CANTERBURY'S GOLDEN ARCHAEOLOGY

1997 - 1998

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Compiled and edited by John Willson and Jane Elder

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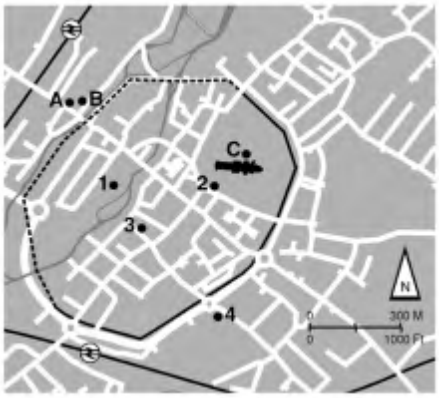

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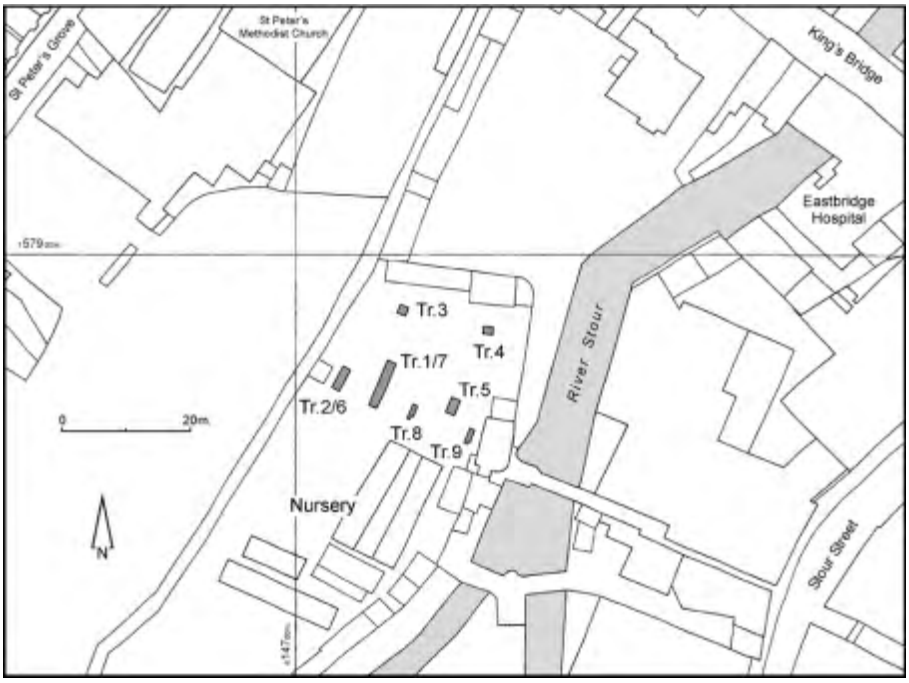
1 Greyfriars gardens
John Willson

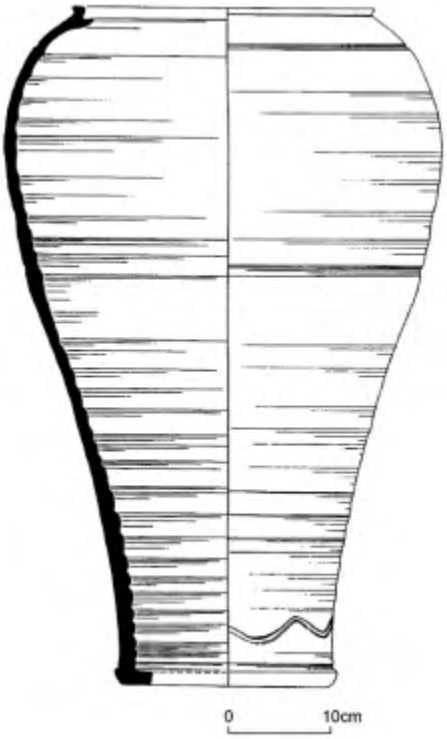
An archaeological evaluation was conducted under the supervision of Simon Pratt, during June and July 1997, on land in the north-eastern part of the precincts of Canterbury's medieval Franciscan friary (TR 14715 57880: Scheduled Ancient Monument (Kent) No. 2) in advance of a proposed development for almshouses.

The earliest deposits recorded were thin layers of gravelly mortar and loam, cut by a wall robber trench, north of which was a heavily gravelled surface overlain by a deposit of clay-loam. Above this was a sequence of four separate layers of heavy gravel metalling, representing a courtyard of several phases which had built up north of the robbed wall. In one trench the earlier metallings were seen to extend southwards beyond the projected line of the wall perhaps where there was a gateway through it. The upper metalling was cut by various small pits and post-holes, some containing pottery sherds dated to c. 1475–1550, probably contemporary with its use. The latest metalling was capped by a thin deposit of mortar and rubble interpreted as a demolition deposit which was perhaps laid down at or shortly after the dissolution of the Greyfriars in 1538.

The wall robber trench had almost vertical sides and was about 1.60 m. wide, containing mixed soil and mortar fills with chalk, peg-tile, late medieval bricks and pottery sherds dated to c. 1525–1600. It appears that the wall may have been replaced, as a narrower, later, robber trench was found on the same alignment. To the south of the wall line was a series of loams, a trampled surface and a succession of lighter late medieval metallings and soils yielding pottery dating up to 1525. These deposits were also overlaid by mortar rubble possibly derived from the demolition of nearby buildings.



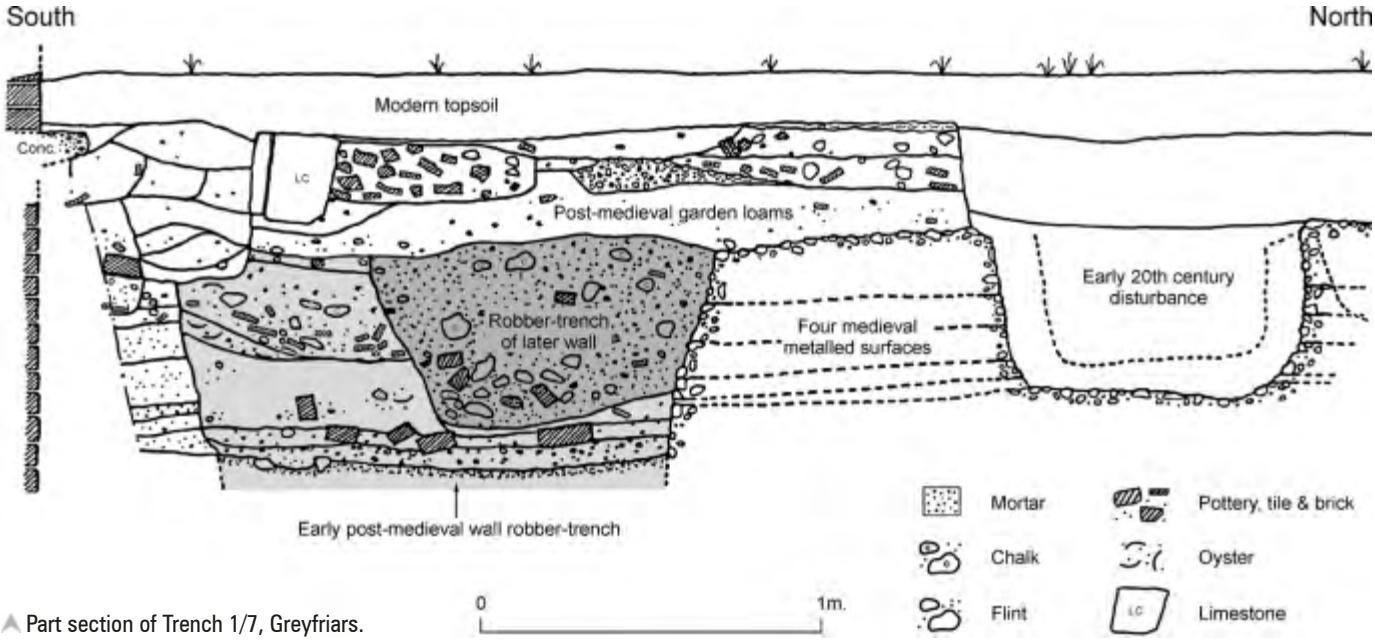
▲ Location of the evaluation trenches in the Greyfriars garden.



The robbed wall and multi-phase metalled courtyard represent part of the developed part of the Franciscan precinct, though the nature of the building and function of the courtyard cannot be ascertained on present evidence. The masonry structure was clearly robbed for building materials and the overall area subsequently became covered with the first of a succession of garden and nursery loams, pathways and a later brick wall.

The Franciscans first settled on the east bank of the Stour on the islet opposite the Poor Priests' Hospital and south-east of the current site in 1224, but transferred to land granted them on Binnewith Island in 1267. Their holdings eventually grew to include, by the end of the fourteenth century, much of the central and southern parts of the island. The friary's ecclesiastical buildings were concentrated in the north-eastern sector of their land and the rest was given over to horticultural and agrarian use, including water meadows. After the dissolution of the Greyfriars in December 1538 the land was sold and passed through several different hands. By the seventeenth century a coloured map of Canterbury (C.A.L.C. Map 123) shows the dormitory and church surviving, as well as a small building just west of the church and two houses to its north. The north-eastern part of the precincts is occupied by a large knot-garden. In the nineteenth century the holding was split up, mostly as gardens. From about c. 1865 until its closure in 1996 this part of the Greyfriars was part of an extensive nursery garden.

An unusual nineteenth-century imported green glazed oil jar. In the eighteenth and nineteenth centuries, olive oil was mainly imported into Britain from Italy and Spain, with smaller amounts from places as diverse as Tunisia, Greece, Crete and Cyprus. From its large size (64.8 cm. tall with a lid-seated rim 26–28.8 cm, in diameter) form and glaze this vessel may well have been of eastern Mediterranean origin as it is quite unlike the Italian or Spanish oil jars known from British sites until now.



Part section of Trench 1/7, Greyfriars.

2 No. 12 The Precincts

Simon Pratt

During the summer of 1997 further fieldwork was conducted, on behalf of the Dean and Chapter, on the site of the proposed Education Centre straddling the entrance to South Close in the Cathedral Precincts. This work formed part of a continuing programme of activity on the site that commenced in the summer of 1995 (Pratt 1997, 5–6). Three evaluation trenches (Tr.20–22) were cut against the western side of the Campanile Mound, immediately behind a recently demolished row of modern garages and watching briefs were maintained during the demolition of the northern garden wall of No. 12 and the cutting of six small service location pits (TP 1–6) in or adjoining the roadway. A boundary wall (which includes a blocked gateway but is probably entirely late post-medieval or modern in date) immediately north of a second group of demolished garages was also examined.

No significant archaeology was encountered in any of the trial trenches or test pits. Mounded earthen deposits, largely undated but probably none earlier than medieval, constituted the earliest contexts in Tr.20–22 and only modern made

Fragment of a Caen stone plinth recovered from the excavation.

A possible frieze fragment of Caen stone with acanthus decoration.

ground was encountered in TP 1–6. Pottery was recovered from only seven contexts, with the bulk of the material consisting of residual Roman and Anglo-Saxon wares.

No phases pre-dating the mid to late eighteenth century were identified in the northern garden wall, although several re-used pieces of medieval worked stone were recovered from garden loams and from a modern revetting wall in Tr.21. Most of the diagnostic pieces, catalogued by Mrs Margaret Sparks, form a homogeneous group dating to the late twelfth century. The Caen stone includes three plinth fragments with differing mouldings and another with a bevelled edge; a capstone which may have stood over a colonette in the undercroft; a probable frieze fragment with acanthus decoration and another with a chevron pattern (comparable with some of the earlier decorative work at St Augustine's); and a corner of a pilaster base, possibly from cloister benching, similar to mouldings from St Gregory's Priory. The Caen also includes a plain ashlar block and part of a small capital, each bearing a mason's mark, and a piece of a cresset lamp. A moulded plinth fragment in Purbeck marble was also recovered from the revetting wall.

3 No. 12 Beer Cart Lane

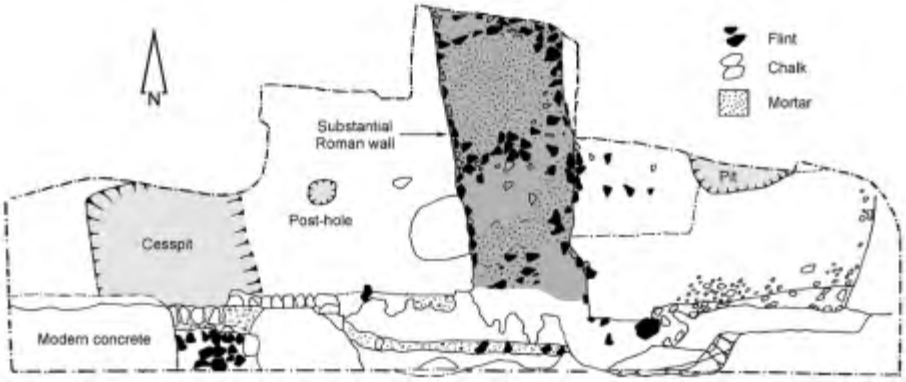
Simon Pratt

Medieval post-hole and stake-hole complex representing several phases of building.

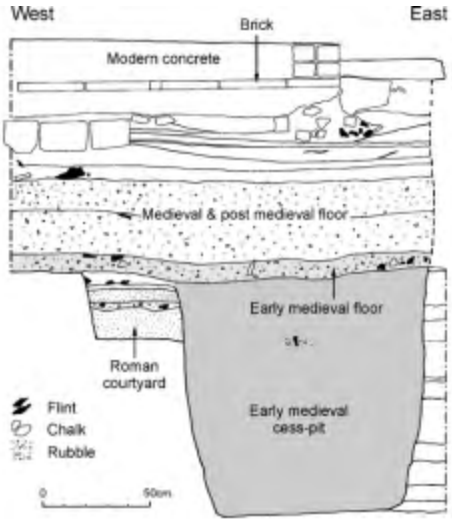
In the summer of 1997, two trenches were excavated and a watching brief maintained on a site acquired for conversion at No. 12 Beer Cart Lane (TR 14755 57728), close to the centre of the temenos of the Roman temple precinct. The more southerly trench was eventually extended to include most of the street frontage, the smaller northern trench lay towards the rear of the site.

A well-preserved sequence of medieval floors, hearths and dwarf walls at the front of the site, representing at least two major medieval building phases, were found sealing a twelfth-century cess tank (with rich organic contents) and deposits of the ubiquitous Anglo-Saxon dark loam. Anglo-Saxon horizons on the site however were found to be thin compared to other sites in Canterbury. This discrepancy, suggesting more limited occupation, has been noted elsewhere within the temenos and it has been suggested that the walled area of the former temple precinct may have been used, at least in part, as a cattle enclosure in the early Anglo-Saxon period.

Previous excavations in the temenos have revealed extensive areas of multi-phase metallings, elements of the surrounding porticoes, a Romano-Celtic shrine, and a fountain base. Portable finds have included fragments from Corinthian capitals, parts of fluted column shafts and their bases as well as over a thousand fragments of imported marbles and other decorative stones.



Plan showing the foundations of a late Roman building.



Section across Roman courtyard, early medieval cess-pit and medieval and post-medieval floors.

Part of a substantial foundation of a late Roman building (possibly the remains of one of the latest pagan Roman temples found in Britain, or one of the earliest Christian churches).

The precise location and alignment of the original main temple, from which it is assumed many of the architectural fragments within the final Roman metalling derived, still eludes detection. However, a tantalising fragment of a substantial late Roman structure was found against the frontage of the site and was clearly contemporary with the final metalling. Though it may not be a religious building, it appears likely to be either one of the latest pagan Roman temples found in Britain or one of the earliest churches built after Christianity became the official state religion.

The Trust's work was commissioned and funded by Bass Breweries.

4 Old Dover Road

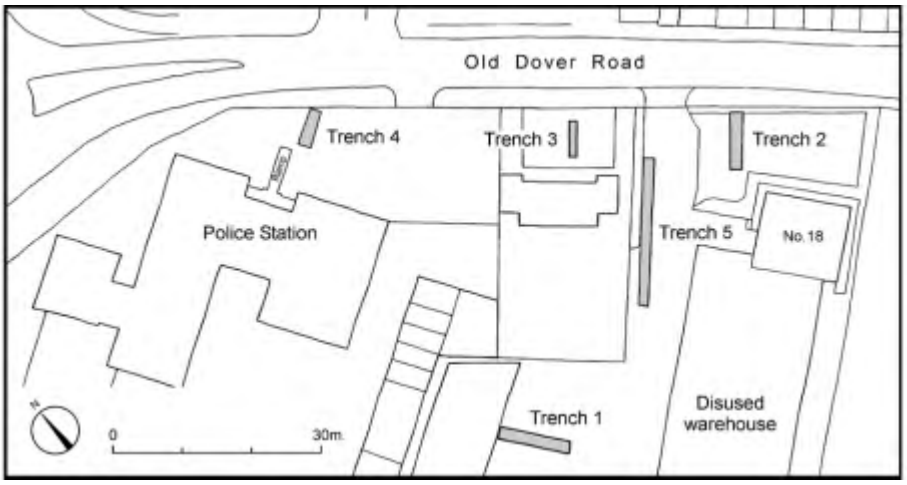
Alison Hicks

Following a proposal by Kent County Constabulary to construct a new building adjacent to the present police station on the Old Dover Road (TR 1501 5740), an evaluation excavation was carried out during November 1997. The site flanks the south side of the Roman road between Canterbury and Dover, lying just outside the town walls and site of the former Roman Ridingate.

The earliest archaeological features revealed were Roman soil horizons dated to the late first and early second century. However, due to the restricted depth of the excavations it is possible that earlier remains may exist below these levels. Most features encountered were not excavated as the purpose of the evaluation was to determine whether significant horizons lay within the area of the proposed development. The excavated evidence showed that occupation ranging from the early Roman period through into the post-medieval period was present within the area. The investigation revealed that this occupation is very shallow towards the north, near the Roman road to Dover, but is increasingly deeper to the south following a downhill slope.

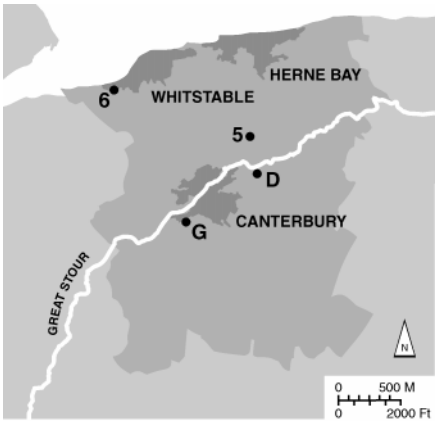
The southern part of the site appears to have been an area used for the quarrying of brickearth or gravel during the late first and early second centuries A.D. This is supported by earlier work undertaken when the police station was being built in 1964, which identified quarries on the site (Frank Jenkins personal archive). To the north of the site, flanking Old Dover Road, soil horizons, pits, post-holes and a hollow way with a series of distinct infilled wheel-ruts all of late first- and second-century date were discovered. Above these features was a later third- to fourth-century metalled surface, possibly for a yard fronting the Roman road. Collectively these features provide evidence for occupation, perhaps ribbon development, throughout most of the Roman period. The earlier hollow way may represent a track providing access for carts from the Roman road to the area of the quarries.

Medieval occupation was represented by a number of rubbish pits, a succession of fillings within the hollows of underlying quarries, and two lengths of flint wall footings for a building. To date no evidence of masonry structures has ever been uncovered within this part of Canterbury and the cartographic and documentary evidence suggests that this area was open ground throughout the medieval period. The quantity of medieval pottery recovered clearly indicates that occupation of the site was reasonably significant; numerous eleventh- and twelfth-century cooking pots were retrieved, mostly dated between c. 1075–1125, as were significant quantities of thirteenth-, fourteenth- and fifteenth-century Tyler Hill ware, clearly testifying to long-term occupation of the street frontage.



Trench location plan.

II Canterbury District Sites



◄ Canterbury District sites
5 Pope's Lane, Sturry
6 Ladysmith Grove, Seasalter
D High Street, Fordwich
G Horton Manor Chapel, Chartham

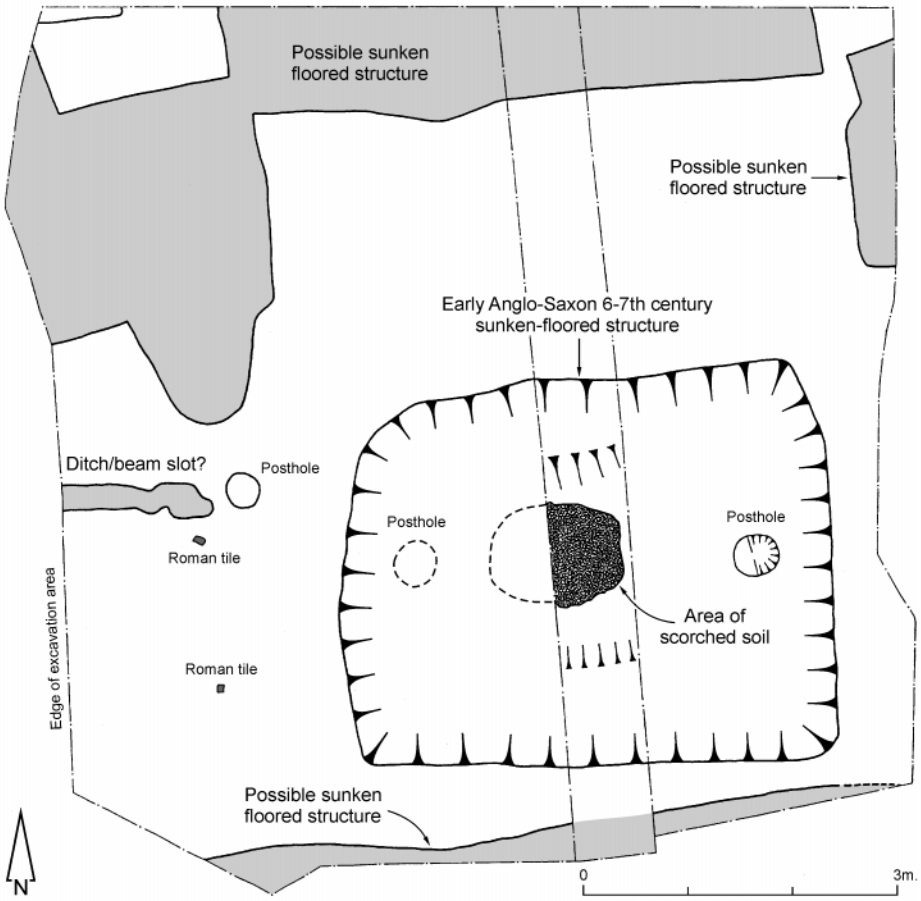
5 Popes Lane, Sturry

R. Cross and T. Allen

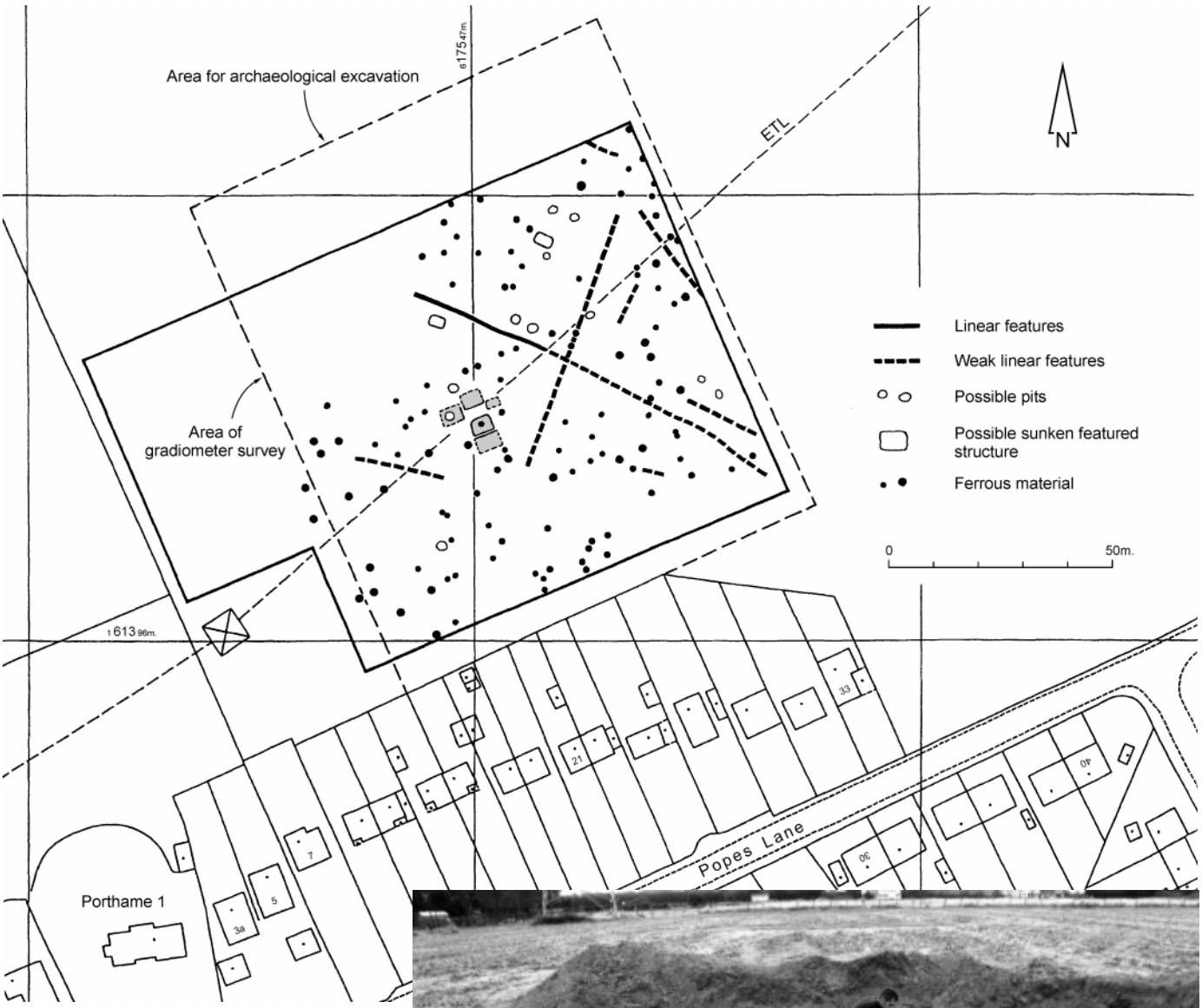
Archaeological evaluation and geophysical survey was carried out in September 1997 and January 1998 respectively across agricultural land (centred on TR 1760 6145) extending to 6.4 ha. abutting the north side of Popes Lane, Sturry. The area was also subject to palaeo-environmental assessment.

Although the majority of the eighty-six machine-cut linear trenches excavated contained no significant archaeological features or finds, evidence for early to mid Anglo-Saxon settlement was recorded within a discreet area about 220 m. south-east of Sweech Farm. The truncated remains of a sunken-featured building, measuring 4.6 m. east–west and 3.7 m. north–south, were identified in Trench 34 and more fully exposed in an adjacent extension. The eastern half of the structure was sample excavated and found to have near vertical sides cut to a maximum depth of 0.20 m. A small circular post-hole, cut into the underlying London Clay, lay on the eastern side of the floor of the feature and a patch of burning close to the centre of the building.

The size and shape of the feature indicates that it is the truncated remains of a sunken-floored structure, a typical form of building of the early to mid Anglo-Saxon period. The building may have originally had simple dwarf walls, constructed of turf, cob or wattle, covered by a pitched thatched-roof. The roof was presumably supported by timber posts set into two centrally-placed post-holes at the west and east ends of the structure, one of which was recorded. The area of scorched earth found at the centre of the structure may indicate the position of a central hearth. Insufficient material was recovered to indicate whether this was a domestic building for certain and the presence of slag from one of the main fills may suggest an alternative use for the structure. The pottery recovered from the fills is



Plan of area excavation showing a definite Anglo-Saxon sunken-floored structure and several similar possible structures. ►



Possible extent of Early Anglo-Saxon settlement based on excavation and gradiometer survey.

Excavation of an Anglo-Saxon sunken-floored building.

of early to mid Anglo-Saxon type, dated broadly to the period A.D. 575–700.

Several other features were recorded in plan across the open area, but these were not excavated. They appear to include elements of probably three, possibly four, further sunken-floored rectangular structures, two to the north, one to the south and a possible beam-slot and post-hole of a structure to the west.

The archaeological deposits and features discovered appear to represent part of a hitherto unknown Anglo-Saxon settlement. Although the full extent of the settlement is not known, the density of features recorded suggests that it extends over a much wider area, and is clearly of regional importance. A small quantity of Roman tile fragments recovered in this area indicates the possibility of a Roman site of some unknown nature existing in the near vicinity.

The evaluation was commissioned and funded by Bryant Homes (Weald) Ltd, in preparation for the submission of a planning application for residential development (subsequently withdrawn).

6 Ladysmith Grove, Seasalter

John Willson

On 25 November 1997 an archaeological evaluation was carried out under the supervision of Tim Allen on a narrow plot of land north of Ladysmith Grove, Seasalter (TR 0900 6460). The work, consisting of the machine excavation of ten trenches and undertaken ahead of proposed housing development, revealed evidence of medieval settlement. The site occupied a flat area of land, situated on London Clay just below 5 m. O.D., and close to the alluvia-dominated Seasalter Levels and Graveney Marshes to the west.

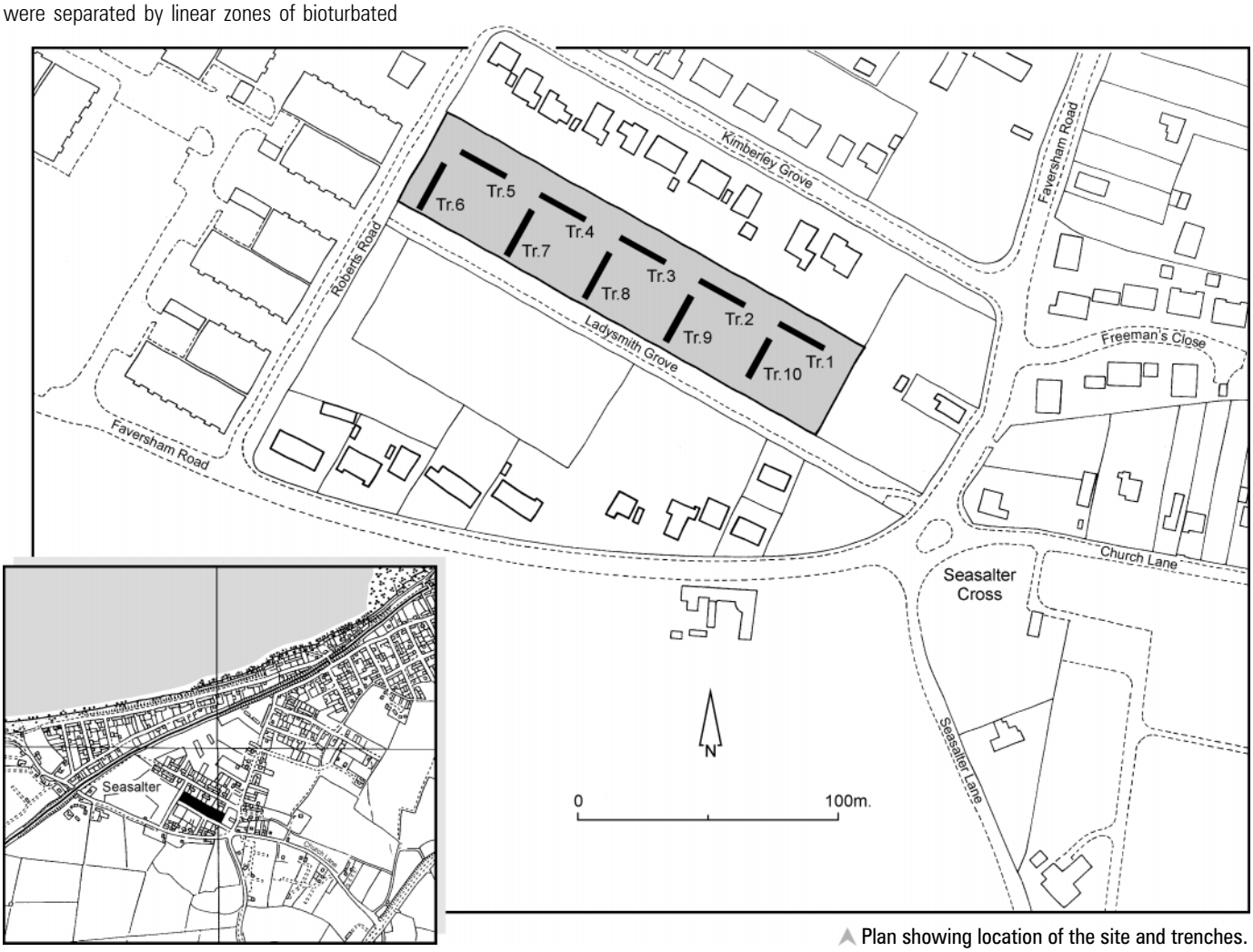
In the north-west area of the site, five linear features were revealed. These were all small ditches, or large gullies, aligned north–south. They contained domestic pottery sherds, including cooking pots and a jug of local Tyler Hill Ware dated to *c*. 1175–1225.

South of these features, a consistent series of contemporary north-west by south-east aligned strips of reworked soils containing chalk fragments and much crushed cockle, oyster and whelk shells was exposed. The strips, which varied in width between 0.40 m. and 2.70 m., were separated by linear zones of bioturbated subsoil on average 2 m. in width. The uniform alignment of the strips, along with the presence of fragmented chalk and crushed sea shell, suggests that they indicate a ridge-and-furrow cultivation system.

Collectively, the features revealed during the evaluation appear to represent the periphery of a previously unknown early thirteenth-century medieval settlement with a contemporary ridge-and-furrow field system adjacent to the south-east. Subsequent work exposed a large, shallow pit underlying the ridge-and-furrow system. The pit contained large quantities of loomweights, some whole others fragmented, and much flint-tempered pottery, all dating to the Late Bronze Age and Early Iron Age. These may represent peripheral remains of the extensive prehistoric settlement centred on Borstal Hill, Whitstable, some 300 m. to the south-west (Allen 2001, 10–12).

