grey |
| 7006 / 7070, grid sq B | 1 | 128 | 14 thick, grey-brown |
| 7006 / 7075, grid sq G | 1 | 35 | 12 thick, red-brown |
| 7006 / 7086, grid sq R | 1 | 115 | 20 thick, grey, stabbed |
| 7006 / 7090, grid sq V | 1 | 97 | 18 thick, grey |
| 7006 / 7099, grid sq AD | 2 | 282 | 15 thick, (3 join) grey, vitrified; 1 orange fragment |
| 7006 / 7104, grid sq AH | 1 | 87 | 20 thick, very hard brown-black |
| 7006 / 7115, grid sq AQ | 1 | 49 | 13 thick, orange with grey surface, stabbed |
| 7006 / 7117, grid sq AR | 2 | 127 | 12-20 thick, overfired orange to grey, bloated |
| 7006 / 7121, grid sq AU | 3 | 40 | Orange fragments |
| 7006 / 7124, grid sq AX | 2 | 123 | 20 thick, very hard brown |
| 7006 / 7137, grid sq BK | 1 | 275 | 21 thick, grey, vitrified |
| 7015 / pit 7018 | 3 | 168 | 12-15 thick, orange-brown with mortar; red; redbrown with peghole 15 diameter |
| 7101 / wall, Building 2 | 9 | 328 | 13-15 thick, 1-orange-brown, 5-red-brown with 1 peghole 11 diameter, 1 remnant peghole and 1 mortar; 1-black; 3-overfired brown-grey bloated |
| Totals | 46 | 2914 |  |

The tiles are $12-20 \mathrm{~mm}$ thick, the majority being $12-15 \mathrm{~mm}$ thick. Four sherds have a peghole, one of which is 12 mm square, the remaining three are circular with diameters of $11-15 \mathrm{~mm}$. A few of the hard brown and grey vitrified tiles have been punctured by a pointed implement c. 2 mm in diameter. There is one join, between the sherd from layer 7099 and that from the layer 7006.

Five sherds retain some white lime mortar adhering to one or more surfaces, indicating that they had been used on a roof. However, many other tiles could have been used in a kiln as part of the structure or as spacers, since over one third have been overfired, some to extremes, including the tiles with puncture marks. These overfired tiles are possibly from the same kiln(s) as the pottery wasters (see 6.5.1 above).

## Brick

The seventeen bricks range from one complete brick to small fragments, altogether weighing 5.8 kg (Table 36). Sixteen of these, in particular six from the demolition layer of Building 2, layer 7154, are handmade to various levels of competence, some well mixed and others less so, using a hard clayey sand fired to orange-brown or redbrown, with or without a grey core. The length and breadth dimensions of four of the bricks from layer 7154 are normal, but all the bricks are thinner than usual, $30-36 \mathrm{~mm}$
( $11 / 8-13 / s^{\prime \prime}$ ), about half the usual thickness, though not uncommon. Another brick, also from layer 7142 is made from dense sandy bright orange clay, and is slightly thicker than the rest, at $48 \mathrm{~mm}\left(17 / \mathrm{s}^{\prime \prime}\right)$. These bricks date from the 16 th to 17 th centuries.

Table 36: Quantification of post-medieval brick

| Context/feature/ type | No | Wt (g) | Dimensions (mm) (inches) | Comment |
| :---: | :---: | :---: | :---: | :---: |
| 7005 | 2 | 795 | -x-x 33 | orange-brown, grey core, clayey sand red-brown clayey sand |
|  |  |  | -x-x $11 / 4$ |  |
|  |  |  | -x-x 36 |  |
|  |  |  | -x-x $13 / 8$ |  |
| 7015 / pit 7018 | 7 | 465 | -x-x 33 | fragments of red-brown and orangebrown clayey sand |
|  |  |  | -x-x $11 / 4$ |  |
| 7101 / wall | 1 | 46 | - | fragment, grey |
| Building 2 |  |  |  |  |
| 7154 / layer Building 1 | 7 | 1156 | $215 \times 105 \times 34$ | red-brown clayey sand, large lumps of |
|  |  |  | $81 / 2 \times 41 / 8 \times 13 / 8$ | grog and chalk up to 25 mm long |
|  |  | 1064 | -x110 x 30 | orange-brown clayey sand with grey |
|  |  |  | - $\times 43 / 8 \times 11 / 8$ | core, two lumps not well mixed |
|  |  | 883 | -x $115 \times 33$ | orange-brown clayey sand |
|  |  |  | -x $41 / 2 \times 11 / 4$ |  |
|  |  | 502 | -x $110 \times 35$ | orange-brown clayey sand |
|  |  |  | - $\times 43 / 8 \times 13 / 8$ |  |
|  |  | 359 | -x-x35 | fragments of orange-brown clayey sand |
|  |  |  | -x - x $13 / 8$ |  |
|  |  | 530 | -x $105 \times 48$ | dense sandy bright orange |
|  |  |  | - $\times 41 / 8 \times 17 / 8$ |  |
| Totals | 17 | 5800 |  |  |

The brick may be from wall foundations, but since only rubble walls were excavated brick formed only part of the material in use, rather than earthfast foundation material in its entirety. It is possible that these bricks may have been used as nogging, forming thin curtain walls between timber beams. Use as flooring is less likely as there is no sign of wear.

The brick fragment from the wall foundation of Building 2, context 7101 in grid AE, is made from a dense coarse red-brown fabric that is probably from a machine-made 19th- to 20th-century brick. A small fragment of modern black brick with a finely dimpled surface, weighing 69g, comes from layers $7006 / 7125$ in grid square AY, and is probably part of a spread that overlay cob wall 7004.

## Fired clay

There are 25 fragments, weighing 311g, typically small with a few exceptions (Table 37). The majority of the fired clay fragments reflect the main distribution of the pottery sherds in an area aligned north-east to south-west (Fig 26). A few fragments of fired clay could be from the same type of bricks found amongst the medieval building layers, and being made from the same hard orange-brown or red-brown clayey sand.

Table 37: Quantification of fired clay from the medieval and post-medieval spread

| Context / feature | No | Wt (g) | Comment |
| :--- | ---: | ---: | :--- |
| 7006 / surface spread | 1 | 20 | hard flat grey-brown, dense fossil shell |
| 7006 / 7069, grid sq A | 1 | 18 | red-black, sandy |
| 7006 / 7070, grid sq B | 5 | 28 | dark brown sub rounded sandy |
| 7006 / 7077, grid sq I | 1 | 9 | dark brown sub rounded sandy |
| 7006 / 7081, grid sq M | 1 | 35 | hard dark orange-brown, dark grey top, flat, daub |
| 7006 / 7085, grid sq Q | 1 | 16 | black and brown |
| 7006 / 7087, grid sq S | 6 | 27 | 5 dark red-brown rounded; 1 orange streaked white |
| 7006 / 7089, grid sq U | 1 | 64 | dark red-brown to brown overfired |
| 7006 / 7090, grid sq V | 1 | 11 | dark red-brown to brown overfired |
| 7006 / 7094, grid sq Z | 1 | 19 | dark red-brown to brown overfired |
| 7006 / 7109, grid sq AL | 1 | 9 | grey |
| 7006 / 7115, grid sq AQ | 1 | 11 | dark red-brown |
| 7006 / 7137, grid sq BK | 1 | 15 | red-brown, possible brick fragment |
| 7097 / 7116, grid sq AQ | 1 | 8 | red-brown to brown |
| 7183 / wall, Building 2 | 2 | 21 | orange-brown with core |
| Totals | $\mathbf{2 5}$ | $\mathbf{3 1 1}$ |  |

### 6.6 Environmental and faunal remains

### 6.6.1 The plant macrofossils by Val Fryer

Five out of the seventy-six samples that were assessed, were of medieval date. The samples were processed by the author using the same methods as for other deposits. The plant macrofossil remains are summarised below in Table 38 and are listed in within the site archive as part of the assessment.

## Sample composition

Plant macrofossils other than charcoal/charred wood were generally scarce. Preservation was mostly very poor; many of the grains and seeds were very fragmentary and were also puffed and distorted.

Cereal grains (particularly wheat) are common within the ditch assemblage, and it would appear most likely that this material is derived from a small, discrete deposit of either cereal storage refuse or domestic hearth waste. The latter is probably more likely as bone fragments and a piece of hazel nutshell are also recorded. It is possibly of note that the few weed seeds present within the same assemblage are all of a similar size to the grains. Such seeds commonly persisted in batches of prime grain until they were removed by hand immediately prior to consumption/use.

Spread 7006 appears to be an accumulation of debris that stratagraphically predates cob wall 7004. A small number of cereals and weed seeds are recorded from the deposit, but the assemblages are largely composed of fragments of charcoal/charred wood. Analysis of the artefacts within the same deposit has identified the presence of a large number of fragmentary pottery wasters, which may represent an accumulation of kiln waste. The deposit is detritus generated by the regular burning of refuse and other materials within a specific area of the site.

## Conclusion

Although both hearth refuse and kiln waste are noted within the assemblages, it is impossible to place these within any particular context, as specific features which were recorded and sampled are very limited.

Table 38: Charred plant remains from medieval features

| Sample number | 13 | 144 | 145 | 146 | 147 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Fill/Deposit number | 5003 | 7111 | 7123 | 7124 | 7125 |
| Feature type | Ditch | Spread | Spread | Spread | Spread |
| Feature number / grid square | 5004 | AN | AW | AX | AY |
| Cereals |  |  |  |  |  |
| Avena sp. (grains) | xcf | - | - | - | - |
| Triticum sp. (grains) | xx | - | - | - | X |
| Cereal, indeterminate (grains) | xx |  | xfg | X | xfg |
| Herbs |  |  |  |  |  |
| Brassicaceae, indeterminate | - | - | - | - | xcf |
| Bromus sp. | x | - | - | - | x |
| Fabaceae, indeterminate | x | - | - | - | - |
| Fallopia convolvulus (L.) A. Love | xcf | - | - | - | - |
| Galium aparine L. | - | - | - | - | xfg |
| Tree/shrub macrofossils |  |  |  |  |  |
| Corylus avellana L. | x | - | - | - | - |
| Other plant macrofossils |  |  |  |  |  |
| Charcoal <2mm | xxxx | xxxx | xxxx | xxxx | xxxx |
| Charcoal $>2 \mathrm{~mm}$ | XXX | XXX | XXX | XX | XXX |
| Charcoal $>5 \mathrm{~mm}$ | - | X | X | X | X |
| Charcoal $>10 \mathrm{~mm}$ | - | X | - | - | - |
| Indeterminate seed | - | - | - | - | X |
| Indeterminate tuber fragment | - | xcf | - | - | - |
| Other remains |  |  |  |  |  |
| Black porous 'cokey' material | xX | x | - | - | x |
| Black tarry material | x | - | - | - | - |
| Bone | $x \quad x b$ | - | - | X | - |
| Burnt/fired clay | x | - | X | - | X |
| Small mammal/amphibian bones | X | - | - | - | - |
| Sample volume (litres) | 28 | 20 | 14 | 16 | 14 |
| Volume of flot (litres) | <0.1 | 0.1 | 0.1 | 0.3 | 0.2 |
| \% flot sorted | 100\% | 100\% | 100\% | 50\% | 50\% |
| $x=1-10 \text { specimens } \quad x x=11-50$ $\mathrm{cf}=\text { compare } \mathrm{fg}=\text { fragment } \mathrm{b}=\mathrm{bc}$ | cimens | = 51-10 | pecimens | xx = 100+ | cimens |

### 6.6.2 The animal bone by Laszlo Lichtenstein

Animal bone was recovered form medieval spread/layer 7006 (same as 7072, 7093, 7099, 7109, 7114, 7116, 7121); a fill of hollow 7007, and gully 7057 (Table 39).

A total of $16(118 \mathrm{~g})$ hand-collected animal bone elements and fragments were analysed using standard zooarchaeological procedures. Three specimens ( $20 \%$ of the total NISP) were identified to taxa and parts of anatomy, representing cattle and sheep species.

The bones were generally in good condition. The fragmentation was high with the majority ( $79.7 \%$ ) being less than 50 mm in size. No complete long bones were recorded, because the proximal and the distal end were damaged. No evidence for burning or bone working was observed. Two instances of butchery were noted on cattle radii and on a large ungulate-size animal long bone fragment.

A single freshly broken bone, weighing 265 g , was recovered in seven fragments from medieval ditch 5008 , Site B. These scapulae fragments were from a horse shoulder blade. There was no evidence for butchery, canid gnawing, burning or pathology.

Table 39: Species present in the medieval animal bone assemblage by fragment count

| Species/Taxa | MNI | Number | Percentage (\%) |
| :--- | :---: | :---: | :---: |
| Cattle - Bos taurus L. | 1 | 2 | 13.3 |
| Horse - Equus caballus L. | 1 | - | - |
| Sheep - Ovis aries L. | 1 | 1 | 6.7 |
| Sheep/Goat - Ovicaprid | - | - | - |
| Pig - Sus scrofa domesticus B. | - | - | - |
| Large ungulate size | 1 | 7 | 46.7 |
| Small ungulate size | 1 | 2 | 13.3 |
| Unidentified | - | 3 | $\mathbf{2 0 . 0}$ |
| Totals | $\mathbf{5}$ | $\mathbf{1 5}$ | $\mathbf{1 0 0 . 0}$ |

## Conclusion

The amount of material was below the level anticipated for a site of domestic occupation. However, it can be stated that cattle and sheep were utilised at or near the site. The species present and their relative proportions appear to be typical for the medieval period.

