

MOLAS 99



MUSEUM OF LONDON

Archaeology Service

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Foreword

MOLAS 99

annual review for 1998

A year ago, the Museum of London decided to place archaeology at the heart of its public activities. During the year MoLAS played a major role in this shift of emphasis: significant finds such as the Saxon remains at the Royal Opera House and the incredibly varied sites of the Jubilee Line Extension Project have been brought to the public through publication, exhibition, site tours and the media. In achieving this, our clients, without whom archaeology would be a poor thing, have supported us both in cash and in kind. I would like to thank them on behalf of everyone in London who is interested in our past.

Next year MoLAS will develop these ideas further, opening displays at London Bridge Underground Station and at the Royal Opera House. These will allow many hundreds of thousands of people to share in our discoveries. As I write, MoLAS is larger than it has been for eight years. A boom in city development is offering the Museum opportunities to reveal more and more about our fascinating past; 1998 was a year of great successes, and 1999 promises to be even better.

Simon Thurley

Director, Museum of London



Dr Simon Thurley on the site of the Royal Opera House with MoLAS archaeologist David Bowsher and surveyor Duncan Lees.

Introduction

1998 will surely stand out as one of the most significant in the history of archaeology in London: MoLAS was internally reorganised to reflect an even greater client-focus; our finds, environmental and conservation staff were established in a new, independent section in the Museum; the Greater London Archaeological Archive was reopened and plans laid to develop it into a major Research Centre; and we saw the beginnings of a small boom in development activity, particularly in central London.

Through all this, the 180 people in MoLAS – archaeologists and project managers, geomatics specialists, photographers and graphic illustrators, geophysicists, geoarchaeologists and IT experts – have worked together unstintingly to provide keen, commercial archaeological services to the property world. They have carried out risk appraisals for prospective developments, assessed archaeological significance, represented clients in discussions over mitigation options, excavated, recorded, analysed and interpreted archaeological data; altogether, they have worked on just under 300 archaeological projects – across Greater London, south-east England and overseas. This abundance of data has led to dramatic discoveries – not only in the field, but also in our post-excavation researches, as this Review will illustrate.

The Museum of London Archaeology Service has, as one of its ultimate aims, to understand and tell the stories of London's past. As ever, the challenge is to meet the requirements of the planning process efficiently and cost-effectively, while designing innovative, focused and questioning archaeological projects which really lead to a greater understanding of our past.

In *MoLAS 99*, we concentrate on a number of the many themes which consistently command a central place in London's histories, drawing on the projects carried out during 1998. *MoLAS 99* offers a view on part of London's hinterland, and highlights new discoveries about how its road network and buildings developed. Several projects in 1998 have contributed to our understanding of how London has been defended through the ages. Importantly, we have learned much more about the people of London's past: about what people ate and how they subsisted; how they traded and what they traded; about what people did with their rubbish, and how, through time, Londoners have buried their dead.



Roman harness pendant of the 1st century AD from 1 Poultry.

Therefore, in this *Review*, rather than present a chronological or geographically linked account of our work in 1998, we have taken a wider view, to consider – very broadly – what we have *really* learned during the year. What continues to strike us is quite how much we have yet to discover, interpret and understand about how London and its people have evolved into the amazing city we see today.

None of this would have been possible without our 330 clients during 1998, who are listed on page 53. I am delighted to take this opportunity to express MoLAS's appreciation for their financial, practical and, indeed, philosophical support. We are also very grateful to colleagues in English Heritage, for their continuing sponsorship of the ambitious Greater London Publication Programme, and to colleagues in the London Boroughs and the City of London Archaeological Trust. The Museum of London Archaeology Service, thanks to the very hard work and commitment of its staff, has had a fine year.

Taryn Nixon
Managing Director, MoLAS

1

London's



thoroughfares

Prehistoric trackways

One of the most important archaeological discoveries of the last decade has been the palimpsest of buried, prehistoric landscapes along the Thames estuary in eastern London. The area is now clearly recognised for its richness as an archaeological resource and, indeed, its rich resources in ancient times. The area is now seeing an active resurgence in modern redevelopment and, in particular, the regeneration of brownfield sites.

On either side of the Thames, archaeologists have uncovered a number of prehistoric trackways crossing the marshy land. One, at Bramcote Green in Bermondsey, was reported on in *MoLAS 95*, and others have been found east of the River Lea, for instance at Dagenham and Barking. These have been dated broadly to within the second millennium BC, during the Bronze Age.

An evaluation at Atlas Wharf, Westferry Road, Isle of Dogs (Persimmon Homes) has since revealed another timber trackway within its buried prehistoric landscape. This trackway was more substantial than any previously known in London. Indeed, the structure itself was much more complex and extensive than was originally indicated by evaluation (trial work). Analysis is still at a preliminary stage but it appears that the site lay astride a tributary stream leading north-westwards towards the Thames. Fluctuations in the river level resulted in the area becoming increasingly marshy from at least as early as 4000 BC. The structure formed part of a timber platform, probably constructed between 1500 BC and 1000 BC, on the edge of the now partly infilled stream channel, and lay towards the top of a peat formation which in places was up to 4m thick.

Only a few artefacts were recovered from the vicinity of the structure, but these included a pair of oak wedges – perhaps used for splitting the logs to build the platform. The discovery of such wedges in close association with Bronze Age woodworking debris is currently thought to be unique in Britain and Ireland.

The platform was constructed from alder, ash, oak and birch – which would have been felled nearby. The structure seems to have seen at least two major phases of building – perhaps separated by one hundred or more years – with the later phase of construction showing



Timber was used not only to create trackways across the prehistoric marshland, but also for building and living platforms. This is the latest of 4 successive phases of Bronze Age timber platforms at Atlas Wharf, Tower Hamlets, E14, being recorded by John Minkin.

signs of a need to raise and consolidate the structure on a number of occasions. It is possible that the level of the surrounding marsh was rising so quickly that it threatened to engulf the structure.

Examination of the environmental remains from the site will reveal details of the contemporary ecology. On-site observations suggest that the site was subject to a series of floods and must have been situated in marginal wetland.

The function of the structure is something of a mystery ... and perhaps likely to remain so. The relative paucity of artefacts associated with it suggests that it was probably not a habitation platform, as such sites usually produce much more domestic and food waste. It is conceivable that it could have been used to provide a hard standing within the marsh for people to exploit the resources of the area, such as fish, timber and wildfowl.