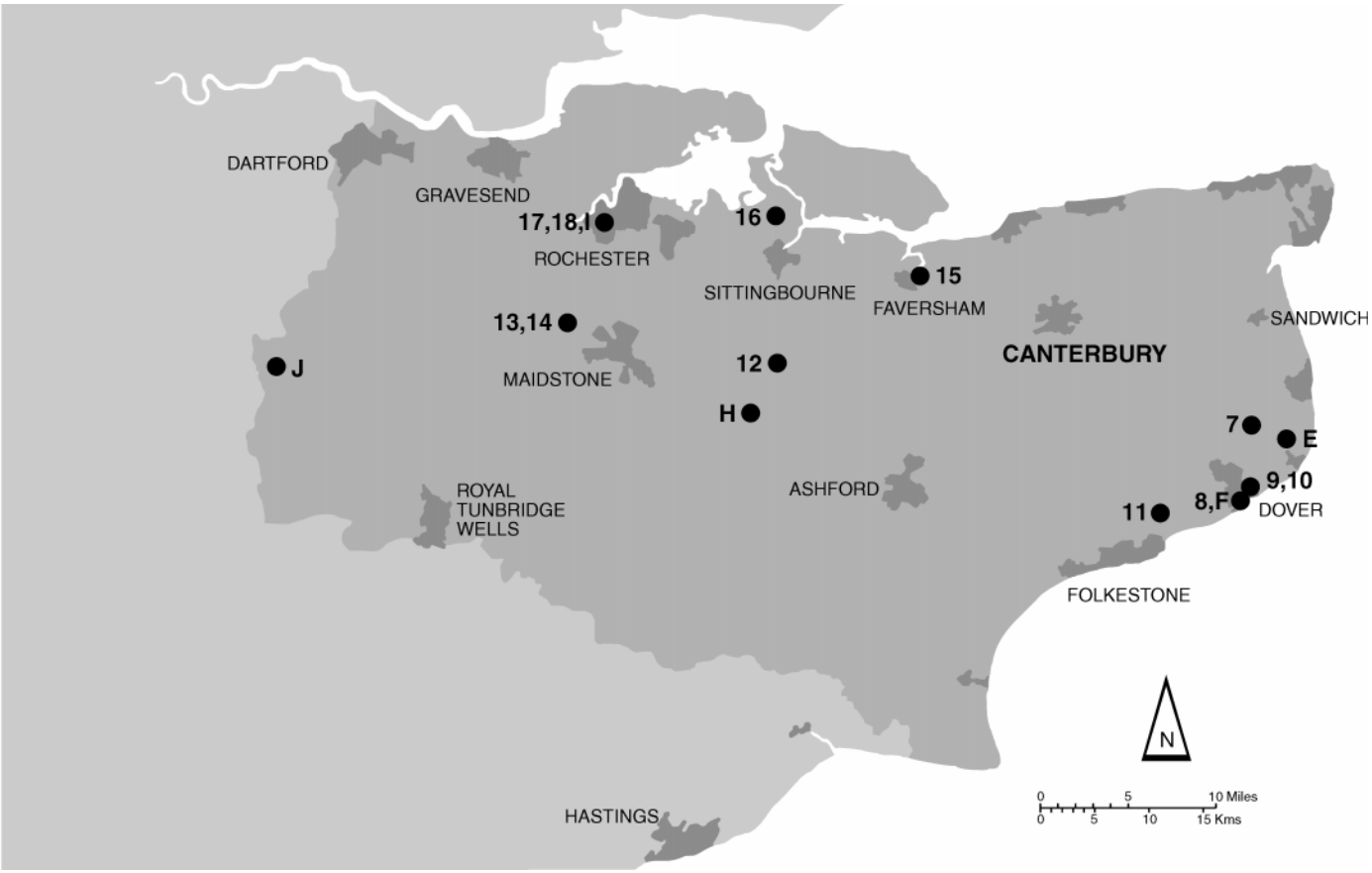
The Trust's work at Ladysmith Grove was commissioned and funded by the owner of the land, Mr K.J. Buchan.

Excavation underway at Ladysmith Grove.



Plan showing location of the site and trenches.

III Kent Sites



Kent sites

7 Langdon Abbey, near Dover
8 Archcliffe Fort, Dover
9 Castle Street, Dover
10 Biggin Street, Dover
11 Folkestone Transfer Pipeline
12 Glebeland, Marley Road, Harrietsham
13 Leybourne Castle
14 Bradbourne House, East Malling
15 Abbey Fields and Cyprus Road, Faversham
16 The Street, Iwade
17 No. 40 High Street, Rochester
18 Rochester city wall
E Oxney Court, Ringwold
F Wellington Dock, Dover
H Ulcombe Village Hall
I Phelp's Lodge, Rochester
J 49–55 High Street, Westerham

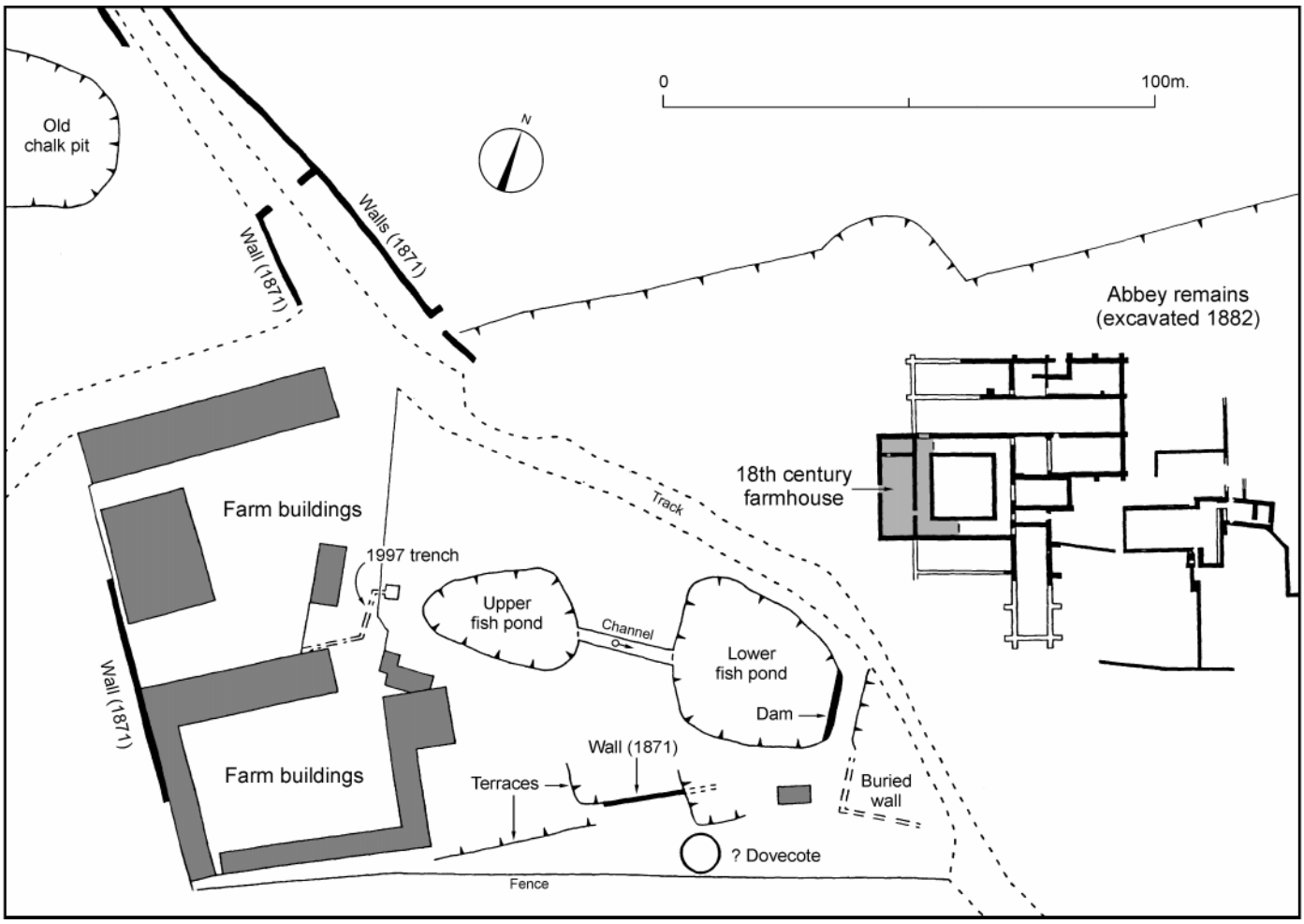
7 Langdon Abbey, near Dover

Keith Parfitt

Sheltering within a shallow dry valley on the chalk downs some 5.5 km. north of Dover, the Praemonstratensian Abbey at West Langdon was founded in 1192 by William de Auberville and was dissolved under Henry VIII in 1535. Today, the site forms part of Langdon Abbey Farm (TR 3255 4690). The monastic house was never a large one and its documented history is very meagre. Virtually no traces of the abbey buildings now survive, although the farmhouse which dates mainly from the sixteenth to eighteenth century incorporates part of the cellarer's range, originally situated on the western side of the cloister (Newman 1969, 354).

Archaeological work on the site has been limited: the outline of the main walls of the abbey church and the adjacent claustral buildings situated to the east of the farm-house were exposed by Sir William St John Hope in 1882, which allowed a reasonably complete plan to be produced (St John Hope 1883). Further smaller-scale work was undertaken by the Duke of York's School Archaeological Society in 1960. This revealed some variations from St John Hope's plan but no details were ever published (Harrison 1961, lvii).

No complete survey of the abbey site has yet been undertaken but further traces of ancillary structures, including two fish ponds may be discerned in a paddock to the south-west of the farmhouse (Phillips 1964; see below). The entire area is scheduled as an Ancient Monument (Kent No. 18). The excavation, in May 1997, of a new soakaway pit and drain trench within the paddock at the extreme western edge of the scheduled area required an archaeological presence and provided the opportunity for some further investigation of this little known Kentish abbey site.



Sketch plan showing location of soakaway pit & 1997 trench.

A brief survey of the visible remains within the paddock to the south-west of the farmhouse was undertaken and an approximate sketch plan produced. Further information has been added from the 1871 O.S. map to produce the accompanying plan. The two medieval fish ponds are now represented by dry, shallow depressions in the bottom of the valley, whilst on the terraced valley side to the south traces of walls relating to several separate structures may be observed protruding through the turf. Lying well beyond the abbey's main buildings, this area has never seen any excavation work.

The soakaway pit was situated a few metres west of the end of the upper fish pond. As excavated, it was about 2.80 m. square and was dug to a maximum depth of 3.50 m. The natural Upper Chalk was encountered at a depth of about 1.50 m., its surface being weathered and undulating. This was sealed by a natural layer of orange-brown flinty clay which was about 0.40 m. thick. Over this was a thin layer of brown clay loam with chalk specks which fairly certainly represents buried topsoil. This layer, in turn, was sealed by a 0.40 m. thick layer of small chalk rubble, which petered-out on the western side of the pit and appeared to represent dumped or upcast material. No datable finds were recovered from the layer but it seems quite possible that it represents spoil derived from the original excavation of the adjacent fish pond. The chalk dump was sealed by a subsoil layer of brown loam with some lenses of orange flinty clay. This deposit included material derived from an adjacent farm track and was sealed by a thin layer of topsoil.

Leading to the soakaway pit from outside the scheduled area, the excavated drain trench was almost Z-shaped, with a total length of about 27 metres. It was 0.55 m. wide and 0.60 m. to 1.30 m. deep. Falling to the north, the trench was mainly cut through the trackway giving access to the adjacent farmyard. The sequence of deposits exposed was similar along almost the complete length of the trench. It consisted of a series of layers of tarmac and rubble representing the rough metalling of a succession of tracks. Significant quantities of flint and greensand rubble had been incorporated into these metallings and this material is no doubt derived from demolished buildings relating to the abbey. This point was largely confirmed by the discovery of two carved fragments of sandstone, including the top of a two-light window.

8 Archcliffe Fort, Dover

Keith Parfitt

At the request of English Heritage, a watching brief was undertaken at Archcliffe Fort, Dover in the spring of 1997 during new building work at the site. This work followed on from that undertaken the previous year (Parfitt 1999a, 19).

The fort is situated on the western outskirts of the town, adjacent to the old coast road to Folkestone, upon a low promontory overlooking Shakespeare Beach and Dover's historic Western Docks (TR 3150 4030). In topographical terms, although the site occupies a cliff-top position, it actually lies in the bottom of a dry chalk valley, truncated obliquely by the Strait of Dover. The truncation of this valley has led to the creation of a slight bay immediately to the north-east of the

Archcliffe headland. Fresh water springs once issued from the base of the cliffs in this area. At the end of the fifteenth century the bay served as the focus for Dover's new Paradise harbour which represented the very first phase in the long and complex development of the port's Western Docks.

The history of Archcliffe Fort has yet to be traced in detail but the earliest recorded structures appear to date to the later medieval period. It would seem that in 1370 Edward III ordered the construction of a rampart and ditch on the headland in order to defend a pre-existing watchtower. Nothing is known of the form or precise location of this watchtower and its associated earthworks. The extant structure principally dates from the seventeenth century, with significant nineteenth-century additions.

In connection with the renovation of the principal nineteenth-century building within the fort, a programme of construction work was undertaken on the site and an archaeological watching brief was maintained during this work. The focus of archaeological attention in 1997 was a drain trench cut along the foot of the fort's north-west rampart. Partly dug by hand and partly by machine, this L-shaped trench totalled about 45 metres in length. It was 0.60 m. wide and between 0.60 m. and 1.60 m. deep, with a fall to the north-east.

At the north-east end of the trench part of the south-west wall of a demolished nineteenth-century basemented building, situated opposite the extant building, was revealed. This consisted of a brick-built cellar wall standing about 1.00 m. high. Further, adjacent sections of this demolished building have been cut through by previous service trenches. According to a detailed plan of the fort dated 1884, this building was then the quarters of the Commanding Officer for the South Front Barracks of the Western Heights.

Elsewhere in the trench, the revealed sequence of deposits was similar. Below a thin layer of modern concrete was a disturbed horizon between 0.20 m. and 0.75 m. thick. This consisted of mixed soil and rubble and represented the combined filling of numerous earlier service trenches. Undisturbed soil at this level was exposed immediately outside the main building at the south-western end of the trench and consisted of a dark grey loam with pea-gravel, perhaps representing casual yard metalling set in the angle between the main range and a projecting wing room.

At a lower level in the trench were continuous undisturbed clay deposits generally beginning at a depth of about 0.60 m. below existing ground level. The sequence of these deposits was the same along the whole length of the trench, although the upper surface had mostly been truncated by previous service trenches. The top layer consisted of brown silty clay with flints and occasional chalk and carbon specks. As surviving, this layer was between 0.30 m. and 0.35 m. thick and rested upon a natural deposit of orange-brown silty brickearth with flints. It produced a quantity of prehistoric struck flints, together with one small prehistoric pot-sherd of coarse flint-tempered ware. The prehistoric flints discovered were scattered fairly uniformly throughout the clay deposit and a total of thirty-four struck pieces were recovered, together with nine calcined flints. Five of the flints showed evidence of working and one appears to be a fragment from a chipped axe.

As with previous work on the site, the present trenching across the interior of the fort suggests that much of the area is devoid of any major pre-fort features, despite the recorded sequence of earlier defences. There remains no evidence for the documented fourteenth-century or Henrican earthworks. The undisturbed clay layers below the fort, however, contain significant quantities of prehistoric lithic material. Most of these flints were reasonably fresh in condition and were probably largely *in situ*. The general characteristics of the assemblage suggest that much of it is of late Neolithic to Bronze Age date. Large quantities of flints of these periods occur on the downlands around Dover (see Folkestone Transfer Pipeline, below). The growing quantity of prehistoric flint material recovered from within Archcliffe Fort, including waste flakes, worked pieces and calcined flints (pot-boilers) is clearly suggestive of occupation in this area and any further opportunities to examine the nature and extent of this should be fully taken up, in addition to any investigations specifically concerned with the history and origins of the fort itself.

9 Castle Street, Dover

Keith Parfitt and Barry Corke

In February 1998, a 30 m. long sewer trench was excavated on the south-eastern side of Castle Street at Dover, between Russell Street and Dolphin Passage (TR 3205 4151, centred). The excavation provided an opportunity to examine the buried stratification in this part of the ancient town and members of the Trust monitored the operations on behalf of W.S. Atkins Consultants Limited.

In contrast to many of the local streets in the area, which are clearly of medieval origin, Castle Street is of nineteenth-century construction. It is recorded that the new street was built between 1830 and 1837 upon an artificial causeway across what had been previously a low-lying wet area (Bavington Jones 1907, 251). The earliest accurately scaled map of Dover dated 1737 shows the region as then being occupied by water meadows and gardens lying close to the River Dour. The modern surface of the street in the area examined stands between 6.00 m. and 6.40 m. above Ordnance Datum.

Rigold has previously suggested that the ridge occupied by Castle Street, largely defined by the 6 metre contour, represents a coastal shingle spit (the Old Spit) partially blocking the mouth of the Roman haven (Rigold 1969, 81). The cartographic, documentary and present field evidence indicates that this notion should now be discounted.

As exposed, the sequence of deposits was broadly similar along the entire length of the trench. In several places, directly below the modern tarmac, traces of earlier street metallings were revealed. These consisted of up to four thin layers of rammed chalk, pebbles and pea-gravel. The various street metallings rested upon a thick dump deposit consisting of layers of compacted soil, building debris and chalk rubble, with an overall thickness of between 1.50 m. and 1.60 m. This dump must represent the make-up of the documented causeway.

Within the dump, individual layers of rammed chalk rubble up to 0.30 m. in thickness were interleaved with layers of brick and tile rubble, clearly representing building debris brought in from demolition sites elsewhere in the town. Amongst this debris were fragments of small Dutch bricks indicating that some structures of seventeenth- to eighteenth-century date were then being pulled down. Other bricks were of typical nineteenth-century, yellow stock variety.

Below the causeway dump continuous deposits of dark grey silty and organic clays, up to 0.60 m. thick, were observed along the entire length of the trench. These must represent riverine silts occupying the old flood plain of the River Dour and their upper surface lies at an elevation of about 4.25 m. above Ordnance Datum. A few finds were recovered from these deposits, including several small fragments of peg-tile, occasional oyster shells and two clay pipe bowls of late seventeenth- and eighteenth-century date.

The present project thus provides some useful new information, confirming the presence of the documented Castle Street causeway, with riverine silts preserved below. The complete

absence of any evidence for Rigold's shingle spit confirms previous doubts about the accuracy of this theory. The two clay pipe bowls recovered from the basal levels indicate that the exposed silt deposits are of post-medieval date and fairly certainly may be equated with the land-surface mapped in 1737, a century before the construction of Castle Street.

10 Biggin Street, Dover

Keith Parfitt and Barry Corke

An archaeological watching brief was carried out during groundworks preceding redevelopment at No. 17 Biggin Street. The site is situated on the north-east side of Biggin Street, at its junction with Edwards Road (TR 3175 4164) and is occupied by a substantial masonry building with a cellar, described on the 1861 Ordnance Survey as 'North Brook House'. The fabric of this structure appears to be primarily of nineteenth-century date, with perhaps some late eighteenth-century work. The building was to be retained within the new development and a new extension made into the existing rear yard.

Effectively located on the edge of the flood plain of the River Dour, the site stands at an elevation of about +6.50 m. O.D. The ground gently slopes down to the river, which is located some 60 m. to the north-east. Ultimately, the natural subsoil is Middle Chalk, but in this area it is sealed by riverine sediments, including silts and gravel. Rigold (1969, 80) has previously suggested that in Roman times the Dour opened up here into a broad, shallow lagoon. Associated alluvial deposits have been recorded in the immediate area (Rigold 1969, 87 and 94; Crellin 1973; OAU 1994, 6).

Prior to the start of the building work, two soil-test pits were excavated in the yard at the rear of the extant building. Cut by machine these each provided a section through the buried deposits on the site for a depth of just over 2 m. Much of the yard area was found to be occupied by earlier infilled post-medieval cellars. The undisturbed soils below probably partially represented the silt of the lagoon and a few Roman pottery sherds (ranging in date from the second to the fourth century A.D.) were recovered from these layers, together with two prehistoric sherds and several calcined flints.

Subsequent observation of the relatively shallow foundation trenches cut for the new extension revealed nothing further of archaeological interest. None of the excavations undertaken on the site were sufficiently deep to reveal the natural subsoil.

11 Folkestone Transfer Pipeline

Keith Parfitt and Barry Corke

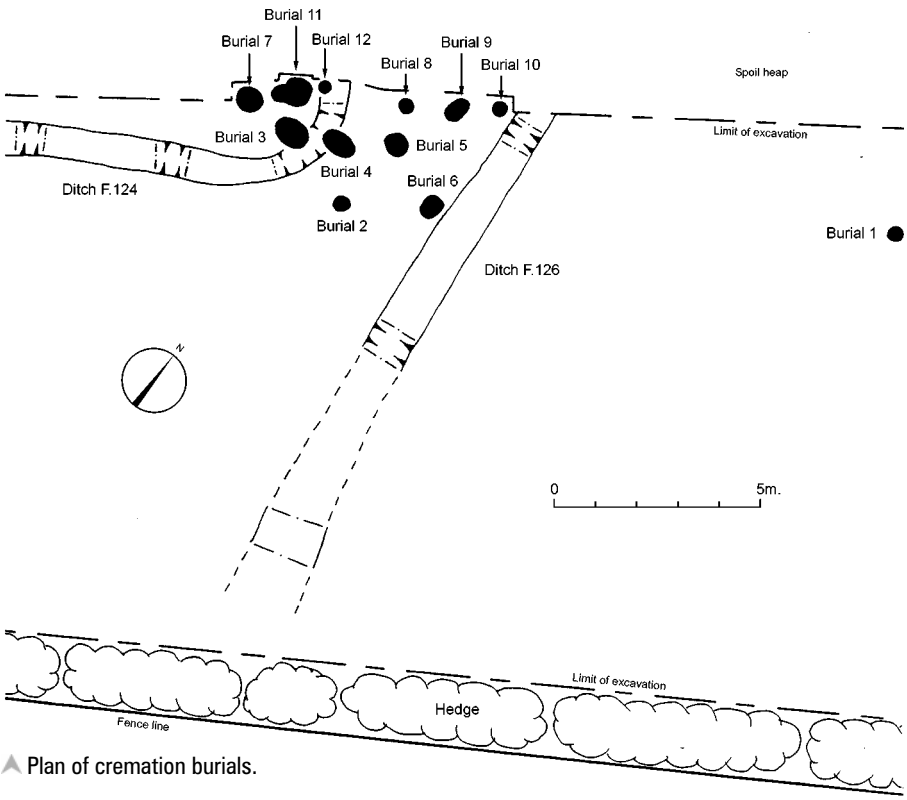
In February 1998 work began upon the construction of a new waste water pipe-line running across some 6.5 km. (4 miles) of largely open country between Folkestone and Dover. Being mainly gravity fed, the pipe followed a somewhat sinuous, contoured route over the dip-slope of the North Downs, running through the parishes of Capel-le-Ferne and Hougham, from Crete Road, near at the top of the chalk scarp above Folkestone, to Broomfield Bank at Farthingloe, below Hougham on the western outskirts of Dover. Members of the Trust were engaged to maintain a watching brief along the route of the pipe and a number of significant discoveries were made.

Along the entire route, the underlying solid geology is Upper Chalk but this was everywhere masked by a series of later drift deposits. Between Crete Road and Capel village these drift deposits consist predominantly of sandy Lenham Beds material, whilst to the east of Capel, heavy Clay with Flints occurs, interspersed with areas of lighter, brickearth.

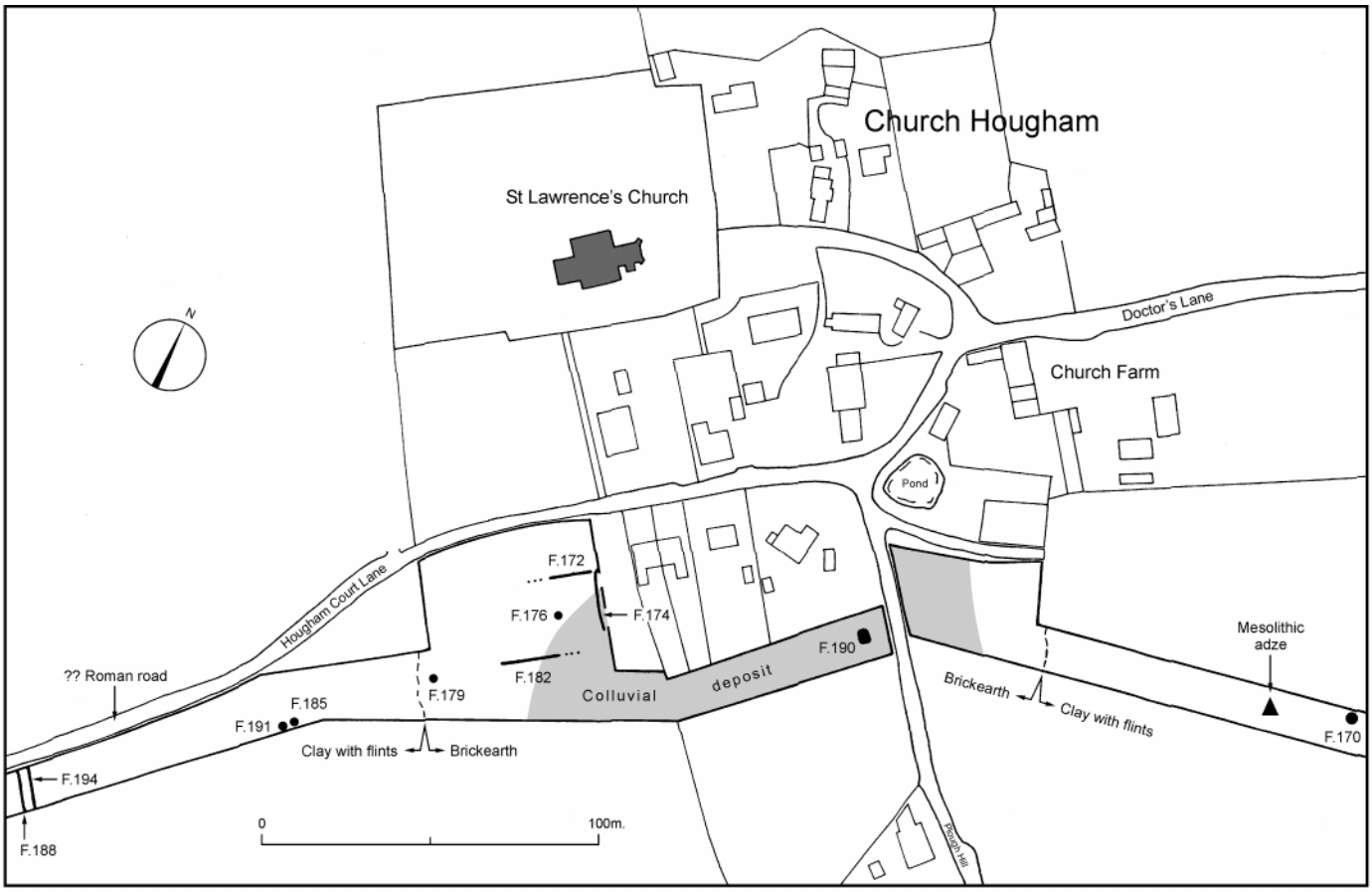
For the purposes of recording archaeological discoveries the pipe-line was divided into 100 m. lengths which allowed the immediate positioning of any surface finds and sub-surface features. The discoveries made along the route collectively provide a very useful transect across a piece of high chalk downland in south-east Kent, an area that has previously seen only limited archaeological research.

Apart from a Second World War pill-box of unusual design, located on the north-eastern side of Cauldham Lane, Capel (TR 2452 3898), no upstanding monuments lay on the route and despite a careful search, no evidence was found for the Dover–Lympne Roman road, which was believed to run close to the line of the pipe.

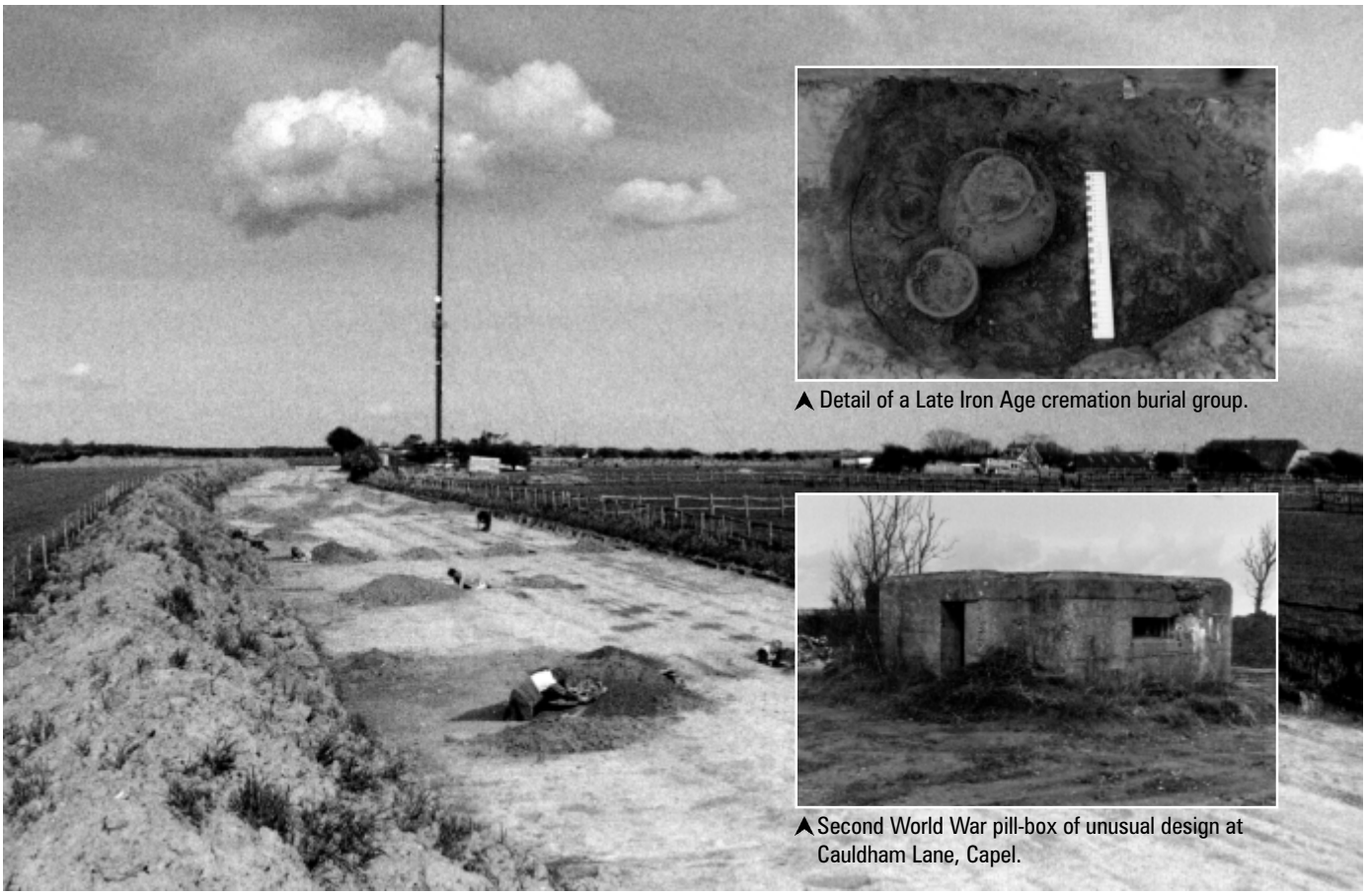
An unbroken scatter of prehistoric struck flints was noted along the entire length of the pipe-line with marked concentrations of material adjacent to Crete Road, on the slopes of Cauldham Hill, Capel and on the western outskirts of Church Hougham. Readily datable implements recovered included an Acheulian handaxe, two



Plan of cremation burials.



Plan of archaeological discoveries around Church Hougham.



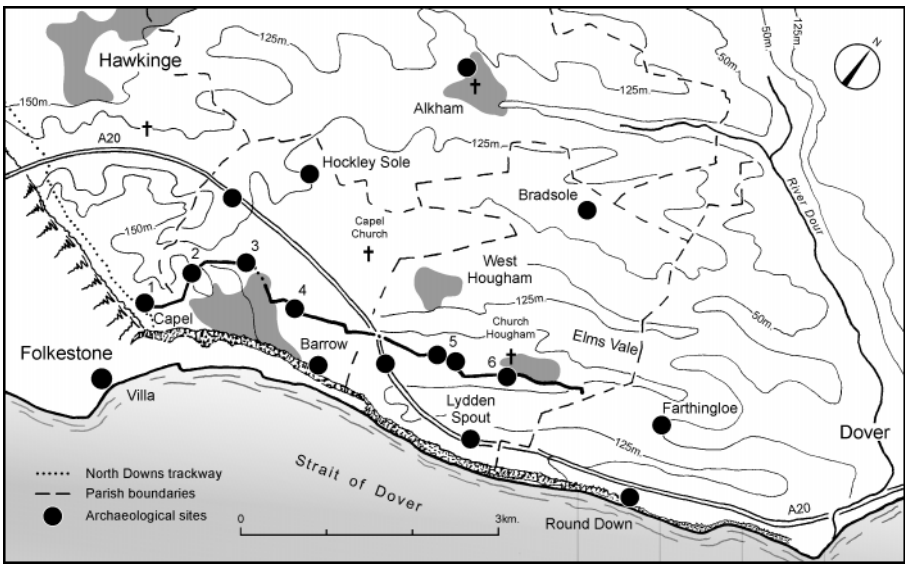
Detail of a Late Iron Age cremation burial group.

Second World War pill-box of unusual design at Cauldham Lane, Capel.

Features under excavation along the easement line of the pipeline.

Mesolithic tranchet axes, a Neolithic leaf-shaped arrowhead, and a Bronze Age barbed and tanged arrowhead recovered from a Roman ditch near Great Hougham Court Farm (see below), as well as many scrapers and numerous waste flakes, the majority of which are likely to be of Neolithic or Bronze Age date.

In addition to a series of minor discoveries, substantial evidence for Iron Age to Roman settlement, in the form of pits and ditches, was located at three sites along the route; at Green Lane, Capel (TR 2470 3909), Great Hougham Court Farm (TR 2714 3957 centred) and Church Hougham (TR 2785 3985). Each site was partially examined ahead of the cutting of the pipe trench in order to ascertain something of its extent, character and date-range. The most extensive site near Hougham Court Farm included a small Late Iron Age cremation cemetery and appears to represent a continuation of a site previously located during the construction of the A20.



Route-map of Folkestone Transfer Pipeline: showing main sites located. 1, Creteway Down; 2, Cauldham Hill; 3, Green Lane, Capel; 4, Winehouse Lane, Capel; 5, Great Hougham Court Farm; 6, Church Hougham.

12 Glebeland, Marley Road, Harrietsham

Crispin Jarman

During 1997 excavation took place under the direction of Crispin Jarman at two adjacent sites on land known as Glebeland, Marley Road, Harrietsham (between TR 8725 5285) ahead of housing development. The site investigated lies close to the church of St John the Baptist, in the north-east part of the village. Isolated finds from the area combined with verbal reports of excavations conducted to the north of the site, in the rectory garden, indicated the likely presence of deposits of archaeological interest within the development area

Excavation revealed evidence of occupation extending from the Late Iron Age to the early Roman period. Occupation seemed to contract or end in the late second or early third century. Re-occupation of the site began in the late third or early fourth century and appears to have lasted until the late fourth century. A scattered and probably unrelated phase of occupation occurred during the Anglo-Saxon period between the fifth and seventh centuries.

The Late Iron Age occupation of the site began in the latter part of the first century B.C. A large north–south aligned boundary ditch extended across the area of the excavations, dividing it into two and forming an enclosure to the west. The ditch was causewayed to allow a flint-metalled, east–west aligned road, flanked by roadside ditches, to enter the enclosure. The road led slightly to the north of due east away from the settlement, apparently heading obliquely up the slope of the Downs.

Detail of a Roman wall foundation.

View showing Late Iron Age/Early Roman metalled road and side ditch (beneath ranging rod).

Typical section across an enclosure ditch.

View showing outline of wall foundations of a third- to fourth-century Roman building.

Detail of Late Iron Age cremation burial group consisting of three 'Aylesford type' pottery vessels and a copper alloy vessel.

View along Trench 5 showing cess-pit.