### 6.7 Discussion of the medieval and post-medieval settlement

### 6.7.1 The medieval midden waste

The midden was almost entirely comprised of pottery wasters in a heavily sand tempered fabric that is similar to the South Hertfordshire greywares of the 12th-13th centuries with a terminus post quem c.1350AD. The total quantity of pottery was 10,581 sherds (c.58kg), together with 33 sherds $(2,260 \mathrm{~g})$ of medieval roof tile, 23 fragments $(290 \mathrm{~g})$ of fired clay and a few elements of animal bone $(16,118 \mathrm{~g})$. The burnt material in the midden contained both herbaceous charred seed and wood charcoal in low quantities. There was insufficient evidence to establish the presence of the potters' workshop, only the water cistern was found beneath the spread of the midden, and there was no evidence for a kiln. Sufficient medieval roof tile was recovered to suggest that a small tile-roofed workshop or drying shed would have been located nearby, but the lack of domestic waste within the midden indicates that the potter did not mix his refuse. We would expect the potter to have lived nearby, but there is no evidence to substantiate this and a larger area would need to investigated to locate the potters' domicile, workshop, drying shed and kiln; although it is thought the workshop lay beneath the midden.

The potter's work was mainly utilitarian comprising jars, bowls and jugs. Relatively few of the pieces were well decorated and it would seem that this potter made the majority of his income from producing plain unadorned pottery to serve a basic function. The majority of decorated sherds came from one particular jar size and the majority of undecorated jars were also standardised to four principal sizes. There was little variation, one popular size for jugs and four sizes for bowls. That is not to say the potter was necessarily unimaginative, but perhaps that he was more sensitive to his customer needs, particularly if the bulk of his pottery went to a trading middle man or to supply a dealer of produce that required pottery containers to transport his wares.

### 6.7.2 Post-medieval buildings

Given the eccentric orientation of Buildings 1 and 2 to each other, it would not be possible for either to have formed a part of a single structure. The construction of Building 1 followed on from the flattening of the medieval pot midden, during which 15th-century Cistercian ware was incorporated into the layer. After Building 1 was pulled down, a mid-17th-century copper-alloy buckle got mixed in with the demolition layers. Thereafter Building 2 was constructed. During the late 17 th century there were a great many floor plan arrangements in use, variations and successors of the medieval hall-house (Alcock 1969). Usually the variations accommodated different numbers of bays, extended wings and or modified trusses. On this basis alone it is not possible to determine the size and layout of the buildings excavated at M1 Junction 12 on the mere position and orientation of its chimney stack, we would need evidence of the timber frame post slots.

A recently excavated example of a 16th-century kitchen range comes from St Johns Street, Northampton, which had an inglenook with internal dimensions of 3.0 m by 1.0 m (Brown forthcoming). A central hearth was 1.6 m by 0.50 m , comprising heat-scorched stone flags. On its left side, set into the corner of the kitchen wall, was a stone bread oven and on the right were further flagstones for standing cooking pots next to the hearth. However, the excavated example from M1 Junction 12 was a simpler and smaller affair.

The fireplace depicted in Figure 29 is likely to have closely resembled the one recorded in the timber-framed house at 59-65 Sundon Road, Harlington, Bedfordshire prior to its demolition in 1979 (Kennett and Smith 1980). The building footprint was $c .22 \mathrm{~m}$ long by 6 m wide. Despite some later rebuilding and refacing in red brick it remained timberframed throughout, consisting of five bays and defined by six trusses following the style of a late medieval hall-house. A red brick chimney stack had been inserted between the two central bays of the building following common practise in the late 16th century (Alcock 1969, 43-6). The fireplace at Harlington was an inglenook with two openings back-to-back and facing into each of the central chambers with massive timber lintels supporting the stack above (Kennett and Smith 1980, fig 1, 100-1). The stack tapered to the roof, combining both chimney flues to a single opening. During the early 19th century the building was divided into a row of smaller cottages, at which time the fireplaces were modified to accommodate smaller fireplaces within the original frame of the inglenook.

A similar arrangement was also recorded at Mavourn Farm, Bolnhurst, Bedfordshire, (Kennett et al 1986, 80-1). The south wing was of five bays with a chimney stack occupying the central bay with two backing fireplaces dividing the wing into two main chambers, each of two bays.

Modifying older buildings to accommodate more 'modern' needs is not a recent fashion in the construction industry, it was in fact commonplace. A similar situation occurred at Vine House, Uppingham, Rutland, which stood in 1657 and had been modified in Georgian times to accommodate a cast iron grate with deep recessed cupboards either side, and a mantelpiece above (Brown 2010, figs 4 and 22). At Vine House the fireplace was located on the adjoining gable between two cottages, the neighbouring cottage being built some time later, 1657-1806, without an inglenook.

However, to attempt to date the building based on the remains of its chimney stack alone is not a reliable approach. Whilst there are plenty of examples of 16 th-century inglenooks, and of modification to earlier structures, it should also be noted that the style was still being used in vernacular architecture during the 18th century. Indeed, the
best candidate for the original form and layout of Building 2 was recorded at 57 Compton Avenue, Leagrave, Bedfordshire, prior to demolition in 1983 (Castle 1988, fig 1, plate A). This example comprised two thatched timber-framed single bay cottages under one roof, c. 11.5 m long by 3.8 m wide, dating post-1770, based on a coin embedded in mortar beneath a paving brick contemporary to the foundation of the southern gable. A central chimney served two backing fireplaces, heating the dwellings on either side, with external and internal dimensions that compare favourably with the excavated example from M1 Junction 12.

## 7 OTHER FEATURES AND STRUCTURES

### 7.1 The historic hedgerow

The historic hedgerow was identified by the Cultural Heritage Chapter of the Environmental Statement (HA 2009). The boundary is first depicted on the Agas map of 1581, where it appears a division between allotments, however, there is no evidence that this was a physical boundary at the time it was mapped.


The historic hedgerow, looking north-west towards Long Lane Fig 43
A total of 140 m hedgerow length was removed to enable road development. The recording comprised a photographic and written description of the hedgerow, bank and ditch prior to clearance, with working shots during and following the vegetation removal (Figs 43-45). Following removal of the vegetation a topographical survey was undertaken to record the bank and ditch, including a contour survey and drawn plan.

Two trenches were excavated to identify, record and date the hedgerow and any buried soil horizons sealed below the bank (Fig 30).


Section across the historic hedgerow, Trench A, looking south Fig 44


Section across the historic hedgerow, Trench B, looking south-east Fig 45


Trench A at the southern end of the hedgerow, was 5 m long by 2 m wide (Figs 44 and 46). Stiff yellowish-grey redeposited clay, 1, formed a bank that was 0.26 m high. This material was the upcast from the initial post-medieval ditch, 2 , which was 1.2 m wide by 0.5 m deep. The ditch had silted up with light yellowish-orange sandy clay, 3, and was subsequently buried beneath a bank of orange-brown silty clay, 4, which was 0.23 m thick. This material was upcast from a ditch recut, 5 , which was up to 2.1 m wide by 0.6 m deep. This had silted with yellowish-grey clay, 6 , and the post-medieval plough soil had slipped into the side of the ditch above this fill, forming a narrow tip line, 7. More recent orange-brown silty clay subsoil, 8 , also accumulated above this, forming a more prominent tip line up to 0.13 m thick. The ditch was then more recently cleaned out to its former dimensions, 9, but then subsequently filled with leaf litter and standing water, 10. The top of the bank had been planted with a hedgerow, which then accumulated a further 0.32 m thickness of dark orange-brown and black loamy topsoil, 11 , to a total height of 0.8 m .

Trench B, excavated at the northern end of the hedgerow was 5 m long by 2 m wide (Figs 45 and 46). It is probable that the original ditch at this point has been lost to subsequent recuts. There was no evidence for an earlier bank, there was instead an orange-brown silty clay subsoil, 12, which was probably a post-medieval ploughsoil. A single 0.3 m thick bank was formed of firm orange-brown silty clay, 13 , upcast from the adjacent ditch, 14. The ditch was 2.2 m wide by 0.75 m deep, was filled with leaf litter and standing water, 17, and had evidently been widened so that the original relationships with the soils in the neighbouring field, $15 / 16$, had been lost. The top of the bank had accumulated 0.20 m thickness of dark orange-brown and black loamy topsoil, 18 , to a total height of 0.57 m .

## Conclusion

Although no datable materials were recovered from the excavations, none of the deposits that were examined were likely to have formed earlier than the late postmedieval period, 18th-19th centuries. The parliamentary enclosure of Toddington took place in 1797 and it was clear that there was no evidence for a ditch predating this, contemporary with the map of 1581. It is likely that the ditches that were examined were not created until after parliamentary enclosure utilised convenient divisions of open field allotments to formalise the apportionment of fields. The hedgerow and ditch boundary was then created, 1797-1882, and cleaned out periodically, with at least three episodes where it was re-excavated. The ditch had not recently been cleaned since 16 November 1990, which comes from the date on a crisp packet within ditch fill 10.

### 7.2 Summary of building recording for the M1 Junction 12 overbridge

A building recording action was conducted for the M1 Junction 12 overbridge prior to its demolition. The work was equivalent to a Level 2 survey as defined by English Heritage (EH 2006). A method statement was compiled in advance of the work, specifically to assess the risks of building recording on a motorway structure (Walsh 2011). The record was primarily by photography, complemented with a written description and analysis of phasing (Fig 47). The full report by Tim Upson-Smith is provided in Appendix 2.

The survey demonstrated that the structure of the bridge had altered little since its initial construction. Patch repairs and the addition of a handrail on the southern parapet were the only apparent changes.

The Northamptonshire Records Office holds a series of drawings of the standard M1 overbridge upon which all the original bridges were based, and in addition it also holds
detailed plans of the route and details of land ownership. The bridge plans form part of an, as yet, uncatalogued collection.

### 7.3 Summary of the watching brief at Leagrave, Luton

In addition to the principal archaeological mitigation works at M1 Junction 12 near Toddington, a short watching brief was conducted beside the M1 motorway southbound at Ch5850-6600, Leagrave, Luton. The work observed the cleaning of an existing drainage ditch and excavation of a single trench for the insertion of a vortex separator tank at the base of the motorway embankment. The full report is provided in Appendix 3.

Archaeological attendance was considered necessary by URS because map evidence suggests that the M1 motorway embankment overlies the site of a medieval manor, c. 160 m to the north-west of this intervention (HER12378). Domesday Book also recorded a watermill in close proximity (HER10817).

No features or deposits of antiquity were present. A sequence of modern make up layers were observed, comprising modern embankment materials and scrap metal in the top 1.0 m , and natural chalk bedrock at the base of the trench.

## 8 <br> CONCLUSION

The overall archaeological programme at M1 Junction 12 was successful, producing significant information that will advance our understanding of the local and regional trends in the material evidence.

Detailed archaeological excavations at Sites A-C recorded the extent, density, character, form, function, type, date, longevity and regional context of occupation.
 enclosure boundaries on the north-facing spur of the valley;

- Site B, a 1st-century AD funerary pyre and stone cairn on the south-facing slope of the valley, east of the motorway development;
- $\quad$ Site C , 1 st to 3 rd/4th-century boundary ditches aligned across the south-facing valley slope, with associated occupation evidence for a nearby farmstead;
- $\quad$ Site $C$, a 12 th to 14th-century pottery production settlement on the south-facing slope of the valley;
- $\quad$ Site C, a 15th to 17th-century cottage and later 18th to 19th-century successor on the south-facing slope of the valley.

Targeted watching briefs confirmed the presence/absence, extent, density, form, function and type of activity in other areas thought to be potentially sensitive on the basis of the earlier trial trench excavations (Walker 2010). This enabled a focused approach overall with clear objectives for dealing with the unexpected remains of the medieval potters' waste, found in TWB3.

Archaeological excavations recovered a sufficient assemblage of funerary material from Site A to draw conclusions over the processes undertaken, sources of raw material, products, activities and the social or economic roles of the site within the north hinterland of Durocobrivae (Dunstable) between the 1st century BC and the 2nd
century AD. The fieldwork was tied into aerial photographs and related to the wider Roman landscape settlement patterns and land use in the region through the use of the Historic Environment Record (HER) and published material. Roman pottery was used to identify phases of cemetery development, and to place it within its wider context alongside other cremation cemeteries in the local Bedfordshire region.

Sufficient environmental ecofacts were recovered from sealed contexts to inform the understanding of the economy, agricultural regimes and presence/absence of cereal crop processing. Whilst this information was limited, it helps to identify the potential location of a 2nd-century farmstead along the north side of the valley.

Analysis of previous work, historic maps and aerial photographs was undertaken to determine the full extent and character of the settlement, and in an attempt to confirm whether the medieval and post-medieval buildings were part of Nuppings Green. This was not clearly evident from the available evidence and the site is thought to represent an isolated smallholding. Further specialist analysis of pottery-kiln wasters and structures was undertaken with an attempt to establish the relationship between the medieval features and the nearby settlement of Nuppings Green.

In addition, the work also included recording a historic hedgerow, which is mapped as a boundary between two open fields from 1581, and was subsequently incorporated into the parliamentary enclosures. The work provided an accurate measured record of the surface and detail of the historic hedgerow bank and ditch, and confirmed that no cut features predated the parliamentary enclosure of 1797.

A permanent photographic record and detailed account of fixtures, fittings and architectural details for the overbridge were recorded to English Heritage Level 2 standard (EH 2006).

### 8.1 Publication

This document has been prepared as a grey literature report for the Central Bedfordshire Council Archaeological Officer. On approval, this will be published online through the Archaeology Data Service (ADS) using the OASIS system. Copies will be deposited with the Central Bedfordshire HER.

