



Archaeological Investigations at Axton Chase School, Longfield, Kent

By Peter Boyer

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By Peter Boyer

with contributions by

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A programme of archaeological evaluation and excavation was undertaken by Pre-Construct Archaeology on land at Axton Chase School, Longfield during August and September 2011. The investigations revealed signs of a human presence as early as the Late Mesolithic or Early Neolithic period, with further occupation in later prehistory, though few features pre-dating the Roman occupation were identified. Although there was a little evidence for activity in the early Roman period the most extensive and significant phase of occupation of the site was during the 3rd and 4th centuries when a small settlement was established, apparently over part of an earlier field system. The core of the settlement however, lay beyond the area of investigation and therefore it was difficult to ascertain its likely extent and function, though it was probably part of a complex network of small agricultural settlements that occupied much of the Darent Valley and areas beyond during the Roman period.

INTRODUCTION

In 2005 planning applications were submitted for redevelopment work at Axton Chase School, Longfield, Kent (Figs. 1 & 2). The first application was for the development of new school buildings along with sports and community facilities on an area of playing fields towards the south-east of the site. Outline permission for this part of the development was granted in November 2005. The second application was for the demolition of the existing school buildings at the north and west of the site and the development of residential properties in this area along with the creation of areas of public open space. Outline permission for this development, including a number of attached conditions, was approved in May 2006. One of the conditions was for a programme of archaeological work to be carried out prior to development. An initial phase of archaeological work was the production of an archaeological desk-based assessment (DBA) in 2008 (Hawkins 2008), which identified that there was potential for the survival of Roman remains, and possibly those of other periods, on the site. Consequently a written scheme of investigation (WSI) for archaeological evaluation by trial trenching was produced (Hawkins 2009) and one evaluation trench was initially opened in October 2009 before work ceased. Because development did not commence within three years of the granting of outline permission in May 2006, an application for renewal of outline permission was submitted in March 2010 and approved in May of the same year, again including an archaeological condition. Consequently the archaeological evaluation re-commenced on the 8th August 2011 and continued until the 25th August (Fig. 3). However, evaluation trenches towards the north-west of the site revealed the concentration of remains of mostly Roman date, as predicted by the DBA (Seddon 2011). It was decided that a larger area should be opened up in this part of the site and excavated using a strip, map and sample methodology (Fig. 3). This phase of work commenced on the 22nd August, initially running concurrently with the evaluation, and continued up until the 9th September. It was carried out according to a revised WSI (Bradley 2011) and revealed further archaeological remains, again mostly of Roman date (Seddon 2012). In addition to the opening up of an area for excavation, three test pits were also excavated in order to assess the underlying geological and potentially early archaeological sequences below the site (Fig. 3).



Figure 1: Site Location



Figure 2: Local Landscape and Sites Mentioned in the Text

GEOLOGY AND TOPOGRAPHY

Axton Chase School is located within a substantial dry valley that slopes down in a generally WNW direction towards the River Darent, which it joins just south of Dartford, whilst the northern part of the site, including the main area of archaeological investigations, is located on the floor of the valley. The site is located some 7km upstream from the confluence with the Darent, where the valley floor lies at a level of c. 52m AOD and the valley sides are noticeably asymmetrical. The southern slope rises quite steeply to a level of c. 90m AOD, whilst to the north, the slope is much gentler, eventually merging with the rising ground forming the dip-slope of the North Downs. The British Geological Survey (1:50,000 Sheet 271 Dartford 1998) shows the area to be underlain by Cretaceous Upper Chalk geology of the Seaford Chalk Formation, which across much of the valley floor, including the northern part of the site, is overlain by more recent Head deposits, described as 'silt, sand and clay with variable gravel, chalky in places'. The southern part of the site directly overlies the Chalk. The nearby valley side to the south is mapped as Made Ground and there is clear topographic evidence that the site was levelled, probably by both cut and fill, when the school and its playing fields were established. There is also likely to have been some modification of near-surface, recent geology in the area as a result of brickearth extraction in the historical period.

Approximately 1km up the valley from the site, where the valley floor lies at approximately 57m AOD, the surface of Upper Chalk bedrock has been recorded at levels between 1.5m and 1.9m below ground level (bgl) (Green 2007). However, the test-pitting on the school site as part of the archaeological investigations revealed that deposits overlying the Chalk on the floor of the dry valley here were substantially thicker, below a surface elevation of c. 52m AOD (Green 2012). Chalk was not seen in any of the trenches down to c. 3.80m bgl, though the presence of chalk clasts in the lower part of the gravel in Test Pit 3 suggested that the surface of the Chalk was not far below the bottom of the trench. Despite the marked difference in the thickness of the deposits between the two sites, the sediment sequences were broadly similar, consisting of fluvial gravels overlain by colluvial deposits (Head).

In Test Pits 1 and 3 on the study site, the lowest units in the sediment sequences consisted largely of free-running flint gravel, incorporating, in Test Pit 3, water-worn clasts up to 300mm (long dimension). These gravels reflected deposition from a very energetic fluvial environment and probably represented torrential flow over frozen ground during the spring melt under periglacial conditions. Overlying these torrent gravels in Test Pits 1 and 3 were sandy silty clays of colluvial origin. In Trench 3, at the base of this colluvial sequence, was a buried soil which elsewhere on the site yielded large numbers of Roman artefacts (see below). In Test Pit 2, no undisturbed fluvial gravels were observed. The lower part of the sediment sequence was occupied by colluvial deposits, which consisted largely of slightly reworked and redeposited, clay-enriched fluvial sands and gravels. The upper part of this sequence comprised a rather stony silty sand, probably equivalent to the material exploited in a former brickfield close to the eastern edge of the site (Hawkins 2008, figs. 8 & 9). The upper part of the sediment sequence in Test Pit 2 was largely obscured by previous

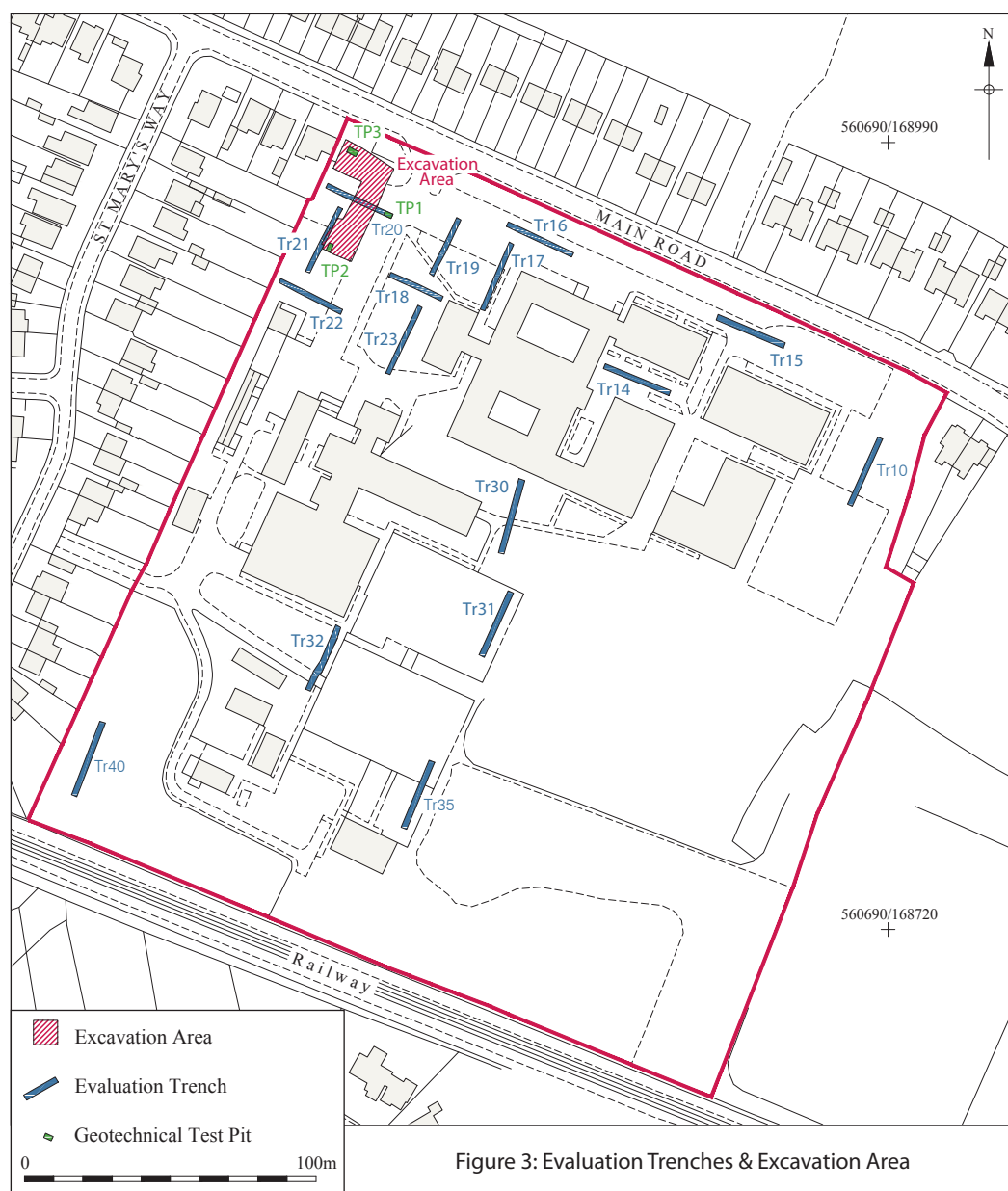


Figure 3: Evaluation Trenches & Excavation Area

trenching and groundwork, but appeared to resemble the upper part of the sequence in Test Pit 3, comprising a stony fine-grained deposit, at the base of which a buried soil could be recognised. Several Roman artefacts were recovered from this horizon immediately prior to the opening of the trench. The juxtaposition of fluvial and reworked fluvial deposits indicated in the contrast between Test Pit 2 and Test Pits 1 and 3, was clearly illustrated on the floor of the area from which the post-Roman colluvium and Roman soil had been removed during archaeological investigations. Here, sharp contacts between the two sediment types could be traced on the ground, demonstrating that the infill beneath the dry valley floor was the product of an interaction between fluvial deposition and colluvial reworking of sediments on the valley floor. The burial of the 'Roman' soil indicates that the introduction of colluvial sediment to the valley floor continued during the post-Roman historic period (Green 2012, 65–6).