To the south of the road, 10 m. west of the enclosure ditch and parallel to it was a smaller boundary ditch. Between the two ditches, and south of the road, was a group of nine Aylesford-type cremation burials. A possibly contemporary burial was located to the east of the smaller ditch. The dating of the cremation vessels, which included a unique copper alloy vessel, suggests that they predate the Roman conquest of A.D. 43. One of the burials cut through the crushed chalk base of the road indicating that this too was of pre-conquest origin. A further three burials were located to the east of the smaller boundary ditch. These appear to be of late second- or early third-century date.

During the late first or early second century the road was realigned to run slightly north of due west within the enclosure. The old road was probably abandoned or used as a yard surface. There was no evidence for buildings within the enclosure, though the presence of animal bone, pottery and other domestic refuse indicates the proximity of occupation. It is therefore difficult to determine the nature of the settlement represented here, though it is thought that a small settlement or a villa complex, is most likely.

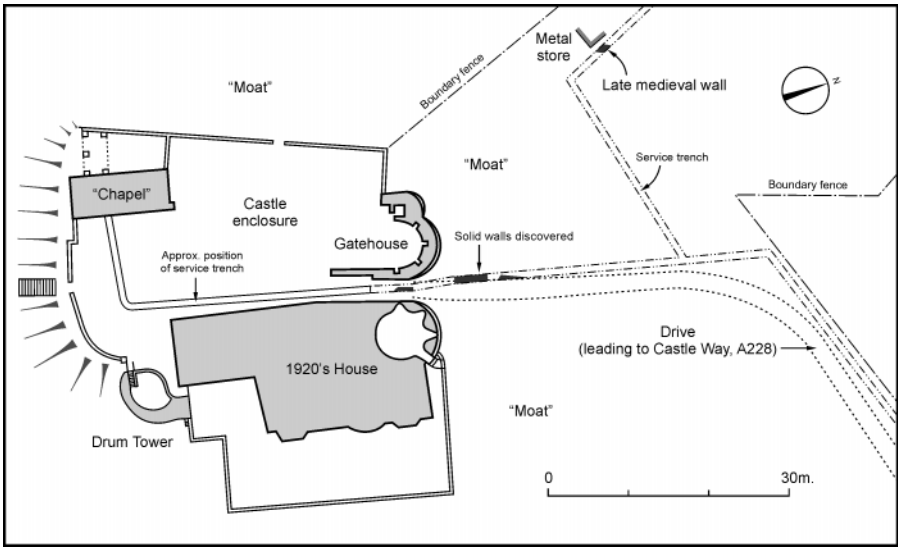
A layer of silt across the north and west of the excavated area indicated contraction or abandonment towards the end of the second or beginning of the third century. Cut into this soil deposit were the footings of nine substantial aisled buildings each approximately 13 m. wide and over 20 m. long. The presence of a coin in the foundation of one of the buildings indicated a late third- or early fourth-century date of construction. No evidence for occupation was recovered from the buildings and so it is tempting to conclude that they were barns. If they were barns, then the main villa or farm remains to be discovered.

A small but significant quantity of Anglo-Saxon pottery was recovered from across the site, though only from a few features. One definite and three possible sunken-featured buildings were identified. A ditch cut the backfill of the definite structure and was itself cut into by a post-hole. These features were sealed beneath a crude metalled surface which would appear to be of Anglo-Saxon date. A further two large pits and a post-hole were dated to this period. How many other features may have been of this period is not clear, since residual Roman material was inevitable and cultural material is often scarce on Anglo-Saxon sites. The nature of the activity in this period is therefore even harder to assess than that in the earlier periods.

The Trust's work was commissioned and funded throughout by Berkeley Homes (SE) Ltd.

13 Leybourne Castle

Crispin Jarman and John Willson



Plan showing castle enclosure, trench location and positions of newly discovered walls.

During March and April 1997 a watching brief was conducted during the cutting of a service trench at Leybourne Castle near West Malling (TQ 6885 5890), under the supervision of Crispin Jarman. Three substantial masonry footings were observed in the base of the trench in the area of the 'moat'. A fourth was observed some distance to the north-west.

One short length of ragstone wall, bonded in yellow-brown mortar, ran between the surviving drum towers. This may have been related to a tie wall linking the towers or perhaps formed part of the gate arrangement. The fabric appeared to be of early fourteenth-century or later date.

Of more significance, however, were two separate sections of wall discovered immediately north of the existing gatehouse.

The first of these, located about 13 m. north of the gateway, was traced for a minimum length of 2.4 m. running in a straight line on a north-east by south-west axis. It was at least 0.60 m. wide (full width not seen) and constructed from ragstone bonded in a hard orange-brown mortar. Only the west face was visible and this appeared to have been finished with roughly squared ragstone blocks. A sherd of pottery recovered from the wall fabric is of twelfth- to very early thirteenth-century date.

The second wall was located about 0.50 m. south of the first and was similar in fabric and construction. This wall appeared to have been curved; a small section of its west face clearly ran in a wide arc across the trench. The foundation was traced for a minimum length of 5 m. and had a projected width of about 2.0–2.50 m. The relationship between the two walls could not be ascertained due to the presence of a modern service trench. Lying above the second wall was a possible demolition deposit of crushed mortar and stone mixed with layers of chalk and clay. Both walls and the demolition deposit were sealed by a band of dark brown sandy clay. The possible tie wall between the drum towers appeared to cut this deposit and is therefore considered to be of a later date.

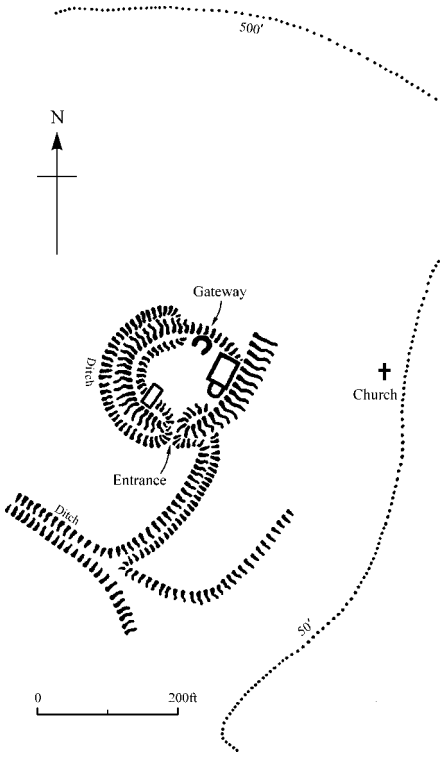
The discovery of masonry indicating the presence of a substantial building immediately to the north of the castle ruins is of great significance. Whilst not enough of the walls were exposed to be really certain of their function, they appear to have been contemporary and their size suggests a fortified structure. Two facts preclude them being contemporary with the existing castle ruins. First, in this position any contemporary structure would have impeded the gateway and obstructed the defensive purpose of the drum towers; second, the curved wall appears likely to extend under the west drum tower, is of a different build and is therefore earlier. On balance, it would appear that these two new walls predate the existing castle and may therefore represent an earlier fortification on the site.

It has always been suggested that the castle occupies the site of an earlier, Norman, fortification. At the time of the Domesday Survey, land was held here by Bishop Odo. Later it was

View showing position of earlier masonry walls in reltion to the late fourteenth-century gate house and flanking drum towers.

Ragstone footings of a late medieval building located close to the metal store.

Detail of curved masonry wall, possibly that of an earlier 'shell keep' type castle, pre-dating the fourteenth-century castle.



Plan showing earthworks around the castle (VCH, 1908, 418).

granted by the Crown to Sir William de Arsick. By the reign of Richard I (1189–99), it was in the possession of Philip de Leyburn (died 1194) '…about which period they created a castellated mansion here' (Ireland 1829, 598). This date would agree with the pottery sherd recovered from the wall fabric which was dated to the twelfth or very early thirteenth century.

By 1263, Sir Roger de Leyburn held the office of Steward the King's Household and Lord Warden of the Cinque Ports. In 1269 he accompanied Prince Edward as a personal attendant on a Crusade. He died *c*. 1271. On 25 October 1286, Sir William de Leyburn (son) entertained King Edward I and his Queen at his castle at Leybourne (Mee 1936, 281). In the '*Inqisitio post mortem'* on the death of Sir Thomas de Leybourne held at Malling 8 July (I Edward. II, A.D. 1307) mention is made of his widowed wife Alice as tenant of the Castle and Manor at Leybourne (Larking 1863, 189). Whether this refers to the original castle or not is unknown, but the present castle ruins appear to date to about this period.

The work was commissioned and funded by the owner Mr A. Albert.

14 Bradbourne House, East Malling

John Willson and Alan Ward

Excavations were undertaken under the direction of Alan Ward between July and October 1997 on land between Bradbourne House and the A20 road north of East Malling (TQ 703 583), ahead of housing development. This followed evaluation trenching undertaken in October 1996 and limited excavation work between January and March 1997 (Ward 1999).

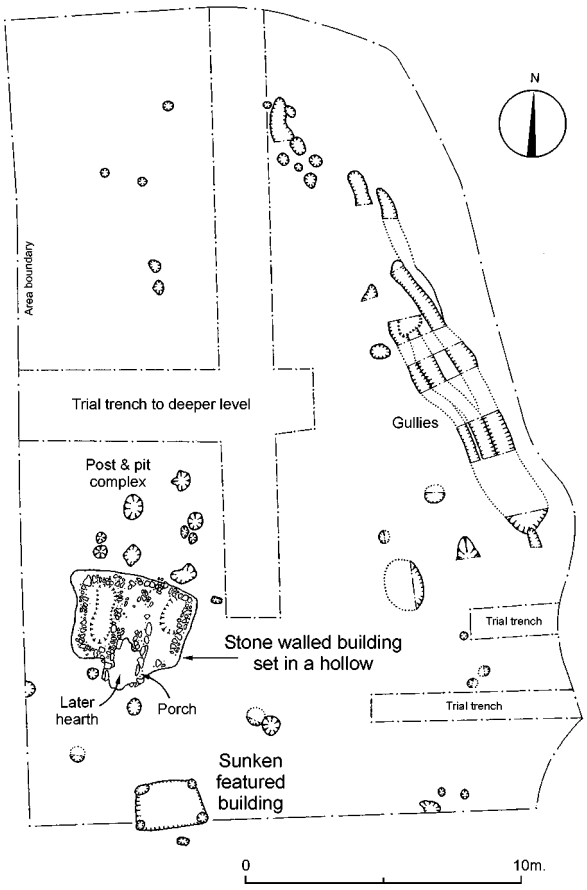
The earliest evidence for settlement on or nearby the site was a quantity of struck flints, including leaf-shaped arrowheads, flint polished axes, a blade, a rod, a hammer-stone, and other retouched and knapping flakes, all broadly dated to the Neolithic or Early Bronze Age.

Actual settlement of the site took place during the Late Iron Age and Early Roman period, when what appears to have been a rural farmstead became established. Ceramic evidence suggests that settlement commenced sometime before the Roman Conquest of A.D. 43 and continued into the late second century with a heavy bias towards the late first and first half of the second century. The main recorded features consisted of a metalled road or yard, ditches, pits, a cemetery and some probable structures. Other features and structures may exist beyond the limits of the excavation. No clear boundaries to the settlement were identified.

The gravel-metalled road or yard to the north, which had evidence of at least three separate phases of metalling, had a parallel side ditch on its south side.

Limited evidence for several probable structures was recovered. One structure consisted of a narrow rectangular (4.0 by 2.60 m.) arrangement of stones bonded by clay. A short 'passage' existed on the south. Within the main body of the structure there was no trace of floors occupation deposits or hearths, the lack of which all suggest a non-domestic function. With the passage there was scorched clay which perhaps indicates this was a flue and hence the feature may be a so-called corn-drier or similar agricultural structure. Ceramic evidence suggests a date somewhere in the mid second century.

Some 3 m. to the south, was a small rectangular sunken-featured structure measuring 2.25 m. by 1.50 m. and just 0.75 m. deep. A post-hole existed at each corner, and two clay floors and occupation deposits were recorded. Probably contemporary with the stone structure, its functional purpose is unclear, but it may have been used for storage. To the north another structure was inferred by a series of six large pits, each containing large storage jars possibly for grain (evidence for brewing from wheat grain was recorded on site). A large quantity of Roman brick and tile was recovered suggesting that more substantial buildings may lie in the vicinity, although they could have been derived from the

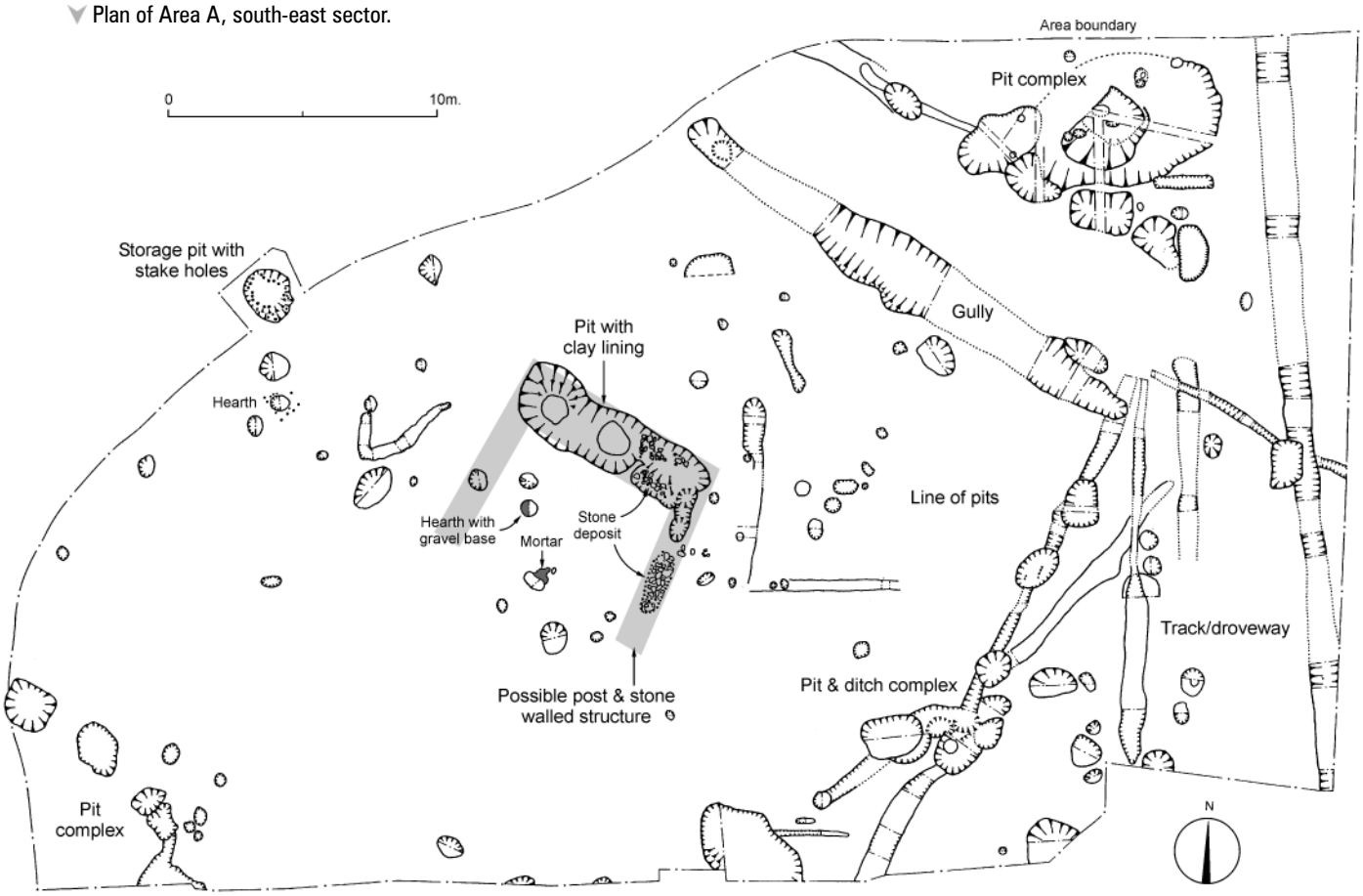


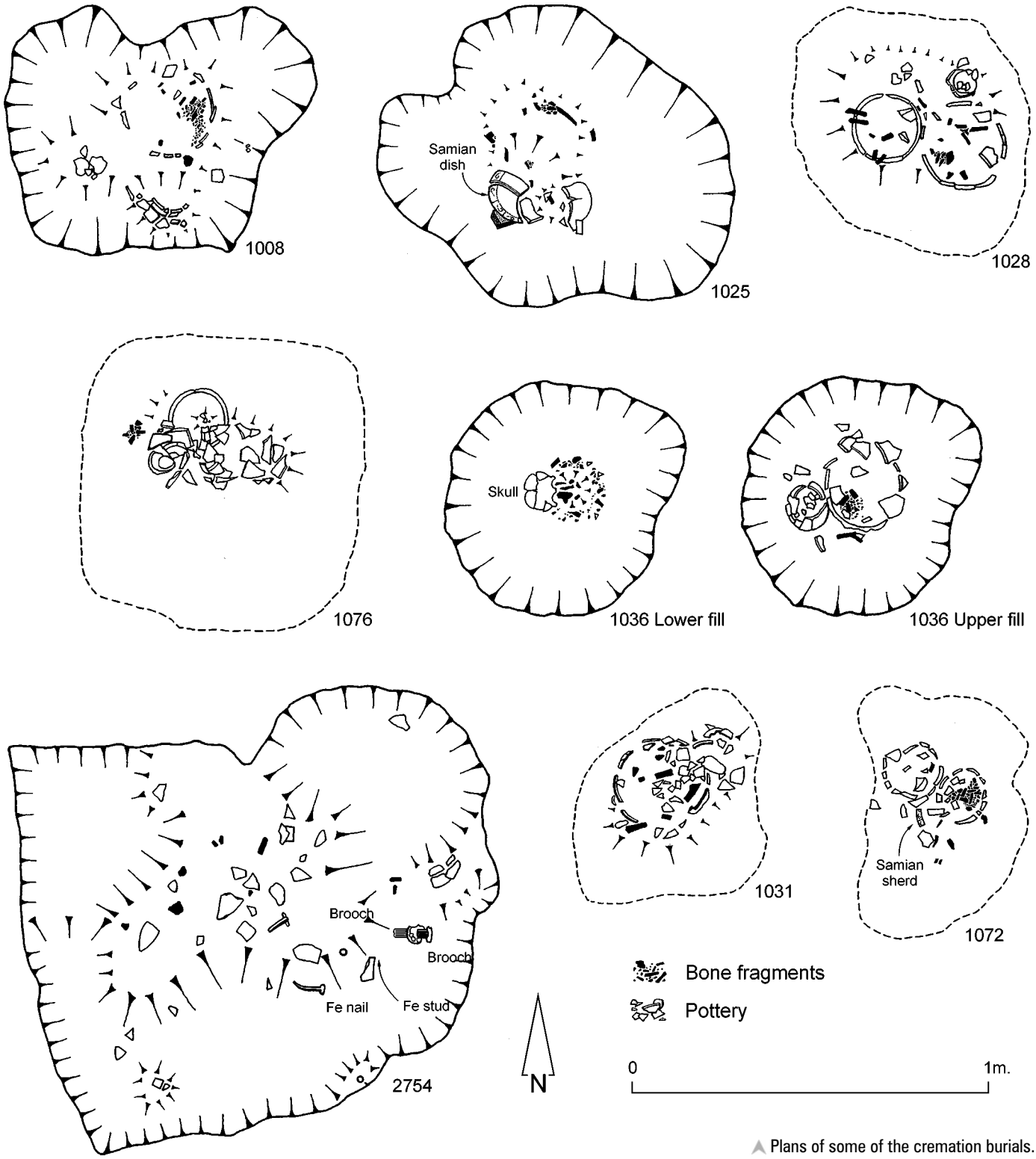
Plan of Area A, south-west sector.

Man and machines, initial topsoil removal.

Location and excavation of features exposed in the subsoil.

Plan of Area A, south-east sector.





Plans of some of the cremation burials.

Roman villa at East Malling about 1 km. to the north.

Of numerous pits discovered, two contained hammerscale evident of iron smithing. Two other pits were used for clay-puddling, others were clay-lined and probably used for grain storage. A series of narrow ditches or gullies were scattered across the site. None seemed to serve as boundary ditches, but in some instances they appeared to be aligned in roughly parallel pairs, perhaps de-limiting trackways between fields or property plots.

To the south a cemetery containing at least thirty-five burials was discovered. There were thirteen inhumation burials of Late Iron Age to Roman date and twenty-two cremations of late first- to early second-century date. Ten other possible cremation burials were inferred. The cemetery was bounded to the west by a recut shallow ditch and to the south by the edge of the scarp. The northern and eastern limits were not reached. One inhumation was surrounded by (and probably covered with) stone blocks. Another contained a copper alloy 'torc' and belt-mount. Other small finds recovered from graves were a coin of 'Cunobeline', a 'Langton Down' brooch and hobnails. Most of the cremations were accompanied by ancillary food and drink vessels, although most were severely plough-damaged. Some contained other grave goods such as

jewellery. One cremation appears to have been contained in a small wooden casket and another in a bag or pouch.

Through the Late Iron Age and the first two centuries of the Roman period the site developed into a small settlement with an associated cemetery. The settlement may have functioned as a farmstead, perhaps under the auspices of the East Malling Roman villa to the south, although a small roadside village is also a possibility. Sometime during the second half of the second century, in common with many other Roman rural sites in Kent, the settlement appears to have been largely abandoned. The reason for abandonment here, or at other sites, is still not fully understood, but it perhaps reflects a settlement shift or more likely changes in the way the land was farmed.

Only one Late Roman feature, representing some re-use of the site was located. This was a sand quarry pit situated close to the earlier cemetery site. The fill of the pit contained pottery of late third- to fourth-century date. A number of post-holes were found cut into the western edge of the feature and these may relate to later fence lines or animal pounds. No evidence for occupation of this date was found.

Much later, during the medieval or early post-medieval period two very straight parallel ditches, 5 m. apart, were cut north-south across the site. These may have been drainage ditches either side of a cart track, although no evidence of metalling or wheel ruts was revealed. Finally at the base of the western slope, beyond the area of excavation, a series of large circular features was revealed. One contained post-medieval pottery and a clay-pipe stem. These features were possibly connected with the park surrounding the early seventeenth-century Bradbourne House.

Location of the site.

The work was commissioned and funded by Redrow Homes.

15 Abbey Fields and Cyprus Road, Faversham

John Willson

An archaeological watching brief was supervised by Jonathan Rady during October and November 1997 to the north of Cyprus Road, Faversham. The brief was maintained during the installation of a new 600 m. length of sewer pipe, the construction of a new pumping station and other works in an area now known as Abbey Fields (TR 0205 6125 to TR 024 617).

A sequence of deposits was observed, mostly waterlogged, the deepest being a sterile silt and clay alluvium. This was overlaid by patches of water-laid gravel, in turn overlaid by up to a metre of peat, which in its upper portion contained recent peg tiles, bricks, animal bone and some medieval and post-medieval pottery sherds. The peat was sealed by modern made ground. Much of these deposits probably relate to an ancient watercourse, now in part delineated by a reduced stream known as 'Cook's Stream'. In trenching to the east and further south both the peat and alluvial deposits disappeared and Head Brickearth was evident. This must represent the eastern bank of the earlier watercourse.

At the north end of the site, during excavations for a new man-hole, undisturbed deposits were encountered on the east bank of the postulated watercourse. Overlying the brickearth was an intact Roman soil horizon of dark grey-brown clay. This contained considerable quantities of Roman tile, some Roman pottery sherds, animal bone, burnt clay and flints. In the confines of the man-hole pit, it was not possible to determine whether this is an old topsoil or a midden deposit. Ploughsoil deposits completed the sequence.

Parts of the main block and south wing of a Roman villa, constructed in the first century A.D. and expanded in various stages into the third century, were excavated just 40 m. to the west of 'Cook's Stream' in 1965 (Philp 1968, 62–85). It is possible and quite likely that the considerable quantities of Roman building material recovered from the man-hole pit, and scattered about the adjacent ploughed fields, represent further buildings of the villa estate. However, as the suggested buildings lay on the east side of the watercourse that was probably much wider, deeper and perhaps navigable during the Roman period, they could also possibly represent a separate Roman site.

Interestingly, quantities of Roman material, suggestive of a building complex, have been found in a similar situation about *c*. 600 m. to the east, either side of Clapgate Stream close to the Television Relay Station. Eight-hundred metres further east again a major Roman villa estate complex is known situated adjacent to a freshwater spring or watercourse at Blacklands, Ewell (Philp 1997, 236–9). It appears therefore that there is a whole string of Roman sites situated either side of the Roman Watling Street, although mostly they fall to the north of it. More than twenty of these sites are now recognised as Roman villa sites. This new site at Abbey Fields clearly suggests the location of Roman buildings and although at presently not fully understood, it can be added to the growing list of known Roman sites along this corridor from the Medway area to Faversham.

The watching brief was commissioned and funded by Southern Water Services.

16 The Street, Iwade
John Willson

During May 1997 an evaluation excavation on land fronting the east side of The Street, Iwade (TQ 9016 6760) was carried out under the supervision of Simon Pratt prior to housing development. Twenty-one trenches were cut across the site.

The earliest evidence recovered was of an isolated, shallow, flat-bottomed pit at the east end of the site, which contained four sherds of a flint-tempered Deverell-Rimbury type pottery vessel of Bronze Age date, a flint flake and charcoal. The soil was not collected from this feature and no bone was seen during excavation; it is however, likely that the feature was either a solitary prehistoric cremation burial or perhaps a hearth.

Close to the frontage of the site and near the centre, five roughly bowl-shaped features, forming two distinct groups, were identified beneath the lower ploughsoil. The fills of all five features contained much charcoal. Those in the group closest to the road frontage also contained daub and pottery sherds indicating an early medieval date. Soil recovered from all five features was sieved and yielded both slag and hammerscale, evidence of both the smelting and smithing of iron. It would appear that they probably represented heavily ploughed-out ash pits, but might have been metalworking hearths or fire pits. The evidence was indicative of small-scale iron working on the site in the late twelfth to early thirteenth century.

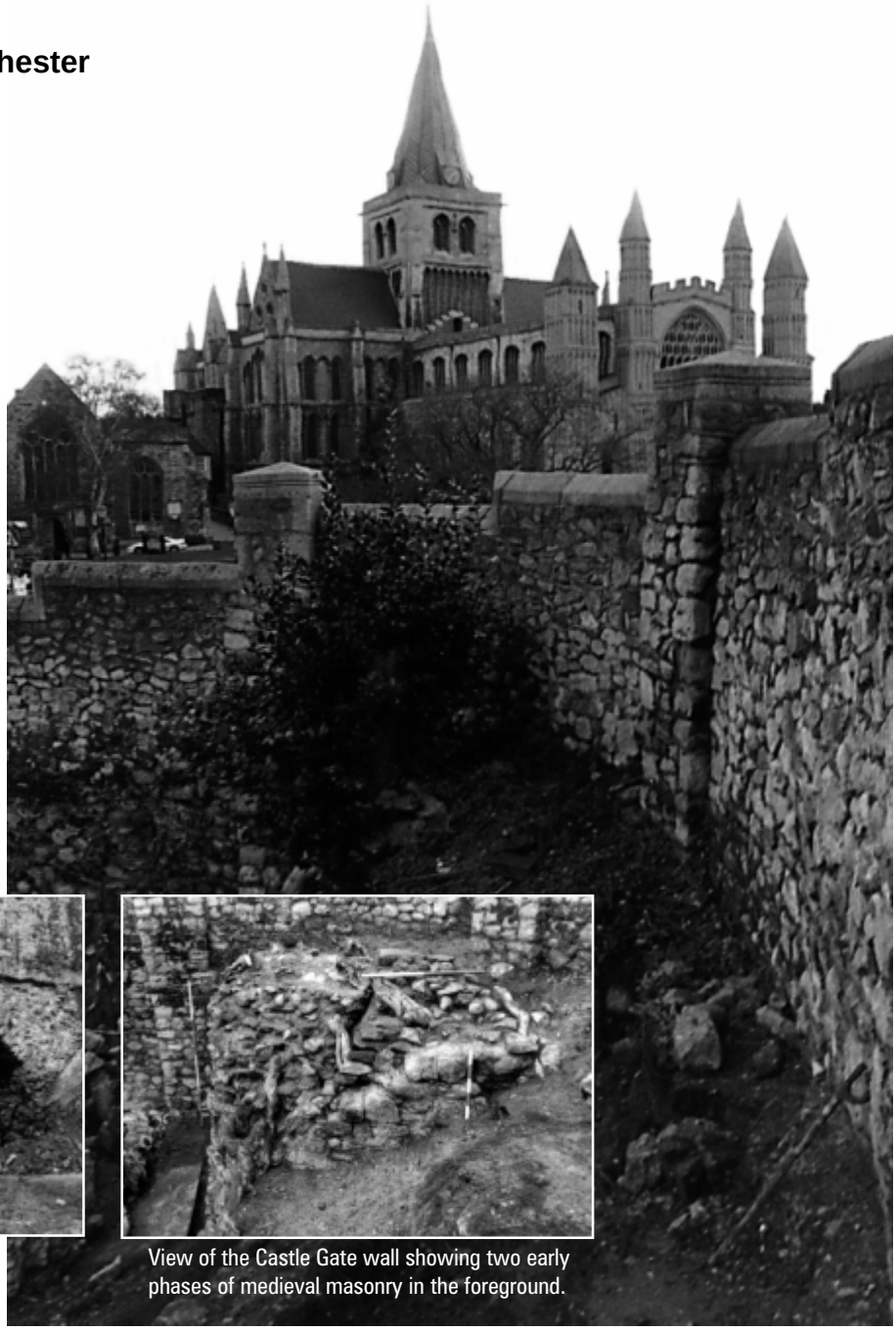
The evaluation was commissioned and funded by Ward Homes.

17 No. 40 High Street, Rochester
John Willson

In October 1997 a watching brief was maintained under the supervision of Alan Ward during the demolition of an unstable wall to the rear of 40 High Street (TQ 7420 6863). The post-medieval ragstone wall had been cut into the rampart of the first castle at Rochester and it was thought possible that traces of the castle wall or gatehouse might be visible once the more recent wall was removed.

Two portions of medieval masonry were in fact revealed, probably representing different phases in the development of the main castle entrance. There is documentary evidence for work at the gate in 1237, 1249–50 and *c.* 1370. The limited extent of the exposed masonry made assignment to a particular building campaign difficult, but it was considered likely that the masonry formed the solid base for the gate structure.

The National Westminster Bank commissioned and funded the work.



General view of the Castle Gate wall.

Rochester Castle showing the arches of construction exposed in 1995 on the south side of Epaul Lane.

View of the Castle Gate wall showing two early phases of medieval masonry in the foreground.

18 Rochester city wall

John Willson and Alan Ward

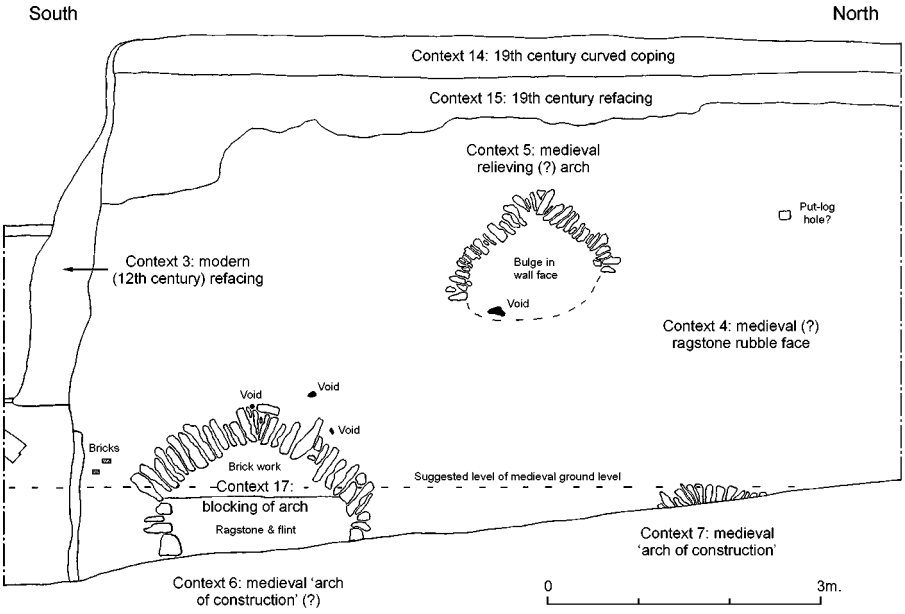
During July 1997 members of the Trust undertook cleaning and recording of a section of Rochester's defensive wall known as the Breach Wall (TQ 7440 6836). This is situated south of the High Street and overlooks Eagle Court Gardens. The work was supervised by Alan Ward.

After the clearance and pruning of the existing shrubbery and a little cleaning to both faces, a 28 m. length of wall was recorded by rectified photography. However, the presence of sheds in the Deanery Garden, against the rear face of the wall, necessitated recording by measured hand drawings.

Although much of the wall had been subjected to refacing and repairs, a considerable area of the original wall surface remained visible. Several interesting features were recorded, in particular a series of three arches. Two of these arches are at ground level and had been recorded in the internal face of the wall in the 1960s (Harrison and Flight 1968, 67). The northernmost arch was probably never designed to be visible and is probably the remains of a so-called 'arch of construction'. The function of the other two arches remains open to conjecture.

Beyond the Breach, a large arch supports a much-repaired later medieval wall across what is known as the King's Orchard Ditch. The most likely function of the arch is that it formed a drain for waste water from the cathedral precinct. Its size implies that there may have been a near continuous flow of water and it is possible that springs, known to have been in existence to the south in the area of the Vines, may have flowed through it. This stretch of wall ends in a rebuilt tower at the south-east corner of the defences.

This episode of work formed the last part of a long term project of cleaning, recording and repairing the whole of the city defences in the care of Rochester-upon-Medway City Council, who kindly commissioned and funded the Trust's work. Thanks are extended to their representatives, Paul Ritson, Cathy Arnold and david Tucker for their assistance, to the volunteers (Jamie, Hugh, Avril, Christine, Beccy, Pauline, Bob and Graham) and to the Dean and Chapter for allowing access to the cathedral precincts.



The 'Breach' Wall, Rochester: elevation showing three built-in relieving arches and an original put-log hole.