Roman roads

The construction of roads, in many people's minds, is synonymous with Roman civilisation, and the imposition of a road network certainly played a central role in the 'Romanisation' of Britain. The routes of the major roads connecting the urban centres of Roman Britain are relatively well identified and many underlie modern highways. On a more local level, however, much remains to be discovered about the density and complexity of the Roman road system. This is particularly true of the Greater London area: the street layout of the Roman city itself is still poorly understood, let alone the many roads that would have served the

Richard Turnbull exposing the rammed gravel surface of the Roman road 'Stane Street' in Merton.





SUPPORT SERVICES

MoLAS's archaeological work is supported by its own Finance office, IT support team, Human Resource management, secretarial assistance and tools/equipment management, here pictured in what would have been the centre of London's Roman amphitheatre, excavated by MoLAS 1987-96. In the background is the early 15th-century Guildhall, built by the master mason John Croxton.

Sam Taylor, Su Nandy, Liz Brock, Richard May, Prasun Amin, Stephen Conquest, Julie Corpuz, Gary Warr Not pictured: Betty Gunn, Fiona MacDonell, Harry Matthews, Joanne Thomas

thoroughfares

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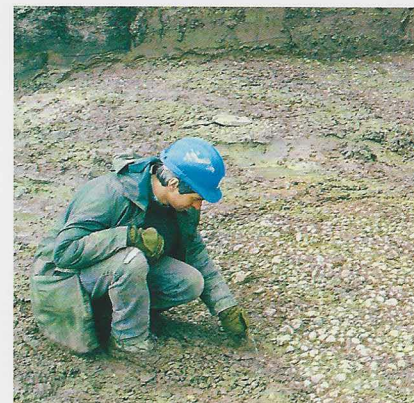
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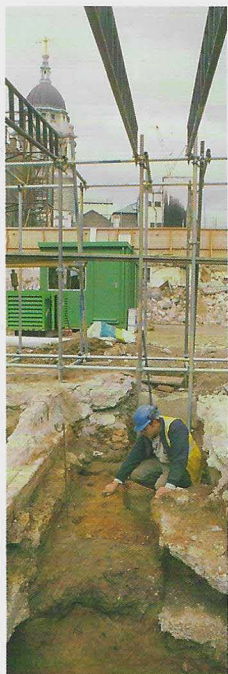
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Richard Turnbull exposing the rammed gravel surface of the Roman road 'Stane Street' in Merton.







The pattern of development along Roman London's main roads continues to emerge. Excavations at Christchurch Court (formerly Sudbury House) in Warwick Lane, EC4 (Pillar Property Investments plc) revealed evidence of Roman earth and timber buildings and a possible yard area adjacent to the Roman town's main east-west street. Andy Daykin is shown here working on the site.

agricultural communities of its hinterland. But excavation continues to fill in gaps in our knowledge and over the past few years post-excavation analysis of MoLAS sites, within the Roman city at least, has led to the discovery of several new roads.

Inside the Roman city, the main east-west road, which ran from the forum (beneath modern Leadenhall Market) to leave the settlement at Newgate before continuing on to Silchester (*Calleva Atrebatum*), has been extensively examined in recent years, most recently at 1 Poultry, EC2 (Alstadtbau Ltd for City Acre Property & Investment Trust and Advanta Management AG). This road is generally accepted as predating the first forum, and as forming one of the earliest elements in the laying out of London. Roman roads in Greater London were generally built of rammed gravel. (Gravel deposits, mostly laid down as river and sea levels fluctuated during the last Ice Age, are both plentiful and widespread within the region.) Once the course of the road had been surveyed, construction began with the laying down of a solid slab of brickearth; then compacted gravel was laid on top of this foundation to form a roadway about 9m wide. This road, as seen at 1 Poultry, continued in use until at least the later 4th century, by which stage the road surface had been relaid 12 times and had risen 1.19m in height. The gravelled surface was cambered to encourage rainwater to run off into roadside drains.

Main roads appear to have been up to 9–10m wide. Outside the Roman city, a portion of Watling Street (the road to St Albans) has been recorded at Brockley Hill where gravel metallings 9.40m wide survived. The main road approaching London Bridge from the south was at least 7m wide, and in places was constructed on a timber raft to prevent subsidence as it crossed the marshy ground close to the river. Stane Street (the road to Chichester) has been excavated at the Merton Priory site (J Sainsbury Developments Ltd). Here the gravelled roadway was somewhat wider, broadening from 12m to 16m as it approached a ford across the River Wandle. Two successive road surfaces each about 0.13m thick were identified. The later road surface was even wider than the first. In east London, a section through the road to Chelmsford was recorded in Stratford in 1998 (Safeway Stores plc). Several successive surfaces of a gravel road at least 6.70m wide were recorded.

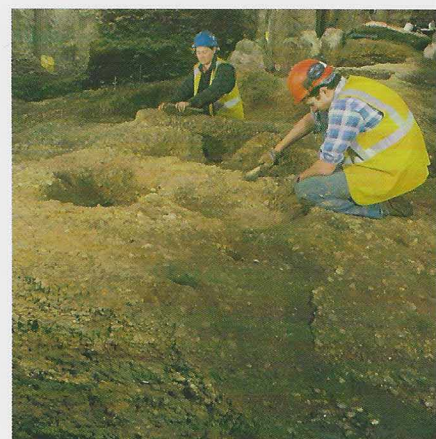
Post-excavation analysis of the 1 Poultry site in the City is throwing considerable light on some of the lesser streets within Roman London. During excavation a junction was discovered between the main east-west road and three side streets. In its original form, before AD 61, this junction was simple: one side street, 4.80m wide, left the main road, heading west/north-west at an angle of about 23°, towards the site occupied by the Roman fort from the early 2nd century. Where the main road and side street met, there was a small, triangular, gravelled piazza. In the AD 70s, two additional side

streets, each 5m wide and running north-south, at right angles to the main road, were added on to either side of the junction. It is becoming increasingly clear, when this evidence is combined with that from sites such as Milk Street and Watling Court, that a width of about 5m was standard for these subsidiary roads. It is also apparent that the Roman street plan did not conform to a rigid rectilinear grid such as was often imposed on early Roman cities. The diagonal road seen at 1 Poultry was also recorded at King Street, where it met another diagonal street heading north-east at a crossroads.