The site is located to the south of Main Road in Longfield and north of the railway line linking London with the Medway towns. The west of the site is bounded by the gardens of properties on St Mary's Way, whilst at the time of the archaeological investigations, open playing field areas extended to the east. The modern land surface slopes broadly downwards from south-east to north-west, reflecting the location of the site within the dry valley, the highest point at the south-east of the site being located at approximately 70m AOD whilst the lowest area to the north-west on the floor of the valley lay at a level of c. 52m AOD. The modern surface topography however, is largely a result of the recent landscaping; at the time of the archaeological investigations a number of artificially raised and levelled playing fields were located towards the south-east of the site, whilst the school buildings to the north and west appeared to be located on levelled terraces or platforms. A small number of field drains were present within the site but there were no substantial water courses or bodies of water.

ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Unlike the Darent Valley to the west, where there have been numerous archaeological interventions (Simmonds *et al.* 2011, 2), there have been relatively few investigations of an archaeological nature in the Longfield area. Consequently a number of periods within the vicinity of the study site at Axton Chase School are probably under-represented in the archaeological record. In order to discuss any archaeological remains present on the study site it is necessary to understand the site within its wider archaeological and historical context and therefore when summarising the background it is necessary in some cases to consider material from a wider area, rather than just from the immediate vicinity of the site and its setting. The most comprehensive database of archaeological and historical material for the region surrounding the study site is the Kent Historic Environment Record (KHER), which provides the basis for much of the following discussion, though accounts of limited archaeological investigations and other historic documentary and cartographic sources are also referenced.

Kent is a rich source of Palaeolithic artefacts and boasts some very important sites (Wenban-Smith 2007). Most artefacts from this broad period, a great many of them handaxes, have been recovered from secondary contexts, in particular Quaternary gravels along the Thames and its major tributaries, including the Darent. There are few finds of this date recorded from the Longfield area though a poorly provenanced, rough flint flake, interpreted as a possible Palaeolithic borer has been found in the vicinity (Dewey 1915, 109) and an assemblage of Palaeolithic flints, including a handaxe is recorded from the parish, some distance to the south-east of Axton Chase School (Burchell 1936, 261). Finds of Mesolithic date are rather more elusive within the county and although flint assemblages have been recorded, none of these were within the vicinity of the study site.

Human populations became more settled during the Neolithic and forested areas were cleared for agricultural purposes, however Neolithic settlement sites are rare; a number of these likely to have been buried by later deposits. Nevertheless, Neolithic artefactual material, including pottery and axeheads has been found in the Darent Valley (Ashbee 2004, 11), though none is recorded in the vicinity of the study site.

Evidence of Bronze Age activity is more widely recorded in the region surrounding the study site and a number of sites are recorded in the Darent Valley (e.g. Yates 2004). However, evidence for activity during the Bronze Age has also been recorded much closer to the study site. An Early Bronze Age round barrow was excavated west of Whitehill Road, approximately 1.5km north-west of the site, as part of the extensive archaeological investigations carried out

prior to the construction of the Channel Tunnel Rail Link (CTRL). Although the barrow had been heavily truncated and partly destroyed by 19th-century railway construction the excavations revealed a monument comprised of two concentric ditches and almost 18m in diameter. No primary burial was detected but a secondary inhumation was present within a grave cut into the backfill of the inner ditch. A number of amber beads, likely to have been from a necklace, were found in the area of the neck and shoulders of the burial and it has been suggested that the presence of these confirms a date for the burial towards the end of the Early Bronze Age though the monument may have originated at an earlier date in the Early Bronze Age or even at the end of the Neolithic (Bull 2006, 7–9). Another ploughed-out round barrow was found further to the north-west during archaeological investigations along the line of the Eynsford to Horton Kirby pipeline. It is estimated that the single ditch, which contained cremated human remains, had an external diameter of up to 26m. Radiocarbon dating of cremated bone and typological characteristics of flint tools deposited in the ditch suggested deposition in the Middle to Late Bronze Age, though again the monument may have had earlier origins (Powell and Sykes 2011, 211–3). Further possible ring ditches, though not necessarily round barrows or of Bronze Age date, are visible on aerial photographs and listed on the KHER. These include a cropmark of an uninterrupted ditch, approximately 7m in diameter to the south of Gay Dawn Farm, a little more than 2km south-west of Axton Chase School (KHER Ref. TQ56NE184) and a ring ditch cropmark at Nurstead Wood c. 1.5km to the east (KHER Ref. TQ66NW51). Worked flints of later prehistoric date are also recorded on the KHER less than 400m east of the study site (KHER Ref. TQ66NW127).

During the Iron Age there was increased exploitation of the landscape for agricultural field systems and the development of defended sites, activity in the Late Iron Age being increasingly influenced by contact with continental Europe. There is some evidence of Iron Age activity in the vicinity of the study site both from archaeological sites and finds and from aerial photographs. Pits containing dateable Iron Age finds were recorded west of Fawkham Road, approximately 1km south-west of the study site (KHER Ref. TQ66NW3; Fisher 1939) and further west, a probable Iron Age pit was identified during archaeological investigations at Dean Bottom (KHER Ref. TQ56NE39). A cropmark of a banjo enclosure, possibly representing an Iron Age farmstead has been identified to the west of Salt Farm, Fawkham, approximately 1.4km west of the site (KHER Ref. TQ56NE10; Cook 1935, 241; Jessup 1941), whilst Late Iron Age field boundaries, which continued in use into the early Roman period, were identified during CTRL works at Fawkham Junction a little further to the north-west (Bull 2006, 11–12). Evidence of Iron Age occupation has also been identified at Pinden Farm, further to the north (KHER Ref. TQ56NE22; Cockett 1974; 1976b).

In contrast with much of prehistory, evidence for activity in the Roman period is quite abundant in the vicinity of Longfield as well as in the wider region. A small Romano-British cremation cemetery was recorded in 1931, a short distance to the north of the study site on the north side of Main Road, with perhaps two or three burials and associated grave goods being represented (KHER Ref. TQ66NW2). To the west of this a Roman period Denehole is recorded from ‘near Longfield Church’ (KHER Ref. TQ66NW4; Page 1932, 158), whilst a short distance to the north a rectilinear feature exposed as a cropmark has been interpreted as possibly Roman and part of a wider enclosure system (KHER Ref. TQ66NW30). Construction of farm buildings at Dean Bottom Farm a little more than 1km west of the site in 1971 revealed a ditch or pit containing 1st-century Romano-British pottery (KHER Ref. TQ56NE29). A settlement to the south of the study site at Hartley that had possible Iron Age origins, produced extensive evidence of Roman activity including a series of pits and ditches containing pottery of 2nd- and 3rd-century date, together with a tile oven. Coins along with iron and bronze artefacts were also recovered from a number of the features (Cockett 1976a). A number of stray Roman finds have also been recovered in the area including a coin found less than 1km north-east of the study site (KHER Ref. TQ66NW18) and another example found in 1951 a little more than 1km to the north-west and now in Dartford Museum (KHER Ref. TQ56NE23). A little further afield, a number of Romano-British inhumations along with occupation evidence including a ditch have been excavated at Pinden Farm (KHER Refs. TQ56NE22, TQ56NE77). A north-west to south-east aligned Roman ditch was also recorded during CTRL works east of Hook Green Road approximately 1.7km north-west of the study site (Bull 2006, 5, 11–12).

A number of undated cropmark and earthwork features have been recorded on aerial photographs within the Longfield area and given the extent of Roman remains locally compared to those of other periods, it is likely that many of these monuments also have Roman origins, though earlier and later dates for some cannot be ruled out.

Approximately 150m to the north of the study site a rectilinear cropmark has been interpreted as a possible 'T-junction' of a trackway (KHER Ref. TQ66NW28), whilst a short linear cropmark is recorded a further 150m north-west of this (KHER Ref. TQ66NW29). Further to the north a number of features are recorded in the area between Longfield and Southfleet villages, and east of the railway line. These comprise a triangular/rectangular possible enclosure with an attached curvilinear feature interpreted as a trackway (KHER Ref. TQ66NW24), a complex of rectilinear and curvilinear features including a number of possible pits (KHER Refs. TQ66NW31, TQ66NW39), further possible pits (KHER Refs. TQ66NW40, TQ66NW37), rectilinear enclosures forming part of a possible field system (KHER Ref. TQ66NW38) and more pits within a rectangular arrangement of ditches (KHER Ref. TQ67SW113). A short distance west of the railway line were two superimposed rectangular enclosures (KHER Ref. TQ56NE46), though these have largely been destroyed by quarrying.