Other sites investigated during the year

This section gives a list of some of the sites visited during the period April 1997 to March 1998 where very little or no archaeological evidence was encountered:

Aylesford Sand Quarry, Bull Lane
Benenden, Eaton Farm
Canterbury, Iffin Lane
Canterbury, Marshwood Close, Sturry Road
Canterbury, Thanington Pumping Station, Wincheap
Chatham, Fort Amherst
Faversham, Lammas Gate, Abbey Street
Guilton, Guilton Road
Lenham, Chilston Park House, Sandway
Maidstone, King Street
Maidstone, Pested Bars Road
North Cray, Church Centre
Ospringe Brickworks, London Road
Penshurst, Foul Water Sewer Works
Preston, Nr. Wingham, The Street
Rainham,, Motney Hill
Ramsgate, Chilton Primary School
Rochester, Coach Parking Areas
Rochester, French Hospital
Sandgate, Esplanade & Castle Street
Strood, Temple Manor
Waldershare, Garden Cottage
Whitstable, 34 Harbour Street
Wye, College Car Park

Building Recording

A The Bishop's Finger, No. 13 St Dunstan's Street, Canterbury

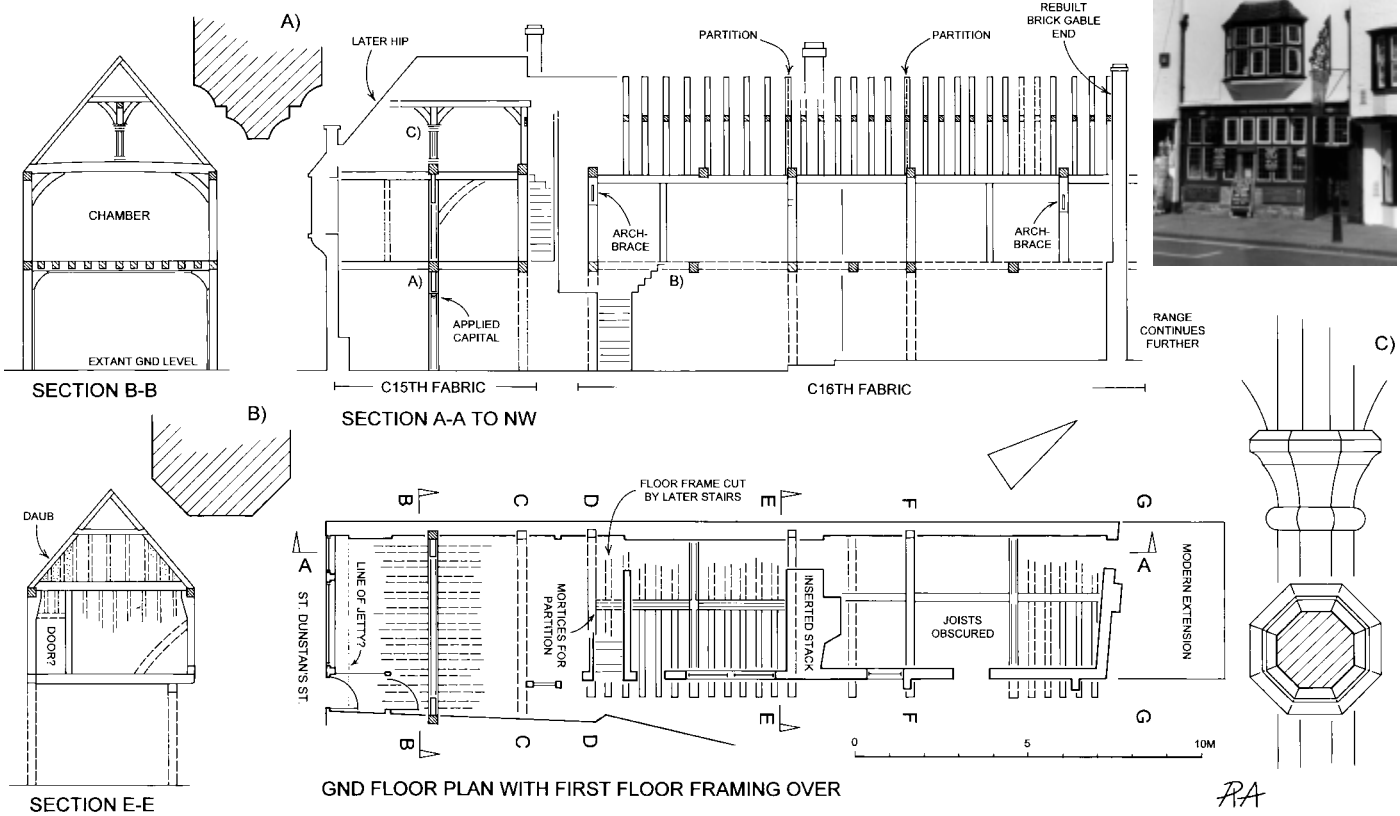
Rupert Austin

The Bishop's Finger public house is located outside the city walls on the north side of St Dunstan's Street within 100 metres of the medieval Westgate. A summary survey of the building was undertaken in advance of alterations during April 1997.

A substantial timber-framed building lies behind the modern façade of the property. This extends for approximately 26 m. behind the narrow frontage and is of two distinct phases of construction. The earliest part dates from the late fifteenth century and fronts the street. A second range, of possible sixteenth-century date, has been added to the rear.

The fifteenth-century element is aligned at right angles to the street and presently comprises two bays. Investigation revealed that it was once longer, comprising perhaps three bays. A single chamber occupies the first floor of the surviving part. This chamber was once open to the roof, its crown-post (which still survives) exposed to view. It seems likely that the roof originally presented a gable to the street, but this has since been changed to a hip. The property was undoubtedly jettied at first-floor level towards the street. A single room occupies the ground floor of the building. Arch-braces rise from posts on either side of this room to meet a central bridging-beam; both braces are embellished with cavetto mouldings.

General view of street frontage.



The rear of the fifteenth-century building was dismantled to make way for the sixteenth-century range. This three bay range increased the accommodation available within the property considerably. It is continuously jettied to the east where it faces a narrow passage or courtyard. The structure is rather indifferently made, its plain collar rafter roof incorporating much re-used timber. Both of the two chimneys are later insertions. That at the centre is the earlier, dating perhaps to the seventeenth century.

B Nos 1–2 North Lane, Canterbury

Rupert Austin

This property is located along the north-west side of North Lane close to its junction with St Dunstan's Street. It started life as a single timber-framed building of seventeenth-century date however by the nineteenth century it had been divided into two smaller properties. An architectural survey of the surviving elements of the timber-frame was undertaken prior to its conversion to a public house.

The seventeenth-century building comprised a two bay structure covered by a clasped side-purlin roof. It was continuously jettied towards the street with an external chimney stack at the rear. An attic floor was an integral part of the structure from the outset. It seems the panels of the frontage were originally infilled with brick nogging rather than daub.

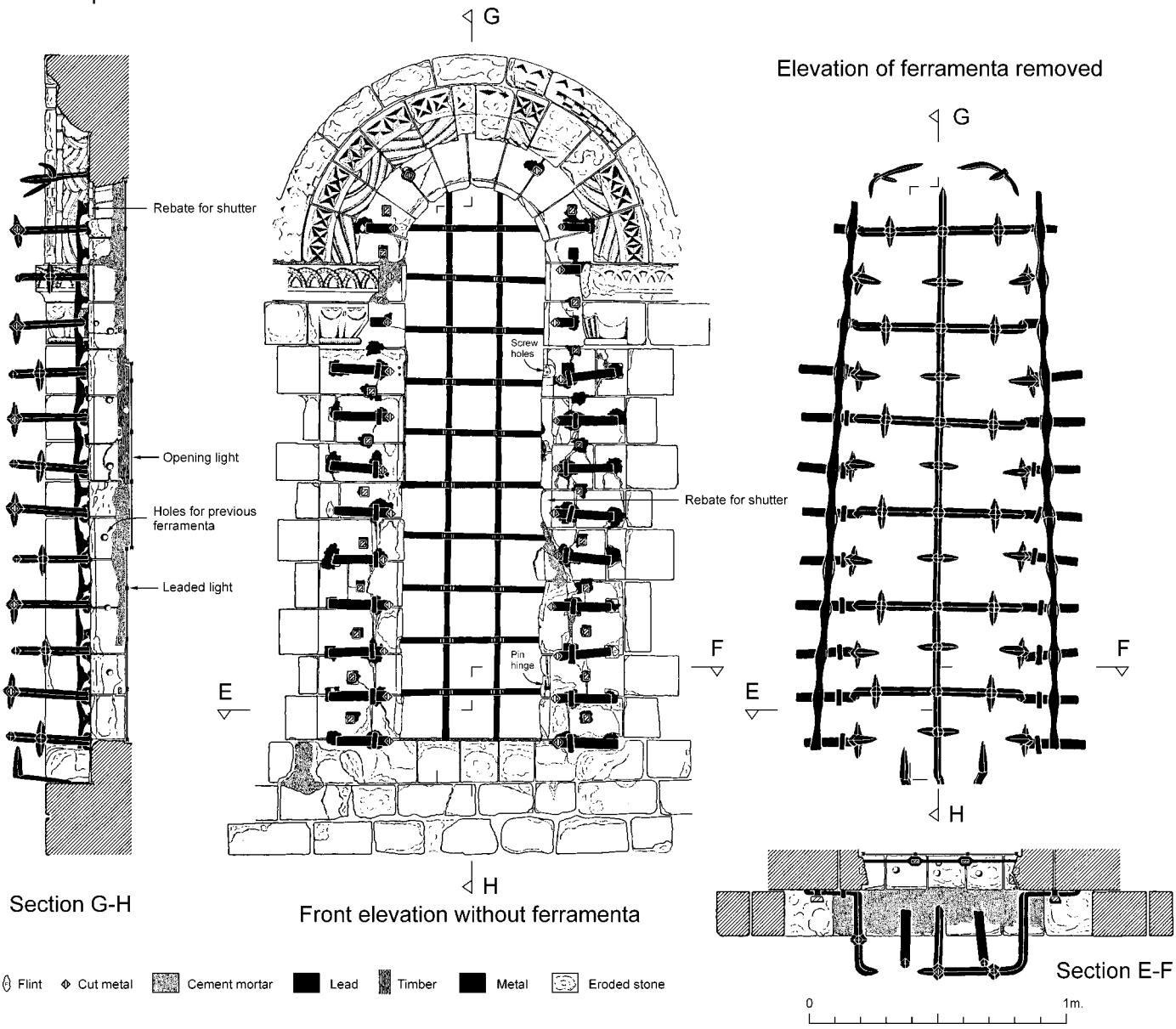
Many of the timbers used in the construction of the property are of small scantling, a feature that is not unusual for the period. Surprisingly the original jetty-plate (something that has usually been displaced by a modern shop front) still survives. Evidence for two wide (5 ft. 9 in.) openings could be seen on the soffit of this plate. These openings suggest that shops or lockups occupied the ground floor of the property, not accommodation. The openings were perhaps closed by double doors and may simply have been for access. Alternatively, they may have been shuttered and fitted with counters over which goods could be sold. It seems likely that the shops were independent of the first-floor accommodation; no evidence for stairs leading to the first-floor rooms was uncovered within the shops. Evidence for the arrangement of shops is rare; the clues uncovered here are of some interest.

The end bay of the adjoining building (No. 5 St Dunstan's Street) has in recent years been incorporated into Nos 1–2 North Lane. A wide passage for carts and wagons runs through this bay at ground-floor level. This is an original feature of the bay, not a later insertion as was first thought. Whilst many such passages remain in Canterbury it is unusual for the surrounding medieval fabric to survive.

General view of North Lane frontage.

C The Great Dorter, the Frater and Treasury Windows, Christ Church Priory, Canterbury

Rupert Austin



▲ Canterbury Cathedral Treasury window: North.

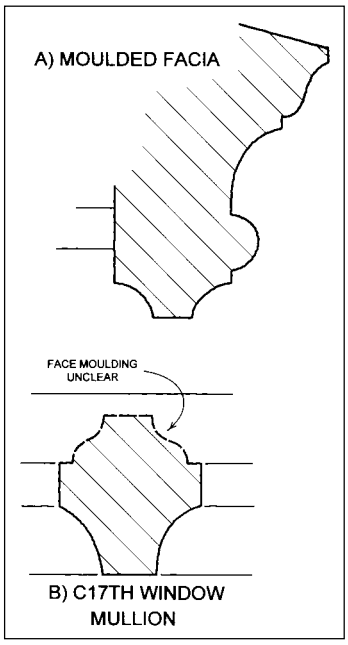
The ruins of the Great Dorter, an enormous dormitory built by Archbishop Lanfranc in the eleventh century to house 150 monks of Christ Church Priory, lie to the north of the cathedral. A survey of the interior of the structure was undertaken by the Trust in 1989. Repairs to the exterior west elevation during the summer of 1997 afforded an opportunity for further recording. This elevation lies above the roof of the fourteenth-century cloisters and now forms part of the cathedral library. It is one of the more interesting parts of the building. Several original round-headed windows, incorporating cushion capitals and engaged columns, survive here above a decorative arcade.

The remains of the thirteenth-century Frater (demolished in 1546) can be seen within the Archdeacon's garden to the north of the cloisters. The east elevation of this building abuts the west wall of the Great Dorter. An attractive but badly eroded arcade comprising trefoil pointed arches runs the length of end of the building at first-floor level. The arcade formed the backdrop to a dias which occupied the east end of the refectory hall. Small dowel holes, some still containing fragments of metalwork, could be seen all over the arcade. These suggest that further decoration once adorned the elevation.

Two of the treasury windows, those in the east elevation at first-floor level, were drawn in advance of restoration. The later ironwork that secured these windows had corroded and was causing damage to the window jambs. Detailed drawings of this ironwork, which is thought to date from the seventeenth century, were prepared together with drawings of the window behind. Evidence for a series of shutters and iron grills could be seen on the surrounding masonry of these windows. Once surveyed, the ferramenta was removed for conservation and the windows restored.

D Manor House, Fordwich

Rupert Austin



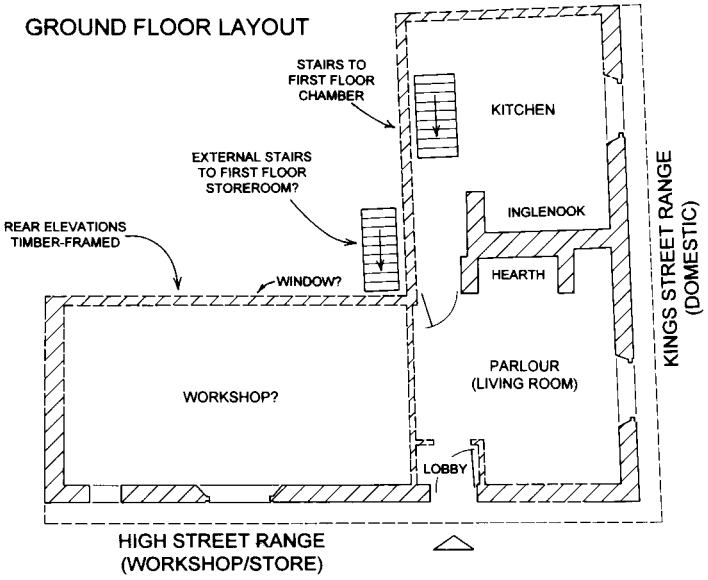
General view of High Street and Kings Street frontages.

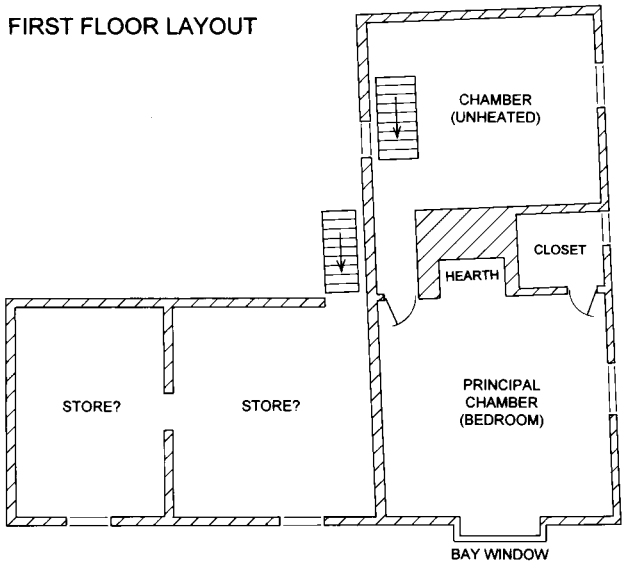
Manor House is centrally located within Fordwich at the junction of the High Street and King's Street. An architectural survey of the building was undertaken at the request of its owner prior to restoration. The building, which probably dates from the early seventeenth century, comprises two distinct but contemporary ranges built at right angles to each other. The upper floors of both ranges are timber-framed and jettied whilst the ground-floor elevations are of brick. The King's Street range is clearly domestic however the High Street range appears to have functioned as a workshop or store.

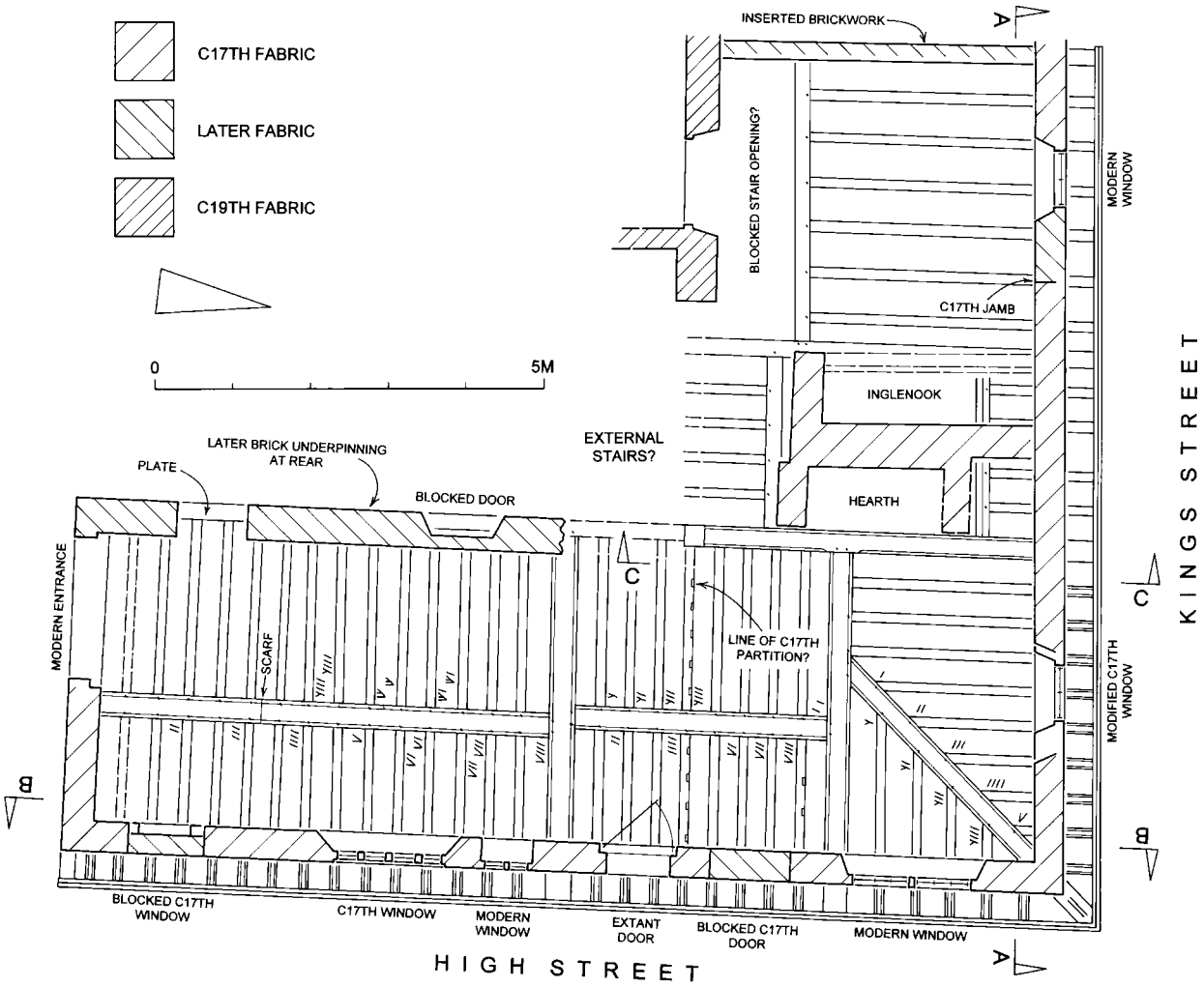
The survival of such a building containing a large element devoted to commerce is an interesting discovery. That it should be located in the ancient port of Fordwich is perhaps less of a surprise. Fordwich enjoyed a period of great prosperity between the mid sixteenth and mid seventeenth centuries as an outport of Canterbury. The commodities that were loaded and unloaded from its quayside were numerous and varied. Craftsmen and traders flourished in the town at this time.

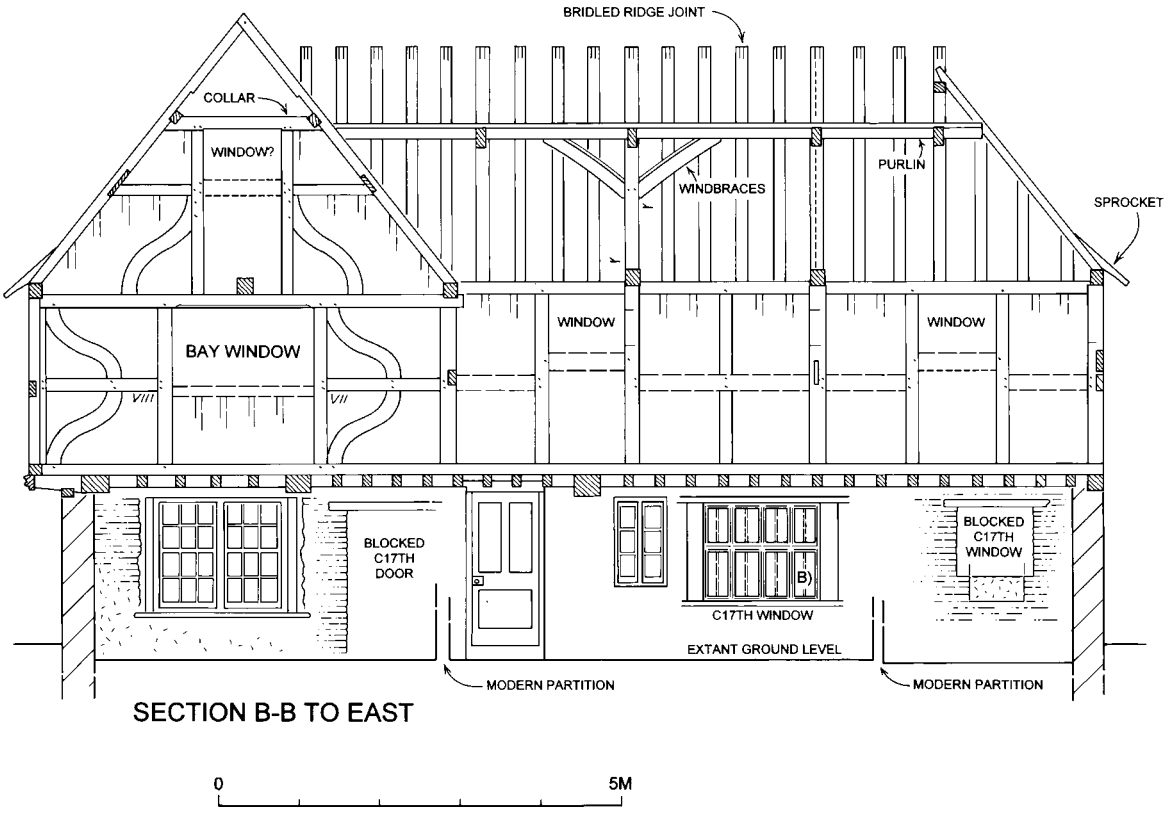
The original (now blocked) entrance to the domestic range of the house was revealed during restoration works to the right of the present front door. It led via a small lobby into the principal ground floor room of the house. This room is heated by a large hearth and was lit by a splayed window (now enlarged) in the north wall of the range. A second room lies to the rear of the first. A substantial inglenook fireplace with evidence for a chimney crane and bottle jack confirms that this room was the kitchen. Stairs to the first floor were once located against the south wall.

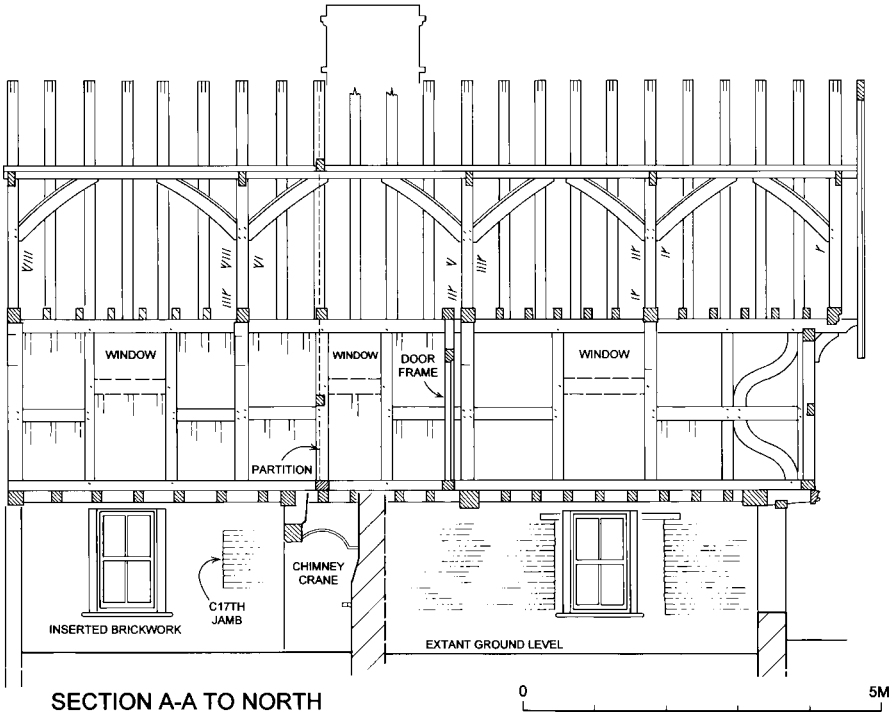
The master bedroom occupied the front of the range at first-floor level. This was heated by a large fireplace and ceiled by a contemporary attic floor. An oriel window was once located in the east wall of the room. A further convenience was a small closet to the right of the fireplace. This may have provided privacy for dressing or for the use of a chamber pot. An attic or garret room, certainly an original feature of the building, lies



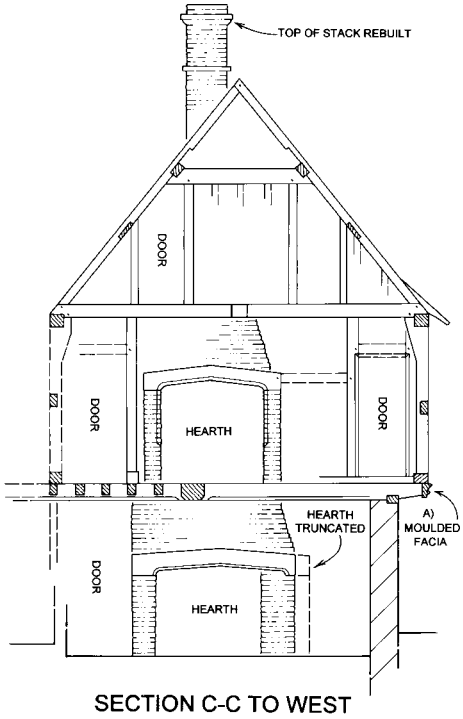



C17TH FABRIC
LATER FABRIC
C19TH FABRIC
0
5M
INSERTED BRICKWORK
A
BLOCKED STAIR OPENING?
MODERN WINDOW
C17TH JAMB
INGLENOOK
HEARTH
EXTERNAL STAIRS?
LATER BRICK UNDERPINNING AT REAR
PLATE
BLOCKED DOOR
C
LINE OF C17TH PARTITION?
MODERN ENTRANCE
SCARF
MODIFIED C17TH WINDOW
KINGS STREET
B
BLOCKED C17TH WINDOW
C17TH WINDOW
MODERN WINDOW
EXTANT DOOR
BLOCKED C17TH DOOR
MODERN WINDOW
HIGH STREET


BRIDLED RIDGE JOINT
COLLAR
WINDOW?
WINDBRACES
PURLIN
SPROCKET
BAY WINDOW
WINDOW
WINDOW
BLOCKED C17TH DOOR
B
C17TH WINDOW
BLOCKED C17TH WINDOW
EXTANT GROUND LEVEL
MODERN PARTITION
MODERN PARTITION
SECTION B-B TO EAST
0
5M



SECTION A-A TO NORTH



SECTION C-C TO WEST

above the main bedroom. Garrets were commonly used for storage; inventories of the period list the many items people stored in their garrets. A servant or lesser member of the household may also have been accommodated in this room. An unceiled unheated chamber lay to the rear of the master bedroom on the first floor.

The High Street range appears to have been independent from the domestic range with no internal connection between the two. A large single room occupies the ground floor. A seventeenth-century window with moulded oak mullions survives in a splayed opening in the front wall of thts room. Although the room was well lit it is unheated with joists exposed overhead. This and its large size suggest it may have been used a workshop. A second smaller opening (now blocked) can be seen to the south of the extant window. This may have been no more than a secondary window but in a building such as this a shuttered opening for the receipt or production of goods or money is a possibility.

Surprisingly there was no evidence for internal stairs within the High Street range. Access to the first floor can only have been via an external staircase. The most likely position for this seems to have been to the rear at the internal corner of the two ranges. The first floor originally comprised two unheated rooms. Both were open to the roof and lit by single small windows along the frontage. The lack of heating and poor illumination suggests the upper floor was used for storage rather than as a workshop.

The timber-framed upper floor of Manor House is constructed in a conventional manner that is typical of the period. Decorative ogee braces are used in the panels of the domestic range, something that distinguishes it from the workshop range where they are absent. The use of ornamental framing such as this is comparatively rare in Kent and does not generally appear until the end of the sixteenth century. A clasped side-purlin roof with windbraces and queen struts has been employed over both ranges.

The English bond ground-floor brickwork is an original feature of the building along its two frontages (the rear elevations were timber-framed at first). Structural use of brick beneath a timber-framed building in this way is unusual. One might expect brick nogging but not solid walls. A brief look at the surrounding properties within the centre of Fordwich reveals, however, an abundance of early brickwork. Clearly brick had become popular within Fordwich at an early date, something that may well be connected with its status as a port. Brick was still an expensive material in the seventeenth century, one that was often used for reasons of status and fashion. Its use was often restricted to the more visible aspects of a building.

Manor House, a fairly sizeable and well appointed dwelling for its time, must have been home to an affluent merchant or craftsmen who lived in one half of the property and conducted his business in the other. The use to which the non-domestic elements of Manor House were put is not known, but the possibilities are many.