All these roads were cambered and flanked by roadside drainage. In their earliest forms, during the 1st century, these drains were often well-constructed timber box drains, neatly set into trenches along the road edges. While many later drains, put in to replace the system over the passage of time, have been robbed out in antiquity, it is clear from the archaeological evidence that by the 3rd century roads were often flanked by poorly constructed ditches whose sides were retained with a variety of *ad hoc* structures reusing available scraps of wood. The ditches would have been bridged over by planks to allow access to roadside properties.

There is quite a contrast between the meticulous and relatively frequent resurfacing of the roads themselves and the remarkably casual approach to the drains. It may be that, while the roads within an urban settlement were maintained by the relevant public authority, each private landlord had responsibility for the stretch of roadside drain in front of their property. The roadside ditch at Well Court adopted an erratic route down the western side of the street, apparently altering its course slightly in front of each property. At 1 Poultry, when a substantial masonry building was constructed in the late 2nd century, the stretch of the roadside drain in front of it was completely refashioned as a tile-arched culvert integral to the fabric of the building.

The gravel roads of Roman London served the city and its hinterland for 350 years. Much has been learnt about them as a result of recent archaeological work. Much more, however, remains to be uncovered.



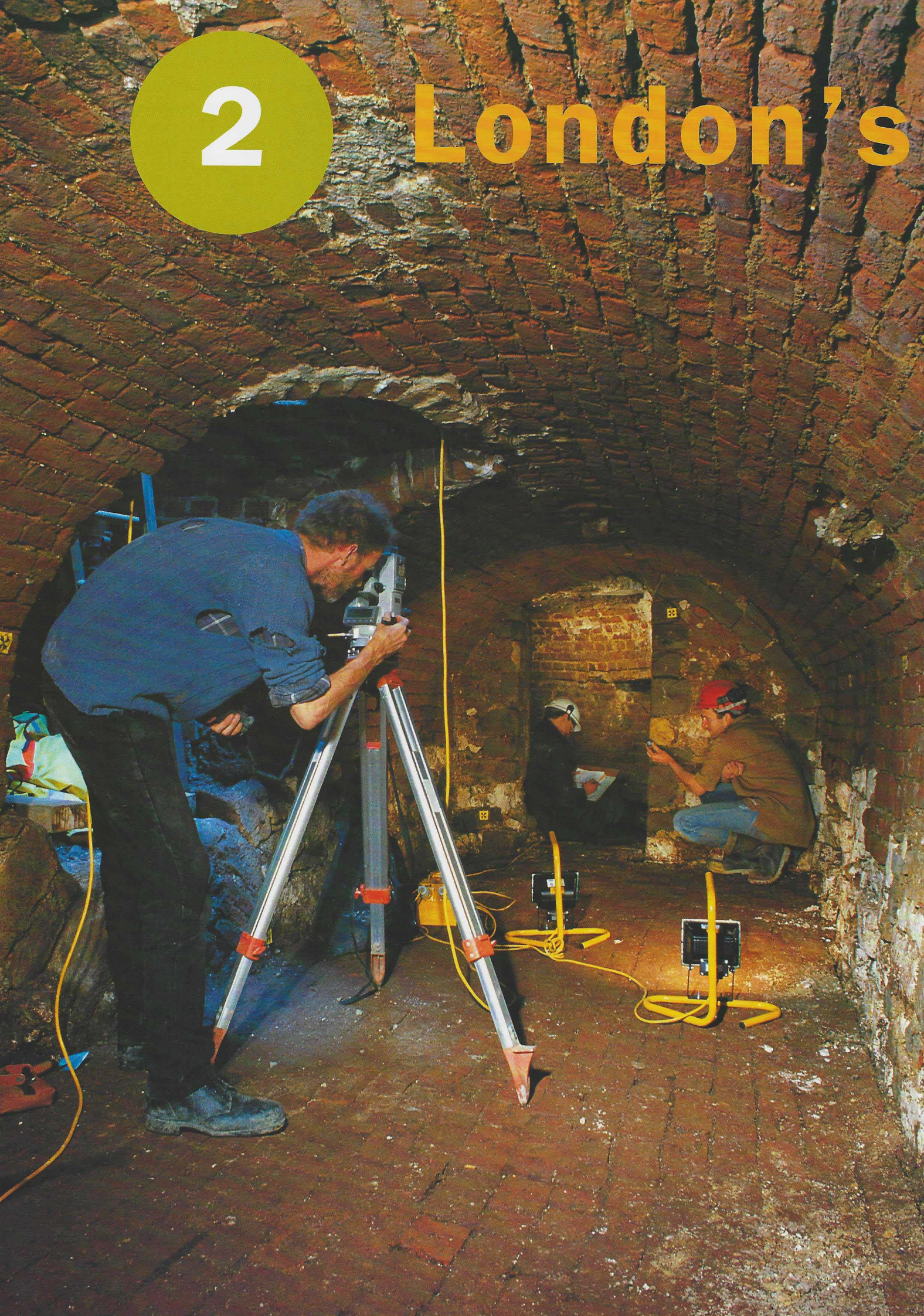
Sarah Jones and Duncan Lees working on the compacted gravel surface of the major Roman road through the city, revealed at 1 Poultry.



Archaeologists collected alluvial samples from the Bankside foreshore of the Thames – London's most famous thoroughfare – on the site of a new pontoon (London Borough of Southwark). Subsequent analysis suggests a neolithic date for the alluvium, with Iron Age erosional features cutting it.

2

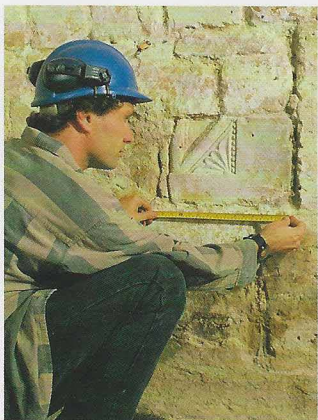
London's



buildings

MoLAS surveyors Steve Every and Duncan Lees recording the medieval and post-medieval remains of the crypt under St Lawrence Jewry.

Our understanding of the various early phases of building at St Paul's Cathedral was further elucidated. Here Robin Wroe-Brown is measuring a stone decorated in 12th-century style, reused in the wall of St Paul's Cathedral crypt. It would have been part of a doorway in the medieval cathedral.



One of the most important aspects of many of MoLAS's investigations (both below and above ground) is the recovery and recording of structures with a wide variety of functions, from housing to places of work and from defence to places of worship. The remains of buildings of timber, wattle, timber frame, and then of stone and later brick, are routinely excavated and recorded on many of our urban sites.