Some distance to the north-east of the study site, in the vicinity of Southfleet village a somewhat irregular, large, rectangular enclosure with rounded corners is visible on Google Earth images (KHER Ref. TQ67SW480), whilst another rectangular enclosure is recorded further east (KHER Ref. TQ66NW34). Approximately 1.5km east of the study site is a virtually square enclosure with associated features, though one of these is a ring ditch so the complex may be earlier (KHER Ref. TQ66NW27). Much further to the south-east an apparent field system is visible to the south-east of Longfield Hill on Google Earth (KHER Ref. TQ66NW124). West of Dean Bottom Farm a possible trackway is visible as a cropmark (KHER Ref. TQ56NE186), whilst much further to the south-west a curvilinear complex cropmark is visible (KHER Ref. TQ56NE49).

Although there was apparently significant activity in the vicinity of the site during the Roman period, the post-Roman period is very poorly represented in the archaeological record. The earliest reference to Longfield is in a land grant dated sometime between AD 945 and AD 984, whilst in Domesday Book it is recorded as *Langafel*. It was an agricultural estate centre at this time rather than a village and the area appears to have remained largely agricultural until the early 19th century.

The earliest detailed cartographic representations of the area are the Hartley and Longfield Tithe Maps, produced in 1846 and 1847 respectively. The study site is shown as agricultural land (principally arable) on the Tithe Maps and on the 1st-Edition Ordnance Survey map of 1868. By 1897 a brick works had been established to the west, together with a chalk pit, gravel pit and 'Brickearth' quarry. The Brickworks continued in operation into the 20th century though had gone out of use by 1938, but as late as 1962 the study site was still comprised predominantly of agricultural land. Longfield School (now Axton Chase School) was developed from 1965 and the bulk of the school buildings extant at the time of the archaeological investigations had been constructed by 1971, with the artificially levelled playing fields on the south of the site created by 1987.

ARCHAEOLOGICAL RESULTS

The archaeological investigations revealed a number of features and deposits, predominantly of Roman date and mostly in areas towards the north-west corner of the site. Residual finds also indicated there had been much earlier activity on the site in the Late Mesolithic to Early Neolithic period and again in the 2nd millennium BC.

Interpretation of the exploitation of the site has been divided into five, very broad periods of activity; prehistoric, Roman occupation 1, Roman occupation 2, late Roman and post-Roman, though clearly there may have been extended phases of activity within each period and also short-lived sub-phases. However, this over-simplified chronological discussion of the archaeological evidence is probably the most effective way to preserve clarity and structure within the report.

The Prehistoric Evidence

Evidence of activity from the Late Mesolithic to the Iron Age was recovered extensively across the site. The lithic assemblage was clearly chronologically mixed and represented activity on the site from at least the later Mesolithic through to the later Bronze Age. It initially appeared that although there was a wide spread of lithic material, none

of the identified features were of prehistoric date. However, a small number of features (Fig. 4) may have had prehistoric origins, based on their slightly different fills from later features, the presence of likely prehistoric artefacts and a total dearth of later finds.

Ditch [145] at the south-west corner of the main excavation area (though not detected in the adjacent evaluation Trench 21) was aligned approximately north to south, though its form appeared to be slightly curvilinear. It was up to 1.18m wide and 0.52m deep, with moderately sloping, concave sides, which broke to a slightly concave base that sloped downwards towards the north. The moderately compact, mid greyish brown sandy, clayey silt fill contained individual pieces of burnt and struck flint, the latter being quite crudely worked and typologically of Middle Bronze Age or later date. A little more than 7m to the north-east of the exposed ditch section was a small, slightly irregular pit [151] that extended beyond the western edge of excavation. It had steep, concave sides breaking to a concave base and measured up to 0.89m across and 0.28m deep. The single dark greyish brown silty sand fill contained almost 4kg of burnt flint, which may have been burnt *in situ* as the edges of the pit exhibited reddening associated with burning. A small quantity of struck flint was also recovered, including a possible blade though the assemblage was largely undiagnostic.

Further to the north-east, three features described as ‘postholes’ intriguingly only contained burnt and/or struck flint and no later finds. ‘Posthole’ [165] was just 0.3m in diameter and 0.25m deep. It lay within a cluster of later features but contained a quantity of burnt flint and a small but notable struck flint assemblage, typologically of Mesolithic or Early Neolithic date. A short distance to the north-east, ‘posthole’ [105] also produced a small assemblage of heavily burnt flint, whilst ‘posthole’ [119] to the north-west produced a few pieces of undiagnostic struck flint. The nature of prehistoric activity was clearly quite difficult to define, though it is possible that a small number of features on the site did represent at least two phases of some type of prehistoric occupation.

Roman Occupation 1

There was clearly Roman activity on the site from at least the mid 2nd century AD though it has been difficult to define an accurate chronology as there are overlaps in the broadly-dated pottery assemblages from features across the site. That there was more than one phase of Roman activity on the site was demonstrated stratigraphically and the relationships between a number of features have permitted the defining of two broad phases of occupation, though in reality the chronology was probably far more complex than this. Two features in particular clearly dated to an earlier phase of Roman occupation (Fig. 5), the most extensive of which was WNW to ESE aligned ditch [157], the eastern terminus of which was located in the main excavation area but was also recorded extending to the west in evaluation Trench 20. The ditch was up to 1.24m wide and 0.41m deep with steep sides and a flattish base. It had initially silted-up naturally but the primary fill was sealed by a more extensive, firmly compacted dark brownish grey sandy, silty clay containing a moderate amount of artefactual material. Pottery recovered from the ditch fill predominantly dated to the 2nd to 3rd centuries, though two sherds of Late Roman grog tempered pottery dating to the late 3rd to 4th centuries were also present (Anderson 2012). However, these could have been intrusive as the ditch was cut by

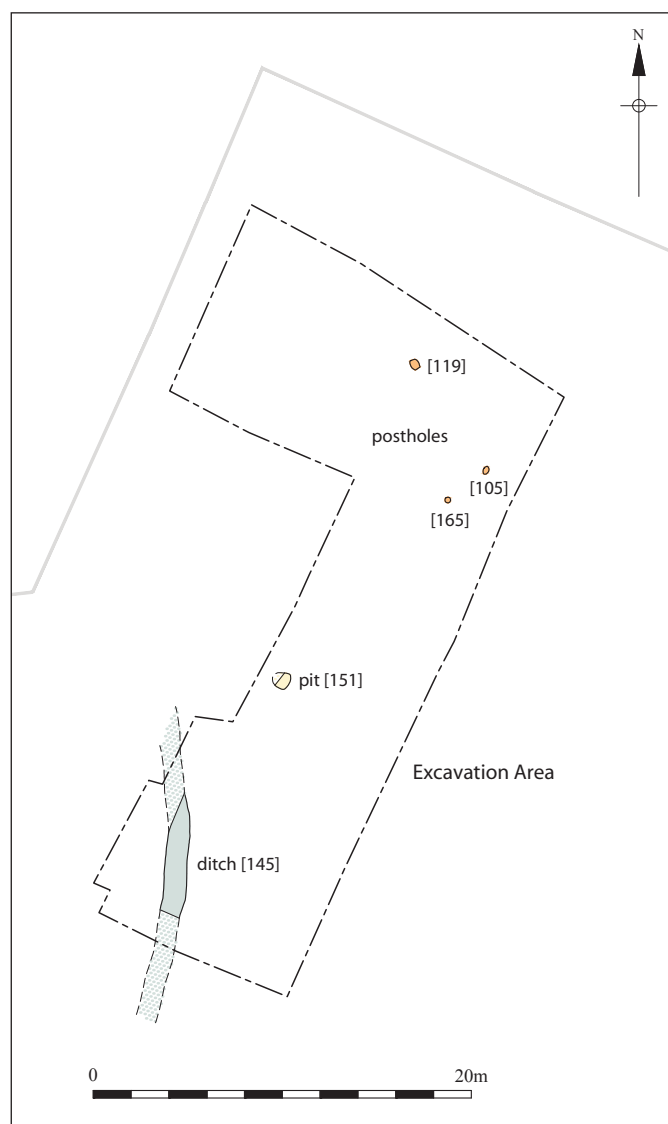


Figure 4: Possible Prehistoric Features

later features towards the eastern terminus, from where the sherds were recovered. The base of the ditch sloped down from west to east.

A short distance south of the ditch terminal was a large, sub-rectangular pit [93], which had step concave sides breaking to a concave base and measured 2.1m by 1.2m with a depth of 0.26m. A possible posthole had been cut into the ditch at its south-eastern end. The single fill was a firmly compact dark brownish grey silty clay that contained a small number of dateable artefacts. In common with the apparent prehistoric pit to the south, it exhibited signs of *in situ* burning at its edges and a quantity of burnt flint was also present along with two pieces of typologically later prehistoric struck flint. However, a small quantity of Roman pottery, broadly dateable to the 2nd to 4th centuries was also present, along with fragments of Roman brick and tile.