A plan was agreed for final publication during minuted discussions between CCJV, URS (now AECOM), Central Bedfordshire Council (CBC) and Northamptonshire Archaeology (now part of MOLA) in September 2012. Two journal articles would be submitted to the county journal, Bedfordshire Archaeology. One article will deal with the Roman cremation cemetery, and the other with the medieval structures and the pottery assemblage. These will be report digests with the significant results from the specialist reports integrated into the site syntheses.

It was recognised that the process would take longer to reach publication since no edition of Bedfordshire Archaeology has reached print since 2010, and while efforts are being made for more regular publication, the future of the journal is uncertain. Currently, the next available issue is anticipated in 2017. CBC felt that a British Archaeological Report or MOLA monograph would not receive sufficient circulation; however, a further option may be to present the papers to the Journal of Roman Studies and Medieval Archaeology. It is expected that draft papers will be prepared within three months of the grey literature report being accepted.

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## APPENDIX 1: GAZETTEER OF CREMATION BURIALS

by Jim Brown, Pat Chapman and Amir Bassir

## Introduction

The gazetteer contains details of the Cremation burials excavated from the principal cemetery at Site A. This is presented in separate sections for each period of cemetery development, so that burials of the same period may be examined as a group.


Excavation of the cremation cemetery, Site A, looking north
Burial information is presented, where available, for each cremation. Some burials were in better condition than others, and this variation in the state of preservation has produced minor variations in the archive record where a complete set of details was not always available to be recorded. This limitation on the archive is largely the product of ridge and furrow plough damage; such that those burials with the best preservation were located below ridges and those which were the most truncated, lay along the line of furrows. It is apparent that the quality of the field photography on the digital camera was not consistent, and whether this was an incorrect setting or a fault, all of the digital images are supplemented with 35 mm colour slides or black and white prints.


Careful recovery of cremation urns, Site A


Recording Cremation burials, Site A

The information for each burial, where present, comprises:

- The burial pit cut number, dimensions, profile and fill number.
- Images of the excavated Cremation burial in situ.
- The urn number, if an urn was present, registered as a unique find (SF).
- The pottery form and fabric, number of sherds, and weight of sherds.
- Images of the urn and any accessory vessels, once cleaned, and where mostly whole both before and after excavation, including during lifting.
- Approximate age, gender and bone weight contained within the Cremation burial, drawn from the specialist work by Sarah Inskip.
- A scale plan of the excavated burial, with plan number referencing the archive drawings. Each plan shows orientation, sherd distribution and changes in the fill. Fill numbers are provided to indicate where different deposits lay during removal, and to differentiate from urns or the fill of vessels where they appear different. Unique registered finds, such as accessory vessels, metal artefacts and urns have their find number shown, which relates to the archive.
- A profile of the burial pit where this survived removal of the Cremation burial. Excavation conditions meant that in some cases it was more practical to box out the earth around an urn, in order to retrieve it whole, and where this was done a profile could not be reconstructed.
- Where individual urns and accessory vessels were deemed worthy of publication note by the specialist, Jane Timby, illustrated pottery drawings are also provided. This is the case for all complete or near-complete vessels, but excludes those where there may be some ambiguity over form owing to the condition and joins on individual sherds.

The following index provides a tabulated summary of contents for each burial in order of appearance through the gazetteer (Table 40).

Table 40: Index of Cremation burial details

| Burial no. | Pit cut | Pit <br> fills | Urn no. | Illustration | Urn fabric | Sherds | Wt(g) | Finds | Age | Gender | Bone wt(g) | Images |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Cremation burials of the 1st centuries $B C$ to $A D$ |  |  |  |  |  |  |  |  |  |  |  |  |
| 13 | 4120 | 4119 | 46 | Plan 33, profile | R29 | 46 | 436 | 2 x nails 145 | unknown | unknown | 118 | 0 |
| 21 | 4140 | 4139 | 56 | Plan 36, profile, urn 56 | - | 57 | 1570 | none | adult | unknown | 686 | 3 |
| 24 | 4146 | 4145 | 85 | Plan 42, vessel 65 | F17 | 49 | 492 | vessels 63, 64, 65 | adult | unknown | 57 | 5 |
| 25a | 4151 | 4150 | 86 | Plan 49, urn 86 | F09 | 114 | 1498 | none | middle adult | ??male | 954 | 1 |
| 25b | 4151 | 4150 | 87 | Plan 49 | R13 | 117 | 610 | none | adult | unknown | 212 | 1 |
| 26 | 4153 | 4152 | 68 | Plan 41, urn 68, vessel 69 | F30 | 286 | 1506 | vessel 69 | adult | unknown | 397 | 1 |
| 27 | 4155 | 4154 | 78 | Plan 45, profile, urn 78, vessel 79 | F17 | 1 | 1124 | vessel 79 | adult | ? male | 780 | 3 |
| 31 | 4171 | $\begin{aligned} & 4170, \\ & 4172 \end{aligned}$ | 80 | Plan 46, profile, urn 80 | F29 | 56 | 1256 | Fe disc 81 | adult | ? male | 321 | 3 |
| 33a | 4178 | $\begin{aligned} & 4777, \\ & 4185 \end{aligned}$ | 89 | Plan 50, profile, vessels 90, 91 | F17 | 232 | 712 | vessels 90, 91 nail 142 | adult | unknown | 250 | 2 |
| 33b | 4178 | 4185 | no urn | Plan 50 | - | - | - | none | adult | ?female | 130 | 0 |
| 35 | 4146 | 4145 | - | Plan 42 | - | - | - | 1 x accessory vessel | - | - | - | 0 |
| 36 | 4188 | 4187 | 92 | Plan 51, profile | F17 | 80 | 79 | none | unknown | unknown | 28 | 0 |
| 42 | 4208 | 4206 | 101 | Plan 57 | F17 | 147 | 198 | none | unknown | unknown | 33 | 0 |
| Cremation burials of the mid-1st century $A D$ |  |  |  |  |  |  |  |  |  |  |  |  |
| 1 | 4067 | 4066 | - | Plan 15, profile, vessels 2, 3 | - | - | - | $3 x$ accessory vessels | - | - | - | 1 |
| 2a | 4069 | 4068 | 1 | Plan 15, profile | R07 | 57 | 234 | Cu fragment | adult | ? male | 140 | 0 |
| 2 b | 4069 | 4068 | 2 | Plan 15, profile | R07 | 22 | 54 | none | young adult | ?male | 17 | 0 |
| 2c | 4069 | 4068 | 3 | Plan 15, profile | F29 | 19 | 63 | none | unknown | unknown | 5 | 0 |
| 3 | 4073 | 4072 | 12 | Plan 16 | R07 | 31 | 90 | $\begin{aligned} & \text { vessels 10, } 11 \\ & \text { mirror 13, brooch } 14 \\ & \text { Fe objects 15-18, } \\ & 137,144 \end{aligned}$ | adult | unknown | 57 | 1 |
| 5 | 4090 | 4089 | 23 | Plan 20 | R13 | 91 | 402 | none | adult | unknown | 682 | 2 |
| 17 | 4132 | 4131 | 57 | Plan 37, profile, vessel 58 | F09 | 123 | 1234 | vessel 58 | middle adult | ?female | 718 | 2 |
| 19 | 4136 | 4135 | 73 | Plan 43, profile, urn 73, vessels 74, 75 | F22 | 149 | 1328 | vessels 74,75 | 2 x adults | ?m + ?f | 1200 | 3 |


| Burial no. | Pit cut | Pit <br> fills | Urn no. | Illustration | Urn fabric | Sherds | Wt(g) | Finds | Age | Gender | Bone wt(g) | Images |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 22 | 4142 | 4141 | - | - | - | - | - | 1x accessory vessel | - | - | - | 0 |
| 23a | 4144 | 4167 | no urn | Plan 48 | - | - | - | none | adult | unknown | 57 | 5 |
| 23b | 4144 | 4143 | 70 | Plan 48 | F09 | 43 | 272 | brooch 150 | unknown | unknown | 217 | 5 |
| 23c | 4144 | 4143 | 71 | Plan 48 | F17 | 94 | 293 | none | 1-2 years | unknown | 242 | 5 |
| 23d | 4144 | 4143 | 72 | Plan 48 | F09 | 107 | 460 | none | unknown | unknown | 122 | 5 |
| 28 | 4158 | 4157 | - | Plan 40, profile, vessels 66a, 67 | - | - | - | 3 x accessory vessels | - | - | - | 1 |
| 29 | 4160 | 4159 | 62 | Plan 39, profile | F09 | 116 | 459 | vessel 61 | adult | unknown | 191 | 0 |
| 32a | 4174 | 7173 | 84 | Plan 47, urn 84 | F17 | 92 | 650 | brooch 143 <br> vessel 82 | adult | unknown | 368 | 3 |
| 32b | 4174 | 4175 | no urn | Plan 47 | - | - | - | none | adult | ??female | 980 | 3 |
| 34 | 4180 | 4179 | 93 | Plan 52, profile, urn 93 | R07 | 94 | 680 | ceramic disc 149 vessel 94 | adult | unknown | 691 | 4 |
| 37 | 4190 | 4191 | 99 | Plan 56, urn 99 | R06 | 141 | 939 | vessels 98, 100 brooch 151 | 2 x adults | unknown | 748 | 1 |
| 40 | 4199 | 4198 | 97 | Plan 53, profile | F17 | 147 | 198 | none | adult | unknown | 308 | 1 |
| 43 | 4210 | 4209 | 104 | Plan 58, profile, urn 104 | R07 | 98 | 290 | 1 x nail | adult | unknown | 374 | 0 |
| 44 | 4214 | 4213 | 103 | Plan 63, profile, urn 103, vessels 114, 115 | F17 | 205 | 623 | vessels 102, 114, 115 | adult | unknown | 561 | 3 |
| 46 | 4221 | 4220 | 110 | Plan 60, profile, urn 110, vessel 109 | R05 | 130 | 664 | vessels 109, 111 | adult | unknown | 547 | 5 |
| 47 | 4224 | 4225 | 113 | Plan 62, urn 113, vessel 117 | R07 | 43 | 1565 | vessel 117 | ? juvenile | unknown | 834 | 3 |
| 49 | 4234 | 4233 | 118 | Plan 64, urn 118 | F17 | 45 | 880 | none | adult | unknown | 909 | 2 |
| 50 | 4247 | 4246 | 122 | Plan 65 | R07 | 356 | 1974 | none | juvenile | unknown | 313 | 0 |
| Cremation burials of the 1st to early 2nd centuries AD |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 | 4088 | 4087 | 20 | Plan 21, profile, urn 20, vessels 21, 22 | R13 | 27 | 115 | vessel $21,4 \mathrm{x}$ nails | young adult | ?male | 633 | 1 |
| 6 a | 4092 | 4091 | 29 | Plan 23, profile, urn 29, vessels 26-28 | R07 | 167 | 893 | vessels 26-28 | adult | ?female | 1042 | 4 |
| 6 b | 4092 | 4091 | 30 | Plan 23, profile, urn 30, vessels 26-28 | R07 | 209 | 263 | vessels 26-28 | adult | ??male | 1094 | 4 |
| 7 | 4094 | 4093 | 24 | Plan 22, profile, vessel 25 | R13 | 46 | 378 | vessel 25 | adult | ?male | 915 | 0 |
| 8 a | 4113 | 4114 | 40 | Plan 30, urn 40, vessel 39 | R13 | 152 | 870 | vessel 39 | unknown | unknown | 369 | 3 |


| Burial no. | Pit cut | Pit <br> fills | Urn no. | Illustration | Urn fabric | Sherds | Wt(g) | Finds | Age | Gender | Bone wt(g) | Images |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 8b | 4113 | 4114 | 40 | Plan 30, urn 40, vessel 39 | R13 | 152 | 870 | vessel 39 | young adult | unknown | 161 | 3 |
| 10 | 4106 | 4105 | 32 | Plan 27, urn 32, vessels 31a, 31b | R07 | 116 | 1908 | vessels 31a, 31b | middle adult | unknown | 1639 | 1 |
| 12 | 4116 | 4115 | 41 | Plan 31, profile, urn 41, vessel 42 | R06 | 17 | 352 | vessel 42 | adult | unknown | 948 | 0 |
| 14 | 4122 | 4121 | 44 | Plan 32, profile | R06 | 46 | 436 | none | adult | unknown | 495 | 0 |
| 16 | 4129 | 4130 | 55 | Plan 35, profile, urn 55, vessels 52, 54 | R07 | 54 | 650 | vessels 52, 53, 54 | young adult | unknown | 1128 | 2 |
| 18 | 4134 | 4133 | 50 | Plan 34, profile, urn 50 | R07 | 59 | 1159 | none | adult | ??female | 426 | 1 |
| 38 | 4193 | 4240 | no urn | Plan 59, vessels 119, 121 | - | - | - | vessels 119, 120, 121 | adult | unknown | 222 | 1 |
| 39 | 4195 | 4194 | 105 | Plan 59, profile, urn 105, vessel 106 | R07 | 425 | 1712 | vessels 106, 107, 108 | middle adult | ?female | 692 | 1 |
| 45 | 4219 | 4218 | - | Plan 61, profile, vessel 12 | - | - | - | 1x accessory vessel | ad | - | - | 1 |
| Cremation burials of the early to mid-2nd century AD |  |  |  |  |  |  |  |  |  |  |  |  |
| 9 | 4104 | 4103 | 33 | Plan 28, profile, vessel 34 | R06 | 49 | 184 | vessels 34, 35 | adult | unknown | 862 | 2 |
| 11 | 4108 | 4107 | 36 | Plan 29, profile, vessels 37, 38 | R13 | 178 | 784 | $\text { vessels } 37,38,2 x$ nails | adult | ?female | 902 | 1 |
| 15 | 4125 | 4127 | 47 | Plan 29, profile, urn 47, vessels 48, 49 | R13 | 107 | 936 | vessels 48, 49 | adult + child | unknown | 1038 | 2 |
| 20 | 4138 | 4137 | 59 | Plan 38, profile, urn 59, vessel 60 | R07 | 109 | 2175 | vessel 60 | adult | ??female | 967 | 2 |
| 30 | 4165 | 4164 | 76 | Plan 44, profile, urn 76 | R13 | 127 | 735 | vessels 46, 77 | adult | unknown | 424 | 1 |

## Cremation burials of the 1st centuries BC to AD

Vessels upright unless stated otherwise. No charcoal/blackened soil unless stated otherwise.