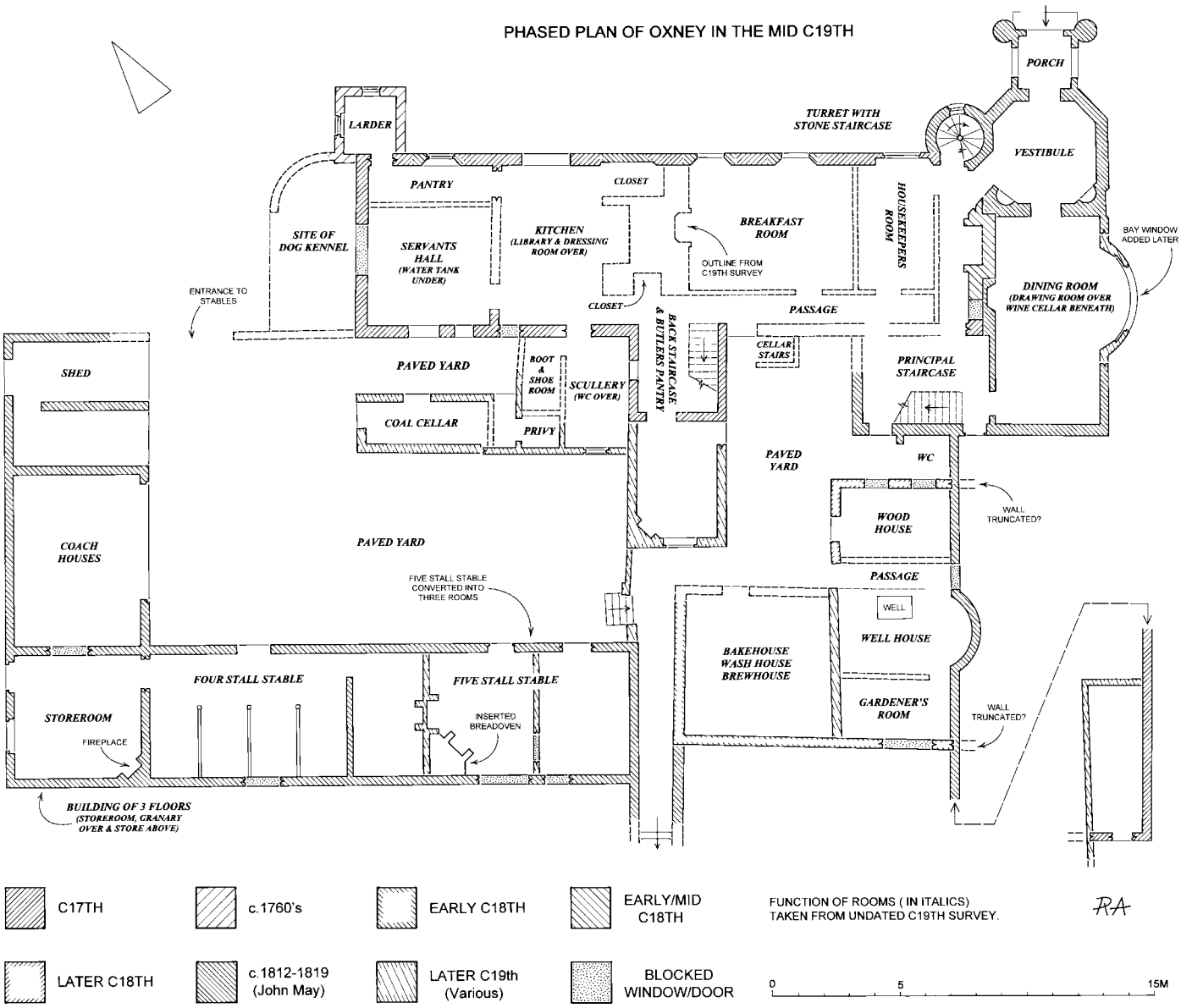
E Oxney Court, Ringwould

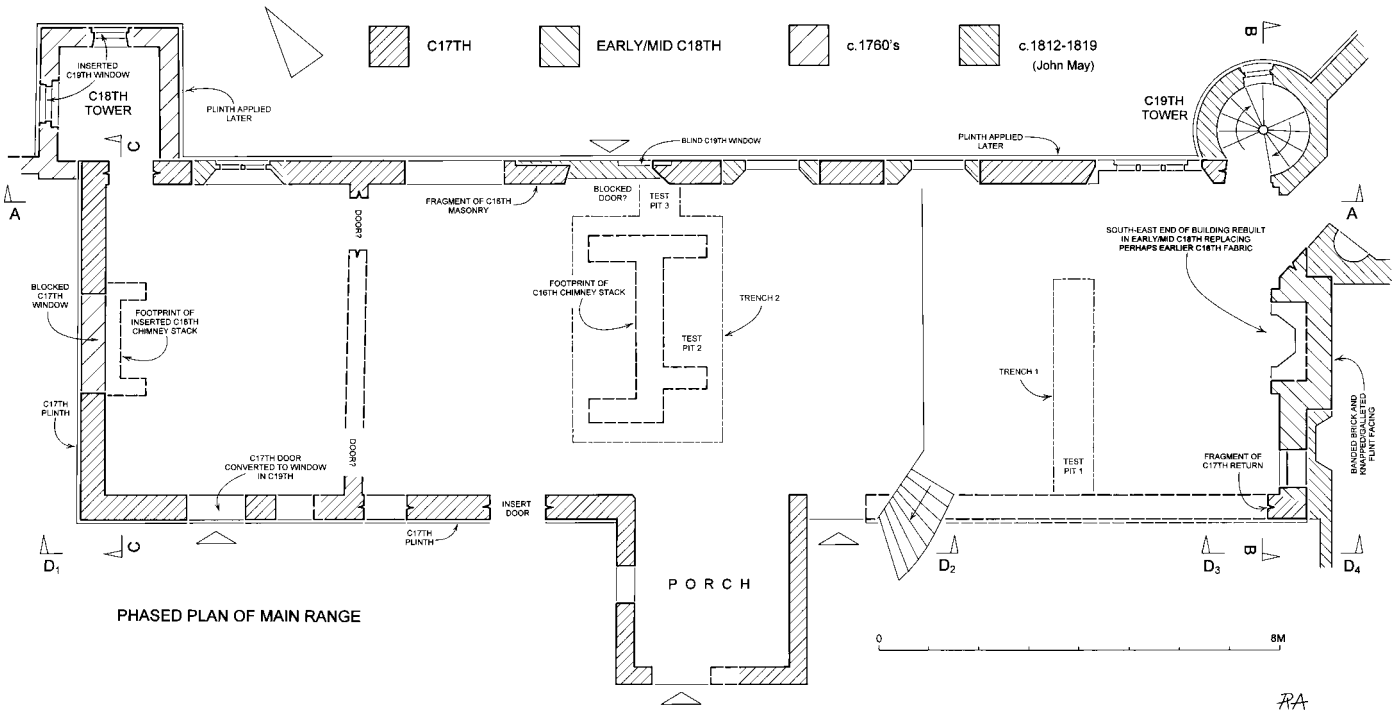
Rupert Austin

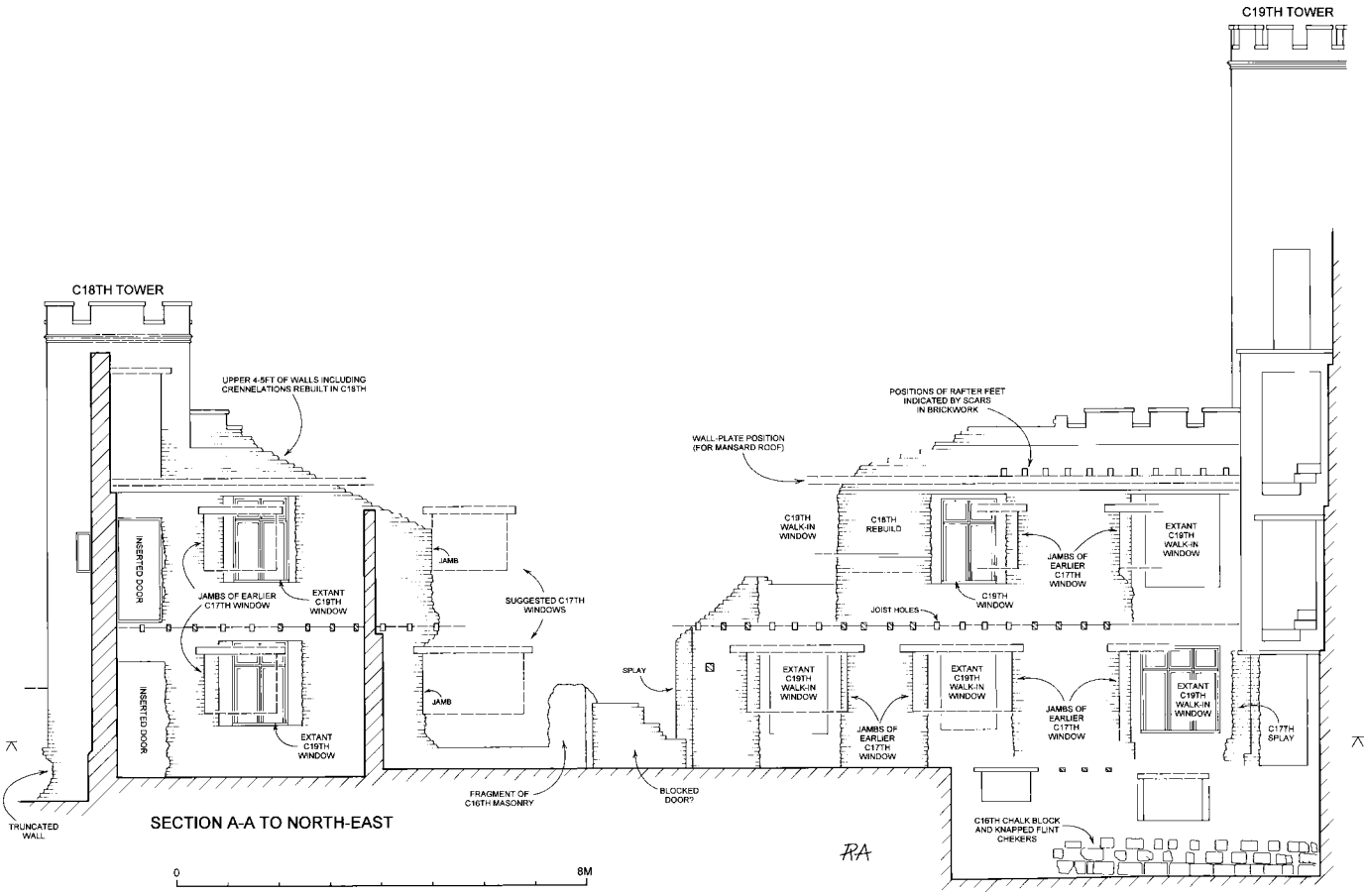
Oxney Court is located on the A258 between Dover and Deal close to the village of Ringwould. The ruins of this substantial country house lie in a secluded spot amongst trees close to the main road. An archaeological survey of the standing remains together with some below ground investigation was undertaken in 1998 in advance of an ambitious scheme to rebuild the house.

In recent years Oxney has been erroneously titled a manor; it was never an organised medieval manor in the historic sense of the word. It seems to have been, from the earliest times, no more than a single estate or farm belonging to a single owner with a nearby church functioning perhaps as a private chapel. Oxney does however form its own parish and at around 319 acres this is one of the smallest in Kent.

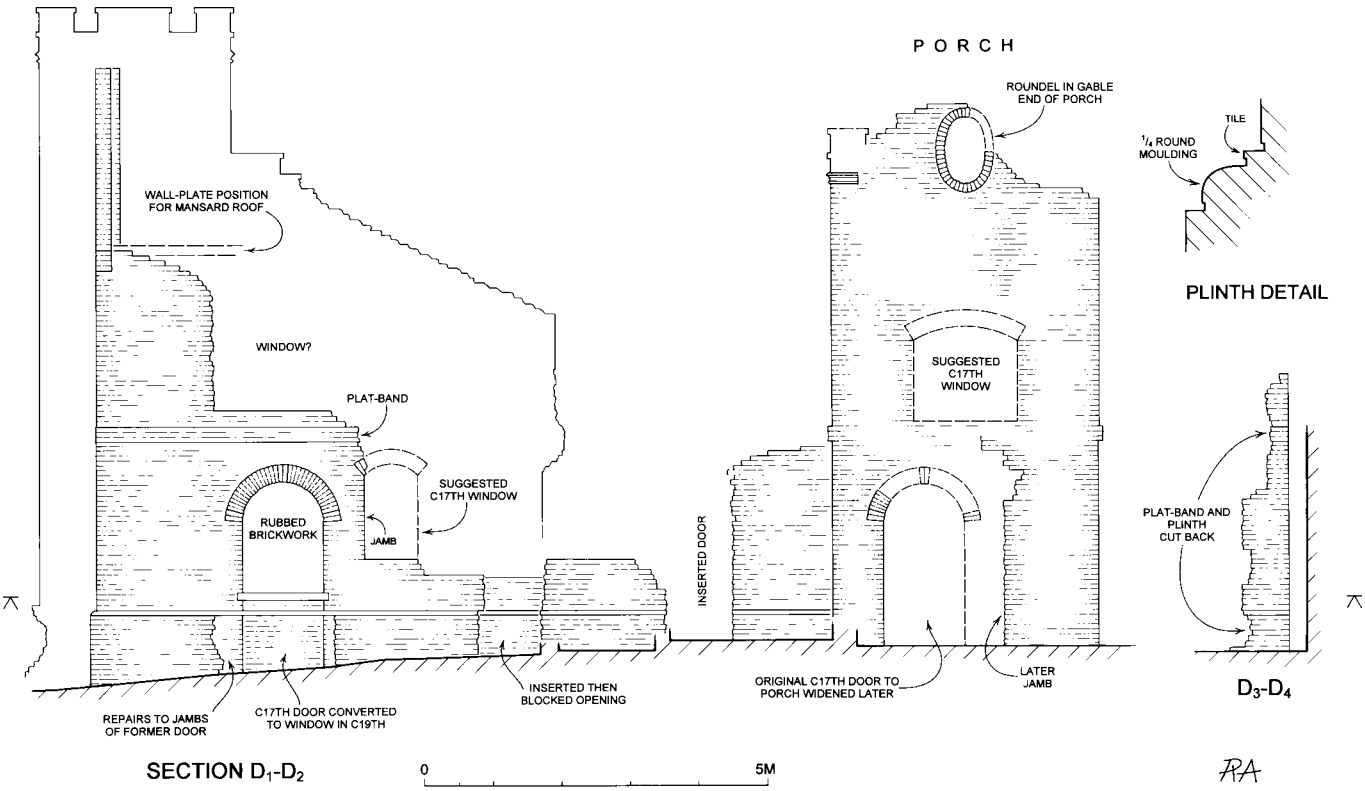
The earliest reference to Oxney appears in a charter of 1038–4, however it does not make a repeated appearance in the records until the twelfth century, when it was held by the Auberville family of Westenhanger. It eventually passed into the Criol family through the marriage of Sir William de Auberville's grandson's only daughter and heir Joane. The Criol's held Oxney until the fourteenth century when it fell to the


PHASED PLAN OF OXNEY IN THE MID C19TH
PORCH
TURRET WITH STONE STAIRCASE
VESTIBULE
LARDER
PANTRY
CLOSET
SITE OF DOG KENNEL
SERVANTS HALL (WATER TANK UNDER)
KITCHEN (LIBRARY & DRESSING ROOM OVER)
BREAKFAST ROOM
OUTLINE FROM C19TH SURVEY
HOUSEKEEPERS ROOM
BAY WINDOW ADDED LATER
DINING ROOM (DRAWING ROOM OVER WINE CELLAR BENEATH)
ENTRANCE TO STABLES
CLOSET
PASSAGE
BACK STAIRCASE & BUTLERS PANTRY
CELLAR STAIRS
PRINCIPAL STAIRCASE
SHED
PAVED YARD
BOOT & SHOE ROOM
SCULLERY (WC OVER)
COAL CELLAR
PRIVY
PAVED YARD
WC
WALL TRUNCATED?
WOOD HOUSE
COACH HOUSES
PAVED YARD
FIVE STALL STABLE CONVERTED INTO THREE ROOMS
PASSAGE
WELL
WELL HOUSE
BAKEHOUSE WASH HOUSE BREWHOUSE
FOUR STALL STABLE
FIVE STALL STABLE
STOREROOM
INSERTED BREADOVEN
GARDENER'S ROOM
WALL TRUNCATED?
FIREPLACE
BUILDING OF 3 FLOORS (STOREROOM, GRANARY OVER & STORE ABOVE)
C17TH
c.1760's
EARLY C18TH
EARLY/MID C18TH
FUNCTION OF ROOMS (IN ITALICS) TAKEN FROM UNDATED C19TH SURVEY.
LATER C18TH
c.1812-1819 (John May)
LATER C19th (Various)
BLOCKED WINDOW/DOOR
0
5
15M
RA


C17TH
EARLY/MID C18TH
c.1760's
c.1812-1819 (John May)
INSERTED C19TH WINDOW
C18TH TOWER
PLINTH APPLIED LATER
C19TH TOWER
BLIND C19TH WINDOW
PLINTH APPLIED LATER
FRAGMENT OF C18TH MASONRY
BLOCKED DOOR?
TEST PIT 3
DOOR?
SOUTH-EAST END OF BUILDING REBUILT IN EARLY/MID C18TH REPLACING PERHAPS EARLIER C16TH FABRIC
BLOCKED C17TH WINDOW
FOOTPRINT OF INSERTED C18TH CHIMNEY STACK
FOOTPRINT OF C16TH CHIMNEY STACK
TRENCH 2
TEST PIT 2
TRENCH 1
C17TH PLINTH
C17TH DOOR CONVERTED TO WINDOW IN C19TH
DOOR?
INSERT DOOR
C17TH PLINTH
TEST PIT 1
FRAGMENT OF C17TH RETURN
BANDED BRICK AND KNAPPED FLINT PLINTH
PORCH
PHASED PLAN OF MAIN RANGE
0
8M
RA



View of ruined west end of seventeenth-century range looking north.



View of ruined north-east frontage before restoration.

Rokesley family then to the Poynings. It was sold at the beginning of the fifteenth century to a Robert Tame.

No fabric of early medieval date was discovered during the survey neither of the standing ruins nor during the below ground evaluation of the site. It is suggested that any dwellings associated with the early medieval history of Oxney were located nearer the Church of St Nicholas. Twelfth-century fabric can clearly be seen in the ruins of this building which is located to the north-east of the house in dense woodland.

At some point towards the end of the fifteenth century Oxney fell into the possession of the Sidley family of Southfleet. Around 1500 John Sidley Esq., descendant and auditor to the exchequer, enlarged considerably what was then described as a small dwelling. The earliest fabric that can be seen within the house today appears to date from the Sidely's occupation of Oxney during the sixteenth century. It seems a new house was built at this time on a fresh plot. A few fragments of this house (a short length of chequered chalk and knapped flint cellar wall and the base of a chimney stack) survived in the ruins. These fragments revealed that the sixteenth-century building occupied much the same footprint as the building that replaced it (see below).

In the late seventeenth century the sixteenth-century building was almost entirely demolished and a new house erected on the same plot. The apparent ease with which the sixteenth-century building was removed (little trace of it was found in the ground) suggests it was a timber-framed structure rather than a substantial masonry affair. It is tempting to suggest a linear three-room plan comprising a kitchen to the north-west of the surviving stack, with hall and parlour to the south-east.

It is the late seventeenth-century rebuild that forms the core of Oxney today. From an architectural point of view it is the most interesting phase of Oxney's development. The new seventeenth-century building was a substantial affair measuring nearly 80 feet in length. Its plan was simple, a long two storey range beneath a single roof fronted by a central two storey porch. It was constructed entirely in red brick laid in Flemish Stretcher bond and was typically Kentish in appearance. When first built it would have been an impressive residence. Much of this structure has survived albeit disguised by later nineteenth-century work.

It quickly became clear when examining the seventeenth-century fabric that the extant nineteenth-century frontage is in fact the rear of the seventeenth-century building. The property has been turned around. The north-west and south-west elevations of the seventeenth-century building are clearly better appointed. Rubbed brickwork can be seen over door and window openings whilst a plinth with quarter round moulding runs along the base of the walls. These features are absent from the north-east elevation. Once the original frontage was recognised, traces of the main entrance (a projecting two storey porch) were easily identified.

The origins of the two lodges (both have been demolished but are shown clearly on the 1867 Ordnance Survey map) also becomes clear once the building's orientation is understood. The seventeenth-century lodge is located to the south-west at the junction of the St Margaret's and Dover–Deal roads. From here Oxney was approached down a long straight avenue. The second lodge and a winding drive to the north-east were added in the nineteenth century.

It seems likely that the end walls of the seventeenth-century building terminated in shaped gables. An illustration dated 1897 shows the end of a substantial barn (now demolished) that lay close to the main house. The end of this barn terminates in a shaped compass gable. Inspection of the surviving brickwork at the west corner of the main house revealed evidence for corbelling beneath the eaves, an essential requirement for a decorative gable. Shaped gables of Flemish influence were a feature of many brick buildings in the south-east during this period.

The 1897 illustration shows other structures close to the seventeenth-century house. The corners of two buildings (of similar style to the barn) can be seen. These may have been agricultural buildings, perhaps a granary or stable block. Oxney undoubtedly comprised a substantial complex of buildings by the end of the eighteenth century. Part of this complex was undoubtedly given over to farming.

The only heating within the seventeenth-century building appears to have been that provided by the sixteenth-century stack. It was not long however before this situation was improved. At some point, perhaps during the first half of the eighteenth century, the south-east end of the building was entirely rebuilt incorporating a terminal chimney stack with sizeable open hearths on both floors. The reconstruction comprised banded red brick and knapped galletted flint. Brick tumbling was employed where the flues of the stack narrowed. The new elevation was undoubtedly an attractive one, but it has since been hidden by later work.

The Sidley family remained in possession of Oxney until the mid eighteenth century when they sold the estate to Rose Fuller Esq. of Sussex. It was the Fullers who began the gothic transformation of Oxney, not John May as was first thought. This is confirmed when we inspect the smaller of the two towers that flank the present day facade. This appears at first to belong with the nineteenth-century remodelling of John May (see below) as it is built in the gothic style with crenellations and a first-floor lancet window. Once inside however we see that it is of eighteenth-century build, its brickwork distinctly different to the nineteenth-century work of May. A similar tower may well have been built at the opposite corner of the building (where May's large tower and porch now stand).

In 1812 Oxney was purchased by John May of Deal, a solicitor and banker, who expended large sums of money transforming the house and estate. He built an impressive drive from the north-east complete with its own stucco lodge, landscaped the grounds, built sizeable stables and repaired many of the existing farm buildings.

Although May did not introduce the castellated gothic style to Oxney he did however add considerably to what had been started. The house was enlarged under his directions from designs prepared by the architect R. Luger. A large octagonal gothic tower with entrance porch was added to the east end of the building. The seventeenth-century structure behind was gutted and a new range of rooms created including a substantial dining room, a large 42ft long drawing room, two reception rooms, three interior lavatories and a 'state of the art' bathroom. The fenestration of the seventeenth-century range and tower was completely revamped at this time. New windows were added; old windows were enlarged, narrowed, blocked or moved. May's work can be distinguished by its crisp nineteenth-century brickwork.

Drawings prepared by Luger show a far more impressive scheme than was ever built. Much of May's money came from lucrative contracts gained during the Napoleonic wars. When the wars came to an end depression followed and May's finances collapsed. Oxney was sold in 1827 to Richard John Roffey and then in 1838 to Sir Edward Banks, a civil engineer whose firm built London Bridge. The house and estate stayed with the Banks family for the next hundred years and little of any consequence in the way of building work appears to have been undertaken during this period. The Banks's main interest lay in the gardens and grounds.

Oxney was last occupied during the First World War when it was taken over by troops, and during which time it was vandalised. A mysterious fire destroyed the roof at this time and this seems to have marked the beginning of its decline to the ruinous state evident when the survey began.

F Wellington Dock Warehouses and Slipway, Dover

Keith Parfitt and Barry Corke

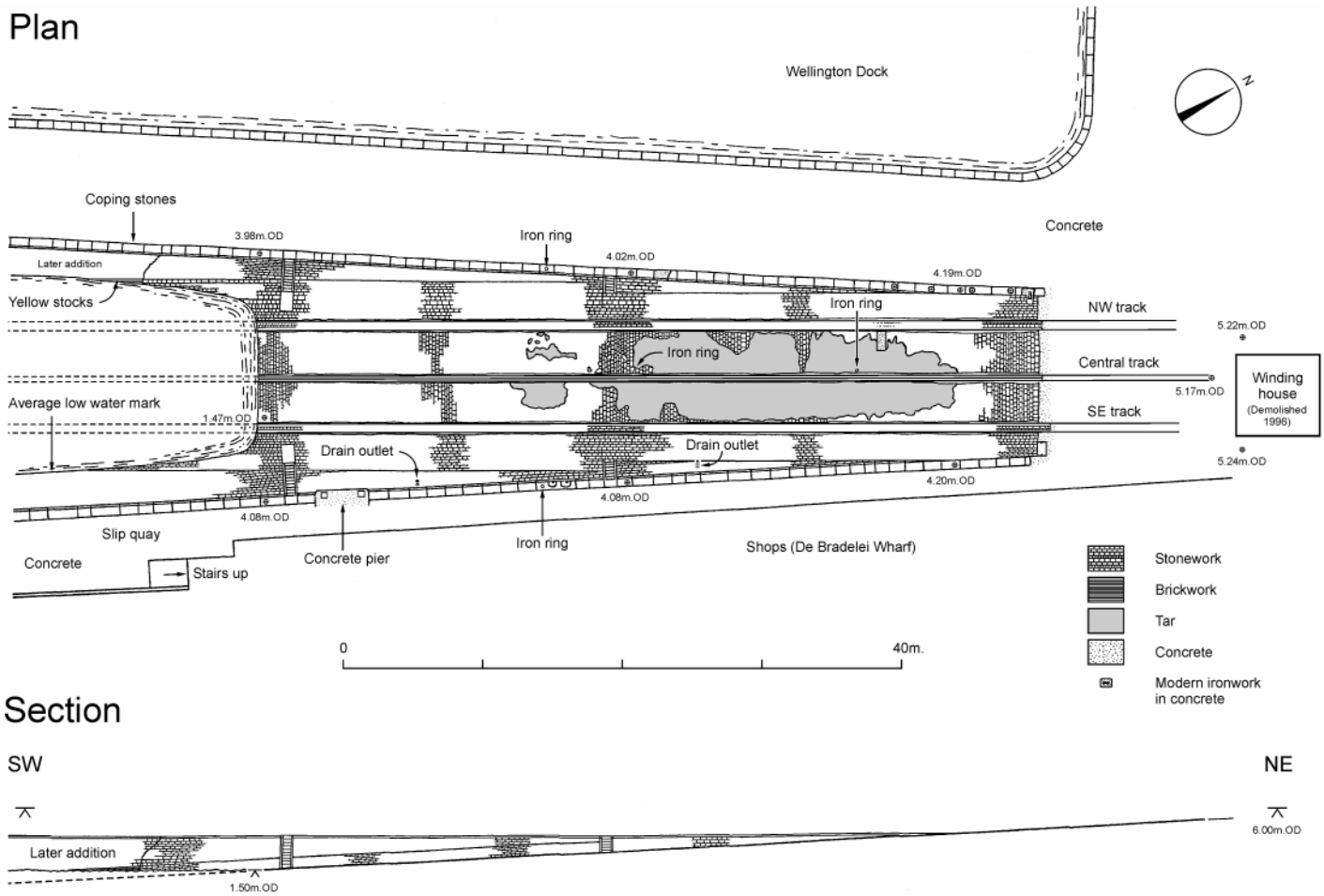
In 1997 proposals were put forward by Dover Harbour Board for the conversion of nineteenth-century dockside buildings fronting Slip Quay at the south-west end of Cambridge Road to form part of the de Bradelei Wharf shopping complex. The Trust was contracted to undertake an architectural and photographic survey of former workshops, stores and other buildings along the quayside. The adjacent nineteenth-century slipway was also recorded prior to its being built over to form an extension to a car park.

Named after the Duke of Wellington who was then Lord Warden of the Cinque Ports, Wellington Dock was constructed in the 1840s in the Great Pent at the mouth of the river Dour. The Great Pent had been established during the reign of Elizabeth I. In July 1849 work began on constructing a stone-lined slipway, complete with boat haulage cradle, pulled by a steam engine, on the south-eastern side of the dock (TR 3194 4110). This was known as the Patent Slipway and it was intended for use both in ship building and repair work. Its construction required the cutting back of the existing foreshore and the formation of a new quay, Slip Quay. The work was undertaken by Messrs Lee, already engaged at Dover as the main contractors for the construction of the Admiralty Pier. The slipway was completed in November 1850 and the first ship to make use of it was a small collier called the Eagle (Hasenson 1980, 105).

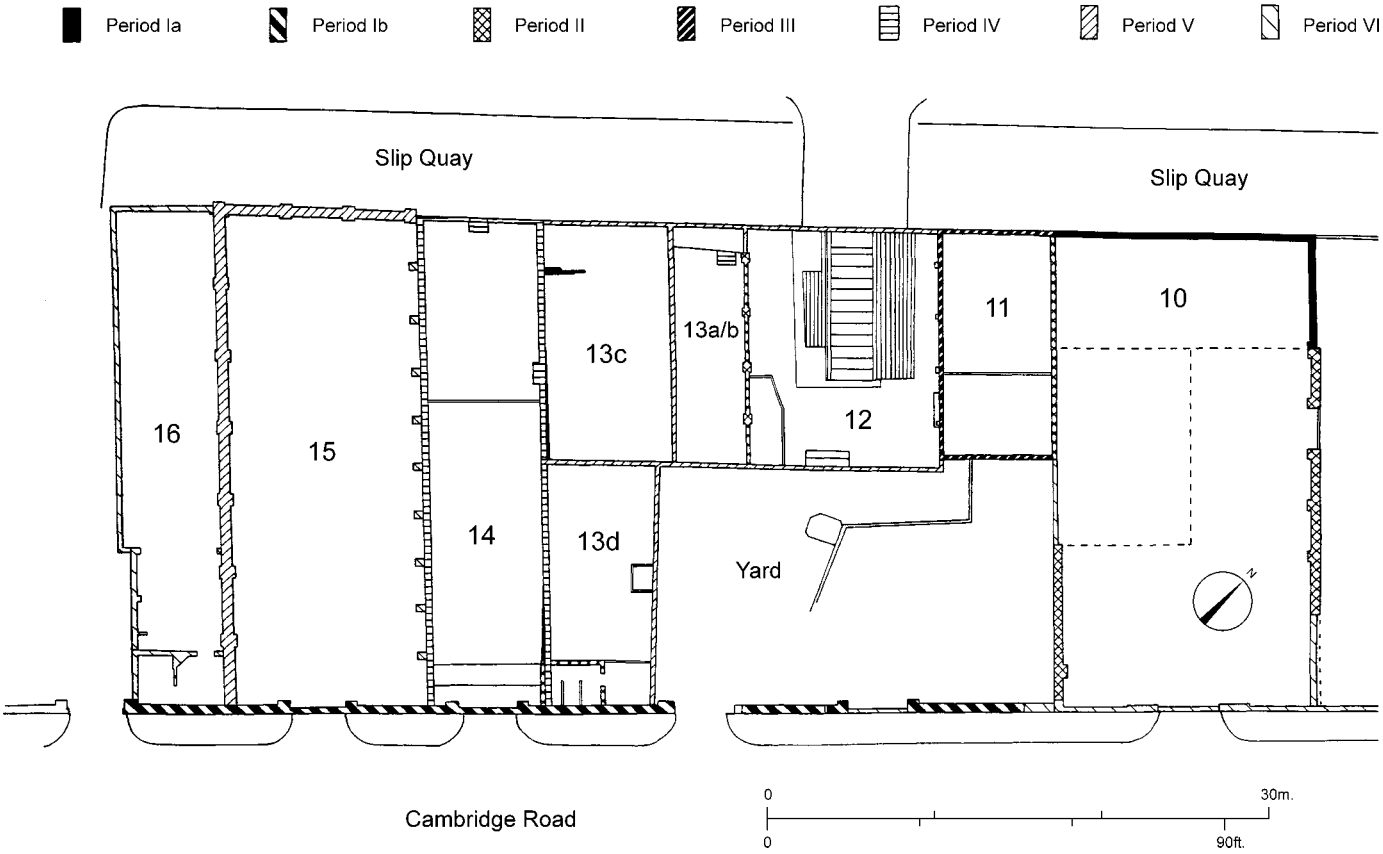
A series of buildings were subsequently constructed along Slip Quay. Those surviving are arranged in three separate blocks (designated for the survey as Group A, B and C). Within these groups the individual buildings identified were numbered progressively from 1 at the north-east end to 16 at the south-west. The buildings of Groups A and B (Nos 1–9) had already been recorded. The seven Group C buildings (Nos 10–16), separated from those of Group B by an area of open ground, represent the oldest structures surviving on Slip Quay and formed the subject of the present project.

The Group C buildings are predominantly of late nineteenth-century date, with traces of probable earlier work incorporated within Buildings 10 and 14. Analysis revealed several stages of evolution, with at least six significant periods of development were identified. The long axis of each building was set at a right-angle to Cambridge Road (i.e. north-west–south-east) fronting onto Slip Quay. There is a general falling-off of the ground from Cambridge Road to Slip Quay by some 2–3 metres, and this slope fairly certainly reflects the contour of the original shingle spit/Elizabethan Long Wall of the Great Pent. Bollards on Slip Quay in front of Buildings 10, 14 and 15 consist of the vertically-set barrels of eighteenth- or nineteenth-century cast iron cannons.

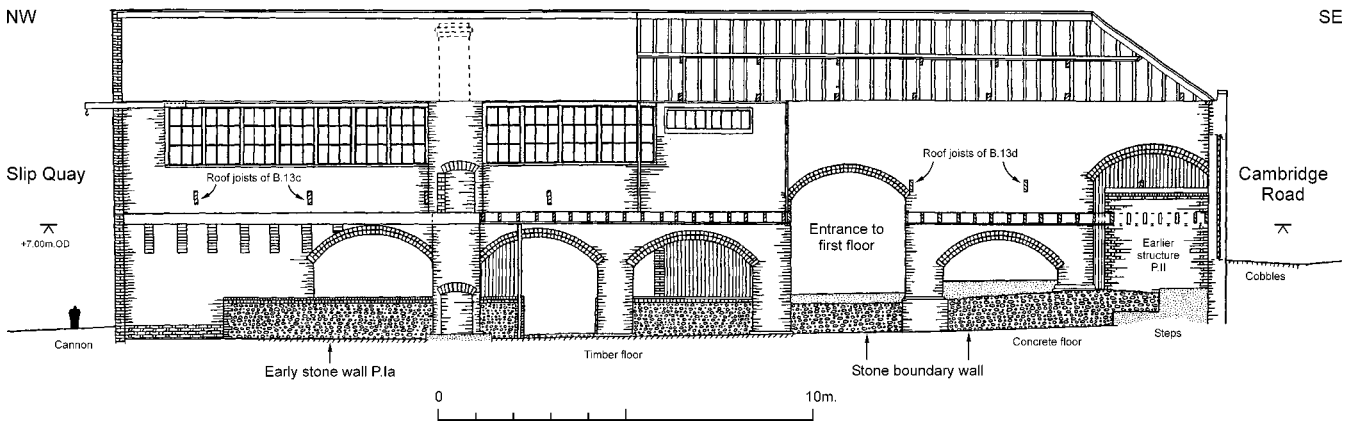
The Goad Insurance maps of 1905 and 1929 provide valuable evidence for the use and occupancy of the buildings during the early part of the twentieth century. The earlier structures incorporated into Building 10 belonged to H. and



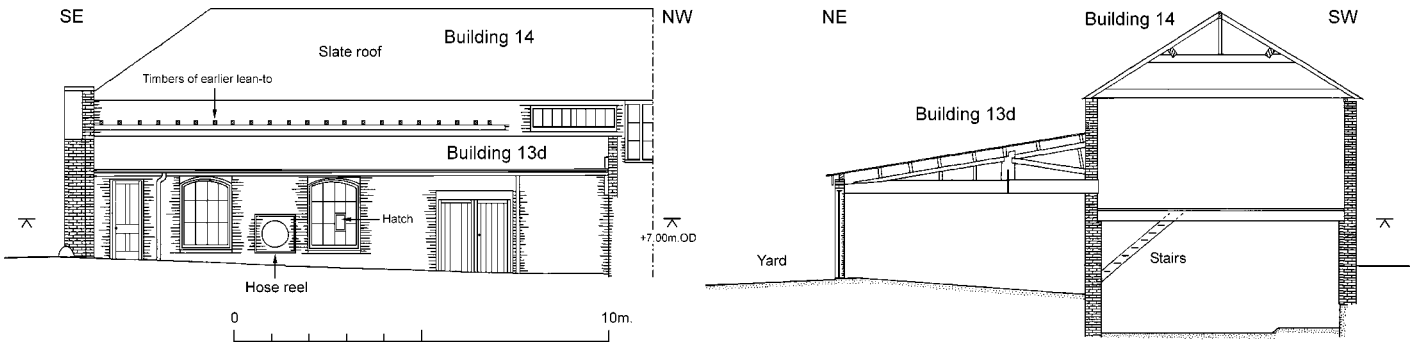
Wellington Dock, Dover: plan & section of the Patent Slipway.



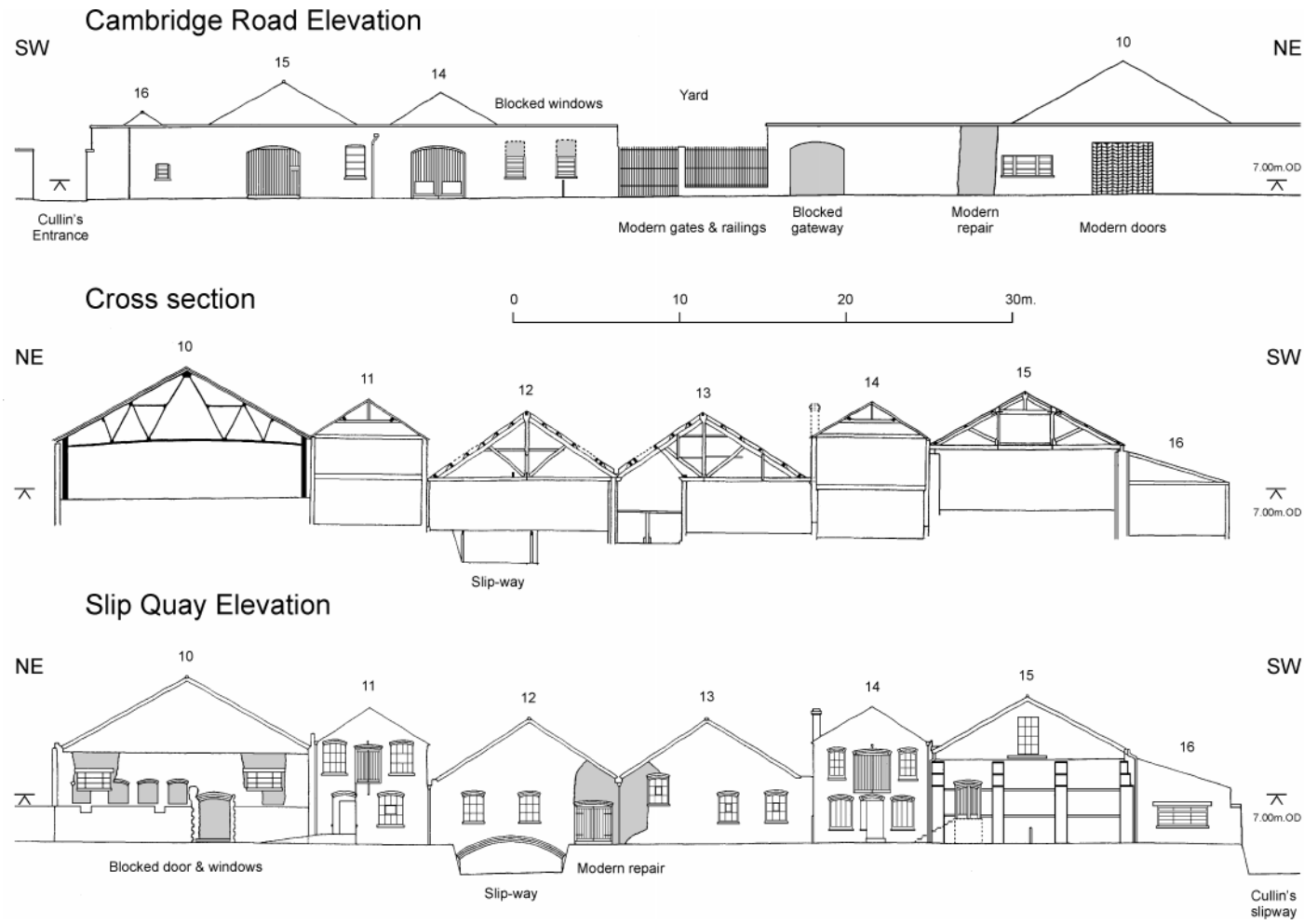
Wellington Dock, Dover: general plan of Group C buildings, Slip Quay.