Both ditch [157] and pit [93] were partly truncated by later Roman features after they had been infilled, but it is difficult to define which other features belong to an earlier phase of Roman occupation because of a lack of stratigraphic relationships and finely dated finds assemblages. Pit [125], which lay immediately to the north of the ditch may have been contemporary but contained no finds and was not physically related to any other features. To the north-east a group of three pits that surrounded prehistoric ‘posthole’ [165] were also possibly contemporary and one of the features [163] did contain a small pottery assemblage dating to the 2nd to 3rd centuries. Posthole [107] at the northern edge of the main excavation area may also have been of earlier Roman date but produced no dateable finds and was unrelated to any other features. The nature, date and extent of an earlier Roman phase on the site is difficult to define given the somewhat sparse and poorly dated nature of the evidence, however there does appear to have been an earlier phase and it most likely comprised features predominantly associated with an agricultural field system that lay close to a nearby settlement. The limited dating evidence suggests that this phase of activity covered the 2nd century, extending into the first half of the 3rd century.

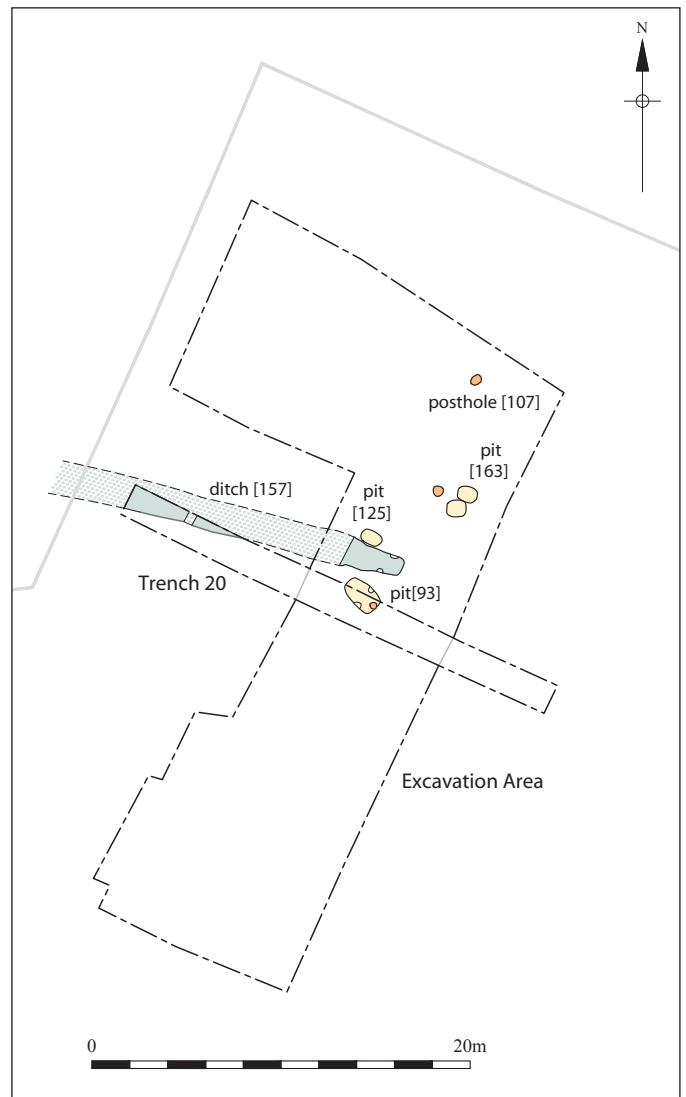


Figure 5: Earlier Roman Features

Roman Occupation 2

A later phase of Roman activity was represented by a larger number of features (Figs. 6 & 8), some of which could be better defined than those of the earlier phase, which may have suggested a change in function of the area of the site excavated. Linear ditches or gullies were present within the main excavation area but generally on a smaller scale than the apparent field system ditch of the earlier phase, possibly suggesting they defined smaller settlement plots rather than acting as larger field boundaries. Towards the south of the main excavation area was the western terminus of ditch [134], which extended beyond the eastern limit of excavation. This was up to 1m wide and 0.34m deep and contained a single sherd of pottery broadly dated to the 3rd to 4th century. To the north was gully [142] aligned approximately perpendicular, though two possibly associated gully sections to the south followed a slightly different alignment.

However, it was not the linear features that were most significant at this time as a number of postholes suggest the presence of contemporary timber structures. Immediately south of ditch [134] at the south-eastern corner of

the excavation area a rectangular structure (Structure 1) measuring approximately 4m by 3m was defined by four postholes, one of which contained an assemblage of 3rd- to 4th-century pottery. Immediately south of the southern terminus of gully [142] was a similar, slightly larger structure (Structure 2) again defined by four postholes, two of which contained pottery of 3rd- to 4th-century date (Anderson 2012). A third, much smaller rectangular structure (Structure 3) was exposed in evaluation Trench 21, immediately west of the main excavation area (Fig. 7). Other postholes in the vicinity of Structure 2 and gully [142] may have been elements of further structures, though the



Figure 6: Later Roman Features, Excavation Area and Trenches 19, 21 & 23



Figure 7: Structure 3, looking east

positions of one or two of these overlapped with parts of Structure 2, suggesting there was more than one construction sub-phase. Pottery of 3rd- to 4th-century date was again recovered from two of these features. It is possible that the larger two structures were simple granaries, suggesting that the site now lay within a farmyard or settlement area, whilst the smaller structure may also have had a domestic or farmyard association.

Activity during this phase was not restricted to the main excavation area; a WNW to ESE aligned ditch was exposed in evaluation Trench 19 to the east, whilst an approximately perpendicular ditch, which contained 3rd- to 4th-century pottery, was recorded to the south in Trench 23. These may have been elements of field systems associated with domestic or farmyard areas though a single posthole some distance to the east in Trench 15 (Fig. 8), which contained pottery broadly dated to the 2nd to 4th centuries, may have indicated further structures in this area. A pit partly exposed in Trench 14 to the south-west of this was interpreted as a Roman brickearth quarry but as no dateable finds were recovered and the full extent of the feature not established, this interpretation is at best, tentative. Overall it appears that a later phase of Roman occupation of the site, most likely dating from the second half of the 3rd and into the 4th century, probably included agricultural exploitation alongside domestic occupation.

Late Roman

The latest Roman phase was represented by a single layer [59] up to 0.3m thick that sealed all earlier features and deposits, its surface being recorded between 51.38 and 51.33m AOD. A moderate assemblage of pottery was recovered from the deposit, which gave a 3rd- to 4th-century date (Anderson 2012); virtually indistinguishable from the later phase features below. Two fragments of box flue tile and a chimney fragment were also recovered, indicating the presence of a high status masonry structure in the vicinity (see Hayward, below). A quantity of metal finds was also retrieved from the layer including a number of coins dating to the 3rd and 4th centuries AD, brooches and tweezers (see Gerrard, below). The nature of this deposit is difficult to ascertain and it is possible that it was either a buried topsoil or colluvial material; the humic consistency perhaps suggesting a buried horizon and the quantity of finds suggesting material that had migrated from elsewhere. Geoarchaeological analysis of the material from within the test pits however, did suggest it was a buried soil, the quantity of finds present, suggesting a deposit that had been extensively reworked by ploughing or other agricultural activity following partial or total abandonment of the occupation site.

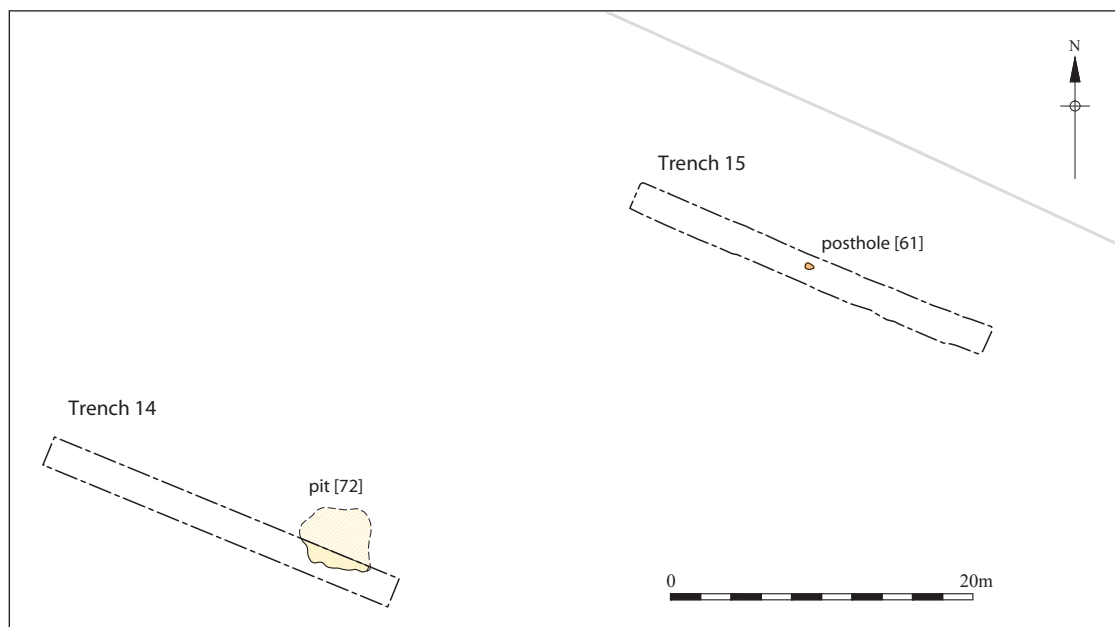


Figure 8: Later Roman Features, Trenches 14 & 15

Post-Roman

Following the apparent abandonment of the site in the late 4th or even 5th century there appears to have been very little, if any activity for an extensive period of time, possibly not until the post-medieval period though any post-Roman agricultural exploitation of the area will have left little identifiable trace. That there was little activity following apparent abandonment of the settlement was evidenced by colluvial deposition and soil development across the site. Overlying layer [59] was a 0.7m thick colluvial layer [58], which had washed down from the ridgeline to the immediate south of the site. This also contained a number of metal finds, many of them Roman, including further coins and two lead weights, though some were obviously of later date, including a musket ball and a Hanseatic cloth seal (see Gaimster, below). In Trench 23 to the south-east of the main excavation area, the colluvium was cut by an east to west aligned ditch (not illustrated) that may have been part of a post-medieval field boundary, though no finds were recovered. In the main excavation area the colluvium was sealed by a late 20th-century layer of hardcore rubble associated with the construction of the school, which acted as a bedding layer for the tarmac that provided the car park surface present at the time of the investigations.