## Burial 13

Urned cremation in a shallow circular pit 4120, 0.60 m long by 0.55 m wide by 0.05 m deep, fill 4119. Age and gender indeterminate, bone weight 118 g in urn fill 4126; 2 x iron nails SF145 with the burial. Burial urn SF46; lower part of handmade jar, fabric R29 (46 sherds; 436g).

Date: 0-50 AD

## Burial 21

Urned cremation, western edge of rim damaged and spread to north of jar, set within square pit $4140,0.55 \mathrm{~m}$ long by 0.55 m wide by 0.20 m deep, with U-shaped profile, fill 4139.


Burial 21, burial urn SF56, in pit 4140 (scale divisions 100mm)
An adult, unknown gender, bone weight 686 g in urn fill 4148. Deliberate deposition: a scapula in the base, long bones angled down and the skull on top. Burial urn SF56; tall, handmade, barrel-shaped jar. Thompson 1982, form B5-3 (57 sherds, 1570g)


Burial 21, urn SF56


Burial 21, showing heads of long bones, bottom right, down the side of the urn (scale 10mm)

Date: Late Iron Age or early Roman

## Burial 13

Plan 33


## Burial 21

## Plan 36



SF Number
Pottery
Pot with burial


## Burial 24

Cuts pit 4183. Urned cremation, with three accessory vessels, in oval pit 4146, 0.90m long by 0.70 m wide by 0.14 m deep, fill 4145 .


Burial 24, pit 4146; looking south, urn SF85 to right, during excavation


Burial 24, pit 4146; looking south, urn SF85 to right (scale 400mm)


Burial 24, looking west and down, urn SF85 top (scale 400mm)
An adult, unknown gender, bone weight 57g. Charcoal pyre debris, comprising roundwood up to 23 mm in diameter, weighing 74 g . Burial urn SF85; wide-mouthed, necked, cordoned jar. Very fragmented, but at least three post-firing holes through the lower body vessel wall placed in triangular formation, fabric F17 (49 sherds, 492g). A few skull fragments in accessory vessel SF63; handmade, necked, cordoned jar, fabric F09 (101 sherds, 616g).


Accessory vessel SF65, split in half, with pyre debris and skull fragment (scale 10 mm )

Pyre debris deliberately deposited as charcoal bands, 2-10mm thick, across the centre of the vessel, accompanied by one skull fragment. Rectangular piece of wood/charcoal adjacent to vessel SF65, probably more pyre debris. Accessory vessel SF65; small, handmade, necked, carinated bowl or cup. Thompson 1982, type E2-1, fabric F17 (17 sherds, 387 g ), blackened towards base.


Burial 24, urn SF SF64 (scale 50 mm )
Accessory vessel SF64; handmade jar, closed form, fabric F09 (79 sherds, 327g). Handmade closed form vessel, fabric F17 (9 sherds, 36 g ). 1 sherd, fabric F29.

Date: 0-50 AD

## Burial 24

## Plan 42



## Burial 25

Plan 49


## Burial 25

Two urned cremations set north and south within sub-rectangular pit 4151, 0.52 m long by 0.28 m wide by 0.3 m deep, fill 4150 . An adult, possibly male, bone weight 954 g . Burial urn SF86 in north end of pit; large handmade jar with neck bulge and cordons, fabric F09 (114 sherds, 1498g, fragmented, most of rim missing).

An adult, unknown gender, bone weight 212 g . Burial urn SF87 in south end of pit; lower half of handmade jar, fabric R13 (117 sherds, 610 g ).


Burial 25, urn SF86 (scale 50mm)


Burial 25, urn SF87 (scale 50mm)
Date: 0-50 AD

## Burial 26

Urned cremation, with accessory vessel, set in centre of square, steep-sided, flatbottomed pit $4153,0.50 \mathrm{~m}$ long by 0.50 m wide by 0.25 m deep, fill 4152 .


Burial 26, urn SF68, in pit 4153 (scale 500 mm )
An adult, unknown gender, bone weight 397g. Burial urn SF68; handmade jar, everted rim, very fragmented, fabric F30 (286 sherds, 1506g). Accessory vessel SF69 lying against the side of burial urn, foot from a pedestalled vessel, fabric F17 (9 sherds, $65 \mathrm{~g})$.

Date: 0-50 AD

## Burial 26

Plan 41


## Burial 27

## Plan 45



Urn / Vessel Number
Pottery
Pot with burial

## Burial 27

Urned cremation, with accessory vessel, within steep-sided, flat-bottomed, rectangular pit 4155 , aligned north-east to south-west, 0.60 m long by 0.50 m wide by 0.17 m deep, fill 4154.


Burial 27, urn SF78 to left, looking north-west (scale 400mm)


Burial urn SF78 (scale 50mm)
An adult, possibly male, bone weight 780g. Deliberate deposition, long bone laid across base. Burial urn SF78, complete handmade necked, cordoned, wide-mouthed jar/bowl, fabric F17 (1 sherd, 1124g). Accessory vessel SF79, wheelmade jar with shoulder bulge, very fragmented on one side, fabric F17 (75 sherds, 433g).

Date: 0-50 AD

## Burial 31

Urned cremation in circular steep-sided, flat-bottomed pit 4171, 0.50 m in diameter by 0.15 m deep, fills 4170 and 4172.


Burial 31, urn SF80 with iron 'disc' SF81 bottom right by urn, looking north-west


Burial 31, urn SF80 with iron 'disc' SF81 bottom right by urn

An adult, possibly male, bone weight 321 g . Fill 4172 contained cremated bone around the urn. Burial urn SF80; handmade, everted rim jar with short pedestalled and protruding foot. Possible firing flaw in base, fabric F29 (56 sherds, 1256g). Iron disc SF81 in cremated bone deposit around the urn.


Date: 0-50 AD

## Burial 31

## Plan 46



## Burial 33

Plan 50


## Burial 33

Urned cremation and unurned deposit, with two accessory vessels, all lying on their sides within truncated oval pit 4178, aligned north to south, 0.90 m long by 0.65 m wide by 0.11 m deep, fill 4777 .


Burial 33; urn SF 89 left, pyre debris and cremated bone right, looking east
An adult, unknown gender, urn bone weight 250 g . Deposit of pyre debris as a very thin layer of charcoal in the base of burial urn. Burial urn SF89; very fragmented handmade jar, fabric F17 (232 sherds, 712g).


Accessory vessel SF91 (scale 20mm)

Mass of cremated bone adjacent to the vessels to the south 4185 , weight 130 g . Accessory vessel SF90; small pedestalled shouldered urn with a foot. Thompson 1982, type A1, fabric F17 (28 sherds, 275g). Accessory vessel SF91; squat, cordoned, widemouthed, handmade jar, fabric F17 ( 96 sherds, 357 g ). Accessory vessel; handmade small jar or bowl, fragmented, fabric F17 (8 sherds, 18g). Nail SF88 next to cremated bone.

Date: 0-50 AD

## Burial 36

Urned cremation in shallow sub-rectangular pit 4188, with bowl-shaped profile, 0.60 m long by 0.35 m wide by 0.15 m deep, fill 4187 . Unknown age or gender, bone weight 28 g . Burial urn SF92; handmade, closed form, very degraded, fabric F17 (80 sherds, $79 \mathrm{~g})$.

Date 0-50 AD

## Burial 42

Urned cremation within pit 4208, fill 4206, heavily disturbed by chalk wall and land drain. Unknown age or gender, bone weight 33g. Burial urn SF101; multiple sherds from a closed form, fabric F17 (147 sherds, 198g).

Date 0-50 AD

## Burial 36

Plan 51


Burial 42
Plan 57


## Cremation burials of the mid-late 1st century AD

All urns upright unless stated otherwise, no charcoal/blackened soil unless stated otherwise.

## Burial 1

Urn, with two accessory vessels, aligned north-east to south-west, in pit 4067, 0.65 m in diameter by 0.05 m deep, fill 4066 . No bone. Accessory vessel 1/1; base and lower body fragments from jar, fabric F17 (20 sherds, 24 g ). Accessory vessel 1/2; hollow pedestalled base with small foot from a closed form, fabric F17 (7 sherds, 146g). Accessory vessel $1 / 3$; small platter with low footring, copy of imported form Cam.8; Thompson 1980, type G1-6 ( 15 sherds, 65 g ).

Date 40-65 AD


Burials 1 and 2, hand excavation, looking north-east

## Burial 2

Urned cremation, with three burial urns, aligned north to south in south end of pit 4069, 0.95 m long by over 0.50 m wide by 0.08 m deep, fill 4068 , possible pyre debris in pit. Pit cut by Roman ditch 4026. An adult, probably male, bone weight 140 g . Burial urn 1, base and bodysherds from jar, fabric R07 ( 57 sherds, 234 g ). A young adult, probably male, bone weight 17 g . Burial urn 2, body sherds from jar, fabric R07 ( 22 sherds, 54 g ). Unknown age or gender, bone weight 5 g . Burial urn 3, body sherds from jar, fabric F29 (19 sherds, 63g).

Date, early Roman

Burials 1 \& 2


## Burial 3

Urned cremation, with three accessory vessels, in sub-oval pit 4073, aligned north-east to south-west, 0.50 m in diameter by 0.14 m deep, fill 4072 . Possible wooden box in south-west end of pit, fill 4080 comprised light grey silty ashy clay with fragments of cremated bone and flecks of charcoal. The associated finds may have been inside the possible box as they were in fill 4080. Mirror sherds SF13; copper alloy brooch SF14, iron objects SF15, 18; iron nails SF16, 17, 137, 144.


Burial 3; bottom, burial urn SF12; right, deposit from possible box with dark mirror fragments, looking south

An adult, unknown gender, bone weight 57g. Burial urn SF12; base fragments from a handmade closed form, fabric R07 (31 sherds, 90g). Accessory vessel SF10; singlehandled flagon, oxidised, collared rim, Sandy ware with occasional blackened organic inclusions, fabric R07 (102 sherds, 449g). Accessory vessel SF11; platter imitating a moulded form, slightly dished base which has spalled through burning, fabric F09 (11 sherds, 398g).

Date: 40-65 AD

## Burial 3

Plan 16


## Burial 5

Plan 20


## Burial 5

Urned cremation in circular pit 4090, 0.20 m in diameter by 0.30 m deep, fill 4089.


Burial 5, urn SF23, rim visible (scale divisions 100 mm )


Burial 5, excavated
An adult, unknown gender, bone weight 682g. Burial urn SF23; triangular-rim jar, fabric R13 (91 sherds, 402g).

Date: early Roman

## Burial 17

Urned cremation, with accessory vessel, in subcircular, bowl-shaped pit 4132, 0.69m long by 0.55 m wide by 0.12 m deep, fill 4131 .


Burial 17, looking west


Burial 17, urn SF57 (scale 50mm)
An adult, probably female, bone weight 718 g , fill 4149. Burial urn SF57: handmade jar, lower part, fabric F09 ( 123 sherds, 1234g). Accessory vessel SF58; narrow-mouthed, necked, cordoned jar, much fragmented, fabric R06 (101 sherds, 353g).

Date: 40-65 AD

## Burial 17

## Plan 37



## Burial 19

Urned cremation, with two accessory vessels, in steep-sided, flat-bottomed, rectangular pit 4136 , aligned east to west, 0.70 m long by 0.60 m wide by 0.20 m deep, fill 4135.


Burial 19, in pit 4136, looking north (scale 500mm)
Two adults, possibly one male and one female, bone weight 1200g. Burial urn SF73; handmade, wide-mouthed, necked, multiple-cordoned jar, fragmented, fabric F22 (149 sherds, 1328g).

Accessory vessel SF75; complete butt beaker, fabric R03 (VER WH); (1 sherd, 316g). Accessory vessel SF74; wheelmade butt beaker decorated with three zones of vertical combing, fragmented, fabric F22 (108 sherds, 474g).

Date: 14-68 AD (pre-Flavian)


Accessory vessels, butt beakers, SF74-75 (scale 500mm)


Burial urn SF73, (scale 500mm)

## Burial 19

Plan 43

97.4 m aOD



## Burial 22

Solitary accessory vessel, scattered in very truncated pit 4142, fill 4141. No bone. SF51, closed form, lower fragments, fabric R13 (13 sherds, 27g).

Date: later Iron Age-early Roman.

## Burial 23

Three urned cremations in east end of steep-sided, uneven bottomed oval pit 4144, aligned east to west, 1.10 m long by 0.85 m wide by 0.20 m deep, and an unurned cremation 4167 in the west end, in fill 4143.


Burial 23, urn SF71 left, unurned deposit right (scale 400 mm )


Burial urn SF71 (scale 20mm)

## Burial 23

## Plan 48



A juvenile, 1-2 years, unknown gender, bone weight 242 g . On top was a skull fragment, femurs, and another long bone, possibly an attempt to lay the child curled up on its side. Copper alloy brooch SF150 placed on skull. Burial urn SF71; lower part of jar, possibly wheel-turned, fabric F17 (94 sherds, 293g).


