CANTERBURY'S ARCHAEOLOGY

1998 – 1999

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Compiled by John Willson

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23rd ANNUAL REPORT

CANTERBURY MUSEUM

1998

1999

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PART ONE

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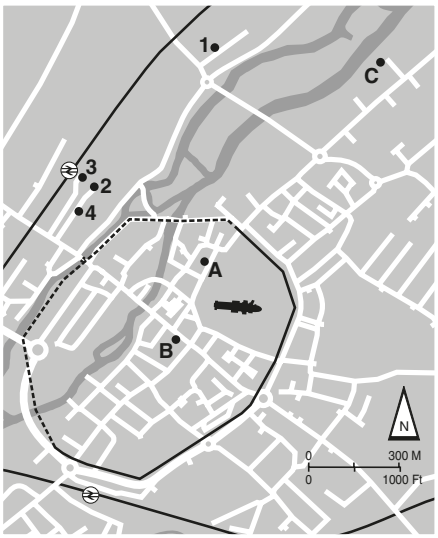

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1 Market Way
Jonathan Rady

Between 14th–18th September 1998, part of the site of the former Cattle Market at Market Way on the north side of Canterbury, was evaluated for the presence of archaeological remains (Rady 1998). The Trust was commissioned and funded by the potential developer to examine the site, in advance of the construction of thirty-four houses. The proposed development area (TR 151 588) lies a few hundred metres north of a branch of the River Stour, on gently rising ground at c. 12–13 m. O.D.

The evaluation located the presence of a number of features, mostly undated pits. A very small amount of Anglo-Saxon material was also recovered, suggesting a previously unknown occupation of this period in the area. Further archaeological work was therefore undertaken in 1999. All site works were supervised by Grant Shand or the author and were completed in early March.

Previous discoveries in the area include a large quantity of broken Roman tiles found whilst digging a pit for an air raid shelter in c. 1940. In addition, Roman tile was apparently found at a depth of two spits in the garden of Beverley House, adjacent to the market. Employees of a brickworks, located on the site of the present electricity sub-station, some way to the east of Market Way, reported seeing 'fire pits' some with 'an earthen seat around and ashes at the bottom' (Jenkins 1956, 40).

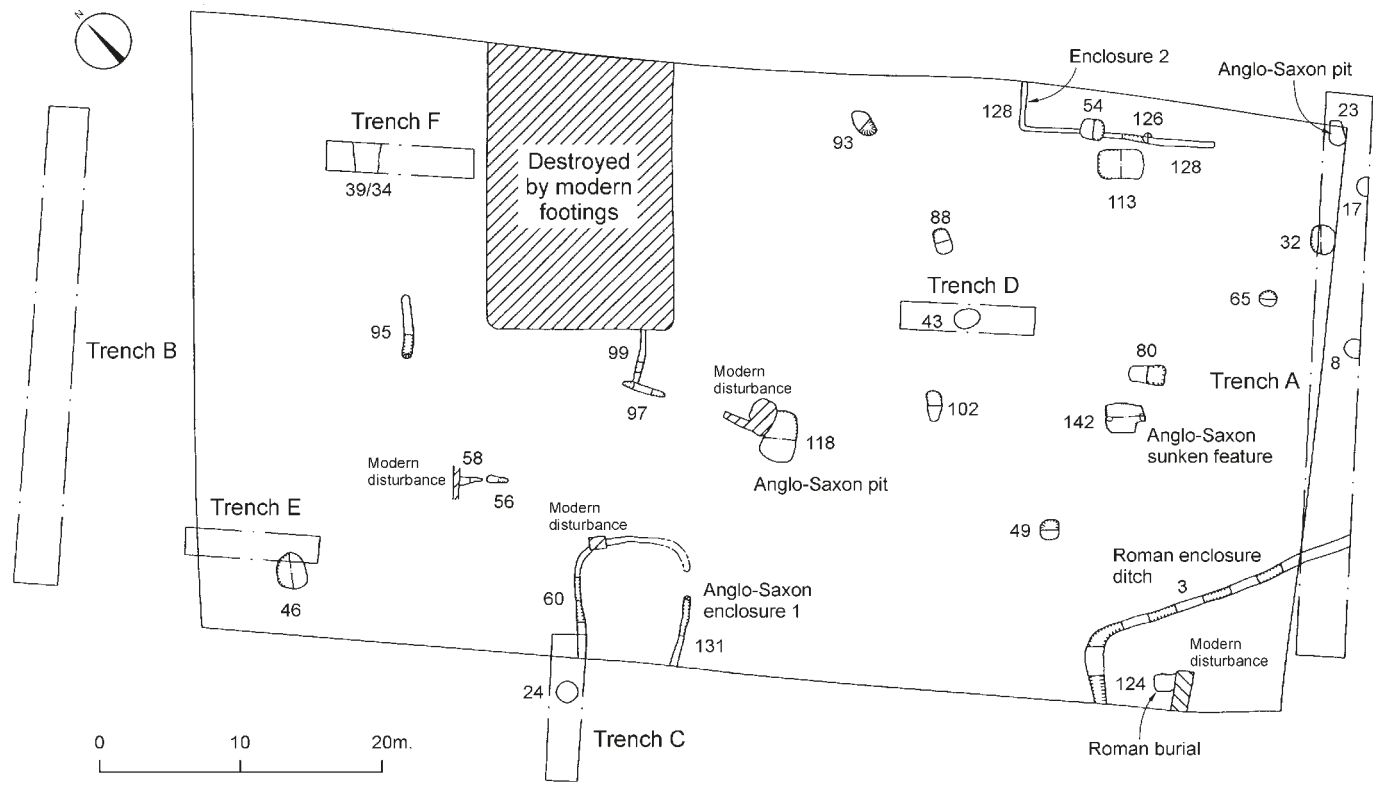
Monitoring by the late Frank Jenkins during the mechanical levelling of ground prior to the construction of the approach road (now Market Way) to the new cattle market off the east side of St Stephen's Road in December 1952, led to the discovery of a large Roman tile kiln and two Roman pottery kilns (Jenkins 1956). Two waste pits were also located, partially excavated and found to contain only tile wasters. The tile and pottery kilns appear to have been active between c. A.D. 130–140. They had gone out of use in the late second or early third century and were left derelict for some time before being levelled. Subsequently, the whole area was covered by a thick layer of burnt daub.

A considerable assemblage of prehistoric material, the bulk of which was worked flint, was recovered from the present excavations. This is unusual since well documented or stratified prehistoric artefacts remain scarce in the immediate environs of the city. It seems probable however that all of these artefacts are residual.

Only two features could be positively ascribed to the Roman period. These were situated in the southern corner of the site, closest perhaps to the Roman remains located in the 1950s. The two Roman features consisted of a ditch (3) and an inhumation burial (124). The ditch, dated to the late second or early third century by the recovered pottery, appeared to form the northern corner of a sub-rectangular enclosure which extended into the stripped area by about 20 m.

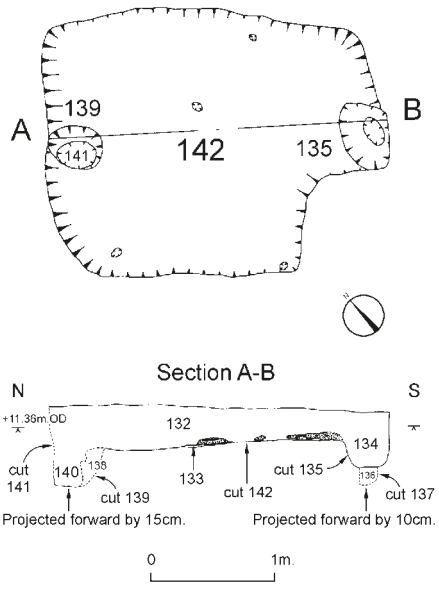
The burial was situated within the enclosure defined by ditch 3, about 5 m. from its northern corner. The southern portion of the grave had been removed by a modern disturbance. The remainder of the grave was at least 1.5 m. long and 1.25 m. wide, and was shallow, only 0.25 m. deep at maximum. It contained the very poorly preserved remains of an inhumation burial, a few traces of the skull, mostly just a smear of degraded bone plus a few teeth and two heavily eroded femoral shafts. The skeleton rested directly on the base of the cut with its head to the north-east and was probably extended. The gender was not determined.

Trench A under excavation.



Market Way, Canterbury: Plan showing location of evaluation trenches and archaeological features.

Immediately around the skeleton, six iron nails were located, three immediately adjacent to the top of the skull remnants. These nails suggest the presence of a coffin. At least two other fragmentary nails were removed from the fill before it was realized that the feature was a burial. Immediately east of the skull, a large fragment of a Roman brick had been laid flat at the base of the grave. Directly to the south-east were two broken but complete Roman pottery vessels, one laid over the other. The uppermost, which was set upside-down was a late second- to early third-century Samian platter. The lower vessel was a straight-sided black burnished ware dish which can be dated to the period A.D. 200–270. These two vessels indicate an early third-century date for the burial.



Market Way, Canterbury: Plan and section of the Anglo-Saxon sunken-feature

Although only five features could be shown to be of definite Anglo-Saxon provenance, various factors suggest that the bulk of the excavated contexts were of this period.

A sunken-featured structure (142) was situated towards the south of the site consisting of a cut, c. 2.7 m. long, 2.1 m. wide and between 0.25 and 0.35 m. deep, with its long axis aligned north-west/south-east. However, the southern 'corner' of the rectangle was missing. Two large post-pits set at the north (139) and south (135) ends of the longitudinal axis, were located. These each contained post-pipes representing the 'ghosts' of upright timbers

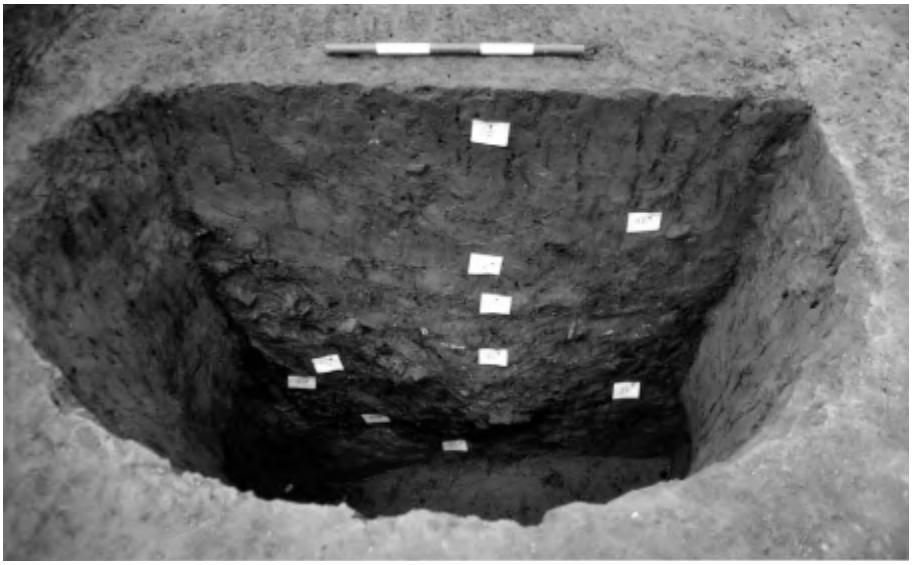
Pits of various types were by far the most common feature located during the excavation. However, only two of these (23 and 118), situated in the extreme south-eastern corner and centre of the site respectively, contained definite Anglo-Saxon material and of this only one sherd of pottery was contained in each. These sherds are however, enough to indicate that both features are Anglo-Saxon.

The backfills of the pits were often silty clays of varying colours but in some the basal or other layers were of markedly greenish hue. This suggests that their original function was to contain cess (Andrews 1997, 174–9). These pits often also contained layers relatively rich in artefactual material suggesting secondary usage for rubbish disposal. Other pits of this group showed no trace of any cess-like deposits and may have been purely for rubbish disposal. A number, including pits 80 and 88, had fairly complex backfill sequences, with layers possibly representing slumping of the edges. This might suggest that some were open for a long period and had protracted episodes of infilling

Only one other feature, a ditch (131), yielded Anglo-Saxon pottery. However this linear feature formed an enclosure with another ditch (60) on the western side of the site (Enclosure 1). A small part of a possibly similar, though undated enclosure, represented by a gully (128) was located in the south-east corner of the site (Enclosure 2). In the northern half of the examined area, there were a number of heavily truncated linear features of uncertain function, but which may also have once represented enclosures.

The evaluation and excavation of this site at Market Way has for the first time revealed both prehistoric activity and Anglo-Saxon settlement in this area of extra-mural Canterbury. In addition there is an indication that the Roman presence was not confined to the earlier Roman industrial activity recorded by Frank Jenkins nearly fifty years ago (Jenkins 1956).

Although the prehistoric material is unlikely to be in situ, it is also unlikely to have moved far. The flint implements suggest flintworking in the immediate vicinity, with the suggestion amongst



One of the Anglo-Saxon pits partially excavated.

the assemblage, of domestic activity. There are therefore, good indications of prehistoric settlement in the immediate area. This is likely to have been either on the slightly higher ground to the east and north, or considering the closeness of the river, perhaps on the site itself, all other physical trace having been removed by subsequent truncation. It is perhaps noteworthy, that the site is situated on the southern fringes of a low lying plateau (situated between 10 and 15 m. O.D.), about 700 m. wide east to west which extends northwards towards Hales Place. This entire, relatively flat area would have been ideal for settlement from prehistoric times onwards.

The date of the prehistoric activity is difficult to determine. The flint assemblage is typologically undiagnostic and only a broad Neolithic–Bronze Age range can be ascribed to it. Similarly, the ceramic assemblage is too small and undefined to be accurately provenanced. Two possible periods may be represented but both fall within the range c. 1500–50 B.C. It seems likely that sporadic occupation, perhaps with differing foci, occurred in this area from the Neolithic period onwards.

As has been mentioned, Roman industrial activity in this immediate area is well attested (Jenkins 1956). This is not unusual since Roman tile and pottery kilns are commonly found away from the contemporary built-up areas and where there was a plentiful supply of raw materials (in this case brickearth) that could be readily extracted. There was however, no evidence for Roman tile or pottery kilns on the site and indeed little material possibly relating to them was located. This suggests that the industrial features excavated in 1952–3 during the construction of Market Way were localised to that area, somewhere near to the entrance to the market or perhaps extended to the south and south-east. Other evidence, such as tiles found in the gardens of Beverley House may indicate that the general focus of Roman activity in this area was closer to St Stephen's Road.

More importantly perhaps, little evidence (apart from a few stray residual sherds) for activity contemporary with this industrial phase was present. Both the burial and the Roman enclosure ditch appear to date to the late second or early third century A.D. These features would therefore seem to relate more to the levelling of the kilns and to some of the other potentially later features examined in 1952–3.

Although there was no direct evidence for a later Roman settlement phase at Market Way, the fact that the kilns were apparently purposefully levelled after a period of abandonment, the presence of potentially domestic pits, and (in the 1999 excavations) an enclosure, may indicate domestic occupation in the immediate vicinity at some time in the later second and third centuries A.D.

Extra-mural settlements of both early and late Roman date have long been postulated to the north-west of Canterbury, whilst recent work at North Lane suggests that a long-lived Roman road, originating in the St Dunstan's area, may have extended as far as the region of the present site (Rady 1997a, 16–18). It is possible therefore that this postulated settlement, or at least a potential later Roman manifestation, was situated further north and east than hitherto supposed, possibly aggregating around the southern part of St Stephen's Road, if not further afield on the plateau towards Hales Place that has already been alluded to.

The burial is perhaps further evidence for settlement. There is, to date, little evidence for extensive formal cemeteries east of St Dunstan's Street, and although burials and cremations have been found it seems likely that these interments were made on a more casual basis in this part of the extra-mural locale. There is then, no reason to suppose that the burial (124) was particularly isolated or distant from its related settlement focus.

The burial itself is perhaps slightly unusual because of the presence of the single Roman brick laid by the head. Although tile cysts and grave linings are not unknown (Philpott 1991, 10–11), the author has so far not found a comparable example to the Market Way interment. At the time of excavation, it was thought that this tile may have indicated that the burial was that of a tiler, perhaps working at the nearby kiln. This would seem to be ruled out by the dating evidence, though it is possible that other, later kilns were still operating in the area. Otherwise, the burial, in a wooden coffin with two associated ceramic vessels is not unusual in this chronological context.

The finds and features found during the present works indicate Anglo-Saxon activity, and both the nature of the features and the burnt clay or daub found within them imply domestic occupation. The daub fragments show clear wattle impressions (some pieces still retain lengths of carbonised wattle within the fabric) which indicate that they are almost certainly derived from timber structures, probably domestic dwellings rather than industrial features.

Although only one sunken-featured structure was identified there is no reason to suppose that this was the only structure of this period in the vicinity. There is ceramic evidence for more than one phase, the earlier of c. A.D. 700–850, and a later of c. A.D. 850–1000, but it is impossible to divide the excavated features between these chronological periods. Settlement may have been protracted but not necessarily continuous, extending perhaps over the entire timespan outlined above, or perhaps of a more discrete but dispersed nature. Additional evidence for the settlement, if not its nature and longevity is supplied by the Roman road mentioned above. Previous excavations have indicated that this route may have survived as a track into the Anglo-Saxon period and was serving, in its later stages, an extra-mural Anglo-Saxon settlement in this part of Canterbury.

There is little evidence relating to the nature of the occupation now revealed due to the paucity of the recovered artefactual assemblage. The presence of cess-pits and the lack of any industrial remnant suggests a limited domestic settlement with agriculture demonstrated by the animal bone and enclosure ditches which may well be related to animal husbandry.

The layout the sunken-featured structure is not unusual. Two-post types are the most common form in England and the continent (Hamerow

1993, 10–11) and although the structure is small compared to other examples, it is nowhere near unique in this respect. Little information about the function of the structure was recovered, nor about its eventual decline or destruction

Rural Anglo-Saxon occupation sites are rare in Kent, and it is only in the last few years that any number have been excavated in any detail. Extra-mural occupation of this period at Canterbury, so far only located in traces on the eastern side of the city (Houliston 1999, 1–4) is of obvious importance in any understanding of Canterbury's development in the early post-Roman period, and the excavation has therefore provided new and potentially important information on the history and topographical development of the town.

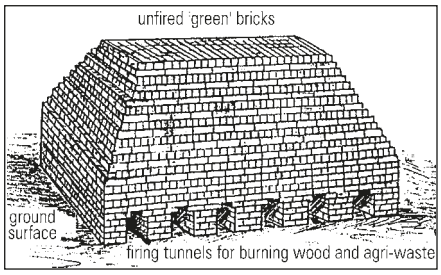
Thanks are due to the developers, Sanctuary Housing Association, for funding all the stages of excavation and post-excavation and to their contractors, Dennes, in particular to Andrew Spain and Andy Hyde. Thanks also to Grant Shand for carrying out much of the archaeological work on site and to Crispin Jarman for surveying the site and preparing site plans.

2 Station Road West

Alison Denton and John Willson

In September 1998 an archaeological evaluation trench was excavated under the direction of Alison Denton, in a plot of land adjacent to the new branch of Station Road West, just north of Barton Mill Court, Canterbury, prior to construction work by Berkeley Homes (Kent) Ltd., who funded the operation. Remains of well preserved sixteenth-/seventeenth-century brick clamp kilns were uncovered at the northern end of the site whilst terracing and the remains of a medieval chalk wall were discovered further down slope, at the southern end of the site. It was therefore recommended that the area be machine stripped under archaeological supervision, and that selective excavation be carried out. This was undertaken between the 19th and 26th October 1998. This additional work revealed the remains of two more brick clamp kilns and more details of the earlier discovered brick clamp kilns, as well as a series of brickearth quarry pits.

A brick clamp is the earliest form of brick kiln; it has no permanent superstructure, consisting merely of a large, carefully arranged, stack of bricks packed with fuel and possibly encased in misfired bricks, turf or clay. This might be fired for a number of weeks or months, depending on the clamp size, method of construction and the weather The quality of the resulting bricks would depend on their position within the kiln, those in the centre possibly becoming over-fired and vitrified, those on the edges remaining soft and under-fired. Many would be mis-shapen and discarded as wasters. The archaeological remains of brick clamps are therefore quite insubstantial, the kiln having been dismantled after each firing. At most a scatter of brick fragments and patches of extreme scorching on the ground surface might be expected to survive. Possibly for this reason few in Britain have been identified and examined, though similar clamps have been discovered, at Shotesham St Mary, Norfolk (Wade 1980), and at Lewisham, London (Meddens et al. 1997). Examples in lowland Europe are more common, where the medieval skill of brick-making originated. The remains of a series of Dutch clamps at Wijk bij Duurstede (Hollestelle 1974), most closely mirror those found at Station Road West.



Artist's reconstruction of a simple 'brick clamp'.

There are occasional documentary references to the manufacture of bricks and the construction of clamp kilns. First published in 1850, 'A Rudimentary Treatise on the Manufacture of Bricks and Tiles' (Dobson 1971) gives a detailed account of the manufacture of bricks and clamp construction. It states the importance of preparing a well-drained and compacted surface. It also gives details of the positioning of the bricks and their inter-dispersal with fuel (coal, wood or breeze) in order to produce a stable and even-firing clamp. In general it appears that unfired 'green' bricks would be stacked in rows, with flues packed with fuel running between them. The final structure may be encased with poorly fired bricks from previous firings, or possibly turf or clay, to contain the heat and protect from the elements. The fuel would then be lit and the main body of the clamp allowed to reach a stable temperature, during this initial heating most of the moisture from the bricks would be driven out as steam. Finally the entrance to the flues would be stopped and the clamp allowed to smoulder until all the fuel had been consumed. A nineteenth-century map of the nearby area shows an 'old brick kiln' marked a short distance north of the site, this may have been the remains of a more permanent structure that replaced the clamp kilns.

Parallel linear features were discovered beneath the section of brick clamp uncovered during the evaluation, these have been interpreted to be clay quarries (Denton 1998a). Similar features have been observed at Marshwood Close, off Sturry Road, Canterbury (Rady 1997b). Originally the purpose of these was unclear, but reassessment in the light of the Station Road West discoveries, and their proximity to nineteenth-century brick kilns suggests that they were cut for the extraction of brickearth, the material used for the making of bricks. Again findings at Wijk bij Duurstede, where long oblong pits were uncovered, suggests a similar function, though associated with kilns of a much earlier date

A further evaluation, carried out on the plot of land immediately to the west of the area presently being studied at St Stephen's Fields, Canterbury (Denton 1998b), also showed considerable evidence of brickearth extraction. Likewise, a recent archaeological evaluation at nos 40–42 Station Road West/Kirby's Lane, Canterbury, some 210 m. to the west, also discovered the remains of an infilled brickearth quarry pit (see article below).

Between 0.20 m. and 0.30 m. of dark, very gritty silty clay was removed from the surface of the site, representing recent (nineteenth- or twentieth-century) levelling across the area. It immediately overlay brick rubble and burnt clay layers, which were assumed to be waste from the dismantling and abandonment of the clamps. In most places this was also removed to reveal the hard baked floor surfaces of the clamps themselves. The stripping of the northernmost area revealed the presence of two distinct areas of burning, both of which overlay oblong quarry pits. These were described as Clamps 1 and 2, Clamp 1 being on the easternmost edge of the site, Clamp 2 was situated to the west of the area. The second area of stripping revealed Clamps 3 and 4, their surface levels were in general more than 2 m. lower than those in the uppermost area

The quarry consisted of a series of oblong pits with vertical sides and flat bases, set on a north-west/south-east alignment. The full length of only one of the oblong quarry pits was visible, it extended 14.25 m. across the area between the clamps. The quarry widths in general were about 0.90–1.0 m., occasionally slightly narrower,

View of the narrow baulks left between clay quarry pits.

with very narrow baulks of natural brickearth in between. Their full depth, previous to truncation by the clamp kilns and any later activity, would have been in excess of 0.60 m. and spade marks from the original removal of the brickearth were visible in the base.

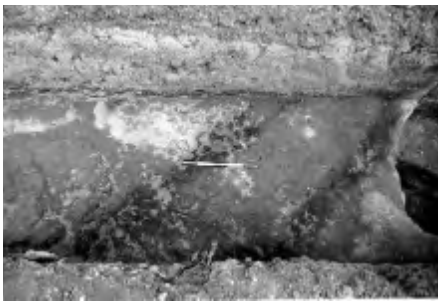
Both the upper and lower clamps have evidence of the ground being levelled prior to their construction, the upper ones being cut into the backfilled quarry strips, the lower into a purpose dug terrace with evidence of an attempt at drainage and some physical containment. Whilst Clamps 1 and 2 each represent single firing events in distinct locations, 3 and 4 were quite different in that they shared a common, or overlapping position, possibly indicating pressure on suitable space given the slope of the land as it inclines towards the river.

Black parallel scorch lines, indicating the position of flues, were evident in three out of the four clamps. Their alignments and widths varied, probably reflecting the wind direction at the time of their firing and the length of time they were to be fired for (wide brick stacks and narrow flues requiring longer than narrow stacks and wide flues). The size of the individual bricks is also something that might influence the necessary firing time.

Archaeomagnetic dating of the scorched surfaces of Clamps 4 and 3 revealed a potential date range of 1360–1410 for Clamp 4 and a date range of 1580–1640 for Clamp 3, with a 95 per cent confidence rating (Clark Laboratory 1998). Clamps 1 and 2 were dated to the early seventeenth century by pottery fragments and brick types from the filling of the quarry pits below them, which gives a similar date to that of Clamp 3; thus it seems that Clamp 4 may potentially have been 200 years older than the other clamps.

Brick preparation was a seasonal activity, most clay being excavated, puddled and refined over winter, the final firing occurring during the summer months. The processes involved would have required further working areas, such as storage sheds, puddling pits and moulding and drying areas. None of these associated workings were observed on the site. The limited size of the sample area might explain the absence of these features, but it is likely that the true boundaries of the industrial area are indeterminable, especially as modern development has encroached on much of the surrounding land. Early maps of the area show that the land package itself has been present and established for at least the past 350–400 years, though none indicate any activity other than fruit growing to have occurred on the plot. This calls into question the scale of production.

The scale of the event is hard to determine. The presence of four clamps need only indicate four seasons of manufacture, however, the use of one area for perhaps more than 200 years points towards a more established industry, or at least a recognised area for an intermittent industry. Given the proximity of the river it is possible that some of bricks produced were transported by shallow bottomed boats or barges, in the Dutch fashion.



View of parallel scorch marks representing position of firing flues within one of the brick clamp kilns.

3 Nos 40–42 Station Road West/Kirby's Lane

Richard Cross and John Willson

On 21st January 1999 an evaluation under the direction of Richard Cross, consisting of two machine-cut linear trenches across the front and rear of a plot of land at nos 40–42 Station Road West and backing onto Kirby's Lane, was carried out in advance of a proposed residential housing development. The Trust was commissioned by Paul Roberts & Associates (Canterbury) agents for the developers Panorama Properties who kindly funded the project.

The work revealed that the earliest deposits remaining on the site form part of a late post-medieval, probably late eighteenth-/early nineteenth-century infilling of a presumably deep and extensive pit, although the full depth of the feature was not recorded. The nature of the backfill indicates that this was originally a quarry pit excavated for the brickearth clay soils, perhaps for use in the manufacture of pottery, tiles and brick in the nearby vicinity. No other features were revealed across the entire length of either of the evaluation trenches.

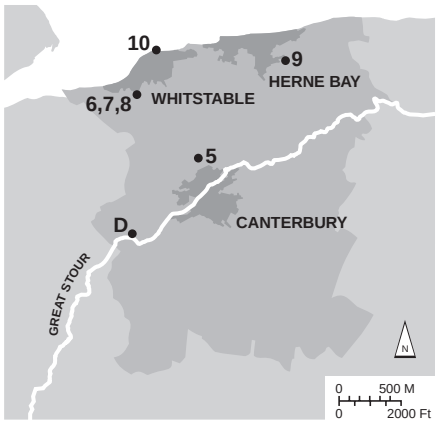
It is possible that the infilled quarry pit on this site is part of the same, or yet another similar industrial site to that situated on the Station Road West site during the late medieval and early post-medieval period

4 Former Police Station, Kirby's Lane

Jonathan Rady

A small scale watching brief during redevelopment at the old Police Station at Kirby's Lane, provided another glimpse of the Roman topography of the area. Here an extremely large and deep linear feature aligned almost north–south, was observed in deep foundation trenches. This feature, which contained some Roman material in what appeared to be water deposited silts has been interpreted as an old water course or stream bed. It was probably fed by springs, some of which still issue near the top of the hill in the university grounds. The presence of this previously unknown Roman period watercourse may explain an abrupt alteration in the alignment of the nearby Roman road located in 1993 and 1996 (Rady 1997a, 16–18), as this exactly coincides with the projected position of the watercourse. Unfortunately the site of the Roman crossing of the watercourse, perhaps via a ford or a bridge, has never been available for excavation.

II Canterbury District Sites



Canterbury district sites:

5	Sarre Penn Culvert, Blean
6	Sunset Caravan Park, Whitstable
7	Wraik Hill, Whitstable
8	Borstal Hill, Whitstable
9	Bogshole Lane, Broomfield
10	Copperas works, Tankerton
D	Cumberland House, Chilham

5 Sarre Penn Culvert, Blean

John Willson

During August 1998, Richard Cross and Andrew Savage carried out a photographic survey of the Sarre Penn Culvert, to the north of Giles Lane and the campus of Kent University (TR 1395 6034). Here, Delta Civil Engineering Co. Ltd. was carrying out maintenance and remedial works on the culvert which formed part of the original 1830 Canterbury to Whitstable Railway. The brick built culvert, carries the Sarre Penn stream under the raised embankment of the railway immediately north of the Tyler Hill tunnel and was constructed to protect the embankment from erosion.

Initially it was proposed to excavate a large area of the embankment and adjacent stream bank to construct a new culvert. The area, however, is considered an historic landscape, with a well-preserved late prehistoric land surface with associated palaeo-environmental waterlogged remains and other features and finds buried by up to 2 m. of weathered sandy silts along the valley floor. Also the important remains of the early railway would be subject to damage, thus any works disturbing the ground surface, during the remaking of the culvert, may have had an impact on both the buried archaeological resource and on the industrial archaeology of the railway. Accordingly, it was decided to construct a new culvert inside the old original with only minimal damage. A photographic record, kindly funded by Kent University, was made of both east and west ends of the old culvert, prior to the construction of the new.

The Canterbury and Whitstable Railway is important both in national and regional terms for its industrial history. In 1736, the road from Canterbury to Whitstable was turnpiked (the second in the county) so as to give the city easy access by water to London and other ports of the county (Jessup 1973, 48). Increasing amounts of coal, foodstuffs and other commercial goods were being conveyed to Canterbury via Whitstable, which had by the eighteenth century eclipsed Canterbury's early port at Fordwich two miles to the east. Fordwich, by then a small hamlet with a tiny quayside, had become unable to keep up with the demands placed on it as a port, largely because of the total silting up of the Wantsum Channel during the medieval period and subsequent and continual silting problems with the river Stour. Plans were being hatched to provide a canal to Canterbury to overcome the problem of supplying the city's growing demands for large quantities of all kinds of luxury and commercial goods, foodstuffs, building materials and in particular coal. However, before this venture was embarked upon, railways had begun to eclipse the canal systems.

In 1824 the Canterbury Rail Road Company was formed. Work began on the difficult construction in late 1825 and despite long delays due to both construction problems and almost financial collapse it was finished in May 1830 (Hart 1991, 9–12). The opening of the Canterbury and Whitstable Railway was a signal event both in the history of the two towns and that of the railways, for on May 3rd 1830, it became the first railway in the world to handle all of its traffic, passengers and goods by steam-powered locomotive, although this was only for part of the six mile route (Hart 1991, 1). It preceded the Liverpool and Manchester Railway by just four months, whilst the Stockton and Darlington Railway, often credited as the world's first railway which ran in September 1825, was only an experimental run with a steam locomotive, not

View of brick culvert mouth (west end).

View of brick culvert mouth (east end).

commercial, and after that horses provided the tractive power on the line. The Canterbury and Whitstable Railway actually holds three firsts: the first railway in the world to handle all its traffic, passengers and goods, by steam power; the first to carry its passengers through a tunnel (Tyler Hill tunnel), and the first railway season tickets in the country were issued in March 1834 (Page *c*. 1991, 3–7).

The locomotive initially used on the Canterbury and Whitstable Railway was the 'Invicta' of the same type as the 'Rocket' and was built by Robert Stephenson & Co. It ran only on the level stretch of the line from Whitstable Harbour to Bogshole (about one and a half miles), then stationary steam engines hauled the wagons up and down the slopes to and from Canterbury (Jessup 1973, 52). A new harbour, part of the overall scheme, opened at Whitstable in 1832 and the harbour and railway developed in conjunction with each other. In 1844, South Eastern Railway leased the line and modernised it using steam locomotives throughout the whole route (Barker 1995, 140). Soon the route became known as the 'Crab and Winkle Line' due to the large quantities of seafood carried to the city from Whitstable. The station at Whitstable was at the entrance to the harbour, whilst the city's station terminus was at Canterbury West.

The effect the railway had on population mobility was enormous, during the 1820s about 4,000 people travelled the toll road between Whitstable and Canterbury, whilst in 1835 some 26,000 travelled the route by rail (Pike *et al.* 1993, 41). Likewise the effect of the railway, once modernised, saw the growth of Whitstable eastwards towards the harbour and rail terminus. By the 1880s, some 100,000 tons of coal was being carried by rail from Whitstable Harbour to Canterbury as well as many thousands of tons of other goods and supplies (Hart 1991, 53).

By 1930, however, the passenger services had become uneconomic and were discontinued in 1931, but the line continued to carry freight until even freight carrying became unprofitable and the historic line closed completely on 29th November 1952 (Hart 1991, 171–2).

6 Sunset Caravan Park and Church Lane East, Whitstable

Tim Allen and John Willson

Between the 13th–28th October two archaeological evaluations were undertaken on adjacent plots on a promontory overlooking Whitstable to the north and Seasalter to the north-west. The first of the evaluations took place in an area designated as Church Lane East (TR 100 647) and was commissioned and funded by Fairclough Homes Ltd. The second fell within Sunset Caravan Park (TR 103 646) and was commissioned and funded by Bennett and Baxter Builders Ltd. Both evaluations were undertaken in advance of applications for planning permission being granted and were directed by Tim Allen.

The evaluation at Church Lane East, on the western slope of the promontory, between the 26 m. and 54 m. contours exposed a diffuse spread of archaeological features provisionally identified as ditches, hearths and rubbish pits.

Excavation of a shallow prehistoric pit.

Initial analysis of the features and their ceramic contents suggested they represented settlement remains dating from the Late Bronze Age or Early Iron Age to the Early Roman period (*c*. 700 B.C. – *c*. A.D. 100).

The evaluation at Sunset Caravan Park took place on the crown of the promontory immediately north-east of Church Lane East. The findings suggested the presence of a large, dense but localised concentration of features surrounded by more diffuse spread of the type previously exposed to the west and their ceramic contents suggested a densely-occupied settlement, apparently having the same date range (*c*. 700 B.C. – *c*. A.D. 100) as the remains exposed immediately to the west. As the date range of the features was identical to those at Church Lane East, it was postulated that the two evaluations had exposed parts of a hitherto unknown large Late Bronze Age or Early Iron Age settlement which had survived into the early Roman period.

Following the completion of the evaluations, the Trust was commissioned to undertake large-scale excavation on the two sites in order to further investigate the settlement remains. The investigations revealed the presence of two distinct patterns of feature concentration, one diffuse and widespread, the other highly concentrated and localised.

The settlement's nucleus, exposed on the Sunset Caravan Park site, was situated on top of a promontory of London Clay at a height of about 58 m. O.D. providing a vantage point overlooking the coastal plain to the north and the Seasalter Level and Graveney Marshes to the west. This nucleus, set within the 55 m. contour and perhaps originally occupying an area of approximately 40,000 square metres, included pits, post-holes,

General view of the site showing prehistoric hut circle in foreground (marked by rods).

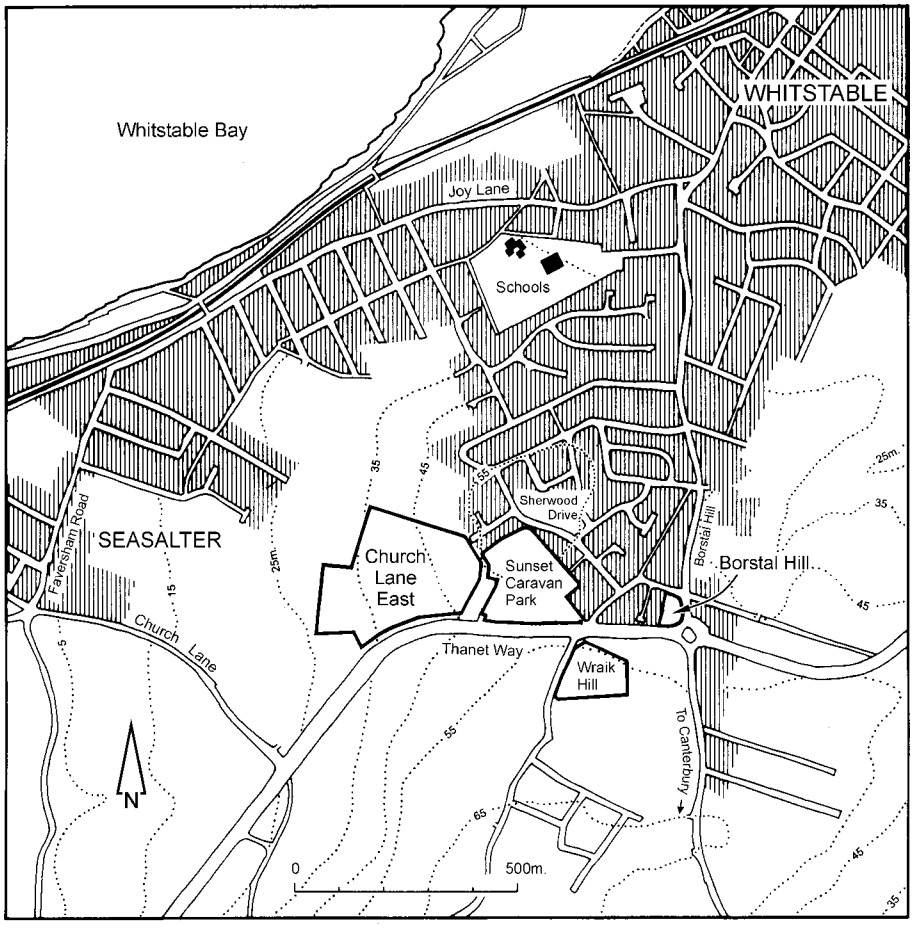
Iron Age rectangular timber-posted structure from the south.

post-pits and ditches lying in a dense concentration around a cluster of circular and semi-circular hut gullies. It was considered significant that virtually no pits or similar features were present in the area occupied by the circular and semi-circular gullies, which were interpreted as dwellings. The majority of these were roughly equidistant at approximately 1 m. from each other. A more complicated, rectilinear arrangement of post-holes and gullies to the south west was of less certain function. A small pit exposed adjacent to one of the circular gullies contained possible evidence for on-site metalworking in the form of slag.

On the Church Lane site the feature distribution pattern was generally even across the stripped area but burnt daub fragments and scorched flints concentrated in the south-west part were in sufficient quantities to suggest that protracted or intensive industrial activity took place there. Associated Late Bronze Age, Iron Age and 'Belgic' potsherds, along with smaller quantities of first- and early second-century Roman material, suggested that this activity was contemporary with the settlement as a whole. One hollow, perhaps a hollow-way of early medieval date, was found to have been cut by a later medieval ditch. Other similar deep-cut, hollow-way like features part excavated in this area remain to be dated.

The largest group of features on both sites were pits, which varied widely in size. Some were almost certainly quarry pits cut for the extraction of clay. Pits containing large quantities of burnt flint, daub, potsherds and occasionally bone and oyster shells were also present.

Finds retrieved within the feature concentration on the Sunset site included spindle whorls, indicating that weaving took place in the vicinity. Iron slag and clay quarries were perhaps indicators of industry. Initial analysis of the pottery from both sites suggests that many of the pots were repeatedly fired, until they were almost completely oxidised. This is unlikely to have been the result of use as cooking pots, where relatively low temperatures are used for relatively short periods of time. Similar re-fired pottery sherds from Highstead, near Chislet were found upon analysis to be impregnated with salt residues. This raises the intriguing prospect that salt production may have formed part of the economic base of the Whitstable settlement during the Iron Age, up to a thousand years earlier than the first documentary evidence of salt production in Whitstable.



The four sites in which Iron Age remains have been exposed.

General view of the site from the south

Archaeological work at two nearby sites on the same promontory, at Wraik Hill and Borstal Hill (see below) revealed that the Iron Age settlement continued onto these sites but in a less dense manner. This tentatively suggests the presence of a substantial Iron Age settlement occupying the London Clay promontory on the westernmost point of levels which supported numerous Late Bronze Age/Early, Mid and Late Iron Age agricultural communities. The settlement overlooked a well-populated coastal margin and the open sea to the north and resource-rich marshes and the Swale to the west.

7 Wraik Hill, Whitstable

Tim Allen

In September 1998 the Trust was contracted by Tyler Partnership & Associates acting on behalf of George Wilson Developments Ltd, (who kindly provided the funding), to undertake an archaeological evaluation of the above site in advance of its development as a new business park. The site is situated on a promontory of London Clay some 2 km south-west of Whitstable on Wraik Hill south of the Thanet Way (TR 103 645).

A wide range of features dating from the Late Iron Age (i.e. *c.* 150 B.C.–A.D. 70) were identified during the trenching including pits, post-holes, hearths and ditches. Significantly, some nine fragments of burnt clay 'daub', possibly indicative of the past presence of wattle-and-daub structures, were also recovered from the Iron Age features.

The evaluation was followed by an excavation which revealed rubbish pits, probable clay extraction pits, clamp kilns or, more likely, bread ovens or hearths and ditches. Also exposed were the remains of a substantial ditch-and-bank lined track or roadway leading from the south.

Excavation of shallow Iron Age features

The pottery recovered from the Wraik Hill site remains dated exclusively to the Late pre-Roman Iron Age (*c.* 150/100 B.C. – *c*. A.D. 70) in the form of flint-tempered and grog-tempered 'Belgic' type wares. The types of vessels represented were jars, bowls, platters, cups, beakers and flagons, some of which were imported, along with associated materials such as daub, oyster shells and numerous fire-cracked flints or 'pot-boilers'. The potsherds and other materials pointed to the use of this area of the settlement for domestic occupation and gave some indication of the status of the settlement.

8 Borstal Hill, Whitstable

Tim Allen

An archaeological evaluation of land due to be developed for housing at Long Reach Close, Borstal Hill, Whitstable (TR 1045 6465) was commissioned by Bennett and Baxter Builders Ltd and undertaken between the 20th–23rd September 1999 under the direction of the writer. Situated at 50 m. O.D., the site was the fourth to be investigated on or close to the promontory forming a vantage point overlooking the coastal plain. The site at Wraik Hill lies some 200 m. to the south-west and Sunset Caravan Park and Church Lane East are respectively situated some 350 m. and 750 m. to the west.

General view of the site showing excavation of prehistoric features in progress

The results of the evaluation at Borstal Hill revealed pits, post-pits and ditches four of which contained pottery dated to the Mid to Late Iron Age. The evaluation was followed by an excavation. Again the remains of ditches, gullies of uncertain function and large amorphous pits, almost certainly the result of clay extraction, provided pottery dating from *c*. 150 B.C. to *c*. A.D. 70.

It would appear that the evidence at Borstal Hill, like Church Lane East and Wraik Hill, represents a scattered area of settlement adjoining a nucleus of intense activity centred around the Sunset Caravan Park site. Neither the Wraik Hill site nor the present site contained evidence of Romano-British occupation reinforcing the hypothesis that the settlement was either abandoned at this time or shifted further to the north-west.

9 Bogshole Lane, Broomfield, near Herne Bay

Tim Allen

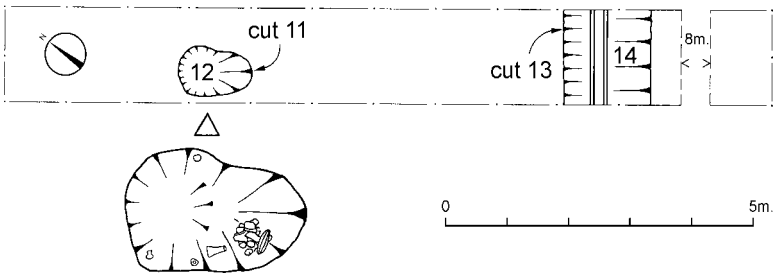
In March 1999 the Trust was commissioned by Mr I.W. Collins, acting on behalf of South East Estates Ltd, who also funded the work, to undertake an archaeological evaluation of land lying immediately east of Bogshole Lane, Broomfield (TR 1984 6695 centred).

The archaeology of the Bogshole Levels has underdone a dramatic reappraisal in recent years, largely as a result of archaeological work undertaken in advance of road construction (Parfitt and Allen 1990) and housing developments to the west of the present site (Bennett and Blockley 1987, 22). The Levels, once considered to be of low archaeological potential, are now recognised to be an area in which protracted and intensive occupation took place from the Mid to Late Bronze Age until the Late Iron Age.

The evaluation work at Bogshole Lane revealed evidence for three sets of remains. Firstly and perhaps most notable was the discovery of a Late Bronze Age 'founder's hoard' along with some evidence for an associated settlement; secondly

Some of the bronze implements from the Bronze Age hoard from Bogshole Lane, Broomfield

Plan of Trench 8



Bogshole Lane, Broomfield: plan of feature containing the bronze founders hoard in trench 8.