THE LITHIC ASSEMBLAGE

Barry Bishop

Introduction

The excavation produced a small assemblage of prehistoric struck and burnt flint, most of which was recovered residually from later features, though some was from features that may have been prehistoric in origin (see above). A total of 87 pieces of struck flint and just over 5kg of unworked burnt flint fragments were recovered from the site and studied to form the basis of this report (Table 1).

Burnt Flint

A total of 5,305g of unworked burnt flint was recovered from 13 separate contexts, mostly dated to the Romano-British period but with some possible prehistoric features also present. By far the largest quantities came from pit [151], tentatively assigned a prehistoric date, which furnished just under 4kg. Quantities exceeding 100g were recovered from six of the other contexts. The flint comprised thermally fractured nodular fragments and virtually all of it had been intensively burned, resulted in it acquiring a uniform grey colour and becoming heavily 'fire-crazed'.

Table 1: Quantification of Lithic Material

Type	Decortication Flake	Core Modification Flake	Flake	Blade	Flake Fragment	Chip	Core	Conchoidal Chunk	Retouched	Burnt Flint (n.)	Burnt Flint (wt:g)
No.	12	7	25	2	18	16	2	4	1	445	5305
%	13.8	8.0	28.7	2.3	20.7	18.4	2.3	4.6	1.1		

Burnt flint can arise incidentally from hearth use but the quantities present here and the high degree to which it has been heated is suggestive of deliberate production, perhaps during food production or from a variety of craft or industrial processes (eg Smith 1977, 111; Barfield and Hodder 1987; Barfield 1991; Jeffery 1991).

Struck Flint

The 87 pieces of struck flint were recovered predominantly from Romano-British contexts with two pieces recovered from the overlying colluvium, and most are likely to have been residually deposited. The struck flint was manufactured from mottled translucent black / opaque grey flint, typical of that from the North Downs. Original cortex tended to be rough and many thermal fracture scars are present, indicating it came from superficial deposits close to the parent chalk, as present in the vicinity of the site. As would be expected from a predominantly residual assemblage, its condition varied and there is a high proportion of broken flakes, although most pieces are not heavily abraded and it is likely that, as a whole, it was recovered from close to where originally discarded.

The assemblage includes a few blades and other thin and competently produced flakes, most notably those from posthole [165], potentially a prehistoric feature, which are most likely to date to the Mesolithic or Early Neolithic periods. The bulk, however, consists of opportunistically struck thick flakes with wide unmodified striking platforms. Two cores were also recovered. One has a series of flakes struck centripetally from the internal surface of a thermally split nodular fragment, the other has a few flakes struck from the end of a nodular fragment but had subsequently been used as a hammerstone. The single retouched flake recovered consists of a large flake that has a series of small flakes removed from across its ventral surface, making a crudely denticulated implement. A few flakes have edge damage that could have accrued from use but the assemblage's overall condition precludes positively identifying these. The flakes, cores and retouched pieces are most typical of the flintworking traditions of the later second or first millennium BC.

Discussion of the Struck Flint

A small number of struck pieces are characteristic of flintworking traditions of the Mesolithic/Neolithic, indicating occasional low-key and sporadic activity at the site, consistent with the transitory nature of settlement during these periods. The bulk of the assemblage is more characteristic of the flintworking traditions of the Middle Bronze Age to Iron Age periods. It has been argued that by this time flintworking was increasingly becoming subsumed within the domestic sphere and therefore predominantly undertaken within settlements or their associated field systems (Young and Humphrey 1999; McLaren 2009). Very little evidence of permanent settlement during the later prehistoric period was forthcoming at the site although it is possible that the assemblage derives from a temporary and insubstantial settlement, possibly associated with seasonal movement of stock from the lowlands around the Thames Estuary to the higher ground of the North Downs. Such forms of transhumance are argued as being important in north Kent during the later Bronze and Iron Ages, as they were during the historic period (Mudd 1994; Bishop and Bagwell 2005).

The unworked burnt flint was probably deliberately produced as part of cooking or industrial processes and therefore has the potential to contribute to understandings of the range of activities undertaken at the site. The struck flint

demonstrates that the site had been visited over a considerable period of time and remains the main evidence recovered for occupation during the prehistoric period. Although somewhat limited by itself, it does contribute to wider understandings of movement and landscape use during both the Mesolithic/Early Neolithic and the later prehistoric period and can add to any future syntheses of the prehistory of this area.

ROMAN COINS

James Gerrard

The excavations yielded a total of 81 Roman coins and the majority of these finds (78 coins) were recovered from the late or post-Roman contexts [58]/[17] and [59]. The use of a metal detector during the excavations also aided the recovery of coinage.

The assemblage represents a relatively typical group of coins from a rural site. The earliest coins are two worn issues of Trajan and Marcus Aurelius. These coins may have been lost many decades after their 2nd-century dates of minting. During the late 3rd century coins loss increased significantly, dipped during the early 4th century, rose again in the mid 4th century and then declined to near nothing in the AD 360s.

The assemblage is too small for any statistical analysis to be meaningful (Reece 1991; 1995). It is, however, clear that the coin loss from this site follows the general British trends (Fig. 9). We might speculate that activity flourished on the site from the middle of the 3rd to the middle of the 4th century, although caution is required because an absence of coinage does not necessarily indicate a lack of occupation.

The significance of the coins lies in their concentration in a small number of stratigraphic units. Beyond providing some chronology for these stratigraphic events the coins, along with the other finds raise questions regarding these contexts and their formation processes. Presumably they have been displaced downslope by agricultural activities.

There were no coins of intrinsic or numismatic interest but a single 4th-century *nummus* <46> was minted in Thessalonica. This is somewhat noteworthy as most late Roman coins found in Britain were struck at western mints such as Trier.

A complete database containing the coin identifications is available from the archive. A summary of the coins by context, date and Reece period is provided in Table 2.