Burial 23, burial urn SF71, juvenile cremated bone with brooch SF150 (scale 10mm)

Unknown age or gender, bone weight 122g. Burial urn SF72; handmade, oxidised butt beaker, much fragmented, fabric F09 (107 sherds, 460g).


Burial 23, burial urn SF70, indented by burial urn SF72
Burial urn SF70; small, squat, handmade jar with sharply everted rim, fabric F09 (43 sherds, 272g).

Unurned cremation 4167, in rectangular shape, possibly originally contained in a box. Bone weight 57 g . Unknown age or gender, bone weight 217 g .

Date: $43-65$ AD

## Burial 28

Three accessory vessels, all fragmented in truncated oval pit 4158, 0.40 m long by 0.35 m wide by 0.09 m deep, fill 4157 .


Burial 28, fragmented vessels, looking west
No bone. Accessory vessel SF67; necked, cordoned jar, fabric R05 (124 sherds, 675 g ). Accessory vessel SF66a; platter, devolved copy of a moulded imported form, fabric R07 ( 5 sherds, 75 g ). Accessory vessel SF66b; necked beaker with rolled rim, fabric F09 ( 14 sherds, 67 g ).

Date: 40-65 AD

## Burial $28 \quad x x \quad$ Urn / Vessel Number <br> Plan 40 <br> $\square \quad$ Pottery



$$
0
$$



## Burial 29

Plan 39

## Burial 40

## Plan 53



## Burial 29

Urned cremation, with accessory vessel, in possible circular pit 4160, aligned northeast to south-west, 0.57 m in diameter by 0.12 m deep, flat base, truncated by land drain, fill 4159. An adult, unknown gender, bone weight 191g, fill 4161. Burial urn SF62; lower part of a closed form, fabric F09 (116 sherds, 459g). Accessory vessel SF61; probable butt beaker, lower sherds with vertically-combed decoration, fabric R07 (69 sherds, 193g).

Date: probably 40-65 AD

## Burial 40

Urned burial in subcircular pit 4199, aligned north to south, 0.52 m long by 0.42 m wide by 0.09 m deep, fill 4198 .


Burial 40, urn SF97, in pit 4199
An adult, unknown gender, bone weight 308g. Burial urn SF97; rolled rim jar, fabric F17 (147 sherds, 198g).

Date: late Iron Age to early Roman

## Burial 32

Two urned cremations, two accessory vessels and possible box cremation, in square pit $4174,0.85 \mathrm{~m}$ in diameter by 0.15 m deep, truncated, fill 4173.


Burial 32, urn SF84 top, possible box deposit, left
One adult, unknown gender, bone weight 368 g . Deliberate deposition with long bones together down one side of the urn, iron brooch SF143 laid on top of bones. Burial urn SF84; handmade jar, wide-mouthed, tall everted rim, ridged zones at neck and girth, very fragmented, fabric F17 (92 sherds, 650g).


Burial 32, urn SF84 with iron brooch SF143 (scale 10mm)

## Burial 32



Plan 52


| $X X$ | Urn / Vessel Number |
| :--- | :--- |
| $\square$ | Pottery |
| $\square$ | Pyre debris |
| $\square$ | Pot with burial |



An adult, possible female, bone weight 980 g , possibly spilled from SF82, or from possible box SF83, fill 4176. Burial urn SF82, lower half large flagon, fabric R03 (VER WH) ( 107 sherds, 1183g). Accessory vessel, sherds from a handmade, everted rim jar with ridging on the body, fabric F17 (14 sherds; 23g). Stray sherds one body and two base sherds from a closed form, fabric R06.

Date: early Roman

## Burial 34

Urned cremation with accessory vessel, in oval pit 4180, aligned north-west to southeast, 0.44 m long by 0.37 m wide by 0.15 m deep, asymmetrical profile, steep-sided south-east, fill 4179.


Burial 34, pit 4180, urn SF93 right, over bone deposit (4201), looking north-east (scale 400 mm )

Cremated bone and pyre debris 4201 on base of pit underneath vessels.
An adult, unknown gender, bone weight 691g. A small ceramic disc, SF149, had been laid on top of the fill overlying the bone in the urn, implying the cremation was covered with soil rather than the urn being covered. Burial urn SF93, wheel-made jar, everted rim, wide-mouthed, fragmented, fabric R07 ( 94 sherds, 680 g ), urn fill 4200. Accessory vessel SF94, lower half of a very thin-walled small flagon, fabric R03 (VER OX) (86 sherds, 242g).


Accessory vessel SF94 (scale 50mm)
Date: early Roman

## Burial 37

Urned cremation, with three accessory vessels, in oval pit 4190, aligned east to west, 0.55 m long by 0.38 m wide by 0.15 m deep, fill 4191 .


Burial 37, in pit 4190, accessory vessel SF98 bottom right (scale 400mm)
An adult, unknown gender, bone weight 748 g . Some cremated bone from the burial urn was spread over the base of the pit by later ploughing. Burial urn SF99, wheelmade necked jar with a bulged, cordoned neck, post-firing drilling holes through the neck and through the wall near the base, very fragmented, fabric R06 (141 sherds, 939g).

Accessory vessel SF98; lower half of a small flagon, fabric R03 (VER WH) (43 sherds, 133 g ). Accessory vessel SF100; small, wheelmade jar, everted rim, fabric R06 (69 sherds, 97 g ). Accessory vessel; several bodysherds from a small grey sandy war jar, fabric R06 ( 6 sherds; 30 g ). Copper alloy brooch SF151 may have been interred with the burial in burial urn SF99.

Date: early Roman

## Burial 37

Plan 56


## Burial 43



## Burial 43

Urned cremation in centre of circular pit 4210, 0.40 m in diameter by 0.12 m deep with U-shaped profile, fill 4209.

An adult, unknown gender, bone weight 374g. Burial urn SF104; bodysherds from a closed form, fabric R07 (98 sherds, 290g). Pot crushed and base degraded back into clay. Nail in urn SF152.

Date: early Roman

## Burial 44

Urned cremation, with five accessory vessels, in sub square pit 4214, steep-sided, flatbottomed, U-shaped profile, 0.43 m in diameter by 0.20 m deep, fill 4213 .


Burial 44, urn SF103 top, accessory vessel SF115 bottom, looking south (scale 500 mm )

An adult, unknown gender, bone weight 561 g . Burial urn SF103; butt beaker with cordons and zones of faint combing imitating rouletting, very fragmented, fabric F17 (205 sherds, 623g), fill 4216.


Burial 44, urn SF103 top right, looking east


Burial urn, SF103 (scale 50mm)
Accessory vessel SF115; wheelmade everted rim jar, slight lid-seating, very worn base angle possibly originally with a footstand or similar, fabric F35 (61 sherds, 226g). Accessory vessel SF114; platter imitating an imported mouded form Cam 8 (Thompson 1982, type G1-6), fabric F17 (54 sherds, 98g). Accessory vessel SF102a; everted rim jar, very fragmented remains, fabric R07 (201 sherds, 288g). Accessory vessel: SF102b; beaker rimsherd and sherds mixed with above vessel, fabric R07 (1 rim, 6 g ). Stray sherd, pedestalled base, fabric R06 (13g).

Date: early Roman, 40-65 AD

## Burial 44

Plan 63


## Burial 46

Plan 60


Urn / Vessel Number
Pottery
Pot with burial

## Burial 46

Urned cremation, with two accessory vessels, in circular pit 4221, steep-sided, Ushaped, 0.63 m in diameter and 0.22 m deep, fill 4220 .


Burial 46, in pit 4221, urn SF110 right, SF111 with pyre debris, top, looking east (scale 400mm)

An adult, unknown gender, bone weight 547g. Deliberate deposition of long bones in base and sides and skull on top. Deposition of charcoal pyre debris across the top of the cremation, perhaps a thin plank. Burial urn SF110; large butt beaker with combed decoration, fabric R05 ( 130 sherds, 664 g ), blackened one side.


Burial urn SF110

Deposition of pyre debris as a mass of charcoal in the base of SF111 and another mass on top dipping down, probably two separate deposits. Accessory vessel SF111, handmade rolled rim jar, very degraded, fabric F09 (198 sherds, 346g).


Accessory vessel SF111, (scale 20mm)


Pyre debris in SF111 (scale 10mm)
Accessory vessel SF109; handmade platter imitating an imported moulded form Cam. 8 (Thompson 1982, form G1-6), fabric F11 (77 sherds, 407g).

Date: 40-65 AD

## Burial 47

Urned cremation, with accessory vessel, in oval pit 4224, aligned north-east to southwest, measuring 0.45 m long by 0.33 m wide by 0.18 m deep, fill 4225 .


Burial 47, in pit 4224, urn SF113 right, looking south (scale 400mm)
Juvenile, unknown gender, bone weight 834g. Deliberate deposition of long bones laid in the base. Burial urn SF113; handmade, lid-seated jar, slightly sooted exterior, fabric R07 ( 43 sherds, 1565 g ).


Accessory vessel SF117; globular beaker with a short everted rim; decorated with white painted arcading; very fragmented, fabric R05 ( 85 sherds, 144 g ). A large lump of natural flint, measuring 70 mm long by 60 mm square, had been placed into vessel SF117, left just poking above the rim. This would appear to be deliberate given the size of the flint.

Date: early Roman

## Burial 47

## Plan 62



XX Urn / Vessel Number
$\square$ Pottery
Pot with buria


## Burial 50

Plan 65

$X X$
$\square$
$\square$
Urn / Vessel Number
Pottery
Pot with burial

## Burial 50

Urned cremation in oval pit 4247, with a steep-sided, U-shaped profile, aligned north to south, measuring 0.55 m long by 0.45 m wide by 0.12 m deep, fill 4246 , truncated by field drain.

A juvenile, unknown gender, bone weight 313g. Deposition of pyre debris suggested by the very thin layer of fill between the cremated bone and the base of the urn being pinkish-red with a small flint burnt porcelain white. Burial urn SF122; wheelmade, rolled rim jar, very fragmented, fabric R07 ( 356 sherds, 1974 g ), urn fill 4248.

## Date: early Roman

## Burial 49

Urned cremation in circular pit 4234, 0.50 m in diameter by 0.07 m deep, fill 4233 , cut by pit 4193 for Burial 38. An adult, bone weight 909g; deliberate deposition of skull in the base of the urn, the remainder in the pit. Burial urn SF118; everted rim jar, base with slightly protruding foot, friable and very fragmented, fabric F17 ( 45 sherds, 880 g ), urn fill 4235.


Burial 49, urn SF118, with spilled bone in foreground (scale 500mm)


Burial 49, urn SF118 and spilled bone on the right (scale 500 mm )
Date: late Iron Age to early Roman

## Burial 49

Plan 64


## Cremation burials of the 1st - to early 2nd centuries AD

## Burial 4

Two urned cremations, with one accessory vessel, in sub-circular pit 4088, about 0.45 m in diameter and 0.20 m deep with a bowl-shaped profile, fill 4087.


Burial 4, in pit 4088, vessel SF22 in foreground, looking north-west
Young adult, possibly male, bone weight 633g, in urn fill 4095, with four iron nails SF146. Burial urn SF20; lower part of a wheelmade jar, fabric R13 (8 sherds, 416 g ). Possible infant bone fragments, weight 0.5 g , in second urn SF22; globular-bodied beaker with flared rim, probable firing flaw in base ( 27 sherds, 115 g ). Accessory vessel SF21; base from a small closed vessel with a girth groove, fabric R06 ( 9 sherds, 90 g ).

Date: 1st to 2nd centuries AD

## Burial 4

Plan 21


## Burial 6

Plan 23

xx
Urn / Vessel Number
Pottery
Pot with burial
98.5 maOD


## 




## Burial 6

Two urned cremations, with three accessory vessels, in the centre of a sub-circular pit 4092 , measuring 0.70 m long by 0.65 m wide and 0.20 m deep, fill 4091.

An adult, possible female, bone weight 1042g. Burial urn SF29; wheelmade, lid-seated jar, fragmented, fabric R07 ( 167 sherds, 893g).
An adult, possible male, bone weight 1094g. Deliberate deposition of long bones down the side of the vessel. Burial urn SF30; wheelmade jar, wide-mouthed, everted rim with undercut rim, fabric R07 (209 sherds, 263g).

Accessory vessel SF26; South Gaulish dish with barbotine decoration, Hermet form 28, Vernhet service B2 (Brulet 2010, 80) (3 sherds, 234g). Accessory vessel SF27; singlehandled ring-necked flagon, complete apart from handle, no obvious handle scar, fabric R03 (VER WH) ( 2 sherds, 410g). Accessory vessel SF28; small carinated beaker with flared rim, complete apart from chip out of rim, fabric R07 (1 sherd, 108g).


Burial 6, pit 4092, urn SF29 left, dish SF26 centre foreground, flagon SF27 right, looking north (scale 500mm)


Adult long bones down side of Urn SF30 (scale 50mm)


SF27, flagon, (scale 50mm)


SF28, carinated beaker,
(scale 10mm)

Date: 60-117 AD (Flavio-Trajanic)

## Burial 8

Urned cremation, with accessory vessel on top, in small circular pit 4113, measuring 0.45 m in diameter and 0.15 m deep, fill 4114.

A young/middle adult, bone weight 369g, and unknown individual, bone weight 161g. Deposition of pyre debris as charcoal with the burial, as well as burnt soil spread above the cremation. Burial urn SF40; lid-seated jar, very fragmented, possibly wheelmade, fabric R13 (152 sherds, 870g). Accessory vessel SF39, used as lid; South Gaulish samian dish Drag.18, central potter's stamp OF.PA VII potter: Paulus iii, die 3a (Hartley and Dickinson 2011, 105-6) (3 sherds, 208g).