Wellington Dock, Dover: sectional elevation of Building 14.

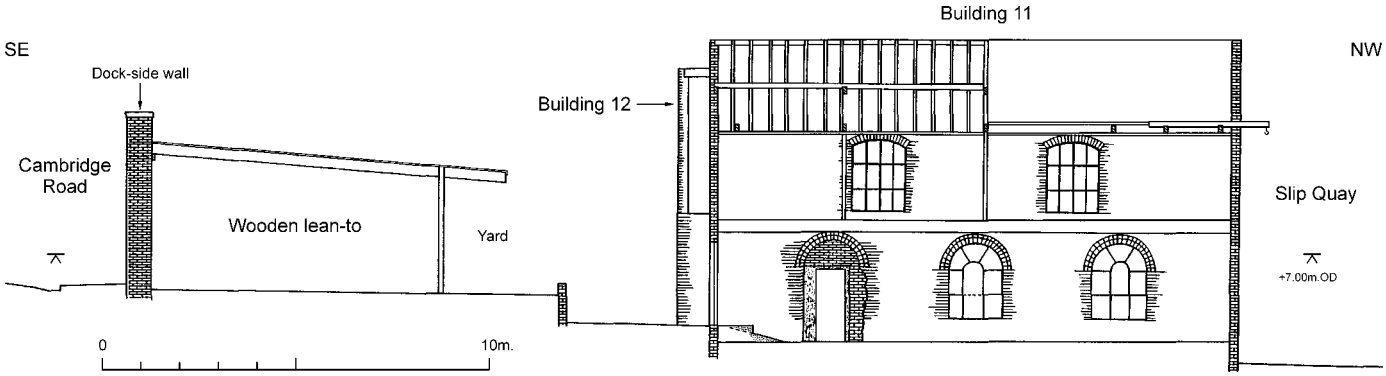


Wellington Dock, Dover: elevation and section of Buildings 13d and 14.

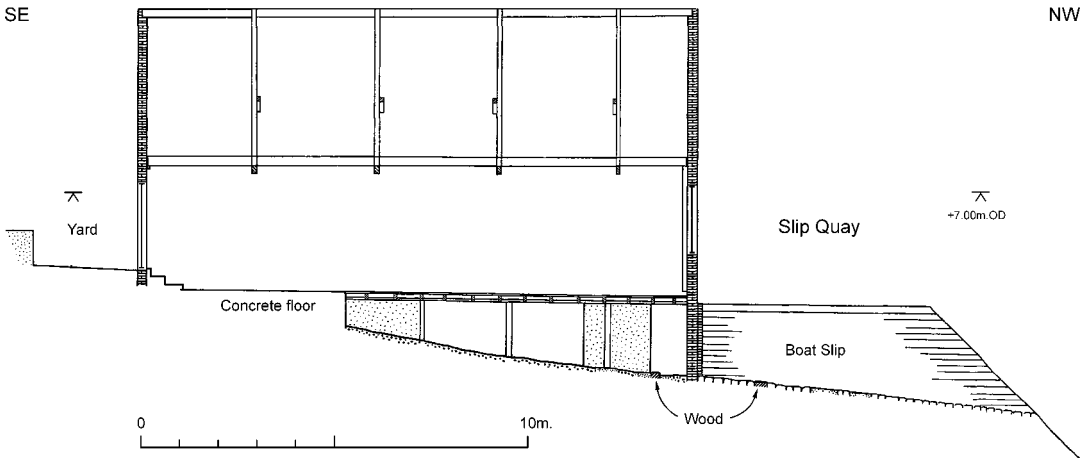


Wellington Dock, Dover: elevations & cross section of Group C buildings.

Group C buildings, Wellington Dock, Dover.



Wellington Dock, Dover: sectional elevation of Building 11.



Wellington Dock, Dover: sectional elevation of Building 12 and boat-slip.

The Patent Slipway in use, Wellington Dock, Dover.

E. Crundall Ltd. They once served as stables adjacent to a coal stores, and later they formed part of Crundall's garage. Buildings 11 to 14 all belonged to the South Eastern and Chatham Railway and constituted the maintenance yard for the company's cross-Channel steam packets. Building 15 was Bussey's coal store and Building 16 then, as now, belonged Cullin's the boat builders. Although the use of some of the buildings changed over time, it seems likely that the Goad maps record the original purpose and occupancy of many of the structures, continuing on from the nineteenth century.

Cartographic and documentary sources suggest that although there were structures in this area from the beginning of the nineteenth century none of the present buildings date before 1850, when Slip Quay was first constructed. A continuous boundary wall, running along the north-western side of Cambridge Road and pierced by a series of wide gateways, is shown on the 1861 Ordnance Survey. This was no doubt intended to divide the residential area of the adjacent Waterloo Crescent from the dock workings. The boundary wall appears to have been one of the earliest structures to be built and was still identifiable in 1997 incorporated into later buildings.

Immediately to the north-west of Slip Quay lay the Patent Slipway. In 1996 the boat haulage cradle on the slipway consisted of a flat, segmented, steel framework set on three lines of bogy wheels, each guided by a rail track. The cradle was rectangular in shape some 8.25 m. (27 ft) in width and about 36.50 m. (120 ft) long. When in use it was surmounted by large detachable V-shaped wood and steel supports upon which the bottom of the boat rested. Nineteenth-century photographs show that angled wooden props were wedged between the side of the slipway and the vessel to further support the craft. In recent times, vertical steel uprights were welded to the cradle structure for support. The British Association's Handbook to Dover, dated 1899, records that the Wellington Dock Gates were widened during the 1888 to allow larger ships to enter the basin. Also by this time the slipway had been lengthened, widened and strengthened so as to take vessels of up to 800 tons (Evans and Bennett-Goldney 1899, 52). Large-scale Ordnance Survey maps of the area dated 1861 and 1907 confirm that on the north-west side of the slipway the Ballast Quay was extended from about 70 to 124 metres in length sometime between these dates.

Precise details concerning the method of winching the boat cradle are not certain. It is known that the cradle in recent times had to be winched both up and down the slipway, using two or three separate steel cables, each *c*. 2 cm. in diameter. These passed through a series of pulleys along the side of the slipway. The end pulley still survives in the dock, set in a solid concrete block south-west of the open slipway beyond Building 16 of Slip Quay. This pulley is only exposed at low tide but lies some 180 metres from the winding house. There was another large pulley on the lower end of the cradle itself.

The original building, with its tall circular chimney which housed the winding engine for the slipway was demolished sometime after the last war. On the 1861 Ordnance Survey map this structure measures some 9.35 m. x 8.00 m. Harbour Board plan No. 4445 indicates the original layout of the building with three similar sized rectangular rooms, side by side, containing the 'purchase house', 'engine house' and 'boiler house'. The 'purchase house' was placed across the centre-line of the slipway with the other two rooms lying to the south-east. The detached chimney at the east corner of the building lay to the rear of the boiler house. The original winding engine installed was a small, 8 horse-power machine supplied by Mortons of Edinburgh (Hasenson 1980, 105). It seems likely that this was later replaced with a larger engine.

The nineteenth-century building was eventually replaced by a small, modern, flat-roofed timber building containing a more up-to-date winching engine. This building was about 6.00 metres square and was dismantled in the summer of 1996.


The Patent Slipway, Wellington Dock, Dover.

G Horton Manor Chapel, Chartham

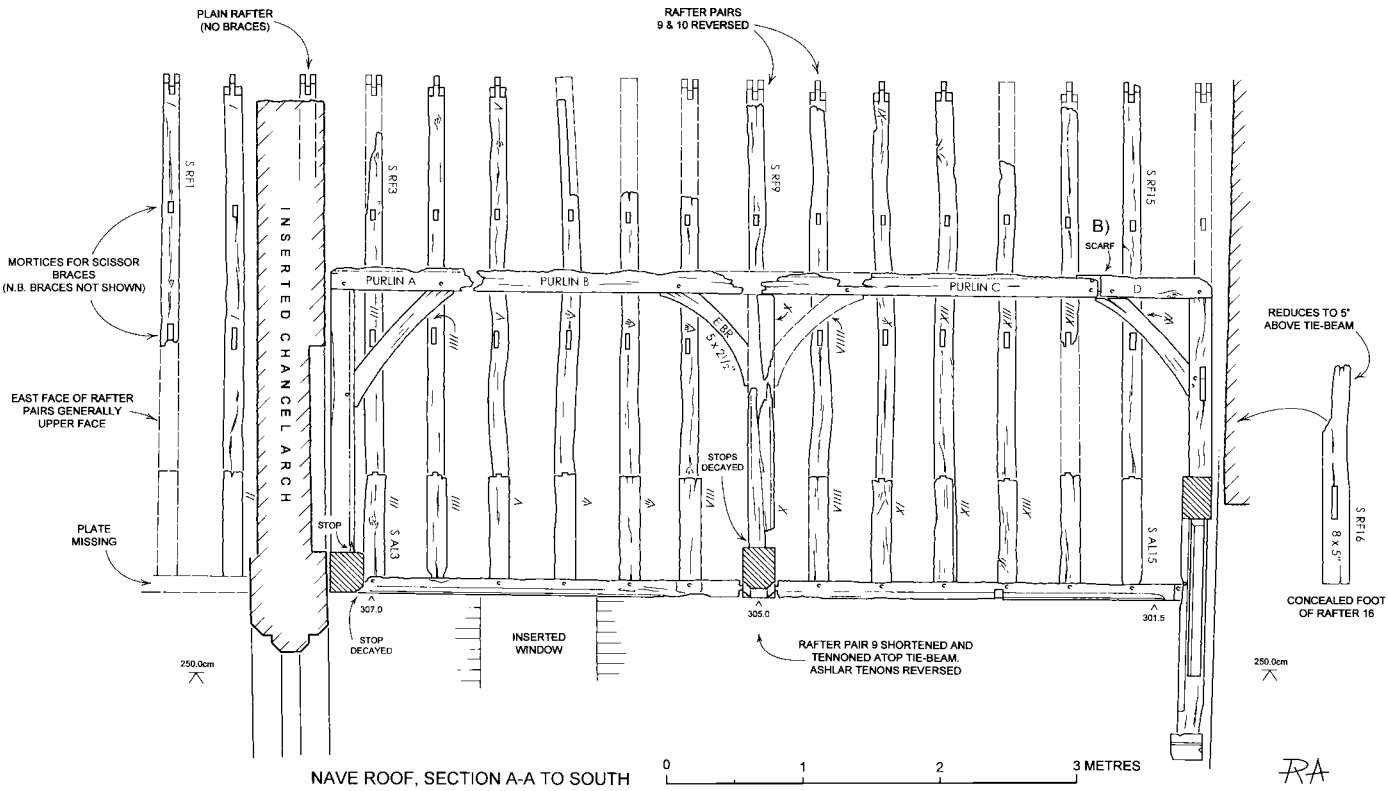
Rupert Austin

A survey of the collapsed roof of the chapel at Horton Manor was undertaken in February 1998. At the time of the survey most of the roof timbers were lying within and around the building and only a handful remained in place atop the walls. Few were in good enough condition to be saved or re-used. A detailed set of drawings was required to provide a record of the roof before the timbers deteriorated further or were lost. The drawings would also enable an accurate reconstruction of the roof to be undertaken at a future date.

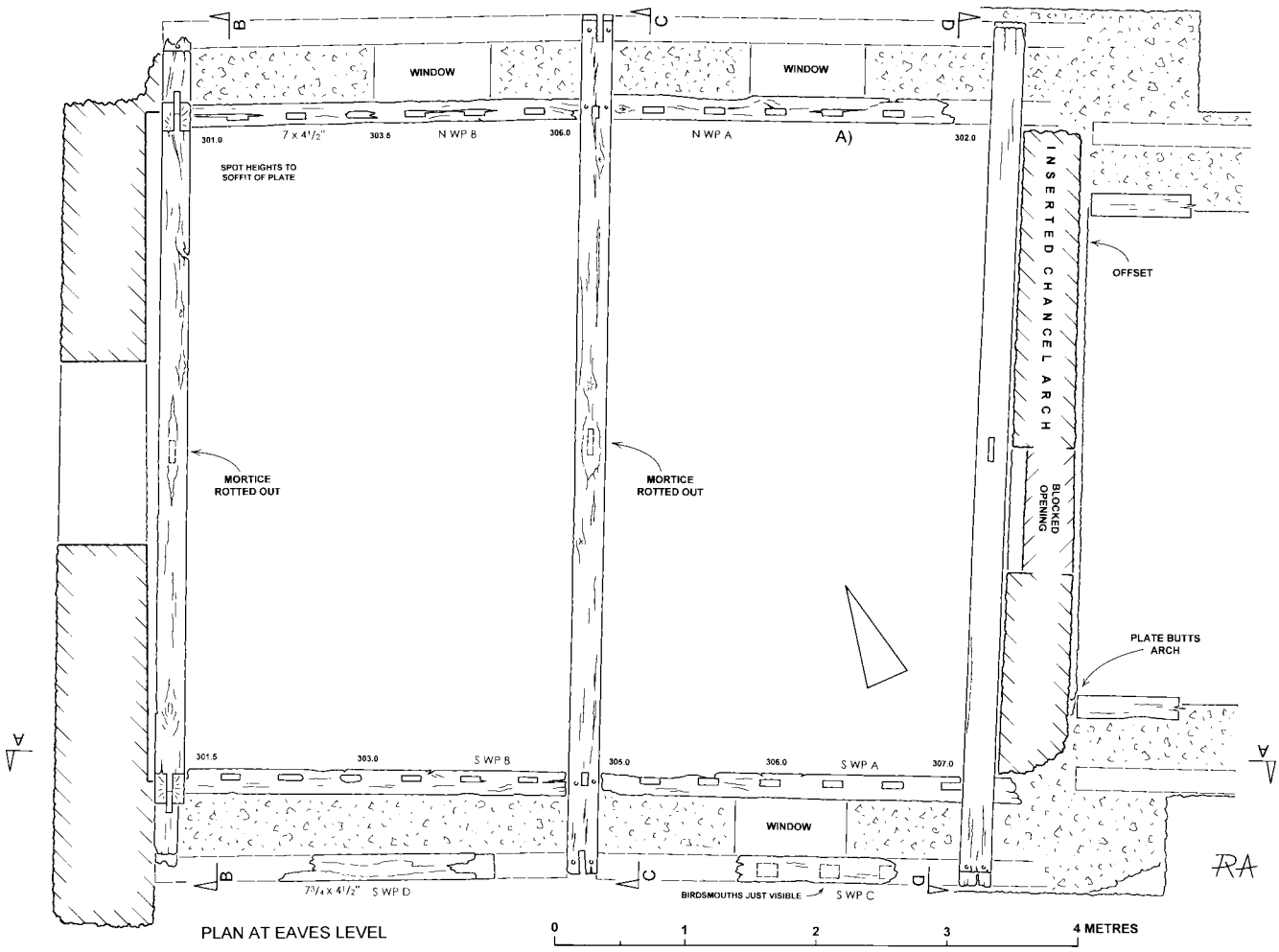
Identifying timbers from the chaotic scene of a collapsed roof is no easy task. It is vital that components are removed from the site in a controlled manner because timber frames collapse in vaguely predictable ways; the positions of fallen pieces can offer clues as to their former locations. Temporary tags were applied to many of the timbers allowing the tracking of components as they were removed from the scene and laid out.

Many of the timbers could be identified with ease by their carpenter's marks. However other clues (tooling, knife marks, general condition and the state of carpentry joints) had to be sought to identify others. Shattered components could also be brought together like the pieces of a giant puzzle. Once identified the timbers were tagged and laid out on open ground next to the chapel before being drawn.

The chapel probably dates to the late thirteenth or early fourteenth century and comprises a simple two celled structure (nave and chancel).



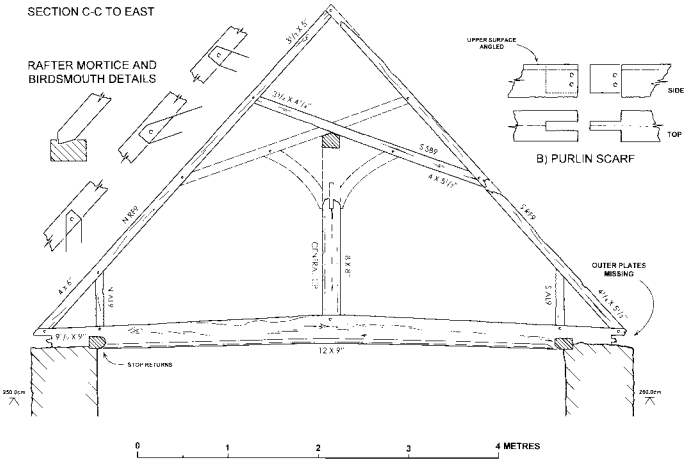
NAVE ROOF, SECTION A-A TO SOUTH

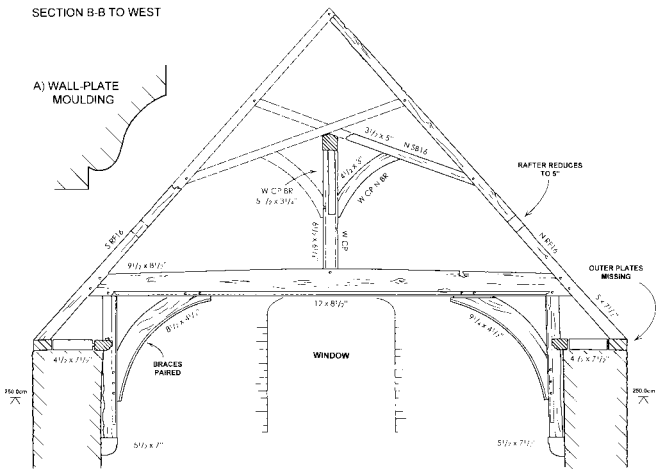


PLAN AT EAVES LEVEL

General view of west elevation of chapel.

Detail of raised west tie-beam.





The nave roof, which was the subject of this survey, was an unusual affair that combined both scissor-braces and crown-posts in its construction. It had been suggested prior to this recording that the scissor-braced elements of the roof were contemporary with the building and that the crown-posts had been inserted later. This proved not to be the case. The roof appears to be a later rebuild associated with alterations to the chapel below including the insertion of a chancel arch. Both scissor-braces and crown-posts are contemporary features of the new roof.

Hybrid scissor-brace and crown-post roofs are rare and generally of fourteenth-century date. Those at Hurst Farm, Chilham (*c*.1300), Old Cryals, Brenchley (*c*.1320–70) and Lynsted Court at Lynsted (*c*.1370–1400) are amongst the few known Kent examples. Dating the example at Horton Manor is not easy; the quickly-grown box-hearted timbers used in the construction of the roof had too few growth rings to enable a date to be obtained using dendrochronology. The plain crown-posts and thin plank like braces together with the cyma mouldings of the wall-plates suggest a fifteenth-century date, perhaps one late in the century. It is unusual to find scissor-bracing still in use at such a late date. This is possibly due to the unusually low pitch of the roof, where scissor braces would certainly have helped prevent the rafters from sagging.

H Ulcombe Village Hall
Rupert Austin

One of the most modern buildings recorded by the Trust in recent years is undoubtedly Ulcombe Village Hall. This structure, which dates to around 1911, was rescued from demolition by the Museum of Kent Life. Halls such as this were an important part of the social history of many villages at that time, something the museum was keen to convey to its visitors.

The construction and appearance of the hall is typical of its date. A lightweight softwood frame supports corrugated tin walls and roof. Only the king-bolt roof trusses appear to have been prefabricated. The interior was illuminated by large sash windows and heated by two small hearths. Louvers in the gable ends, operated by cords and pulleys, afforded some degree of ventilation.

Recording and dismantling of the building was undertaken during September 1997 and it has since been rebuilt at the Museum.

I Phelp's Lodge, The Precincts, Rochester
Rupert Austin

A brief appraisal of this property was undertaken during refurbishment in May 1997. Phelp's Lodge, whilst entered today from the precincts, is in fact the end of a long range that extends back from No. 82 High Street. The range contains three distinct phases of work. The earliest, the remains of a fifteenth-century open-hall house with soot blackened crown-post roof, survives within the centre of the range. This is a rare find in Rochester, perhaps the only domestic medieval structure known to survive in the town centre. The south end of the range comprises a timber-framed building of seventeenth-century date. This was once a separate dwelling, but it has since been combined with the medieval element of the range to form one property. An eighteenth-century building now occupies the frontage, its construction resulting in the loss of much of the fifteenth-century building.

Detail of fifteenth-century crown-post roof.

In addition to an understanding of the building the survey also revealed something of the layout of this corner of Rochester in the medieval period. The precinct wall runs close to the High Street at this point, but its exact path is unknown. The alignment of Phelps Lodge suggests a course for this boundary wall, but further investigation would be required before this could be considered definitive.

J Nos 49–55 High Street, Westerham
Rupert Austin

An architectural appraisal of these properties, which lie in a single range to the south-east of Westerham High Street, was undertaken in November 1997 at the request of Crest Homes. Externally the range appears to comprise structures of several different periods, but it became clear during the survey that all were once part of a singe medieval building that has been subdivided and adapted over the centuries.

A timber-framed hall house of fifteenth-century date forms the core of the property. This still survives at the centre of the range (No. 51). Two bays of its open-hall remain together with a soot blackened crown-post roof. To the north-east of the hall (No. 49) a two bay cross-wing of sixteenth-century date has replaced the former service wing of the hall-house. The nineteenth-century facades of the properties to the south-west of the hall (Nos 53 and 55) disguise earlier work, but it is not the high end of the hall house that survives here behind the frontages. This appears to have been demolished and replaced in the seventeenth or early eighteenth century by a new wing. Fragments of this new wing survive, but much was replaced by the nineteenth-century work.

PART THREE

Post Excavation and Research

I The Finds Department

Losing your marbles: Post-medieval gaming marbles of pottery and stone from Canterbury excavations

John Cotter

Over the past twenty years small numbers of gaming marbles have turned up on excavations in Canterbury. Excavations at Nos 1–2 Best Lane have produced a collection of sixteen stone and ceramic marbles from well-stratified post-medieval contexts thus prompting a more serious look at this relatively neglected class of artefact. The pilot study presented here is based on a collection of seventy-two marbles currently available for study, from eight sites around the city. It does not include those examples in the collection of Canterbury Museums; hopefully these will be included in a future more detailed survey.

The writer has a growing suspicion that some, or perhaps most, of the marbles could be foreign imports, particularly as we have documentary references to imported marbles during this period. The problem is that no attempt seems to have been made, as yet, to distinguish foreign from home-produced marbles found on British sites. The Best Lane discovery provides an ideal opportunity to make a start on tackling this problem and also an excuse to overview the wider significance of gaming marbles in general. Those from Canterbury will be considered below in order of the material they are made from.

Stone marbles

Grey marble: 23 examples (Nos 1–2). Diameter range 11–20 mm. with a concentration between 15–17 mm., peaking at 16 mm. (8 examples), and a smaller peak at 19 mm. (3 examples). These are made from a hard pale grey or sometimes brownish-grey marble or dense limestone which reacts strongly to dilute hydrochloric acid. One or two examples are fairly translucent, like alabaster, and one or two others have a scatter of lens-shaped calcite-lined voids up to 2 mm. across. Most examples exhibit some degree of geological banding comprising fine parallel bands of darker and lighter grey tones. Except for two or three examples battered from use or weathered by acidic burial conditions, all the marbles are very competently made and perfectly spherical with either polished or smoothed surfaces showing no obvious signs of tooling or manufacture. Geologically some appear quite complex with the primary banding interrupted by one or more sets of fine fault lines at completely different planes to the original banding. This manifests itself on the surface of some examples as overlapping circular areas of different size and tone set against a finely banded background thus giving some marbles a curious, almost planetary, appearance.

Pink-brown marble: a single example (No. 3). Diameter 19 mm., from the Mint Yard (1979) excavations. This is clearly from a different geological source to the pale grey marbles. It is hard, dense and of variegated pink-brown colour with twisting white veins. It is perhaps the most attractive marble in the whole collection and must have been highly valued by its owner.

Flint or chert: 9 examples (none illustrated). Diameter range 18–33 mm. These are natural pebbles, grey or brown in colour, obviously selected for their sphericity which in one or two cases is nearly perfect. The surfaces of some exhibit contusion or impact marks caused by vigorous use. Flint marbles are noticeably on the large size compared to those in other materials and perhaps were selected as larger target balls or 'jacks'.

Ceramic marbles

Grey stoneware: 13 examples (Nos 4–5). The majority (11 examples) have a very restricted diameter range of 14–15 mm. while two larger examples have diameters of 29 mm. and 32 mm. respectively. They are of dark grey clay with brownish-grey surfaces fired to stoneware hardness. Chipped or unglazed areas reveal a very dense fine fabric with few inclusions visible to the naked eye, among these sparse amounts of quartz and red and black iron-oxide all up to 1 mm. across, but mostly under 0.25 mm., and rare coarser inclusions of white or yellow marl or pipeclay up to 5 mm.. Nearly all examples have patches, traces or specks of a very thin and lustrous purplish-brown glaze or 'bloom'. This is probably an ash glaze rather than a true lead or salt glaze and it could be accidental – a by-product of over firing and the combustion of wood fuel in the kiln. It is similar, for example, to the ash glaze seen on medieval German Langerwehe stoneware, but this could be purely coincidental. One marble is completely covered in this glaze while at the other extreme two examples are

completely unglazed. The largest example is basically unglazed and coloured rather like a gull's egg, i.e. brownish-grey with random speckles of dark reddish-brown glaze where iron-oxides on the surface have blistered and vitrified. While more or less spherical, all the marbles exhibit slight irregularities such as dents and flattened patches. Some have crude spiral or circular grooving at the 'poles', evidently a by-product of the manufacturing process. Presumably they were hand-formed.

White clay: 18 examples (Nos 6–12). These include both the smallest and largest diameter marbles in the whole collection. The range is 10–37 mm. with a fairly even distribution between 10–23 mm. and none then until 36 mm. There is a slight peak at 17 mm. (3 examples). This diversity in size is matched by their composition and appearance which ranges from soft to very hard and plain to highly decorated. It seems highly likely that these variations are a reflection of their diverse origins which are probably from several different workshops or production centres. Although some distinct types of white marbles can be recognised in the collection, a much larger statistical sample would be needed as a basis for the firmer sub-classification of this general group. Some of the main types can nevertheless be outlined here.

Some white marbles are of fairly soft, fine, white pipeclay (the sort used for making clay tobacco pipes), others are in a slightly coarser white or cream-coloured fine earthenware, others are in white stoneware (or highly fired pipeclay) and these merge with the hardest examples which occur in a very dense vitreous fabric like a low-grade porcelain. Very fine but geologically undiagnostic inclusions of quartz, mica and red iron-oxide can be seen in nearly all examples of white marbles. One stoneware specimen is flawed due to the presence of rare angular quartz inclusions up to 2 mm. across. Those in pure pipeclay include the three smallest marbles (10–11 mm.) which are unglazed, one of which bears traces of blue paint while another is marked with a spot of pink paint (No. 6). Another, larger, marble in pasty cream earthenware has crudely burnished surfaces and is covered with thin pale bluish-green paint. Another broken marble, in micaceous pipeclay, is covered with a thin bright yellow glaze decorated with four concentric circles of red-brown paint forming a 'bull's eye' (No. 7). One of the largest marbles (No. 8), again broken, is also one of the most highly decorated. This is a very fine white or slightly creamy hard earthenware under a good quality clear glaze with a faint bluish tint. Decoration is underglaze and hand-painted consisting of a broad equatorial band in dark cobalt-blue edged with swirling black lines and at the surviving 'pole' a blue star. The fabric of the latter, and its decoration, is very similar to 'Pearlware' and related Staffordshire-type fine earthenwares. Although this example is almost certainly a gaming marble, the writer has noted similar ceramic hemispheres used to represent planets decorating the faces of grandfather clocks.

Marbles of plain white stoneware occur in several sizes including the largest marble in the collection (No. 9) which has a thin patchy clear glaze and numerous slight surface irregularities. Other stoneware marbles are unglazed including No. 10, a slightly flattened sphere with two faint blue parallel lines around the equator. The fabric of this is not dissimilar to the dense white low-grade porcelain fabric of Nos 11 and 12 and the fact that they all have linear polychrome decoration also links them together as a distinct group probably with a common origin. Nos 11 and 12 are superior products. They are well-made, unglazed but competently decorated; the painted lines are so neat and regular that they must have been executed with the marble held in place on a revolving potter's wheel or similar device. On the broken marble No. 11, the colours have survived well and comprise three intersecting bands of red, blue and green, each composed of three parallel lines. On No.12 the colours have faded, but certainly include red, blue and most probably black, in a similar but more complex arrangement to No. 11. Both resemble a globe marked with intersecting lines of longitude and latitude, though perhaps more complex than this (see illustration). This common theme of concentric and intersecting circles seen on the painted marbles from Canterbury and elsewhere (see below) is quite possibly an imitation of the banding seen on the best quality grey marble examples described above but developed on the ceramic marbles to the point of abstraction.

Red clay or terracotta: 7 examples (none illustrated), all in the 13–14 mm. diameter range. The term 'red' is used only loosely here, in fact three examples are pinkish-brown and four reddish-brown. None is glazed but one or two appear to have been burnished or polished and one has definite traces of silver paint. In the main they are made from a soft fine micaceous clay paste. One example has sparse coarse mica inclusions up to 0.5 mm. and sparse quartz to 0.3 mm. Another more distinctive example has abundant red-brown clay pellets up to 1 mm. across and rare quartz to 0.75 mm.; it is also underfired and badly chipped. As with the other ceramic marbles described above they are imperfect spheres.

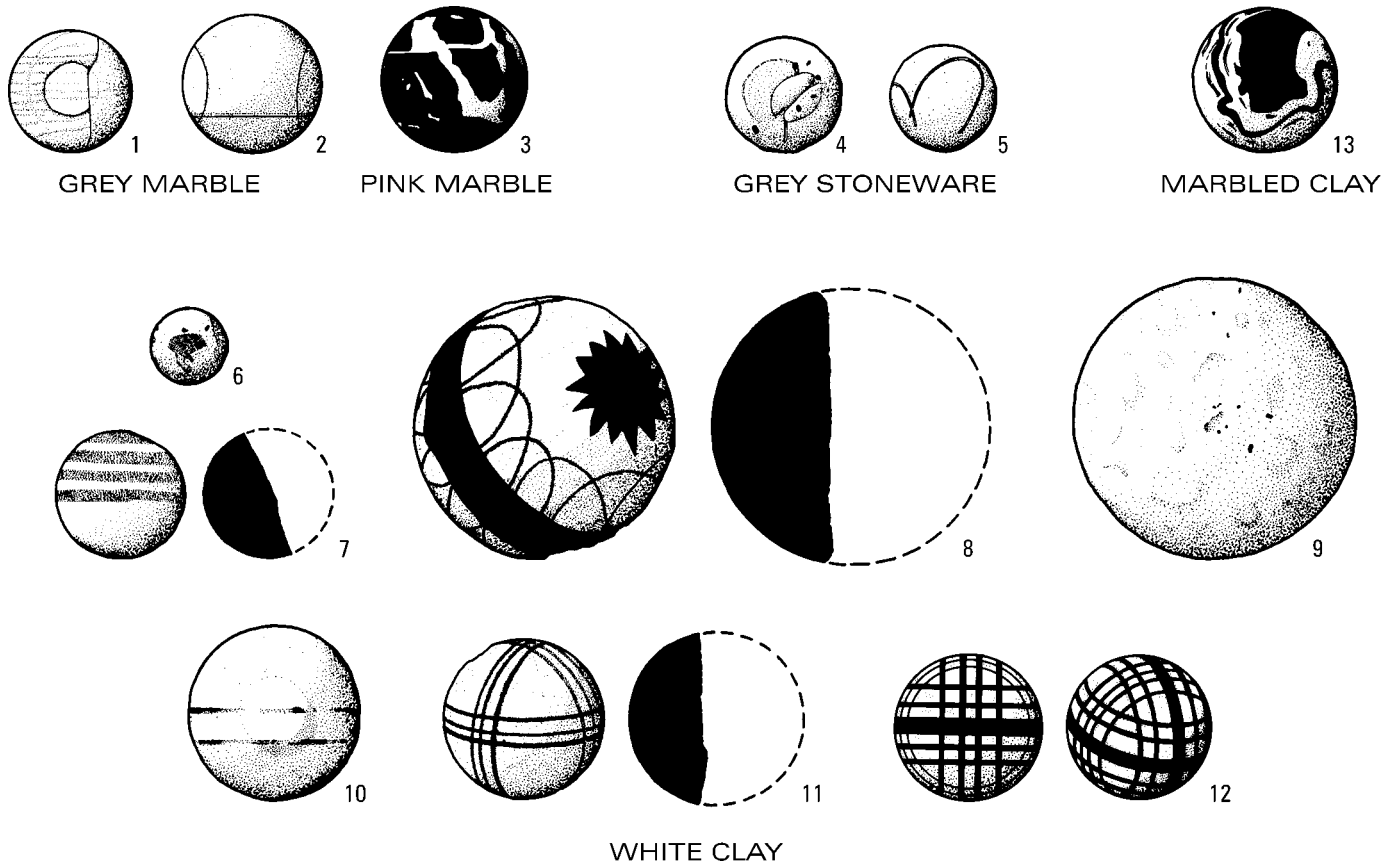
Marbled clay: a single example (No. 13) from the Mint Yard site, diameter 19 mm. This is unglazed and of fine pasty red and white clay mixed together to resemble veined marble. It is imperfectly spherical with a few surface voids/craters up to 4 mm. across.

Marbles: their uses, dating and sources

Gaming marbles of all sorts of natural and man-made materials have been used since remote antiquity in many parts of the world. In earlier times it is likely that natural pebbles, or nuts, or any suitably-sized object would have served for a variety of recreational purposes. In our own times glass marbles, apparently a Victorian innovation, are the usual type of marbles found in school playgrounds. Because marbles have been around for so long in so many different places and made of so many different materials it will be necessary to define the parameters of this overview lest one embarks on some endless academic survey. To be relevant to the material at our disposal the following discussion will therefore confine itself, largely, to the man-made marbles found in Canterbury i.e. those of worked stone and ceramic.

From an archaeological viewpoint we are primarily interested in what these artefacts can tell us about past societies, the 'When? Where? Who? How?' approach to archaeological enquiry. For the present we are mainly interested in the first two questions: When were the marbles made and used and where were they made? This confines our discussion, geographically speaking, to north-west Europe and the entire post-medieval or modern period (from about A.D. 1500 onwards). The social dimension i.e. who used the marbles and how? is just as interesting, perhaps more so, but is difficult to reconstruct from the archaeological record alone, especially from small numbers of marbles casually lost perhaps over centuries. We can however briefly consider this dimension with the aid of documentary sources.