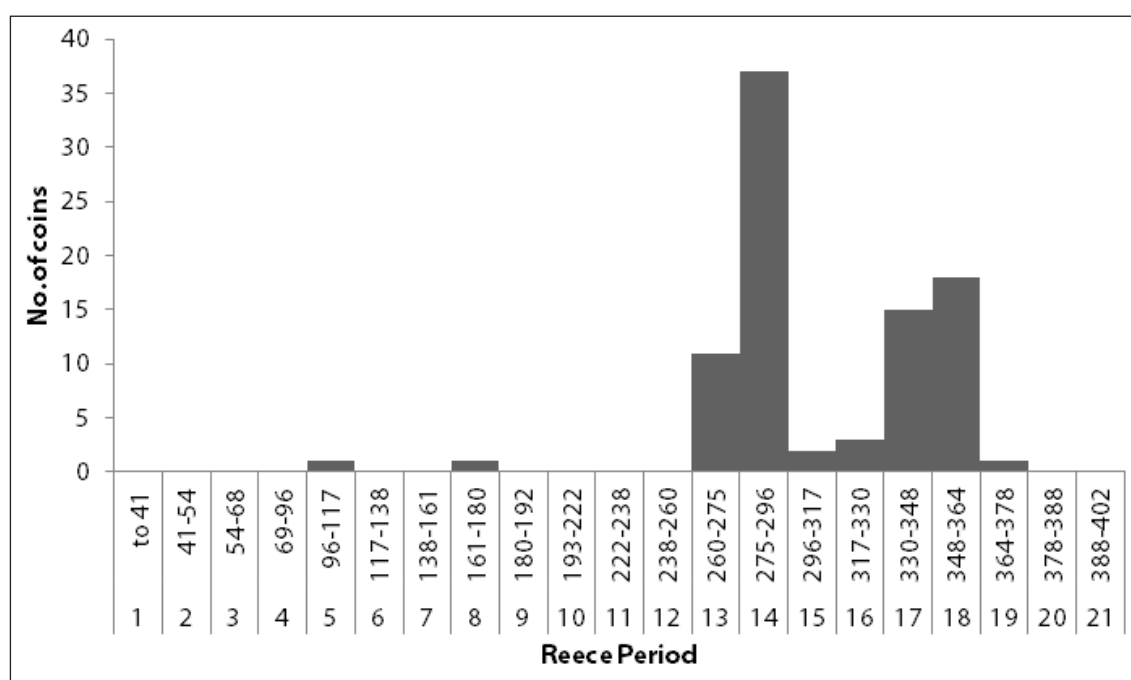


Figure 9: Roman Coins Histogram

Table 2: A summary list of the coins and their dates by context and Reece period

Context	SF Number	Date	Reece Period
0	2	98-117	5
17	4	268-270	13
17	5	270-290	14
17	3	C1/C2	
17	6	C3/C4	
18	1	268-270	13
58	12	286-293	14
58	13	293-296	14
58	17	270-290	14
58	18	270-290	14
58	20	270-290	14
58	76	284-296	14
58	77	270-290	14
58	81	270-290	14
58	82	270-273	14
58	83	270-290	14
58	88	270-290	14
58	89	270-290	14
58	15	313-314	15
58	73	323-324	16
58	19	330-335	17
58	75	335-341	17
58	78	335-341	17
58	79	330-335	17
58	80	330-335	17
58	87	335-341	17
58	90	341-348	17
58	85	364-378	19
58	14	C1/C2	
58	16	C3/C4	
58	74	C1/C2	
58	84	C3/C4	
58	86	C3/C4	
59	106	176-177	8
59	28	260-268	13
59	35	260-268	13
59	36	260-268	13
59	37	269-270	13
59	42	268-270	13
59	51	268-270	13
59	56	268-270	13
59	102	253-268	13
59	104	270-273	13
59	29	270-290	14
59	30	270-290	14
59	31	270-290	14
59	32	270-273	14
59	34	270-273	14
59	38	293-296	14
59	39	270-290	14
59	40	286-293	14
59	45	270-290	14
59	47	270	14
59	48	270-290	14
59	50	270-290	14
59	53	270-290	14
59	54	270-290	14
59	55	270	14
59	58	270-290	14
59	59	270-290	14
59	97	270-290	14
59	99	270-290	14
59	100	270-273	14
59	105	270-290	14
59	107	270	14
59	119	270-290	14
59	27	316-317	15
59	33	318-324	16
59	60	318-324	16
59	41	337-341	17
59	43	337-341	17
59	49	330-335	17
59	52	335-341	17
59	57	330-348	17
59	62	324-330	17
59	98	335-341	17
59	101	330-335	17
59	46	355-361	18
59	44	C3/C4	
59	103	268-270	
108	0	270-290	14

Table 3: Iron Nails from [59]/[17]

Manning's (1985) Type	Number	Comments
1D	3	
1E	11	A single nail has been bent into an 'L' shape
4	1	
7	3	

ROMAN SMALL FINDS

James Gerrard

Introduction

In common with the coins, the bulk of the Roman small finds came from deposits [59]/[17] and [58]. The interpretation of the finds from these layers is made difficult by the presence of demonstrably post-Roman objects in [58]. This suggests that some of the undiagnostic or fragmentary objects may be intrusive. Nevertheless, the finds offer some insights into activity on or near the site during the Roman period.

A full catalogue of the objects is available in the site archive. The following discussion focuses on the finds from deposits [59]/[17] and [58].

Finds from layer [59]/[17]

Personal Adornments

The only personal adornments are two Romano-British brooches. The first is a plate brooch with blue enamelled decoration <61> (Mackreth 2011, Type 2.g3) and the second a fragment from an incomplete Colchester derivative brooch <108> (Figs. 10.1 & 10.2). The former is probably of 2nd-century date and the latter is of late 1st-century date.

Toilet instrument

The only toilet instrument present was a single pair of copper-alloy tweezers <109> (Fig. 10.3). The exterior displays clear file marks. They are a rather small example and probably of Roman date. However, they are closely paralleled by a find from an early medieval context in Colchester (Crummy 1983, No. 1884).

Furniture

The head of a large copper-alloy convex stud is decorated on the exterior with three concentric circles (Fig. 10.4). This might be derived from a piece of furniture (Crummy 1983, 116).

Structural Fittings

Iron nails were the most frequently occurring type of find in the deposit and were classified using Manning's (1985, fig. 32) scheme (Table 3). All of the nails were complete and, with a single exception, were undamaged. The exception was a Type 1E nail bent over mid shaft to form an 'L' shape. Clearly this had been done to secure the pointed end of the nail once it had been driven through a piece of timber. Their undamaged state is noteworthy and might suggest that they are derived from nailed timbers that either rotted *in situ* or were burnt at low temperatures.

The only other structural fitting was an iron double-spiked loop of well-known type <121> (Manning 1985, 130) (Fig. 10.5). These commonplace objects could have been used to perform a variety of different functions.

Tools

The only tool was a blade from an iron knife seemingly of Manning's (1985, 110) Type 3 (Fig. 10.6). This is a somewhat rare type where the tip is set in the midline of the blade.

Other objects

A small number of objects of indeterminate or fragmentary form were also present.

Finds from layer [58]

Deposit [58] was stratigraphically later than [59]/[17] and also contained Romano-British finds alongside a small number of later objects (see Gaimster, below).

Personal adornments and dress accessories

The only personal adornment from the context was a fragment from a Nauheim derivative brooch <23> (Mackreth 2011, plate 11) (Fig. 10.7).

A single hobnail <93> is of typical Romano-British form.

Objects used for weighing

Unusually the context produced two lead weights (Greep 1987, fig. 6). The first of these is a biconcial example with traces of an iron suspension fitting <67> (86.6g) (Fig. 10.8). The second is somewhat amorphous with an iron suspension loop on its upper surface <68> (72.0g) (Fig. 10.9).

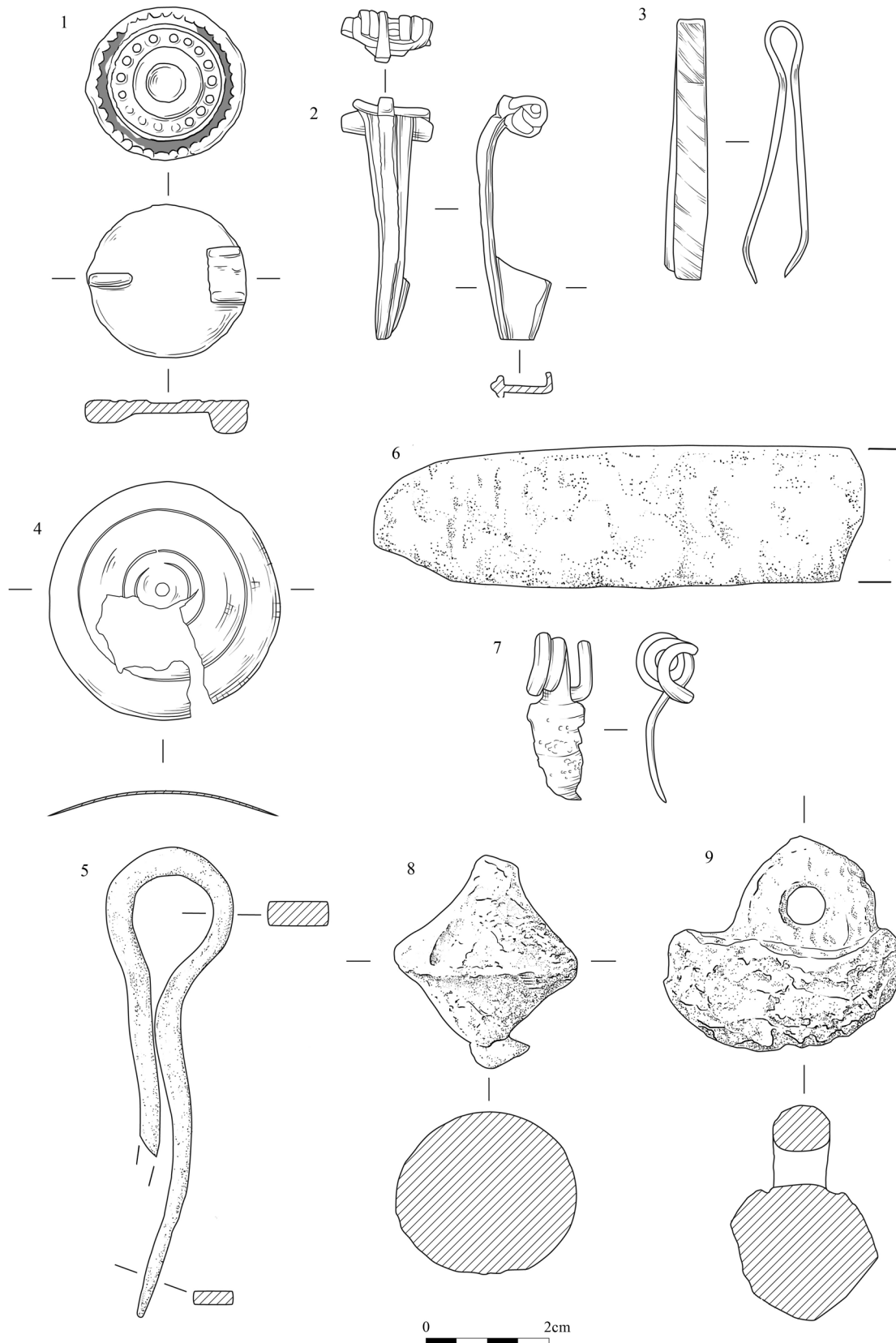


Figure 10: Roman Small Finds

Structural fittings

This deposit contained only two iron nails of Manning's (1985) Type 1E.