Burial 8, urn SF40, with samian dish SF39 as lid


Burial urn SF40 (scale 50mm)
Date 70-95 AD

## Burial 7

## Plan 22



## Burial 8

## Plan 30



40


XX Urn / Vessel Number
$\square$ Pottery
$\square$ Pyre debris

## Burial 7

Urned cremation with accessory vessel inside, slightly off centre in shallow circular pit 4094, 0.25 m in diameter and 0.12 m deep, fill 4093.

Adult, possible male, and infant, bone weight 915 g . Burial urn SF24; handmade jar, lower part only, fabric R13 ( 46 sherds, 378 g ). Accessory vessel SF25, placed inside burial urn; lower half of beaker decorated with barbotine dots, fabric R06c ( 9 sherds, 39 g ).

Date: 60-117 AD (Flavio-Trajanic)

## Burial 10

Two urned cremation, with one accessory vessel, in sub-square pit 4106, aligned north-west to south-east, 0.75 m long by over 0.50 m wide by 0.20 m deep, fill 4105 , truncated by land drain. The accessory vessel was on the south-east side of the urn, with a large lump of flint against the north-west side of the urn.


Burial 10, pit 4106, burial urn SF31a by drain, looking west (scale 50mm)
An adult, unknown gender, bone weight 1639g. Burial urn SF32; large wheelmade jar, narrow-mouthed, necked; decorated with a faint zone of burnished line latticing on the shoulder and slightly irregular burnished horizontal lines down the body; slightly sooted, fabric R07 (116 sherds, 1908g). Unknown individual, bone weight 1 g . Burial urn SF31a; lower part of a small single-handled flagon, fabric R03 (VER WH) ( 40 sherds, 310 g ). Accessory vessel SF31b; curved wall dish with a small footring, fabric R06 (31 sherds, 157 g ).

Date: later 1st century

## Burial 10

Plan 27



## Burial 12

Plan 31


## Burial 14

Plan 32


## Burial 12

Urned cremation, with two accessory vessels, all fragmented and in identical fabrics, in circular pit 4116, 0.65 m in diameter and 0.20 m deep, fill 4115.

An adult, unknown gender, bone weight 948 g . Burial urn SF41; wheelmade jar, widemouthed, necked, cordoned, burnished exterior, fabric R06 (17 sherds, 352g). Accessory vessel SF42a; rim of narrow-necked jar or beaker, fabric R06. Accessory vessel SF42b; wheelmade jar, rolled rim, fabric R06 (both vessels 151 sherds, 70 g ).

Date: late 1 st to early 2 nd centuries AD

## Burial 14

Urned cremation, in circular pit 4122, 0.37 m in diameter by 0.10 m deep, fill 4121.
An adult, unknown gender, bone weight 495g. Burial urn SF44; lower fragments of a closed form, fabric R06 (46 sherds, 436g).

Date: late 1st to early $2 n d$ centuries AD

## Burial 16

Urned cremation with three accessory vessels, in pit $4129,0.65 \mathrm{~m}$ in diameter by 0.15 m deep, fill 4130.


Burial 16, pit 4129, urn SF55 centre, looking south-east


Burial urn SF55 (scale 50mm)

A young/middle adult, unknown gender, bone weight 1128 g . Deliberate deposition of the long bones down the side of urn, and the skull a mass on top. Burial urn SF55; lower half of large wheelmade jar decorated with a faint burnished line lattice, fabric R07 ( 54 sherds, 650 g ). Accessory vessel SF52; base of a beaker, fabric R07 (55 sherds, 106g). Accessory vessel SF53; shattered fragments of a small flagon, fabric R03 (VER WH) (110 sherds, 183g). Accessory vessel SF54; South Gaulish samian dish, Drag. 15/17; central stamp too abraded to decipher (7 sherds, 238g).

Date: up to c80 AD (pre-Flavian or early Flavian)


## Burial 18

Plan 34


## Burial 18

Urned cremation in sub-square pit 4134, measuring 0.60 m long by 0.55 m wide by 0.18 m deep, fill 4133 , truncated north side by land drain.


Burial 18, pit 4134, urn SF50, looking north
An adult, possible female, bone weight 426 g . A fragment of charcoal and a red smear within the cremation. Burial urn SF50; slow wheelmade, lid-seated jar, fabric R07 (59 sherds, 1159 g ).

Date: 1st to 2nd centuries AD

## Burial 38

Urned cremation, with two accessory vessels, in oval pit 4193, aligned east to west, 0.55 m long by 0.40 m wide by 0.28 m deep, fill 4192 . Cuts earlier pit 4334 , Burial 49 .

An adult, unknown gender, bone weight 222g. Burial urn SF120; lower part of a flagon, fabric R03 (VER WH) (111 sherds, 1129g). Accessory vessel SF119; almost complete South Gaulish samian dish, Drag. 18 with an external step. Central stamp:OFCALV[I] (Calvus i). Stamp too abraded to identify die but in the 5 series (Hartley and Dickinson 2008, 2, 178-9) ( 7 sherds, 259g). Accessory vessel SF121; wheelmade jar, narrownecked, everted rim, fabric R07 (62 sherds, 209g).


Burial 38, SF120 centre, looking south (scale 500mm)
Date: 65-90 AD

## Burial 38

## Plan 64



Burial 49

## Burial 38




## Burial 39

## Plan 59



## Burial 39

Urned cremation with three accessory vessels aligned north-west to south-east, in centre of triangular pit 4195, measuring c0.70m each way, and 0.30 m deep, fill 4194.


Burial 39, burial urn SF105 centre, looking north (scale 500mm)
An adult, possibly male, bone weight 692g. Deliberate deposition of long bones in the base and the skull on top. Burial urn SF105; handmade everted rim jar, with at least one body cordon; very fragmented, fabric R07 ( 425 sherds, 1712g). Accessory vessel SF106; South Gaulish samian dish, Drag.36, almost complete. Had been broken in half and then repaired with three lead rivets ( 2 sherds, 181g). Accessory vessel SF107; single-handled flagon, fragmented remains, fabric R03 (VWR OX) (70 sherds, 342g). Accessory vessel SF108; small closed vessel, possibly a beaker, very fragmented remains, fabric R07 ( 84 sherds, 57 g ).

Date: 60-117 AD (Flavio-Trajanic)

## Burial 45

Pyre debris in centre of sub-rectangular pit 4219, aligned north-west to south-east, 1.0 m long by 0.63 m wide by 0.28 m deep, with accessory vessel and layer of fragmentary bone immediately south, in fill 4218.


Burial 45, pyre debris, bone and accessory vessel SF112, looking north-west
A few bone fragments, weight 1g, no urn. Accessory vessel SF112; a globular beaker with a short everted rim, pale oxidised colour, faint traces barbotine decoration as circles and panels of dots in same colour as fabric, fabric R05 (20 sherds, 214g).

Date: 69-117 (Flavio-Trajanic)

## Burial 45

## Plan 61



## Cremation burials of the early-mid 2nd century AD

## Burial 9

Urned cremation, with two accessory vessels, in centre of oval pit 4104, aligned northwest to south-east, 0.85 m long by 0.75 m wide by 0.15 m deep, fill 4103 , cuts Burial 20.


Burial 9, pit 4104, looking down and south-west (scale 400 mm )
An adult, unknown gender, bone weight 862g, in fill 4110. Burial urn SF33, bodysherds from a closed form, fabric R06 (49 sherds, 184g). Accessory vessel SF34; Central Gaulish dish, Drag.18/31. Abraded central potter's stamp AVI...V•F. Potter Avitus iv, possibly die 7a (Hartley and Dickinson 2008, 1, 375-9) (4 sherds, 380g). Accessory vessel SF35; lower part of small flagon, fabric R03 VER WH) ( 61 sherds, 243g).

Date: 120-150 AD

## Burial 9 <br> Plan 28 <br> 



## Burial 11

Two urned cremations, with one accessory vessel, in oval pit 4108, aligned north to south, 0.65 m long by 0.55 m wide by 0.20 m deep, with fill 4107 . Immediately adjacent to Burial 15.


Burial 11, burial urn SF36 central, Burial 15 to right, looking south-west (scale 400mm)
An adult, possibly female, bone weight 902g; two nails 139. Burial urn SF36, rolled rim jar, very fragmented remains, fabric R13 (178 sherds, 784 g ). Unknown individual, bone weight 2 g . Burial urn SF37; globular flask with a short narrow neck. The base is very thin and cracked through firing, suggesting this is a second, fabric R06 ( 2 sherds, 217 g ). Accessory vessel SF38; small everted rim beaker, fabric R07 ( 33 sherds, 147 g ).

Date: early $2 n d$ century AD

## Burials 11 \& 15

Plan 29




Burial 11


Burial 15


## Burial 15

Urned cremation, with two accessory vessels, in sub square pit $4125,0.40 \mathrm{~m}$ long by 0.35 m wide by 0.08 m deep, fill 4127 . Immediately adjacent to Burial 11.


Burial 15, pit 4125, burial urn SF47, looking north-east


Burial 15 , looking south (scale 400 mm )

A juvenile and adult, bone weight 1038g. two nails, SF140, were amongst the cremated bone. Burial urn SF47; handmade everted rim jar with a rolled rim, very fragmented, fabric R123 (107 sherds, 936g). Accessory vessel SF48; wheelmade, plain poppyhead beaker, fabric R07 (18 sherds, 220g). Accessory vessel SF49; Central Gaulish samian dish Curle 23; very abraded central rosette stamp ( 5 sherds, 273g).

Date: 117-138 AD or 138-160 AD (Hadrianic or early Antonine)

## Burial 20

Urned cremation, with accessory vessel, in subcircular pit 4138, 0.65 m long by 0.60 m wide by 0.30 m deep, fill 4137 ; cut by Burial 9 .


Burial 20, pit 4138, urn SF59 centre, looking south-west (scale 400mm)
An adult, possibly female, bone weight 967 g . Deliberate deposition of a very thin layer of charcoal pyre debris on the base of the urn, with skull and long bones placed over it; long bone across the top of the deposit with other long bones surrounding it. Burial urn SF59; handmade lid-seated jar, fabric R07 (109 sherds, 2175g).


Burial 20, with long bones on top (scale 10mm)
Accessory vessel SF60; complete globular beaker with short everted rim; decorated with rows of barbotine dots, fabric R06c (1 sherd, 144g).

Date: 98-117 AD? (Trajanic?)

## Burial 20

Plan 38

98.0 maOD


## Burial 30

Urned cremation, with two accessory vessels, in oval pit 4165, aligned north-west to south-east, measuring 0.60 m long by 0.45 m wide by 0.15 m deep, fill 4164 .


Burial 30, pit 4165, urn SF76 centre, looking south-west (scale 400 mm )
An adult, unknown gender, bone weight 424g. Burial urn SF76; bevelled rim jar, very fragmented, fabric R13 (127 sherds, 735g). Accessory vessel SF77; fragments of a small flagon, fabric R03 (VER WH) (94 sherds, 132g). Accessory vessel SF 46; Central Gaulish samian dish, Drag.18/31, poor slip and fragment of a centrally placed very flaked stamp J..M..[ ( 13 sherds, 134 g ). Stray sherds, 2 rimsherds from central Gaulish dish Drag. 18/31 or $31(31 \mathrm{~g})$.

Date: early to mid 2nd century AD

## Burial 30



APPENDIX 2: M1 OVERBRIDGE, LEVEL 2 BUILDING RECORDING REPORT
by Tim Upson-Smith

## Northamptonshire Archaeology

# Archaeological building recording of the M1 Junction 12 Overbridge, Toddington Central Bedfordshire October 2011 

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## OASIS REPORT FORM



## Contents

1 INTRODUCTION ..... 1
2 OBJECTIVES AND METHODOLOGY ..... 1
3 HISTORICAL BACKGROUND ..... 3
4 SURVEY ..... 7
5 DISCUSSION ..... 15
BIBLIOGRAPHY ..... 15
APPENDIX 2.1: PHOTOGRAPHIC INDEX ..... 16

## Figures

Fig 1: Site location
Fig 2: Elevation of Standard M1 Overbridge (Sir Owen Williams and partners 1956)
Fig 3: $\quad$ Plan of Standard M1 Overbridge (Sir Owen Williams and partners 1956)
Fig 4: View from the M1 Junction 12 Overbridge, looking north-west, showing the construction of the new bridge
Fig 5: M1 Junction 12, building recording area showing position of photographs
Fig 6: North-western elevation looking south-east
Fig 7: South-eastern elevation looking-north
Fig 8: Column capital detail, looking south-east, also showing the corbelled soffit
Fig 9: Detail of the inclined tapering haunches looking north-east
Fig 10: The stencilled bridge number, looking south-west
Fig 11: Parapet handrail fixtures, looking north-west
Fig 12: M1 Junction 12 Overbridge, looking north-west
Fig 13: M1 Junction 12 Overbridge, looking south-east
Fig 14: M1 Junction 12 Overbridge, looking west
Fig 15: M1 Junction 12 Overbridge, column detail, looking north
Fig 16: M1 Junction 12 Overbridge, internal detail of the northern parapet, looking north-east

## ARCHAEOLOGICAL BUILDING RECORDING OF THE

M1 JUNCTION 12 OVERBRIDGE, TODDINGTON
CENTRAL BEDFORDSHIRE


#### Abstract

Northamptonshire Archaeology carried out building recording of the M1 Junction 12 Overbridge, Toddington, Central Bedfordshire, prior to its demolition. The survey demonstrated that the structure of the bridge had altered little since its initial construction. Patch repairs and the addition of a handrail on the southern parapet were the only changes apparent.