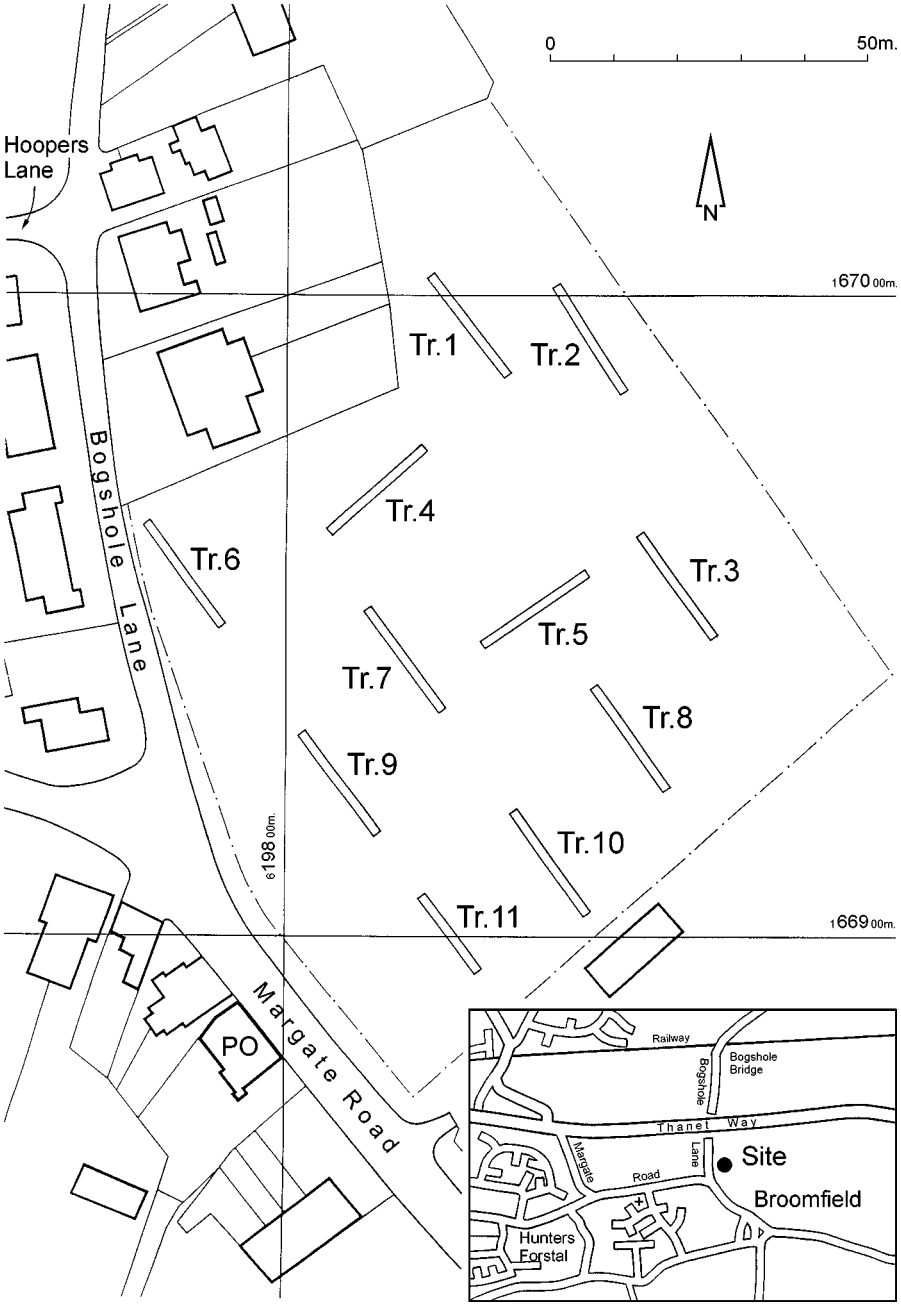
the presence of Late Iron Age and Early Romano-British ceramic material; and thirdly evidence in the form of features and ceramic materials for a medieval settlement and enclosure.

The Late Bronze Age evidence consisted of a roughly oval-shaped pit, the fill of which contained twenty-seven copper alloy objects. This rare 'founder's hoard' comprised deliberately broken fragments from eleven axe or palstave heads/blades, one of which was socketed, one was winged and one was both socketed and winged. Also represented were parts of two spear heads and two shaft fragments of uncertain identity, along with twelve amorphous bronze lumps.

The only datable fragments in the Bogshole Lane bronze hoard are of the period *c*. 850 B.C.–700 B.C. Many of the bronze fragments were not diagnostic in terms of style and type. One possible exception, however, was part of a kite-shaped spear head, the shape of which was more typical of an earlier style, it is possible that other types are present but this awaits specialist analysis. Most of the fragments from recognisable tools and weapons are of high-quality workmanship but are rather soft and disproportionately heavy, probably as a result of high lead content. Five potsherds were also recovered in association with the hoard of a fabric type that was used throughout the Mid to Late Bronze Age period

Although sherds of later Iron Age and Romano-British pottery were recovered in topsoils and residual contexts, no features of the period were discovered.

Evidence for medieval occupation was exposed in several trenches. A combination of possible occupation deposits, post-holes and slots for ground beams in one trench (T9) suggests that this was possibly the site of a medieval dwelling. An assemblage of potsherds, many from heavily-sooted cooking pots, pointed to activity of a generally domestic nature. Other trenches provided evidence of boundary or enclosure ditches, some of which had been recut. Pottery dating from *c.* 1250 to *c*. 1550 was recovered from these features.



Bogshole Lane, Broomfield: location plan showing position of trenches.

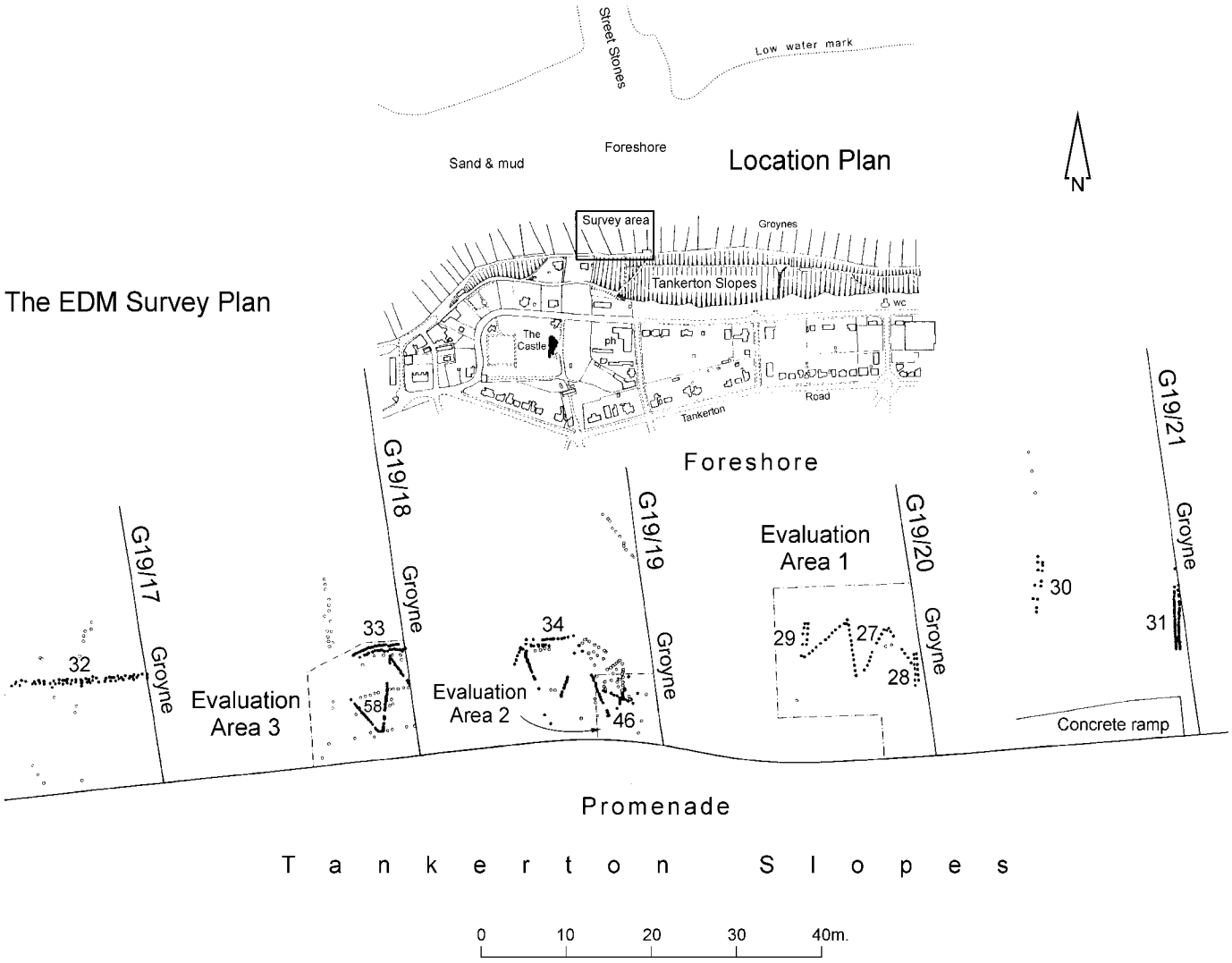
10 The Copperas Works at Tankerton

Tim Allen

From 1995 onwards, an extraordinary array of timber posts set in bright red-orange mortar was exposed by marine erosion on the Tankerton foreshore at Whitstable. In 1997 the Trust began a two-year investigation to identify these remains and discover what they could tell us about the history of Whitstable. Some of the remains were eventually identified as part of a late sixteenth-/seventeenth-century copperas works, evidence of perhaps the first major chemical industry to be established in England.

The archaeological site lies to the north of the concrete sea wall and promenade at Tankerton (TR 1140 6740). The investigation centred around a survey of the exposed timbers and other features and an evaluative excavation of three areas within the inter-tidal zone. Initial excavation was undertaken using a mechanical excavator which removed a substantial quantity of shingle and sand which was then used to construct a barrage to protect the site from the sea. In spite of this, the site was inundated at each high tide. The lower levels of sand and shingle were removed by hand.

Area 1 contained a series of floors, floor beddings and levellings laid down over a protracted period of time. Finds included iron and copper nails and fragments of scrap iron. The basal layer consisted of yellow powdery dumped deposits, most probably the sulphur-rich by-



Plan showing features related to the Tankerton copperas works discovered on the foreshore.

products of copperas production. Similar material was found underlying the poured mortar floors and seems to have been regularly employed as a levelling material. Timber structures set into these floors appear to have included windbreaks and groyne-like structures, together with two abutting triangular structures of undetermined purpose. Although resembling groynes in their form, the structures were too light to have withstood heavy seas, and other evidence indicates that the area was not subject to inundation during the early eighteenth century, the period to which they can be most plausibly ascribed.

Area 2 included an area of London Clay, redeposited as alluvium, overlying a layer of peat which contained fragments of tile suggesting that it had accumulated during the medieval or post-medieval period. Further excavation revealed a spread of chalk rubble and limestone blocks associated with a row of upright timbers on its north-western edge and a second row intersecting the rubble feature on a south-eastwards alignment. The area defined by the two linear features was covered with flint cobbles and stained red to a depth of 5 cm. This suggested that the feature was the site of a copperas bed, used for the initial weathering of the nodules. The adjacent flint cobbling included numerous fragments of brick, iron nails and metal objects, including a fifteenth-/sixteenth-century cloth seal. Two rows of timbers set in a triangular pattern were also exposed and seemed to be part of the similar arrangement seen in area 1.

Later features appeared to indicate the existence of a wharf or similar structure, constructed of limestone fragments from the Thanet Beds which do not occur naturally in the area. A further timber structure, adjacent to the modern sea wall, appear to be the remains of a raised walkway or long wharf.

Area 3 revealed a 10m long section of a well-preserved plank-and-post structure and two abutting clay strips. The planks and posts were joined by mortise-and-tenon work and conformed in appearance with Colwall's description of a copperas bed (see below). These features were therefore interpreted as part of a repaired or rebuilt copperas bed associated with one of two copperas works lost to marine encroachment before 1639. A plank-and-post structure of similar build and alignment was exposed in Area 2. This was considered to be part of the same bed, suggesting that the bed was over 141 feet long. This structure was identical in appearance and orientation with two smaller structures exposed in Area 3 and interpreted as earlier examples of copperas beds, again associated with a copperas works lost to marine encroachment.

Also exposed was a linear spread of chalk rubble and limestone blocks immediately north of the bed in Area 2. An iron bar was embedded in the chalk's surface and the north-west edge of the linear spread abutted a row of 12 upright timbers. This row was contemporary with another row of upright timbers, which intersected it, the contained area being flint-cobbled, stained red-brown and covered with brick fragments and iron nails. The presence of nails is consistent with known evidence that old iron nails were added during the boiling process.

Together the three areas of excavation exposed the remains of three copperas beds conforming

The Tankerton site from the south, showing copperas bed and triangularly arranged jetty support timbers, with the encroaching sea beyond.

in structure with a detailed description dated to the second half of the seventeenth century (Colwall 1677, see below). The triangularly-arranged timber-posts, were probably the remains of raised jetties built in the face of marine encroachment and shown on a chart dated 1725.

The close proximity of the works to the beds was assumed on the basis of the following descriptions. The first description dated to 1600 notes: '... three beddes or raucks of goulde stones or sulphure stones to make coppres, that lie in a feilde wherein the workhouse now standeth, with 18 greate butts that stande in the grounde to receyve the liquer from the goulde stones ...' (Melling 1961, 147–8). A second description dated 1745 states: '... and also without and near adjoining to the said Copperas house within the said small Parcell of Land Three Bedds or Pannells made of Gold Stones, Sulphur Stones, Marquesette Copperas Stones or Stones whereof Copperas is made ...'.

Without the contribution of documentary records it would be extremely difficult to interpret the structures discovered on the Tankerton foreshore. Fortunately a number of accounts give precise details of the industrial process and these can be used to interpret the archaeological features. An account written in 1677 describes the structure of the copperas beds at Deptford: '... they make Beds ... about an hundred feet long, fifteen feet broad at the top, and twelve feet deep, shelving all the way to the bottom. They ram the Bed very well, first with strong clay, and then with the rubbish of Chalk, whereby the Liquor, which drains out of the Dissolution of the Stones is conveighed into a Wooden shallow Trough ...' (Colwall 1677, 1057).

This immediately brings to mind the foundation-like chalk and limestone spread found in evaluation Area 2, with the residue of the drained out 'liquor' comprising the red-brown stain. Similarly Colwall's description of the construction of the bed for the boiler used to concentrate the liquor prior to crystallisation suggests that the cobbled area in Area 2, with its numerous fragments of brick, two iron bars and fragments of lead represents the remains of a demolished copperas boiler. If this is the case, then Area 2 would appear to be the site of one of the earliest Tankerton copperas plants. The dating is confirmed by the fifteenth-/sixteenth-century cloth seal which did not appear to have been redeposited.

The function of the triangular timber structures is not immediately apparent, but their clear association with the poured mortar floor in Area 1 indicates that they were originally dry-land structures. It may be suggested that they represent the remains of copperas beds post-dating those described above. It may be that the use of mortar was a design improvement intended to speed up the weathering of the nodules, the most time consuming element of the manufacturing process.

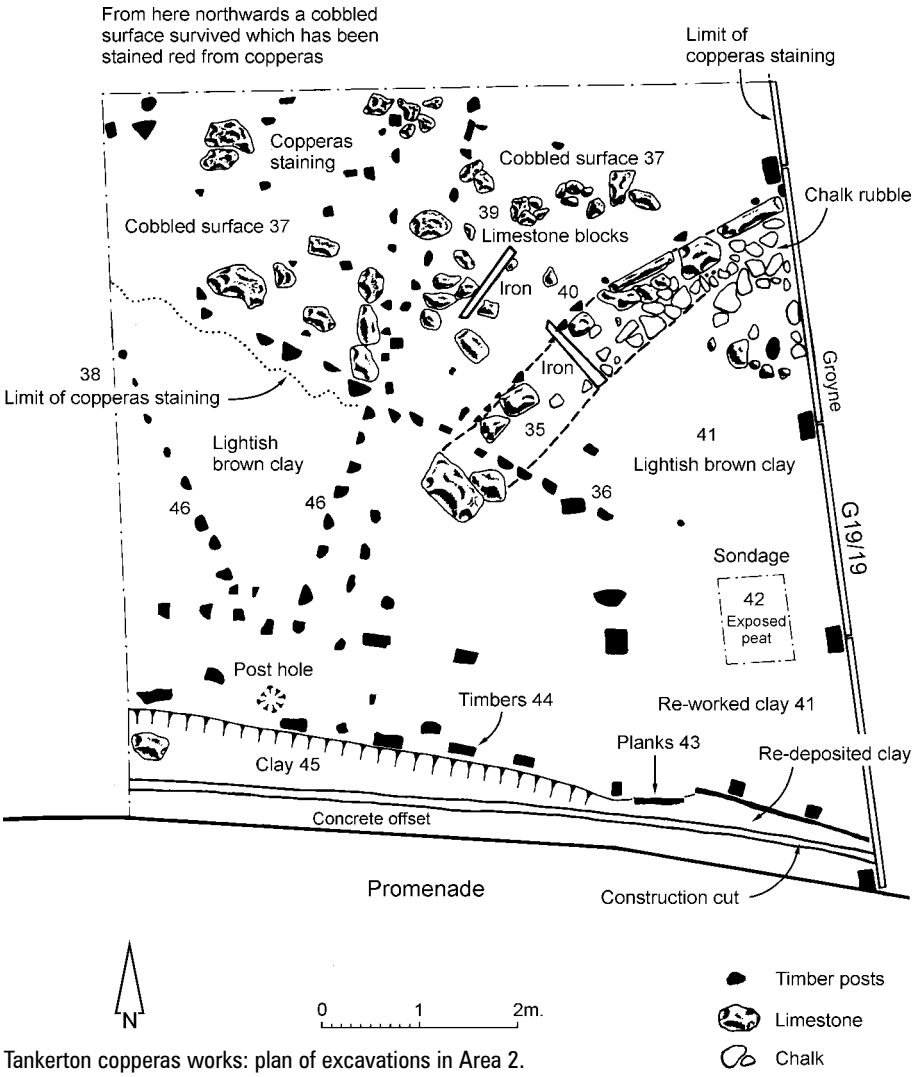
The groyne-like rows of upright timbers, which were interpreted as windbreaks, are not shown on the 1725 map, but were clearly associated with the triangular structures and appear to be contemporary with them. The triangular structures had vanished by 1770, when a map shows the area to have been occupied by thirteen rack-like structures of unknown function.

A: Furnace **B**: Enclosed space
C: Aluminous rock **D**: Deep ladle **E**: Caldron
F: Launder **G**: Troughs.

Print showing the initial process in the production of copperas and equipment used in the sixteenth century (Agricola 1556, 571).

A: Tanks **B**: Stirring poles **C**: Plug **D**: Trough
E: Reservoir **F**: Launder **G**: Lead caldron
H: Wooden tubs sunk into the earth
I: Vats in which twigs are fixed.

Print showing another stage in the production of copperas and equipment used in the sixteenth century (Agricola 1556, 567).



Tankerton copperas works: plan of excavations in Area 2.

A survey dating to *c.* 1770 makes specific mention of defensive works carried out on the Tankerton foreshore, including groynes and quantities of stone, laid down to stabilise the area against erosion by the sea. These can be identified with the large amounts of redeposited limestone visible in the area. The 'long wharfing', specifically mentioned in the survey, seems to refer to the linear plank and post structure exposed in the southern part of Area 2. A further feature shown on the 1770 map, a timber fence running east to west, can be confidently identified with a linear structure mapped during the EDM survey of the site. It probably marked the northern limit of the wharfing, landpiling and other works described in the 1770 survey.

But what is copperas? It is a vitriol (a metal/sulphate, generally termed *alumen* in antiquity), the production and uses of which were known to the ancients. Vitriols are described by Herodotus and Pliny and by medieval authors, with the Spanish Moor Jabir-ibn-Hayyan [721–815] distinguishing between green vitriol (ferrous sulphate) and blue vitriol (copper sulphate). By the fourteenth century, vitriol production was centred in Asia Minor and controlled by a Genoese syndicate. With the fall of Constantinople to the Turks in 1453, the Genoese returned to Italy and re-established the industry at Tolfa under Papal monopoly

The Whitstable copperas industry revolved around the production of ferrous sulphate, known as 'copperas' and 'green vitriol' but confusingly, also identified by the generic terms 'alum' and 'brimstone', the latter denoting sulphur or sulphur-rich materials. Copperas was produced from ferrous disulphide (iron pyrite), otherwise 'copperas stones' or 'gold stones'. The pyrite occurs as nodules within London Clay, an Eocene deposit ubiquitous in the Thames Basin. Copperas works therefore proliferated around the Thames estuary, especially on the Essex and north Kent coasts, where the nodules are washed out by the action of the sea. Production was also established where pyrite occurs on the Hampshire, Isle of Wight and Dorset coasts. In the latter case, pyrite was mined from deposits of the Bagshot and Bracklesham Beds, near Bournemouth.

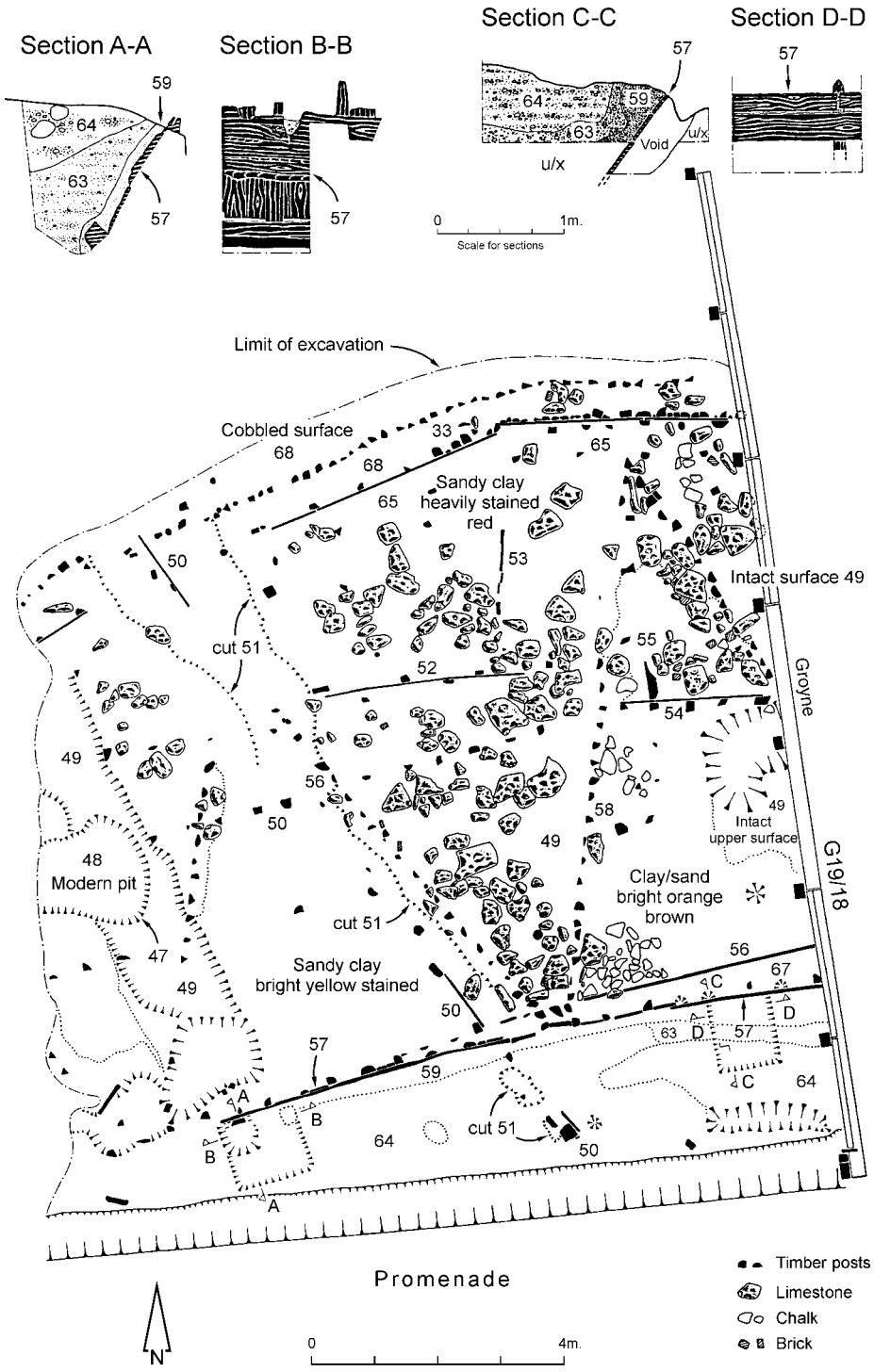
Copperas was produced by a long, noxious and dangerous process involving hundreds of gallons of boiling liquid containing sulphuric acid. Evocatively, a local newspaper reported in 1788 that: '... as John Wellard, one of the men who work at the copperas houses at Whitstable, was assisting in running the copperas ink coolers, he unfortunately slipped in up to the breast ... in 24 hours a mortification ensued and in two hours after, he expired' (Kentish Gazette 1788).

The principal importance of copperas was as a dye fixative for woollens. Thus, copperas was greatly in demand as long as woollens dominated the English export trade. It was also used extensively in the embryonic chemical and pharmaceutical industries and for many other purposes (tanning, the manufacture of printer's ink, as a black dye, as sheep dip), all of which increased its value. Pyrite may have been used to produce sulphur for early gunpowder production in Faversham (*c.* 1573), 10 miles west of Whitstable. If so, it would probably have been produced via a method of dry distillation under heat, discovered by Christopher Saunders in 1570.

Eventually the main use of copperas stones was for the production of sulphuric acid used in the textile, pharmaceutical, fertilizer and detergents industries and the demand for sulphuric acid grew as the Industrial Revolution increasingly 'galvanised' the economy. As Liebig famously said: ' we may fairly judge of the commercial prosperity of a country from the amount of sulphuric acid it consumes'. However, in 1825, the price of Sicilian sulphur was enormously reduced, this favouring Roebuck's lead-chamber method for sulphuric acid production and dealing a death blow to the already moribund southern copperas industry. Previously, customers had been happy to pay a premium for the purer, copperas-derived sulphur.

Before the Reformation, the vitriol trade was controlled under Papal monopoly, with the market confined by the Apostolic Chamber to Antwerp, the great textile *entrepôt* of Northern Europe. Antwerp, as part of the Spanish Empire, was also subject to increasing economic control by the Spanish Crown, further damaging English trade interests. In response, a search for a domestic supply of copperas was initiated by Henry VIII, but this came to nothing. Only when nascent nationalism and the Reformation weakened the power of the Pope and the Spanish Crown was Elizabeth I able to attract 'certain foreign chymistes and mineral masters' by promising lucrative 'patents' to produce copperas (initial attempts to produce ammonia iron alum in Dorset were soon abandoned in favour of copperas).

Amongst the above were Cornelius De Vos, Cornelius Stevenson and Matthias Falconer, Brabanters from Liège. De Vos apparently first



Tankerton copperas works: plan of excavations in Area 3.

initiated copperas production in 1565/6 at Canford, Dorset, in association with Stevenson, who later, in 1588, founded the Whitstable works. Richard Laycolt, an associate of de Vos, left Dorset to establish an alum works at Guisborough in Yorkshire in 1603, this marking the beginning of the northern alum and copperas industry, which later overshadowed its southern counterpart. Skulduggery and litigation was rife in the early copperas industry (De Vos himself was a rogue) and so legal documents along with contemporary descriptions simplify the task of reconstructing the manufacturing process.

Pyrite was collected from the seashore and placed in clay-lined '*shelving*' timber beds, measuring about twelve feet high, one hundred and sixteen feet long, fifteen feet broad and twelve feet deep. One of the six Whitstable works had seven such beds. Eventually, after up to four years, '*liquor*', a dilute solution of hydrated ferrous sulphate and sulphuric acid, was produced, which flowed down a channel at the base of the bed into a cistern within a boiler house or, in the early period, into barrels set into the ground. One Whitstable works had three cisterns, the largest measuring eighty feet by nine feet. The liquor was then pumped into a twelve foot square, coal-fuelled lead boiler containing one hundred pounds of scrap iron. During the subsequent twenty days of boiling, fifteen hundred pounds of scrap iron and further liquor was added, the latter to make up loss by evaporatation.

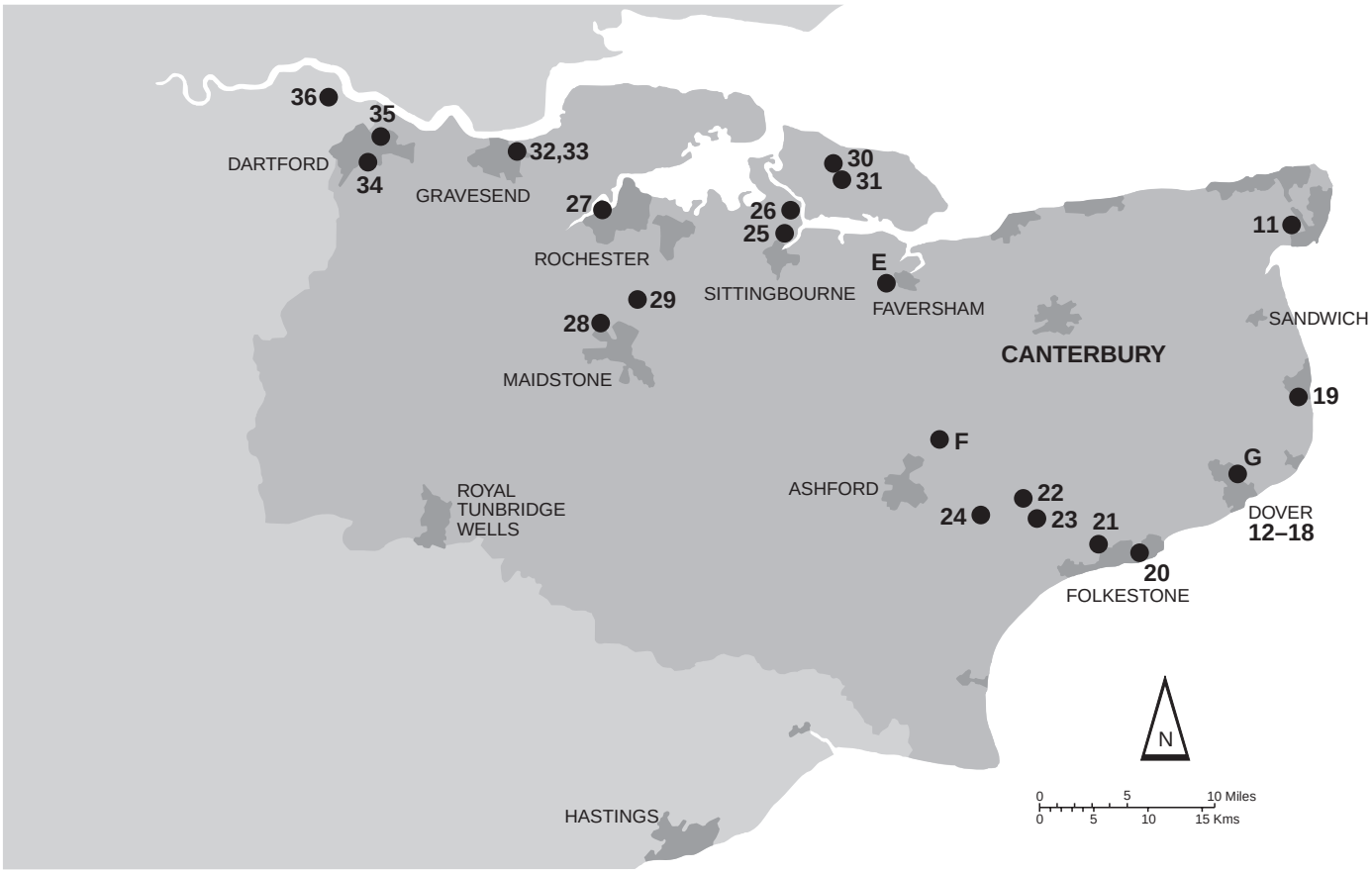
When sufficiently concentrated, the liquor was drained into a '*cooler*'. Two Tankerton coolers measured twenty-nine feet long by six feet six inches wide. There, the solution was left for about two weeks, when the copperas began to crystallise on the cooler's inner surface (bundles of twigs were often placed in the coolers to increase the surface area). After the remaining solution was channeled into a second cooler for reprocessing, the crystallised copperas was collected, re-heated to melting point, and poured into moulds to make cakes suitable for transport in barrels.

Copperas production was a major investment requiring considerable capital outlay for plant and raw materials. Initially, Stevenson probably lacked such capital because, despite receiving the Whitstable patent in 1565, he only began production in 1588, presumably using profits from the Canford Works. Within fifty years, another five works were established in Whitstable.

The two earliest Whitstable works, which were situated on the coastal flats, were lost to marine encroachment within fifty years. Later works were built on higher ground on and above the Tankerton Slopes overlooking the flats but the ten 'copperas' buildings shown cartographically on the Slopes in 1770 had dwindled to one by 1835.

The southern copperas industry was one of the first heavily-capitalised, large-scale inorganic chemical industries to be established in England and it played an important role in the English economy from the late sixteenth to the mid eighteenth century. It provided a catalyst for the development of the modern chemical industry, and in this respect, can be seen to have played a major role in the industrialisation of the British economy. The results of the work at Tankerton uniquely provided a body of integrated archaeological and documentary evidence. This evidence proved sufficient to form the basis of a comprehensive study of the establishment, development and decline of an important early industrial process and its contribution to the early modern economy of southern England (Allen *et al.* forthcoming). A report has also appeared in *Industrial Archaeology News* (Allen 1999, 2–3) and we are grateful to Peter Stainier (editor) for permission to use extracts from it here.

III Kent Sites



Kent sites:

11 Ramsgate Harbour Approach Road
12 Dover Infiltration Reduction Scheme
13 The Citadel, Dover Western Heights
14 Northampton Quay, Dover
15 Broadlees Bottom, Dover Castle
16 Dover Ship's Stores, Honeywood Road, Whitfield
17 Honeywood Parkway, Whitfield
18 Langdon Military Prison, Dover
19 North Barracks, Deal
20 Tram Road, Folkestone
21 Cheriton Parc, Cheriton
22 Land north of Westenhanger Castle
23 Stone Street, Westenhanger
24 Mersham
25 Court Hall, High Street, Milton Regis
26 Kemsley Fields, near Sittingbourne
27 Boley Hill repaving, Rochester
28 Hermitage Lane, Barming
29 Tottington Farm, Aylesford
30 Harps Avenue, Minster-in-Sheppey
31 Rape Hill, Minster-in-Sheppey
32 Bank Street and rear of No. 17 High Street, Gravesend
33 High Street, Gravesend
34 Princes Road, Dartford
35 Priory Centre, Instone Road, Dartford
36 Church Manor Way, Belvedere

E Valley Farm, Stalisfield, near Faversham
F The undercroft, no. 2 Upper Bridge Street, Wye
G Old Park Barracks, Whitfield

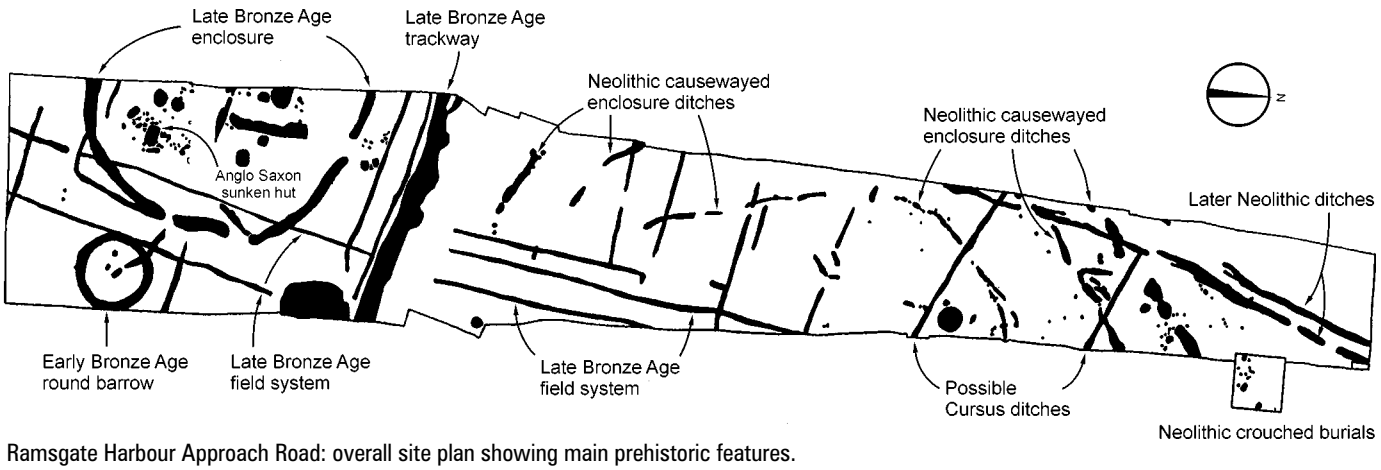
11 Ramsgate Harbour Approach Road

Grant Shand

From April 1997 to June 1998 the Trust was commissioned by Heritage Conservation Group, on behalf of Kent County Council Highways Department to undertake extensive archaeological investigations ahead of the construction of the Ramsgate Harbour Approach Road (TR 362 647). The land to be impacted upon by the new road was 0.72 km. long and between 25 m. and 45 m. wide. The investigations, involving extensive evaluation trenching followed by area excavation, revealed a complex multi-period landscape of monuments and features dating back over four millennia.

The most striking and important discovery made during the course of the work was of a triple-ditched Early Neolithic enclosure (typical of the causewayed camp style of monument). The enclosure, inclusive of outer ditch, measured about 150–170 m. in diameter and consisted of three roughly concentric circuits of interrupted ditches. The excavated parts of the ditch circuits represented only a small percentage of the monument. The route of the road bisected the enclosure through its centre, leaving western and eastern extremities unexcavated.

Only a small handful of causewayed enclosures have been investigated in Britain and few of these have been subjected to modern intensive excavation. The form and function of causewayed enclosures is not well understood, although



Ramsgate Harbour Approach Road: overall site plan showing main prehistoric features.

circuits of between one and four interrupted ditches are common to them all. The enclosed space is thought to have acted as an arena for ceremonial activities. Most of the evidence for such activities derives from deposits found in the ditches. These can include human skulls, animal skulls and bones along with pottery, flint tools and flakes, many deliberately placed.

The excavated component of the inner circuit comprised twelve ditch segments separated by causeways. The ditch segments were fairly shallow, usually no more than 0.3 m. deep and between 0.4 and 0.9 m. wide. Some of the segments displayed evidence of maintenance by re-cutting and pottery, sometimes in association with small quantities of burnt animal bone, flint flakes and scrapers were found within some ditch segments. Many of these finds, recovered in linear arrangements or in discrete caches at the terminal ends of the ditches, appeared to have been deliberately placed 'structured deposits' rather than the result of casual disposal.

The middle circuit of ditch segments was also shallow and of modest width, being cut approximately 0.4 m. deep and 0.5 to 1.0 m. In this circuit re-cutting of the ditches was noted in only a few segments. Quantities of flint flakes were recovered from ditch fills together with a small number of scrapers and leaf-shaped arrowheads placed in the terminal ends of some of the ditch segments. Broadly contemporary with the monument and flanking the inner side of the middle circuit, was a row of evenly spaced post-holes. The function of these post-holes is presently unclear, but they may represent some sort of fence line.

The segmented ditches of the outer circuit varied in length were considerably larger and deeper than the ditches of the inner and middle circuits, being 1.6 to 1.8 m. deep and up to 2 m. wide. Numerous re-cuts were also evident. Frequent deposits of waste flint from knapping were discovered in many of the re-cuts. Animal bones often in association with pottery, flint flakes or tools were found in discrete concentrations, suggestive of intentional placement. Two cow skulls were found in one of the ditch segments and three human skulls in another.

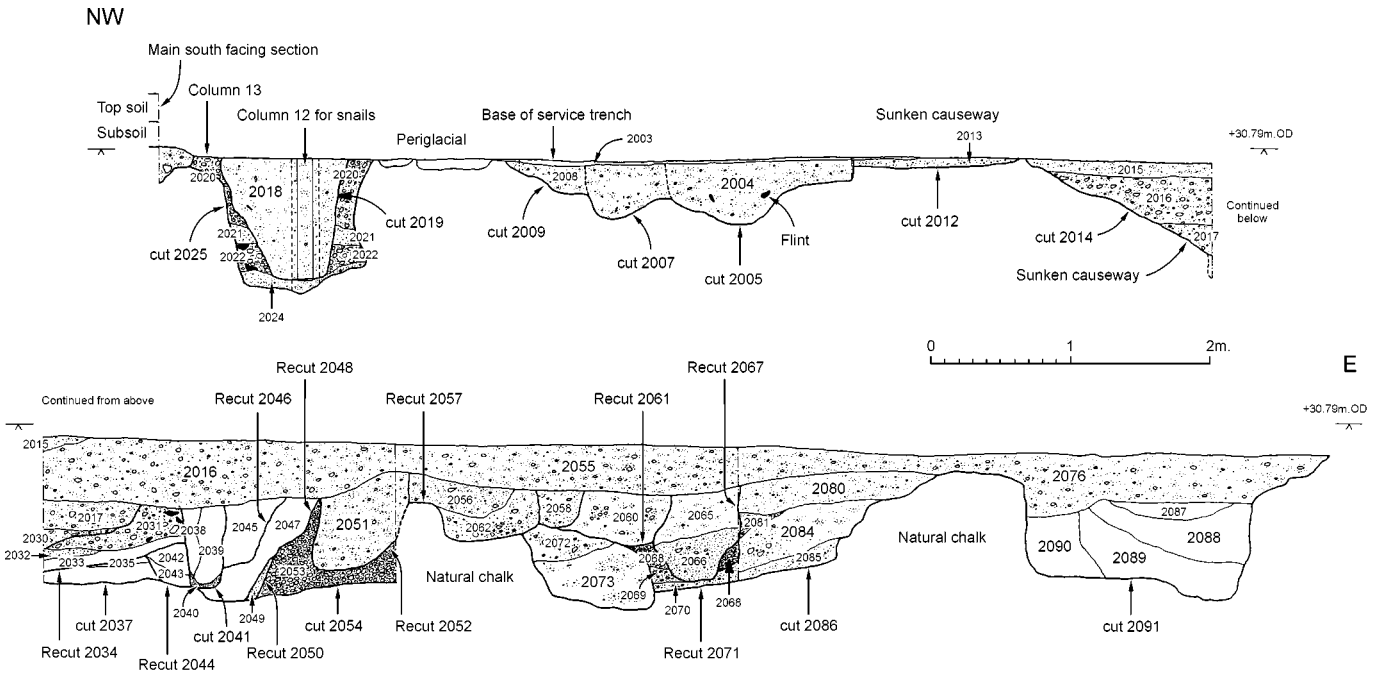
Numerous post-holes, shallow pits, scoops and other features were found in and around the Neolithic enclosure. Although the features were considered to broadly date to the period that the enclosure was in use they formed no coherent plan and remain enigmatic. The position of some post-holes suggests that possible gated causeway entrances may have connected the spaces formed by the ditch circuits.

During the Later Neolithic period, when the enclosure had fallen out of use, two long parallel curvilinear causewayed ditches, aligned generally north-east to south-west and traced for a minimum distance of 90 m. were cut across the outer ditch of the enclosure. The function of the ditches is unclear, but they too may have been cut for a ceremonial purpose.

Cutting the linear causewayed ditches and the ditches of the earlier causewayed camp but terminating within the former enclosure were two north-west to south-east aligned ditches, set parallel to one another and spaced 30 m. apart. The ditches, tentatively interpreted as the remains of a cursus appear to have been aligned to approach a possible henge monument located some 600 m. to the north-west at The Lord of the Manor crossroads (Perkins 1976, 15–16). A

Aerial view of site from the south, showing Neolithic causewayed enclosure ditches (foreground) cutting diagonally across the site.

Overall view of the site.



Ramsgate Harbour Approach Road: longitudinal section through causewayed enclosure (outer ditch segments 1–5 showing complex re-cuts).

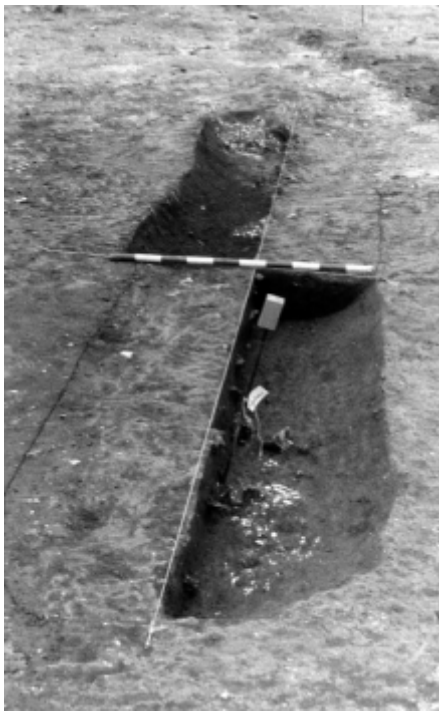
close parallel for this unusual sequence can be found at the Etton causewayed enclosure in Cambridgeshire (Pryor 1998, 373), where cursus ditches post-dating the enclosure were found to terminate within the enclosure and approach a later Neolithic henge monument a short distance away.

Outside the enclosure and perhaps post-dating it were two crouched inhumation burials, set in cut graves without overlying burial mounds. The burials may have formed part of a small 'flat-grave' cemetery.

Located approximately 70 m. south of the enclosure was an Early Bronze Age round barrow. This consisted of a continuous ring-ditch enclosing an area 12 m. in diameter, containing a single crouched inhumation burial at its centre. Accompanying the burial was a fragmented pottery vessel and a shale object. A second grave contained the contemporary burials of a young child and a neonate.

Sealing the Neolithic and Early Bronze Age features was a significant deposit of wind-blown soil. The accumulation and origin of this deposit is of importance since it may reflect climatic changes taking place at this time. It is currently thought that the origin of the silt was Pegwell

View of one of the primary interrupted ditch segments of the Neolithic causewayed enclosure.



Typical section of the Neolithic causewayed enclosure middle segmented ditch circuit, from the east.

View along segment seven of the outer ditch circuit of the Neolithic causewayed enclosure, showing 'cow burial'.

View of Neolithic 'crouched burial', from the north-east.

View of the second Neolithic 'crouched burial', from the north-east.

Ring ditch of the Early Bronze Age round barrow, from the east.

View of the Anglo-Saxon sunken-floored building, from the south.