Other objects

A small number of unidentifiable and fragmentary objects were also present.

Comparison of the assemblages

The numbers of finds from the two contexts are too small to sustain any meaningful analysis. That said, there are significant differences between the assemblages. The number of iron nails in [59]/[17] and the double-spiked loop are perhaps indicative of a Roman period structure in the vicinity. The absence of nails in [58] suggests that the two deposits had different origins (assuming that recovery and retention was consistent between the two deposits). Similarly, the presence of weights in [58] is also noteworthy as these are somewhat uncommon finds.

The number of personal adornments and other items is small. The early date of the brooches contrasts quite sharply with the 3rd- and 4th-century coins from these deposits and confirms that there is no straightforward interpretation for the origin of this material.

CAVITY WALLING AND CHIMNEY FRAGMENT

Kevin Hayward

Introduction

Nearly half (6kg) of the sizeable Roman ceramic building material assemblage was recovered from late Roman buried soil horizon [59]. The fabric types are typical for the Darent Valley with the early Wealden silty group (AD 60–120) forming over one third of the assemblage supplemented by the common London sandy group 2815 (AD 50–160) and quantities of a locally produced iron oxide fabric 3023 (AD 50–120). As much of the assemblage is in a broken up and abraded condition, comment will only be made on the more unusual items namely three combed box-flue tiles and a chimney fragment.

Box-Flue Tiles

Evidence for an early heated masonry structure in the vicinity is provided by the presence of three narrow combed box-flue tiles from [59]. Three separate fabrics are identified, all poorly represented at this site. The earliest tile, an arrow shaped six track design, is made of the distinctive white Eccles fabric 2454 (AD 50–80) manufactured near to the early Roman Villa at Eccles, with burnt straight designs represented by the later Wealden fabric 3238 (AD 71–100) and fabric 3009 (AD 100–120) made at Hartfield, Hampshire. The striations would have been made using a tile-comb either made of wood, bone or metal (Brodribb 1987). Heated baths are associated with the impressive villa complexes that define much of the Darent Valley such as Lullingstone and Farningham and it is conceivable that this material derived from the demolition of such a heated structure.

“Chimney-Pot” Fragment

The hand-pressed rim of a Roman “chimney-pot” or lamp-chimney from [59] in the London fabric group 2815 (AD 50–160) and having an estimated diameter of 150mm was a particularly rare find. They may have formed part of an arched segment impressed with thumb and forefinger ‘frilling’ (Parsons 1972) of the superstructure of an Ashstead-type chimney. Examples have turned up nearby at New Ash Green to the south of Longfield (Walsh 1971) and slightly further afield such as Footscray in the Cray Valley (Parsons 1972). The function of these chimney-pots have been the subject of a great deal of discussion (Lowther 1976) and finds in rural districts associated with opulent villas such as Ashstead in Surrey may relate to fumigation of bath-buildings e.g. downward smoking flues from hypocausts or even the dissemination of perfumed incense in temples (Parsons 1972).

POST-ROMAN SMALL FINDS

Märit Gaimster

The assemblage of post-Roman small finds from the site was small (Table 4) and mostly only useful as a dating tool. However, a few individual items were of rather greater interest and are discussed in more detail here. The earliest dateable object is the fragment of a late medieval folding clasp of copper-alloy (Fig. 11.1). Unlike buckles, clasps lack provision for a pin, instead holding the strap in place by way of a folded sheet plate fixed to the front of the buckle frame (Egan and Pritchard 1991, 116 and figs 76–77). Also potentially of the same date is a probable iron punch (Fig. 11.2; cf. Ottaway 1992, fig. 197 no. 2204). Punches like this were used as metalworking tools, and the neck on the shaft would have facilitated holding the punch with a tong while piercing the hot metal (Ottaway 1992, 516). Clearly post-medieval, is the disc of a cloth seal featuring the Hanseatic double-headed eagle, probably dating from the late 16th or early 17th centuries and intended for cloth exported from England (Fig. 11.3; cf. Egan 1994, 116–17). A lead shot, from a musket or pistol, can only be given a general date between c. 1500 and 1800. With the exception of the iron punch, which was recovered from the evaluation, these objects all came from colluvial layer [58].

Discussion

The findings from the site, although somewhat restricted, have produced evidence of a number of phases of human activity, ranging in date from possibly as early as the Late Mesolithic to the post-medieval period, with some of this evidence providing important new data concerning past utilization of environs of the Longfield area.

It is clear that the site was utilized, albeit intermittently, throughout much of later prehistory from the Late Mesolithic to the Iron Age, the predominantly residual flint assemblage testifying to intermittent site use and a small number of features possibly suggesting more intensive prehistoric exploitation. It is difficult to define and quantify the nature of prehistoric activity however, given the rather limited and disparate archaeological record. In all likelihood the site was probably used on an occasional basis during the late Mesolithic to Neolithic periods, with more permanent occupation nearby from the Middle Bronze Age, a situation mirrored by the limited prehistoric evidence from other sites in the vicinity (see above).

There was clearly more extensive occupation of the site and the surrounding area during the Romano-British period, the broad chronology suggesting that the site itself lay in predominantly agricultural land from the mid 2nd to 3rd centuries, with settlement encroachment from the later 3rd to 4th centuries. The assumption is that there was settlement nearby from at least the 2nd century, with this becoming more apparent as it expanded onto the site at a later date. However, the artefactual assemblages derived from deposits post-dating the main phases of Roman occupation point to a rather more complex sequence of activity, at least in the near vicinity, if not on the site itself. Whilst the coinage evidence points to the main phase of occupation being during the 3rd and 4th centuries, a factor that is also supported by the *in situ* site and pottery evidence, ceramic building materials recovered from deposits post-dating the 4th-century occupation of the site, suggest there was a significant building in the area during the 1st or early 2nd century, whilst two brooches of this date were also recovered from the later deposit. This is in stark contrast to the pottery evidence from apparently *in situ* contexts and overlying deposits, for example, which suggests there was not a presence on the site until at least the middle of the 2nd century (Anderson 2012, 47).

Given the natural topography in the vicinity of the site it is likely that the finds from later deposits were derived from elsewhere and were transported to their resting places by colluvial activity. This raises the possibility that there was earlier occupation upslope and therefore to the south-east of the settlement activity attested by the concentration of excavated Roman features. Hayward (above) in discussing the ceramic building material has already drawn parallels with the rich villa complexes in the Darent valley to the west and it is possible that such a complex formerly lay in the area above the later settlement at Axton Chase School. Unfortunately this is the area that would have experienced significant disturbance during development of the school in the later 20th century, and therefore its exact nature and extent may never be known.

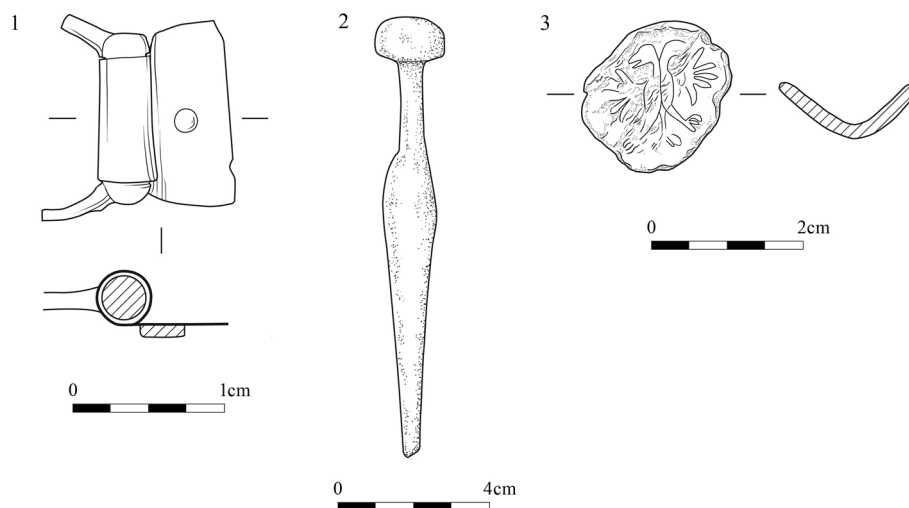


Figure 11: Post-Roman Small Finds

Table 4: Catalogue of Post-Roman Small Finds

Context	SF	Description
17	120	Near-complete iron ?punch; rectangular-section necked shaft with thick circular head; L 120mm
58	25	Folded bifacial disc of lead cloth seal; one side with the Hanseatic double-headed eagle, the other illegible; diam. c. 25mm
	91	Lead shot; diam. 9mm; not illustrated
	92	Copper-alloy folding clasp; front of frame only with in-situ pivoting folding plate; W 14mm

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BIBLIOGRAPHY

- Anderson, K., 2012. 'Appendix 3: Roman Pottery Assessment', in G. Seddon, *Assessment of An Archaeological Excavation at Axton Chase School, Longfield, Kent*. Pre-Construct Archaeology Ltd. unpublished report, 43–7.
- Ashbee, P., 2004. 'The Neolithic in Kent', in T. Lawson and D. Killingray (eds.), *An Historical Atlas of Kent*. Chichester: Phillimore, 10–13.
- Barfield, L. H., 1991. 'Hot Stones: hot food or hot baths?', in M. A. Hodder and L. H. Barfield, (eds.) *Burnt Mounds and Hot Stone Technology: papers from the 2nd International Burnt Mound Conference, Sandwell, 12-14 October 1990*. Sandwell: Sandwell Metropolitan Borough Council, 59–67.
- Barfield, L. and Hodder, M., 1987. 'Burnt Mounds as Saunas, and the Prehistory of Bathing', *Antiquity* 61 (233), 370–9.