In 1998, excavations at 13–21 Eastcheap, EC3 (Taylor Woodrow Developments Ltd) revealed the remains of a number of Roman timber-framed buildings. The site lay between the Roman forum and the port waterfront to the south. The earliest evidence of occupation on the site was a sequence of successive timber-post buildings, with wattle and clay walls, and open or courtyard-type spaces between them frequently used as rubbish dumps for enormous quantities of oyster shells (the sort of midden dump now thought of as characteristic of the Roman quay area). The building foundations included the remains of two pottery vessels, which might have been votive deposits in a family or household ritual. Some of these buildings had burned down individually at different times but all the buildings in the latest sequence appeared to have been destroyed by a single fire. A glass flask, which contained oil used for bathing, was found whole but partly deformed by the heat of the fire. Later activity on the site – which had cut through the timber building sequence – was evidenced by pits, presumably dug in what would have been the

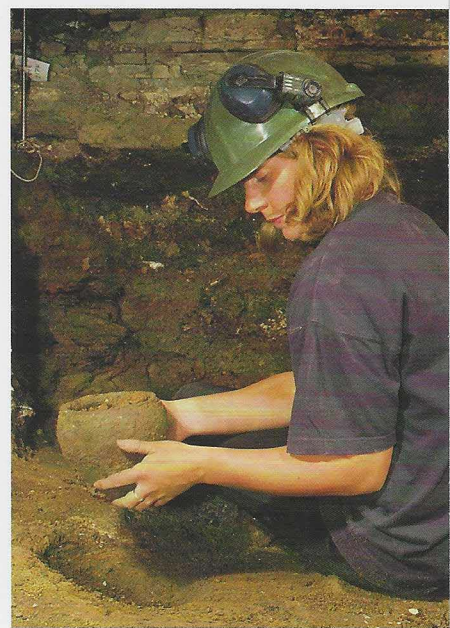
back yard or garden of a building fronting on to a road to the south. Two timber drains were found cut into the pits. On the east side of the site a corner of a later, large masonry building was discovered. Its foundations were mortared ragstone walls, free-standing in a large square cut. The outer construction trench was backfilled with weathered London clay and a layer of clay was laid internally, possibly as waterproofing.

At 40–43 Bow Lane and 67–71 Watling Street, EC4 (The Southern Properties Group) an extensive Roman mortar floor was recorded, sealed by substantial fire deposits dating from the Hadrianic period (early 2nd century AD). The structures rebuilt after the fire consisted of timber-framed

buildings with painted plaster walls. On the very southern edge of the site, part of a Roman road was discovered, likely to be the precursor to the present-day Watling Street.

In Southwark, at 8 London Bridge Street (London Bridge Hotels Ltd) Roman deposits included a furnace and part of a timber-framed building, the alignment of which reflects the Roman road to the west (Borough High Street). Both the building and the furnace appear to have been in use in the 2nd century AD, and destroyed by fire in the early 3rd century AD. In a second trench a metallised surface was sealed by occupation deposits. These may have been the remains of a masonry building foundation aligned east–west and in use no earlier than the early 2nd century AD. This building was robbed of its masonry in the late 2nd century AD. The remaining sequence consisted of at least three phases of timber-framed buildings, with brickearth and gravelled surfaces and postholes, spanning the late 2nd to early 3rd century AD.

Excavations at the Spitalfields Residential site (St George plc) show clearly the shift during the 16th and 17th centuries from using stone as the main building material to using brick. Until 1538 the site lay within the gardens of the Priory and Hospital of St Mary Spital. Stone buildings, possibly the prior's stable and the east end of the canons' infirmary, were erected in the 15th century. After the priory was dissolved in 1538, large houses were built on the site. These were built of brick – although some stone from the old priory buildings was reused, including fragments of a late medieval rose window. The brick was the characteristic orange or red Tudor type. The earliest of these buildings had a brick floor, and its own garderobe and a fireplace built into the east side of the building. It was extended to the north and east during the later 16th and 17th centuries. A series of brick boundary walls divided the former monastic garden and pond into several different



Diane Walls lifts a complete pot, found beneath the floor of an early-Roman building at 13–21 Eastcheap, EC3.



properties fronting on to the adjacent streets. Many of the houses also had their own brick cesspits which were fed by a network of drains.



A pot used as a soakaway in a 16th-century brick floor at Lamb Street, Tower Hamlets, E1; the excavators are Nick Holder and Val Griggs.

In the early years of the 18th century much of the modern street pattern around Spitalfields was laid out; new houses were built from much darker red brick and their floors were laid directly over the floors of the earlier houses. About 2m of dark ashy material was then dumped in the streets and back gardens, turning the lowest storeys of the new buildings into semi-basements. Previous phases of work have found the foundations of a chapel built in the early 18th century as well as many more houses. During this period Spitalfields was a rapidly expanding suburb and became the home to many immigrants, including Huguenot refugees from the Continent.

At 49–61 High Street, Croydon (London and Regional Estates), a 16th-century cellar, probably a domestic property, was found. The cellar was 2m deep and had evidence for a doorway and a plaster floor; the cellar walls were constructed from chalk with some Reigate stone and flint. Later in the 16th century the cellar was subdivided by a chalk wall into two rooms. Another chalk structure, probably built early in the 16th century, lay to the east of the cellar. This building had floor and walls rendered with a similar mortar. Brick and flint walls were added in the 17th and 18th centuries.

Excavations were also carried out in Preacher's Court within the precincts of the London Charterhouse (Governors of Sutton's Hospital in Charterhouse). Charterhouse contains a fascinating collection of buildings, reflecting the complex history of a site that was, in turn, a burial ground for victims of the Black Death, a Carthusian priory, a Tudor and Elizabethan palace, and a charitable school and hospital.

A series of brick and masonry walls lay immediately below the existing, modern courtyard surface, badly disturbed by the foundations of 19th- and 20th-century brick structures. These walls formed two ranges of

buildings, one oriented north-west to south-east against the western boundary wall of the Charterhouse precinct, and the other oriented south-west to north-east, projecting across Preacher's Court from the boundary wall.