Bay and that prevailing westerly winds during the later part of the Early Neolithic may have lifted exposed silts from the bay and deposited them on Chalk Hill until the material eventually engulfed the site. The accumulation of silt is thought to been episodic and an early phase of soil deposition may have led to abandonment of the causewayed enclosure. As identical material was found to seal Late Neolithic and Early Bronze Age features, fierce storms resulting in the deposition of quantities of wind blown soil may have been a regular occurrence over a protracted period.

The next major phase of activity was represented by the construction of a domestic causewayed enclosure, dating to the Late Bronze or Early Iron Age. The enclosure, 60 m. in diameter, and only partly within the excavated area, consisted of at least five separate ditch segments of varying lengths interrupted by three causeways. Numerous post-holes, with a small group possibly belonging to round house, were revealed within the southern part of the enclosed area. Other features within the enclosure included pits and a metalled track or courtyard. Fragments of a human skull found in one of the larger pits bore marks indicating that the brain may have been deliberately removed. For what purpose remains a matter of speculation. Human long bones were found in some of the ditches of the enclosure. An area of irregular pitting in the chalk subsoil within the enclosure suggested that at least part of the internal space may have been used for the penning of domesticated animals.

A few metres to the north of the enclosure but probably of later date, was a linear metalled trackway aligned north-west to south-east. The track, identified for a minimum length of 15 m., was 2.5 m. wide and composed of a surfaced with several metallings of rounded and angular flints. A later date is preferred based on a shared alignment of an extensive co-axial field system also of Late Bronze Age/Early Iron Age date. The field system covered much of the length of the site and cut both the barrow and the Late Bronze Age enclosure.

Lastly, but not least, on the inside of the Late Bronze Age enclosure was a single small Early Anglo-Saxon sunken floored building. The building measured 4 m. in length east-west by 2.6 m. in width and was cut to a depth of 0.30 m., with a single post-hole at both ends of the long axis. Its location perhaps coincidentally was in the area of the tentative Late Bronze Age round house. Within the backfill of the sunken floored building were two heavy ceramic objects. These were somewhat similar to typical early Anglo-Saxon 'doughnut-shaped' loomweights, but much larger and more cylindrical, with a central perforation. Initially their function was unclear, but the discovery of barnacles adhering to the surface of the central hole of one of them, has led to their identification as ceramic fishing net weights (see p.64).

The discovery of the first confirmed Neolithic causewayed enclosure in Kent can now be added to the few other groups of Neolithic communal monuments known in county. Namely: the

Late Bronze Age/Early Iron Age linear field system ditch visible in the ground, from the west.

earthen long barrows of the Stour valley and the megalithic monuments of the Medway valley; several early round barrows now believed to have Neolithic origins; and three hengi-form monuments on the Isle of Thanet at Northdown (John Willson pers. com.), Lord of the Manor, Ramsgate (Perkins 1976, 15-16) and Monkton (Rady forthcoming). These were, until recently, the relatively few positive indicators of Neolithic communal presence in Kent.

Interestingly, a Neolithic settlement was proposed in the vicinity of Grummock Avenue, Nethercourt Farm, St Lawrence, Ramsgate (Dunning 1966, 1–25). This lies just 700 m. to the north-east of the newly discovered Neolithic causewayed enclosure. There a crouched inhumation burial of a probable adult male aged 35–45 years accompanied by a large hemispherical open bowl pottery vessel of Windmill Hill type, was discovered on a building site in 1949. This was overlaid by a second inhumation burial of a young adult, possibly 'dismembered'. Both were buried in a large and deep pit believed to have originally been a domestic storage-pit, and later re-used for burial purposes

The Neolithic causewayed enclosure at Chalk Hill, Ramsgate is of great interest and importance for the county and has surely put Kent on the Neolithic map. Analysis of the finds from the enclosure will refine and embellish our understanding of it. Some 21,000 flints have been retrieved and provisionally identified, the majority from the Neolithic enclosure. Sizeable assemblages of pottery and animal bone from both the Neolithic and Bronze Age periods are also of interest.

Aside from the Neolithic enclosure, the continued use of the land in the Later Neolithic, Early and Later Bronze Ages are important in their own right. The possible cursus ditches, crouched burials and the round barrow suggest the continuation of a ritualistic theme in the landscape. In the Later Bronze Age/Early Iron Age a change is evident turning away from a ritual landscape and towards domestic and agricultural practices.

A ditch dating to the Late Bronze Age transitional period cut through the barrow. This interestingly suggests that the barrow mound was removed in antiquity, possibly in the Late Bronze Age rather than removal by more common recent agricultural practices.

12 Dover Infiltration Reduction Scheme

Keith Parfitt

A series of eight shafts (Shafts 1–8) was excavated during 1998 along the western side of the town of Dover in connection with the construction of a new sewer tunnel. These were monitored for possible archaeological remains by members of the Trust (Parfitt 1999a). Three shafts revealed useful information.

Shaft 4: eastern end of Priory Hill (TR 3151 4171). Sealed by modern road metalling and hard-core, a thick layer of grey loam was recorded over the natural chalk. This must represent hillwash from further up-slope and produced a small quantity of medieval tile and five sherds of pottery. There was no sign of any Anglo-Saxon graves here, despite the presence of a known cemetery close-by (Payne 1893–95, 178–183; Willson 1988, 81–92). The pot-sherds recovered included two pieces of Belgic grog-tempered ware, one sherd of Roman Upchurch ware, a fragment of medieval Tyler Hill ware and a sherd of late post-medieval date.

Shaft 5: junction of Effingham Street and Effingham Crescent (TR 3154 4166). This was dug at the foot of Priory Hill, within the grounds of Dover's medieval priory complex. A sterile hillwash layer consisting of grey-brown clay with chalk was sealed by modern dumps of soil associated with recent garden landscaping. No finds or features of medieval date were located.

Shaft 6: junction of Effingham Street and Folkestone Road (TR 3158 4149). This region is of some considerable archaeological potential as it falls within the main area formerly occupied by Dover's medieval priory (St Martin's Newark), established outside the town in 1130 for Benedictine monks (Haines 1930). The general ground-plan of the priory can be determined from the surviving ruins of the claustral buildings and from earlier investigations of the great priory church that lay east of Effingham Street (Plumptre 1861).

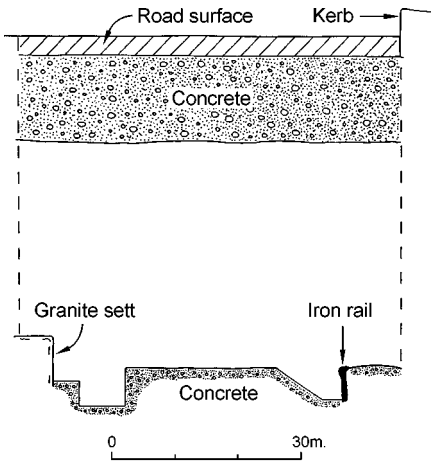
Below the tarmac and hard-core of the present road, observation of the excavations for the upper levels of the shaft revealed fragments of three substantial masonry walls relating to the priory. These were associated with a sequence of stratified soil deposits, producing medieval and early post-medieval finds.

13 The Citadel, Dover Western Heights

Keith Parfitt

An intermittent watching brief on various construction works conducted at the Young Offender's Institution, at the Citadel fortress, Dover Western Heights (TR 3075 4035) was maintained by the writer between November 1998 and May 1999. Renewal of the drainage system relating to the Institution required the excavation of 80 metres of pipe trench through the Western Outworks and the excavation of a deep shaft for the installation of a new pumping station. At the same time, remodelling of the gateway leading from the Citadel to the Western Outworks required the excavation into the rampart bank of a number of deep post-pits. Several useful archaeological observations were made during the course of these various works (Parfitt 1999b).

The main Citadel on the Western Heights was constructed between 1805–16 on the site of late eighteenth-century fieldworks (Coad and Lewis 1982, 166–77). To provide extra defence, the Western Outworks were added to the fortress during the period 1858–67 (Coad and Lewis 1982, 186). The West Sallyport provided the only access from the Citadel to the Outworks, although it is not presently clear whether this entrance was added during the mid-late nineteenth century, or whether it had existed from the first. The entrance, itself, consisted of a single, straight carriage-way leading along a brick-lined tunnel



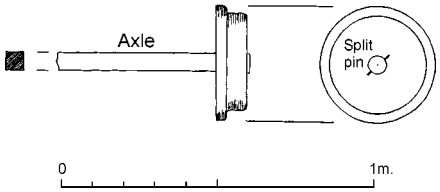
Dover Western Heights, Citadel: section across test-pit No.2 with iron rail in situ.

through the rampart and out across the moat to the Outworks. During the twentieth century the entrance tunnel was removed and replaced by a deep open cutting through the defences.

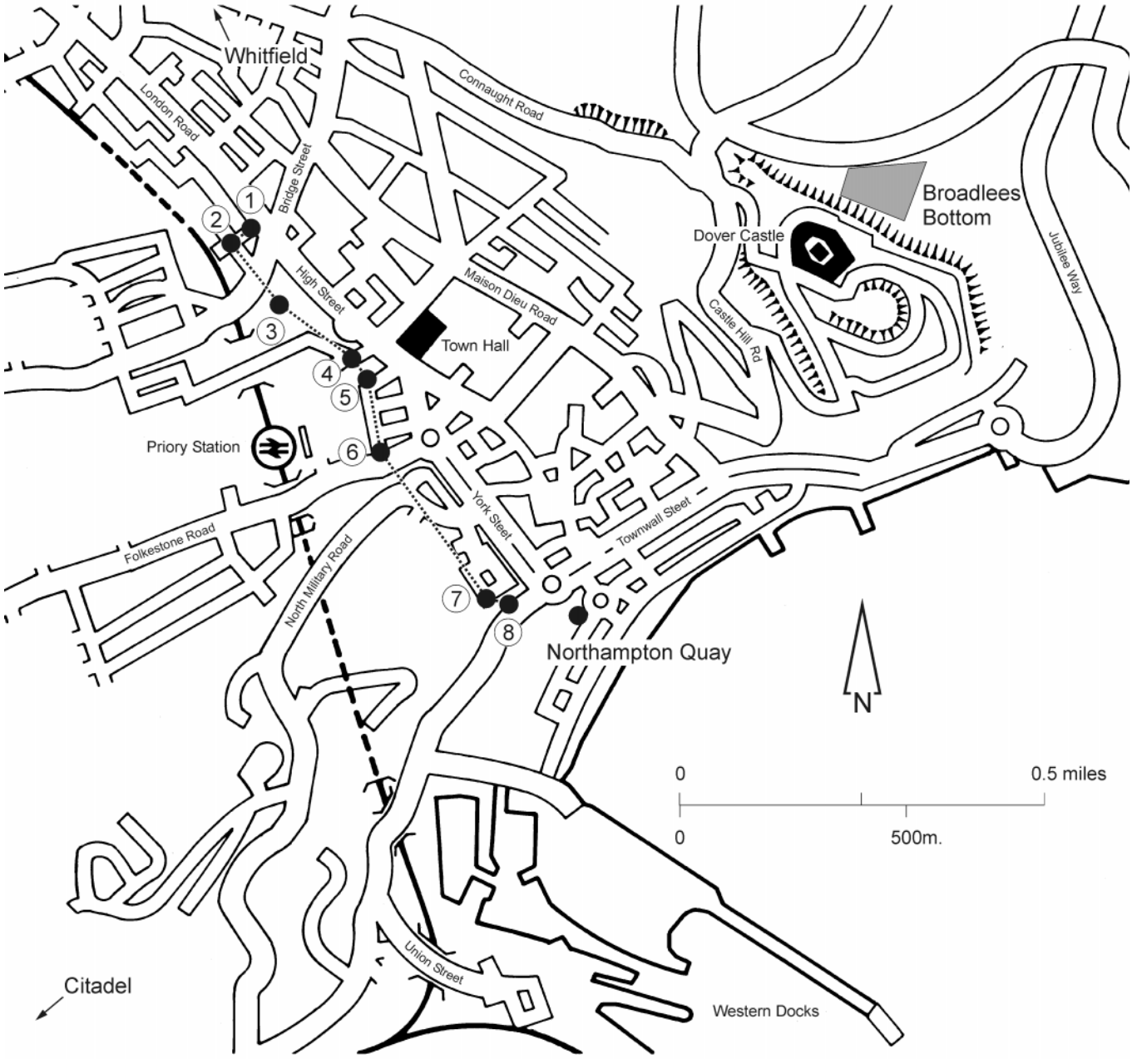
The line of the new drain trench was monitored, leading from just inside the Citadel defences through the entrance passage and out to a new pumping chamber built within the Western Outworks. Nothing of interest was seen from the pumping chamber northwards to the outer edge of the Citadel moat. Beyond the moat, an initial test trench dug by contractors across the road in the entrance passage of the old West Sallyport unexpectedly revealed a largely intact surface of granite setts, clearly representing the original surfacing of the gate passage. Contrary to previous assumptions, this had not been extensively damaged by earlier service trenches.

Two smaller test pits dug further south-west in the passageway, nearer the moat, again revealed traces of the granite paving and also showed the presence of an iron rail set in concrete running along the eastern side of the passage.This rail was at least 50 mm. high and 40 mm. wide. A minimum length for the rail of 4.70 m. may be given. In the rubble over the rail in the south-western pit a flanged wheel of cast iron was recovered by the workmen.

The iron rail set in the early paving may be interpreted as relating to a sliding bridge that originally crossed the moat here. Such an interpretation for the rail can be supported by the discovery of the flanged cast-iron wheel in the overlying rubble. Fairly certainly, this was originally attached to the moveable part of the bridge structure.



Dover Western Heights, Citadel: cast iron wheel from the original sliding bridge structure? Found by workmen.



Locations of infiltration reduction scheme shafts 1–8 and other sites investigated in Dover 1998–99.

14 Northampton Quay, Dover
Keith Parfitt

In connection with Dover Harbour Board's plans for extensive redevelopment of the Western Docks (TR 3190 4115), a series of six soil test-trenches and nine bore-holes was excavated across the site of the former Northampton Street and Northampton Quay, between the new A20 and the Wellington Dock in the autumn of 1998. This work was monitored by members of the Trust and ArchaeoScape Consulting (Royal Holloway College), with some useful results (Parfitt 1998a; Palmer *et al.* 1998).

The six test-trenches were excavated to a depth of about two metres and showed little, apart from recent make-up layers behind the nineteenth-century quayside. Buried portions of the cobbled surface of old Northampton Street were exposed.

The bore-holes provided a transect along the north-western side of the Wellington Dock, with a single bore-hole on its south-east side. They were all taken down to the top of the natural chalk, which was found to be between 5.00 and 10.30 m.below present ground level. The bore-holes placed towards the north-eastern end of the dock revealed traces of early riverine sediments contained within a chalk-cut channel, relating to an ancient course of the River Dour.

15 Broadlees Bottom, Dover Castle
Keith Parfitt

In connection with the proposed construction of a new car park in Broadlees Bottom on the northern side of Dover Castle (R 326 421) the Trust was contracted by English Heritage to undertake evaluation trenching in order to ascertain if any archaeological remains were present in the area. The site was formerly occupied by an Army transport depot, apparently established in the early part of the twentieth century. Traces of associated service roads, levelled areas and building foundations still survived.

Broadlees Bottom is a dry valley which separates the ridge occupied by Dover Castle from the main chalk plateau to the north. The natural sub-soil here was found to consist of a thin layer of flinty clay (head) over Upper Chalk. The elevation of the valley bottom in the area investigated was between 60 and 80 metres above O.D.

Traditionally, this region is regarded as an area where the French attackers in the great (but unsuccessful) siege of 1216 were encamped. It was in 1216, during the civil war between King John and his barons, that Louis the son of the King of France, had been invited to become the rebels' leader and to take the English throne. Landing in Kent, Louis and his forces rapidly gained control of most of south-eastern England and laid siege to Dover Castle for three months. However, they failed to take it, the castle being stoutly defended by Hubert de Burgh and a large number of soldiers, including 140 knights. Louis and his forces eventually retreated to London but the siege was briefly resumed in 1217, before Louis was finally defeated, following the Battle of Sandwich.

A total of five separate trenches was excavated in December 1998 across partially wooded ground, bounded by the St Margaret's road (Upper Road) on the north and the outer defences of the castle on the south. The work was confined to an area between the outer entrance of the Fitzwilliam Gate and the Averanches Bastion of the castle complex.

The evaluation trenches failed to locate any archaeological remains of major significance (Parfitt 1998b). There appeared to be no substantial deposits of colluvium within the valley-bottom. The discovery of a few prehistoric flints may suggest that occupation during the Neolithic-Bronze Age occurred in the area. Later activity on the site was represented by a 1.30 m. wide, 1.07 m. deep ditch located below Upper Road. This had been recut and appears to be medieval in date. Although clearly too insubstantial to be defensive, it may have originally marked the boundary of the outer limits of the castle grounds.

16 Dover Ship's Stores, Honeywood Road, Whitfield
Simon Pratt and Keith Parfitt

Seven evaluation trenches were cut by the Trust in June-July 1998, on the area of a proposed development site, on behalf of Dover Ship's Stores and Harrisons, Chartered Surveyors. The site lay on the north side of Honeywood Road, Whitfield (TR 304 444), on a flattened ridge running east-north-east/west-south-west at about 125 m. O.D. Several modern features were probably cut during previous usage as a 'telegraph pole erecting practice area': an unusual and as yet little studied branch of industrial archaeology.

The ancient features exposed consisted of ditches, pits, post-holes and an iron-smithing hearth, probably relating to a small settlement, perhaps a farmstead. Although three phases of activity were ascribed to the 'Belgic', Early Roman and Anglo-Saxon periods, have been described below, the evidence for pre-Roman and Anglo-Saxon occupation was tenuous and it is possible that all the pre-modern activity could have belonged to the early Roman period.

The 'Belgic' phase was represented by several small features seen in at least three of the trenches spaced across the site. A small oval-shaped pit or post-hole was revealed cut into the subsoil in the north-westernmost trench. Two post-holes were close by, one of which was located in the base of a later ditch. Adjacent to the post-holes, and cutting one of them, was a slightly curved ditch, aligned on a roughly east-west axis. This ditch was also seen in an adjacent trench, where it was cut by another ditch running on a north-west to south-east axis, and from which a single sherd of 'Belgic' pottery was recovered. It is possible that this later ditch continued another 24 m. at least to the south-east, where several undated ditches were revealed in various trenches, one of which may possibly represent its continuation.

A shallow post-pit and socket was found cut into the fillings of the curving ditch and of the oval shaped pit/post-hole. Apart from the single 'Belgic' sherd recovered from the fill of the later ditch, the dating of this phase is based on various stratigraphic relations and on residual pottery in later features. One or more of the post-holes and/or the slightly curved ditch might have been considerably earlier whilst one or more of the post-holes may, along with the shallow post-pit and socket,may have belonged to a later phase.

Early Roman activity was represented by a shallow, possibly circular hearth, cut into the top of the later ditch in the north-westernmost trench. Several burnt flints were set to form a base and

twenty sherds from a single mid to late first-century vessel, largely broken *in situ,* lay just over these. A few fragments of iron-smithing slag and burnt daub were recovered from the overlying daub and charcoal flecked fill of the hearth. A sample of the fill contained both hammer-scale and non-grain carbonised seeds, the former also indicative of iron-smithing, the latter perhaps from dried weeds used as kindling. In another trench some 18 m. to the south, a narrow ditch or beam-slot was found set on a north-east to south-west axis and cut into the subsoil. A small pit or post-hole lay just north of it and another post-hole was revealed to its south. A few Roman sherds were recovered from the possible beam-slot. The small pit and post-hole contained no datable material and may not have belonged to this phase.

Possible Anglo-Saxon activity was indicated by a sherd of Anglo-Saxon pottery, dated *c*. A.D. 550–700 in a wide, shallow ditch cutting the subsoil. The ditch ran north-east to south-west across the middle of the north-western most trench and it probably linked up, a little to the north-east, with a ditch set on a south-east to north-west axis, seen in the south end of an adjacent trench 3 m. to the north-east, which may itself have run on to join one of the undated ditches in trenches to the extreme south-east of the site. The Anglo-Saxon sherd may, however, have been deposited during the silting up of a Roman or even prehistoric feature.

Following the evaluation undertaken by Simon Pratt a watching brief was maintained during April 1999 by Keith Parfitt during the construction of the new building. Despite the formation levels of the structure being generally higher than the level of the archaeology some useful additional information was recorded, concerning Roman and prehistoric activity on the site.

Flint artefacts of Lower Palaeolithic, Neolithic and Bronze Age date were recovered. Romano-British occupation was represented by six cut features, consisting of three small pits and three ditches. These remains seem to relate to a native farmstead, probably provided with rectangular ditched fields and enclosures. Its buildings were presumably of timber, of which no traces survived beyond a few scattered post-holes. Evidence for black-smithing on the site was observed in several pits.

A similar farmstead site lies about one kilometre to the north-west, off Green Lane at Whitfield. The available pottery dating suggests that the Honeywood Road site belongs to the early Roman period, possibly with a pre-Conquest origin. This, combined with the more tangible evidence at Green Lane, indicates that the high clay-lands around Dover were being settled at a relatively early date.

17 Honeywood Parkway, Whitfield

Adrian Gollop and John Willson

The Trust was commissioned to undertake an archaeological field evaluation in advance of development at Honeywood Parkway. The work, consisting of the cutting of nineteen evaluation trenches, was carried out between 6th–24th October 1998.

The site, consisting of *c*. 17,000 square metres at NGR TR 305 445, lies upon the '400 foot plateau' on the north-east side of the Dour valley. The underlying geology is Clay-with-Flints with Upper Chalk forming the solid bedrock.

In three areas a build up of fine-grained sterile silt was evident overlying the Clay-with-Flints, identified as a form of 'reworked' Loess (wind blown soil), and may be similar to the Loess deposit previously identified at Old Park, Whitfield (Allen 1998). The absence of a similar deposit in other trenches may be due to later erosion quite possibly as the direct result of early man's influence on his environment - the erosion of Loess type deposits is argued by some (Evans 1975) to have been instigated by early farming techniques during the Neolithic, leading to the current agricultural landscape.

Archaeological features were observed in eight trenches. In the main they would appear not to conform to any pattern and to be isolated features although the majority were located in the north-eastern area of the site. Here three linear features, all probably ditches, two pits and two unidentified features were excavated. Only one of the ditches produced pottery, this being of the Late Iron Age or Early Roman period, and apart from general similarities in the nature of the fills, there was no obvious evidence for grouping of the features over space or time. A small number of pits revealed in the opposite higher corner of the site again produced the same picture of un-patterned isolated archaeological activity.

18 Langdon Military Prison, Dover

Peter Seary

View showing foundations of the prison walls.

In October and November 1998, the Trust conducted a watching brief of at the site of the former Langdon Military Prison (TR 335 422) during the construction of a Visitors' Centre within the National Trust Nature Reserve on Langdon Cliffs. The prison was built on a series of terraces behind the chalk cliffs overlooking the Eastern Docks of Dover in 1884. This date falls just after a major programme of Penal Reform, which instituted the so-called 'separate' system for prisons based upon isolation within single-sleeping cells and the prevention of communication between inmates (Tomlinson 1980).

The footprint of a new Visitors Centre exposed part of the footings of Prison Block 'A', one of two identical cell blocks placed across the lower terrace of the site. Deep terracing had removed any remains antedating the prison, but the cell block itself was well represented. It was a long rectangular building, aligned east-west, with a central projection in each long wall. It had two rows of cells disposed on either side of a central corridor. Footings cut into the chalk indicated that the cells measured approximately 1.5 m. by 2.5 m. internally, facing end-on to the corridor

The outline and appearance of the building is known from plans and photographs. Each block was of more than one storey, with a pitched roof. The roofs were pierced by rows of chimneys or vents (one to each bay) reflecting a concern with the minute control of temperature and ventilation in the cells.

The stepped-brick footings, some 0.4 m. to 0.5 m, deep, were of coarse yellow engineering bricks laid in English Bond. The longitudinal walls (both internal and external) were three bricks thick, whilst the internal transverse walls were two thick. Unfortunately, neither end wall of the

building was exposed.

After seven years as a military prison, the site became a barracks in 1908. Prison Block 'A', now redundant, was demolished by local labour in 1924. The demolition of Block 'B' followed in 1925. The walls were carefully grubbed out, leaving scant evidence for internal arrangements above ground level. Fragments of a slate worktop, observed within demolition deposits suggest that the block contained its own ablution facilities. A number of structural alterations were observed among the footings, focused around the central bay of the block. Some of these appear to have related to sewage disposal.

19 North Barracks, Deal

Keith Parfitt and Barry Corke

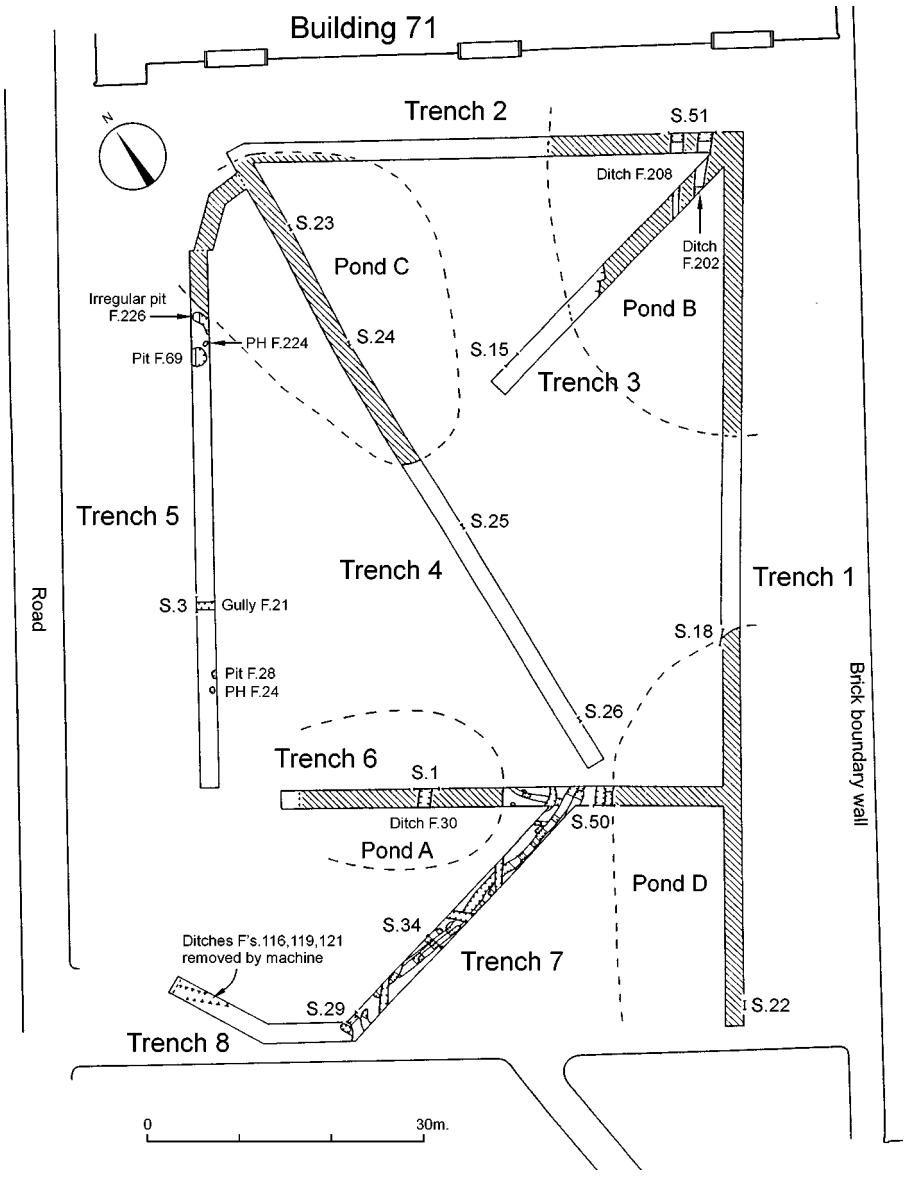
In connection with the proposed redevelopment of the former Royal Marines Barracks complex at Deal (TR 3755 5169), the Trust was invited to undertake evaluation trenching upon the North Barracks parade ground, as a first phase of archaeological site investigation. A series of eight trenches was cut across the area with the intention of establishing the presence of any archaeological remains and if present, something of their extent, date and character.

Particular archaeological interest in the area of Deal Barracks is provided by the fact that it lies immediately adjacent to that stretch of the east Kent coast-line which has long been considered to be the area where Julius Caesar landed with his forces in 55 and again in 54 B.C. There have been few subjects in Kentish archaeology that have occupied the thoughts of researchers more than the vexed question of the exact location Caesar's landing place. Despite all the effort and ingenuity expended, however, it remains a disappointing fact that there is not one single piece of direct archaeological evidence for any of Caesar's documented activities in Britain. It was hoped that excavations at the barracks site might provide some useful new evidence but the work revealed nothing of relevance.

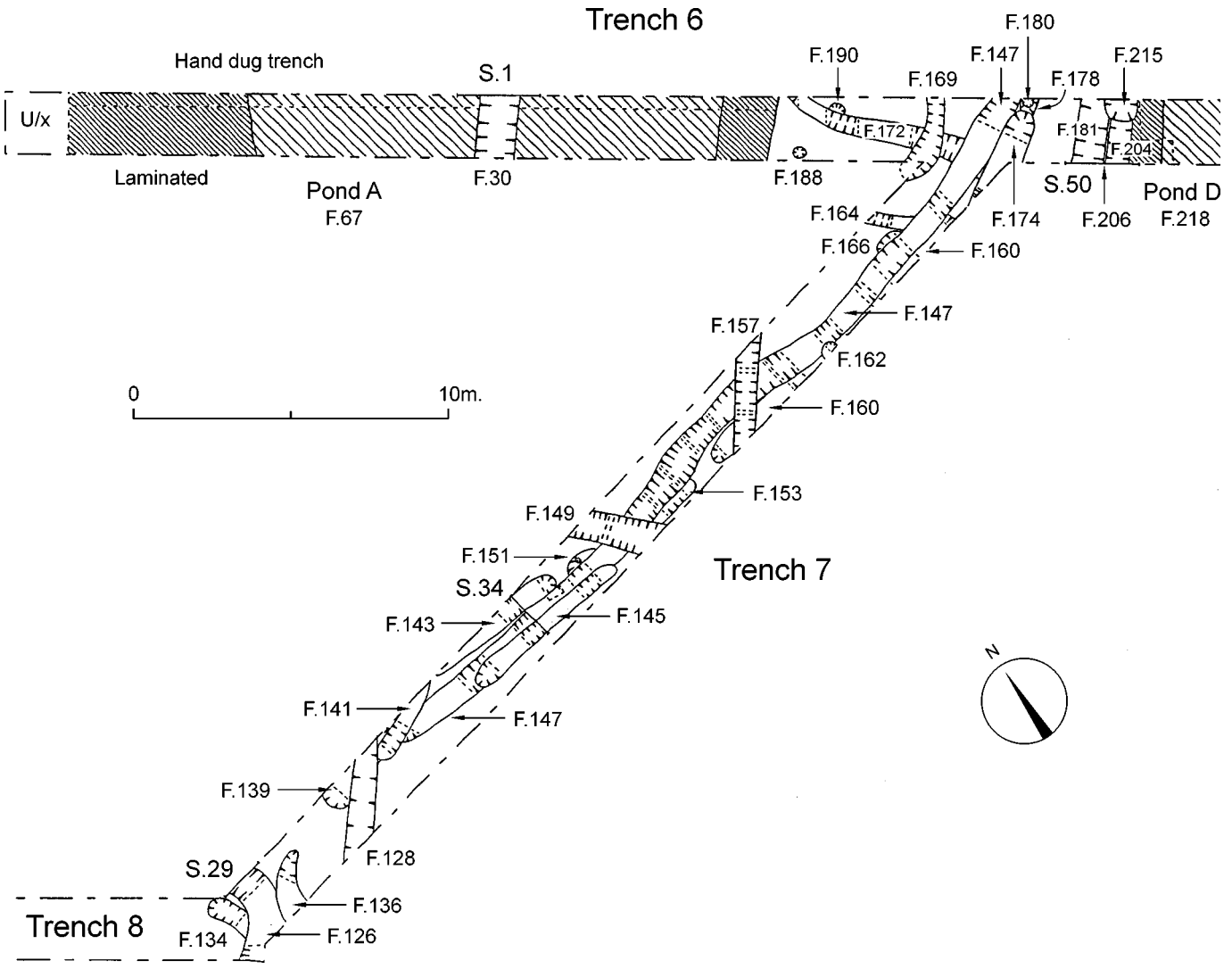
The documentary evidence indicates that the site of the present parade ground falls within the area of the original 1795 land purchase for the North Barracks and it seems to have had the same function throughout the military occupation of the site (Clayre 1998, 13). Apart from a series of Second World War air-raid shelters, no buildings ever seem to have occupied this open area and the archaeological deposits revealed during the present programme were found to be remarkably undisturbed.

The general sequence of deposits exposed was broadly similar across the entire area and may

Excavation of Trench 5 in progress.



Deal North Marine Barracks: plan showing evaluation trenches, Ponds A–D and excavated features.



Deal North Marine Barracks: plan showing excavated features in trenches 6 & 7.

be summarised thus:-

a) Modern tarmac surface of parade ground (two successive layers)

b) Modern hard-core supporting tarmac

c) Brown loamy sand (presumably wind-blown from the adjacent coastline)

d) Orange-brown silty clay (natural brickearth)

This sequence was interrupted in four separate areas where intervening deposits of silty clay occupied shallow depressions in the top of the natural brickearth, under the sand. In each area the filling of these hollows consisted of two distinct layers - an upper dark grey-brown silty clay, overlying a generally more extensive layer of mottled grey-brown silty clay showing evidence for horizontal lamination.

The impression gained was that these hollows represented shallow, in-filled ponds or meres that had formerly lain on the surface of the brickearth. Apart from a very few fragments of prehistoric flint-work and pottery (probably intrusive), the filling of the ponds was found to be sterile. The fillings of at least three of the ponds were cut by later archaeological features, indicating that they were silted-up and presumably dry by this time. The archaeological features themselves appear to belong to the early Bronze Age (see below) implying that the ponds may be of considerable antiquity.

Archaeological features were noted on two horizons, the top of significant deposits beginning at about 0.50 m. below present ground level. The latest features recorded had been cut into the top of the sand layer (c). These were mainly ditches and all appeared to be of post-medieval date.

The majority of the archaeological features discovered, however, were found cutting into the upper zone of the brickearth and infilled ponds, sealed by the later sands. Significant quantities of prehistoric struck flints, calcined flints ('pot boilers') and some pottery probably of early Bronze Age date were recovered from their fillings. The majority of these prehistoric features were located within Trench 7, on the south-western side of the parade ground, where a complex sequence of ditches was revealed running along the line of the trench. The ditches here were of at least four separate phases. Of particular significance was a deposit of flint knapping debris recovered from a deposit sealing three intercutting ditches. This contained at least one pair of conjoining flint flakes, indicating that flint-working was going in the immediate area.

The other trenches examined contained a few early features. These included several pits, ditches and a post-hole. They appear to be of a similar date to the features located within the Trench 7. Overall, it seems possible that the various ditches recorded represent field boundaries, which suggests that this entire area might have been once occupied by an Bronze Age field system (of several phases), subsequently buried by wind-blown sand.

20 Tram Road, Folkestone

John Willson

In November 1998 following the compilation of an impact assessment report (Cross 1998), three evaluation trenches were excavated, under the direction of Adrian Gollop, within the Information Centre car park, Tram Road, Folkestone (TR 232 361). This work was in advance of proposed sewerage works forming part of the Marine Parade Scheme of the Folkestone Drainage Area Plan.

This part of the old town falls in an area thought to contain an early harbour for Folkestone at a point where the Pent, once an open stream and another stream named *Marthas Dyke* ran into an area named the *Old Sea Gate*. Nothing is known of the medieval waterfront, although documentary sources dating back to the twelfth to fourteenth centuries refer to, amongst other things, the obligation placed upon Folkestone to supply ships and men as part of its membership of the Cinque Ports Confederation (as a limb of Dover). Certainly by the fifteenth century wills testify to the existence of a thriving fishing industry based at Folkestone. All of this suggests that a sheltered anchorage was available at the mouth of the Pent.

Although there is no direct documentary or archaeological evidence for the layout of the lower town during the medieval period, it is likely in part to have consisted of simple fishermen's houses and boat building sheds strung out along the base of the West and East Cliffs. Fishing vessels would likely have been drawn up shelving beaches by simple capstans, whilst merchant ships may have tied up along a quayside perhaps by the mouth of the Pent. The first reliable evidence, however, for the existence of defined harbour works at Folkestone doesn't appear until the early seventeenth century, although records from the early 1540s, during Henry VIII's invasion of France, tell of ships departing from Folkestone to France (Robertson 1876, civ-cxxvii). This suggests that some harbour facilities probably existed such as a pier, or mole, and perhaps a bulwark of stone and timber for mooring at high tide.

The evaluation work consisted of the cutting of three machine excavated trenches (1-3) of varying lengths and widths along the line of the proposed new sewer. A north–south aligned trench (1) revealed geological deposits at its northern end that had been heavily truncated by modern activity, but, further south the archaeological horizon was better preserved. Four features were recorded within this horizon, including the remains of a large stone wall. Cut into the underlying alluvial deposits were three features. The first and earliest was a rectangular shaped pit. Its filling contained several pieces of clay daub, some with wattle impressions, clearly from a nearby structure of some sort, but no dateable objects were recovered. The pit appears to be of early medieval date, however, as a second and larger sub-circular shaped pit, containing rubbish and finds of medieval date, was found to be cutting the earlier pit on its northern side.

Further south lay a circular pit, probably a well shaft. Its lower filling contained early medieval pottery sherds indicating a date of *c*. 1075–1125. South of this the northern edge of a wide water channel was revealed. Sediments filling the channel were found to contain medieval pottery suggesting that it had been partially infilled or had silted up by that date and subsequently sealed with large flat stones providing a work surface. The work surface butted up to a large stone wall, at the very south end of the trench. The wall, at least 1m thick, was constructed with large squared greensand blocks with some clay bonding and appears to have been built on piles consisting of stone blocks set in square pits cut into the underlying deposits. A single pottery sherd recovered from the wall fabric suggests a construction date of *c*. 1075–1150.

A second but shorter trench (2), cut to the south of Trench 1, revealed a backfilled cellar or basement, which appeared to have removed all archaeological deposits. A third trench, just 3.5 m. long was cut to the west of the southern end of Trench 1. This exposed a further section of large greensand wall, here standing to a height of 1.10 m. More detailed evidence of the wall's construction was recovered showing that the northern face was built with smaller and rougher greensand blocks, with a rubble central core consisting of smaller pieces of greensand in a clay bonding mix. Evidence of two types of mortar on the upper surfaces of the wall suggested three possible phases of build, or repairs. Butting the north side of the wall was a rough cobbled surface set at the same level as the stone slab surface seen further east in Trench 1, whilst dumped soil deposits were recoded south of the wall. The cobbled surface was sealed by a soil deposit containing pottery exclusively of medieval date. This deposit was in turn sealed by stone rubble and mortar probably relating to wall collapse and subsequent repairs during the post-medieval period. The structure appears to have gone out of use by the late eighteenth or early nineteenth century, when a tile box drain was cut through the wall.

This small evaluation showed that significant archaeological remains survive in the central area of the car park, in an area which perhaps marks the northern limits of a foreshore. The recorded water channel is in the vicinity of the Pent inlet depicted on Abraham Walter's plan of Folkestone dated 1698. The plan clearly shows the old harbour as a wide 'V'-shaped tidal inlet formed around the mouth of the Pent stream. Systematic dumping appears to have taken place during the medieval period, as a form of land-reclamation, including the partial infilling of the water channel, on which subsequently the large greensand wall and cobbled work surface was constructed. The purpose of the large wall and associated work surfaces on its northern side are unknown. There was no evidence to indicate a cut for the wall through the infill deposits of the water channel. It is possible that the infilling of the channel, the stone slab surface and the wall are contemporary representing a significant change of use for the area. It is possible that the wall represents a limit, or boundary, to the medieval and early post-medieval waterfront, possibly in the form of a seawall or perhaps an early harbour wall, with a cobbled quayside north of it. The placing of the wall in an area apparently reclaimed from the foreshore, and the use of pile-type foundations, supports the suggestion of a harbour wall by the mouth of the Pent. If this is the case, then the watching brief may have exposed rare evidence for Folkestone's medieval harbour.

Medieval greensand block wall with rough cobbled surface to right, from the east.

21 Cheriton Parc, Folkestone

Jonathan Rady

In May 1998 an evaluation took place prior to the development of Cheriton Business Parc by Eurotunnel Developments Ltd. The work was funded by the developer.

The site, situated immediately west of the former Eurotunnel Exhibition Centre (TR 1830 3700), lies at the northern extremity of St Martin's Plain, and is bounded by deep cuttings for the M20 to the north, and the Folkestone to London railway line to the south. To the west is a deep valley, while to the east the site borders the Exhibition Centre and its associated car parks. The proposed development area is situated on relatively flat ground, at a level of about 65 m, O.D., whilst the underlying subsoil consists of the Folkestone Beds.

Considerable archaeological fieldwork has taken place in the area, mostly in relation to the construction of the Channel Tunnel terminal, to the north and west of the site. In 1948 part of an early Roman cremation cemetery was located and excavated some 600 m. east of the Exhibition Centre during the construction of a housing estate and there is also evidence for Iron Age and probably related early Roman settlement nearby (Tester and Bing 1949, 21-36). During 1987 and 1988 an extensive multi-period settlement of Iron Age, Roman and Anglo-Saxon date, was excavated near Dolland's Moor, only 500 m. to the west (Bennett 1989, 54–9). In 1988 the site of the Exhibition Centre was evaluated by the Trust and followed by a watching brief on a drainage pipe trench which cut across the present site but no archaeological features were located during any of this fieldwork. Finally, in November 1992, an area of the present development, *c*. 300 m. to the east was evaluated, when nearly 600 m. of trenching was carried out, also with negative results (Rady 1993, 41).

Some nineteen trenches were machine excavated and archaeological features were located in only three of them, all concentrated in a discrete area at the western margin of the site. The archaeological features consisted of a ditch, two pits and a possible post-hole. In addition, what appeared to be an ancient buried soil horizon was observed in most of the trenches at the west end of the site. This deposit, a mid brown sandy clay about 20 cm. thick, contained a few sherds of pottery dating to the Roman period.

The ditch, completely excavated in one trench and located in two others, consisted of a linear cut aligned approximately north–south, 1.3 m. to 1.35 m. wide and *c*. 25 cm. deep, with a flat based profile with fairly steep sides. The ditch yielded pottery of early to mid Iron Age date.

The other features were located 10 m. west of this ditch. One oval-shaped pit provided no finds. The second more substantial pit contained a relatively large assemblage of potsherds of early to mid Iron Age date.

In addition to early to mid Iron Age pottery, a background scatter of Bronze Age flints was also recovered including a scraper and an arrow-head.

Although the archaeological features located at the western end of the site are indicative of settlement in the early to mid Iron Age, not enough of the area was exposed to indicate the form of occupation. It seems likely that the Iron Age settlement was more extensive than suggested by the results of this evaluation, but has been completely ploughed out to the east.

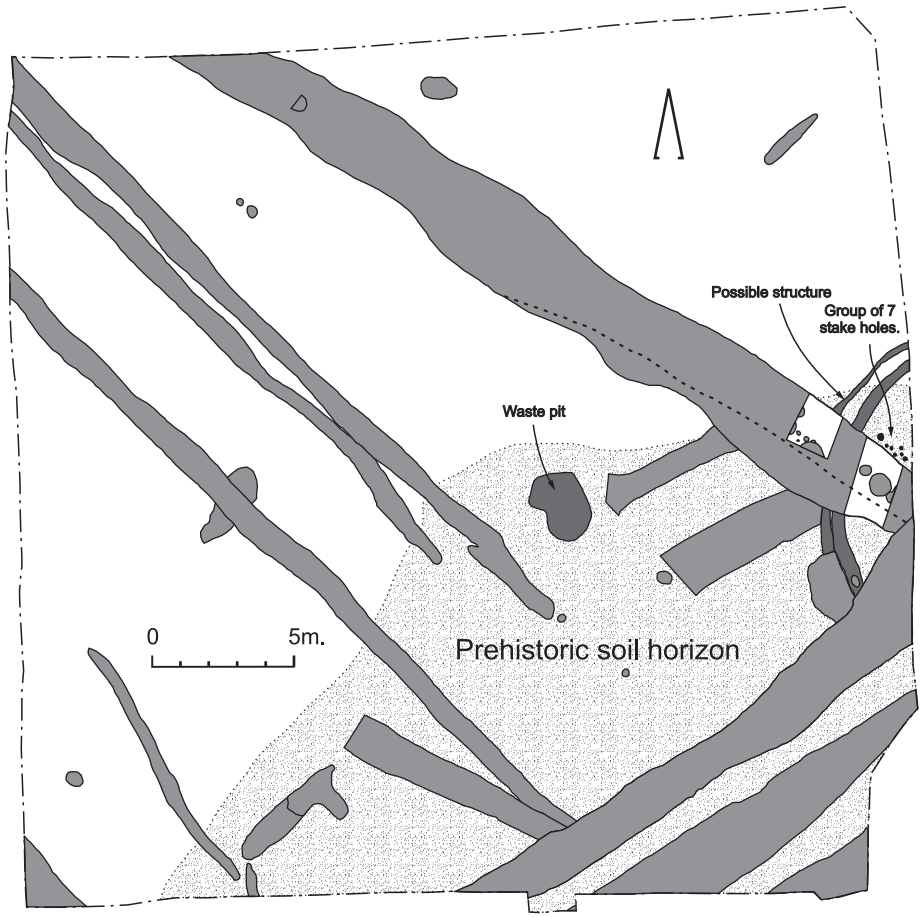
22 Land north of Westenhanger Castle

John Willson

In April 1999 the Trust was commissioned and funded by Union Railways (South) Limited to undertake a detailed archaeological excavation, under the direction of Adrian Gollop, on land to the north of Westenhanger Castle (TQ 1220 3750). This formed part of a larger programme of archaeological investigations carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL).