- Bennett, P., 1988. 'Archaeology and the Channel Tunnel'. [*Archaeologia Cantiana* 106, 2, 4.](#)
- Bishop, B. J. and Bagwell, M., 2005. *Iwade: occupation of a north Kent village from the Mesolithic to the Medieval period*. Pre-Construct Archaeology Monograph 3.
- Bradley, T., 2011. *Written Scheme of Investigation for an Archaeological Strip Map and Sample Investigation at Axton Chase School, Longfield, Kent*. Pre-Construct Archaeology Ltd. unpublished report.
- Brodribb, G., 1987. *Roman tile and brick*. Gloucester: Alan Sutton Publishing.
- Brown, A., 1991. 'Structured Deposition and Technological Change among the Flaked Stone Artefacts from Cranbourne Chase', in J. Barrett, R. Bradley and M. Hall (eds.), *Papers on the Prehistoric Archaeology of Cranbourne Chase*. Oxbow Monograph 11, 101–33.
- Bull, R., 2006. *The Prehistoric Landscape at Whitehill Road Barrow, Longfield and New Barn, Kent*, CTRL Integrated Site Report Series. <http://ads.ahds.ac.uk/projArch/CTRL/index>.
- Burchell, J. P. T., 1936. 'Hand-Axes later than the Main Coombe-Rock of the Lower Thames Valley', *The Antiquaries Journal* 16, Issue 3, 260–4.
- Champion, T., 2007 'Prehistoric Kent', in J. H. Williams (ed.), *The Archaeology of Kent to AD 800*. Woodbridge: The Boydell Press/Kent County Council, 67–133.
- Clark, J. G. D., Higgs, E. S. and Longworth, I. H., 1960. 'Excavations at the Neolithic Site at Hurst Fen, Mildenhall, Suffolk (1954, 1957 and 1958). *Proceedings of the Prehistoric Society* 26, 202–45.
- Cockett, R. A. C., 1974. 'Longfield', [*Archaeologia Cantiana* 89, 218–9.](#)
- Cockett, R. A. C., 1976a. 'Hartley', [*Archaeologia Cantiana* 92, 249.](#)
- Cockett, R. A. C., 1976b. 'Longfield', [*Archaeologia Cantiana* 92, 249.](#)
- Cook, N., 1935. 'Romano-British', [*Archaeologia Cantiana* 47, 240–1.](#)
- Crummy, N., 1983. *The Roman Small Finds from excavations in Colchester 1971–9*. Colchester: Colchester Archaeological Report 2.
- Dewey, H., 1915. 'Surface Changes Since the Palaeolithic Period in Kent and Surrey', *Proceedings of the Prehistoric Society of East Anglia* Vol. 2, Issue 1, 107–16.
- Egan, G., 1994 *Lead Cloth Seals and Related Items in the British Museum*. London: British Museum Occasional Paper 93.
- Egan, G. and Pritchard, F., 1991. *Dress Accessories c.1150–c.1450*. Medieval finds from excavations in London: 3, London: HMSO.
- Fisher, C. E., 1939. 'Early Iron Age', [*Archaeologia Cantiana* 51, 204.](#)
- Green, C. P., 2007 *Geoarchaeological Field Investigation: Longfield, Kent (NGR: TQ 611 686)*. ArchaeoScape (Royal Holloway, University of London) unpublished report.
- Green, C. P., 2012. 'Appendix 9: Geoarchaeological Assessment', in G. Seddon, *Assessment of An Archaeological Excavation at Axton Chase School, Longfield, Kent*. Pre-Construct Archaeology Ltd. unpublished report, 63–7.
- Green, H. S., 1980. *The Flint Arrowheads of the British Isles: a detailed study of material from England and Wales with comparanda from Scotland and Ireland: Part I*. British Archaeological Reports (British Series) 75.
- Greep, S., 1987. 'Lead sling-shot from Windridge Farm, St. Albans and the use of the sling by the Roman army', *Britannia* 18, 183–200.
- Hasted, E., 1798. *The History and Topographical Survey of the County of Kent: Volume 7*, 497–514.
- Hawkins, D., 2008. *Archaeological Desk Based Assessment: Land at Axton Chase School, Longfield, Near Gravesend, Kent*. CgMs Consulting unpublished report.
- Hawkins, D., 2009 *Written Scheme of Investigation for an Archaeological Evaluation on Land at Axton Chase School, Longfield, Near Gravesend, Kent*. CgMs Consulting unpublished report.

- Herne, A., 1991. 'The Flint Assemblage', in I. Longworth, A. Herne, G. Varndell and S. Needham, *Excavations at Grimes Graves Norfolk 1972 - 1976. Fascicule 3. Shaft X: Bronze Age flint, chalk and metal working*. Dorchester: British Museum Press, 21–93.
- Jeffery, S., 1991. 'Burnt Mounds, Fulling and Early Textiles', in M. A. Hodder and L. H. Barfield (eds.), *Burnt Mounds and Hot Stone Technology: papers from the 2nd International Burnt Mound Conference, Sandwell, 12-14 October 1990*. Sandwell: Sandwell Metropolitan Borough Council, 97–108.
- Jessup, R. F., 1941. 'Crop Markings at Fawkham, Kent', [*Archaeologia Cantiana* 54, 74–5.](#)
- Lowther, A. W. G., 1976. 'Romano-British Chimney Pots and Finials', *The Antiquaries Journal* 56 (1), 35–48.
- Mackreth, D., 2011. *Brooches in Late Iron Age and Roman Britain*. Oxford: Oxbow.
- Manning, W., 1985. *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum*. London: British Museum Press.
- Martingell, H., 1990. 'The East Anglian Peculiar? The 'Squat' Flake'. *Lithics* 11, 40–43.
- Mclaren, A. P., 2009. *A Social Life for Later Lithics: a technological and contextual analysis of later Bronze Age and earliest Iron Age flintworking in East Anglia, England*, PhD Thesis, University of Cambridge.
- Mudd, A., 1994. 'The Excavation of a Later Bronze Age Site at Coldharbour Road, Gravesend', [*Archaeologia Cantiana* 114, 363–410.](#)
- Ottaway, P., 1992. *Anglo-Scandinavian ironwork from 16-22 Coppergate*, The Archaeology of York 17/6, London.
- Page, W., 1932 *The Victoria History of the County of Kent Volume 3*. London: The St Catherine Press.
- Parsons, J., 1972. 'More "Lamp-Chimneys" from Kent', *Kent Archaeological Review* 27, 202.
- Powell, K. and Sykes, D., 2011. 'Excavations Along the Route of the Eynsford to Horton Kirby Pipeline', in A. Simmonds, F. Wenban-Smith, M. Bates, K. Powell, D. Sykes, R. Devaney, D. Stansbie and D. Score, *Excavations in North-West Kent, 2005–2007. One hundred thousand years of human activity in and around the Darent valley*. Oxford Archaeology Monograph 11, 203–42.
- Reece, R., 1991. *Roman Coins from 140 Sites in Britain*. Cirencester, Cotswold Studies 4.
- Reece, R., 1995. 'Site finds in Roman Britain', *Britannia* 26, 179–206.
- Seddon, G., 2011. *An Archaeological evaluation on land at Axton Chase School, Longfield, Kent*. Pre-Construct Archaeology Ltd. unpublished report.
- Seddon, G., 2012 *Assessment of An Archaeological Excavation at Axton Chase School, Longfield, Kent*. Pre-Construct Archaeology Ltd. unpublished report.
- Simmonds, A., Wenban-Smith, F., Bates, M., Powell, K., Sykes, D., Devaney, R., Stansbie D. and Score, D., 2011. *Excavations in North-West Kent, 2005–2007. One hundred thousand years of human activity in and around the Darent valley*. Oxford Archaeology Monograph 11.
- Smith, K., 1977. 'The Excavation of Winklebury Camp, Basingstoke, Hampshire', *Proceedings of the Prehistoric Society* 43, 31–129.
- Walsh, R. M., 1971. 'Lamp Chimney from New Ash Green Kent', *Kent Archaeological Review* 26, 183–4.
- Wenban-Smith, F., 2007. 'The Palaeolithic archaeology of Kent', in J. H. Williams (ed.), *The Archaeology of Kent to AD 800*. Woodbridge: The Boydell Press/Kent County Council, 25–65.
- Wymer J., 1999. *The Lower Palaeolithic Occupation of Britain*. Wessex Archaeology/English Heritage.
- Yates, D., 2004. 'Kent in the Bronze Age: Land, Power and Prestige c. 1500–c. 700BC', in T. Lawson and D. Killingray (eds.), *An Historical Atlas of Kent*. Chichester: Phillimore, 13–15.
- Young, R. and Humphrey, J., 1999. 'Flint Use in England after the Bronze Age: time for a re-evaluation?', *Proceedings of the Prehistoric Society* 65, 231–42.