In her study The Traditional Games of England, Scotland and Ireland, Alice Gomme lists the names of a dozen games commonly played with marbles, many of which had regional names and regional variations to the rules (Gomme 1894–8, 394). Most games entailed arranging the marbles in a circle or a row from which players attempted to dislodge those of their opponent by shooting other marbles at them. Another game, of ancient origin, was Nine Men's Morris, and related games such as Nine Holes or Morrells/Merrels, which used a square arrangement of marbles or pebbles on a board scratched on a stone floor. Gomme mentions the different kinds of marbles used by the players and which had different nicknames e.g. barrididdles, barios, poppo, stonies, alleys and taws. At the bottom end barrididdles were home-



Gaming marbles from Canterbury. Scale 1:1.

made marbles of rolled and baked clay. Gomme is not specific enough about the material of each. 'Stonies' might, possibly, refer to stone or ceramic marbles; at any rate we are informed that, in bartering, three stonies were worth a common white alley 'those with pink veins being considered best'. This last implies they were made of marble. 'Alleys', Gomme continues, 'are the most valuable and are always reserved to be used as "'taws" (the marble actually used by the player). They are said to have been formerly made of different coloured alabaster'. The Shorter Oxford Dictionary (1944) enlarges on the word 'taw', which is of obscure origin: 'A large fancy marble, often streaked or variegated, being that with which the player shoots'. It also dates the earliest reference to 'taws' as a game from 1709.

We turn now to the dating of marbles from excavations in Canterbury and elsewhere in Britain. Dating evidence for marbles on the Continent will be considered below under 'sources'. There seems to be no evidence for purpose-made stone or ceramic gaming marbles in medieval Britain so presumably pebbles etc. would have been used. The earliest evidence seems to date only from the sixteenth century. Ten marbles ranging in diameter from 11–30 mm. were found on excavations at the Free Grammar School, Coventry, in contexts securely dated to *c.* 1545–57/8 (Woodfield 1981, fig. 11.8a–b). Six were of sandstone, one was of chert, two were of brick and one of clay. Evidently these had fallen through gaps in the choir floor of the school church, part of an older friary. These circumstances find a remarkable parallel from a nineteenth-century context at Colchester in Essex where a group of eighty-three marbles was found under the floorboards of St Giles Church. Eighty-one of these were of fired clay glazed a variety of colours; two others were of wood, and a hazelnut may be a replacement for a lost piece (Crummy 1993, 235). It is charming to imagine that schoolboys or choirboys down through the centuries might have relieved the monotony of long church services with an occasional crafty game of marbles.

Ceramic marbles were made in most of the seventeenth-century pottery kilns at Wrenthorpe (Potovens) near Wakefield, Yorkshire. Mostly these were unglazed balls of red or white clay measuring 13–19 mm. across (Brears 1967, 34). There is also a single redware ball, 30 mm. across, with a black glaze, and a unique brick-red ball, 35 mm. across, with a polka-dot decoration of inlaid white clay spots, all under a clear glaze (Moorhouse and Slowikowski 1992, fig. 84.4–5). The Wrenthorpe finds are important in that they provide perhaps the earliest evidence for the production of ceramic marbles in this country, though we do not yet know whether they were made purely for local use or if they were traded further afield.

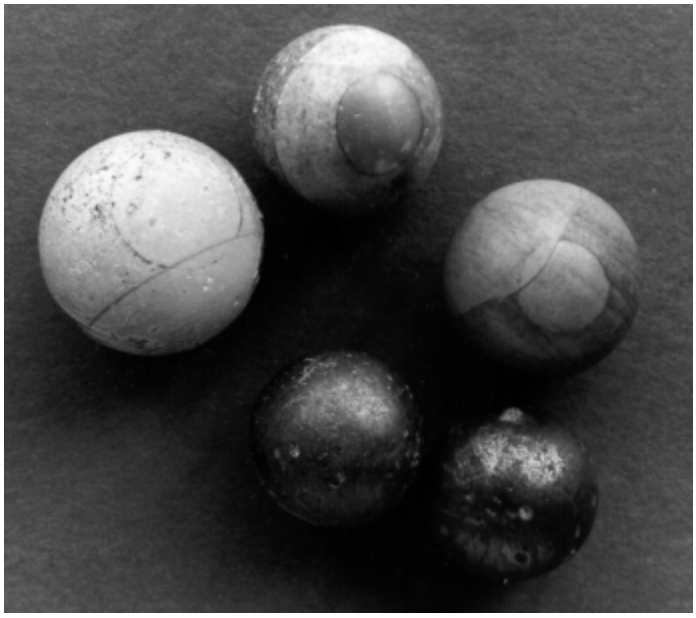
Marbles are reported from several eighteenth-century contexts around the country but rarely in sufficient detail to allow comparisons with the marbles from Canterbury. The dating evidence from Canterbury varies in quality from site to site. Nearly all of the fourteen marbles from the post-medieval occupation phases of the St Gregory's Priory (1988) site come from nineteenth-century contexts including most of the white pipeclay marbles and several undecorated white stoneware marbles described above. The decorated 'Pearlware' marble (No. 8) is associated with a pot-mark datable to *c.* 1850–4 but its style of decoration suggests an early nineteenth-century date. The remaining marbles from the site have no clear dating associations. Doubtless some, perhaps most of these, do date from the nineteenth century, but as several contexts also contained residual eighteenth- and even seventeenth-century pottery, it is possible that some of the marbles could be of earlier date too. The marbles of pure pipeclay have several late nineteenth- or early twentieth-century associations on the site. One comes from a late Victorian well-fill containing tavern refuse. Some

marbles might even have been produced on this site since we know there was a tobacco pipe manufactory here between the eighteenth and early twentieth centuries. It may be significant that only one marble from the site was of grey marble (no dating) and one of grey stoneware.

The 1993 excavations in the nave of Canterbury Cathedral provide the only useful archaeological terminus ante quem ('date before which') for the local dating of gaming marbles. It is known that the York stone floor, replaced in 1993, was laid down in 1787 thus providing a dated 'cap' to all the deposits below it. Bedding layers beneath the floor produced two grey stoneware marbles and one of pale grey marble with characteristic banding. However, it seems likely that these are somewhat earlier than the 1787 reflooring. This is suggested by the pottery and clay tobacco pipes associated with the marbles and which date almost entirely within the period *c.* 1650–1725; there is an isolated pottery deposit (without marbles) dating to *c*. 1740–50 but nothing obviously as late as the reflooring date (Blockley *et al.* 1997). Elsewhere in the city, a grey stoneware marble from North Lane (1997) and a marble one from No. 26 Broad Street (1992), came from contexts containing Staffordshire white stoneware dating to *c.* 1725–80.

Unfortunately no detailed information is yet available for the post-medieval pottery assemblages from the 1979–82 Poor Priests' Hospital site and the 1979 Mint Yard site. The former produced seventeen marbles and the latter eleven, eight of these from a single context. Between them, both sites produced nearly half the total number of grey marble marbles found in the city and the only pink marble, but only a single grey stoneware marble. These relatively high totals are not so surprising given that both sites were at one time or other used as schools for boys. The Poor Priests' Hospital is a medieval building (currently part of Canterbury Heritage Museum). At some point, after repairs in the late sixteenth century, part of the building was used as a school for sixteen Bluecoat boys, orphans who were to be educated and apprenticed. This function was reconfirmed in 1727 and continued until *c*. 1881 (Tatton-Brown *et al*. 1981, 175). The Mint Yard site lies within in the precincts of Canterbury Cathedral and formed the main yard of the King's School, founded l558, and which survives to this day. Hopefully, future publication of these two sites will allow the marbles to be evaluated in context and dated more closely than they are at present.

Perhaps the most reliable, and earliest, dating evidence comes from the site excavated in 1996 at Nos 1–2 Best Lane (also known as the Friar's Car Park site), where a number of late medieval and post-medieval timber-framed buildings were excavated. In all sixteen marbles were recovered from a sequence of worn clay floors and floor levelling/demolition debris. The marbles comprise five of pale grey banded marble, eight of grey stoneware and three flint pebbles. Dates provided by the numerous clay tobacco pipes associated with the marbles are predominantly in the *c.* 1660–80 range, with just a few in the *c.* 1680–1710 range. Associated pottery consists mainly of slipwares from Staffordshire, Harlow ('Metropolitan slipware'), Canterbury and North Holland together with tin-glazed wares, all of which suggest dates perhaps as late as *c.* 1725/50 for some contexts. One broken marble marble came from a floor deposit together with twenty-one clay pipe bowls of *c.* 1640–60/80 and a few pot sherds compatible with a date of *c*. 1650–1700. There is thus convincing evidence for the presence of grey marble and grey stoneware gaming marbles in Canterbury at least between the years *c*. 1675–1750, and perhaps both earlier and later than this.



Outside Canterbury, confirmation for the dating suggested above is provided by a site at Aldgate in London where excavations revealed a row of terraced brick properties built in the 1670s and demolished in the mid eighteenth century (Thompson *et al*. 1984). Of the three marbles published from here (*ibid*. fig. 59.109–11) one is of well-polished marble (apparently banded), 15 mm. across, and from a context of ?*c*. 1700–50/70; another, 14 mm. across, is of stoneware with a purple, slightly pitted, surface and from a context of *c*. 1700–20; and the third, 15 mm. across, is of well-polished pipeclay from a context of *c*. 1700–1750/70. The writer has seen banded marbles, identical to those from Canterbury, on sale in a London antique shop. They were, presumably, found locally and were said to be of eighteenth-century date.

Establishing the sources of gaming marbles used in post-medieval Britain is at least as difficult as establishing their dates. Those made of local materials, particularly stone, should be relatively easy to source if the material is sufficiently distinctive and of limited geological or geographic occurrence. Other marbles, particularly those of common red clay or white pipeclay, present a greater problem since these could in theory have been produced by any local potter or clay pipemaker. More distinctive ceramic materials, such as stoneware or porcelain, would have been produced by a much smaller number of potteries producing these more specialised and costly wares. Even so, it is still almost impossible to source something as plain as a ceramic marble to a particular factory, unless it is marked in some distinctive way. In the end perhaps the only way of sourcing marbles with any accuracy may have to be through a scientific analysis of the materials they are made from.

Leaving aside those marbles clearly or potentially made from local materials, the most distinctive types found at Canterbury and London are those of pale grey banded marble, the one of pink-brown marble, those of grey stoneware with a purplish glaze and the fancy painted white marbles. We can at least be fairly certain that they were not made within the modern county of Kent since no stone of this type occurs here and there is no history of stoneware or porcelain production here until the advent of the modern studio potter. Stoneware and porcelain were however produced at several potteries in London including the former Kentish parishes of Woolwich and Deptford (stoneware) and Greenwich (porcelain) but not in significant quantities, in the case of stoneware, until the end of the seventeenth century, and thereafter at many stoneware potteries across England. Nevertheless, with the exception of the Wrenthorpe potteries mentioned above, there seems to be very little evidence for the production of ceramic marbles in seventeenth- or eighteenth-century Britain. The picture is further confused

by the fact that large quantities of German stoneware continued to be imported into this country even as late as the 1750s and this almost certainly included gaming marbles. Stoneware marbles have been found on excavations across the Rhineland in contexts dating to the fifteenth and sixteenth centuries; even ceramic cannon-balls were produced (Gaimster 1997, 125). But there is no evidence for their importation into Britain as early as this.

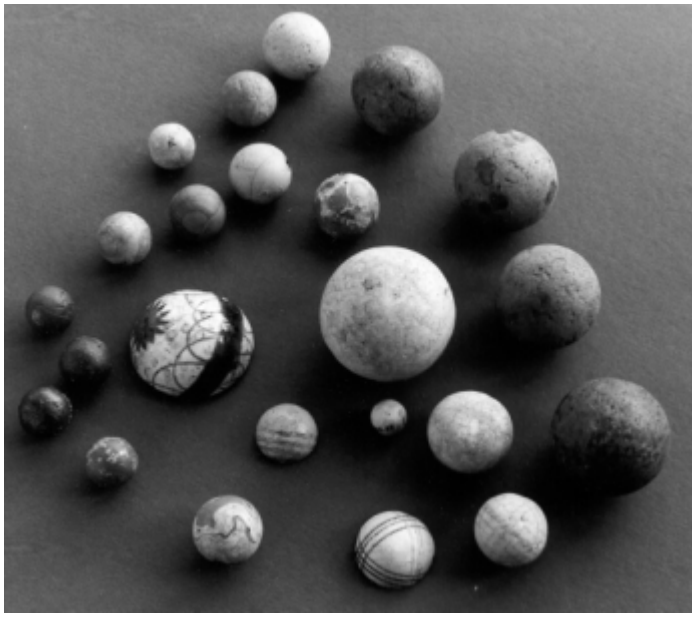
There are in fact reasonable grounds for suspecting that both stone and ceramic marbles were imported in large quantities from abroad and the evidence for this lies in a few key documentary references. In 1696, as part of a parliamentary debate on the banning of imported pottery, a certain John Houghton published a list, compiled from official records, of pottery imported into Britain in the year 1694. Among many other things Houghton lists the following:

The next are marbles for boys to play with, and these came from Germany tons twenty three, barrels ten; from Holland fifty two thousand two hundred and casks ten. The next are knickers and bowling-stones, which I take to be all one; if so, there came from Germany twenty three thousand, from Holland six thousand beside seven casks, surely a little more encouragement would cause them to be made here. (Haselgrove and Murray 1979, 132).

At this date it is most likely that the ceramic marbles imported from Germany were of stoneware and very likely therefore to come from production centres along the Rhine, where most of Britain's imports of stoneware came from. In this case we can reasonably suggest that most of the grey stoneware marbles found on British sites are likely to be German. What the Dutch marbles looked like is much less certain but they might have included re-exports of German stoneware marbles. Given that the average stoneware marble weighs only 3–4 g., the 23 (imperial) tons from Germany alone must represent something in the order of 5–6 million marbles per year, let alone those from Holland and those made of other materials. Multiply this figure by a century or more and the overall total of imported marbles used and lost by British schoolboys is really quite staggering to contemplate.

The ceramic bowling-stones or 'knickers', which Houghton regarded as the same, were presumably like marbles though considerably larger. Unless these include the largest of the Canterbury marbles (No. 9), which has a diameter of only 37 mm., these have not been reported from excavations in Britain. It is interesting to note that word 'knikkers' is still used in Dutch reports to describe stoneware gaming marbles (Bartels *et al.*1995, see below). The word appears to be onomatopoeic in origin, deriving from the noise made by marbles as they click or crack together; this is probably from the German knicken meaning to crack or break. The English word 'marbles', now applied to the modern glass variety, recalls the material from which they were formerly made.

A cache of ceramic marbles and other gaming pieces was found in a rubbish pit datable to *c*. 1800–1869 at the Burgerschool excavations in the Dutch town of Tiel. These included both fancy white marbles with painted 'bull's eyes' and interlaced circles decoration (as Nos 7, 8, 11 and 12) and plain stoneware marbles ('knikkers') like those from Canterbury (Bartels *et al.* 1995). Although the fabric of the white marbles at Tiel is not described it is more than likely they are of the same low-grade porcelain as those from Canterbury. By the early nineteenth century porcelain was produced in many European countries and one could argue that the marbles from Tiel could be imports from Britain. Although there is no reason why such marbles could not have been produced here, current evidence, albeit slender, favours a Continental origin. The low-grade porcelain (or vitrified white stoneware) fabric of the painted white marbles from Canterbury is very similar to another class of nineteenth-century ceramic toy namely the small dice-like glazed cubes used in the game of Knucklebones or Fivestones. These occur on many British sites but are believed to be of German origin (Brown 1990, 697). Despite the pre-eminence of the British ceramic industry during this period, cheap 'china' goods, such as dolls, toys and souvenir wares, were imported from Germany and Bohemia, in the Czech Republic, and this trade grew in volume as the nineteenth century progressed. It is suggested then, that painted marbles formed a part of this trade and that those found in Britain and Holland are largely of German origin. On current information this class of gaming marble seems to be nineteenth century in date but future work may perhaps demonstrate a late eighteenth-century origin. The large fancy 'Pearlware' marble (No. 8), if English, would date to the period *c.* 1780–1825 and hail, most probably, from Staffordshire or Yorkshire. However, 'Pearlware' was also imitated by Dutch factories and continued to be exported to the Dutch colonies for perhaps a decade or more after it had gone out of fashion in Britain so a Dutch or English origin for this marble is equally possible.



As for stone marbles, there is a useful reference in The Cyclopaedia or Universal Dictionary of 1819 testifying to their importation and mode of manufacture. This is worth quoting in full despite the vagueness of parts of the description:

Marbles, playing, are mostly imported from Holland, where it is said they are made by breaking the stone alabaster, or other substance, into pieces, or chips of a suitable size; these are put into an iron mill which turns by water: there are several partitions with rasps within, cut f[?s]loatways, not with teeth, which turn constantly round with great swiftness; the friction against the rasps makes them round, and as they are formed they fall out of different holes, into which size or chance throws them. They are brought from Nuremberg to Rotterdam, down the Rhine, and thence dispersed over Europe.

Although the preceding reference makes it clear that marbles were imported from Rotterdam in Holland, where they were manufactured, it also suggests that the stone or alabaster (a kind of marble) used to make them was brought downriver from Nuremburg, hundreds of miles away in Bavaria, southern Germany. Whether or not the actual marble quarries were located near Nuremburg or the city was just a collection point for the products of more distant quarries (?the Alps perhaps) we do not currently know. Marble gaming marbles were used in Germany from at least the sixteenth century (Schütte 1979, 55)

but we do not know exactly when they were first imported into Britain. It seems probable, however, in the light of these references, and in the absence of any positive evidence for their production in Britain, that the pale grey marble marbles found on British sites were produced in Holland but from stone exported from German sources which have yet to be pin-pointed. The single pink-brown marble (No. 3) is markedly different in character to the latter class; it does however look remarkably similar to the low-grade pink marble found in the Veneto region of north-east Italy, of which the cities of Verona and Venice were largely constructed, though like the 'German' marbles it could have been fashioned in Holland. The single marble of marbled red and white clay (No. 13) could have been made almost anywhere from local red clay and white pipeclay though a Continental source is, again, perhaps more likely.

A later reference occurs in the *Nouveau Larousse Illustré* published in Paris *c.* 1900 (p. 82). This repeats almost exactly the 1819 Cylopaedia reference but also mentions marbles of agate as well as stone and alabaster; it also adds 'the English make them also, but of inferior quality, the main material being clay'.

Conclusions

Post-medieval gaming marbles might not be as important archaeologically as the Elgin marbles (though many schoolboys might disagree) but they are, nevertheless, a class of archaeological artefact worthy of some attention. The discrepancy between the relatively small numbers of marbles surviving from excavations, or housed in museum collections, and the enormous numbers of imported marbles indicated in documentary sources, has also been noted for certain types of pottery imported during the post-medieval period e.g. German stonewares, crucibles and Chinese porcelain etc. We do not fully understand this paradox but it may, in part, have something to do with rubbish disposal patterns and also the sheer chance that excavations are conducted in the right locations. Doubtless if we excavated more school playgrounds we would find more marbles than we would, say, in Canterbury Cathedral. Over the centuries, therefore, we have quite literally lost our marbles – millions and millions of them.

This overview has indicated that the polished stone marbles, the grey stoneware marbles and perhaps half the white marbles from Canterbury, nearly two-thirds of those recovered, are likely to be foreign imports, primarily Dutch and German. More work is needed to confirm this suggestion, but when we eventually have more concrete evidence, marbles, like other better-known classes of imported artefact, will be yet another useful tool for archaeologists to play with in their efforts both to reconstruct the patterns of international trade and to gain insights into how our ancestors amused themselves.

II Animal Bone Studies

Does size really matter? Osteometry and cattle husbandry in medieval Kent

Robin Bendrey

On-going analysis of the Anglo-Norman faunal assemblage from Townwall Street, Dover has produced a reasonably large database of bone measurements. Detailed comparative study of metrical data has not previously been undertaken for sites in Kent. The information obtained from Townwall Street (TWD) is compared to that from Linacre Garden Canterbury (LIN). This is the only contemporary published assemblage from Kent with sufficient data for comparative study (Driver 1990).

This is work preliminary to preparation of a full publication text. Cataloguing of the assemblage is on-going and data therefore will be different in the final analysis. All measurements were taken following von den Driesch (1976). Only post-cranial elements were considered. Elements and measurements were selected to cover most parts of the skeleton (where sample size allowed).

The Townwall Street assemblage dates from

element (dimension)	site	min.	max.	mean	number	s.d.	V
scapula (GLP)	TWD	51.3	64.7	55.6	10	4.3	7.7
	LIN	56.0	74.6	64.3	10	6.8	10.7
radius (Bp)	TWD	63.0	83.2	73.2	17	6.3	8.7
	LIN	62.5	87.6	71.4	23	6.0	8.4
pelvis (LA)	TWD	57.3	63.6	61.3	6	2.3	3.7
	LIN	56.8	67.2	62.9	11	3.9	6.2
tibia (Bd)	TWD	48.4	64.8	55.3	26	4.6	8.3
	LIN	49.1	74.0	57.4	25	5.6	9.7
astragalus (GLl)	TWD	53.7	63.9	58.9	15	2.8	4.8
	LIN	50.3	68.5	60.6	17	4.7	7.8
astragalus (Bd)	TWD	33.7	41.3	37.2	17	2.4	6.4
	LIN	31.4	41.7	38.0	17	3.3	8.7
metacarpal (GL)	TWD	163.3	185.7	174.8	8	6.7	3.9
	LIN	176.8	193.2	187.7	4	7.5	4.0
metacarpal (Bp)	TWD	45.4	58.0	52.9	26	4.1	7.7
	LIN	46.0	58.0	51.5	25	3.7	7.3
metatarsal (GL)	TWD	182.0	226.6	200.3	6	16.1	8.0
	LIN	190.0	222.9	207.2	9	11.7	5.7

Table 1. Summary of element comparisons.

	mean	minimum	maximum	number
Townwall Street, Dover	1.09	0.99	1.23	6
Linacre Garden, Canterbury	1.13	1.04	1.21	9

Table 2. Reconstructed withers' heights, in metres.

the mid twelfth to mid thirteenth century. Assemblages D, E and F have been selected from the Linacre Garden archive for comparison. These date from the first half of the twelfth century to the beginning of the fourteenth. Summaries of the raw data, including minimum, maximum, mean, number, standard deviation (s.d.) and coefficient of variation (V) are included in Table 1.

The standard deviations give a measure of the variability of the elements from each site. This shows greater variability amongst most of the LIN material than the TWD (in six of the nine elements). The coefficient of variation (V) enables the variability of the different elements to be compared. The scapulae from Linacre Garden stand out with a high degree of variation, whereas the metacarpals (GL) from both sites and the pelvis (LA) from Townwall Street have the smallest variation.

Statistical testing of the data has been undertaken to assess the significance of the results. Use of the Mann-Whitney U test showed that differences in bone size were significant at the 5 per cent level for all measurements except the metatarsal (GL).

Percentage differences of the means between the two sites have been calculated, and are represented in Fig. 1. The data is shown as the difference of the LIN material to the TWD. This allows different sized bones to be compared together. The bones from Canterbury exhibit a generally larger size, except for the two Bp (proximal width) measurements.

Estimations of withers' heights can be calculated by multiplying the greatest length (GL) of the metatarsals by 5.45 (von den Driesch and Boessneck 1974). These reconstructed withers' heights should not be taken literally, only as an indication of the size of the animals. Both ranges and means are very similar (Table 2). TWD has a slightly larger range, though LIN has a greater mean. Figure 2 compares Townwall Street and Linacre Garden withers' heights to a number of other contemporary sites (n = sample size).

Albarella and Davis (1996, 28) plot metatarsal indices of robustness – the distal width (Bd) and shaft width (SD) expressed as a proportion of the greatest length (GL) – in doing so they present element proportions independent of size. Figure 3 shows the TWD and LIN metatarsal indices. The means of the two samples have been calculated and plotted on the graph. These show an animal with a slightly stockier metatarsal at Townwall Street. Metapodials tend to display marked sexual dimorphism (see below). Differences therefore in this graph may represent different numbers of male/female/castrates, however the number is too limited to distinguish any reliable groups (Fig. 3). Though both samples show a similar distribution, a few TWD mid-shaft indices (SD/GL*100) show significantly stockier dimensions (on right of distribution).

Plotting of astragalus dimensions shows similar distributions for the two sites (Fig. 4). Linacre Garden astragali show greater variability, with all the TWD plots falling within the area of the LIN plots.

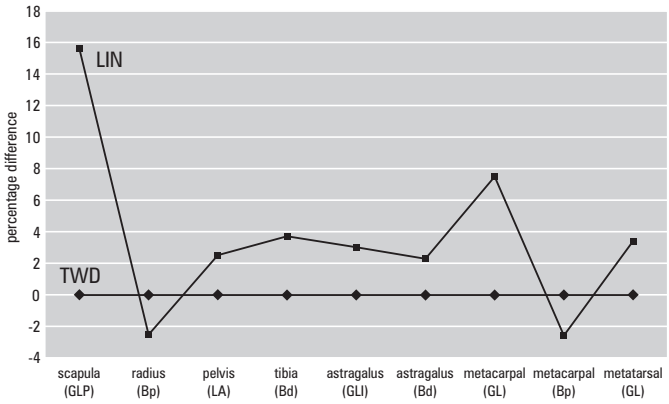


Figure 1. Percentage difference of cattle elementmeasurement means of Linacre Garden from Townwall Street.

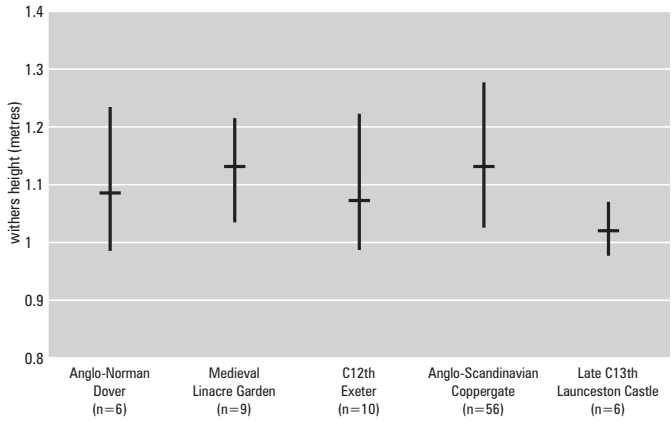


Figure 2. Cattle reconstructed withers' heights (mean and range).

Figure 3. Comparison of metatarsal shape.

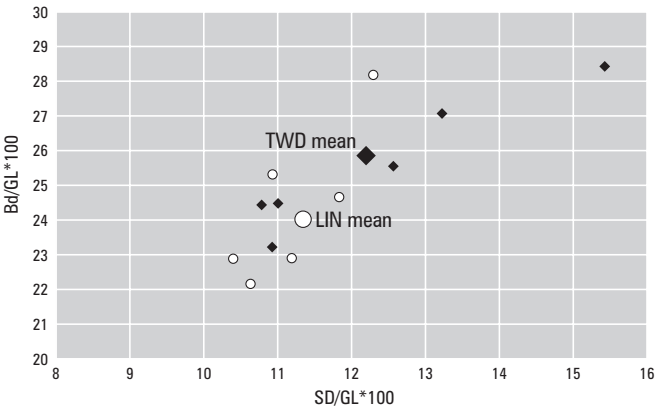
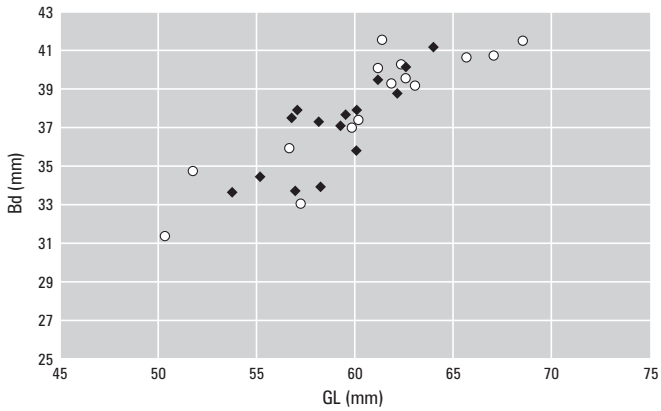


Figure 4. Comparison of astragan measurements.



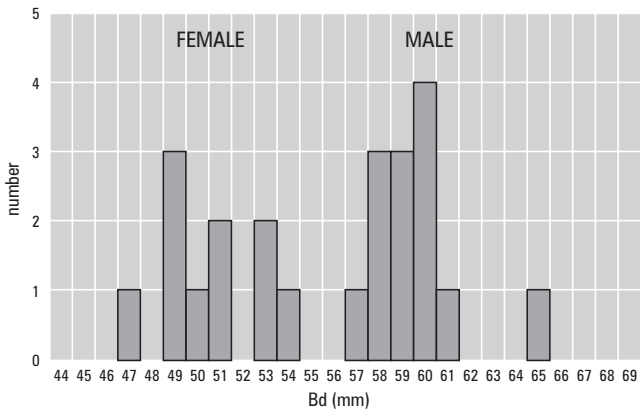


Figure 5. TWD metacarpal measurements.

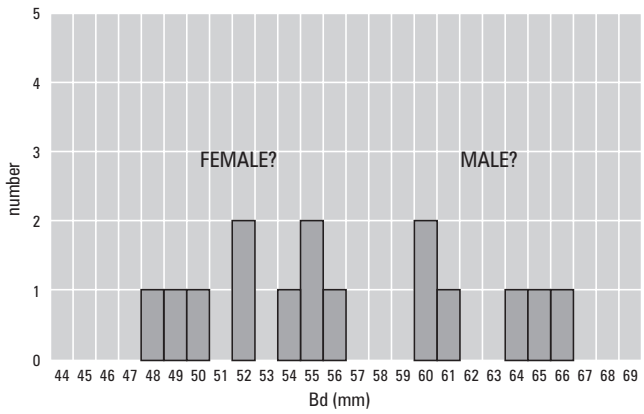


Figure 6. LIN metacarpal measurements.

Much work has been carried out on the sexing of cattle metacarpals (discussed in Grigson 1982). The distal width measurements (Bd) are plotted in order to distinguish modal groups, which represent different sexes. Cows are consistently smaller than bulls, but overlap between males, females and castrates does occur (Grigson 1982, 10–11). The TWD and LIN material have been plotted in Figs 5 and 6. The Townwall Street metacarpals (Fig. 5) show significant bimodality – small cows and large bulls/castrates – however the data is insufficient to differentiate between bulls and castrates. Measurements from Linacre Garden were too limited to form any reasonable hypothesis (Fig. 6).

Osteometric analysis of the cattle remains from Townwall Street and Linacre Garden has revealed animals which, though small, are of a comparable size to cattle found at other medieval sites. Linacre Garden generally had animals of slightly greater size and variability than Townwall Street. The differences are however small.

Age and work related pathologies of the lower legs were more numerous at TWD than at LIN (Driver 1990, 236). These may imply that a greater number of aged/traction animals were being used for food at the Dover site. Although metacarpal measurements suggested a roughly even division between males and females (Fig. 5), analysis of pelvic morphology from Townwall Street has revealed nine female pelves and only one male. Such a (pelvis) ratio might imply greater reliance on old animals from dairy herds at the Dover site. The slightly greater variation of cattle bones at Linacre Garden, therefore, may reflect the greater affluence of Canterbury in a larger and more varied supply-hinterland. This conclusion however is very tenuous, and must await the analysis of further data. It should also be noted that prolonged malnutrition would result in smaller animals.

The presence of different types of cattle or proportions of males, females and castrates will affect the distribution of bone sizes at each site. Detailed osteometric study of the horn cores from Townwall Street will reveal more information on breed and sex, and possibly the heterogeneity/homogeneity of the animals used. Comparison of the frequency of non-metrical traits may also prove informative in relation to types of cattle, such as dental pathologies that are genetic conditions. Detailed breakdown of the age at death of the animals and quantification of all pathologies is also necessary for the final analysis.

The small size of these medieval cattle may seem surprising to a modern psyche which suggests 'the bigger the better'; e.g. a bigger animal can supply more meat. The extent of medieval knowledge and practice of selective breeding however is unsure. O'Connor (1982) argues that the very practice of castration implies selection of the animals on some basis, and that visual heredity of some characteristics must have been obvious. Van Wijngaarden-Bakker (1983) demonstrates where selection can cause a decrease in size: animals bred for traction, where the strongest and largest bulls are selected for castration, causes a decrease in size because the smaller and weaker animals are used for reproduction.

The two samples of cattle bones reveal animals of similar size at Canterbury and Dover, with some differences in the individual elements that may represent slight differences in build. Linacre Garden, in the centre of Canterbury, may have had a more varied supply than the fisher-folk of Townwall Street, Dover. Finally, the data shows that size does matter both for individual sites and the region. The further collection and analysis of metrical data has potential to illustrate the size and shape of medieval animals and thus possibly practices of husbandry, selective breeding, and meat supply to the growing populations of Kent's towns.

III Palaeoenvironmental Studies

Just passing through ...

Enid Allison and Saleh El-Hassey

The excavation at No.12 Beer Cart Lane revealed a late eleventh- to early twelfth-century cess pit which had not been emptied after its last use. The soil into which it was dug was waterlogged and the remains of human faeces within it were in an excellent state of preservation. Cess pits have been well studied in a number of British towns but little detailed work has been done in Canterbury. The soils here are relatively dry and many cess pits excavated here in recent years have contained only small quantities of rather poorly preserved mineralised remains.

Cess pits are of great interest because they provide direct evidence for the food consumed by the people who used them. Information on medieval diet can be obtained from documentary sources such as household account books, references in contemporary writings and pictures, and occasionally from recipes. Documentary sources are relatively rare for the early medieval period, however, becoming commoner in the thirteenth and fourteenth centuries. They also tend to refer to food eaten by the better-off members of society or the monastic community. This site therefore provided a good opportunity to find out what the ordinary inhabitants of this part of early medieval Canterbury were eating.

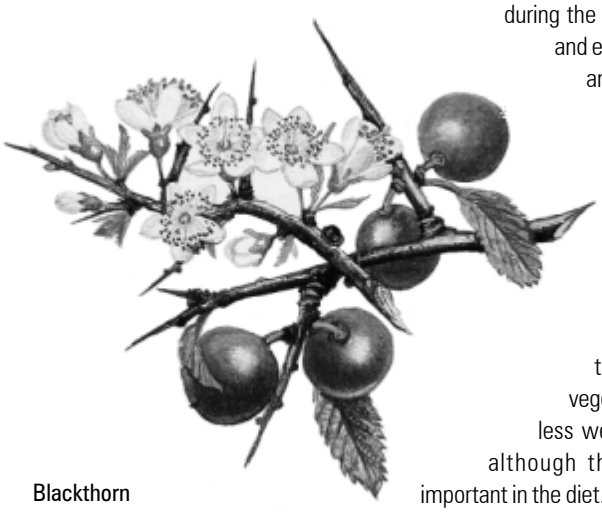
The cess pit in Beer Cart Lane does not seem to have been used for general rubbish dumping as is often the case, and because of this it is thought that the deposits within the pit built up over a relatively short time before it became disused. It was situated close to the corner boundary of the property and may have been used by the occupants of more than one property.