Present day Stone Street runs past the site 400 m. to the east and is believed to follow the alignment of the Roman road (Margary route 12) leading from *Durovernum Cantiacorum* (Canterbury) to the Roman fort at *Portus Lemanis* (Lympne) (Margary 1955, 35–6). The medieval village Westenhanger is thought to have been situated along the line of the Roman Stone Street, whilst immediately opposite the site is the fourteenth-century castle, or fortified manor house known as Westenhanger Castle.

Earlier fieldwalking of the area recovered concentrations of prehistoric worked flint. An evaluation on the same site revealed the



Plan of excavated area showing medieval ditches and pits.

View of waste pit containing quantities of charred plant remains.

One of the ditches on the site showing evidence of later re-cutting.

presence of medieval field boundaries and a possible corn-drying oven (U.R.S. 1998). Ceramic evidence recovered from the features pre-dated the construction date of the castle and therefore appeared to relate to an earlier manorial farm. Interestingly, the earliest historical documents for Westenhanger, is the Westenhanger Charter of 1035. Although apparently named *Berwic* during this period, the charter clearly describes the boundaries as almost identical to those of Westenhanger manor when it was sold in 1885. A possible direct reference to the site is a pocket of land referred to as 'Five Acres'. This existed within the boundaries of 1035, and was to the north of the East Stour and is summarised as being to the north and slightly to the west of the present day castle at Westenhanger. A reference is also made to a Saxon church within the boundary which is also mentioned in the *Domesday Monachorum*.

The excavation revealed a prehistoric soil horizon and evidence of early medieval farming activities. The prehistoric soil horizon produced a number of struck flint artefacts including blades, cores and flakes, retouched pieces and other flint knapping debris, also a quantity of pottery sherds was recovered. The pottery includes: a single sherd of a beaker or food vessel, with traces of finger-pinched rusticated decoration, dated to *c.* 2000–1600 B.C. and another of a food vessel or urn, with vertical incision decoration to its inner rim; and some twenty-nine sherds of Later Bronze Age Deverel-Rimbury-type pottery dated to *c*. 1600–1400 B.C. The later prehistoric period is represented by a pottery sherd of Early-Mid Iron Age date, whilst a quantity of sherds of Late Iron Age date *c*. 200–50 B.C. were also recovered.

Across the site a series of features of early medieval date was recorded. These features consisted of various large ditches, which appeared to form a rectangular enclosure. At least one of the ditches had been recut and had large post-holes or pits cut into its base. It is suggested that the concentration of features in a possible enclosure, including a waste pit could be indicative of a work or activity area and may be connected with nearby settlement.

Detailed excavation of the waste pit produced a significant volume of charred plant and cereal remains, including a high quantity of oats (*Avena*), with lesser amounts of rye (*Secale cereale*), free-threshing wheat (*Triticum*) and occasional grains of barley (*Hordeum Vulgare*). Other samples included cereal chaff whilst weed seeds, especially brome grass (*Bromus* subset *Eubromus*), are common. The presence of oats is unusual for the early medieval period in Kent and indeed southern Britain.

Other archaeological features within the internal area comprised small ditches, post- or stake-holes and a clay quarry pit. The ceramic evidence recovered from the fills of these features all falls within the date range of A.D. 1050–1250. One sherd of Tyler Hill Ware found in the lower filling of the waste pit narrows the date range to A.D. 1175–1250.

23 Stone Street, Westenhanger

Adrian Gollop and John Willson

An archaeological field evaluation of land to the east and west of Stone Street, Westenhanger, Kent, was undertaken under the direction of Adrian Gollop, between 15th February and 19th March 1999. This formed part of a programme of archaeological investigations along the route of the Channel Tunnel Rail Link, and was commissioned by Union Railways (South) Limited.

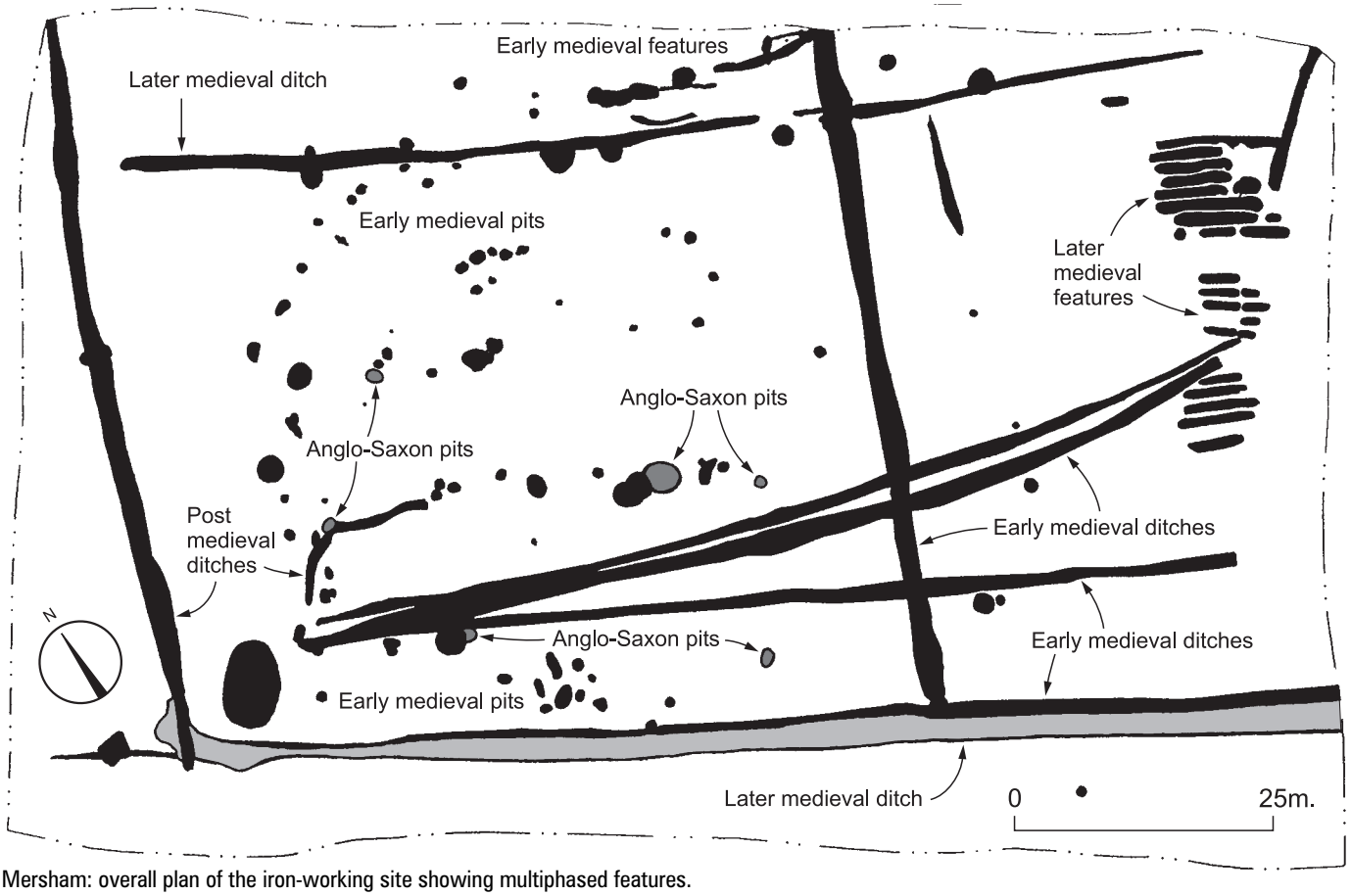
The area under investigation consisted of two separate fields of rough grazing land either side of Stone Street (centred on TR 1275 3745 and TR 1290 3705). The eastern area was located to the south of the existing London to Folkestone railway, whilst the western area lay to the north. As with the site north of Westenhanger Castle (above) previous work and documentary evidence suggested that these two new areas threatened with development may have had some archaeological potential.

During the evaluation some twelve trenches were excavated and, archaeological features were identified in six of these. These features consisted of a series of pits, two small ditches, and one larger unidentified linear feature possibly a geological anomaly. The evidence available from the limited datable material retrieved from these features indicates that all of them are of a late post medieval or more recent date.

24 Mersham

John Willson

During December 1998 and January 1999 detailed archaeological investigations under the direction of Mark Houliston took place on land situated to the south of the church of St John the Baptist, and north of the embankment of the London to Folkestone railway line at Mersham, Kent (TR 0518 3929). The site occupied a slight spur on the edge of the Hythe Beds, whilst to the south and west the land dropped away onto low-lying Atherfield and Wealden Clays. The investigation was commissioned and funded by Union Railways (South) Ltd.



Mersham: overall plan of the iron-working site showing multiphased features.

The excavation recovered small quantities of mid Anglo-Saxon and earlier material but these were thought to be entirely residual. More significantly a few features, one filled largely with slag from iron smelting, were attributed to the late Anglo-Saxon period (*c*. 850–1050). Pits backfilled with iron slag, a very large oval pit (probably for water storage) and ditches cut to bring water to the site probably dated to *c*. 1050–1125, although activity may have continued until *c*. 1200. Boundary ditches were identified on the eastern, western and southern sides of the site; the last of these was found to continue into the modern field immediately to the east of the excavation.

Some six features, five pits and a probable ditch relating to the late Anglo-Saxon phase (*c*. 850–1050) were revealed. It was during this phase that ironworking was first carried out on site, slag from the smelting process being deposited in a large, purpose cut pit. The association of this feature with four others yielding domestic material and with contemporary textile-working implements found in later contexts suggests a mixed regime. Spinning and weaving in order to meet requirements of the household was a ubiquitous domestic occupation at this date but iron smelting, dependent on viable supplies and fuel, was a far less common activity. In this period, the site probably formed part of a much wider network of similarly small-scale ironworks whose overall economic importance lay only in their combined output.

The early medieval period (*c*. 1050–1125), saw the site at its most active, although occupation may have continued until *c*. 1200. The area excavated appears to have been used predominantly for the smelting and smithing of iron, although evidence for domestic activity was also found. This might be construed as indicative either of a simple intensification of the metalworking aspect of the earlier mixed regime or of a switch to a more specialist operation, on a small industrial scale though with the metalworkers still living on the site. The majority of the features dating to this phase, including many associated with ironworking, were concentrated within an area bounded by ditches forming a large enclosure. This was reduced in size, or partitioned into two separate enclosures, during the latter part of this phase by the addition of an almost centrally placed dividing ditch.

Slag derived from smelting, which probably took place within the excavated area, was disposed off in eighteen to twenty specifically cut pits in the central and southern parts of the enclosure, and hammerscale, indicative of smithing, was identified over much of the site. It is likely that ironworking was carried out near the south-western corner, where a large water storage pit and two short ditches were located and where three successive long ditches may have been used to carry the water to the site. About twenty-five pits of this phase, distributed fairly evenly across the enclosure, contained domestic rubbish, while seven or eight, in the central and northern parts, contained traces of cess. The main domestic area was located in the northern part of the excavation, where two small gullies, four post-holes and two beam-slots, were found. Some twenty-eight other post-pits were found spread across the northern and southern halves of the area; these may relate to the domestic activity or to the industrial process itself. Thirteen or fourteen other pits contained little evidence for either domestic or industrial use and were generally hard to classify.

There was only limited evidence for use of the site after the early medieval ironworking phase. For the late medieval period (*c.* 1475–1550) the area appears to have been cleared of industrial workings and occupational habitation, most of the features filled in and the site used for agricultural purposes, using the main enclosure ditches as field boundaries. By the post-medieval period (*c.* 1550–1900) most of the area was probably put to the plough, whilst a series of features and associated pits found near the eastern fringes may relate to horticultural activity and traces of later cart tracks were found running over them.

A preliminary analysis suggests a marked shift in the relative importance of smithing and smelting from the late Anglo-Saxon phase (*c*.

850–1050) to the early medieval phase (*c*. 1050–1200) with a striking increase in the later period in the proportion of material attributable to smelting. To date, there is a lack of documentary evidence relating to ironworking at Mersham for the Anglo-Saxon and early medieval periods. However, post-1200 records of customary dues collected from peasants for Christ Church Priory contained in Bedels' Rolls dating from the mid thirteenth century, record the paying of 12 pieces of iron valued at 3s. under the heading 'Dues' within the receipts section of the annual accounts. It is hoped that full study of the evidence and environmental materials from the excavation and more detailed documentary studies will prove an important addition to current knowledge of ironworking in the Weald.

25 Court Hall, High Street, Milton Regis

Andrew Linklater

View showing the medieval 'Court Hall'.

During July and August 1998 the Trust carried out an archaeological watching brief on a parcel of land surrounding Court Hall, High Street, Milton Regis (TQ 9037 6474). The work was commissioned and funded by Swale Borough Council.

The historic town of Milton Regis stands on a slight ridge of Head Brickearth and Thanet Sands to the west of Milton Creek. The High Street, aligned roughly north–south, runs along the crest of the ridge with the Court Hall located midway along its eastern side. The town possibly originated as a pre-Roman settlement next to a navigable channel giving onto the Swale estuary. Evidence for this hypothesis, however, is scarce. An Iron Age cremation burial is known from the area of the Court Hall, and a second, interestingly, was found just prior to the start of the watching brief, by contractors digging a service trench in the High Street 6 m. north-west of the Court Hall. At present, the building (listed Grade II*) is used as a museum.

Court Hall, dating from *c*. 1450, and once the medieval Courthouse of the market town, sits in a triangle of land formed by the High Street, Cross Lane and Brewery Road. Though much restored, the building is of typical Kentish-framed type, with a jetty to the west and a roof supported by original ornamented crown-posts. The lower floor contains two lock-up cells; the upper floor forms a single room open to the roof.

Groundwork was unfortunately well underway prior to the start of the brief and the following is a record of information salvaged after a deep service trench had been cut across a car park to the north of the Hall and after foundation trenches for steps and retaining walls north and south of the Court Hall had been cut. Despite this, elements of two separate structures forming part of an earlier Court complex were briefly examined.

A timber-framed cross-wing, supported on mortared flint dwarf walls 0.23 m. high was identified to the south of the Hall. This irregular-shaped extension, 2.6 m. wide at the High Street frontage and 3.5 m. wide at the east rear wall, was 7.2 m. deep. An eastern wall-return identified at the north-east corner of the extension indicated an eastward continuation of the cross-wing. A brick wall set parallel to the return and 2 m. to the north may indicate that the continuation took the form of a passage or pentice. Insufficient evidence survived however to prove this.

The cross wing almost certainly post-dates the Hall and may have been added early in the post-medieval period to provide additional heated ground and perhaps first-floor rooms at the southern end of the building and a possible passage leading eastwards from the extension. That the rooms were heated is suggested by a 1.4 m. square mortared flint foundation located mid-way along and south of the cross-wing south wall. The dwarf walls were plaster-faced only on the internal face. Nothing of the internal layout or floors survived except for a relatively modern sunken brick chamber or soak away, to the rear of the cross wing. Outside the wing to the south and west were deposits of dirty gravel and silt representing successive road and courtyard metallings.

The wing was almost certainly the structure demolished during a major rebuilding campaign at Court Hall in 1957–8. At this time a substantial south annex to the building was taken down, of which a number of contemporary photographs survive, and timber framing linking the two buildings was removed and replaced with new framing.

To the north of and adjoining the Hall was a brick-built cellar which projected forward of the road frontage line. The cellar 2.5 m. by 3.30 m. was not excavated, but a doorway and steps down was identified at the centre of the north side. Elsewhere, levels had been reduced to below natural subsoil with only a circular brick well identified to the east of the building.

The northern cellared building, which also formed an early annex to the Court Hall and of which early photographs survive, was also demolished in 1957–8.

26 Kemsley Fields, near Sittingbourne

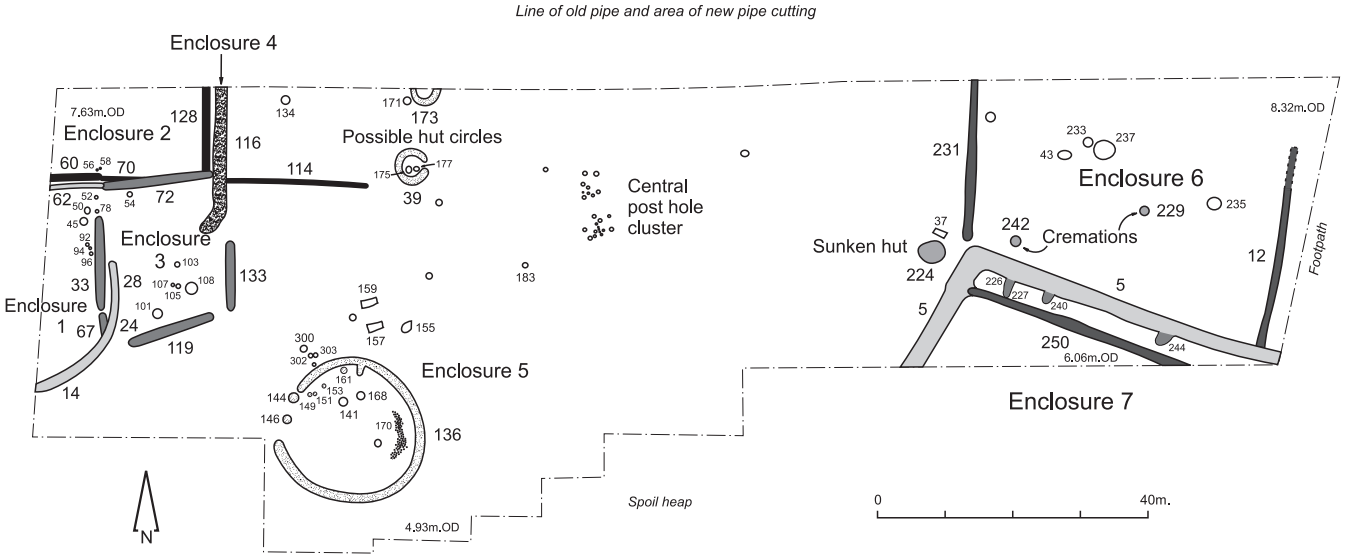
John Willson

In August 1998 evaluation trenching was undertaken on an extensive 11 hectare site east of Kemsley village in advance of a proposed residential development. The site (centred TQ 9100 6600) lay on the 8 m. contour adjacent to low-lying marshland. The evaluation and all consequent archaeological work were funded by the developer, Abbey Homes Ltd.

The evaluation revealed features indicating mid to late Bronze Age and early Iron Age activity of sufficient importance to warrant a more extensive programme of excavation (Hicks 1998). This began in the area designated 'West Field' in January (Hicks 1999) and continued in 'Centre Field' (Hutchings 1999). Together the excavations proved that an ancient prehistoric settlement of some size once existed at Kemsley. A watching recording brief is in progress at the time of writing.

Although the dating is, as yet, provisional, it is possible that the settlement remained in use from at least *c*. 1700 B.C. to perhaps 600 B.C. A Neolithic arrowhead recovered during the evaluation, and a contemporary flint axe and residual sherds of possible Neolithic pottery found during the watching brief, testify to an earlier but ephemeral phase of occupation.

The earliest settlement features comprised a sunken hut, three cremation burials and a group of domestic rubbish pits, all found on the eastern side of the site. Perhaps of contemporary date or



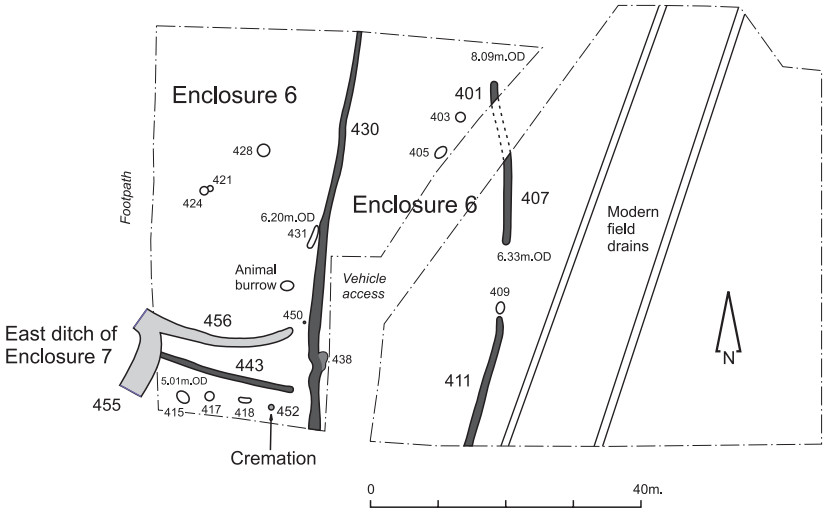
Kemsley Fields: plan of the excavated area in 'West Field', showing archaeological features.

slightly later were further hut circles and rubbish pits, together with a series of ditched enclosures and linear earthworks, perhaps representing paddocks and field systems. The features suggest the presence of a rare 'open' settlement dating to the period 1700–1500 B.C. Collectively the pits, gullies and ditches have yielded a regionally important assemblage of Deverel-Rimbury-type pottery.

A large circular ditched enclosure succeeded the earlier arrangement. The enclosure was provided with an internal timber structure and a cobbled work area. To the west of the enclosure and possibly of contemporary build was a small sub-circular enclosure or corral. It appears likely that many of the earlier enclosures and fields may have continued in use into this period, which perhaps prevailed from 1500–1300 B.C.

It would appear that sometime later the settlement arrangement and field systems changed again. To the south-east a large ditched enclosure was constructed, clearly cutting earlier field boundary ditches. Three sides of this large enclosure were traced through excavation. Large post-holes in the base of the northern ditch may suggest that a timber palisade was formed along the inside of the ditch, possibly for defence purposes. Little of the west ditch and none of the east were excavated, so it remains unknown whether this possible palisade arrangement was continuous. The size of the new enclosed area is unknown since it extended southward beyond the excavated area. No trace of an entrance into the enclosure was observed.

The last phase of occupation dated to about *c*. 950–600 B.C. and is represented solely by pottery recovered from pits on the eastern side of the area. This may suggest that by this time the focus of settlement may have already shifted onto new ground. The reasons for the apparent abandonment of the settlement are unclear. Perhaps the waterway that bounded the site to the south and was presumably of some importance to the settlement, became unnavigable and hastened a shift in settlement pattern in the first millennium B.C.



Kemsley Fields: plan of the excavated area in 'Centre Field', showing archaeological features.

27 Boley Hill repaving, Rochester

Alan Ward

Between March and December 1998, a watching brief was maintained during an extensive repaving project in the historic core of Rochester. This scheme, extending from the High Street, along Boley Hill, St Margaret's Street, The Precincts and College Yard, provided a wide range of new and exciting discoveries spanning the Roman to post-medieval periods. During the course of the project three medieval buildings, three gateways (two medieval, one Roman), a seventh-century church, and parts of the Roman and medieval defences were uncovered.

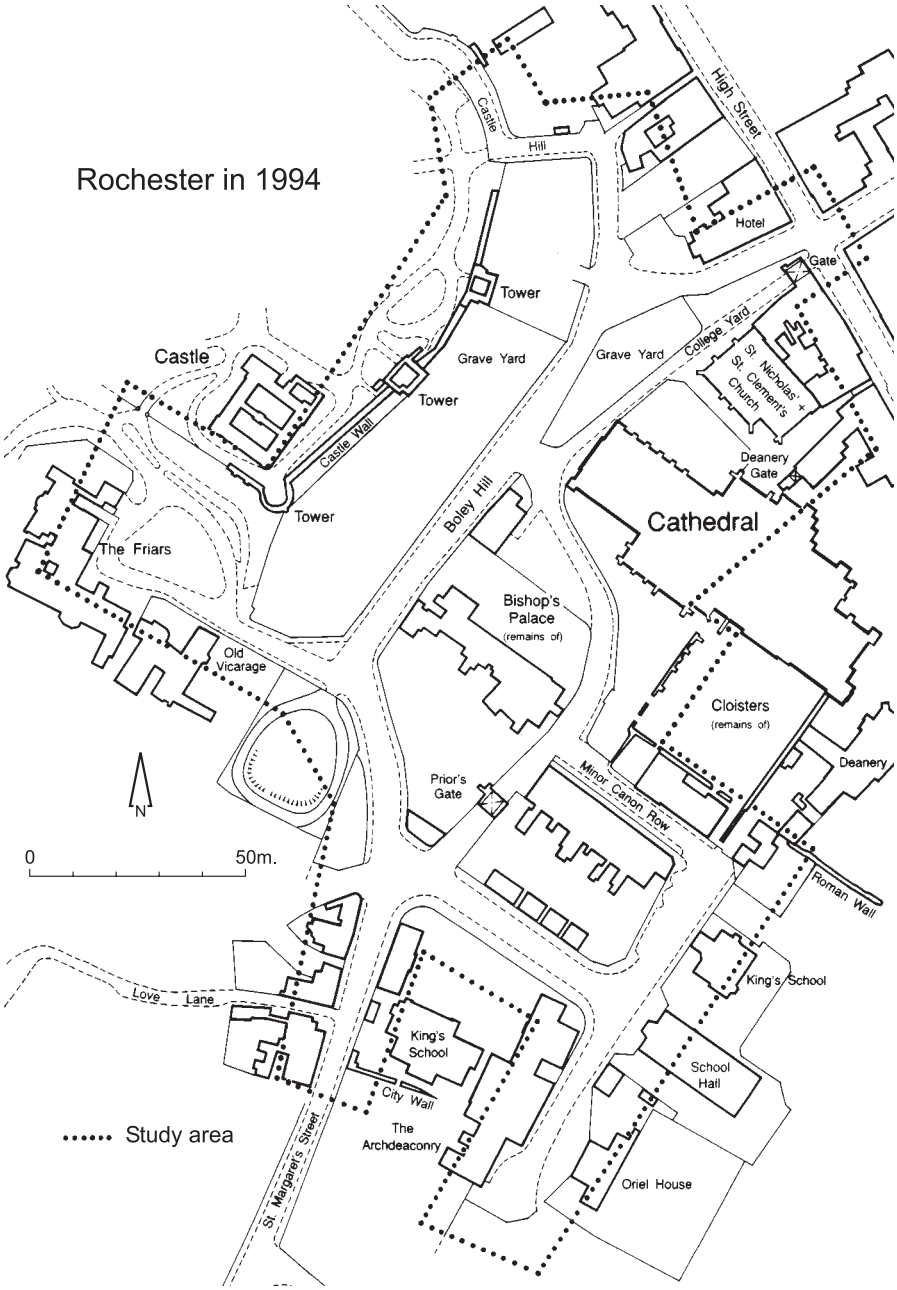
The Roman (and Norman) South Gate

The remains of the Roman south gate to Rochester (*Durobrivae*) were located just 0.25 m. below the modern road surface. Only a short length of masonry forming the western side of the gate passage was visible, but a more extensive fragment of the east wall was exposed in a nearby Victorian drain trench. Most of the surviving masonry, bonded in an *opus signinum* mortar, was foundation material, but two courses of neatly laid ragstone facing blocks, topped by a string-course of Roman tile, also survived. These two walls, forming a gate passage *c*. 4 m. wide, also served as retaining walls to prevent the second-century defensive earthen rampart from eroding into the road. The gateway was constructed at the same time as the rampart.

The walls were provided with a sub-foundation of laminated flint and crushed chalk. At the southern end of the passage this material formed a 'sleeper' or 'tie' foundation across the gate passage implying the presence of a wall with gate opening in this position. The absence of a sleeper foundation at the north end of the passage suggested that there was no internal arch at this point and therefore no turret above the gate passage.

Rochester's second-century rampart was provided with a wide stone face in the third century. The front of the rampart mass was cut back at this time and the passage walls foreshortened. The foundation of the third-century wall exposed during the repaving work was 2.6 m. wide and terminated either side of the passage. Although there was no evidence for a new gate opening, it is likely that, given the extent of rebuilding, a new opening was formed at this time on line with the new wall.

Traces of later fabric representing a rebuilding of the Roman wall, perhaps in the medieval period, was recorded together with a fragment of masonry possibly forming part of a wall built to block the gateway passage. Unfortunately, the isolated fragment of blocking wall survived only on the western side of the Victorian drain trench, surrounded by a sea of disturbance, and could not be stratigraphically linked to the Roman or Medieval wall foundations. Although wall fabric appeared to be of Roman build, this could not be substantiated and the date of the blocking wall remains unproven.



Boley Hill, Rochester, repaving project: location plan.

View showing Roman *opus signinum* wall foundation and town wall, from the west.

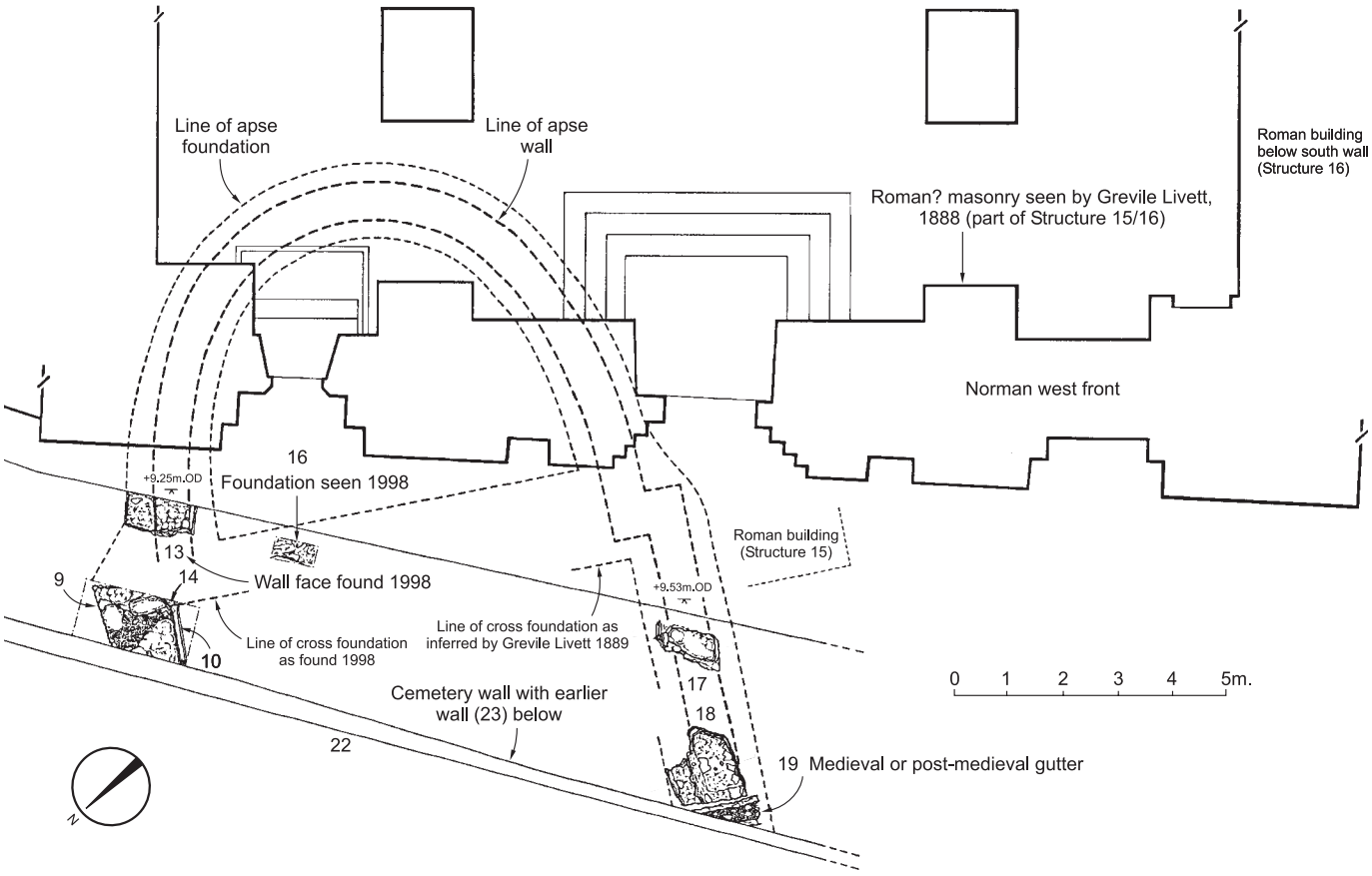
The Anglo-Saxon church

During the repaving of College Yard, outside the west front of the cathedral and just 0.20 m. below the modern road surface, the substantial foundations of an early Anglo-Saxon church, first

View showing levelling and rubble make-up for post-medieval roads.

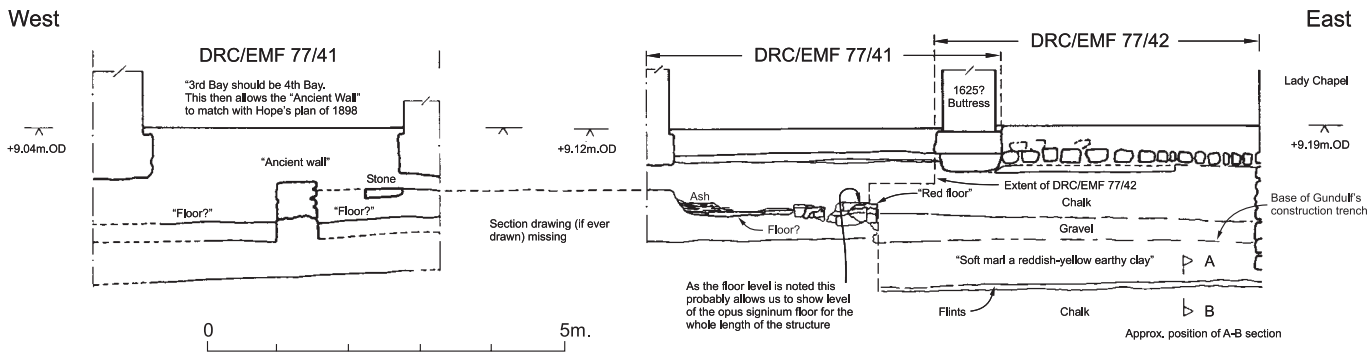
View showing the Roman south gate, from the north.

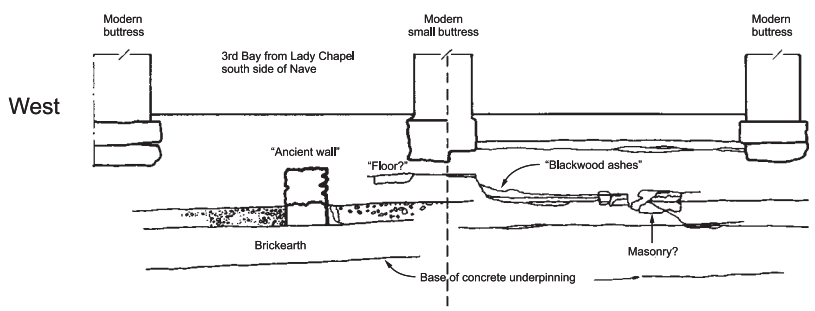
The Roman south gate, from the west.

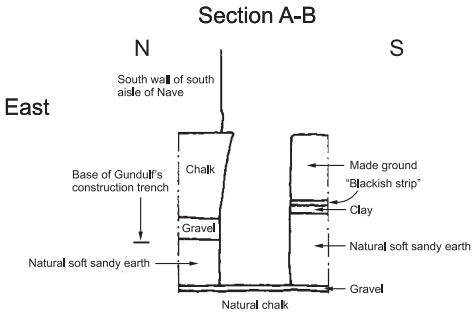


Boley Hill, Rochester: plan of the seventh-century. Anglo-Saxon church showing foundations discovered during 1998.

Irvine's section drawings of masonry building (structure 16)



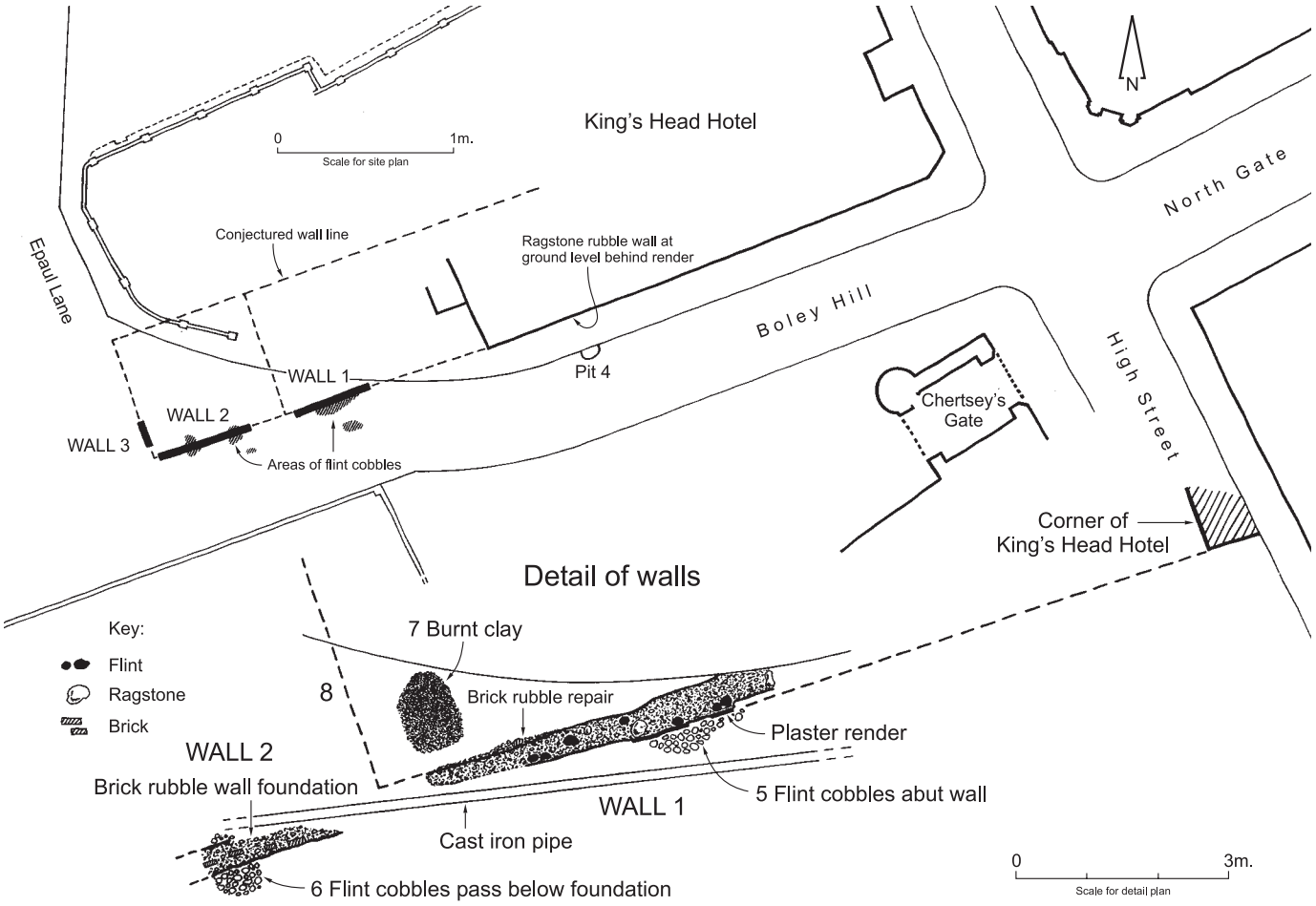




Tracing of Medway Archive office document 77/41 as preserved. This drawing survives as two separate sheets of paper stuck to a backing sheet

Part of Medway Archive office document DRC/EMF 77/42

Boley Hill, Rochester: section across structure found below the south wall of the cathedral in 1876.

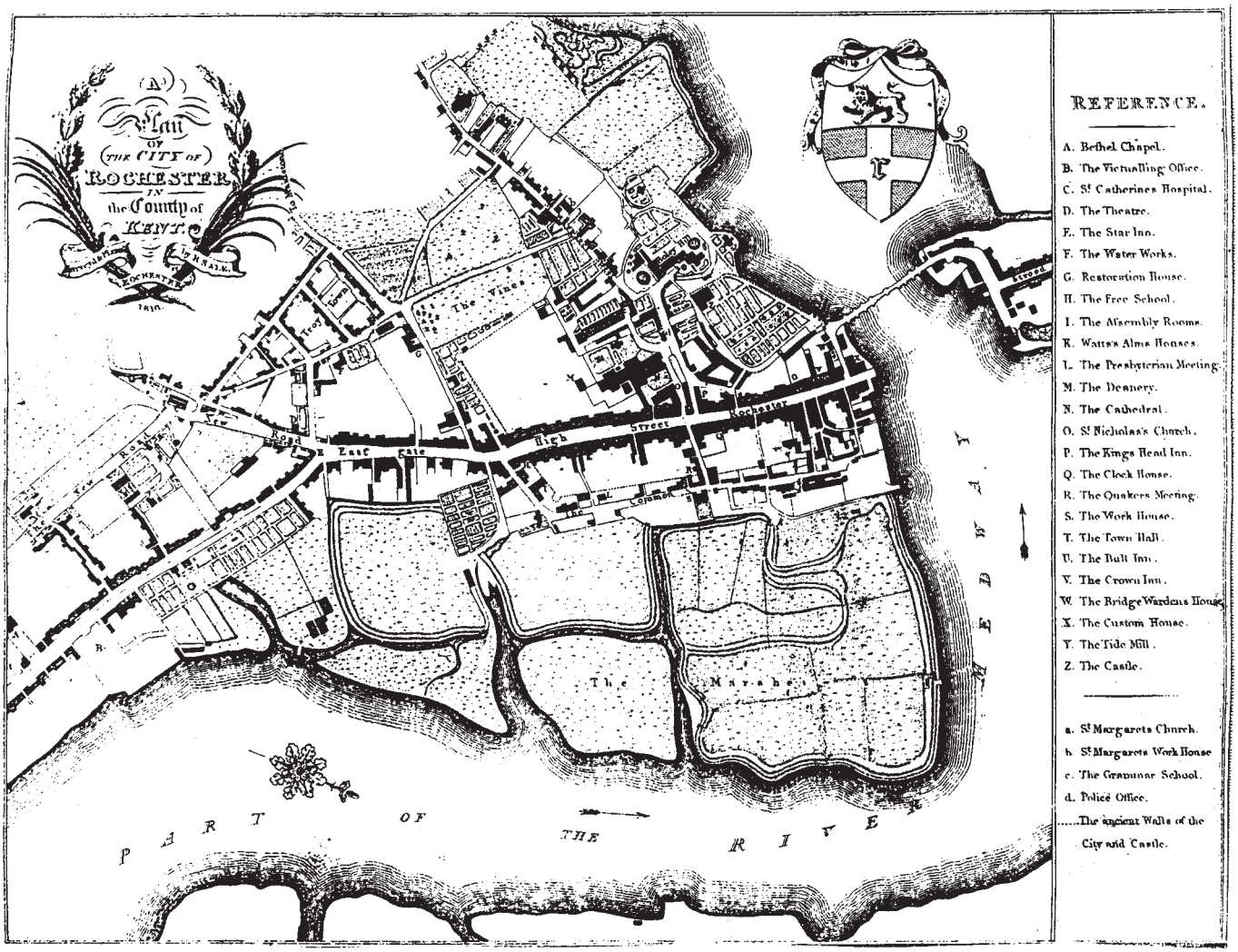


Boley Hill, Rochester: medieval wall foundations to the rear of the King's Head Hotel.

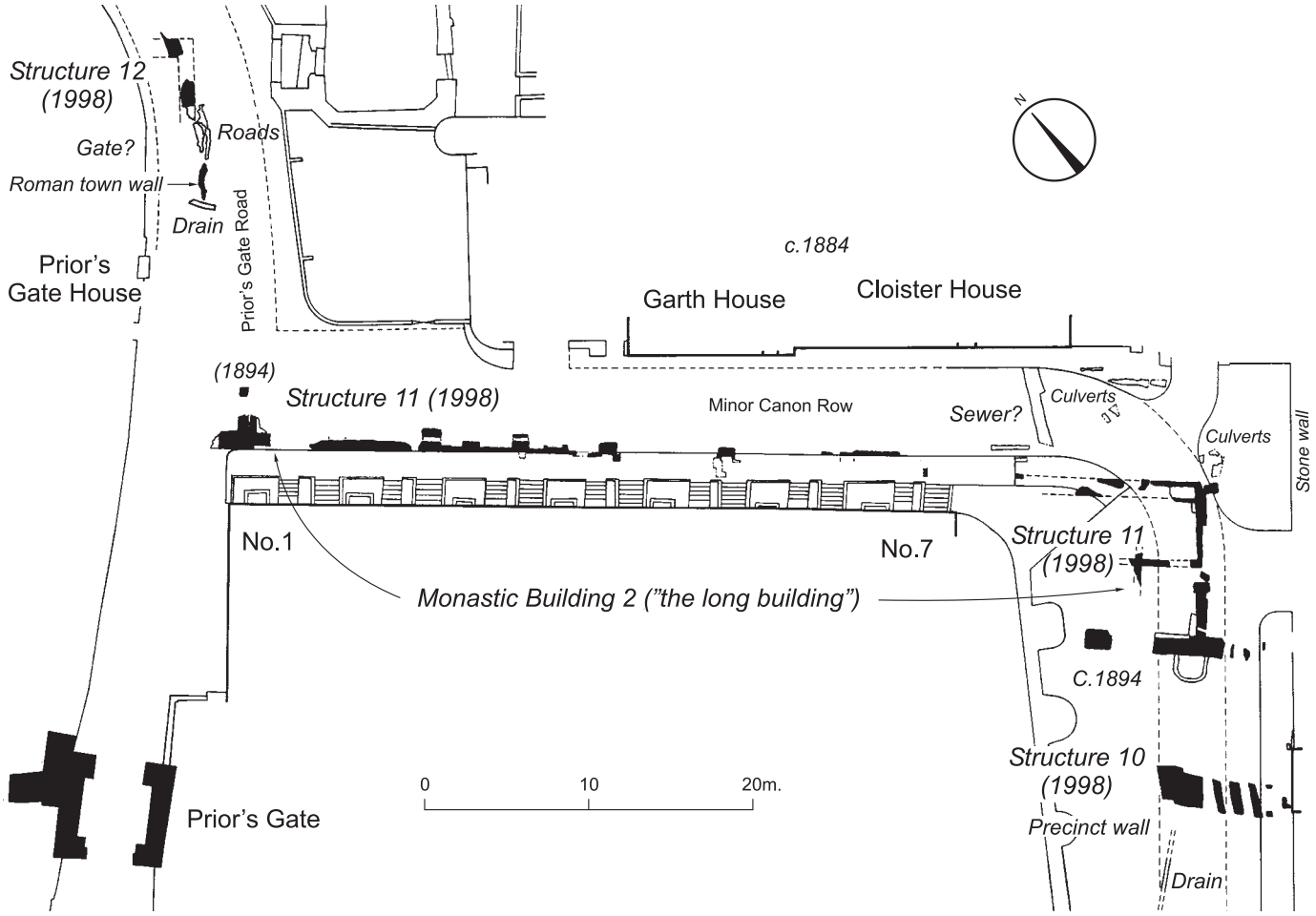
North wall foundations of the Anglo-Saxon Church, from the north-west.