The northern range, constructed in about 1550, survived in the form of a number of internal brick partitions and clay floors. It appears to have been a service building related to the conversion of the priory into a mansion after the Dissolution. It was substantially rebuilt at some time after 1580 when a new brick frontage and external staircase were inserted, the internal walls removed, and a drain and cesspit added to the rear. This phase of building may relate to the early years of Sutton's Hospital, when Charterhouse tradition recalls that 'monastic barns' were converted into the 'Brothers' accommodation. At a later date the range was divided into a number of rooms with brick floors.

The southern range, which was probably destroyed by fire in the 17th or 18th century, consisted of a single-celled building of masonry construction with the exception of the gable to the north-east, which had been rebuilt in brick. The building had a cobbled floor and a brick-lined cesspit against one wall. Prior to this, the building extended further to the north-west. Excavated evidence suggests that this building had a brick drain running asymmetrically along its length under a suspended timber floor. It is not yet clear whether this relates to post-Dissolution conversion or to the latest phase of the monastery, but it does suggest that the building could have been used as stables. The earliest form of the building, certainly monastic, was a narrow masonry range, with poorly preserved floors of beaten earth and mortar, divided into at least two rooms; it appears similar to some of the barns in the outer court of Mount Grace Priory in North Yorkshire. Projecting the alignment of this range, it may have extended to the north-west corner of the great cloister. It was contemporary with the construction of a length of monastic precinct wall, and is provisionally dated to after 1480 – remarkable in that the Carthusians were ordered to enclose their precinct by a Visitation of 1405, to prevent local citizens, particularly women, from entering the monastery and the church. The idea that some of this work was not completed until much later is supported by the fact that the chapel in the outer (public) cemetery was only consecrated in 1481.

Medieval and post-medieval London was dominated by several important religious houses, and MoLAS continued its major programme of research into London's monasteries, including St Mary Clerkenwell, Bermondsey and St Mary Stratford Langthorne. New fieldwork took place at Charterhouse: beneath the 19th-century buildings, archaeologists Carrie Cowan and Malcolm McKenzie are excavating an outbuilding of the Carthusian monastery.



From the site at Monument House, EC3, this late 16th-century chimney mantle dressed from Reigate Stone is a very late example of this tradition of fireplace construction that originated in the medieval period. The use of Renaissance ornament is unusual but represents a development of this long tradition.

The earliest phase of structures identified were two insubstantial buildings with brickearth floors and sill walls, possibly to carry a timber-framed superstructure. Their function is unclear but they probably belong to the period immediately following the foundation of the priory in 1371, when the great cloister and the main conventual buildings were under construction.



Part of a Roman tessellated floor which had collapsed into a later medieval rubbish pit at Gateway House, Cannon Street, EC4, being excavated by Neil Adams.

At Monument House, Monument Street, EC3 (Berkeley Homes (Essex) Ltd) the Roman levels were sealed beneath an extensive and well-preserved range of medieval cellared buildings which were destroyed in the Great Fire of London (1666). It is likely that some of these formed part of Lombardes (Lombards) Place, an imposing merchant's house which is known to have occupied part of the site adjoining St Botolph's churchyard from at least the 15th century.

The walls of the cellars were made principally of dressed chalk blocks and survived in places up to the base of the vaulting for the ceiling at a height of 1.56m (5ft). All the cellars had brick floors added at a later date. The carbonised remains of two internal wooden staircases, giving access to an exterior courtyard, were also found. Many interesting internal modifications, probably of late 16th-century date and mostly in brick, were present in each of the eastern range of cellars. Perhaps most unusual is that the smaller southern

cellar had been converted from a chalk-lined cesspit, by raising its floor level 1.50m (4ft 9in.) and installing an internal stair. In the northern cellar a rectangular brick substructure was added against the west wall to support an internal chimney stack and fireplaces on the upper floors. The remains of a substantial section of a rare late 16th-century chimney breast, carved with fine decorative foliage work, was found in the Great Fire destruction debris close to this feature.

Each of the brick cellar floors had at least one complete pot set into and flush with their surfaces. These pots were all located at the edges of the cellars close to doorways and may have been inserted for drainage.

Finds collected from the destruction fill in the cellars would have originated mainly from the buildings' upper storeys, and provide very useful information about the status of the buildings. Quality finds included imported Spanish *cuerda seca* floor tiles, manufactured in Seville around 1500, and

Dutch floor and wall tiles. By far the most numerous finds were internal fixtures and fittings including iron door locks, padlocks, keys, hinges and fire grates. Evidence for post-Fire buildings included an 18th-century house.



Ian Blair with one of a number of pots found set into the brick floors of a range of cellars at Monument House, Monument Street, EC3, destroyed in the Great Fire of London.

At 36 St Andrew's Hill, EC4 (GAD Holdings) in the City, a watching brief found three fragments of truncated chalk and ragstone masonry forming part of the south-west corner of the King's Great Wardrobe complex. A tiled floor sealed by fire debris was also recorded in section. This probably represented a later phase of surfacing within the Wardrobe, and subsequent destruction in the Great Fire. Further parts of the King's Wardrobe were found at 53–57 Carter Lane, EC4 (Wardrobe Court Ltd) where two phases of arched chalk, ragstone and flint foundations were constructed over a former stream. These probably formed the south-eastern corner of the King's Wardrobe.



Excavations in progress at Monument House, EC3. To the left and centre are the chalk footings and cesspit which are thought to be part of Lombard's Place, an imposing 15th-century merchant's house. The line of the Roman culvert (see London's rubbish) is beginning to become apparent across the top right of the picture.



GEOMATICS

The geomatics team with St Paul's Cathedral in the background, where MoLAS continued its survey and analysis of the pre-Fire construction. During the year, the geomatics team focused in particular on four areas of development: extending the use of Reflectorless Electronic Distance Measurement in standing building surveys; developing MoLAS's use of Global Positioning Systems – in both archaeological and environmental projects; training even more field staff in the use of hand-held data loggers; and extending the analytical applications of Geographic Information Systems on MoLAS publication projects.

Kate Pollard, David Bentley, Duncan Lees, Sarah Jones, Peter Ratxioh, Jessica Cowley, Dave Mackie. Not pictured: Josephine Brown, Marek Ziebart.

3

London's



defences

In Kent, a medieval moated manor was excavated in the autumn of 1998 at Parsonage Farm, near Ashford, in advance of construction of the Channel Tunnel Rail Link (Union Railways (South) Ltd). The sides of the moat were partly revetted in stone, probably more for prestige than defence. The site was very wet – perhaps why the manor was abandoned at the end of the 13th century.