## INTRODUCTION

Northamptonshire Archaeology (now part of MOLA) was commissioned by Costain Carillion Joint Venture (CCJV), on behalf of the Highways Agency, to carry out a historic building survey of the M1 Junction 12 Toddington Overbridge (NGR TL 02070 29820; Fig 1).

Prior to the improvement scheme the overbridge had carried the Harlington Road (A5120) across the M1 at Junction 12. The bridge was demolished as part of the Junction 12 improvements. A Level 2 historic building recording survey was required prior to demolition.

MOLA is a Chartered Institute for Archaeologists (CIfA) registered organisation. This report has been prepared in accordance with current best archaeological practice as defined in the Chartered Institute for Archaeologists' Standard and guidance for the archaeological investigation and recording of standing buildings and structures (CIfA 2008) and the Management of Research Projects in the Historic Environment: Project Managers' Guide (EH 2006).

## 2 OBJECTIVES AND METHODOLOGY

The general aim of the survey was to record the existing bridge as specified in Section 7 of the Cultural Heritage Written Scheme of Investigation (HA 2011), and which is equivalent to a Level 2 survey as defined by English Heritage (EH 2006). The record was primarily by photography, complemented with a written description and analysis of phasing.

The specific objectives of the work were (HA 2011, 7.14):

- Use of historical survey drawings for comparable investigation relating to building form and function, identification of fixtures and fittings, where visible or accessible;
- Provide detailed accounts of fixtures, fittings and architectural features, where visible or accessible; and
- Provide a photographic record of the structures in context.



## Methodology

After the appropriate Health and Safety induction from CCJV, an initial walk around was made to identify the condition of the structure, estimate angles of views and types of exposures required.

Photographs were taken of the structures external appearance in order to give an overall impression of its size and shape, by a series of oblique views and elevations. Although the English Heritage guide states; 'All photographs will include an appropriate unobtrusive scale, where possible' (EH 2006), due to the nature of the survey and the continuous use of the M1 carriageway, it was not possible to include scales in the photographs.

Photographs were also made of structural details relevant to the bridge's design and development.

Photography was primarily by digital SLR camera and 35 mm black and white film negative (Appendix 2.1).

The main items of equipment used in the survey were:
Nikon F80 Film SLR
Nikon D200 SLR, 10.2 million pixel sensor
Nikon $18-70 \mathrm{~mm}$ wide angle lens
Sigma $17-35 \mathrm{~mm}$ wide angle lens
Sigma $10-20 \mathrm{~mm}$ wide angle lens
Sigma 100 mm telephoto lens
Nikon SB800 Speedlight (digital), Nikon SB28 Speedlight (negative)
llford HP5 Black and White Film
Sandisk Extreme III 2Gb Compact flash memory Cards
Manfrotto Neotec tripod and head with quick release
Sekonic 650036 L-308 S Flashmate Handheld Light meter
The archive includes unprocessed digital files (Fine JPEG and RAW format) and film negatives with prints.

## 3 HISTORICAL BACKGROUND

The existing Toddington Interchange Overbridge forms part of the first long distance interurban motorway in Britain, designed by Sir Owen Williams.

During the preparation of the Stage 3 Assessment, English Heritage was consulted regarding the status of the original M1 motorway structures and their significance (HA 2007). The decision was taken not to designate the M1 structures; however, the historic importance of the individual elements was acknowledged (HA 2011, 2.13-2.14).

The Motorway Archive Trust has also published a series of books on the construction of the country's motorways, the volume for southern and eastern England includes the M1 (Baldwin et al 2007).

The following history of the M1 is a summary of an article by R H Soper, an engineer who worked for Sir Owen Williams and Partners.
http://www.ciht.org.uk/motorway/m1soper.htm

Authorisation from the government for the first stretch of the M1 was given in July 1955. The project went out to tender at the end of 1957, the tenders had to be returned by 6th January 1958, a very quick turn around for such a large project. The successful candidate was John Laing and Son Ltd, who were awarded the contract on the 20th January 1958 with work to start on the 1st April 1958.

The Junction 12 Overbridge, one of 128 bridges in the first stretch of the M1 motorway between Luton and Crick, was built in 1958-9 to a standardised design (Figs 2-3). The premise behind the standard design was that the shuttering could be re-used on subsequent bridges to speed construction. However, due to the number of bridges and speed of progress it was often the case that new shuttering had to be made to keep up the rapid progress of the road construction.

The bridges were made from reinforced concrete, as prestressed concrete was still a fairly new innovation at the time and its longevity had not been assessed. Another issue with prestressed concrete beams was the transport of them to each bridge site; whereas the materials needed for a reinforced concrete bridge could be transported down the unfinished road corridor with greater ease.

The bridges all followed the same basic design with strong, low, vertical walls surmounted by inclined tapering haunches curving over into the reinforced deck slabs. The middle of the span of the overbridges was supported on large circular columns, the number of which varied depending on the width of the bridge.


Elevation of Standard M1 Overbridge (Sir Owen Williams and partners 1956) Northamptonshire Record Office un-catalogued collection

Fig 2


Plan of Standard M1 Overbridge (Sir Owen Williams and partners 1956) Northamptonshire Record Office un-catalogued collection

Fig 3

## SURVEY

The survey was carried out in bright early sunshine, changing to dull overcast conditions by mid-morning, on the 10th October 2011 (Figs 4-15). Construction work had started on the north-west side of the bridge for its replacement, limiting the opportunities to take clear unobstructed photographs of this side of the bridge (Fig 4). Another limiting factor was that apart from the outside lanes, the M1 was still open. Access to the roadworks in the outside lanes for photographic purposes was facilitated by CCJV, after receiving the appropriate Health and Safety inductions.


View from the M1 Junction 12 Overbridge, looking north-west, showing the construction of the new bridge (digital ref no 0167)

Fig 4
The bridge formed the central element to a diamond interchange (Fig 1), which is considered as the most basic way to connect a road to a motorway, it is easy to use but is only suitable for low capacity traffic.

The construction and features of the bridge matched those in the historic descriptions available about the construction of the M1 bridges and the original drawings which were viewed in the Northamptonshire Records Office (NRO), (Figs 2-3). The full collection of M1 drawings held by NRO has not yet been catalogued.

The bridge appeared to be in as near original condition as can be expected for a 53 year old concrete structure. Patching of the concrete structure was evident on all sides (Figs $6-16)$. This is because the structure had begun to degrade over time and parts of the bridge had to be repaired to prevent a more serious failure in the fabric of the bridge.


Whilst the design of the bridge may not have been to everyone's taste, these bridges were designed with aesthetics as well as functionality in mind and reflected the modern thinking of the age. The design of the bridges was approved by the Royal Fine Arts Commission. The bridge, like all the other original bridges on this section of the M1, was built with a three foot $(975 \mathrm{~mm}$ ) deep reinforced concrete deck, supported by raking abutments and circular columns (Figs 6-15). The soffit of the deck was corbelled out in a series of steps to meet the parapet, which was finished with a ridged coping (Fig 8). Due to the width of the carriageway, the bridge had three supporting circular columns in the central reservation (Figs 8 and 15).

The only marking visible on the bridge was a small stencilled panel on the south-western side marked with the number, 623 (Fig 10). All road structures have a unique structure number, which is based on the premise of London being the centre of the country and the numbers relate to how many kilometres the bridge is from London, in this case 62.3 km . The number on this bridge does not follow the modern standard format, as it should read $M 1 / 623 / A$, the A showing that it is on the northbound carriageway, also it should be white numbers in a black rectangle, stencilled in a standard font 1.2 m above the ground surface so as not to be obscured by safety barriers. It was not possible to measure the height of this bridge number as access could not be gained to the hard shoulder. The number is unlikely to be original, as when it was built it was more likely to have been given a name relating to where it was located, rather than a number (Steve Field, UK Highways, pers comm).

The only addition to the structure of the bridge was a galvanised handrail on the top of the southern bridge parapet. The rail was fixed to the parapet with regularly spaced plain inverted U-shaped fixtures, which had been drilled and bolted into the concrete of the parapet (Fig 11). There was no evidence that a handrail had ever been fixed to the northern side parapet, there was no apparent pedestrian access along either side at the time of recording, and no particular reason why one side should require a guard and not the other. No further additions or alterations to the basic bridge structure were observed.



South-eastern elevation, looking north (digital ref no 0164)
Fig 7


Column capital detail, looking south-east, also showing the corbelled soffit (digital ref no 0204)

Fig 8


Detail of the inclined tapering haunches, looking north-east (digital ref no 0211)
Fig 9



Parapet handrail fixtures, looking north-west (digital ref no 0190)
Fig 11


M1 Junction 12 Overbridge, looking north-west (digital ref no 0184)
Fig 12


M1 Junction 12 Overbridge, looking south-east (digital ref no 0201)
Fig 13


M1 Junction 12 Overbridge, looking west (digital ref no 0208)
Fig 14


M1 Junction 12 Overbridge, column detail, looking north (digital ref no 0164)


M1 Junction 12 Overbridge, internal detail of the northern parapet, looking north-east (digital ref no 0168)

Fig 16

## DISCUSSION

The survey recorded the bridge as it stood on the 10th October 2011 and demonstrated that the basic structure of the bridge had not been altered since it was first built in 195859 , the only addition being the handrail on the southern parapet. There was evidence from the various patches of different colour concrete that the bridge had seen a series of minor repairs in its life.

When driving along the M1 the original 1958-59 stretch of the M1 from St Albans to Crick can be identified by its bridges, which all follow the same basic styles as designed by Sir Owen Williams. In recent years many of these bridges, especially in Northamptonshire, have been altered by replacing the railings for the original concrete parapets. To the south of Junction 12 the original character of the M1 has already been altered with the addition of further lanes and the installation of new bridges, which reflect the increased traffic volume, to which the motorway has been subjected to in recent years. With these alterations in mind, the survey of the Junction 12 Overbridge preserves by record one of a diminishing number of original structures.

The Northamptonshire Records Office holds a series of drawings of the standard M1 Overbridge, on which all the original bridges were based, in addition it also holds detailed plans of the route and details of land ownership. The bridge plans are part of an, as yet, un-catalogued collection.

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MOLA
26 January 2015

## APPENDIX 2.1 PHOTOGRAPHIC INDEX

| Fig | Description | Direction of view | Location (Fig) | $\begin{aligned} & \text { Digital } \\ & \text { Ref } \\ & \text { No } \end{aligned}$ | Black <br> and <br> white Ref No | Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | south-eastern elevation | north |  | 0163 | - | 10/10/11 |
| 7 | south-eastern elevation | north | 5 | 0164 | F1/11 | 10/10/11 |
| 15 | column detail | north | 5 | 0164 | F2/4 | 10/10/11 |
|  | carriageway over bridge | north-east |  | 0165 | - | 10/10/11 |
|  | view from the M1 Junction 12 |  |  | 0166 | - | 10/10/11 |
|  | Overbridge, showing the construction of the new bridge |  |  |  |  |  |
|  | view from the M1 Junction 12 |  | 5 | 0167 | - | 10/10/11 |
|  | Overbridge, showing the construction of the new |  |  |  |  |  |
| 4 | view from the M1 Junction 12 | north-west |  | 0168 | - | 10/10/11 |
|  | Overbridge, showing the construction of the new bridge |  | north |  |  |  |
|  | north-western elevation | south |  | 0169 | F1/8-9 | 10/10/11 |
|  | north-western elevation | south |  | 0170 | F1/10 | 10/10/11 |
|  | north-western elevation | south-west |  | 0171 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0172 | F1/3 | 10/10/11 |
|  | north-western elevation | south-east |  | 0173 | F1/4 | 10/10/11 |
|  | north-western elevation | south-east |  | 0174 | F1/5 | 10/10/11 |
|  | north-western elevation | south-east |  | 0175 | F1/6 | 10/10/11 |
|  | north-western elevation | south-east |  | 0176 | F1/7 | 10/10/11 |
|  | north-western elevation | south-east |  | 0177 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0178 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0179 | - | 10/10/11 |
| 6 | north-western elevation | south-east | 5 | 0180 | F1/2 | 10/10/11 |
|  | north-western elevation | south-east |  | 0181 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0182 | - | 10/10/11 |
|  | south-eastern elevation | north-west |  | 0183 | F2/16 | 10/10/11 |
| 12 | M1 Junction 12 Overbridge | north-west | 5 | 0184 | F2/17 | $10 / 10 / 11$ |
|  | south-eastern elevation | north-west |  | $0185$ | F2/18 | $10 / 10 / 11$ |
|  | south-eastern elevation | north-west |  | $0186$ | F2/19 | $10 / 10 / 11$ |
|  | south-eastern elevation | north-west <br> north-east |  | $0187$ | F2/20-21 | $10 / 10 / 11$ |
|  | detail of the inclined tapering haunches |  |  | 0188 | - | $10 / 10 / 11$ |
|  | detail of the inclined tapering haunches |  |  | 0189 | - | 10/10/11 |
| 11 | parapet handrail fixtures | north-west | 5 | 0190 | F2/6 | 10/10/11 |
| 10 | the stencilled bridge number | south-west | 5 | 0191 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0192 | F2/13 | 10/10/11 |
|  | north-western elevation | south-east |  | 0193 | F2/14 | 10/10/11 |
|  | north-western elevation | south-east |  | 0194 | F2/15 | 10/10/11 |
|  | north-western elevation | south-east |  | 0195 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0196 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0197 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0198 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0199 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0200 |  | 10/10/11 |
| 13 | M1 Junction 12 Overbridge | south-east | 5 | 0201 | F2/14 | 10/10/11 |