Overhead view from the east of the wall foundations of the Anglo-Saxon church.

Monastic Building 2, showing added post-medieval cobbled surface and internal wall cutting earlier clay floors.



Sale's map of Rochester (1816).



Boley Hill, Rochester: plan showing extant of walls of Monastic Building 2 ("the long building").

exposed by Canon Grevile Livett in 1888 (Livett 1889, 261–278; Livett 1895, 17–72) were discovered. The newly exposed footings lay a short distance west of those recorded by Canon Livett and included the foundations for north and south nave walls and a thickening of both foundations for a chancel arch. A sleeper wall separating the nave and apsidal chancel was also identified for the first time.

The early Anglo-Saxon apse excavated by Livett (marked out in the present paving of the westernmost part of the nave), was considered by him to form part of a cathedral church dedicated to St Andrew and built in A.D. 604 by Justus, the first bishop of Rochester. The structure with an internal width of 8.5 m. and length of 22 m. (St John Hope 1898, 212–3) is small by comparison with the contemporary church of St Peter and St Paul at St Augustine's Abbey, Canterbury (18 m. wide and 27 m. long), but compares favourably in size with the later seventh-century churches of St Pancras, Canterbury (9 m. by 22 m.) and St Mary, Reculver (7.5 m. by 19.5 m.). Although it is likely that Canon Livett was correct in his identification and dating of the remains, the size of the church might imply that it is of later seventh-century build and may even have formed one of a number of churches set in line as at St Augustine's Abbey and Jarrow. As yet, however, and despite numerous campaigns of excavation in the late nineteenth century, no trace of another Anglo-Saxon church has been found beneath the present cathedral.

The significant new additions to the church plan and depth of surviving fabric relative to the existing ground level, together with the possible identification of the west wall of the early church by probing in 1894 (St John Hope 1898, 212) indicate that the foundations of the early nave and perhaps other deeply cut Anglo-Saxon features (for example, early graves) may survive in the existing open ground, formerly cemetery, west of College Yard.

There was no sign of a '*porticus*' or side chapel to the south of the exposed remains, as is implied on Livett's plan of 1889. Analysis of his observations show that the '*porticus*' wall was set at a lower level than the church foundations and well below postulated Anglo-Saxon ground level, which was approximately the same as that of the present road surface. The '*porticus*' was described by Livett as 'wall standing on a foundation', the latter being 18 inches (0.45 m.) deep, cut into the natural soil at a depth of about 5 feet (1.5 m.) from the modern surface. As the top of this foundation was at least a metre below Anglo-Saxon ground level, it is more likely that the putative '*porticus*' formed part of an earlier, perhaps Roman, building.

Medieval buildings

The foundations of medieval and post-medieval buildings were recorded in a number of locations during the repaving scheme. Most of the buildings or parts of buildings recorded were casualties of late eighteenth- and mid nineteenth-century road widening schemes.

The King's Head Hotel showing earlier phases of the structure.

Monastic Building 2, showing ragstone rubble walls revealed in doorway, from the east.

Monastic Building 2, showing long broach plates in door jambs, from north-west.

Repaving of the junction of Boley Hill Road and Epaul Lane brought to light a section of flint wall with a brick extension to the west, representing an early road frontage for the present King's Head Inn. The flint wall originally supported a timber plate surmounted by framing for a timber west end of the inn. The brick extension may not have carried a frame. This substantial medieval building, depicted on two early surveys, the Bridge Warden's map of 1717 and Sale's map of 1816, was shortened to its present length by 1841 (the date of the tithe map for the area), presumably to widen the road junction.

A short length of east–west aligned wall was brought to light beneath the south side of King's School Road. The wall, 0.60 m. wide probably formed part of a medieval building depicted on nineteenth-century surveys as 'parsonage barn' which was demolished *c*. 1842. A north–south aligned wall of similar proportion but of later build was found to butt the south face of the earlier wall. Both walls were of sufficient size to carry masonry to full height and may therefore have formed a small part of a substantial masonry building. As the area in which the discovery was made is believed to have been the medieval monastic grange, the structure may have formed part of the monastic complex.

A drain trench cut close to the intersection of Boley Hill and Prior's Gate Road exposed a north-west to south-east aligned foundation of loose mortar and crushed chalk. The foundation was cut through a soil deposit from which a single potsherd dated *c.* 1100–1225 was recovered. A similar foundation was identified beneath the junction of the roads, extending across Prior's Gate Road. The foundation, aligned parallel with and set 6 m. to the north of the first wall, may be contemporary and both foundations may form part of a single early medieval building. Examination of an adjacent standing wall against the south-east side of Boley Hill Road indicated that much of the standing fabric was of considerable antiquity. The earliest phase, visible only at a low level, comprised of two courses of flint laid in herringbone fashion. Such a style of masonry was used in the late Roman, and Norman periods, but is unlikely to date to after *c*. 1200. As the standing wall post-dates the foundations recorded in the drain trenches, if the dating of the standing wall is correct, then the foundations represent an earlier, perhaps Norman structure.

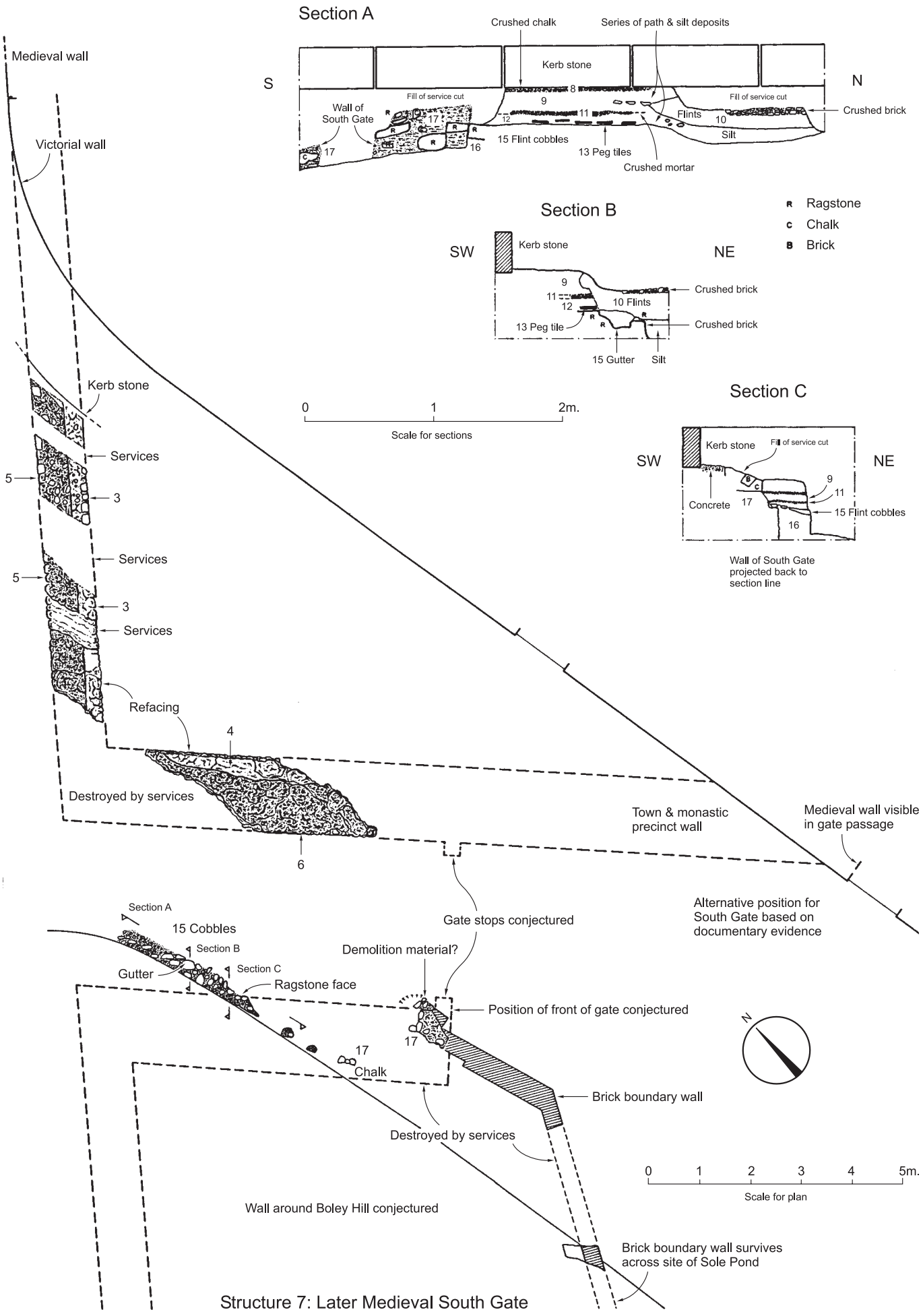
The standing wall also contains later work. A quoin, together with a bulge in the masonry, appeared to form the south-west angle of a building constructed after the herringbone flint wall was partially demolished. An extension of the same wall, which also appeared to be of medieval build, had a doorway inserted in more recent times. The high level of the threshold suggested that steps would have been required to access the street. A horizontal slot at a height of *c*. 2.50 m. above the present pavement may have been for a contemporary lean-to structure.

Just 0.25–0.35 m. below the road surface and pavement in front of Minor Canon Row, the north wall of a medieval building at least 59 m. long was observed. Most of the wall was of ragstone rubble with small ragstone blocks and flints forming an external face, but at its east end the wall was predominantly of chalk rubble, suggesting that the east end of the building was a later addition. A single potsherd associated with the chalk wall has been dated c. 1475–1550 and this perhaps confirms the suggestion that this end of the building was of later build. The north-west corner of the building was buttressed and traces of at least six roughly equidistant buttresses were identified indicating a building of perhaps seven bays, extending for at least 35 m. A 1.50 m. wide doorway was located in the third bay west of the earlier building. The doorway was flanked by jambs decorated with broach stops of mid fourteenth- to mid fifteenth-century date. At the south-east corner of the buttressed building the wall appears to return to the south. Beyond this, the later extension, set back approximately 2 m. from the road line, continued to an east gable, found beneath the north end of Archdeaconry Road.

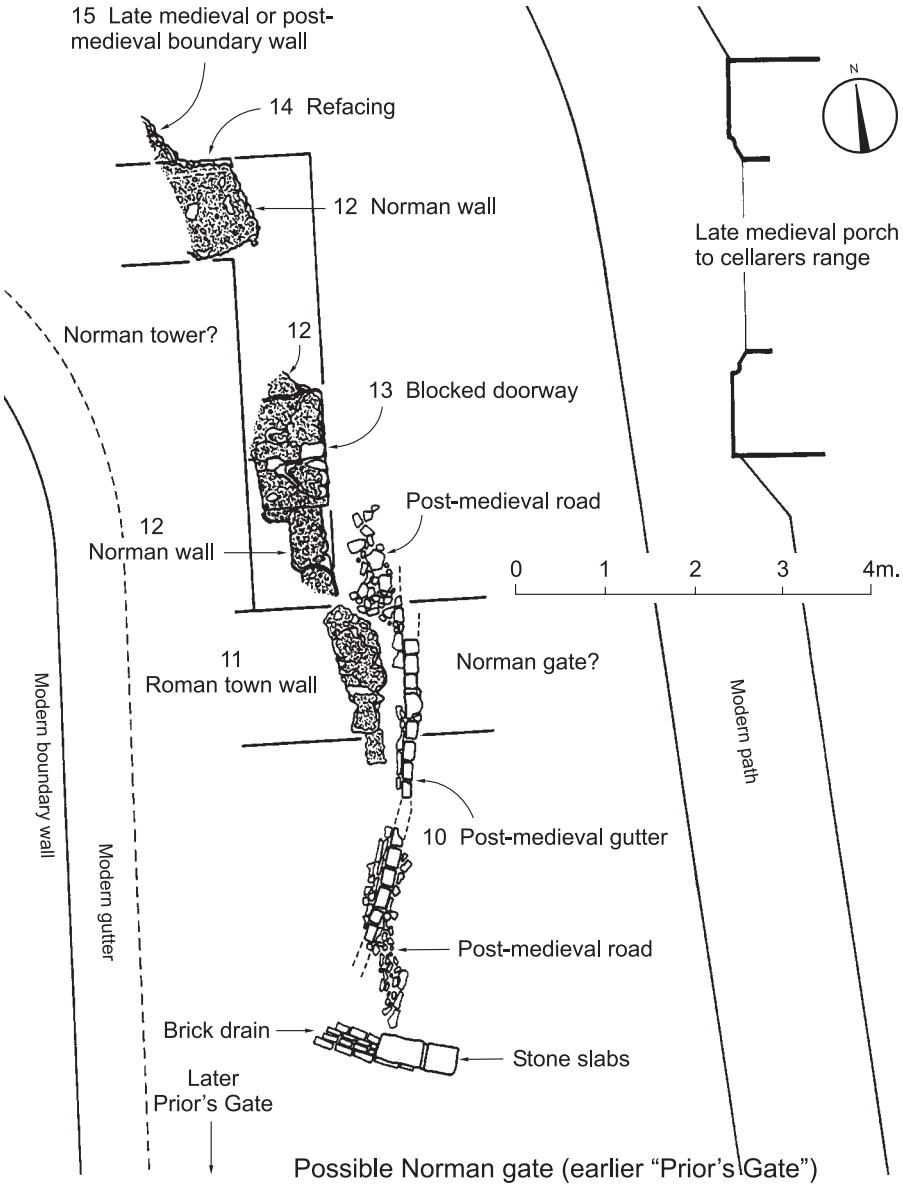
The structure uncovered beneath Minor Canon Row may have been a major monastic service building, perhaps a bakehouse referred to in documents as the 'long bakehouse' (St John Hope 1900, 49–52; Livett 1895, 61; Tatton-Brown 1984, 187). The bakehouse is known to have been rebuilt in the 1330s at the same time as the refectory by bishop Hamo de Hythe (1319–52), with no further work being recorded there until the Dissolution (St John Hope 1900, 23). Most of the complex was probably demolished at the end of the seventeenth century, but the east end, recorded as the 'Provost's or Dean's Stable' on eighteenth- and nineteenth-century plans (Medway Archive Office Documents DRc/Emp 11 and CCRc P41 respectively), survived until *c.* 1860.

A chalk-lined cess-pit found butting the face of the south wall of the stable, beneath Archdeaconry Road, produced one of the best collections of post-medieval pottery yet recovered from Rochester. The assemblage included at least sixty-four separate post-medieval pots, together with clay-pipes, glass bottles, wine glasses, a tortoiseshell comb and part of a set of ivory

View showing the north wall of the later medieval south gate.



Boley Hill, Rochester: plan showing surviving remains of the later medieval South Gate and the town and monastic precinct wall revealed during the repaving scheme.



Boley Hill, Rochester: plan showing remains of the Roman town wall and Norman wall (Prior's Gate).

dentures – one of the earliest sets of dentures found in Britain. Amongst the pottery, which broadly dates from *c.* 1680–1710, is a rare and near complete teapot, in white stoneware, from the Fulham factory of John Dwight, dated *c*. 1700–1710 (Cotter 1999, 9–11).

The later medieval (second) South Gate

Fragmentary traces of the later medieval south gate were uncovered during repaving at the intersection of St Margaret's Street and Boley Hill. The (second) south gate was originally located outside the western corner of the bishop's precinct. Here, the precinct wall formed the north side of a north-west to south-east aligned gate passage. The south side of the passage was probably built freestanding, against a pre-existing or contemporary north–south aligned boundary wall. Only remnants of the south wall survived demolition in the late eighteenth century and cutting by recent service trenching. A small area of post-medieval road surface and a stone drain abutted one of the remnants of the south wall. Just to the north of this gate part of the medieval precinct wall still survives to a height of *c*. 3 m., and the southernmost demolished portion of this wall was found to be of the same build as the gate. Overall sufficient islands of intact deposits and fragments of masonry survived to provide a plan indicating a gate passage 7.25 m. long and 3 m. wide.

The later medieval South Gate is generally thought to date from *c*. 1225 when a major campaign of repair to the town defences is documented (Livett 1895, 51–52). Unfortunately, there is no specific documentary reference to the South Gate at this time and the date of the gate remains unproven. Contemporary maps of 1633 (the Duke of Northumberland's map, displayed in the Guildhall Museum, Rochester) and 1717 (the Bridge Warden's map) show the gate as a simple rectangular structure, similar to the present Prior's Gate. Most of the gate was demolished in 1770 to allow road widening and part of the north wall survived until 1901 when further road widening was undertaken.

The Norman Prior's Gate

Under Prior's Gate Road, north of the junction with Minor Canon Row, a remnant of the Roman town wall was observed adjacent to No. 2, Prior's Gate House. The wall, aligned north-west to south-east formed the south side of the town defences, with this section lying some 60 m. south-east of the Roman South Gate. Extending north of the wall and at right angles to it was a separate and later foundation forming a fragment of an early medieval building built against the back of the Roman wall and therefore cut into the rampart mass. A second wall fragment formed a return of the building to the north-west and a structure up to 7.5 m. wide was indicated. Traces of a possible blocked doorway were found in the east wall. Although there was no sign of a corresponding structure on the east side of the road, one possible interpretation of the remains is that they formed the west side of a gate. A gate in this position has been suggested by others

Wall forming one side of a gate passage to the Norman 'Prior's Gate'.

View showing a section of the medieval north precinct wall.

A probable gate in the precinct wall.

(Flight and Harrison 1986, 21 and fig. 3). The wall fragments were bonded in a very distinctive pale yellow mortar containing copious quantities of shell. A near identical mortar was used to construct a Norman building excavated less than 10 m. away in 1976–7 (Harrison and Williams 1979, 22 and fig. 1) and it is plausible that the possible gate structure may also be of Norman build.

The town and precinct wall and associated ditches

Sections of medieval precinct wall were observed during repaving and drainage works beneath Boley Hill Road. To the south, most of the observations were made against the eastern kerb line. To the north, on the west side of the cathedral cemetery, well preserved lengths of wall were seen. The northernmost portion, opposite Epaul Lane was observed in a 1 m. deep drain trench and consisted of ragstone blocks bonded by a light grey mortar with charcoal specks. This type of mortar is one of the few that can be securely dated and is typical of the later eighteenth century. A flint cobble surface passed below this foundation and perhaps represents a medieval or possibly even a Roman road surface.

A little way to the south of the possible road metalling, a gap in the boundary wall was observed which coincides with the site of a gate giving onto the cemetery shown on a map of 1633, the Ordnance Survey of 1867 and in photographs dating to before 1887. At that time the wall was of ragstone and stood perhaps 1.75 m. high. To the south of the opening, surviving masonry was bonded in a pale yellow mortar, perhaps indicating that this section of the wall was of earlier date.

At the junction of St Margaret's Street and the King's School a 3.50 m. long section of the town and precinct wall was observed and a further section was noted outside Mackean House. Here only sub-foundation deposits of laminated and rammed mortar, Caen stone chips and gravel survived, with a total foundation depth of *c.* 1 m.

Road deposits

Several road deposits were seen in the various drain trenches cut along and across Boley Hill. Some of these roads were almost certainly Roman and these observations taken together with O.D. spot heights for the Roman High Street and for Roman deposits at Northgate, show there was a far greater downward slope from south to north in the Roman period than at present.

'Prior's Gate Wall', or precinct wall, showing two distinct alignments representing builds of different dates.

28 Hermitage Lane, Barming

Alison Hicks and John Willson

An area of land lying to the east of Hermitage Lane, Barming (TQ 7350 5635), was the subject of an archaeological evaluation by the Trust, under the direction of Alison Hicks, in 1998

The site, consisting of 22.57 hectares, lies north-west of Maidstone on the southern side of the Medway valley where the ground drops gradually from an area of relatively flat high ground (at + 83 m. O.D.), to + 62 m. O.D. to the north. The underlying geology comprises mainly Hythe Beds of sandy limestone and calcareous sands. These are overlain to the south-west by Sandgate Beds, of silty clay and fuller's earth, capped along their northern fringe by Folkestone Bed sands. An outcrop of fifth terrace river gravels overlies the deposits within the central area of the site.

The land under evaluation was divided into three fields A, B and C. Field A lay to the east of a thirteenth-century chapel dedicated to St Lawrence and was bounded by a footpath to the south and coppice woodland to the north and east. Field B occupied the eastern side of the area, immediately east of a central reservoir bounded by a coppice to the south, a housing estate to the east and to the north-west by a trackway. Field C lay to the north-west of the area bounded from the reservoir by a trackway and to the north-west by the parish and borough boundary.

Previous finds on the site include a Mesolithic flint pick, and Neolithic flint tools. Late Iron Age burial urns were discovered close to the medieval chapel in 1905, and a Roman brooch and a cremation burial were found in a sand-pit very close to the northern edge of Field A in 1923. Other Roman artefacts have been found nearby, including a cremation urn probably from the south-east corner of Field A. The thirteenth-century chapel of St Lawrence was located immediately west of Field A. Often referred to as the 'Hermitage of Longsole', it was suppressed in 1545–7, and now no visible remains of the chapel survive. Two springs are known to lie to the north and west of the chapel respectively and may have favoured the site for settlement at various times in the past.

Significant archaeological features and deposits were identified within Field A, indicating the presence of three phases of occupation ranging from the late Neolithic to the early Roman period. Neolithic occupation within the Medway valley is well attested but the presence of flint tools from find spots within the locality of the site only hinted at settlement near to the evaluation area. However, the discovery of two unworn potsherds of Late Neolithic date strongly suggests that some form of Neolithic occupation exists nearby.

A second phase of occupation in Field A may have taken place during the Late Bronze and Early Iron Age periods, probably spanning *c*. 750–550 B.C. Although only a small number of features identified during the course of the evaluation may have been cut at this time, residual material of the period was recovered from a greater number of later features. The combined evidence suggested a significant level of occupation in the area at that time.

The majority of the features uncovered during the course of the evaluation of Field A dated from the mid first century B.C. to the early first century A.D., with some activity extending into the second century A.D. Features of this period extended across the greater part of Field A, but a concentration of features was noted towards the south-western corner of the field. Most features were shallow, surviving just 0.20–0.35m below the level of the present ground surface. The survival of the features owed much to the use of the land for orchard since at least 1931, thus escaping any form of recent deep ploughing.

The occupation identified within Field A has also been shown to extend northwards, down the slope into Field B. Here, two of the south-western trenches, appear to indicate the most northerly extent of the settlement itself, whilst two other trenches in which archaeological features were uncovered perhaps represent outlying activity, possibly within surrounding fields. Within the eastern corner of Field B, a large depression was revealed. Whilst further work is required to determine its nature, anecdotal information from several local people suggests that Fields A and B were struck by 'flying bombs' during World War II, and it is thought that a wartime bomber may have crashed in the eastern corner of Field B. Within Field C, no deposits or features of archaeological significance were identified.

29 Tottington Farm, Aylesford

Paul Hutchings and John Willson

During the latter part of 1998 a small archaeological evaluation was carried out by the Trust under the direction of Paul Hutchings, for RMC Aggregates (Southern) Limited at Tottington Farm, Aylesford (TQ 7320 5945) in the Medway valley. The works were requested as a condition of planning consent for gravel extraction, following an earlier geophysical survey which identified cropmark enclosures and other anomalies of unknown function and date (Bartlett 1998).

The rich and fertile Medway valley contains a dense concentration of archaeological sites dating from the Neolithic to the present day. In particular there are a number of high status Roman sites, including the large villa estates at Rowe Place Farm and Eccles, which lies less than 2 km. to the north-west. The immediate area is known to contain archaeological remains including prehistoric flints and Bronze Age and Iron Age burials.

The evaluation concentrated on areas where features were recorded during the geophysical survey. Some thirty archaeological features were discovered including: two stake-holes; four pits, eight shallow drainage gullies and fourteen linear ditches (mostly enclosure ditches). Many of the ditches had been re-cut, implying lengthy use. Limited dating evidence implied occupation in the late Iron Age and early Roman periods, dating up to but no later than the late first century A.D. The presence of some Roman building materials, including lumps of *opus signinum* mortar, suggested that some form of masonry structure may have existed nearby. Combined with the evidence of linear ditches and gullies it is not impossible that a small early Roman farmstead existed in this location.

30 Harps Avenue, Minster-in-Sheppey

Simon Pratt

In October 1997, the Trust cut thirty-five evaluation trenches into London Clay in fields to the south of Harps Avenue, Minster-in-Sheppey. The work was undertaken on behalf of and funded by Osborne Homes Ltd. Trenches 1–30 lay within the site of a new residential estate (TQ 950 724), forming part of the much larger Thistle Hill development, and the remainder were set along the line of a new access road to Scocles Road. The only feature of interest encountered was a small post-medieval clay quarry for brick and tile production.

An intermittent watching brief was maintained through the following January and February, during which much burnt clay and charcoal was observed just to the north-east of the quarry. A small pit, possibly a farrier's hearth, containing a sherd of eighth-century pottery was also found during the watching brief. A midden of charcoal and sea shells (mostly oyster and mussel) was noted in bunded topsoil along the southern side of the southern limb of the access road and another of mussel and cockle shells was found in a recently re-cut ditch but no associated features could be seen.

31 Rape Hill, Minster-in-Sheppey

Simon Pratt

In August 1998, the Trust cut thirty-five evaluation trenches on a proposed new Community Hospital site (TQ 944 722) about 1.5 km. south-west of Minster Abbey, on behalf of and funded by Wallis Ltd. The site, on London Clay, occupied part of the summit of Rape Hill and of a slight saddleback connecting it to Thistle Hill. A stretch of Barton Hill Drive, which flanked the site to the west, probably formed part of an early road linking Minster to the causeway which led to the main ferry across the Swale. 'Barton Hyll' appears in a list of rents due to Minster Abbey dated to 1536 (Judge 1997, 43) but there is no conclusive evidence that a Barton (monastic barley processing centre) stood upon Rape Hill.

Four areas of archaeological interest were identified. A concentration of pits and post-holes (Area I with seven probably prehistoric and eleven

undated features) lay in the saddleback at the eastern end of the site. Near the summit of Rape Hill two pits (one perhaps a ditch) and three unstratified sherds of prehistoric pottery were found towards the south-west (Area II) and a single undated pit or double post-hole to the north-west (Area III). An east–west ditch was found near the northern boundary of the site (Area IV): the pottery may indicate a prehistoric date but some later material was also found. Two small undated pits lay just north of the ditch and a post-hole yielding an early medieval rim sherd was recorded to the south.

The pottery was generally in poor condition and few pieces can be dated closely, though an Early Iron Age date for the bulk of the assemblage is likely. Sherds of Romano-Belgic and early medieval pottery were also present. The findings in Area I suggest the presence of a farm-sized Early Iron Age settlement. Elsewhere, the scatter of features appeared to be consistent with less intense occupation in perhaps the prehistoric and Anglo-Saxon period.

32 Bank Street and rear of No. 17 High Street, Gravesend

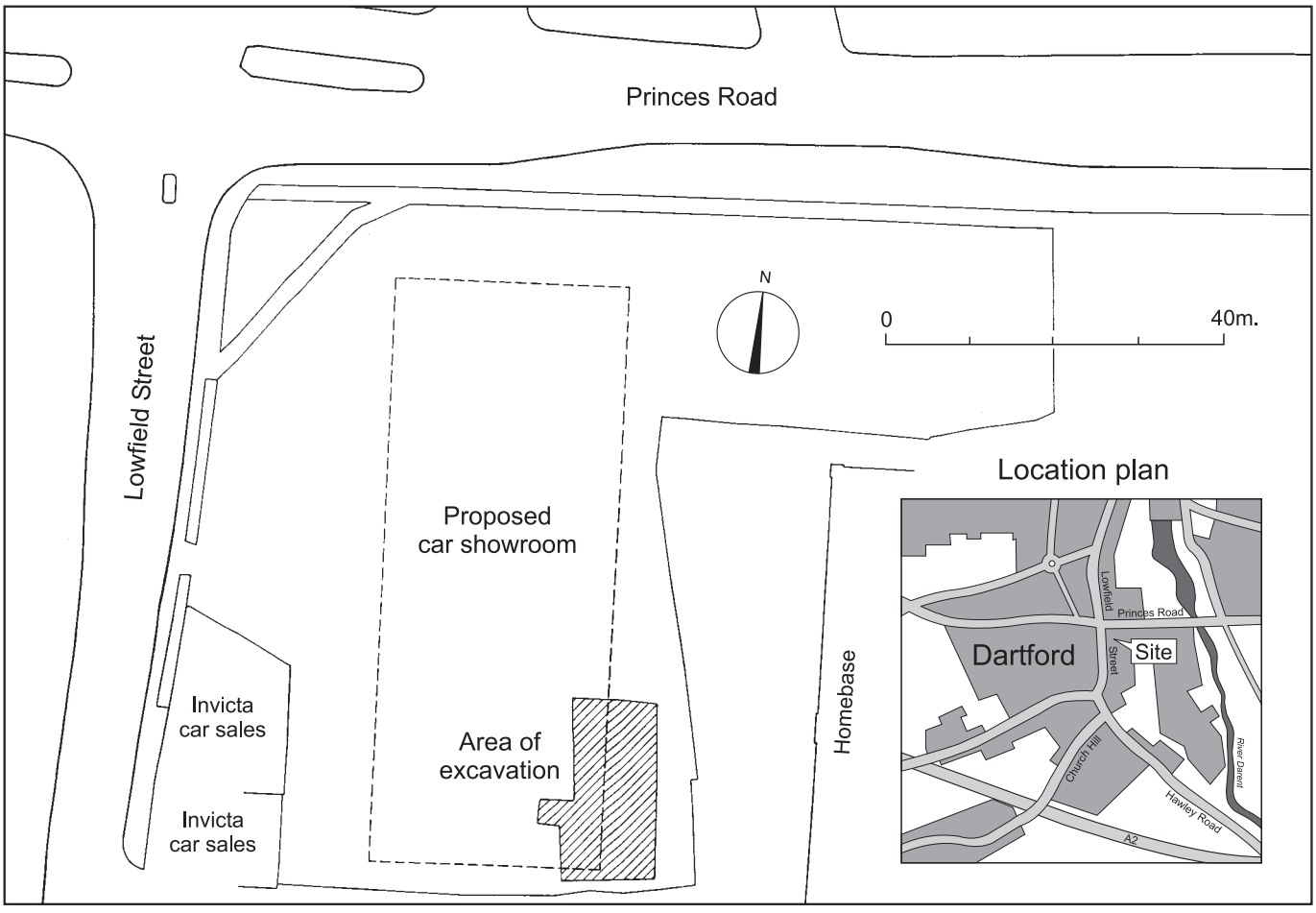
John Willson

Between January and August 1998 Crispin Jarman of the Trust monitored a series of six geotechnical hand-dug test pits and two boreholes being excavated for building project engineers on the site of a new Health Care Centre at Gravesend. The site is located to the rear of Nos 16–19 High Street and 24 Bank Street (TQ 6472 7435). The underlying geology is Upper Chalk.

The early work revealed two deep brick-built cellars, brick wall foundations and a drain, all probably of early nineteenth-century, or slightly earlier date, cut into the natural chalk. One cellar, extending from the rear of 17 High Street had a barrel-vaulted roof. The cellars were built using un-frogged bricks, suggesting a pre-1830 date for their construction. In July two more test pits were excavated in order to ascertain the extent and depth of the cellars. In August Tim Allen continued the watching brief during groundwork and recorded an early cellar.

All of the cellars were probably associated with a distillery, known to have been situated on the site during the eighteenth and nineteenth centuries. Finds from amongst the rubble backfill in the earliest cellar provided a date of *c*. 1660–80 for the founding of the distillery. The presence of large numbers of onion-shaped bottle fragments, along with the ceramic material, suggests that the structure above the cellar was probably a tavern or similar demolished to make way for the later distillery. This tavern may itself have distilled liquor (specifically gin during this period) for consumption on the premises.

The archaeological work here and in the immediate vicinity has shown that despite the building and rebuilding of structures along the street frontages of the High Street and related side streets, many with cellars and basements, deeply cut archaeological features containing closely datable groups of finds can survive (Tilley 1962; 1971; Hutchings 1998 and below).



Princes Road, Dartford: location plan.

33 Nos 36-38 Princes Street and 67-76 High Street, Gravesend

Paul Hutchings

In November 1998, an archaeological evaluation was carried out by the Trust on land between 36–38 Princes Street and 67–76 High Street, Gravesend at (TQ 647 743). The work was in advance of a new housing building scheme by The North British Housing Association (Midlands and South Division), who funded the work.

The archaeology of Gravesend and the history of the tenement plots on the site has been well documented (Hutchings and Jones 1998). Tenement plots allotted in the medieval and post-medieval periods, in the High Street core of the town were used, re-used, subdivided and overbuilt. The eighteenth century saw Gravesend beset with disastrous fires that led to the rebuilding of the High Street.

Some nine evaluation test trenches were machine excavated within the limited areas available on the site and archaeological features were only seen in four of these. A well shaft and a nineteenth-century rubbish pit were revealed at No. 70 High Street and at No. 38 Princess Street a large post-medieval pit was recorded containing pottery and clay-pipe bowls ranging in date from *c.* 1640 to 1850. At Nos 73 and 74 High Street medieval and post-medieval soil horizons were recorded.

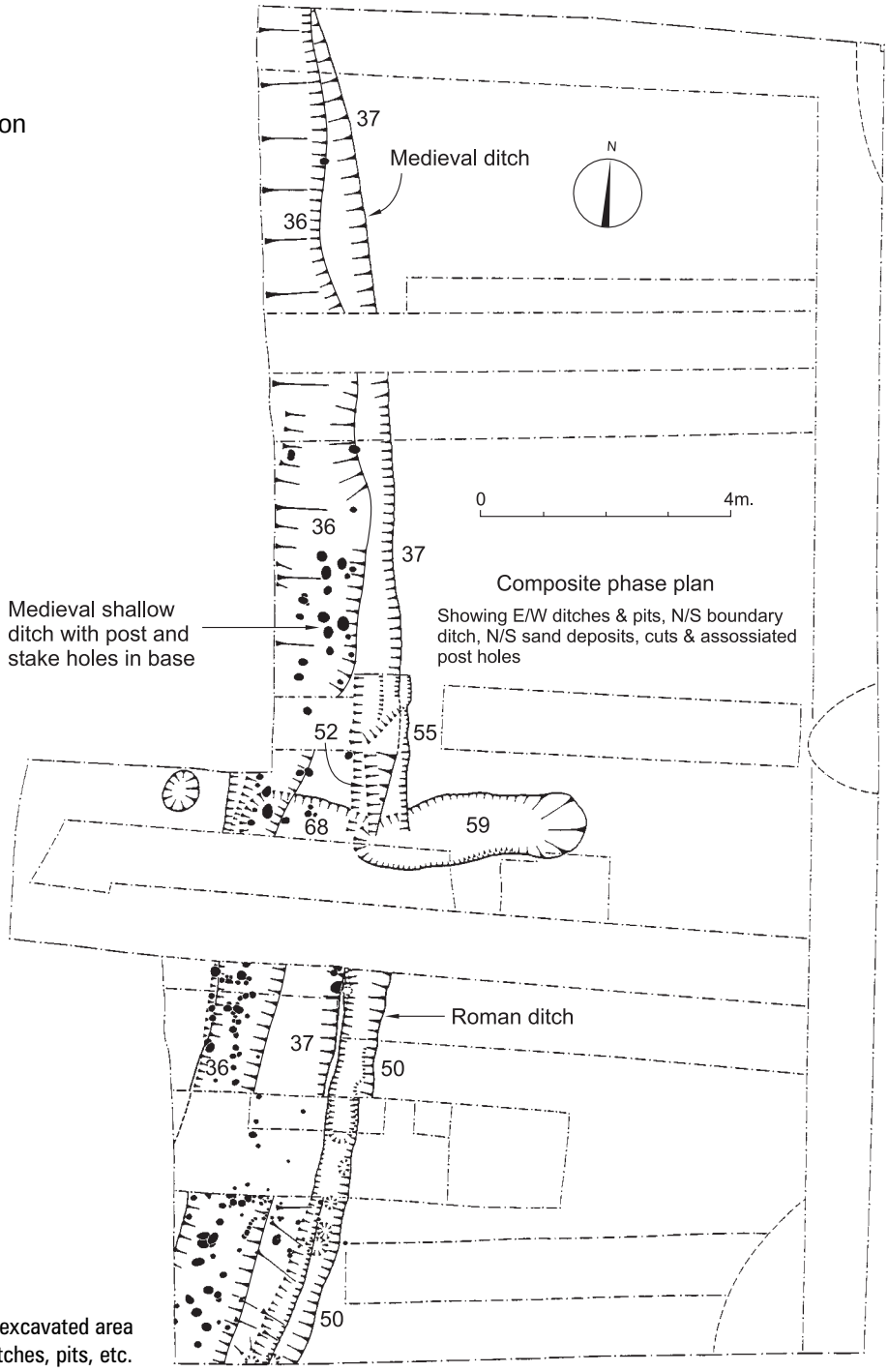
The subsequent watching brief revealed at least seven previously unknown cellars and nineteen wells. Several large pits containing domestic and industrial waste and a large collection of nineteenth-century clay tobacco pipes and 'wasters' from a nearby, but unlocated, post-medieval pipe kiln, were recorded.

34 Princes Road, Dartford

Paul Hutchings and John Willson

In May 1998, the Trust carried out an archaeological excavation, under the direction of Paul Hutchings, on an area of land to the south of the junction of Princes Road and Lowfield Street, Dartford. The site lies in the valley of the River Darent (TQ 541 732) at about 8.4 m. O.D. The modern river Darent lies some 450 m. to the east of the site, whilst the Cran which once ran to the west of the site is now culverted and cannot be seen. The topography of the site and its location to the two rivers undoubtedly provided the first impetus for occupation.

View of site from the south, showing the Roman long curving ditch (left) with associated post- and stake-holes.



Princes Road, Dartford: plan of excavated area showing ditches, pits, etc.

Work concentrated in an area which appears to have been boggy ground affected by flood water from the adjacent watercourses throughout the prehistoric period. A considerable deposit of alluvium and organic silt was found to have accumulated throughout the period in a wide but shallow hollow located in the corner of the development site and it was here that most discoveries were made. A number of pits, gullies and post-holes of Late Bronze Age date were found to have cut the deposits and been sealed by them. A sequence of dumped deposits laid down during brief episodes of prehistoric settlement was also recorded. A curving ditch of Roman date cut against the edge of the flood deposits completed the occupation sequence.

The earliest finds recovered from primary organic silt were of Neolithic date. These comprised a surprisingly large corpus of edge-ground flint implements. As the number of these relatively sophisticated tools is so large and the number of flakes and other by-products of tool manufacture is comparatively small, the recovered corpus may represent a ritual deposit.

Middle Bronze Age occupation was attested by pottery of Deverel-Rimbury type dated to *c.* 1535–1385 B.C., recovered from dumped deposits found interleaved with layers of organic silt. A Later Bronze Age occupation phase was indicated by pits and post-holes containing pottery dating to c. 1100–800 B.C. Contemporary dumped deposits yielded two rare continental-type 'roll-headed' bronze pins, thought to represent a ritual deposit. Occupation debris thrown into the boggy area at this time also contained carbonised Spelt wheat (*Triticum spelta*), a rare and exceptionally important discovery.

A Roman ditch of second-century date was found to cut across the site, following the edge of the flood plain. The purpose of the ditch was not determined, but it could have been cut as a drainage channel, to feed water from higher ground into the boggy area.

35 Priory Centre, Instone Road, Dartford

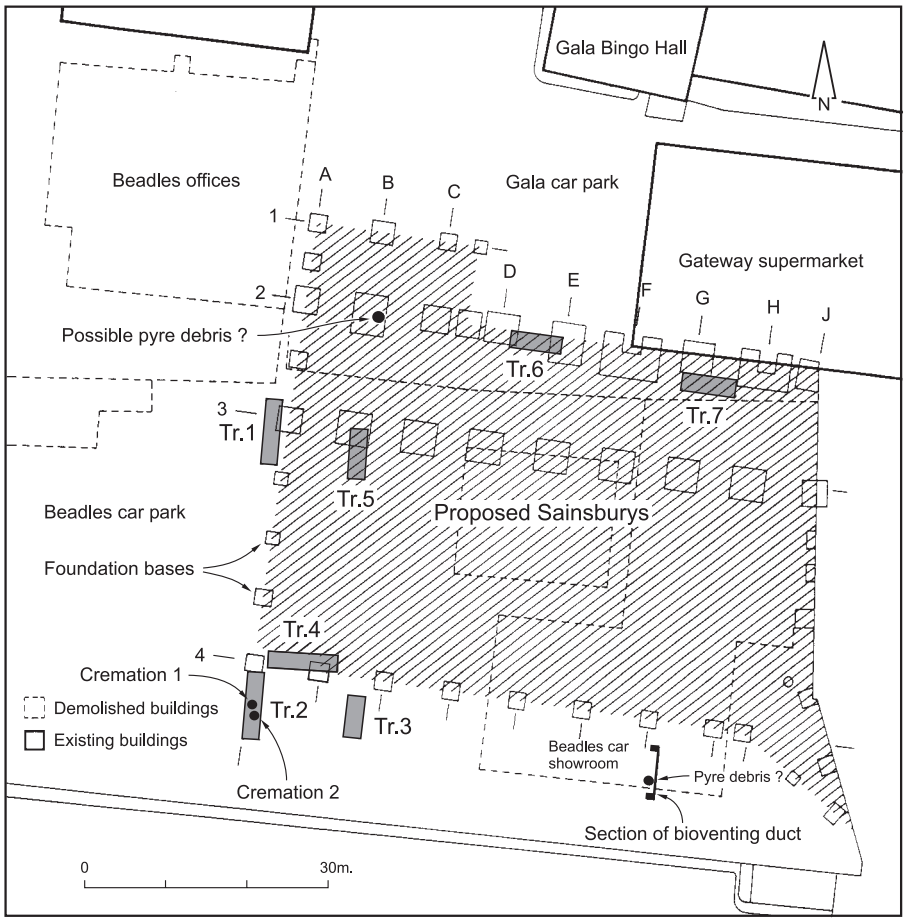
Paul Hutchings and John Willson

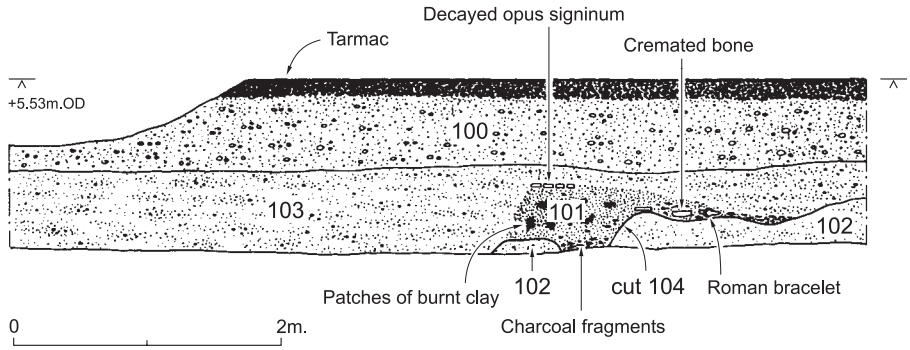
An evaluation took place in advance of redevelopment at the Priory Centre, Dartford (TQ 540 740) under the direction of Paul Hutchings in October 1998. Further trenches were excavated four months later and a watching brief maintained during construction work. The work was funded by Sainsbury Ltd.

Evaluation trenches cut in forecourt of Beadles garage uncovered two Roman cremation burials dating from the late first century to mid second century. An area of burning was also located east of the cremation group. This has been identified as a possible funerary pyre of contemporary date. Trenches excavated on the land formerly belonging to the Gala Bingo Hall provided little of interest.

The subsequent watching brief provided an additional cremation burial and a second possible funeral pyre. A Roman soil horizon identified across much of the northern part of the site provided quantities of Roman pottery sherds dating from the late first and second centuries A.D. Other zones produced third- and fourth-century pottery.

Although the cremations and other discoveries clearly indicate the presence of a cemetery in this part of Roman Dartford the main part of the cemetery must lie outside of the present area.





Dartford, Priory Centre: plan of site showing location of trenches and the west facing section of the bioventing duct, trench 2 with the cremation burial (104).

36 Church Manor Way, Belvedere

Paul Hutchings and John Willson

During February 1999 the Trust was commissioned by Ground Works Environmental Services, to carry out a watching brief during the construction of a new car park in Church Manor Way, Belvedere. During the brief a 1.2 m. thick sequence of soil deposits over peat was observed, considered worthy of further investigation. A mechanically excavated trench cut through the deposits provided a large corpus of Roman pottery mostly dating from the second century A.D. The material, recovered from a layer of organic silt clearly suggests some form of previously unknown Roman activity or occupation in the vicinity.

Other sites investigated during the year

This section gives a list of some of the many sites investigated in the period April 1998 to March 1999, but where very little or no archaeological evidence was encountered.