River defences

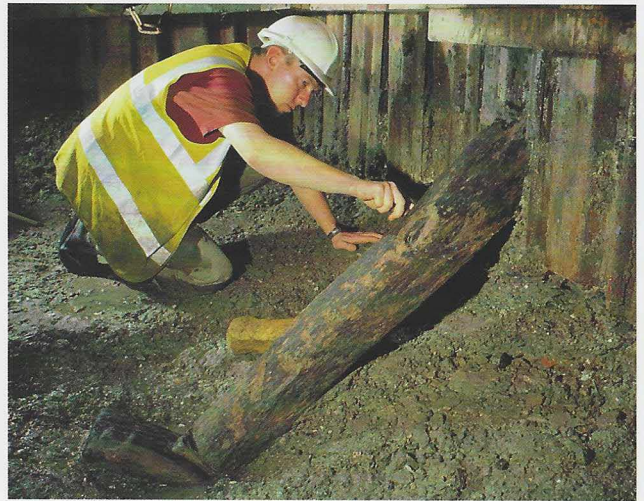
The investigation of London's river defences has long been one of the central themes in recording London's archaeology. River levels have been sporadically rising over the last 10,000 years but until around 2000 years ago man had little influence on the natural flow of the Thames. After the establishment of the Roman city, excavations have demonstrated the continuing need both to provide London with a working port and to protect it from flooding. The progressive reclamation and revetting of the river has been most widely seen in the City and in Southwark. Indeed, reclamation in the City is known to have encroached into the river for a distance of about 100m since the Roman period.

Two recent pieces of fieldwork, one in the City and one in Southwark, have expanded our knowledge of London's river defences.

Recording along the Tower of London foreshore prior to the rebuilding of the Tower Pier (Port of London Authority) involved two complementary foreshore surveys, including an auger survey. The location of a section of medieval riverside wall was discovered. In addition, numerous post-medieval foreshore features have been identified and recorded, including barge-beds, revetment structures, artefact scatters and drainage features.

In Southwark, a site at Horseshoe Wharf (Oakmayne Properties Ltd) was situated on the north side of Clink Street and is incorporated within the Winchester Palace Scheduled Ancient Monument. The northern side of the site fronts on to the Thames. During the 1980s the site of Pickfords B was excavated, immediately to the east of Horseshoe Wharf where a series of east-west waterfronts dating from the 12th century to the 15th or 16th century were uncovered.

The 1998 work was limited to the excavation for two 5m x 2m wide pile caps: one on the north side of the site and one on the south. The northern trench was designed to relocate the masonry river wall, record it, and see if any further riverside structures survived



between it and the present wall, while the southern trench was situated so as to avoid the wooden revetment and tie-backs predicted to pass through the site from the Pickfords B site.

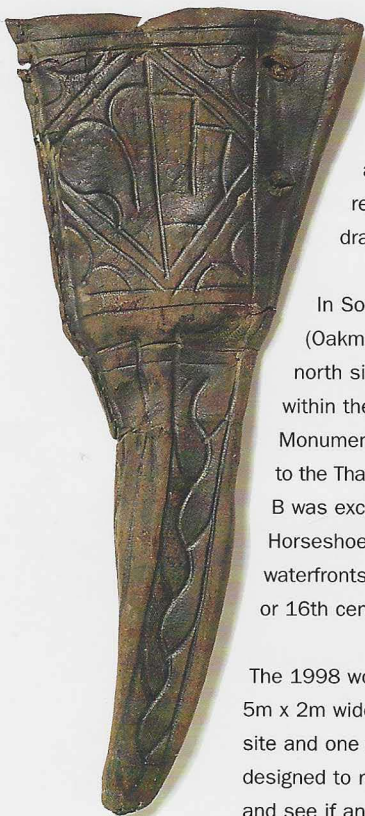
The foreshore deposits were cut by a substantial, wooden front-braced revetment built in the late 12th century. The construction methods of this revetment were of the highest standard and the base level indicates that it may originally have been 3m high. By the early 13th century the revetment required a series of additional front braces, these being simple struts and wedges. A built waterfront in this location had not been previously found on Clink Street. As the levels correspond to a similarly dated revetment on Pickfords B it is notable that the primary, late 12th-century waterfront for Winchester Palace was not a linear feature but had inlets and steps along its length.

Silting and dumping dating to the 13th century were up to 1.20m thick. All deposits contained a lot of broken roof slate and domestic waste.

Subsequently, a massive build-up of material, probably related to the construction of a mid 14th-century revetment, was presumed to survive between the two trenches. The area remained open and, during the late 15th/early 16th century, a large, open gutter was built which appeared to be associated with an opening in a new, masonry, river wall recorded in the northern trench. This masonry river wall was also recorded in the Pickfords B site and dated to the late 15th/early 16th century. It was constructed of large rectangular ragstone blocks and its top had been raised twice.

Medieval Southwark was home to many fine mansions, religious houses and palaces. Kieron Heard is here seen cleaning a front brace for an early 13th-century addition to the 12th-century revetment associated with Winchester Palace, excavated at Horseshoe Wharf, Southwark, SE1.

13th–14th century leather knife scabbard found on the site at the New Merrill Lynch Regional Headquarters, Newgate Street.





The Roman city wall

When London was established around AD 50, its visible defences consisted of little more than a large perimeter ditch and remained so for the next 150 years until about AD 200, when the landward portion of the city was encircled by a monumental wall. This was some 3000m long, and entered by five gates (Ludgate, Newgate, Aldersgate, Bishopsgate and Aldgate), all of which are still nodal points in the modern road network. The sheer scale of this project is illustrated by the fact that it required over 30,000 cu m of stone and over one million squared ragstone facing blocks – all shipped by sailing barge from north Kent.

Quite why the city wall was built is not known. It is debatable that at this time southern England faced no serious internal or external threats, and the fact that the river frontage (the port) remained undefended until the late 3rd century suggests that the city wall was erected for civic reasons, perhaps in response to an edict issued by the Emperor Septimus Severus (AD 193–211), who arrived in Britain during AD 208 to campaign in Scotland and died at York in AD 211. During Severus's short reign a number of military bases including Birdoswald, Chesters, Housesteads and York were all rebuilt, so he may well have decided to fortify the provincial capital of London for political or strategic reasons.