| Fig | Description | Direction of view | Location (Fig) | Digital Ref No | Black <br> and <br> white Ref No | Date |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 8 | north-western elevation | south-east | 5 | 0202 | - | 10/10/11 |
|  | north-western elevation | south-east |  | 0203 | - | 10/10/11 |
|  | column capital detail, also | south-east |  | 0204 | - | 10/10/11 |
|  | showing the corbelled soffit column capital detail, also |  |  | 0205 | - | 10/10/11 |
|  | showing the corbelled soffit | north-west |  |  |  |  |
|  | snails in central reservation | - |  | 0206 | - | 10/10/11 |
|  | detail of the inclined tapering haunches | west |  | 0207 | - | 10/10/11 |
| 14 | M1 Junction 12 Overbridge detail of the inclined tapering haunches | west | 5 | 0208 | F2/6 | 10/10/11 |
|  |  |  |  | 0209 | F2/11 | 10/10/11 |
|  |  | west |  |  |  |  |
|  | detail of the inclined tapering haunches |  |  | 0210 | - | 10/10/11 |
|  | detail of the inclined tapering | north-east | 5 | 0211 | F2/10 | 10/10/11 |
| 9 | detail of the inclined tapering haunches | north-east |  | 0212 | F2/12 | 10/10/11 |
|  | view under bridge | north-east |  | 0213 | F2/1 | 10/10/11 |
|  | view under bridge | north-east |  | 0214 | F2/2 | 10/10/11 |
|  | view under bridge | north-east |  | 0215 | F2/3 | 10/10/11 |
|  | view under bridge | north-east |  | 0216 | F2/4-5 | 10/10/11 |
|  | column capital detail, also |  |  | 0217 | F2/8 | 10/10/11 |
|  | showing the corbelled soffit column capital detail, also | north-west |  | 0218 | F2/9 | 10/10/11 |
|  | showing the corbelled soffit | north-west |  |  |  |  |
|  | detail of the inclined tapering haunches | north-east |  | 0219 | - | 10/10/11 |
|  | detail of the inclined tapering haunches | north-east |  | 0220 | - | 10/10/11 |

Note: Some digital duplication is due to getting pictures as clear of traffic as possible


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## APPENDIX 3: LEAGRAVE WATCHING BRIEF REPORT

## Northamptonshire Archaeology

## An archaeological watching brief beside the M1 motorway southbound at chainage 5850-6600, Leagrave, Luton



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Jim Brown
Report 12/105
revised January 2015
Accession: LUTNM 2010.67

## STAFF

Project Manager Jim Brown BSc PGDip MIfA

Text and illustrations Jim Brown

Fieldwork Paul Clements BA

## QUALITY CONTROL

|  | Print name | Signed | Date |
| :---: | :---: | :---: | :---: |
| Checked by | Pat Chapman | PCham | 2) 6/12 |
| Verified by | Anthony Maull | 2 SMamll | $2 / 6 / 12$ |
| Approved by | Andy Chapman | -llum | $21 / 6 / 12$ |

OASIS REPORT FORM 128071

| PROJECT DETAILS |  |  |
| :---: | :---: | :---: |
| Project title | An archaeological watching brief beside the M1 motorway southbound at chainage 5850-6600, Leagrave, Luton |  |
| Short description | An archaeological watching brief was carried out by Northamptonshire Archaeology beside the M1 motorway southbound at chainage 5850-6600, Leagrave, Bedfordshire. The work observed the cleaning of an existing drainage ditch and excavation of a single trench for the insertion of a vortex separator tank at the base of the motorway embankment. No archaeological features or deposits were encountered. |  |
| Project type | Archaeological watching brief |  |
| Site Status | None |  |
| Previous work | None |  |
| Current land use | Motorway embankment |  |
| Future work | None |  |
| Monument type and period | None |  |
| Significant finds | None |  |
| PROJECT LOCATION |  |  |
| County | Central Bedfordshire |  |
| Site address | M1 motorway southbound, Chainage 5850-6600, Leagrave |  |
| Post code | None |  |
| OS co-ordinates | TL 0519623488 |  |
| Area (sq m/ha) | 25 sq m ( 5 m by 5 m ) |  |
| Height | c122.5m above Ordnance Datum |  |
| PROJECT CREATORS |  |  |
| Organisation | Northamptonshire Archaeology |  |
| Project brief originator | Martin Oake, Central Bedfordshire Council |  |
| Project Design originator | lain Williamson, URS |  |
| Director/Supervisor | Paul Clements, Northamptonshire Archaeology |  |
| Project Manager | Jim Brown, Northamptonshire Archaeology |  |
| Sponsor or funding body | Costain and Carillion Joint Venture, acting for the Highways Agency |  |
| PROJECT DATE |  |  |
| Start date | 29/3/12 |  |
| End date | 30/3/12 |  |
| ARCHIVES | Location (Accession no.) | Contents |
| Physical | Luton Museum LUTNM 2010.67 | No finds |
| Paper |  | Watching brief record sheets, engineering plans, photographic register and background notes |
| Digital |  | Client PDF and digital photographs |
| BIBLIOGRAPHY | Journal/monograph, published or forthcoming, or unpublished client report (NA report) |  |
| Title | An archaeological watching brief beside the M1 motorway southbound at chainage 5850-6600, Leagrave, Luton |  |
| Serial title \& volume | 12/105 |  |
| Author(s) | Jim Brown |  |
| Page numbers | 7 |  |
| Date | 26 January 2015 |  |

## Contents

## 1 INTRODUCTION

## 2 BACKGROUND

### 2.1 Archaeological background

2.2 Topography and geology

3 FIELDWORK STRATEGY
3.1 Objectives
3.2 Methodology

## 4 THE WATCHING BRIEF

5 ASSESSMENT

## BIBLIOGRAPHY

## Tables

Table 1: $\quad$ Historic Environment Record data

## Figures

Front cover: Engineers shoring the trench sides, looking north
Fig 1: Site location
Fig 2: $\quad$ Extent of the engineering works
Fig 3: $\quad$ Drainage ditch, cleaned and concreted, looking north
Fig 4: Layers above the chalk within the vortex separator trench, looking west

Back cover: Ground level compared with the school field, looking north-east

# AN ARCHAEOLOGICAL WATCHING BRIEF BESIDE THE M1 MOTORWAY SOUTHBOUND AT CHAINAGE 5850-6600 <br> LEAGRAVE, LUTON 

## MARCH 2012


#### Abstract

An archaeological watching brief was carried out by Northamptonshire Archaeology beside the M1 motorway southbound at chainage 5850-6600, Leagrave, Bedfordshire. The work observed the cleaning of an existing drainage ditch and excavation of a single trench for the insertion of a vortex separator tank at the base of the motorway embankment. No archaeological features or deposits were encountered.


## 1 INTRODUCTION

An archaeological watching brief was carried out by Northamptonshire Archaeology (now part of MOLA) beside the M1 motorway southbound at chainage 5850-6600, Leagrave, Bedfordshire for URS on behalf of the principal contractors Costain and Carillion Joint Venture, acting for the Highways Agency (NGR: TL 05196 23488; Fig 1). The engineering work encompassed a 63 m length of existing drainage ditch and a 5 m by 5 m trench for a new vortex separator that connects to an existing M1 surface water drainage outfall tank and culvert. The archaeological watching brief forms part of an ongoing scheme of works for the M1 improvements as a whole. The work followed a Written Scheme of Investigation as part of this larger archaeological mitigation design, which was approved by the Central Bedfordshire Council Archaeological Officer prior to the commencement of the M1 improvement scheme (HA 2011).

MOLA is an Chartered Institute for Archaeologists (CIfA) Registered Organisation. All work was undertaken in accordance with current best archaeological practice as defined in the Chartered Institute for Archaeologists Code of Conduct (CIfA 2014), Standard and Guidance for an archaeological watching brief (CIfA 2008), and the procedural documents of English Heritage (EH 1991; 1997; 2002; 2009).

## 2 BACKGROUND

### 2.1 Archaeological background

There are six references listed in the Central Bedfordshire Historic Environment Record that are located within 250 m radius of the vortex separator trench (Fig 1). These are summarised in Table 1.

A Roman coin was found to the east, which is a low denomination copper alloy coin of Constantine I, 274-337 AD showing Sol standing and holding a globe (HER15277). On the opposite side of the motorway, to the north-west, there was a Roman inhumation burial of a child found in a gravel pit in 1934, associated with three sherds of pottery, excavated by Manshead Archaeological Society (HER1984).

Map evidence suggests that the M1 motorway embankment overlies the site of a medieval manor, c160m to the north-west (HER12378). Domesday Book also records a watermill in close proximity (HER10817). A rectangular waterfilled moat is shown on
an estate map of 1795 and three sides of the waterfilled moat also appear beside the river shown on a map of 1842.

To the west of the motorway lay the manor of Lewsey (HER12380), and a map of 1795 shows the estate surrounding a complex of buildings with a courtyard on the site of the former Lewsey Farm, demolished prior to 1960.

The 19th-century building of the Wesleyan Methodist Chapel, constructed c1800, is also recorded along the High Street nearby (HER12398).

Table 1: Historic Environment Record data

| Period | Description | HER reference | Source |
| :--- | :--- | :---: | :--- |
| Roman | inhumation | 1984 | Manshead Archaeological Society, <br> Luton Museum, Accession <br> 170/54/1-4 |
| Roman | coin | 15277 | Bibliographic reference, <br> Bedfordshire Archaeology |
| medieval | moat | 12378 | Bedfordshire \& Luton Archives and <br> Records Service (BLARS), R1/53 <br> estate map |
| medieval | watermill (site of) | 10817 | Bedford Museum, map |
| post-medieval | manor (site of) | 12380 | BLARS, R1/53 estate map |
| post-medieval | chapel | 12398 | BLARS, AT and MAT 301/ tithe |
|  |  |  | award and map |

### 2.2 Topography and geology

The site comprises an 83 m long stretch of motorway embankment which was covered by semi-mature trees and scrub vegetation prior to the works (Fig 1). The embankment lies on the east (southbound) side of the motorway and borders the Leagrave Primary School field at chainage 5850-6600. The perimeter was previously bounded by a hedgerow and trees.

The underlying geology is Cretaceous Chalk (BGS 2001). The soil belongs to the Swaffham Prior soil association comprising well drained calcareous coarse and fine loamy soils over chalk rubble, prone to erosion (LAT 1983).



## 3 FIELDWORK STRATEGY

### 3.1 Objectives

The main aim of the investigation was to determine if archaeological features or deposits were present, and to record these if they were encountered by the development.

If remains were present, then the specific objectives of the project were to determine their location, extent, date and degree of preservation, and to define the sequence and character of activities encountered. The results would be assessed within its local, regional and national contexts, advised by the research aims laid out in the regional research frameworks for the eastern counties (Glazebrook 1997; Brown and Glazebrook 2000; Oake et al 2007; Medleycott and Brown 2008) and the English Heritage research agenda (EH 1997).

### 3.2 Methodology

Archaeological attendance, observation, investigation and recording was conducted during the mechanical excavation of the engineering works and prior to construction of the vortex separator (Fig 2). The topsoil and subsoil above the vortex separator pit was removed under archaeological observation. Excavation took place using a mechanical excavator, fitted with a toothless ditching bucket, to reveal significant archaeological remains or, where these were absent, the natural substrate. The existing drainage ditch along the base of the embankment was cleaned out and reinstated over a distance of 162 m .

The site location, area and extent was recorded in relation to the Ordnance Survey using engineering plans and fixed boundaries. Spot heights were taken from the engineering survey and recorded in relation to Ordnance Datum.

Digital photographs were taken, supplemented with 35 mm monochrome negatives, and colour transparencies for archive purposes. The photographic record is accompanied by pro forma watching brief record sheets that contain notes on the areas of investigation (NA 2011). All photographs and paper archive records have been compiled in accordance with recognised museum practise (Walker 1990, CIfA 2008) and the requirements of Luton Museum (BLM 2008). The watching brief was part of a wider scheme of work registered under the accession code: LUTNM 2010.67.

## 4 THE WATCHING BRIEF

The embankment sloped between 122.50-129.12m above Ordnance Datum. The drainage ditch and vortex separator trench lay at the base of this slope. The trench was square, 5 m by 5 m , and a total of 5.20 m deep. The drainage ditch was 1.50 m wide by 0.45 m deep (Fig 3). Cleaning of the existing drainage ditch did not expose archaeological deposits, and it was subsequently lined with concrete.

During excavation of the vortex separator trench the Cretaceous Chalk substrate was observed at $c 1.2 \mathrm{~m}$ depth. Immediately on top of the chalk was taram sheeting overlain by a jumble of scrap metal (Fig 4). This was overlain by variations of compact pinkishred sandy clay gravel, comprising M1 embankment material, c0.80m thick. Light greyish-brown clay loam topsoil lay at the surface, $c 0.30 \mathrm{~mm}$ thick.


Drainage ditch, cleaned and concreted, looking north
Fig 3


Layers above the chalk within the vortex separator trench, looking west Fig 4

ASSESSMENT
No features or deposits of antiquity were present. A sequence of modern make up layers were observed, comprising modern embankment materials in the top 1.0 m , and natural chalk bedrock lay at the base of the trench (Fig 4).

Whilst remains of a medieval moated manor may be noted on map evidence, overlain by the motorway embankment $c 160 \mathrm{~m}$ to the north-west, this small intervention did not provide evidence for archaeological remains of any period.

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[^0]:    r=roundwood; s=sapwood; h=heartwood