Alkham, Abbey Road
Bearstead, Holy Cross Church
Beckenham, Royal Bethlem Hospital
Canterbury, Broad Oak Road
Canterbury, Christ Church College
Canterbury, Gordon Road/Martyrs Field Road
Canterbury, Hollow Lane
Canterbury, Kirby's Lane
Canterbury, St Stephen' s Fields
Canterbury, St Stephen's Passage
Canterbury, Sturry Road
Canterbury, Wincheap
Darenth, Gore Road
Dover, Biggin Street
Dover, Harold Street
Eastchurch, High Street
Elmstead, Podlinge Farm
Eythorne, Wigmore Lane
Faversham, Cyprus Road/Abbey Fields
Grove Road, Darenth
Hartlip, Primary School
Hawkinge, Cowgate Lane
Hoo, Vicarage Lane
Loose, All Saints Church
Maidstone, Barton Road
Maidstone, Lidsing Road
Ospringe Brickworks
River, SS Peter & Paul Church
Rochester, High Street
Sandwich, Pfizers Plant
Sandwich, Royal Cinque Port Golf Course
Sellindge, Barrow Hill
Sellindge, East Stour Drive
Sittingbourne, Crown Quay Lane
Sturry, Junior King's School
Tonbridge, Priory Road
Tonbridge, the Castle
West Malling, Leybourne Castle
West Malling, Town Hill
Worth, Hacklinge
Whitfield, Honeywood Road

PART TWO

Building Recording

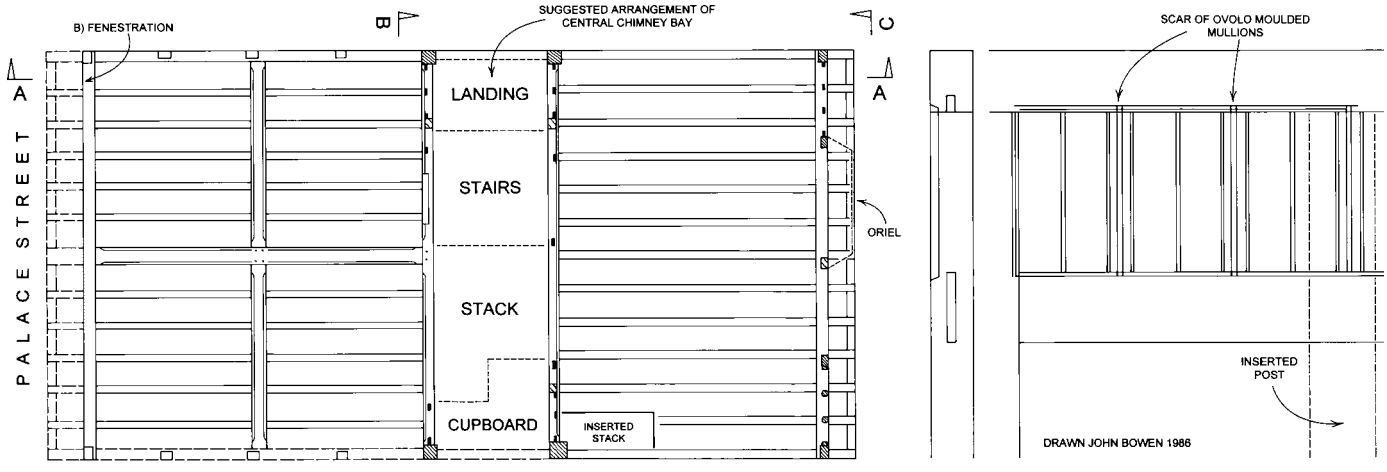
A No. 22 Palace Street, Canterbury

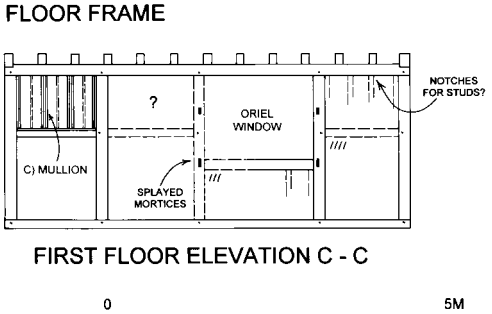
Rupert Austin

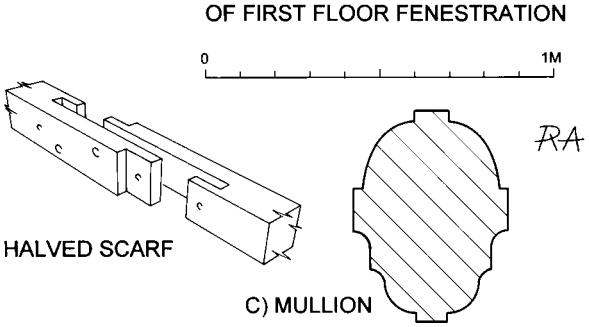
An architectural survey of this property was undertaken in July 1998 during an extensive period of refurbishment. A timber-framed structure, dating perhaps to the third quarter of the seventeenth century, lies behind the extant Georgian façade of the building. The timber frame is three bays in length and aligned at right angles to the street. The central bay is narrower than the front and rear bays and once accommodated a substantial brick chimney. Winding newel stairs undoubtedly rose beside this chimney, but both have since been removed.

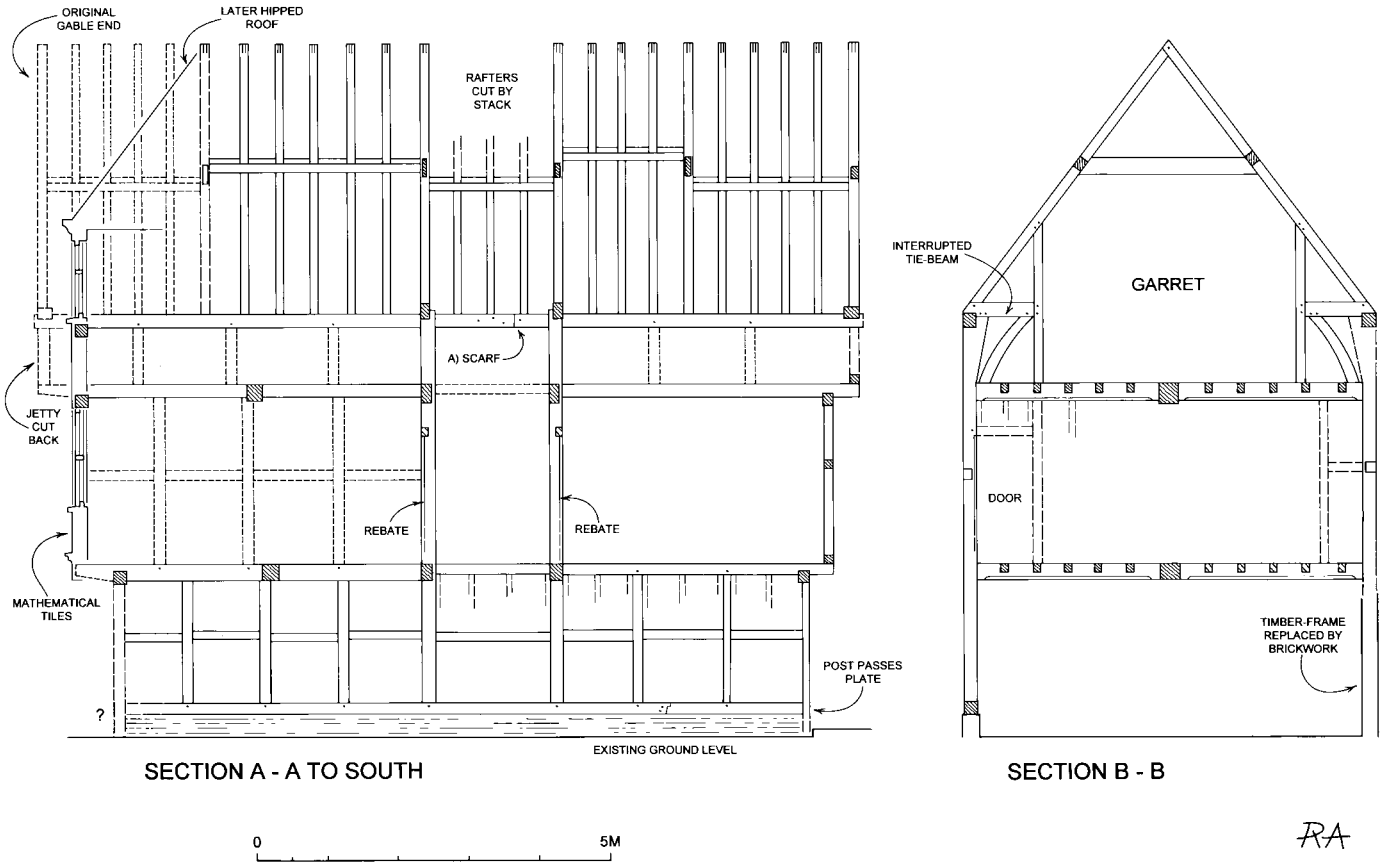
It seems likely the building was entered from the street through a door in its south wall. There was, however, no passage behind this entrance and the street door must have led directly into the ground floor room, which may well have functioned as a shop. A door in the rear wall of this room afforded access to the stairwell (and from here the rear of the property). Mortices and rebates revealed the location of doors leading from the stairwell at first floor level.

The timber-frame is two and a half storeys high, the upper floor comprising a half storey garret. This garret necessarily lies partly within the building's roof, which is of clasped side-purlin form. An interrupted tie-beam arrangement, a development of the seventeenth century, has been employed within the roof structure to improve access along the length of the garret.









The garret was perhaps used as secondary accommodation.

Many interesting carpentry details, all of which are consistent with the building's seventeenth-century date, were observed within the property. The elevations of the timber frame comprise small square panels above and below a mid-rail; braces are noticeably absent from these panels. Face-halved scarfs, a form that is common for the period and not generally seen earlier, have been employed to join lengths of timber plate.

A number of features confirm that the timber-framed tradition was in decline when the building was constructed. The medieval practice of drilling stud mortices was not employed at No. 22 Palace Street; simple notches cut with a chisel have been used instead. Economies have also been made in the framing of the mid-rails. These are only tenoned at one end, the other end dropped into a groove in the fashion of a simple stud. Further economies appear to have been made by reducing the quality of the framing at the rear of the building. The timbers here are generally of lighter scantling than those used at the front of the building; the jetties are also less pronounced.

A further interesting detail, and one that does not usually survive, is the threshold arrangement. The rear north corner post of the building does not sit on the ground-plate as in a medieval building. Instead it passes the plate, descending to ground level. This allowed one to enter the building freely without having to step over a raised threshold.

The only external framing exposed during works was at the rear of the building at first floor level where clear evidence for an oriel window was observed. A smaller clerestory window complete with ovolo moulded mullions survives to north of the missing oriel. A similar window was observed on the street frontage in 1986 (Bowen 1986, 29–30).

The building, like many of its contemporaries, was completely remodelled in the eighteenth century. The second floor jetty was cut back and the vertical facade clad in mathematical tiles. Chamfered wooden blocks, attached to the corners of the building, give the impression of rusticated stone quoins. Sash windows now replaced the older leaded lights and the gabled roof has been converted into a hip.

The form and layout of No. 22 Palace Street exemplifies the arrangement of an urban structure of the period. One of its features, a half storey garret with interrupted tie-beam assembly, illustrates a common solution to the problem of providing more accommodation in a building. The declining effort expended on timber-framed construction at the time is also clearly illustrated within the building's fabric.

View of rear showing half storey garret.

B Nos 44–45 High Street, Canterbury (Queen Elizabeth's Guest House)

Rupert Austin

The Queen Elizabeth's Guest House is one of Canterbury's most impressive and prominent historic buildings. The property comprises two distinct elements; a medieval timber-framed building of late fifteenth- or early sixteenth-century date and a Georgian building of early eighteenth-century date. In 1995 some of the fabric at No. 45 was recroded during refurbishment of the ground floor shop. A more detailed archaeological appraisal of the property was more recently undertaken at the request of the new owners, Warrington Industrial Investments.

The timber-framed building fronting the street is well preserved, retaining for the most part its original form and many original features. It is a good example of the design and layout of an urban house of its period, comprising a three storey three bay structure aligned parallel to the street, its upper floors jettied towards the frontage. A stair tower survives in part at the rear.

A conventional crown-post roof covers all three bays of the building, the plain square sectioned posts braced to the collar-purlin but not the tie-beams. A short edge-halved scarf with bridled abutments joins two lengths of the collar-purlin within the roof. The attic floor appears to be an original feature of the building (i.e. the upper chamber was not open to the roof).

The roof structure over the stair tower differs from the main roof. It is of simple collar rafter form ending in a gable, with knifed rather than incised assembly marks. It is suggested the stairs within the stair tower reached only the second floor at first and that steps were added to the attic, necessitating a new taller roof structure.

Two chambers were located at second floor level. One occupied the west bay of the building whilst a second larger chamber occupied the easternmost bays. The chambers were entered from the stair tower at the rear. Two door-frames with broach stops can be seen in the rear wall of the main range here. Together this confirms the contemporary nature of the stair tower.

An original four-centred window, concealed externally by decorative pargetting, can be seen in the front wall of the east chamber. A shutter groove, which runs vertically rather than horizontally, confirms that the window was originally unglazed. Some of the original close studding of the façade can also be seen to one side of this window.

A single chamber occupies the first floor of the building. This is the principal room of the property, the first floor hall. It was illuminated by continuous four-centred fenestration along the frontage, an arrangement that emphasises the status of the room and contrasts with the rather poorly lit and less important second floor rooms. Most of the fenestration survives, but has been replaced in part by later oriel windows (only one of these is a genuine example).

An attractive plaster ceiling, comprising a geometric pattern of thin ribs with decorative bosses, can be seen in this room. The bosses are embellished with various floral designs including the Tudor Rose and more particularly a crest with the initials E.R., something that suggests a date towards the end of the sixteenth century. The ceiling is not an original feature of the room but a later addition, perhaps contemporary with the oriel windows.

Understandably little of the medieval fabric of the building survives at ground level; most has been lost as a result of many years of retail use. All that can be seen are the substantial joists and beams of the first-floor frame. Mortices on the soffits of these beams reveal how the ground floor was subdivided. It is suggested that at least two and maybe four lock-up shops occupied the ground floor. These appear to have been independent of the rest of the building, perhaps sublet by a resident landlord above. The known partition lines at the west-end of the building define the first shop. This is a surprisingly small unit measuring only 6 feet wide but extending back the full depth of the building.

A cross-passage was located against the west end of the building; this provided independent access to the stair-tower at the rear. Only a few fragments of this stair-tower survive. Its steps, presumably a confined and steep arrangement of solid treads, were removed following the construction of the framed eighteenth-century staircase that is now used to gain access to the upper floors.

A long two-storey brick building, dating perhaps to the early eighteenth century, extends from the rear of the medieval range. Its principal rooms are located to the north and south of a substantial brick chimney, which rises up through the centre of the range. A softwood, staggered butt side-purlin roof runs the length of the property. Any surviving period features are mostly at first and second floor level, the ground floor having suffered from years of retail use in much the same way as the medieval property. Many of the extant features, whilst Georgian, are however the result of later refurbishment. Only a few original early eighteenth-century fittings remain. These include a bolection moulded fireplace and a dog-leg staircase to the attic. The unfielded ovolo moulded wooden panelling, two panel doors and window shutters that survive in one of the first floor rooms are later fittings of mid eighteenth-century date.

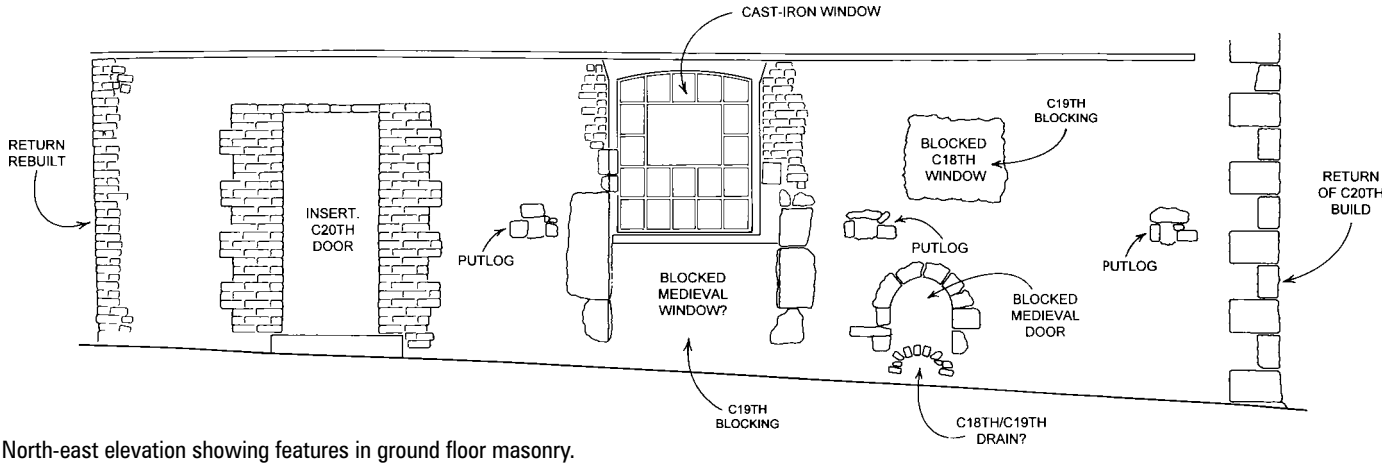
The attic rooms have largely escaped the passage of time. Little has changed here since the early eighteenth century, something that certainly adds to their interest. They lie entirely within the roof space and are lit by dormers along the west slope of the roof. Both were heated from the outset. A cupboard and closet are positioned on either side of the stack in each room. A wrought iron casement, one of the original dormer windows, was found in one of the cupboards. It is fitted with leaded lights (nine rectangular panes of clear glass) and a rotating turnbuckle catch. Stencilled decoration, something that became popular towards the end of the eighteenth century as people tried to emulate the new wallpapers, can be seen in several places in the attic.

C Barton Mill, Barton Lane, Canterbury

Rupert Austin

Fire severely damaged one of the Barton Mill buildings in the winter of 1997. A survey of the surviving fabric was undertaken in advance of rebuilding. Much of the structure, which is located along the south-west side of Barton Lane opposite the main mill building, dates to the late eighteenth or early nineteenth century, but part of an earlier building survives within its fabric. The north-east wall of the structure comprises several metres of well preserved medieval masonry.

The Barton Mill area has a documented history extending back to the eleventh century. At that time much of the land along the south bank of the Stour was assigned, by Archbishop Lanfranc, to the monks of Christ Church Priory. Barton Mill was the barley collecting and malting centre of the monastery's brewing activities; the brewhouse itself lay north of Green Court in the



North-east elevation showing features in ground floor masonry.

Cathedral precincts. The area appears to have enjoyed relative stability and reasonable prosperity up until the Dissolution. The Bartoner's accounts preserved in the Christ Church archives show a peak of activity from *c*. 1250 to *c*. 1350 with a gradual waning in business thereafter. The medieval fabric preserved in the mill building undoubtedly relates to the priory's occupation of the site and may well date to the twelfth century.

The masonry is nearly a metre thick and comprises for the most part roughly coursed knapped flint with the occasional randomly placed stone. Despite many alterations and repairs several medieval features still survive. The most prominent is a small blocked doorway with a rounded arch. The jambs of this door are built in Caen stone with simple chamfered edges. Surprisingly this feature is only a metre high, suggesting perhaps a rise in ground levels since its construction. To the left a larger blocked opening can be seen. This is around 1.5 m. in width, its jambs comprising a coarse shelly limestone. Unfortunately the fabric beneath this opening has been much repaired and it is not clear whether the feature functioned as a door or window. Three putlog holes, spaced at approximately 3 m. intervals, are also visible in the wall.

The north corner of the elevation is clearly of comparatively modern build. The rock faced quoins, which are of an Oolitic limestone, have been built atop concrete footings. This work is perhaps of twentieth-century date. The medieval wall may have continued further, but there is now nothing above ground to support this suggestion. The south end of the wall has also been rebuilt (in brick) following the insertion of a modern doorway.

A short length of masonry also survives at the rear of the building in the south corner of the range. Although the wall here is of a similar thickness to the frontage its internal face comprises mostly chalk block. Although the fabric is undoubtedly of some antiquity it is perhaps of slightly later date than the frontage. Externally the wall has been refaced in knapped flint of nineteenth-century date.

It is clear, whatever the origins of the building, that the structure was converted to some form of industrial use in later centuries. This was achieved by adding a timber-framed upper storey to the earlier walls. Unfortunately this framing was severely damaged by the fire but enough remained to understand something of its construction. At first glance one might believe the fabric to be relatively early. The jowled posts, arch braces and dovetailed tie-beam assemblies of the cross-frames are all features one would expect to see in a medieval building. Indeed some of the framing comprises hand-sawn oak. Close inspection however, revealed that the first floor was not of this date.

The large span of the building, the heavy square sectioned studding and bracing and softwood floor and roof construction, whilst a little ambiguous from a dating point of view, all suggest a date in the second half of the eighteenth or early nineteenth century. Both the ground and first floors appear to have been open throughout the length of the remodelled building, suggesting perhaps that it was used for storage. Indeed the floor frame was strengthened at a later date with extra joists. It seems that the timber-framed upper storey was originally clad in weatherboards.

Frontage view to north-west.

Detail of blocked medieval doorway.

D Cumberland House, The Street, Chilham

Rupert Austin

General view of Cumberland House.

An architectural survey of this property was undertaken in January 1999 at the request of its owners Mr and Mrs Willett. Cumberland House is located close to the centre of the village along the north side of The Street. It is a complex structure that has been enlarged and remodelled considerably over the years. It started life in the fifteenth century as a conventional Wealden hall house, a form of medieval building for which Kent is renowned.

The Wealden at the centre of Cumberland House comprised a two-bay open-hall flanked to the east and west by floored wings. The hall was surprisingly short in comparison to the length of its wings (approximately 19 feet long), something that suggests its importance had dwindled by this time in comparison to other parts of the building. The hall was originally recessed along its frontage, a feature defining the Wealden form. The recess, however, has since been infilled by later work. The smoke blackened roof still survives in part; its crown-post has been removed.

Medieval buildings such as this can be divided into two distinct halves. One end of the building is referred to as the low end or service end, the other as the high end. A buttery and pantry was typically found on the ground floor of the service wing with a sleeping chamber for lesser members of the household above. The high end of the building was reserved for the owner of the house and his immediate family. A principal bed-chamber, often referred to as a solar, occupied the first floor of the wing. The ground floor room was used when he wished to retire from the hall (although beds were often accommodated here as well).

The service wing of Cumberland House survives largely intact at the west end of the property. It remains jettied towards the street frontage as intended. The east wing however has been all but destroyed by later sixteenth-century rebuilding. Fortunately enough fragments remain for us to gain an understanding of its original form. The wing was originally doubled jettied to the east and south. A dragon beam was employed within its floor frame to support the two jetties. This double jetty arrangement contrasts with the single jetty of the service wing, something that confirms this is indeed the high end of the building.

Medieval houses were entered through a door in the frontage that led onto a cross-passage. Although the passage does not survive at Cumberland House we can see evidence for its location. Cross-passages were invariably located at the low end of a building, usually within the hall. However sometimes, and particularly in houses with small halls, they lay within the service wing. The remains of a blocked doorway (albeit a later sixteenth-century replacement) can be seen in the front wall here beneath the service wing jetty.

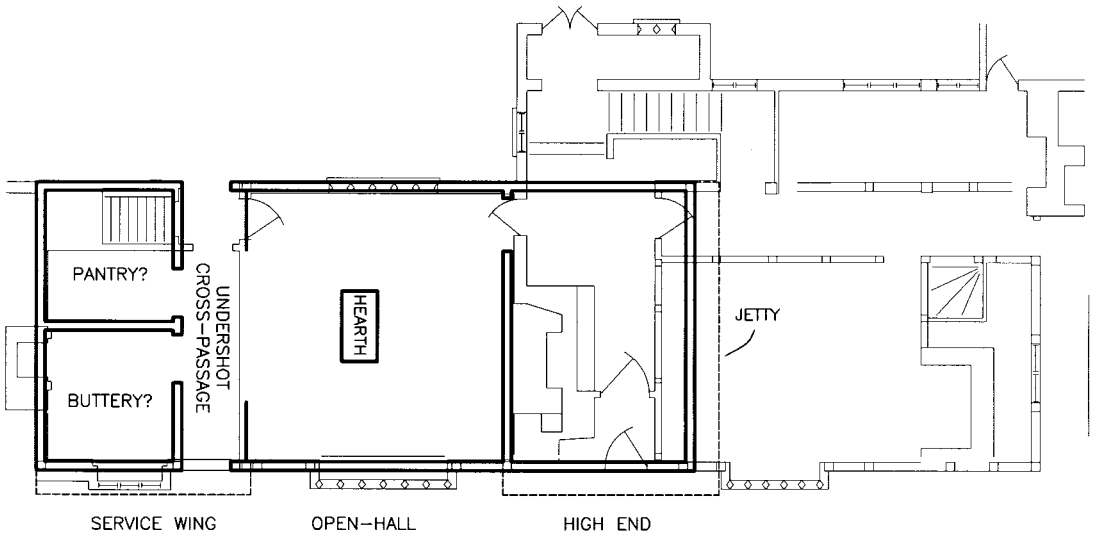
Surprisingly none of the original fifteenth-century frontage of Cumberland House survives today. The attractive close-studding that can be seen is all later work of the sixteenth century. The original Wealden was far simpler in appearance than the present day arrangement with only the principal posts and braces exposed to view. A small area of this framing does however survive along the west elevation of the building. No evidence for the fifteenth-century fenestration of Cumberland House can be seen though this would certainly have been unglazed, comprising perhaps simple wooden mullions.

The open-hall tradition had all but died out by the end of the fifteenth century. New houses were floored throughout their length and the smoke from fires contained at first within smoke bays or timber flues, later by brick chimneys. Older houses were adapted by inserting floors and chimneys into their halls. Cumberland House, like nearly all its contemporaries, has been improved in exactly this way. A splendid floor with richly moulded beams and joists was inserted across the former open-hall in the sixteenth century. A substantial chimney with large open hearths formed part of these changes. The ground and first floor bressumers of the inserted hearths are of low four-centred form, the spandrels of each embellished with leaves and Tudor roses.

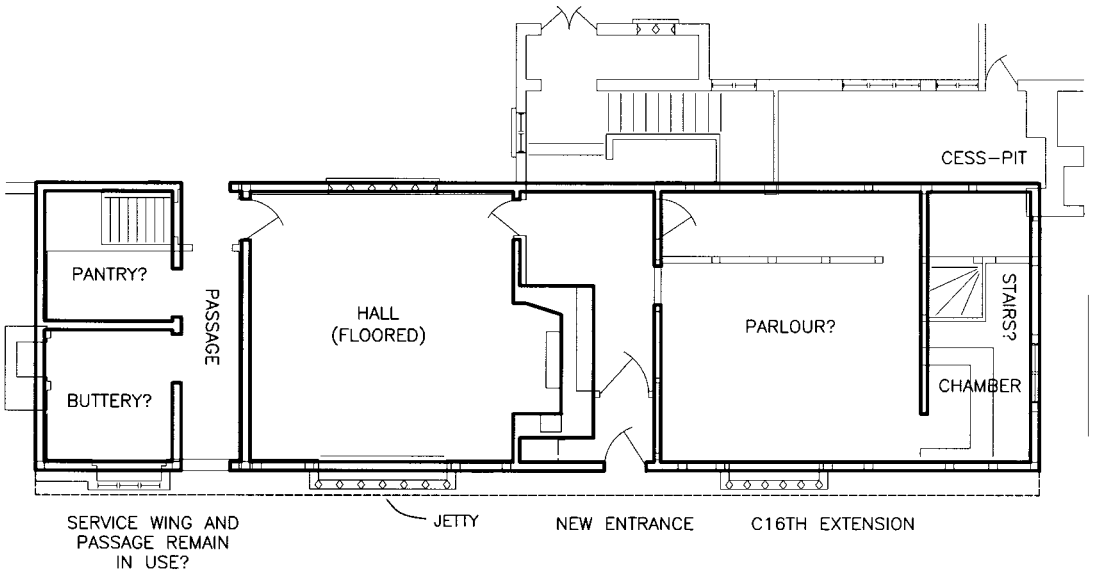
The unglazed windows of the hall were also improved at this time. One of the new windows, an elaborately moulded oriel, still survives at the rear of the building. Its corbelled sill is heavily moulded and wrought from the solid (later oriels were supported by separate brackets). A further feature that was lost during the flooring of the hall was the recessed Wealden frontage. The inserted upper chamber was jettied towards the street in a similar fashion to the adjacent wings, creating the appearance of a continuous jetty house.

It was not just the hall that received attention during the sixteenth century. Cumberland House was also enlarged. The east end of the original Wealden was all but demolished and a considerably larger wing built in its place. The new wing extended the building by over seven metres. Its construction is clearly different from that of the original house. The elevations are close-studded and incorporated glazed windows from the outset. The mullions of these windows are embellished with ogee/roll mouldings. The extension considerably increased the accommodation available within the building. Two rooms were added to both the first floor (perhaps a bedroom and a closet) and also the ground floor (perhaps a parlour and small chamber).

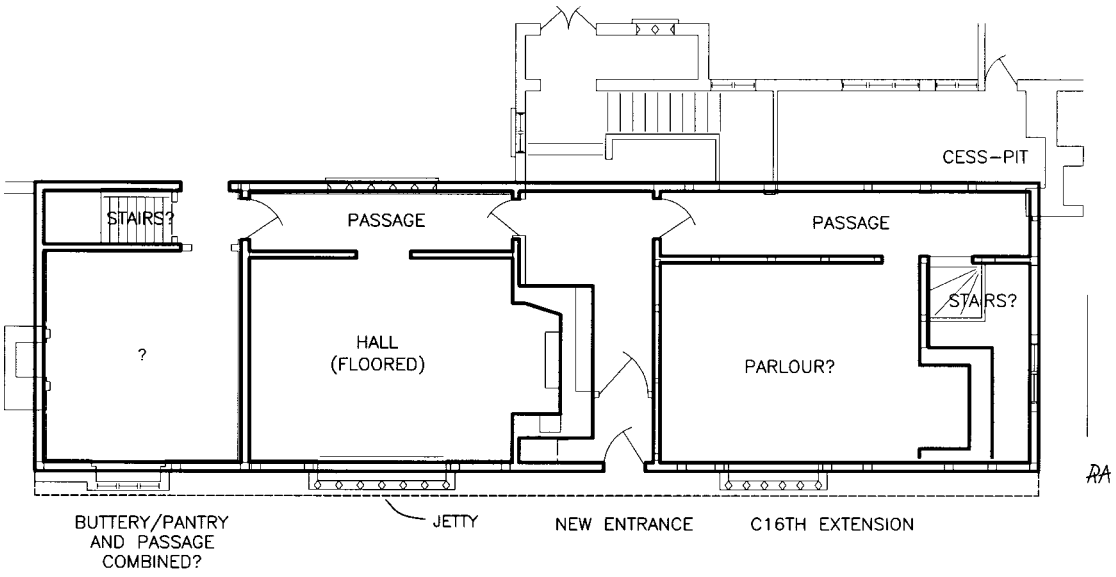
A passage runs along the rear of the wing at first floor level. This is certainly an original feature of the extension, one that provided independent access between the first floor rooms. It would



SUGGESTED C15TH ARRANGMENT
(THE WEALDEN)



SUGGESTED C16TH ARRANGMENT



SUGGESTED C17TH ARRANGMENT

GROUND PLANS SHOWING DEVELOPMENT OF BUILDING

have been considered acceptable in an earlier structure to walk through one or more rooms to get to another. However a desire for greater privacy emerged by the sixteenth century and is reflected here. The arrangement was apparently successful for the passage was extended along the older part of the building in later years; a similar passage was also inserted at ground level. A blocked door can be seen at the east end of the first floor passage. This originally led into a small stairwell. Presumably a steep straight flight of solid steps down to the ground floor was located here. A redundant seventeenth-century staircase occupies this position today. A small door lies opposite the stairwell in the rear wall of the building at first floor level. It seems likely this door led into a garderobe, a small privy with a wooden seat projecting from the rear of the house.

One of the first improvements to the sixteenth-century wing was the addition of a brick chimney; the wing would have been unheated at first. This chimney was probably built towards the end of the sixteenth century. The first-floor hearth of this stack, which has a depressed four-centred bressumer and chamfered jambs with broach stops, survives in its original form.

Changes to the ground floor layout of the original Wealden were undertaken once the new wing had been built. The original undershot entrance was now a long way from the centre of the house. A more convenient entrance was formed within the middle of the enlarged property to the east of the central chimney. Two splendid decorated plaster ceilings were inserted into the principal ground and first floor rooms of the extension in the early seventeenth century. The moulded ribs of these ceilings are arranged in circular patterns. Decorative bosses, placed at the intersection of the ribs, give the ceilings the impression of church or cathedral vaults. The bosses at first floor level are decorated with floral motifs and a plaster frieze runs around the walls immediately beneath the ceiling. This comprises a repeating pattern that incorporates the Prince of Wales insignia, Tudor rose, fleur-de-lis and a dolphin or hippocampus (a heraldic seahorse). A variety of motifs decorate the bosses of the ground floor ceiling; a vase of flowers, swan, two floral motifs and again the fleur-de-lis.

One of the last improvements undertaken at Cumberland House before the Georgian era was the fitting of oak panelling in the former hall. The majority of this panelling is mainly of the plain small-square variety; decorated panels cover part of the north wall of the room. A freeze and wooden cornice runs around all four sides of the room below the moulded ceiling joists. This frieze is finely carved with three dimensional human figures, floral designs and beast like heads. It seems likely the panelling, frieze and cornice was installed around the middle of the seventeenth century.

Cumberland House is a fascinating building that illustrates well many of the changes that occurred as domestic houses evolved from the open-halls of medieval days through to fully floored buildings with fireplaces, ceilings and corridors. The building has been enlarged considerably over the years, its status increasing accordingly. It probably started life in the fifteenth century as the dwelling of a Yeoman farmer. By the end of the sixteenth century it was perhaps the home of a wealthy merchant. Today it is a fine residence admired by many as they walk or drive through the village.

Detail of frieze around master bedroom.

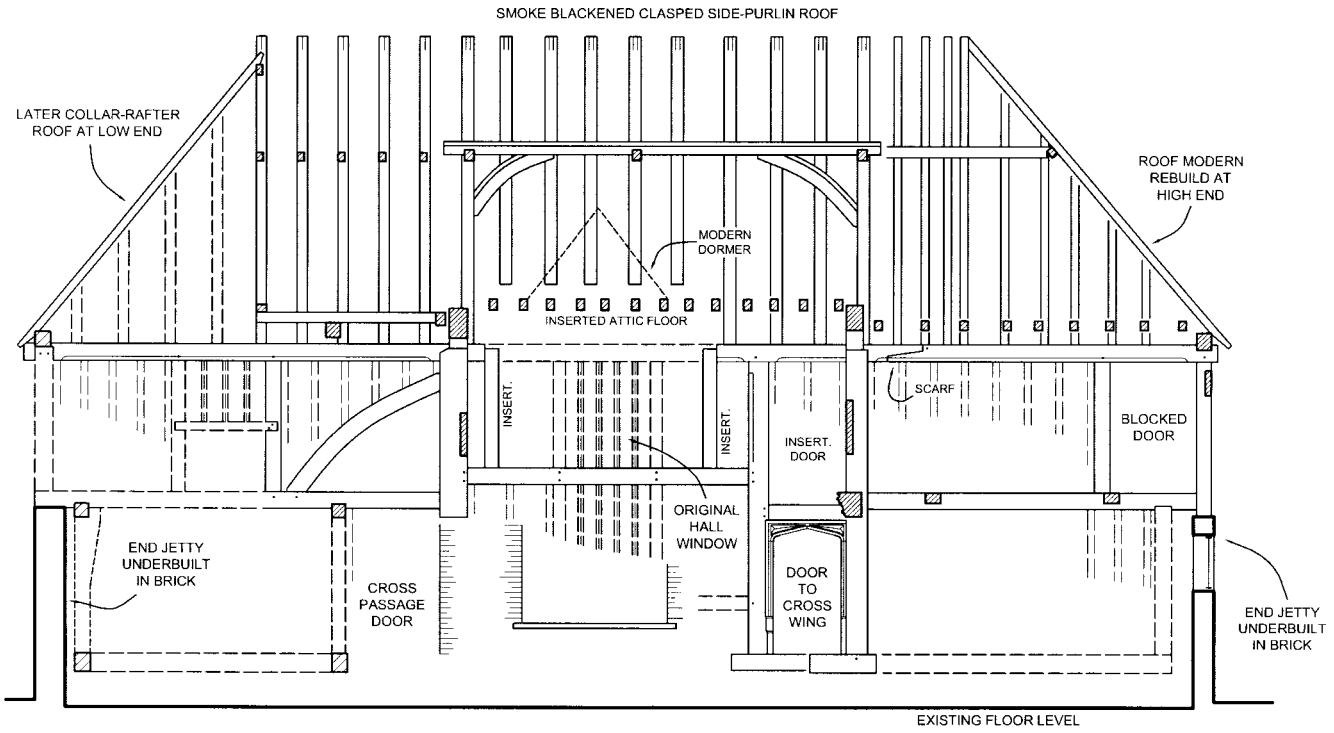
Valley Farm, Stalisfield, Faversham

Rupert Austin

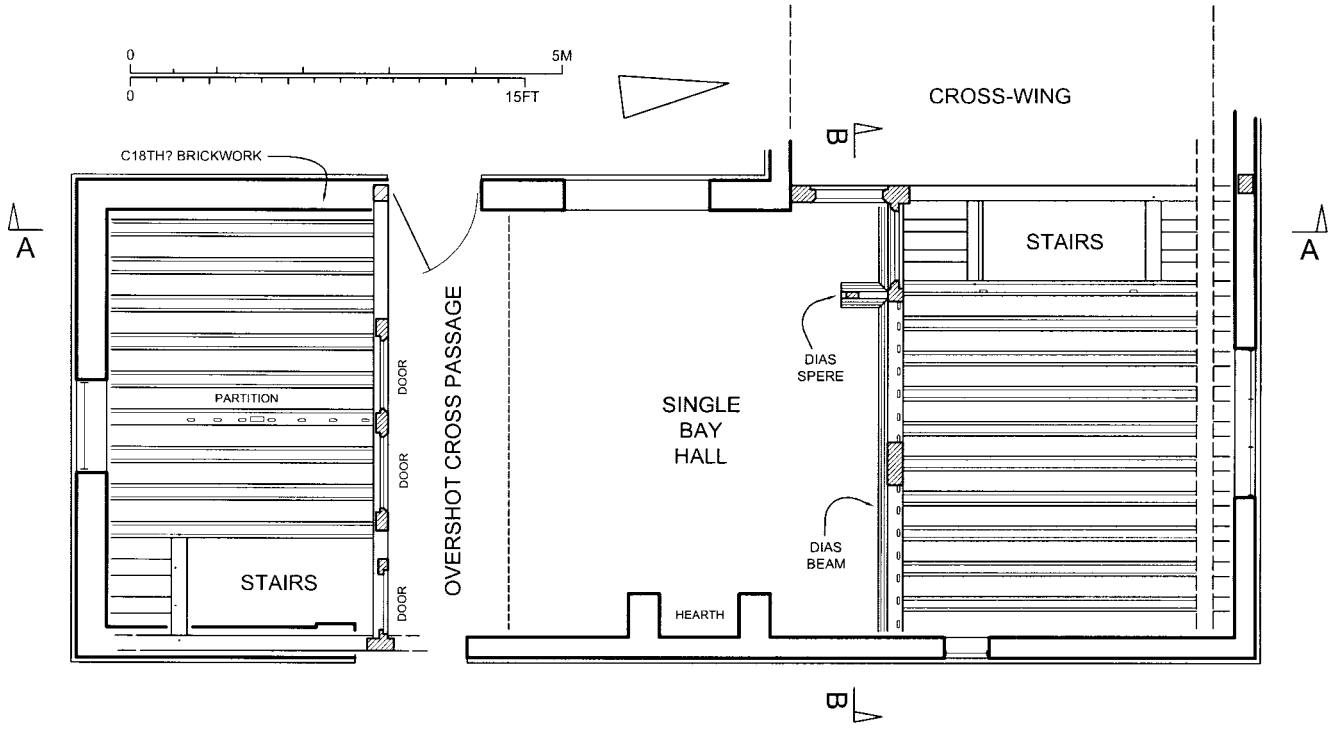
General view (to S.W.) during restoration.

Valley Farm is located to the north of Stalisfield, a small and relatively isolated village high on the North Downs. The building, which has been unoccupied for some years, has recently been restored. A measured survey of the property was undertaken in 1997 in advance of these works and at the request of its owners, The Otterden Estate.

A single bay open-hall, flanked by two wings, lies at the centre of the building. The hall has now been floored over, but many of its features survive. At the high end of the hall a deeply moulded but uncrenellated dais-beam, decorative ogee braces and wide central posts can be seen. A four-centred door, beneath the west end of the dais-beam, leads through to the northern wing. Between this door and the dais is a rare survival, an intact dais-spere. This is a short screen or



SECTION A-A TO WEST



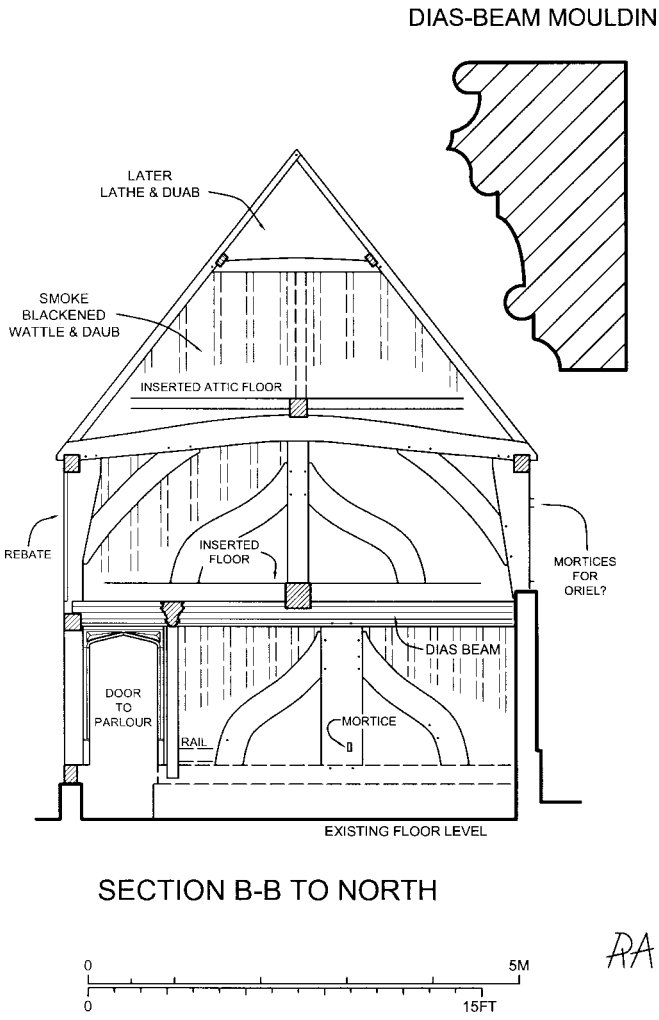
GROUND PLAN + FIRST FLOOR FRAME (REFLECTED)

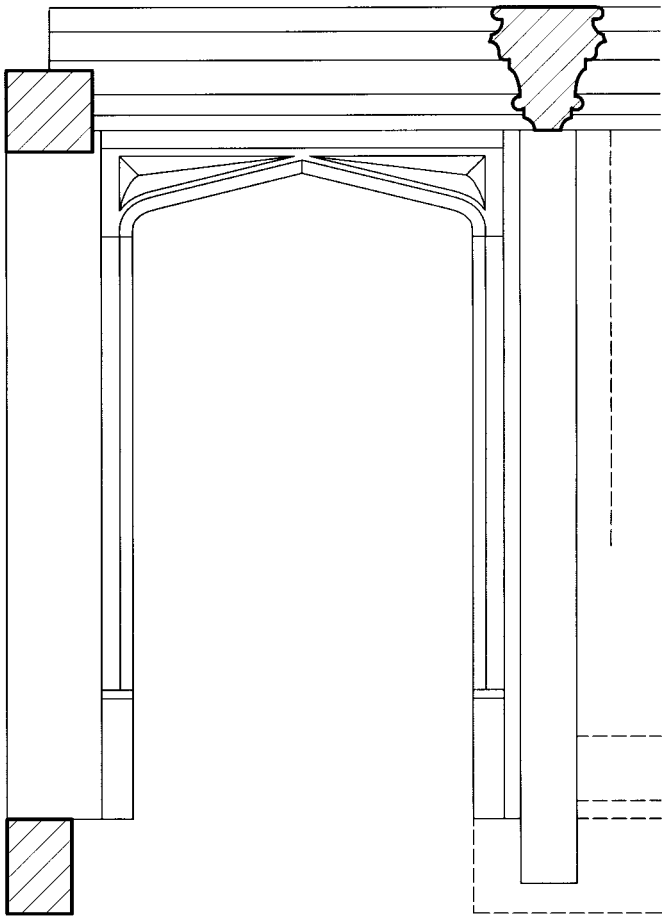
RA

partition that shields the dais from the draught which entered the hall from the unheated parlour. The short projecting head of the spere, which is similarly moulded to the beam, is still supported here by its original post and plank partition. Empty mortices and peg-holes beneath the dais-beam reveal where the dais-bench was fitted.

The original roof still survives over the central hall. Surprisingly this is not the crown-post affair one would expect but a clasped side-purlin roof with windbraces. Whilst this roof form is not unusual in itself (thousands like it can be seen throughout the county) its appearance over an open-hall in this part of Kent is something of a rarity. The heavy soot blackening on its timbers confirm that it is not a later replacement.

Clasped side-purlin roofs appear to have been adopted more readily, and at an earlier date, in the neighbouring county of Sussex. Here they survive, in a suitably soot blackened state, over open-halls in equal numbers to crown-post roofs. Their introduction into Kent, however, took a little longer, appearing first at the end of the fifteenth century in the north-west of the county. It is not until the second quarter of the sixteenth century that the form spread further to the east. Stalisfield, with respect to the easterly progress





of the roof form, is perhaps centrally placed within the county. The clasped side-purlin roof over Valley Farm is therefore an early example of its type in this part of Kent. Despite its early date the roof is completely conventional in its construction.

Evidence for the original fenestration of the hall was revealed in the west elevation during the works. Mortices for diamond mullions could be seen on the surviving timbers. These confirmed that a two-light window was located in the rear elevation of the hall (one light atop the other).

It is possible a similar mullioned window once illuminated the front of the hall, though the only evidence that could be seen was for an oriel. One would expect this to be a later feature (such an arrangement clearly contrasts with the simple mullioned windows elsewhere). However, no evidence for an earlier window was seen. Perhaps a little more effort was expended on this the principal window of the building.