Much of the organic material in the pit consisted of bran from wholemeal cereals used to make bread and other products. The flour appears to have been finely milled, but was contaminated with corncockle seeds. These are poisonous, their toxic effect depending on the quantities consumed. From its presence in faecal material on many archaeological sites, corncockle appears to have been a common weed of cereal crops in the past. The large black seeds tended to remain with the grain during processing and ended up being ground into flour. Bread with a high corncockle content would be heavily spotted with black and unpalatable. It is possible that people built up some degree of tolerance and it may even have been beneficial to some extent as it is said to be poisonous to intestinal worms, eggs of which are invariably present in cess pits of this date.

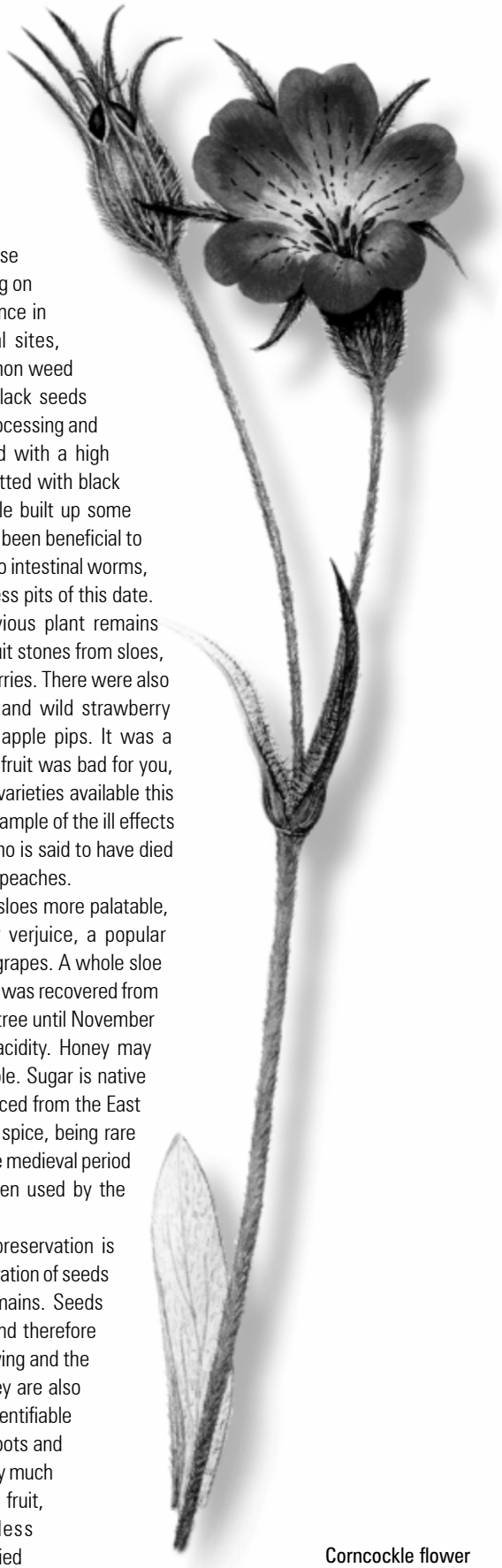
To the casual observer, the most obvious plant remains preserved in the pit were thousands of fruit stones from sloes, bullaces, damsons, plums and sweet cherries. There were also large numbers of elderberry, raspberry and wild strawberry seeds, and hawthorn, grape, and crab apple pips. It was a generally held medieval opinion that raw fruit was bad for you, and with many of the highly acidic, sour varieties available this could well have been true. An extreme example of the ill effects of fruit eating is provided by King John who is said to have died of dysentery aggravated by eating green peaches.

Cooking rendered even fruit as sour as sloes more palatable, particularly if combined with apples or verjuice, a popular condiment made from fermented unripe grapes. A whole sloe with burnt flesh that remained undigested was recovered from this pit. Bullaces were usually left on the tree until November when frosts would have reduced their acidity. Honey may have been used for sweetening if available. Sugar is native to the Old World Tropics and was introduced from the East during the Crusades. It was treated as a spice, being rare and expensive even by the end of the medieval period and would have hardly ever been used by the lower classes.

Even in waterlogged soil preservation is biased towards the preservation of seeds rather than vegetable remains. Seeds are generally fairly hard and therefore relatively resistant to chewing and the processes of digestion. They are also in themselves more easily identifiable than fragments of leaves and roots and vegetables are consequently usually much less well represented in faeces than fruit, although they were not necessarily less important in the diet. Most of the vegetables identified



Blackthorn



Corncockle flower

Fat Hen

Interestingly, evidence for the large-scale consumption of peas and beans comes not from plant remains but from insects. A range of insects, mainly beetles, were recovered from the pit. The most numerous of these was the bean weevil *Bruchus rufimanus*, a pest of peas, beans and vetches. The females lay their eggs on the seeds of the plants growing in the field and the larvae develop inside the seeds, eventually emerging when they are ripe. The bean weevils here appear to have been eaten with infested pulses. Their hard exoskeletons survived passage through the digestive system relatively unaffected and were passed in the faeces. Peas and beans do not survive digestion well; of the few fragments of seed coat identified, only one could be definitely identified as pea.

Eggs were represented by the tough membrane that lies between the egg white and the shell. Study of chicken bones from this period shows that hens were similar in size to modern bantams so the eggs produced would have been correspondingly small. The shells would have been white rather than brown. Brown shells were a characteristic of Asiatic fowls that became more common in Europe in the post-medieval period and interbreeding led to the development of 'improved' breeds.

from this pit were represented by seeds, although leek was identified from fragments of leaf. Vegetables and herbs included summer savory, dill, wild cabbage, black mustard and celery. The opium poppy and hop seeds identified may have been used for flavouring food or drink. Seeds of the goosefoot family (Chenopodiaceae) were fairly common. Many of these were probably from a plant called fat hen which can be eaten as a spinach-like vegetable. It is also a very common weed of cultivated land, however, so it is possible that the seeds may be from plants living around the pit. Apart from chickweed, few other weed seeds were present.

Fish was enormously important in the medieval diet and fish bones were quite common in the cess pit. These were mostly small bones of eels and herrings, with fewer numbers of mackerel, thornback ray and other species. The majority of the identifiable bones were vertebrae, some of which showed signs of having been chewed. There was little visible evidence for the meat component of the diet other than fish as little kitchen waste was dumped in this pit.

Not all the remains found in the cess pit were from food. Some are accidental inclusions such as the bones of mice, voles and frogs that found their way into the pit and found escape impossible. Other creatures, such as some of the insects and the abundant woodlice recovered, found the pit provided an ideal home.

The evaluation carried out nearby at the former main Post Office in Canterbury High Street also produced an interesting cess deposit. Wooden planking was exposed in a one metre square test pit cut into waterlogged soils in the basement. The planking had a thick deposit of faecal material containing mineralised fruit stones on its upper surface and appeared to be part of a chute carrying human waste towards the River Stour. The 'common jakes' (the medieval public convenience) is known to have been situated close to the East Bridge which lies just to the west of the Post Office, and to have emptied directly into the river. Without a larger scale excavation it is impossible to say whether this chute is from a particular building, or formed part of a general sewer.

Acknowledgements

The majority of the bulk samples were wet sieved by David Knight. We are grateful to volunteers, notably Bob Robson and Krystyna Zaleska for their painstaking work sorting through the dry residues from the samples.

Waterlogging of a soil excludes oxygen so that the aerobic bacteria that cause decomposition of organic material cannot function. This means that a wide range of organic material including structural timbers, wooden and leather artefacts, seeds, insect remains and pollen grains are likely to survive.

Mineralisation of organic material occurs where there is a high concentration of phosphate ions in solution and calcium carbonate is present. The liquid fills of cess pits dug into chalky soils therefore provide ideal conditions. Sometimes the structure of individual seeds etc. is replaced by calcium phosphate producing an exact replica of the original, but often internal casts of fruit stones are produced, or seeds and other items are covered in a hard mineral crust. Identification can be difficult and the information obtained from such assemblages is often limited.

IV Publications

Two new titles

Jane Elder

1997 saw the launch of two new Trust series. The first of the Trust's Occasional Papers, *A Twelfth-century Pottery Kiln at Pound Lane, Canterbury,* was published in March and in October the results of the 1993 excavations in the nave of the cathedral were published as the first title in the New Series of The Archaeology of Canterbury monographs.

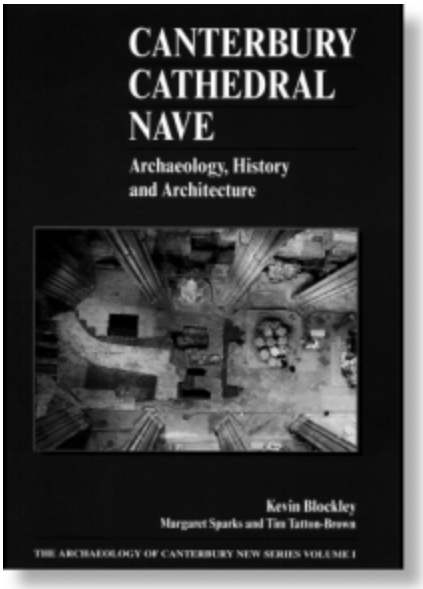
A Twelfth-century Pottery Kiln at Pound Lane, Canterbury: Evidence for an Immigrant Potter in the Late Norman Period by John Cotter tells the story of the discovery of a medieval pottery kiln close to the Westgate. The report contains a short account of the site and excavation, followed by a more detailed account of the kiln itself, its plan and parallels. An extensive typology of the kiln products is presented together with observations on manufacture and statistical frequency. The local, English and European contexts of the Pound Lane industry are each treated in detail and an attempt is made to define the likely homeland of the immigrant potter. This section is copiously illustrated with parallels taken from a wide range of continental reports as well as previously unpublished material. Later sections examine Canterbury's particularly rich documentary sources for evidence of potters, immigrant communities and the possibility of Church patronage. The duration of the kiln and interaction with the local (Tyler Hill) potting community are also considered.

The report is considerably broader in scope than most medieval pottery reports. The continental connections involved raise some thought-provoking questions on the extent to which immigrant potters may have influenced the development of English pottery in the Norman period and to what extent this was a new phenomenon or just the continuation of a much older one. Probably the main implication of the report however is that the consequences of Norman occupation may have had more far-reaching effects on native English pottery industries than has hitherto been supposed.

The report was published with the aid of a grant from English Heritage and thanks are due to Sarah Jennings for help and advice during the preparation of the report. Thanks are also due to Barretts of Canterbury who made a donation towards publication costs. It was during the expansion of their premises in Pound Lane that the kiln was discovered in 1986.

Canterbury Cathedral Nave: Archaeology, History and Architecture by Kevin Blockley, Margaret Sparks and Tim Tatton-Brown publishes the results of excavations undertaken in the nave prior to the relaying of the floor in 1993. The foundations of two Anglo-Saxon churches were revealed. Parts of a seventh-century Kentish church like those formerly at St Augustine's Abbey and Reculver were revealed and found to have been extended in the ninth century to provide a church with a long nave and aisles. A large western apse with hexagonal stair towers was added in the early eleventh century. The excavation report by Kevin Blockley includes reconstruction drawings by Ivan Lapper of the Anglo-Saxon cathedral and the cathedral of Lanfranc, finished in 1077, the foundations of which were also discovered. There are short specialist reports on some of the finds and two essays on the nave. Tim Tatton-Brown writes about the rebuilding of the Lanfranc nave between 1377 and 1405, and the later fifteenth-century rebuilding of the western transepts and crossing tower. Margaret Sparks describes the liturgical use of the nave 1077–1540 and the fittings, repair and use of the nave 1541–1993.

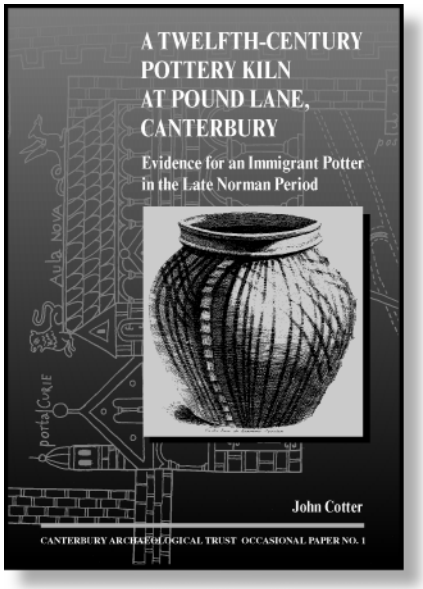
Publication of the monograph was funded by the Dean and Chapter of Canterbury Cathedral and the Friends of Canterbury Cathedral. Sincere thanks are due to them and to the many and various scholars and specialists who helped in the process of bringing the discoveries together in this monograph.



Price: £25 (plus p&p)

Friends of the Canterbury Archaeological Trust and Friends of Canterbury Cathedral: £20.00

Obtainable from: Canterbury Archaeological Trust, 92A Broad Street, Canterbury, CT1 2LU; Friends of Canterbury Cathedral, 8 The Precincts, Canterbury, CT1 2EE and all good booksellers.



Price: £9.95 (plus p&p)

Friends of the Canterbury Archaeological Trust and Kent Archaeological Society: £7.50.

Obtainable from: Canterbury Archaeological Trust, 92A Broad Street, Canterbury, CT1 2LU and all good booksellers.

Education

Marion Green, Education Officer

A range of activities took place during the year, with participation by several members of Trust staff.

Lecturing at Canterbury Christ Church University College

New courses are being implemented in the college's Department of Education and we were approached to support two of these. Now, students intending to teach in primary schools will have regular lectures and workshops about Archaeology and local Roman Archaeology in order to help them teach aspects of the National Curriculum History programme.

'Medieval Monasticism' internship for the University of Kent, Canterbury

This year the one-week CAT placement was expanded for UKC students engaged in this module. Now, in addition to the usual programme, students also have the opportunity to work with environmental material (animal and plant remains), learning how this particular kind of evidence adds to our knowledge of medieval lifestyle.

Work Experience placements

The one week placement is valuable to individuals intending to study Archaeology at Further or Higher Education level and those who simply would like to widen their personal experience. Students this year came from schools in Rochester, Orpington, Ashford, Canterbury, Tonbridge, Maidstone, Sandwich and Sittingbourne.

'Women to Work'

A number of secondary schools arrange for their older female students to engage in this one-day annual event. The idea is to give young women an opportunity to find out about the variety of occupations open to them in the work place. This year two students from Simon Langton Girls School, Canterbury, came to the Trust and part of the day involved interviewing a number of our female staff about their jobs.

Duke of Edinburgh Award Scheme

Students from Simon Langton Girls School and Barton Court Grammar School gave valuable assistance in the finds department, which contributed towards their Duke of Edinburgh Awards.

Discovering Archaeology in National Curriculum History

This teacher's guide was completed and published. The guide aims to give primary and lower secondary school teachers some background to the nature and processes of Archaeology and suggest ways they can include Archaeology in their teaching programmes.

In-Service Training

The Trust hosted an INSET day for Kent primary school teachers, featuring aspects of local Roman and Tudor archaeology. The day had plenty of variety, giving teachers the opportunity to work with artefacts, develop their personal subject knowledge and tour the city's historic properties in blustery rain! Many thanks in particular to Ian Coulson, History Adviser to Kent County Council schools, for his stimulating contribution.

The Friends

The Friends of the Canterbury Archaeological Trust

Lawrence Lyle

Our numbers fluctuated between 350 and 360 but we hope that a new application form will stimulate recruitment. Friends who enter into a covenant add to our income at no cost to themselves.

John Parsons' death after a long period of ill-health deprived the Friends of one of our most enthusiastic members. In his will John left his house in Longport and its contents to the Canterbury Archaeological Trust, a generous bequest which added to the Library and, after the sale of the house, provided a fund some of which was used to install central heating at 92a Broad Street.

The main grants during the year were:

£700 for extra shelving in the Library

£500 plus VAT towards a joint project with Canterbury Museums to collect and catalogue the extensive archive of documents, site plans and photographs of the Canterbury Excavation Committee. The CEC seized the opportunity presented by the bombing of the city to pioneer a series of excavations during and after the war. Professors Sheppard Frere and John Wacher played a large part in that early work and support the project. The Museum will house the archive which laid the foundations for the Trust's later work.

Several smaller grants, some of them from the Donald Baron Bursaries Fund have enabled Tania Wilson, John Cotter and Peter Clark to attend conferences and seminars.

Members enjoy discounts on the price of two recent publications – John Cotter's A Twelfth-Century Pottery Kiln at Pound lane, Canterbury (C.A.T. Occasional Paper No.1) and on Kevin Blockley, Margaret Sparks and Tim Tatton-Brown's Canterbury Cathedral Nave: Archaeology, History and Architecture (The Archaeology of Canterbury New Series Volume 1), published jointly with the Dean and Chapter and financed by the Friends of Canterbury Cathedral.

The short break in April was to Bury St Edmunds. On the way to Suffolk we stopped at the remarkable medieval barns at Cressing Temple and had a tour of the Abbey ruins before settling in at the Angel Hotel. During the next two days we had a conducted walk round the town and visited St Mary, Woolpit, Clare Priory, Ickworth, the reconstructed Anglo-Saxon village at West Stow, Thetford Priory, Grimes Graves and Oxburgh Hall. The return journey was enlivened by stops at Lavenham and Long Melford.

FRIENDS of the CANTERBURY ARCHAEOLOGICAL TRUST

For day excursions we collaborated with Canterbury Archaeological Society in trips to Tilbury Fort and Ingatestone Hall (led by myself), to Minster-in-Thanet (Jean Crane) and to Colchester (Ann Vine). Meriel Connor's specialist tour of the Cathedral in March was so popular that she kindly repeated it a week later. Her Festival Walks were again much enjoyed and yielded a profit of nearly £500 for the Trust.

Paul Bennett's Frank Jenkins Memorial Lecture was as well-attended and as fascinating as ever. Peter Clark as also reported on progress on research into the Dover Bronze Age Boat.

Three Newsletters have been produced and many delivered by our indefatigable team of distributors. I am most grateful to them and to the willing and energetic Committee who keep the show on the road.

PART SIX

Financial Accounts

The following financial statements represent a summary of the audited accounts of the Canterbury Archaeological Trust Limited for the year ended 31 March 1998. A full set is available at the Registered Office.

Report of the Directors

The Directors have pleasure in presenting their report for the year ended 31 March 1998.

Review of The Activities

The company was incorporated on 2 August 1979 and acquired all the assets and liabilities of the unincoporated association "Canterbury Archaeological Trust". The principle activities of the company remained unchanged from those of the unincoporated association, that is to advance the education of the public in Archaeology and to acquire and promote knowledge of the past of and in Canterbury and the surrounding area.

Results

The results for the Trust for the year ended 31 March 1998 are as follows:

	1998	1997
	£	£
Main Account	(19,480)	28,386
Friends Account	6,093	5,974
Donald Baron Bursary Fund	464	602

Directors

The Directors during the year were:
F.H. Panton
M.H.S. Bridgeford
R. Westbrook

Secretary

The Secretary during the Year was Lawrence D. Lyle.

Registered Office

92A Broad Street, Canterbury, Kent.

Registered Charity Number

The company is registered under charity number 278861

Auditors

A resolution to reappoint Chantrey Vellacott as auditors will be proposed at the forthcoming Annual General Meeting.

BY ORDER OF THE BOARD
Lawrence D Lyle
Secretary

26th February 1999

Report of the Auditors

We have audited the financial statements set out herein which have been prepared under the historical cost convention and the accounting policies.

Respective responsibilities of directors and auditors

The company's directors are responsible for the preparation of financial statements. It is our responsibility to form an independent opinion, based on our audit, on those statements and to report our opinion to you.

Basis of opinion

We conducted our audit in accordance with Auditing Standards issued by the Auditing Practices Board. An audit included examination, on a test basis, of evidence relevant to the amounts and disclosures in the financial statements. It also includes an assessment of the significant estimates and judgements made by the directors in the preparation of the financial statements, and of whether the accounting policies are appropriate to the company's circumstances, consistently applied and adequately disclosed.

We planned and performed our audit so as to obtain all the information and explanations which we considered necessary in order to provide us with sufficient evidence to give reasonable assurance that the financial statements are free from material misstatement, whether caused by fraud or other irregularity or error. In forming our opinion we also evaluated the overall adequacy of the presentation of information in the financial statements.

Opinion

In our opinion, the financial statements give a true and fair view of the state of the company's affairs as at 31st March 1998 and of the deficit) for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

CHANTREY VELLACOTT
Chartered Accountants
Registered Auditor

7 Dane John
Canterbury
Kent CT1 2QS
26th January 1998

Main Account

Statement of Financial Activities for the year ended 31 March 1998

		1998 £		1997 £
Incoming Resources				
Fees		741,874		744,190
Grants		31,710		36,840
Donations		7,405		12,106
Other		51,414		35,818
Total Incoming Resources		832,130		828,954
Resources Expended				
Direct Project Expenditure				
Direct project	563,594		523,909	
Management salaries	117,403		123,169	
Overheads	103,399		85,398	
		784,396		732,476
Management and Administration				
Management salaries	57,730		60,666	
Overheads	9,484		7,426	
		67,214		68,092
		851,610		800,568
Net Movement of Funds				
(Deficit)/Surplus for the year		(19,480)		28,386
Fund Balances brought forward at 1 April 1997		305,188		276,802
Fund Balances carried forward at 31 March 1998		£285,708		£305,188

There is no difference in the financial activities requiring disclosure within a "Statement of Financial Activities" and those requiring disclosure within an "Income and Expenditure Account", and so the above statement has been constructed so as to comply with FRS3 and consequently a separate Income and Expenditure Account has not been produced.

Balance Sheet — 31 March 1998

		1998 £	1997 £
Fixed Assets			
Tangible fixed assets		185,126	185,126
Current Assets			
Debtors and work in progress		154,015	146,908
Cash at bank and in hand		141,595	113,744
		295,610	260,652
Creditors (Due within one year)		(178,181)	(123,755)
Net Current Assets		117,429	136,897
Total Assets less current liabilities		302,555	322,023
Creditors (Due after one year)		(11,022)	(11,010)
		£291,533	£311,013
Funds			
Trust Capital Account	-Restricted	5,825	5,825
Fund reserve	-Unrestricted	285,708	305,188
		£291,533	£311,013

The Friends Account

Statement of Financial Activities for the year ended 31 March 1998

	1998 £	1997 £
Income		
Subscriptions - Covenanted	4,862	4,289
Income Tax Reclaimed	1,334	1,361
	6,196	5,650
Subscription - Not Covenanted	1,977	2,129
	8,173	7,779
Other Income		
Donations, Events, Interest	1,942	2,027
Total Income	10,115	9,806
Expenditure		
Stationery, Postage, Printing, Bank Charges, Miscellaneous	4,022	3,833
Surplus of Income over Expenditure	£ 6,093	£ 5,973

Balance Sheet — 31 March 1998

	1998 £	1997 £
Current Assets		
Cash at Bank	19,487	18,723
Sundry Debtors	1,334	1,361
Donald Baron Bursaries Fund	445	(172)
	21,266	19,912
Creditors: Amounts falling due within one year		
Sundry Creditors	(862)	(2,378)
Total assets less current liabilities	20,404	17,534
Represented by:		
Income and Expenditure Account		
Balance brought forward	17,534	14,389
Surplus of Income over Expenditure	6,093	5,974
	23,627	20,363
Less payments on behalf of Canterbury Archaeological Trust Ltd		
Mrs Marjorie Lyle	—	(600)
Contribution to Canterbury Archaeological Trust Ltd	(3,223)	(2,229)
	£20,404	£17,534

The Friends Account - Donald Baron Bursaries Fund

Income and Expenditure Account — 31 March 1998

	1998 £	1997 £
Income		
Deed of Covenant	500	500
Income Tax Reclaimed	167	167
Interest Received	582	450
	1,249	1,117
Expenditure		
Courses Paid	784	515
Surplus of Income over Expenditure	465	602
Balance brought forward	8,673	8,071
	£ 9,138	£ 8,673

Balance Sheet — 31 March 1998

Represented by:		
The Charities Deposit Fund	9,582	8,501
The Friends Account	(445)	172
	£ 9,137	£ 8,673

PART SEVEN

Members of the Trust Council

Patron:
His Grace the Lord Archbishop of Canterbury
(Dr George Carey)

Vice-Presidents:
*Cllr Bernard Collins
Mrs Margaret Collins
Mrs Margaret Scott-Knight

Chairman:
The Lord Mayor of Canterbury

Vice-Chairman:
*Dr Frank Panton, M.B.E., Ph.D., C.Chem., F.R.S.C., F.R.Ae.S., F.R.S.A.

Honorary Secretary:
*Mr Lawrence Lyle

Honorary Treasurer:
*Mr Robin Westbrook

Canterbury Museums Officer:
*Mr K.G.H. Reedie, M.A., F.S.A. (Scot.), A.M.A.

Mr David Anning, F.C.A.
Dr T.F.C. Blagg, M.A., F.S.A.
Professor B.W. Cunliffe, C.B.E., M.A., Ph.D., Litt.D., F.B.A., F.S.A.
Professor S.S. Frere, C.B.E., M.A., Litt.D., F.B.A., F.S.A.
Mr Michael Nightingale, O.B.E., B.Litt., F.S.A.
The Dean of Canterbury (Very Rev. Dr John Simpson, M.A.)
Professor Alfred Smythe, M.A., Ph.D., F.S.A., F.R.G.S.
*Mrs Margaret Sparks, M.A.
Professor John Wacher, B.Sc., F.S.A.
*Mr Bruce Webster, M.A., F.R.Hist.S.
*Mr Michael Bridgeford, F.A.S.I.

*indicates Member of Management Committee

One person appointed from each of the following bodies:

The Dean & Chapter of Canterbury Cathedral:
Mr John Burton, Dip. Arch., R.I.B.A.

Council for British Archaeology:
Mr Tom Hassall, M.A., F.S.A., M.I.F.A.

University of Kent at Canterbury:
Mr Andrew Butcher, M.A.

Canterbury Archaeological Society:
Mrs P. Garrard

Kent County Council:
Cllr Terry Pears

The British Museum:
Dr Leslie Webster, B.A., F.S.A.

Royal Archaeological Institute:
Mr Geoffrey Beresford, F.S.A.

British Archaeological Association:
Mr Brian Davison, F.S.A.

Kent Archaeological Society:
Mr Arthur Harrison, B.A., F.S.A.

Heritage Projects Limited:
Dr Peter Addyman, M.A., F.S.A., M.I.F.A.

Four members of Canterbury City Council:
Cllr M. Jeffries
Cllr D. Sinnock
Cllr A. Linfoot
Cllr W. McLachlan

Non-voting members:
Mr Mansell Jagger, M.A., Dip. T.P., M.R.T.P.I.
(Director of Planning, Canterbury City Council)
Mr Peter Kendall, B.A.
(Historic Buildings and Monuments Commission (England))

Honorary Legal Advisors:
Furley Page Fielding & Barton (Mr Nigel Jones)

Auditors:
Chantrey Vellacott (Mr David Anning)

Sponsors

The work of the Canterbury Archaeological Trust is mostly sustained by the commissioning and funding of fieldwork and research projects by clients. We are very pleased to acknowledge the support of the following during 1997–98:

Mr A. Albert
W.S. Atkins Consultants Ltd
Bass Breweries
Berkeley Homes (S.E.) Ltd
Bryant Homes (Weald) Ltd
Mr K. J. Buchan
Chilston Park Ltd
Cremer Whiting & Co., Ltd
Dean and Chapter, Canterbury
Dover Harbour Board
English Heritage
English Villages Housing Association
Fort Amherst and Lines Trust
Hall Aggregates (South East) Ltd
Ibbett Moseley Chartered Architects
Iffin Meadows Farm
Mr and Mrts Iglinski
Kent Archaeological Society
Kent County Constabulary
Kent County Council
Kent County Council Education
Kent Property Services
Mid Kent Water Plc
Monson and Locks
National Westminster Bank
North Cray Parish Council
PPI Fairbairn
Redrow Homes
Rochester-upon-Medway City Council
Southern Water Services
Sussex Building Contractors
Total Project Integration
Ward Homes
A.A. Warner & Partners

Bibliography

Albarella, U. and Davis, S.J.M. 1996, 'Mammals and birds from Launceston Castle: decline in status and the rise of agriculture', *Circaea* Vol. 12, No. 1, 1–156.

Allen, T. 2001, 'Sunset Caravan Park and Church Lane East, Whitstable', 'Wraik Hill, Whitstable' and 'Borstal Hill, Whitstable', *Canterbury's Archaeology 1998–1999*, 10–12.

Augé, C. (undated, *c.* 1900), *Nouveau Larousse Illustré*, Paris.

Bartels, M. de Haan, A. and Bresser, J. 1995, 'Archeologisch onderzoek aan de Achterweg te Tiel' *Archeologie in Tiel* 1. Rijksdienst voor het Oudheidkundig Bodemonderzoek. Tiel. (Information sheet distributed at Bruges 1997 medieval conference).

Bavington Jones, J. 1907, *Dover: a Perambulation of the Town, Port and Fortress*, Dover.

Blockley, K., Sparks, M. and Tatton-Brown, T. 1997, *Canterbury Cathedral Nave: Archaeology, History and Architecture*, The Archaeology of Canterbury I, New Series, Whitstable.

Brears, P. 1967, 'Excavations at Potovens, near Wakefield', *Post-Medieval Archaeology* 1, 3–43.

Brown, D. 1990, 'Games and toys: Dice, a games-board, and playing pieces' in Biddle, M. *Object and Economy in Medieval Winchester*, Winchester Studies 7 II II Artefacts from Medieval Winchester, Oxford, 692–706.

Crellin, D. 1973, 'Dover, Salem Chapel', *Kent Archaeological Review*, No. 31, 5.

Crummy, N. 1993, 'Small finds (St Giles's Church)' in Crummy, N., Crummy, P. and Crossan, C. *Excavations of Roman and later cemeteries, churches and monastic sites in Colchester, 1971–88*, Colchester Archaeological Report 9, Colchester, 234–5.

Driver, J.C. 1990, 'Faunal Remains' in Driver J.C., Rady, J. and Sparks, M. *Excavations in the Cathedral Precincts, 2 Linacre Garden, 'Meister Omers' and St Gabriel's Chapel*, The Archaeology of Canterbury IV, Maidstone, 228–57.

Evans, S. and Bennett-Goldney, F. (eds) 1899, *British Association Handbook to Dover*, Dover.

Gaimster, D. 1997, *German Stoneware 1200–1900*, London.

Gomme, A.B. 1894–98, *Traditional Games of England, Scotland and Ireland*, London. (Thames and Hudson edition, 1984).

Gould, I.C. 1908, 'Ancient Earthworks', *Victoria History of the County of Kent*, Vol. I, (1974 edition) W. Page (ed.), London, 418–419.

Grigson, C. 1982, 'Sex and age determination of some bones and teeth of domestic cattle: review of the literature', in Wilson, B., Grigson, S. and Payne, S. (eds), *Ageing and Sexing Animal Bones from Archaeological Sites*, British Archaeological Reports 109, Oxford, 7–23.

Harrison, W.C. 1961, 'Report, 1960', *Archaeologia Cantiana lxxvi*, p. lvii.

Harrison, A.C. and Flight, C. 1968, 'The Roman and medieval defences of Rochester in the light of recent excavations', *Archaeologia Cantiana* lxxxiii, 55–104.

Haselgrove, D. and Murray, J. (eds) 1979, *John Dwight's Fulham Pottery 1672–1978. A Collection of Documentary Sources*, Journal of Ceramic History 11.

Hasenson, A. 1980, *The History of Dover Harbour*, London.

Ireland, W.H. 1829, *A New and Complete History of the County of Kent*, Vol. III, London.

Maltby, M. 1979, *Faunal Remains on Urban Sites: the animal bones from Exeter 1971–1975*, Exeter Archaeological Reports, Sheffield.

Mee, A. 1936, *The King's England – Kent, The Gateway to England and its Great Possessions*, London.

Moorhouse, S. and Slowikowski, A.M. 1992, 'Ceramic small finds' in Moorhouse, M. and Roberts, I. *Wrenthorpe Potteries* Yorkshire Archaeology 2, West Yorkshire Archaeology Service, 161.

Newman, J. 1969, *The Buildings of England: North East and East Kent*, Harmondsworth.

O.A.U. 1994, *11–16 Biggin St, Dover – Archaeological Field Evaluation 1994*, (Archive Report, Oxford Archaeological Unit, 5/4/94).

O'Connor, T.P. 1982, *Animal Bones from Flaxengate, Lincoln c. 870–1500*, The Archaeology of Lincoln, Volume XVIII–1, London.

O'Connor, T.P. 1989, 'Bones from Anglo-Scandinavian Coppergate', *Council for British Archaeology, Report 15 (3)*, London, 137–207.

Parfitt, K. 1996, *The Dover Harbour Cambridge Road Warehouses: An Historic Building Survey* (Canterbury Archaeological Trust Archive Report, October 1996).

Parfitt, K. 1999a, 'Archcliffe Fort, Dover', *Canterbury's Archaeology 1996–1997*, 19.

Parfitt, K. 1999b, 'Cambridge Road Warehouses, Dover Harbour', *Canterbury's Archaeology 1996–1997*, 20.

Phillips, A.S. 1964, Ordnance Survey record card, TR 34 NW 7.

Phillips, A.S. 1964, Ordnance Survey record card TR 34 SW 14.

Philp, B. 1968, *Excavations at Faversham, 1965, The Royal Abbey, Roman Villa and Belgic Farmstead*, Crawley.

Philp, B. 1997, 'The Roman Villa at Blacklands, Faversham Part II', *Kent Archaeological Review*, No. 130, 236–239.

Pratt, S. 1997, 'No. 12 The Precincts', *Canterbury's Archaeology 1995–1996*, 5–6.

Rees, A. 1819, *The Cyclopaedia or Universal Dictionary*, London.

Rigold S.E. 1969, 'The Roman Haven of Dover', *Archaeological Journal*, 126, 78–100.

Scühtte, S. 1979, 'Spielzeug aus Göttinger Bodenfunden', *Göttinger Jahrbuch* 22, 55–62.

St John Hope, W.H. 1883, 'On the Praemonstratensian Abbey of SS Mary and Thomas of Canterbury, at West Langdon, Kent', *Archaeologia Cantiana* xv, 59–67.

Tatton-Brown, T., Bennett, P. and Sparks, M. 1981, 'The Poor Priests' Hospital in Canterbury' in Detsicas, A. (ed.) *Collectanea Historica: Essays in memory of Stuart Rigold*, Maidstone, 173–86.

Thompson, A., Grew, F. and Schofield, J. 1984, 'Excavations at Aldgate, 1974', *Post-Medieval Archaeology* 18, 1–148.

van Wijngaarden-Bakker, L.H. 1983, 'The influence of selection on the size of prehistoric cattle' in Kubasiewicz, M. (ed.), *Archaeozoology vol. 1*, Szczecin.

von den Driesch, A. 1976, 'A Guide to the Measurement of Animal Bone from Archaeological Sites', *Peabody Museum Bulletin 1*.

von den Driesch, A. and Boessneck, J.A. 1974, 'Kritische Anmerkungen zur Wiederisthoherberechnung aus Langenmassen vor- und fruhgeschichtlicher Tierknocken', *Saugetierkundliche Mitteilungen* 22, 325–48.

Ward, A. 1996, 'Rochester city wall', *Canterbury's Archaeology* 1996–1997, 25.

Ward, A. 1999, 'Bradbourne House, East Malling', *Canterbury's Archaeology 1996–1997*, 26.

Woodfield, C. 1981, 'Finds from the Free Grammar School at the Whitefriar's, Coventry, *c.* 1545–57/58', *Post-Medieval Archaeology* 15, 81–59.

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