Later on in the Roman period the defence of London clearly became a military and political necessity, as the internal and external threats to the security of the city increased. During the late 3rd century the river frontage was defended by a continuous wall, and during the late 4th century a series of half round towers or bastions were added to the eastern portion of the city wall. At about the same time the internal earthen bank was enlarged, and a wide external defensive ditch was dug along the entire landward portion of the wall.

The Roman city wall is constructed of two facing courses of squared Kentish ragstone blocks, interrupted at regular intervals by bands of red ceramic tiles; its core is composed of mortared rubble. Originally the wall was about 4m high and topped by a walkway, which was fronted by a low wall surmounted by battlements. Internally, an earth bank reinforced the wall. Due to centuries of redevelopment only a few small stretches of the Roman city wall can be seen above ground level today. However, several fragments of city wall are preserved and displayed within the basements of modern buildings.

The most impressive of these is the portion excavated in 1909 on the site of the new Merrill Lynch Regional Headquarters at Newgate Street, EC1 (Merrill Lynch Europe Property Ltd) and subsequently preserved and



Monitoring the augering of new piles through the infilled medieval city ditch at the New Merrill Lynch Regional Headquarters, Newgate Street. The upcast from the piles contained numerous medieval artefacts including a decorated floor tile and a leather knife scabbard.

displayed within a specially constructed chamber at basement level. This was a very early example of preservation *in situ* at a time when scant attention was paid to our archaeological heritage, and it is now a Scheduled Ancient Monument.

The current redevelopment of the site is an opportunity to improve public access to the monument and provide an illustrated display to explain what the public can see. MoLAS has undertaken a detailed condition survey of the city wall and the adjoining medieval bastion (see below). This work has involved the preparation of a stone by stone, three-dimensional image of the entire monument, produced by digitising a network of detailed photographs in three-dimensional space by a survey of hundreds of photographic targets. Using a CAD (computer-aided design) program these digitised images or tiles have been 'draped' over the network of photographic targets. The data have then been annotated to show features like the geology of the masonry or the areas of mortar loss due to dampness. This is the first time this technology has been used to record and monitor London's city wall.

Cripplegate Fort

The area of London's Roman fort has been intensively investigated during recent years and was augmented, in 1998, through excavations at Barrington House on Gresham Street, EC2 (Stanhope plc) and at 29 Gresham Street (Standard Life Assurance Company).

Evidence of the Roman fort was first recorded by Professor Grimes during his post-War investigations in the City of London. The fort was a typical 'playing card' shape: rectangular with rounded corners. Gates were located centrally on each side and connected by a system of roads. The total area of the fort is estimated as 5ha. Its large size suggests that it would have housed a legionary attachment and may have provided

At 6–7 Crescent, EC3, the Roman city wall survived to a height of 2.45m. Its full height may originally have been 4m, or 6.5m including crenellations. This shows the outer face of the Roman wall, based on a projecting plinth of red sandstone blocks; courses of well squared Kentish ragstone above are separated at intervals by levelling courses of tiles. The upper part of the wall (not visible) was rebuilt early in the medieval period.

Superimposed are some of the artefacts from the site at Shelley House which add to the picture of life in and around the Cripplegate Roman Fort: Top: A late Roman face-pot. Centre: A sherd of Roman pottery found in a medieval pit with lettering (probably the owner's name) scratched on the base after firing. Bottom: Roman painted wall-plaster from one of the Fort barrack blocks.

London's medieval city ditch having been intentionally infilled, the deposits of dumps and rubbish were then consolidated in places, using timber piles. The tops of the piles seen here, at the site of the new Merrill Lynch Regional Headquarters, supported a 16th-century masonry cellar wall.



an additional military presence for the provincial governor. It was situated at the north-west corner of the city and formed part of the walled Roman defences which later enclosed the city. Within the fort's defensive wall was an internal bank and intramural road with drainage ditches. The remains of several buildings, probably barrack blocks, flanked by metal surfaces were also uncovered.



The robbed-out wall of the Cripplegate fort, at the left of the picture, with its associated defensive ditch to the right, being recorded at 100 Wood Street by Portia Askew and Robin Wroe-Brown.

Recent excavations have recorded additional important evidence of the internal layout of the fort. In 1995 at Shelley House, EC2 (Royal London Mutual Insurance Society) the foundations of three large rectangular masonry buildings with associated alleyways were revealed. At Garrard House, EC2 (Legal & General Management Property Ltd) in 1996, the truncated remains of the main north-south road leading to the southern gate of the fort were recorded. This road connected the fort with the city to the south. In 1996-7 a large excavation at 100 Wood Street, EC2 (Helical Bar (Wood St) Ltd) uncovered the remains of at least three large masonry buildings, three roads and associated drainage ditches, including the main north-south route into the city, the *via praetoria*, which connected with the road at Garrard House and the intramural road which ran along the inside of the wall. The location of the external southern fort wall was also recorded during this excavation although the structure had been removed in antiquity.

Post-excavation analysis has suggested that the buildings were probably barracks – although the lack of specific finds means that it has not been possible to define activity taking place within the buildings. As would be expected from a Roman military establishment, the internal area of the fort had been kept extremely clean: refuse produced from the garrison stationed here was disposed of elsewhere, and the roads and ditches had been kept clear of rubbish. The fort is believed to have been constructed in the 2nd century and was probably out of use by the end of the 3rd century. The severity of truncation has removed much of the evidence for activity in the later Roman period. However, there is

some evidence that the area of the fort continued in use in this period, but for domestic rather than military purposes.

Taken together, the recent excavations have been able to add to and revise the layout of the fort first proposed by Professor Grimes. The results of the post-excavation analysis, including the reoccupation of the fort in the medieval period, will be published as part of the MoLAS Monograph series.

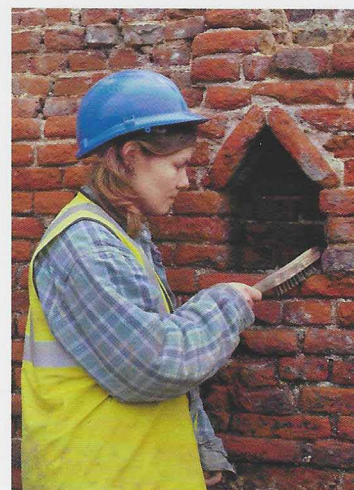
The medieval City wall

When the walled Roman city was reoccupied by the Saxons around AD 900 the city walls and gates were refortified and new defensive ditches dug. During the late 12th or 13th century a series of rubble-built hollow bastions were added to the western portion of the city wall. John Stow, the famous London historian writing in the 1600s, noted that in 1257 Henry III 'caused the walls of the city, which were sore decayed and destitute of towers, to be repaired'. Half of one of these bastions survives at the new Merrill Lynch Regional Headquarters site near Newgate. During the medieval period the city wall was flanked by a broad wet ditch, which, although it was periodically scoured out, served as an unofficial rubbish dump, and was otherwise left to silt up. Excavation of the 13th- to 15th-century waterlogged ditch silts produced masses of discarded everyday objects, including leather shoes, belt fittings, a complete knife scabbard, wooden vessels, pottery jugs and bowls, plus a whole range of animal, fish and bird bones and shellfish.