A cross-passage arrangement still survives at the low end of the hall (albeit with modern front and rear doors). Two doors lead from this passage

Detail of high end of hall (dias-beam & dias-sphere).

to the rooms that once occupied the southern service wing (typically a buttery and pantry). These have four-centred door heads with sunken spandrels and ogee/cavetto moulded jambs. A third door affords access to stairs and the upper chamber of the service wing. Interestingly the first floor chamber oversails the cross-passage. To achieve this the joists of the service wing were cantilevered, by approximately 3 feet, over the ground floor framing at the low end of the hall. Whilst this overshot arrangement is less common than a passage contained within the hall proper, it is perhaps not such a surprise here. Overshot passages are frequently associated with single bay halls. Later brickwork underpins the ground floor elevations of the southern wing, though evidence for an end jetty can still be seen.

A single room, perhaps a parlour, occupied the ground floor of the northern wing. This would have been a private room where the owner of the house and his family would have retired. A trimmed opening in the joists reveals where the stairs to the first floor were located. Mortices on the beam adjacent to the stair position suggest that posts and perhaps a handrail enclosed the stairwell. A single chamber occupied the upper floor of the wing; this was once open to the roof but has since been ceiled. Evidence for a two-light window with diamond mullions survives in the north wall of the chamber. Later brickwork once again underpins the ground floor elevations of the northern wing. However evidence for a second end jetty is again visible.

Interestingly a cross-wing was once attached to the west side. A second four-centred doorway was revealed in the north-west corner of the hall at ground level during works. Rebates for its door, unlike those of the main cross-passage entrance, lie on the outside face of the frame; it is the inside face that is embellished with sunken spandrels and mouldings. This confirms that the door led out of rather than into the hall.

Evidence for a first floor window in the external face of the north-west corner post of the main range reveals that the cross-wing was floored. A small door provided access to the upper floor of the wing from the first floor chamber of the main range. A second door was added later from the inserted chamber over the hall; this that reveals the cross-wing was still standing when the hall was floored. Other than these details nothing else is known about the construction and arrangement of the cross-wing.

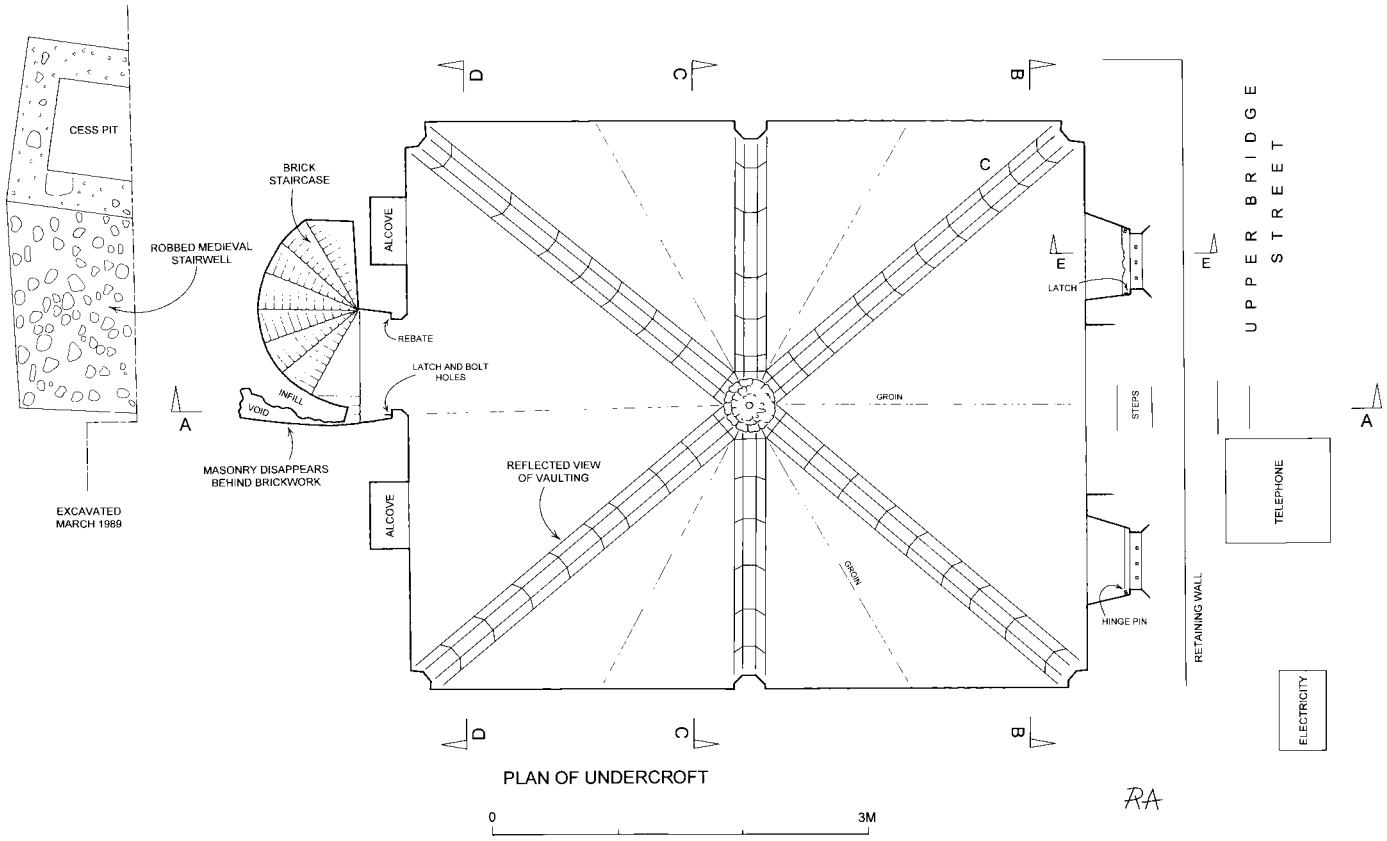
F The Undercroft, No. 2 Upper Bridge Street, Wye

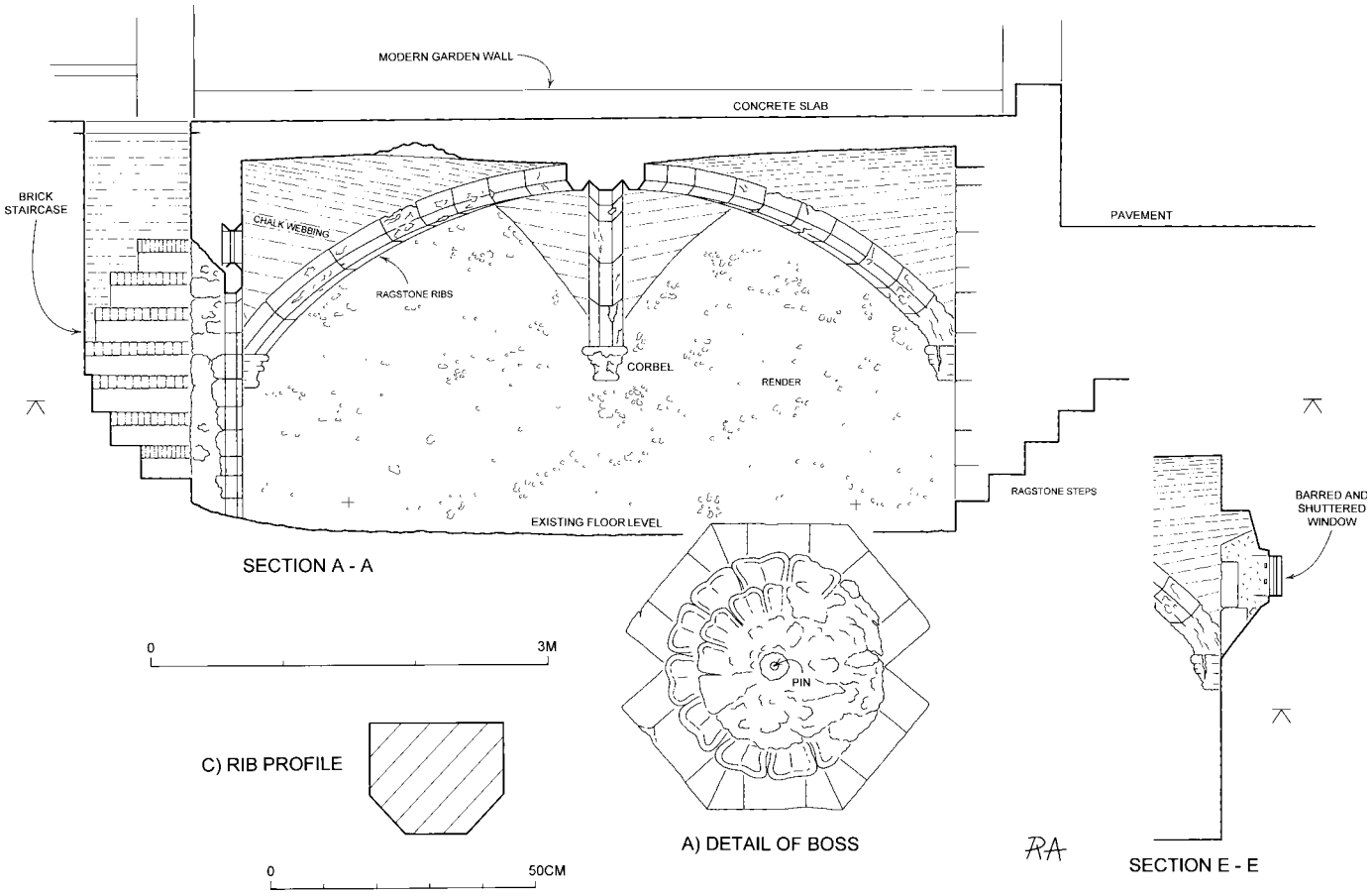
Rupert Austin

A drawn and photographic survey of Wye undercroft was undertaken in November 1998 in advance of restoration. This was the second time the site had been visited by the Trust. An archaeological evaluation of the plot was undertaken in 1988 prior to the construction of a new house; the undercroft lies beneath the front garden of the property.

Although undercrofts are most often found in towns, examples in village or rural settings are not unknown. The term usually implies a vaulted chamber set either partly or wholly below ground level. On occasion simple cellars ceiled by beams can be referred to as undercrofts. The earliest undercrofts that survive in Canterbury, and indeed many other towns, date from the late twelfth century. Their construction continued into the fifteenth century when they were eventually replaced by simpler brick cellars (vaulted or otherwise).

Undercrofts were used in a variety of ways. By the mid fourteenth century larger urban examples were often used as taverns or alehouses. Those below shops may have been used in connection





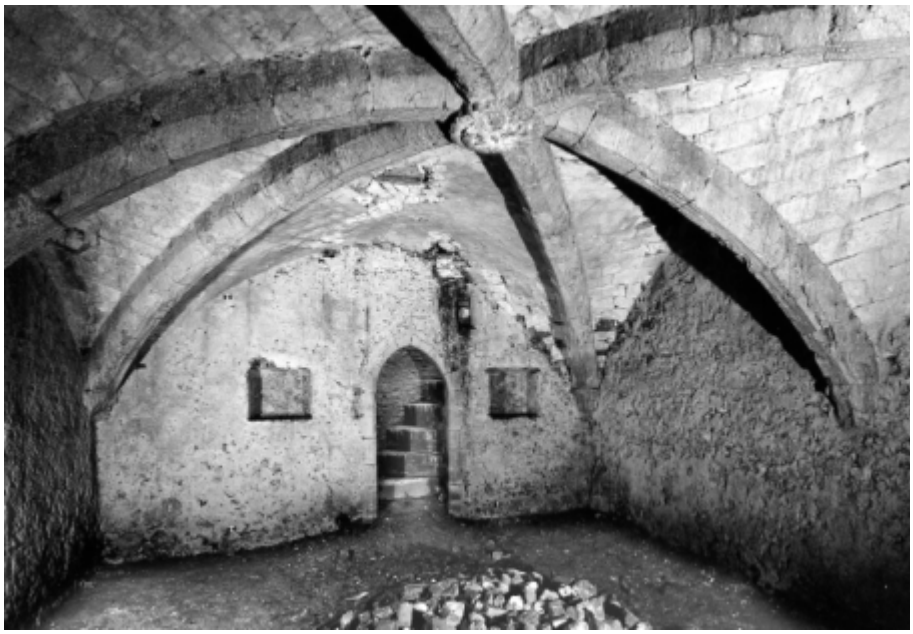
with the trade above. A few examples used for religious worship have also been recorded. The most common use for undercrofts was undoubtedly for storage; many lay beneath the houses of wealthy citizens, particularly merchants.

The undercroft at Wye measures 5.38 x 4.52 m. and is presently entered via a small brick spiral stair at the rear of the cellar. The chamber is largely, but not entirely, below ground level and measures approximately 3 m. high.

A sexpartite vault spans the undercroft, its ribs rising from corbels in the side walls to a central boss. The ribs are plainly chamfered whereas the central boss is embellished with a large petalled motif. An iron pin at the centre of the boss indicates that part of its decoration has been lost. Unfortunately the corbels are now very decayed and much of their detail is also lost. They are, however, clearly perpendicular in style, comprising a sequence of rolls and hollows typical of the period.

The corbels, ribs and central boss are fashioned from ragstone whereas the intermediate webbing comprises squared blocks of chalk cut with an axe. The walls of the chamber are built using small knapped and roughly coursed field flints.

The front (north) wall of the undercroft retains all its original features. A large street door, with low segmental arch, is centrally located in the elevation. Later brickwork now blocks this doorway; however a small exploratory hole has exposed the ragstone steps behind. Two small windows, also blocked by brickwork, are positioned on either side of this door. Iron bars and hinged shutters once secured the splayed openings of these windows. The hinge pins, latch plates and sockets for these fixtures survive but the bars and shutters have long since been removed. The sills of these windows now lie around 0.5 m. below pavement level, something that suggests ground level has risen since the construction of the undercroft.



General view of undercroft, looking south.

The rear (south) wall of the undercroft also contains several interesting features. A small gothic doorway is located within the centre of the elevation. Its jambs are rebated for a door, but the door, had it survived, would have been prevented from opening by the extant brick steps. Clearly the area behind the door was once larger. A small narrow rectangular light lies to the west of the doorway. This feature is blocked by the steps and also belongs with an earlier arrangement. It seems likely a more substantial stairwell, lit by the narrow light, was once located to the rear of the undercroft. A watching brief undertaken during the construction of the house revealed a robbed out feature that is almost certainly the remains of this stairwell. It is suggested the stairs may have been contained within a stair tower.

Interestingly the construction of the rear wall differs from the remainder of the undercroft fabric. The features in the rear wall are constructed entirely from Caen stone whereas those in the front wall and vault are of Ragstone. The two doors are very different in appearance; that to the front is wide and tall with a low segmental arch whilst that to the rear is smaller with a pointed two-centred arch. Claw tool marks can be seen on several of the Caen stone jambs of the rear door; no such tooling is visible on any of the ragstone features. The small light also raises questions, seemingly attempting to illuminate one dark space from another. It seems likely these different areas of fabric represent two different phases of work. The undercroft is perhaps the later phase, lying beneath an addition to an earlier thirteenth- or fourteenth-century building of which the rear undercroft wall with its gothic doorway is all that remains.

Unfortunately no evidence for the structure that lay above the undercroft has survived, though, it seems likely that any house which merited an undercroft such as this would have occupied a larger plot than that taken up by the surviving undercroft. The evaluation undertaken in 1988 did not, however, reveal the footings of any such structure to the east or south of the undercroft. It seems such a building can only have extended west across the side street. An illustration of 1875, titled 'Old House Near the Pump', reputedly shows the building that sat above the undercroft. The timber-framed structure shown, however, is certainly much later in date and must replace the original building.

The surviving features of the Wye undercroft suggest that it was built during the fifteenth century. It is certainly domestic in nature, suggesting that the building beneath which it lay was residential. It would have been used as a secure and fire-proof storage area; undercrofts were not rooms in which people lived. The wide substantial steps from the street would have allowed bulky items to be stored. The barred and shuttered windows confirm that security was an important consideration. One might conjecture that a wealthy merchant, of some social standing, built the undercroft and it was used to store valuable merchandise.

Old Park Barracks, Whitfield

Peter Seary

During November and December 1998, four buildings were recorded by the Trust on the former military base at Old Park Barracks, Whitfield (NGR TR 3044). Thanks are given to the Dover Harbour Board who commissioned and funded the project. The survey covered two three-storey barrack accommodation blocks (Pasley and Kitchener blocks) and two 'messes', all due for demolition prior to redevelopment of the site.

The buildings formed part of a Royal Artillery barracks of the late 1930s and were typical of those raised during Mr Leslie Hore-Belisha's reforms. These reforms centred on the mechanisation of the army, evident in the other buildings at the barracks which include early Motorised Transport sheds.

The two H-plan barrack blocks were built in red-brown and blue brick in an austere, neo-Georgian style. Such blocks, incorporating up-to-date heating and ventilation systems, represented a marked improvement in barrack accommodation. Dining facilities were provided in a large hall occupying the ground floor of the central range. This was served by a single-storey kitchen block behind the hall. Integral ablution blocks at the back of each wing provided toilets, wash rooms, bathrooms, and cleaning and drying rooms, some retaining their original slate sink-tops and work-surfaces. There were two classes of dormitories; the higher-status rooms had fireplaces and relatively ornate cavetto cornices.

With the formation of the Junior Leaders Regiment the two blocks underwent a number of alterations. The Pasley Block was adapted for education and recreation. A number of dormitories were turned into classrooms, including two science classrooms with fume cupboards, gas taps and DC supplies. The dining hall was subdivided to house a library and 'hobby rooms'. The Kitchener block took over the catering with an extended kitchen and dining hall. The barrack blocks were found to be startlingly clear of personal ephemera, giving a decidedly bleak impression of barrack life.

The two messes were more domestic in character, but similarities of construction made it clear that they were contemporary with the barrack blocks. They had single rooms rather than dormitories alongside day-rooms with homely features such as faux inglenook fireplaces in gabled projections.

One mess had been converted into a medical and dental centre with widened corridors, 'porthole' doors and open wards. The other (the sergeants' and warrants officers' mess) had extended bar and kitchen facilities and a residential annexe

View showing front of Pasley Block.

PART THREE

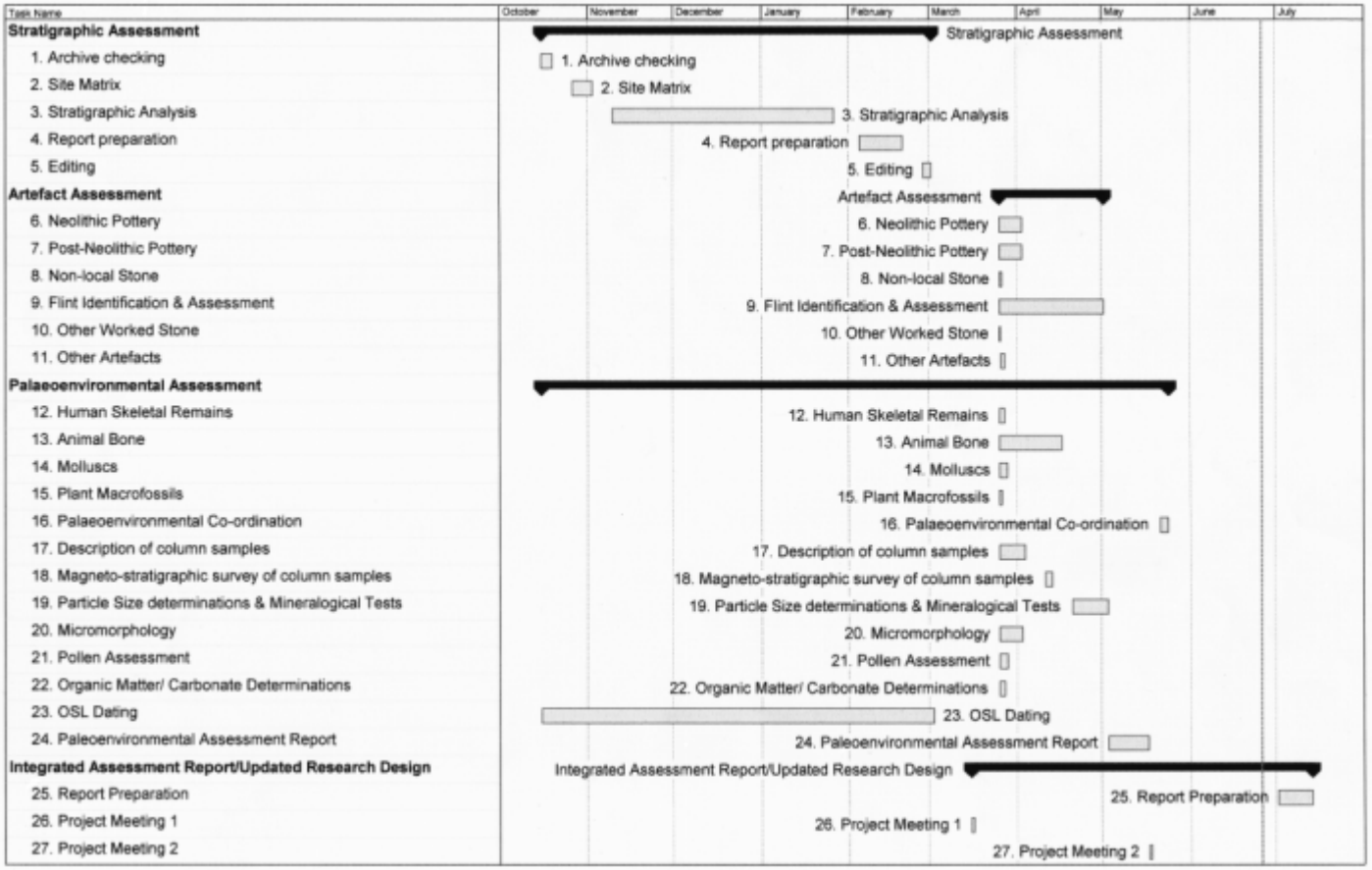
Post Excavation and Research

I Post Excavation Analysis Peter Clark

The public face of archaeology is that of excavation; of dedicated men and women working with trowel and spade to help salvage our buried heritage before destruction, often in bad weather and with extremely limited time (for a good review of modern excavation procedures see Roskams 2001). However, excavation is but the first stage of a long process by which we unlock the secrets of the past and report our findings to the general public and our professional colleagues. The detailed study of the results of archaeological fieldwork can take months, sometimes years to complete, and usually takes place away from the public gaze. Collectively the stages needed to produce a final report on a piece of fieldwork is known as 'post-excavation analysis', usually shortened by archaeologists to 'post-ex'. Here we attempt to outline what happens after the end of an excavation to make the publication of a report possible (although we refer to excavation here, the principles are equally applicable to a watching brief, evaluation or field survey).

Collating the archive

It is perhaps self-evident that an essential prerequisite for studying the results of an excavation is to know precisely what was found and to ensure all the records of the site are correct



Ramsgate Harbour Approach Road assessment programme.

and properly cross-referenced. On the best sites, this is done as part of the excavation process; field notes and drawings are checked for accuracy, site matrices prepared, plans digitised, finds washed, marked and catalogued, preliminary identifications and spot-dating carried out, emergency conservation undertaken, and photographs, finds records and field records cross-referenced and a concordance produced providing an index to all the information available on a particular site. Very often, however, this does not prove possible; pressures of time or bad weather conditions make this difficult. Indeed, in these commercial times, the cost implications of including these tasks in the initial fieldwork phase of a project may make an initial tender for a job uncompetitive, even though the work will have to be carried out at some stage. Whatever the circumstances, the collation of the excavation archive is the first job of post excavation. A key tool in this is the general *site concordance* (Fig 1), which cross references all the different data sets produced by the excavation team. These are now nearly always produced on computer. Thus a finds researcher, considering a particular object, can easily discover which layer it derived from; what other finds came from the same layer; a description of the layer and its stratigraphic relationships with other layers; the numbers of any environmental samples taken; what plans, section drawings and photographs exist of the relevant layer; and so on. Quantification lists of pottery and other finds of different periods and types are easily generated, which can help inform estimates of the time needed to study the material.

Assessment

The next stage is to assess what potential all this material has to tell us something about the past; what is known as the *research potential* of the data. This may be an informal procedure, or may follow strictly structured formal guidelines, resulting in a specialised *assessment report* (English Heritage 1992). Few modern excavations are undertaken these days without specific *research objectives*, identifying the reasons for undertaking the dig and the kinds of knowledge one might gain from the results. These can, of course, help to determine the position of trenches, the type of excavation to be done, and the techniques of sampling for finds and palaeoenvironmental data. They often form part of the specification for a project, produced by the planning authority; no fieldwork should be carried out without a clear statement of the objectives of the exercise. In assessment, we review the potential of our discoveries in the light of the original questions and objectives we set out with. Sometimes particular research questions cannot be addressed by the data recovered; on other occasions unexpected discoveries might suggest new research objectives that may be considered.

The reason why the assessment phase has become formalised in the professional management of archaeological projects is a historical one. During the 1980s, particularly during the boom of urban development and large-scale urban excavation, there was a common attitude that *everything* derived from an archaeological excavation was of equal value, and needed to be studied in detail. The result was that huge amounts of money were spent studying great quantities of material in (what now appears ludicrous) detail, with no significant gain in our knowledge of the past. There was a kind of 'knee-jerk' response, where every sherd of pottery was described in detail, whether or not it derived from a late Victorian rubbish dump, with no contribution to make to any sensible research objective. I remember writing up several large urban sites some fifteen years ago where I was instructed to describe every layer, every cut and stake-hole in minute detail, which distracted the mind from developing an overview of the site and an understanding of the stratification. It was a triumph of technique over judgement and skill.

Nowadays, most professional archaeologists recognise the value of assessment, whether

Context	Type	description	Section number	Plan number	Filled by	Photos		Finds					
Number						Colour	B/W	Material	Quantity	Weight	Comments	Find No.	Dsk
2000	f	fill of 2001	241/2	18									
2001	c	pit	241/2	18	2000	f201/13	f502/12						
2002	f	fill of 2004	241/1	26									
2003	f	fill of 2004	241/1	26				Bone	3	45		904	k
2004	c	pit	241/1	26	2002, 2003	f201/14	f502/13						
2005	f	fill of 2006	245	16				Pottery	10	20		849	k
								Stone	4	115	burnt flint	850	d
2006	c	gully	245	16	2005	f201/15	f502/14						
2007	f	fill of 2109	242/5, 245	16									
2008	f	fill of 2009	242/6, 246/3	16									
2009	c	ditch	242/6, 246/3	16	2008								
2010	f	fill of 2012	246/4	16				Bone	5	45		938	k
								Pottery	8	220		937	k
								Stone	2	1760	sandstone	884	d
2011	f	fill of 2012	246/4	16									
2012	c	?pit	246/4	16	2010, 2011	f201/16	f502/15						
2013	f	fill of 2014	243/1	15									
2014	c	ditch	243/1	15	2013	f201/17	f502/16						
2015	f	fill of 2027	243/1	15				daub/fired clay	4	90		857	d
								Pottery	24	180		856	k
								Stone	5	55	burnt flint	858	d
2016	f	fill of 2017	243/1	15				daub/fired clay	1	55		940	d
								Pottery	1	10		939	k
								Stone	1	20	burnt flint	941	d
2017	c	gully	243/1	15	2016	f201/18	f502/17						
2018	f	fill of 2019	242/4	15				Bone	3	2		852	k
								Pottery	20	105		851	k

Example of a concordance list.

informal or formal. It is an important phase to help maximise the value of our discoveries and deploy the often-limited resources available to us most effectively. Of course, the bureaucratic beast will not die so easily, and now we see some funding bodies insisting on huge, minutely detailed assessment reports, which often prove to be significantly larger than the final report on the site itself! *Plus ça change, plus ça meme chose!*

The updated research design

At this stage, then, we have quantified, checked and cross-referenced our data, in addition to assessing its potential for addressing our research objectives. We now need to plan what needs to be done to realise that potential and prepare a report on the excavation. The jargon for a plan of campaign to bring the project through to completion is an *Updated Research Design*.

First we must decide what the 'product' of the post-ex project will be. Will it be published as a monograph, or an article in a learned journal such as *Archaeologia Cantiana* or the *Proceedings of the Prehistoric Society*? Perhaps more than one article will be produced, concentrating of different aspects of the same site, destined for different journals. A less academic, 'popular' publication might be proposed, or that the site is not formally published, but only taken to archive report, the World Wide Web or the production of a 'client report'. In some instances, no further work at all might be thought necessary, and the site archive deposited with the museum responsible with no further work. It is important to decide this early on, as different publications have very different requirements, which impinge on the style of the text, illustrations and layout that are to be produced during the analysis phase.

Next we must decide in detail all of the tasks necessary to analyse the material and produce the report. Every data category must be considered in turn; the finds, stratigraphy, palaeoenvironmental and absolute dating samples, animal bone, etc. Integrating the results of individual studies must be considered, together with allowing for project meetings so that the post-ex team can discuss their findings; illustration, photography, editing, academic refereeing, desk-top publishing, archiving and submission to the receiving museum; indeed all the jobs involved in finishing the project must be identified and listed. We then need to identify which experts will be responsible for each task, and discuss the project with them so that they can identify how long they will need to undertake the work. Estimating the time required to conduct any analytical task is a difficult job, requiring experience and expertise; unreasonably large estimates become uncompetitive, whilst too low an estimate may mean that funds are exhausted and the work uncompleted. Any modern professional archaeologist needs to master the skill of realistically estimating the time required for their work, and indeed master the self-discipline to complete the job within that time! The next task in preparing the updated research design is to establish the relationship between jobs; obviously the finds cannot be studied until the stratigraphy has been analysed and phased; this information can be fed into project management software and a draft programme of work established to complete the project. The project team can then compare this against their own personal work schedules (and holidays!), and any adjustments made. The result is a clearly timetabled programme of work, with clear deadlines for each task, which will bring the post-ex project to completion (Fig 2).

Finally, the project is costed. Usually the greatest cost is labour, but allowance must be made for consumables, equipment, absolute dating, specialist services (such as the preparation of geomorphological slides), project management and financial administration. It is not unknown for the funding body to wish to discuss the proposals further, and project designs may be revised several times before agreement is reached and analysis can begin.

Post-excavation analysis

Prior to excavation, an archaeological site consists of a mass of interconnected features and deposits, containing artefacts, animal bones, seeds, insect remains, pollen, mollusc shells and so on, in varying degrees of association. The process of excavation dissects these relationships and separates the site into its constituent parts – our 'data classes'. The term 'post-excavation analysis' is a misnomer. Analysis, strictly speaking, means *'the division of a physical or abstract whole into its constituent parts to examine or determine their relationship or value'* (Collins English Dictionary). Such analytical processes are, in fact, what is carried out during excavation, breaking the site down into discrete subsets of information that can be studied independently. In post-excavation, we do something quite different: we reassemble and synthesise, structuring the constituent parts into groupings to which we assign meaning (Clark 2000, 157).

There are, of course, many different approaches to post-ex; a very common method in British Archaeology is to study each data class independently and then bring the results together to compare the results; a kind of informal hypothesis testing. This approach is generally adopted at the Canterbury Archaeological Trust.

First, then, the stratification must be studied and a stratigraphic report prepared. No further work on finds or samples can sensibly be undertaken until there is an understanding of the stratigraphic provenance of the material, even if phasing and grouping is necessarily provisional. Once the report is completed, a project meeting is called where the stratigraphic analyst presents the results of her work to the rest of the post-ex team and discusses any issues pertinent to the project research objectives. Then a whole series of analyses takes place, including the finds, pottery, animal bone, etc., and a series of reports produced. A second project meeting discusses the results of these reports in relationship to each other, and an integrated report is prepared, along with appropriate illustrations of the finds, the site features, complemented by photographs, tables and graphs. When this has been completed, it is refereed by other specialists not associated with the project and copy edited for grammar, punctuation and consistency of style. Following any necessary revisions, the report is complete. All that now remains is to publish the report in whatever format has been decided (often easier said than done!). Short summary reports are produced for inclusion in the major period journals, the SMR (Sites and Monuments Record) and UAD (Urban Archaeological Database), and the project records, reports and other material collated, indexed and passed on to the appropriate museum for long-term storage.

Multiple post-excavation projects

In a unit the size of the Canterbury Archaeological Trust, there are many tens of post-excavation projects going on simultaneously. Keeping tabs on all of them is a difficult task, particularly given our need to respond to new threats to the County's buried heritage and to ensure continuity of employment for all of our staff. It has been said that managing a large number of post-ex projects is rather like looking through a kaleidoscope; with every small change a completely different pattern emerges. Unexpected discoveries, over-runs on specific task estimates, illness and other delays often have an unexpected and fundamental knock-on effect for all the projects undertaken by a team. It is critical that archaeologists involved in this process are professional, enthusiastic, tolerant, adaptable and respectful of their peers. We are particularly lucky in Canterbury that so many of our colleagues share these qualities in ample measure.

II The Finds Department

1 The pottery from four Iron Age sites at Whitstable: a discussion

Malcolm Lyne

The earliest ceramic evidence for occupation on this complex of sites on the south side of Whitstable is a residual fragment of a Late Bronze Age bucket urn from a medieval context at the Sunset Caravan Park site in the centre of the complex and a possible other from Borstal Hill.

The next ceramic phase in the occupation spans the transition from the post Deverel-Rimbury Late Bronze Age through the Early Iron Age and is represented by considerable concentrations of sherds from both the Sunset Caravan Park and Church Lane sites. The material from the Church Lane site is heavily abraded and probably residual in its contexts but that from the Sunset Caravan Park includes concentrations of fresh sherds from ?hut sites along the western edge of the site.

The sherds from this phase include fragments from tripartite jars with finger-impressed carinations and developed from Late Bronze Age bucket urns and biconical bowls. The former vessels include examples similar to those associated with both the *c*. 800–600 B.C. dated Early All Cannings Cross and 750–500 B.C. dated Kimmeridge/Caburn ceramic traditions. The biconical bowls are of similar date, tend to be in a much finer calcined-flint tempered fabric and are paralleled by examples from Minnis Bay a short distance to the east. Other forms from Sunset Caravan Park include fine ware bipartite bowls, simple jars with finger impressed rims, cauldrons and at least one handled vessel. Some of these forms, and in particular some of the plain jars with finger-impressed rims, are later than 500 B.C. in date and indicate continuing use of Early Iron Age pottery types on the site until at least *c*. 300 B.C. and probably overlapping with the appearance of pottery in the Middle Iron Age tradition.

These Middle Iron Age pottery forms from the sites include 'onion' jars and barrel-shaped bead-rim vessels in a very-fine calcined-flint tempered black fabric with polished surfaces and are confined to the Sunset Caravan Park site. The true saucepan-pot, as encountered further west in Britain, is conspicuous by its near absence, although a few rim fragments could be from vessels of this type. The lack of such vessels is, however, characteristic of East Kent and their absence would not be surprising.

Late Iron Age type wares made their appearance at the Sunset Caravan Park site sometime during the late second century or early first century B.C.; in the form of bead-rim jars, pedestal jars, barrel-shaped jars with multiple cordoning, necked and cordoned bowls and other Aylesford-Swarling tradition forms in grog-tempered, grog-and-flint tempered and calcined-flint tempered wares. The site lies near the eastern edge of a Late Iron Age ceramic zone in north-central Kent where the use of flint-tempered fabrics was prevalent until the time of the Roman conquest. Body sherds in these fabrics are common at Whitstable and can be almost impossible to distinguish from those of Early Iron Age date, so creating problems in dating some of the smaller pottery assemblages from the site, where rim sherds and other diagnostic fragments are lacking.

The Late Iron Age saw occupation spread to the Wraiks Hill and Borstal Hill sites, east of Sunset Caravan Park. These various sites have produced a number of imported wares including Dressel IB (*c*. 90–25 B.C.),Dressel 2.4 (*c*. 50 B.C.–A.D. 50) and Dressel 7/11 (*c*. 50 B.C.–0) wine amphorae and indicating importation of that commodity from Italy. Other pre-Conquest imports include Gallo-Belgic whiteware butt-beakers from North-East Gaul: the tiny amounts of such wares and amphorae from the site do, however, suggest that any such trade was on a very limited scale and may even have taken the form of gift exchange with other individuals elsewhere in the region.

Other imports from closer at hand include salt from the Folkestone area, evidenced by a number of hand-made salt-container fragments in a crude chaff-tempered fabric. One or two other sherds of pottery are in the soot-soaked sand-tempered fabric characteristic of the Late Iron Age of the Folkestone area and probably arrived with the salt through coastal trade. Yet other rare ceramic imports include vessels with glauconitic sand filler from the Medway valley and shell-tempered wares from Higham marshes, and may indicate similar coastal trade from an easterly direction out of the Thames and Medway estuaries.

Occupation continued into the early Roman period, although its intensity is difficult to determine due to the bulk of the pottery in use on the site during the Late Iron Age and period between the Roman Conquest and *c*. A.D. 70 being in 'Belgic' grog-tempered ware and changing little in either form range or fabric during the three decades after A.D. 43. It seems likely, however, that significant occupation on the Sunset Caravan Park site ended around A.D. 70, although a few sherds indicate that activity continued nearby well into the third century and possibly into the fourth.

Pre-Flavian Roman imports are few and far between but include a South Gaulish Samian Dr.15/17 platter from the La Graufesenque kilns and more Gallo-Belgic wares from just across the Channel. Small amounts of Romanised coarse pottery were acquired from nearer at hand after A.D. 50–60, including oxidised sand-tempered flagons from the Canterbury kilns and fine greyware biconical beakers produced at the Upchurch marshes flanking the estuary of the River Medway. One unusual import is a large lagena in oxidised Patchgrove grog-tempered ware from West Kent: both this and the Canterbury flagons may have served as packaging for produce of some sort as examples from the latter source have been found elsewhere in East Kent with black resin sealant adhering to their necks.

The latest sherds from the site are medieval in date and hint at some kind of activity, possibly field-marling, during the thirteenth century and later.

2 Ceramic building material from Market Way, Canterbury

Louise Harrison

The daub

A total quantity of 1,541 fragments of daub was recovered from both the evaluation and the excavation. The daub was generally of a good quality, baked hard and was quite resistant when scratched with a finger nail. It consisted of one clay type which varied in colour from a red/orange to a pale brown colour. When studied under the microscope the fabric was fine and sandy with a ground mass of small sized quartz grains (>0.5 mm.). No other inclusions were readily apparent.

Approximately 384 fragments bore wattle impressions and flat surfaces, of these 104 fragments showed varying degrees of burning or scorching. Additionally, two pieces of daub were vitrified indicating that they were exposed to intense heat (other than being baked) at sometime in the past. Unusually, four charred wattle fragments survived, one still embedded in a fragment of daub.

Although a proportion of the daub showed evidence of burning, it is clear that the corpus was derived from a collapsed building rather than from an oven. This is due to the relatively small quantity of burnt or scorched fragments present. If the daub had been used to form part of an oven it would most certainly have shown more signs of being in direct and prolonged contact with extreme heat.

The Roman brick and tile

Eight fragments of Roman brick and tile were retrieved from both the evaluation and the excavation. These consisted of three pieces of brick, four pieces of *imbrex* and one *tegula* fragment. The majority of the material was residual apart from a brick found in a inhumation burial (124) and two other fragments (one brick and one *imbrex*) which were retrieved from a ditch (3).

The material was studied under a binocular microscope (10x magnification) and was found to all consist of a red/orange coloured fabric with a fine sandy matrix containing few large quartz grains. This fabric is very similar to tile excavated from two tile kilns situated nearby at St Stephen's Road excavated in 1952–3 (Jenkins 1956; Jenkins 1960). The material discussed below is probably a direct product of one of these two tile kilns.

One brick fragment measured 292/296 mm. (?width) and 38/40 mm. (thickness), suggesting that it was either part of a *pedalis* or *lydion*. It also bore a signature mark on its surface, which consists of a two banded semi circle. This brick is of particular interest due to its seemingly deliberate placement in grave 124 at the head of the burial. The other two fragments only had thicknesses (40mm and 51mm) tentatively suggesting that they were parts of either *bessales* or *pedales.* Two of the three brick fragments bore signature marks on their surfaces, both consisting of a two banded semi circle. The remaining material was fragmentary and consisted of just one *tegulae* and four *imbrices*, none of which are worthy of further comment.

3 Anglo-Saxon ceramic weights from the Ramsgate Harbour Approach Road

Ian Riddler

Anglo-Saxon ceramic weights from Ramsgate.

The objects from the Harbour Approach at Ramsgate fall into two principal groups, namely the prehistoric implements and the material of early Anglo-Saxon date. Attention will naturally be focused on the prehistoric elements from this site, but it should not be forgotten that there are some intriguing components within the Anglo-Saxon assemblage as well. Most of the Anglo-Saxon objects come from the fill of the single sunken-featured building found on the site. The assemblage includes several beads, a bone pinbeater, a fish hook and several fragments of querns. In addition, there are also two unusual, cylindrical clay objects. These cylinders are carefully-made with noticeable finger marks, and they both have central apertures. The finger marks from their shaping are visible all around the outer surfaces. Both objects have been fired and are now an even, dark brown colour. Their present colouring probably relates more to their subsequent use, however, than to their original firing.

At some point, these objects have been in the sea. The larger cylinder retains a barnacle, which is attached to its inner surface within the central aperture. It has cracked across most of its outer surface and this may also be a consequence of its immersion in salt water. It appears that the salts are now leaching out of both cylinders. Immersion in salt water has probably also determined their present colour, given that clay, even when fired, remains a porous material.

The two weights came from separate fills of the sunken-featured building. They have not been precisely dated as yet, but they clearly come from contexts of the early Anglo-Saxon period. In the early Anglo-Saxon period clay was used for several purposes. As daub, it lined the walls of structures. It was, of course, the raw material for the ceramics of the period and, in its fired state, it was used also to make spindle whorls and loomweights. At first sight, the Ramsgate objects might indeed be mistaken for loomweights, given that they are cylindrical, with centrally-placed perforations. There are two reasons to doubt this interpretation, however. Hundreds of loomweights are known from this period and in several cases over a hundred have come from a single building, as at Mucking and West Stow, for example (Hamerow 1993, 68; West 1985, 23 and fig 71). In every case, early Anglo-Saxon loomweights are of an annular shape with a large central aperture which is broader than the width of the clay ring. Other loomweights, of the Middle and Late Saxon periods (like those from the Longmarket at Canterbury, for example), have narrower central apertures and are a little closer in form to the Ramsgate objects. Even so, they are essentially discoidal in shape, rather than cylindrical.

The other reason for doubting that the Ramsgate objects are loomweights lies with their weight. Studies of the weight patterns of loomweights are still in their infancy, but some general points can be made. Loomweights were suspended in two parallel rows from a warp-weighted loom and were used in sets, nearly all of which needed to be of approximately the same weight. The estimating and recording of weights in detail has much to recommend it, although there needs to be some caution applied in making broad generalisations. Fired clay loomweights do not usually deteriorate too much in the ground but different burial environments may affect them in different ways, and can lead to variable amounts of weight loss.

Early Anglo-Saxon annular loomweights tend to cluster around 200–450 g. in weight. Middle Saxon intermediate examples are usually a little heavier, at around 450–600 g., but with outliers up to 700 g. Late Saxon bun-shaped loomweights, the closest in form to the Ramsgate examples, cluster around 500–700 g. but with outliers again, some of which can weigh a little over 1kg. With a weight of 285g, the smaller of the two Ramsgate objects can be fitted within this overall range, although it lies at the lower end of the scale. The heavier object, however, weighs 1.4 kg. and is beyond the figure for any loomweight, of whatever period.

If these objects are not loomweights, then what was their function ? It is unlikely that they are thatch weights because such weights are practically unknown within the Anglo-Saxon period, although a series of possible examples, made from chalk, have come recently from Cottam in Yorkshire (Richards 1999, 61–2). On

current evidence, thatch weights first occur in the Middle Saxon period and are made of stone, including flint and chalk, rather than fired clay. Many buildings of the Anglo-Saxon period included thatched roofs, but there remains little evidence of the weights to accompany them.

The other possibility is that these are fishing weights, but is there such a thing as a ceramic fishing weight? In fishing, weights were used with both lines and nets (Steane and Foreman 1988). The materials used included lead and stone, and late medieval weights from the Upper Thames were made from brick (Mynard 1979; Thomas 1981). One of the chalk weights from Cottam includes an incised illustration of a ship, and it has been plausibly interpreted as a net weight (Richards 1994). Ceramic fishing weights, whether used for lines or nets, are noticeably scarce. Marian Rulewicz, the Polish authority on early medieval fishing, has argued that some of the ceramic weights from Gdansk, Szczecin and Wolin could be for fishing, rather than acting as loomweights (Rulewicz and Zajdel-Szczyrska 1970, 356; Rulewicz 1994, 184–6). Illustrated examples do, however, resemble bun-shaped weights closely (Rulewicz 1994, ryc. 20.6–8, 45.10, 58.6 and 59.2).

Steane and Foreman have noted that net weights should be smooth and regularly formed: 'a very irregular form would, however, be undesirable, as would sharp edges: both could snag or tear nets' (Steane and Foreman 1988, 164). The Ramsgate weights fit the general requirement well, given that they are well fired, are regularly shaped and are relatively smooth. They are almost completely unparalleled, as yet, although there is a similar ceramic weight of cylindrical form from an eleventh- or twelfth-century context at Foundation Street, Ipswich (Keith Wade, pers comm.). It weighs around 170 g., a little below that for a loomweight. Another may have come from Great Yarmouth, a site which is closely related to the fishing settlement at Townwall Street, Dover. A 'pierced disc of yellow brown clay' from there was thought possibly to have been a loomweight (Rogerson 1976, 167).

4 The brick from the 'clamp kiln' at Station Road West, Canterbury

Louise Harrison

A total quantity of eighty-seven pieces of brick were retrieved from the excavation at Station Road West. The assemblage consisted of both complete and fragmentary examples, 43 per cent of which were vitrified, overfired and distorted 'waster' bricks.

The colour of the brick varied from a pale orange colour (an underfired example) to a dark purple almost black colour (found on the very overfired examples). The fabric of the brick was examined with a (10x) microscope to determine its structure. It appeared to be a dense, closely packed fabric with a fine but very sandy matrix. Occasional larger sized quartz grains (0.5 mm.) and rare calcareous inclusions were also present.

Only one complete brick was retrieved, its dimensions being 221 x 107 x 47 mm. (length, width, thickness). The remaining bricks were fragmented but most provided width and thickness measurements. The width of the bricks varied from 125 mm. to 94 mm., while the thickness varied from 67 mm. to 47 mm.

The material displayed few other features such as impressions. Only organic tempering was visible on the surface of six bricks. This was probably caused when the brick was covered with straw (when in a plastic state) to provide protection from the rain before being fired. Two of the bricks appeared to have firing holes (diameter 5–8 mm.). These were made by piercing or stabbing the brick with a square or circular sharp-pointed implement before it had been fired. These holes probably speeded up the drying process and helped to prevent distortion during firing (Ryan 1996).

It is difficult to date bricks on size alone, particularly if there are few or no complete bricks present. However, there appeared to be two different sizes of brick in the assemblage. The larger bricks probably date from the late fourteenth to the early fifteenth century while the smaller bricks probably date from the late sixteenth to the early seventeenth century. This appears to agree with the archaeomagnetic dates (provided by the Museum of London Archaeology Service). This could suggest that there were two or more different periods of production at the kilns in Station Road West.

5 Post-medieval pottery and clay pipes from Gravesend

John Cotter

The following notes aim to draw attention to some of the more interesting ceramic finds recovered during archaeological work by the Trust in 1998–9 on two redevelopment sites in the vicinity of High Street, Gravesend.

No. 17 High Street, Gravesend

Monitoring of groundworks here on the site of a proposed health centre on the corner of High Street and Bank Street revealed the existence of three deep-cut cellars to the rear of No 17 High Street. Two of the cellars were brick-lined and probably of early nineteenth-century date. These were probably connected with the distillery shown on the 1863 Ordnance Survey. The third, and earlier, cellar, which concerns us here, was cut directly into the chalk bedrock. Excavation of the cellar fill produced two substantially complete pottery vessels and twelve clay pipe bowls in good condition. The pipes are undecorated and of well-known types datable to *c.* 1660–80, which provides the dating for the cellar backfill.

The pottery comprises the complete rim and conical base of a Spanish olive jar in a pale cream, coarse, sandy, unglazed fabric (No. 1). These come almost exclusively from Seville in southern Spain and were exported to coastal areas of Britain between the late sixteenth and the mid eighteenth century. The marked carrot-shape of this example, which is ultimately derived from Roman amphoras, is typical of olive jars from seventeenth-century sites. They were made as containers for the transport of luxury commodities such as olives, olive oil, dried fruit or honey.

The second vessel is a jug in Westerwald stoneware, produced near Cologne in Germany (No. 2). Exports of Westerwald stoneware to Britain were common during the period *c.* 1625–1750 and included many highly decorated items such as jugs and drinking vessels both for use and display. Normally the fabric is a pale grey salt-glazed stoneware, but in this case the fabric is pale cream. The Gravesend jug is a particularly fine example of this ware. Although fragmentary, it is almost completely reconstructable, except for the rim and neck which are missing (the illustration here however shows what the complete form would look like). This is a distinctive form of jug known as an *Enghalskrug*

which would probably have had an applied grotesque lion-mask on the front below the spout. The particular radial or star-like decorative scheme on the front places it into a sub-category known as *Sternkrug* (star jugs). In this case the decorative scheme is quite complex consisting of applied roundels and triangular palmettes with moulded borders, stamped details and painting in cobalt-blue (shown here as stipple) and manganese-purple (shown as hatched horizontal lines). Jugs of this form were popular from the mid seventeenth century onwards. A jug of very similar form in a London collection is dated 1679 (Gaimster 1997, pl. 123) and a similar *Sternkrug* is dated to the period *c.* 1650–75 (*ibid.*, pl. 118). These dates fit well with the *c.* 1660–80 pipe dates from Gravesend.

Besides pottery and pipes, fragments from a large number of onion-shaped glass wine bottles were also recovered from the cellar backfill. The nature of these finds has led the excavator to suggest that the cellar may have been connected with a lost seventeenth-century tavern that may have developed into the distillery that later occupied the site.

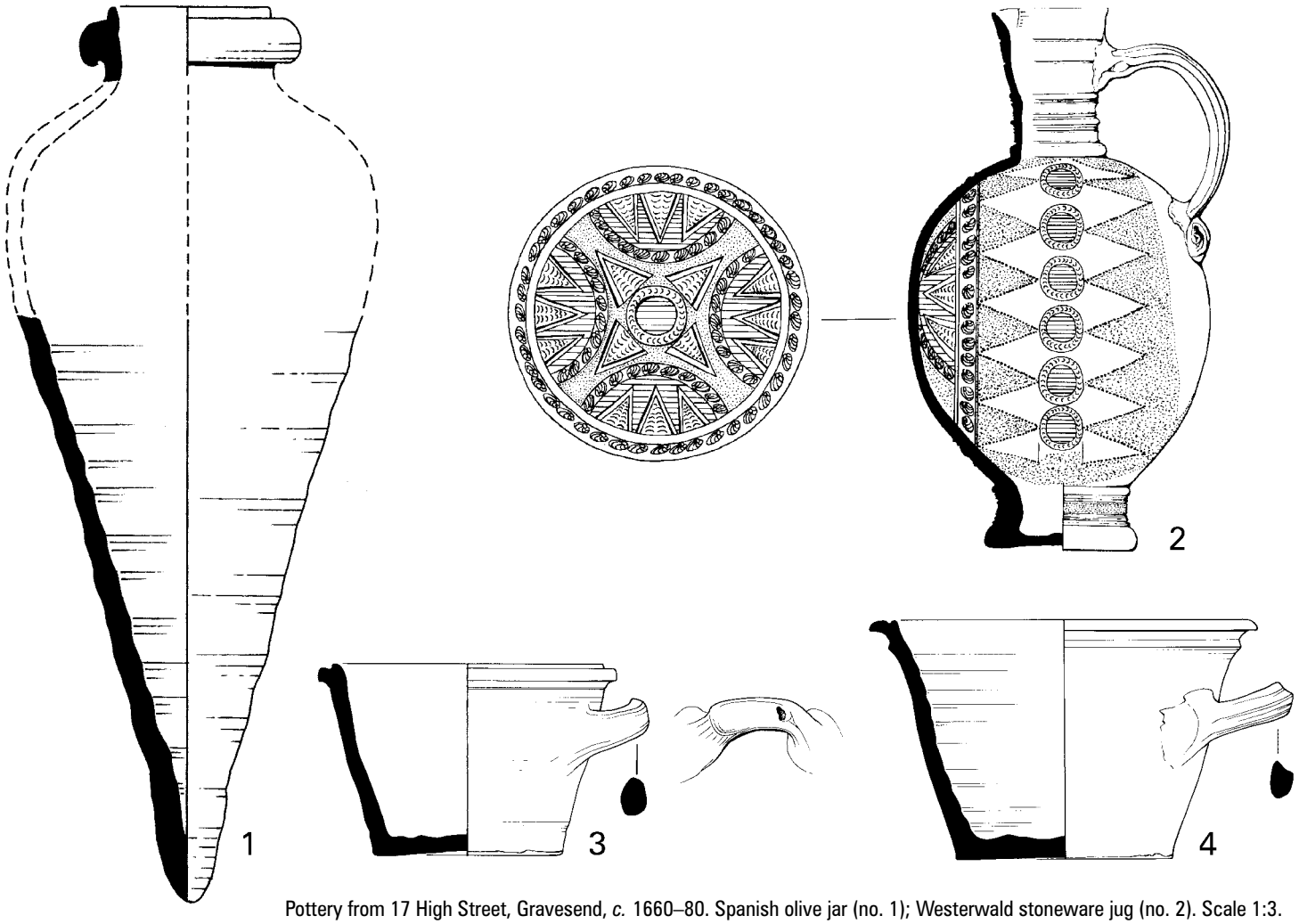
Nos 67–76 High Street and Nos 36–38 Princes Street, Gravesend

Archaeological evaluation trenches dug in land bounded by these properties in November 1998 produced relatively little ceramic material – parts of around six pots and three clay pipe bowls. However the subsequent watching brief conducted the following year while redevelopment was in progress produced parts of at least sixty-one pots and eighty clay pipe bowls, plus stem fragments. The latter included important evidence for the presence of a nineteenth-century clay pipe manufactory located somewhere in the near vicinity. Most of the pottery and pipes recovered derive from post-medieval pits and cellar backfills.

The earliest pottery recovered dates to the period *c.* 1475–1625, roughly the Tudor period, and comprises three or four vessels in a type of glazed red earthenware, probably produced at Woolwich or Greenwich, and well-known from excavations in London where it is sometimes referred to as Guy's Hospital ware.

Pottery and pipes indicate increasing occupation from the mid seventeenth century onwards but the majority of pottery vessels recovered date to the eighteenth century. A significant number of pottery vessels survive as large fresh sherds and of these around twenty are either substantially or, in a few cases, wholly complete. Most of these are almost certainly from cellar backfills and probably include items of household crockery that were stored in those cellars. Due to difficult salvage conditions, however, these features could not always be fully investigated and recorded.

In general the pottery represents a typical range of seventeenth- to eighteenth-century wares, typical of domestic sites in the London hinterland. The range is very similar to material recovered from cellar backfills excavated along High Street Gravesend in the 1960s and '70s (Tilley 1962; 1971). This consists mainly of glazed coarse red earthenware vessels, possibly of local manufacture, or perhaps from the Thameside potteries at Woolwich and Deptford, not far away. Vessel forms in this ware include jars, chamberpots, large storage jars, handled cooking pots or 'pipkins', bowls, handled bowls or 'porringers', and strainers or colanders – all common items of domestic kitchenware during



Pottery from 17 High Street, Gravesend, *c.* 1660–80. Spanish olive jar (no. 1); Westerwald stoneware jug (no. 2). Scale 1:3.
70 High Street, Gravesend, c. 1700–50. Two of the four porringers from the cellar backfill (nos.3–4). Scale 1:3.

Set of four porringers from 70 High Street, Gravesend. *c.* 1700–50.

this period. There are also whiteware vessels from the Surrey/Hampshire potteries ('Border' ware) and numerous items of tin-glazed earthenware ('delftware') from the London potteries – mainly painted tablewares, such as dishes, plates, storage jars and ointment pots of various sizes. A few tankards and flagons in brown salt-glazed stoneware also come from London sources. Tablewares from the Staffordshire potteries, mainly dating to the period *c.* 1720–80, include plates, mugs and teapots in white salt-glazed stoneware and early Creamware, a red stoneware teapot and a few nineteenth-century blue-and-white transfer-printed whitewares. The few imported items, which date to the eighteenth century, include a jug and tankard in German Westerwald stoneware, a ?cup in marbled slipware from Pisa in North Italy and a bowl in blue and white Chinese porcelain.

One group of pottery and another group of clay pipes from this site have been singled out for closer attention below.

The post-medieval pottery group ?c. 1700–50:

This comprises a 'set' of four complete near-identical vessels recovered from a large and deep feature, probably a cellar, in the rear garden of No. 70 High Street. Unfortunately we do not know whether any clay pipes or other closely datable objects were found in association with them, so the pots must be dated purely on general style. The basic form shared by the pots is that of a conical flat-based bowl, each with a single horizontal loop handle. Bowls of this type are sometimes referred to as porringers. Only the smallest (No. 3) and largest examples (No. 4) are shown here to illustrate the size-range. Three examples are close in size to No. 3, with rim diameters between 134–7 mm. across, while that of the largest (No. 4) is 173 mm. across.

It is unusual enough to find four complete vessels from such a context and more so near-identical vessels which appear to part of the same set. They probably represent part of the original cellar contents which somehow escaped being crushed by the soil backfill after the cellar was abandoned. The fabric of the vessels is a sandy post-medieval type red earthenware with an orange-brown to dark brown internal glaze, occasionally spilling over the rim. They were probably used as serving vessels, although one vessel is fire-sooted on the base and sides and has a thick white deposit internally, suggesting it had been used for heating or cooking food. The precise date of the vessels depends on typological comparisons but they are certainly either late seventeenth or eighteenth century. There are parallels for this form of porringer from a kiln at Woolwich dating to *c.* 1660–80 (Pryor and Blockley 1978, fig. 13.66) but the form remained current elsewhere well after this date. Machining of the High Street site produced a large number of clay pipes datable to *c.* 1680–1710, and two other virtually complete pots, which look like they might all have come from a single context. This may, possibly, have been the cellar discussed here above, but we cannot be sure of this. Other general characteristics of the porringer set, however, including the rather developed flowerpot-like fabric and the marked plainness of the forms, are matched by eighteenth-century vessels from elsewhere in Kent and the London area, suggesting, perhaps, a date within *c.* 1700–50.

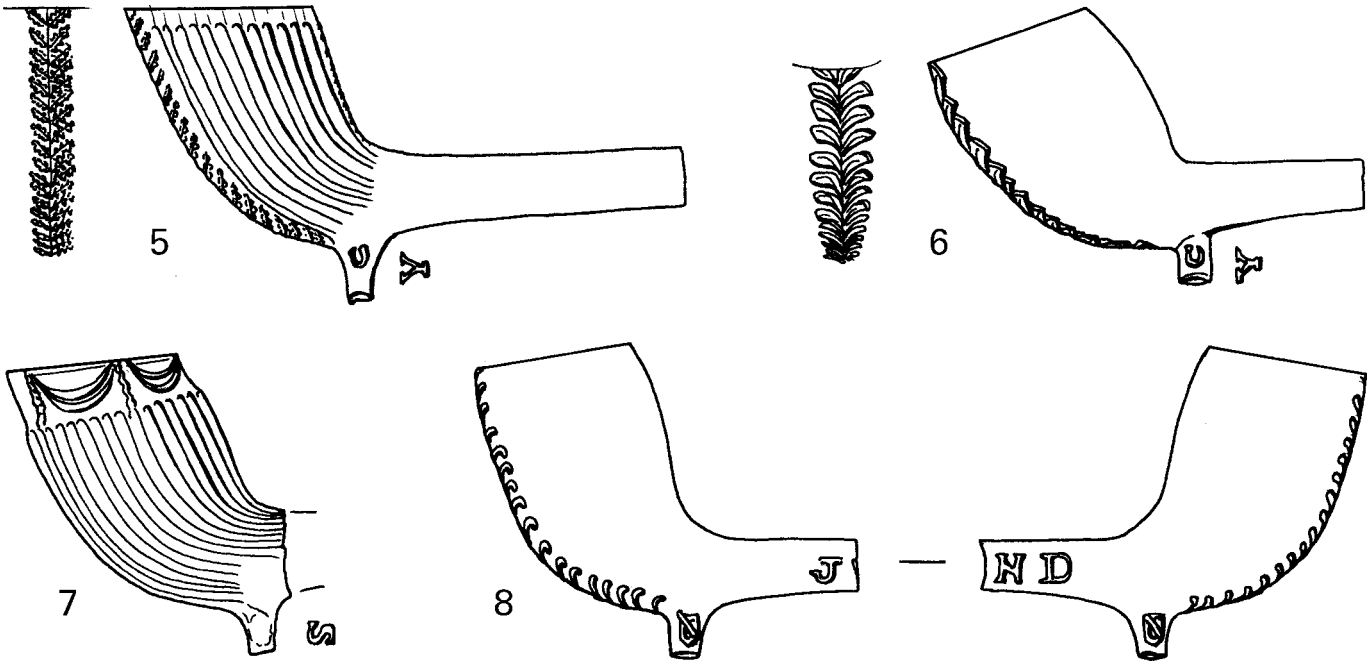
The clay pipes, including kiln debris, c. 1851–?1875:

This group of clay tobacco pipes comes from a pit on a plot of land north-east of No. 40 Princes Street. The pipes comprise fifty-one pipe-bowl fragments, many of which are complete, and forty-six stem fragments including a mouthpiece tipped with red paint. Only two sherds of pottery were recovered with these. One is a mid eighteenth-century Creamware teapot spout, which may have been antique when discarded or simply a residual fragment derived from an earlier layer or pit, and the other is part of a cup or jug in Staffordshire-type white earthenware with blue transfer-printed decoration showing a (fragmentary) scene commemorating the Crystal Palace (or Great) Exhibition of 1851. This provides useful confirmation that the pit was backfilled after this date and, although it undoubtedly contains some earlier pieces, most of the pipe bowls are types roughly datable to the mid to later nineteenth century. Less datable items recovered include glass bottle fragments and a post-medieval roof (pan) tile. There are several indicators which, taken together, strongly suggest that most of the pipes represent rubbish derived from a nearby pipe-kiln, the structure of which remains to be discovered. The most convincing piece of evidence is in the form of nine thick slab-like fragments of yellowish pipeclay, which probably represent elements of the kiln structure. Then there is the fact that most of the pipe bowls (thirty-one) represent the products of a single manufacturer (see below) and that none of these shows definite evidence of having been used. Several in fact are heavily scorched or burnt leaving them grey or black throughout, probably as a result of overfiring in the kiln rather than from contact with smouldering tobacco, and a few pipes are either warped, flawed or perforated due to overly thin walls. These are classic indications of 'wasters' or reject kiln material.

While it is certain that the pipes of more than one Gravesend pipemaker are represented in the pit, it is less certain how they all ended up in the same pit. A few pipes, showing evidence of use, are of eighteenth-century date and a few nineteenth-century types also look used, so probably the pit contents represent a mixture of older and more recent domestic refuse as well as more recent industrial (kiln) refuse. However, apart from those of the main pipemaker, one or two other pipes produced by other nineteenth-century makers also look as though they might be wasters too. These are generally blackened, either because they are wasters, or perhaps because they were burnt in household or garden fires and so are not wasters at all. Alternatively the pit could contain pipe wasters derived from more than one nearby kiln, but other explanations are also possible.

The following account is necessarily just an overview of the pipes recovered with illustrations of just a few of the main and more unusual types. Pipe forms closely follow those of London pipes (Atkinson and Oswald 1969) and need not be reproduced here. Unless stated otherwise information on Kent pipemakers is taken from the list compiled by Oswald (1975, 174–6). Pipes are listed below roughly in numerical and chronological order beginning with the most recent.

Charles Yonwin of Gravesend, active 1847–80. This pipemaker was also active at Dartford *c.* 1861 when he is recorded in the 1861 census as having a workforce of two apprentices and four pipe trimmers at Overy Street (Baker 1979, 11–12), but very little is known about him. He may have run the workshops at Dartford and



Princes Street, Gravesend. Wasters from a nearby kiln: (no. 5–6) produced by Charles Yonwin of Gravesend (1847–80). Other Gravesend pipes from the excavation: (no. 7) by John Sloper (1841–70); (no. 8) uncertain 19C pipemaker. Scale 1:1.

Gravesend concurrently. Excavations at Overy Street, Dartford, however, produced only a single pipe bearing his mark (*ibid.*, fig. 3j) and it appears that he was re-using the pipe-mould of his predecessor Thomas Pascall of Overy Street (1832–51) whose initials are on the spur of the pipe while Yonwin's surname is stamped on the back of the bowl within a stamped oval. The Gravesend pipes however lack this feature.

Thirty one pipe bowls from Gravesend bear Charles Yonwin's initials on the spur. These include definite wasters. Yonwin produced at least two types of pipe here. The commonest type (No. 5) (twenty-five examples), is the more ornate. It has a vertically fluted bowl with a horizontal top, oakleaf seams on the front and back of the bowl, and a relatively pointed stem. The 'CY' spur stamp seems almost identical on both types except that the 'C' on the fluted type may be thinner/less robust than that on the plainer type. Trimming of the top causes height variation of between 38–42 mm. between spur-tip and top. No pipe stem survives for more than 70 mm. beyond the spur but this is enough to demonstrate that stems were unstamped.

Six examples of Yonwin's plainer pipes survive (No. 6). These have a chubbier bowl profile with a sloping top and a more squared spur. The bowl is plain except for a 'laurel' leaf seam on the front only.

John Sloper of Gravesend, active 1841–70 (Tilley 1977, 170). Two examples, both of slightly different type, are probably to be identified with this maker. However only the surname intial '-S' survives on one side of one of the pipe-spurs, the other side being blundered, while on the second pipe the spur has broken off completely. Sloper worked at Bath Street, Gravesend, which lies one block away west of and parallel to Princes Street. The two pipes from Princes Street are unused and look like they could be wasters, which could suggest that the undiscovered kiln(s), or at least one of them, lay to the west of the Princes Street site, though how they ended up being dumped across the road on the east side is a mystery. The marked pipe (No. 7) has a finely fluted bowl without decorated seams. The upper part is decorated with a horizontal band of draped crescents or swags separated by rope or tassel-like motifs, a fairly common design on southern English pipes of the period. The spurless pipe, which may or may not be one of Sloper's, is almost identical to the preceding example except that the fluting is broader and it has oakleaf seams very like those of Yonwin's fluted type (No. 5). A probable John Sloper pipe from the Gravesend Blockhouse, which lacks the swags, demonstrates that he also made other types (*ibid.*, fig. 10e).

Maker uncertain, nineteenth century (No. 8). This distinctive type is the only pipe recovered with a maker's mark on the stem. It is also unusual in having two shield-like devices on the spur in place of the usual initials. On one side of the surviving stem fragment is the initial letter, in this case 'J', of the maker's first name. This was usually followed by the surname, written in full, which has not survived. The other side of the stem normally records the place of manufacture, which

Princes Street, Gravesend. Wasters from a nearby pipe kiln *c.* 1851–75.

in this case can fairly certainly be reconstructed as '(GRAVESE)ND'. The shield-like devices, which seem to be identical, might contain the maker's initials or a monogram behind a diagonal cross-bar, but if so they are unintelligible. The front seam of the bowl is decorated with frond-like foliage. As the pipe shows no evidence of use it might be a waster. Two Dartford pipemakers –Thomas Pascall (1832–51) and James Rumley (1879–92) also produced pipes with similar shield-like devices on the spur (Baker 1979, fig. 2c, fig. 3k). There are three nineteenth-century Gravesend pipemakers who might have made the pipe under consideration here – John Bishop (see below), or the John Sloper mentioned above, or perhaps J. Sandy (active 1873).

John Bishop of Gravesend, active 1851. Two examples. Unused, possibly wasters. One burnt. The spurs are initialled 'JB' (earlier makers would have shown this as 'IB'). Otherwise these are identical to Charles Yonwin's fluted type described above (No. 5), so much so that they could almost have come out of the same mould, except that Yonwin's pipes have a few more pairs of oakleaves on the front seam (around fifteen, compared to Bishop's thirteen). This might, however, be a result of trimming differences and probably the spur initials could be changed by adapting the mould. Yonwin's relationship to Bishop is unknown. If anything the details on Yonwin's pipes are less clear than Bishop's, so, if they were using the same mould, it may have been slightly worn by the time Yonwin acquired it and we know that Yonwin later re-used moulds at Dartford (see above). Technically Bishop should be later than Yonwin by a few years but the few recorded dates make it unclear to what extent they were contemporary.

Thomas Pascall of Dartford, active 1832–51 (Baker 1979, 11). One example. Burnt, probably used, but not impossibly a waster? Apart from the 'TP' spur stamp the form and decoration are virtually identical to Yonwin's common fluted type (see above).

A. Barker of Gravesend, active 1851. One example. Burnt, ?or waster. As Yonwin's fluted type but with 'AB' spur stamp, sloping top, broader fluting and slightly more detailed oakleaf seams.

'IC' spur stamp. Nineteenth-century types. Two examples. Maker uncertain. Possibly John Court of Folkestone (1839–49). But this seems less likely than an unknown Gravesend, north Kent or even a London pipemaker. Both pipes are of different shape and not very similar to the other Gravesend pipes except that they have the same basic form as Yonwin's plainer type (see above). Both burnt, probably used. One has larger and more exuberant oakleaf seams than Yonwin's fluted type, while the other has a larger and completely plain bowl.

'Taylor. London'. Nineteenth-century type. One example. Used. Plain bowl with sloping top and unmarked spur. On the back a circular stamp: a milled circle enclosing the words 'TAYLOR. LONDON.' around the circumference and a central shield with a simplified version of the arms of the city of London. Oswald lists five London pipemakers with this surname. On dating however the maker of the pipe here is likely to have been either John Taylor of Cromer Street (1844–8), Thomas Taylor of Shoreditch (1836–75), or Thomas Taylor of Mile End Road (1877–88) (Oswald 1975, 147). On balance, probably the second of these.

John Johnson of Gravesend, active 1763–97. One example. Plain with 'II' spur stamp. Probably used.

Benjamin Tucker of Gravesend, active 1784. Two examples. Plain with 'BT' spur stamp with pellet above each initial. Both used.

Thomas Johnson of Gravesend, active 1733–64. One example. Plain with 'TI' spur stamp with pellet to left and right of each initial respectively. Probably used.

Makers uncertain. Six examples. Nineteenth-century bowl types, plain and fluted, with spurs missing. Includes wasters (probably Charles Yonwin).

The group of pipes described above, therefore, is interesting for a variety of reasons. Perhaps primarily because it is the first group of pipe wasters to have been found in Gravesend and, secondly, because a study of the designs and makers' marks present suggests there were much closer connections between Gravesend and Dartford pipemakers than the published sources suggest. These connections evidently involved the movement of pipemakers and probably pipe-moulds between the two towns.

III Palaeoenvironmental Studies

1 Ramsgate Harbour Approach Road

Enid Allison

An extensive sampling programme was carried out by the Trust and Archaeoscape Consulting, Royal Holloway College to determine the nature of the local environment before construction of the Neolithic enclosures, during their use, and in subsequent periods of occupation or use of the site. Analysis of sediments and biological material recovered, however, is at a very early stage at time of writing.

The sequences of sediment on the site were sampled to determine the processes by which they had been deposited. They may provide evidence for the effects of human activity on the local soils and vegetation. Pollen samples taken also have the potential to provide information on local and regional vegetational history and the effects of man on the landscape.

A large number of bulk samples were taken from the fills of the Neolithic ring ditches, Late Bronze Age and Early Iron Age features, and an Anglo-Saxon sunken building. A variety of animal and plant remains have been recovered from these. Charcoal and charred plant remains reflect local vegetation and agriculture. The Neolithic agriculture of Kent is particularly poorly known so the charred cereal remains from features of that date are of great interest.

Land snails were recovered from many of the bulk samples and, where possible, sequences of samples specifically for recovery of snail assemblages were taken from the full depth of ditches and pits. The habitat requirements of various species recovered will characterise the local environment and vegetation throughout the time represented by the deposits sampled.

The remains of shellfish and the several thousand animal bones recovered will provide dietary and economic information. The relative importance of farming and hunting in Neolithic and later economies can be assessed, and stock management and butchery techniques may be determined.

2 Princes Road, Dartford
Enid Allison

At the beginning of the excavation there were high hopes that waterlogged animal and plant remains would be found but it soon became obvious that although waterlogging of deposits had originally occurred, subsequent drying out, probably relatively recently, had resulted in the degradation of much of the preserved organic material, particularly pollen and insect remains.

Despite this, an extremely interesting assemblage of charred plant remains, the survival of which does not depend on the water content of the soil, was recovered from a layer of dumped occupation material dated to the Middle Bronze Age. Radiocarbon dates of 1680–1260 B.C., were obtained from the top and bottom of this layer. The deposit was very rich in cereal grains and chaff, and weed seeds. The cereals were dominated by emmer and spelt wheat, with a smaller amount of barley. Chaff was particularly well-represented suggesting that much of the deposit was derived from the waste from cereal processing. Other species of economic significance included hazel nuts, flax, a large legume (pea, vetch or bean), and possibly sloe. The range of weed seeds suggest that light acidic soils were being cultivated.

This assemblage is of great significance. It provides information on both the Bronze Age economy of Kent, which is poorly known, and on the introduction and distribution of particular cereal species in Britain. It shows conclusively that extensive cereal cultivation was carried out in the region at this period and that emmer, spelt and barley were grown. The occurrence of spelt wheat at such an early date is particularly significant. Emmer wheat is the principal wheat species recovered from Middle Bronze Age sites in southern Britain although a small number of sites in Somerset, Sussex, and the Middle and Upper Thames Valley have yielded spelt wheat from contexts of this date. The evidence from Dartford extends the known distribution of spelt in the Middle Bronze Age across a much greater region than was previously known (Ruth Pelling pers. comm.).

3 Mersham, near Ashford
Enid Allison

One of main reasons for sampling many of the features at Mersham was to recover waste from metalworking. Plant and animal remains were not particularly common on the site in general but small assemblages were recovered chiefly from early medieval pits.

Plant remains on the site had mostly been preserved by charring. These are likely to represent small-scale cereal processing, food preparation waste, and waste from fires. Cereal crops represented included bread type wheat, spelt wheat, oats and barley. Pulses present included broad bean and possible cultivated vetch. Other crops such as flax, beet and plum or sloe were also present. Small quantities of mineralised seeds, particularly of brassicas (mustard, cabbage, etc.), and occasional fruit stones were recovered from the remains of faeces preserved in cess-pits on the site.

Quantities of food refuse recovered from the site were fairly small, probably due to the fact that the area excavated was associated with industrial rather than domestic activity. Shellfish imported onto the site included oysters, mussels, cockles and winkles. The mammal bone assemblage was dominated by cattle, sheep and pig. It included a complete and excellently preserved skeleton of a horse.

Very few fish and bird bones were recovered from the site by hand but small assemblages of both were obtained by sieving of samples from ditches and pits close to areas of industrial activity. Among the bird bones, those of domestic fowl and goose were most numerous, and ducks and pigeons were represented. The two largest collections of fish consisted chiefly of eel bones.

Although the assemblages are small they provide an opportunity to study material from an early medieval rural site, information for which is generally lacking in East Kent.

4 Westenhanger
Enid Allison

A large assemblage of several thousand excellently preserved charred cereal grains and associated crop weeds were recovered from a feature provisionally interpreted as an early medieval grain drier. The bulk of the grains were oats, with lower numbers of rye and free-threshing wheat, and occasional barley grains. Cereal chaff was present in one sample. As noted above little work has been carried out on material of this date from rural sites. The composition of the assemblage is unusual when compared with those from other areas of southern Britain. Further study will produce information on agricultural practices and crop processing techniques in the area in the early medieval period. A detailed analysis of the remains may also help to establish whether the feature is a corn drier or a dump of burnt refuse. The fact that the majority of the grains are oats may suggest that it is not a drier as oats do not usually require drying.

Acknowledgements

Information on the plant remains has been provided by Ruth Pelling of the Environmental Archaeology Unit, University Museum, Oxford. Sorrel Renton-Green and Darryl Weston carried out the processing of samples from the Ramsgate and Dartford sites. Bob Robson and Krystyna Zaleska painstakingly sorted through the sample residues from various sites to recover animal and plant remains.

Education

The work of the Education Department was, as always, part proactive and part reactive in nature covering a range of activities. Two new projects this year merit particular note.

Roman and Anglo-Saxon Canterbury Reconstructed, a teacher resource pack

We were indeed resourceful in producing this pack! The Trust has excellent reconstruction images of the centre of Canterbury in the Roman and Anglo-Saxon periods, both based on extensive excavation in the area. Originally produced for an exhibition they were also printed at A4 size (with others) to make a calendar. Alas, a number of calendars remained unsold ... but no matter, my gain ... and I set about recycling the pictures into an educational resource.

The pack now consists of the two coloured reconstructions (laminated for frequent use) and an accompanying bound booklet setting out the evidence underlying the images together with related plans, finds illustrations and ideas for use in teaching programmes.

The pack is versatile, suiting a number of teaching levels. The text is written in a user-friendly syle while retaining academic integrity. The content is directly in line with National Curriculum History requirements for the primary school (Key Stage 2 in particular), while being a useful resource for GCSE and A Level History and Archaeology course work and individuals engaged in 'Lifelong Learning'.

Research, writing and production of the teacher's pack was undertaken by the Education Officer for the Archaeology in Education Service, funded principally by Kent Archaeological Society, Kent County Council Education and Libraries and the Trust itself. The Roman Research Trust awarded a grant to cover printing costs, which was very much appreciated.

English Heritage Education Service and Kent Archaeological Society have both publicised the pack and the Society has made a special offer of a free copy to K.A.S. members who are currently teaching in schools in the county of Kent. This is a specific requirement by the K.A.S. and the offer is not open to tutors in tertiary level education or relatives/friends of working teachers. Contact the Trust's Education Officer for further details.

Science, Engineering and Technology Week '99 (SET Week '99)

Firstly, I would like to thank Dr Peter Nicholls of the Department of BioSciences at the University of Kent for his support of our work and consequently obtaining funding from the Biotechnology and Biological Sciences Research Council which enabled us to take part in SET Week '99 – an unusual event ... and definitely different!

SET Week is a national event co-ordinated by the British Association for the advancement of Science, Engineering and Technology. There is a strong focus on the encouragement of general public understanding and appreciation of these subjects and many activities are aimed at young people in particular. Canterbury took part for the first time in SET Week '98 when the Education Officer liaised with Canterbury Museums and wrote an information leaflet 'Discovering Science in Archaeology at the Roman Museum Canterbury'. The intention was that this should continue to be useful long after SET Week '98 had finished and it is still available at the Roman Museum.

A major contribution was planned for SET Week '99. The four day hands-on event held at the Royal Museum, Canterbury, was the result of a partnership project between Canterbury Museums, Canterbury Archaeological Trust and the Department of BioSciences at the University of Kent. A number of other individuals were invited

'Smelly Bits Roadshow': Skeletons are a real magnet for younger visitors.

'Smelly Bits Roadshow': Dr Enid Allison, environmentalist, shows children what we can find in poo!

to participate and in all there were nine 'stalls', each demonstrating a particular link between History/Archaeology and an aspect of Science, Engineering or Technology.

The title of the event, 'Smelly Bits and Skeleton Pits' reflected the contributions from the Trust, Canterbury Museums and the BioSciences department of the University, all complementing each other very well.

The 'Smelly Bits' related to the work of Dr Enid Allison. Enid elaborately displayed preserved plant and animal remains from a Norman cess pit found by the Trust in Beer Cart Lane, Canterbury. The remains were excellent evidence of early medieval diet - plums, cherries, raspberries, egg, herring, bran, leeks and lots more ... she even had some chunks of cess (faeces or 'poo') – perfectly harmless after 800 years and a great magnet for children and adult visitors alike.

Then the 'Skeleton Pits' part ... Trevor Anderson, osteo-archaeologist, showed visitors how we can examine human skeletons to determine age, gender and the general state of health of our ancestors and Dr Peter Nicholls of UKC's Department of BioSciences explained about the processes of DNA analysis and how it can be applied to ancient skeletal material. Here, there was a focus on the fifth-century multiple burial excavated by the Trust in Beer Cart Lane in 1980. Through DNA analysis it may be possible to draw out even more information about individuals from the past, for example about their racial origins and familial relationships.

The Beer Cart Lane burial consisted of an adult male, adult female, two juveniles and a dog. We ran a competition for local primary schools to create a story about who these people may have been and the events leading up to the deaths. Later we went to the winning schools to talk to the children and present their prizes. First prize went to Wingham County Primary School and second prize to St Peter's Methodist Primary School, Canterbury. A display about the mulitple burial can be seen in Canterbury's Heritage Museum, where visitors can see the numerous artefacts found with the individuals.

Other work of the Archaeology in Education Service

We continue to provide a one week 'Medieval Monasticism' placement for those Humanities students at the University of Kent who choose to take this module in their first year. The practical, hands-on experience looking at medieval life from an archaeological perspective is always well received by the students.

We have a good working relationship with the Education Department of Canterbury Christ Church University College. The Education Officer has once again been lecturing regularly to both undergraduate and post-graduate trainee teachers both to develop their personal knowledge and to introduce practical ways of using Archaeology in the classroom.

Work Experience placements are always much in demand and we continue to accept students on a first-come-first-served basis. During the year we took students from The North School at Ashford, King Ethelbert School at Birchington, Highworth Grammar School at Ashford, Maidstone Grammar School for Boys, The Charles Dickens School at Broadstairs, The Archbishop's School at Canterbury, Simon Langton Girls School at Canterbury, Norton Knatchbull School at Ashford, Clarendon House School at Ramsgate and the Kings School at Canterbury.

Assistance with 'personal investigation' course work was given to several students taking A Levels in Archaeology, History and Geography. This typically takes the form of allowing access to the the Trust library and giving one-to-one guidance through particular excavation projects undertaken by the Trust.

Visits were made to primary schools in Ashford, Blean, Herne Bay and Garlinge where pupils were looking at how Archaeology helps us to find out about the past.

Students engaged in the Duke of Edinburgh Award Scheme at Barton Court Grammar School and Simon Langton Girls School (both at Canterbury) made regular visits to the Trust offices to assist with post-excavation projects as their personal contribution to working with an organisation in the local community.

CANTERBURY ARCHAEOLOGICAL TRUST
Education

My thanks go to all those who continue to support the work of the Archaeology in Education Service, in particular the Kent Archaeological Society and Kent County Council Education and Libraries.

The Friends

The Friends of the Canterbury Archaeological Trust

Lawrence Lyle

The Committee lost three valued members during the year. Liz Rothwell-Eyre, our tireless social secretary and organiser of the shop on the Longmarket site, found her teaching commitments too heavy for extra work and Robert Shine, a model Minutes Secretary, had more responsibilities at the University. Paul Crampton's increased workload also obliged him to resign. We are all most grateful for their contribution to the Friends and to the Trust. Our numbers remain around 360. The death of Martin Hicks in a car accident in Bahrain was a great shock and we extend our deepest sympathy to Alison and two year old Naomi.

The main grants to the Trust during the year have been:

£1500 towards the cost of a second-hand R.A.F. Landrover

£1350 for a second edition (1,500 copies) of the successful children's' book on Roman Canterbury.

£2200 to replace and upgrade computer equipment, principally for building recording.

Several small grants from the Donald Baron Bursaries Fund to enable members of staff to attend conferences and courses. These included Trevor Anderson's attendance at a conference on human osteology at which he delivered a paper, Mark Houliston's at a conference on theoretical Roman archaeology (twenty-two papers in two days!) and Adrian Gollop's at the Association of Field Archaeologists Annual Meeting at Glasgow.

The venue for our annual lunch at Simple Simon's was medieval but the service was slow and the food indifferent. Marjorie improvised a talk on the building during the interval between the first and second courses. The short break I organised in April, based in the Green Dragon Hotel in Hereford, covered a variety of sites which included the Mappa Mundi and the Cathedral, Kilpeck Church and Berrington Hall. The countryside in spring was an additional pleasure.

Our summer excursions, in which we collaborate with the Canterbury Archaeological Society, started with my trip to London during which the party visited All Hallows by the Tower, Tower Bridge and the Bramah Tea and Coffee Museum. In June, Ann Vine's tour in June of Great Chart, Mersham and Brook churches was full of interest. Peter Leeming organised a visit for a small party of members to the Cathedral Archives in October.

FRIENDS of the CANTERBURY ARCHAEOLOGICAL TRUST

Festival Walks organised by Meriel Connor were their usual success, raising the profile of the Friends and bringing in funds for the Trust. This year ten walks were held and all were fully subscribed.

Winter lectures began with Peter Clark describing the extensive research programme on the Dover Bronze Age Boat. This was followed in February with a visit to Dover Museum to see the progress being made with the reconstruction of the preserved timbers of the boat. This visit was over-subscribed and Peter kindly agreed to give a second tour of the museum gallery. In December Paul Crampton showed slides of the Whitefriars area, shortly to be redeveloped by Land Securities and excavated by the Trust. Paul Bennett's Frank Jenkins Memorial Lecture was as fascinating and as comprehensive as ever.

Three Newsletters have been compiled and distributed during the year. We are all very grateful to the distributors who save our funds avoidable spending on postage. I also warmly thank the Committee who work hard and enthusiastically to run our affairs.

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 1999. 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 1999.

The Trust was formed as a charity in 1975 and incorporated as a company limited by guarantee on the 2 August 1979. The principal objective of the company is to promote the advancement of public education in the subject of archaeology. The Trust has a board of directors who act as trustees and they delegate the day to day management to the director of the Trust, Mr P Bennett B.A., M.I.F.A. (who is not a director of the company).

Review of the Business

The property at 72 Northgate was revalued during the year and sold post year end for net proceeds of £89.943. An investment property, the unrealised gain of £44,817 is included in the Statement of Financial Activities for the year.

Due to the material acquisition of motor vehicles and computer equipment in the years ended 31 March 1998 and 1999, the accounting policy to write off amounts in the year of purchase has been changed. Motor vehicles and computer equipment are now capitalised and depreciated over their useful economic life.

Prior year adjustments have been made regarding:-

a) the capitalisation and depreciation of assets in the year ended 31 March 1998.

b) the inclusion of the Friends of the Canterbury Archaeological Trust Limited and the Canterbury Archaeological Trust Appeal Fund in the financial statements.

Results

The results for the Trust for the year ended 31 March 1999 are shown in the statement of financial activities.

The surplus for the year before unrealised gains on investments amounts to £77,991 (1998 £6,358 deficit)

Directors

The Directors during the year were:
Dr. F.H. Panton C.B.E., Ph.D., C.Chem., F.R.S.C., F.R.Ae.S., F.R.S.A.
M.H.S. Bridgeford F.A.S.I.
R. Westbrook Esq.

Secretary

The Secretary during the Year was Lawrence D. Lyle M.A.

Auditors

Chantrey Vellacott DFK (retired 25 February 2000)
Chartered Accountants
7, Dane John
Canterbury
Kent
CT1 2QS

Larkings (appointed 25 February 2000)
Chartered Accountants
31, St. George's Place
Canterbury
Kent
CT1 1XD

A resolution to appoint Larkings as auditors will be proposed at the forthcoming Annual General Meeting.

BY ORDER OF THE BOARD
Lawrence D Lyle
Secretary

27 March 2000

Auditors Report to the Members of Canterbury Archaeological Trust Limited

We have audited the financial statements which have been prepared under the historical cost convention as modified by the revaluation of certain fixed assets and the accounting policies set out in this report.

Respective Responsibilities of Directors and Auditors

As described above, the trustees, who are also directors of the Canterbury Archaeological Trust Limited for the purposes of law 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 includes 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 charitable 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 charitable company's affairs as at 31 March 1999 and of its incoming resources and application of resources, including its income and expenditure for the year then ended and have been properly prepared in accordance with the Companies Act 1985.

Larkings
Chartered Accountants and Registered Auditors
31 St George's Place
Canterbury
Kent
CT I 1XD

27 March 2000

Main Account

Statement of Financial Activities for the year ended 31 March 1999

	1999 £	1998 £
Incoming Resources		
Fees receivable	1,032,008	741,874
Grants receivable	41,825	31,710
Donations and Legacies	29,583	4,097
Subscriptions	7,965	8,173
Investment Income	13,150	10,284
Other	11,150	44,132
Total Incoming Resources	1,135,681	840,270
Resources Expended		
Direct Project Expenditure		
Direct Charitable Expenditure	973,928	773,058
Management & Administration	83,762	73,570
Total Resources Expended	1,057,690	846,628
Net Incoming/(Outgoing Resources) for the year	77,991	(6,358)
Unrealised Gains on Investments	44,817	–
Net Movement of Funds	122,808	(6,358)
Balance brought forward at 1 April 1998 as previously stated	291,533	360,220
Prior Year Adjustment	62,329	–
Balance brought forward at 1 April 1998 as previously stated	353,862	360,220
Balances carried forward at 31 March 1999	476,670	353,862

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.

The above statement of financial activities, all of which are derived from continuing operations, includes all recognised gains and losses for the year, as defined by the Financial Reporting Standard No. 3.

Balance Sheet — 31 March 1999

			1999 £	1998 £
Fixed Assets				
Tangible fixed assets			160,060	149,788
Investments			89,943	45,126
			250,003	194,914
Current Assets				
Debtors	258,140	155,349		
Cash at bank and in hand	165,766	193,664		
			423,906	349,013
Creditors (Due within one year)			(195,016)	(179,043)
Net Current Assets			228,890	169,970
Total Assets less current liabilities			478,893	364,884
Creditors (Due after one year)			(2,223)	(11,022)
Net Assets			£476,670	£353,862
Funds				
Restricted Funds			58,665	58,366
Unrestricted Funds			418,005	295,496
			£476,670	£353,862

The financial statements have been prepared in accordance with the special provisions of Part VII of the Companies Act 1985 relating to small companies.

Approved by the Board of Directors on 27 March 2000 and signed on its behalf:

F.H. Panton
Director

R. Westbrook
Director

The Friends Account

Statement of Financial Activities for the year ended 31 March 1999

		1999 £		1998 £
Income				
Subscriptions - Covenanted	4,760		4,862	
Income Tax Reclaimed	1,313		1,334	
		6,073		6,196
Subscription - Not Covenanted		1,892		1,977
		7,965		8,173
Other Income				
Donations, Events, Fund Raising	1,496		1,069	
Interest	963		873	
	2,459		1,942	
Total Income		10,424		10,115
Expenditure				
Stationery, Postage, Printing, Bank Charges				
Miscellaneous		4,014		4,022
Surplus of Income over Expenditure		£ 6,410		£ 6,093

Balance Sheet — 31 March 1999

		1999 £		1998 £
Current Assets				
Cash at Bank				
Current Account	10,278		5,664	
Business Premium Account	906		2,824	
Charities Deposit Fund Account	12,586		10,999	
		23,770		19,487
Sundry Debtors		1,314		1,334
Donald Baron Bursaries Fund		328		445
		25,412		21,266
Sundry Creditors		(5,160)		(862)
Net Assets		20,252		20,404
Represented by:				
Income and Expenditure Account				
Balance brought forward		20,404		17,534
Surplus of Income over Expenditure		6,410		6,093
		26,814		23,627
Less payments on behalf of Canterbury Archaeological Trust Ltd				
Contribution to Canterbury Archaeological Trust Ltd		(6,562)		(3,224)
		£20,252		£20,403

The Friends Account - Donald Baron Bursaries Fund

Income and Expenditure Account — 31 March 1999

		1999 £		1998 £
Income				
Deed of Covenant	500		500	
Income Tax Reclaimed	167		167	
Interest Received	619		581	
		1,286		1,248
Expenditure				
Courses Paid		(834)		(784)
Surplus of Income over Expenditure		452		464

Balance Sheet — 31 March 1999

	1999 £	1998 £
Current Assets		
The Charities Deposit Fund	9,917	9,583
Creditors		
The Friends Account	(328)	(446)
	£9,589	£9,137
Represented by:		
Income / Expenditure Balance B/F	9,137	8,673
Surplus of Income over Expenditure	452	464
	£9,589	£9,137

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.
The Dean of Canterbury (Very Rev. Dr John Simpson, M.A.).
Professor Alfred Smyth, 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., F.S.A.
*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.

Kent Archaeological Society:
Cllr Paul Oldham

Heritage Projects Limited:
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