By the mid 16th century London's defences no longer served any apparent useful purpose and in the 1550s this portion of the city ditch along Giltspur Street was systematically infilled and then built over. Finds from this infilling of the ditch and the later features dug into the ditch, included fragments of ceramic stove tile and the basal portion of two circular stone mortars for use with a pestle for grinding commodities such as medicines or cosmetics.



A Roman unguentarium with pedestal base from 100 Wood Street.



A niche in the late 16th-century boundary wall surrounding the Artillery Ground, Spitalfields, Tower Hamlets, E1, being cleaned by Alison Telfer. The Spitalfields area, east of Bishopsgate, was used as an artillery ground by the Gunners of the Tower and the Honourable Artillery Company from the late 15th century to 1658.



The cheek-piece from a burgeonet (open helmet) dated to the last quarter of the 16th century and found at Abbots Lane, Southwark, SE1 (St Martins Property Corporation Ltd).

4

Diet in



London

These four 16th/17th-century pewter spoons and the 16th-century Beauvais slipware plate from Normandy, France were excavated from waterfront sites in Southwark. Spoons such as these are often found in small groups having been lost down drains.

A fundamental aspect of environmental archaeology is the question of diet in past societies and it is linked to important questions about individual and group status, how people produced food, and how and what they traded. It is an ongoing part of post-excavation research into London's archaeology which continues to develop using the results of current excavations. This section provides a summary of current knowledge from three periods – the prehistoric, Roman and Saxon periods – to provide an insight into how the diet of early Londoners changed across these period boundaries.

The prehistoric period

One of the earliest examples of food selection in the London region comes from the site of Three Ways Wharf, Uxbridge (English Heritage). A Late Glacial hunting camp, this site has produced evidence of a faunal assemblage which includes red deer, reindeer, roe deer, teal, fox and beaver. These animals were being hunted for skins, fur, bone, antler and food, and point to a meat-rich diet based on seasonal availability.

One of the most dramatic changes to diet – and indeed way of life – took place in the transition from the Mesolithic to Neolithic period; in fact this change is what generally characterises the Neolithic. Put simply, society changed from a mobile, hunter-forager society to a sedentary, farming community. The evidence for this in London is abundant in the area around Heathrow, where excavations such as those at Perry Oaks (BAA plc) and others along the Bath Road are adding to the picture. The evidence thus far points to a very restricted diet consisting mainly of beef and mutton, with some occasional wild animals such as deer and aurochs which were hunted to supplement the diet. Perhaps the most significant part of the shift to farming was the importance of cereals in the diet, consisting of primitive varieties, such as emmer and spelt wheat, later supplemented by barley. Evidence for fruit and vegetables is in very short supply, although this may be due to poor preservation of material rather than contemporary absence. Seeds of blackberry/raspberry were found on these sites, but these were probably from wild plants rather than consumed berries.

Although the transition to a settled community will have had many advantages over a mobile life in terms

of social development and integration, in the early Neolithic period at least, the diet is likely to have been very restricted and certainly less interesting and possibly less nutritious than that enjoyed, for instance, by the earlier hunting community at Uxbridge. There is some evidence suggesting that animals continued to be hunted for food, in addition to the domestic stock. However, as farming skills developed, the benefits of a more predictable source of food would have become extremely important. Other foods such as milk and milk products would have contributed to a diversification which would eventually lead to a diet with greater variability than that enjoyed by the hunter-forager. Another great advantage of a cereal-based economy is that cereal can be stored for times of shortage, and obviously it is sustainable in that it generates seed for a subsequent crop.

The Roman period

The building of the city of London during the Roman period brought great changes to the topography and landscape of central London and to the diet of its inhabitants. Although the Roman economy was still farming based, Roman London became very much a consumer society reliant upon farms in the hinterland and traded goods for daily staples. In addition, as Britain became increasingly 'Romanised', luxury goods came from all over the Empire and in some instances it is possible to identify the exact area of production. An amphora found at Winchester Palace, containing fish sauce or *liquamen*, had a stamp which identified the place of origin as Antibes in southern France.

In the very early Roman period there is pollen evidence from 1 Poultry for continuation of Iron Age cereal agriculture. However, the accessibility of new trading areas throughout the Roman Empire led to the rapid diversification of available foodstuffs. Chicken and pig had become relatively common in the diet compared with the preceding Iron Age. They are signs of increasing Romanisation as pigs may be associated with the diet of more wealthy individuals. Both these species are also associated with ritual activities, particularly chicken. This has been noted from recent publication work on the east London Roman cemeteries (English Heritage) and the Temple of Mithras (English



A Neolithic/Bronze Age blade knife from the Royal Docks Community School, Newham, E16 (London Borough of Newham).



A group of 2nd-century flagons
thrown down a Roman timber
well, excavated at Spitalfields,
Tower Hamlets, E1.

Heritage) where chickens are commonly found as food offerings with the dead, placed on plates or in jars within the graves.

Fruit remains become much more common and diverse in this period with fig and grape seeds regularly found from sites all over the city. Other fruits such as pear, apple, cherry and plum are found, but rather less

commonly, while olives for example are relatively rare. Pulses have

also been recovered – generally pulses are cooked to a

mush and are therefore rarely recovered or

identifiable. Lentils

and peas have

been recovered

as part of ritual

offerings with

inhumation burials in

the east London Roman cemeteries – presumably

as a food offering. Although this is not strictly

evidence for diet, it does show that both species were

present, and the example of lentil indicates a trade

link with the Near East, and possibly an addition to

the staple diet. A final example of botanical dietary

components is in the form of imported stone pine

cones – these may have transported pine nuts within

the cones. These have recently been recovered from

sites such as 1 Poultry and Regis House, EC3 (Land

Securities plc). However, it is possible that pine cones

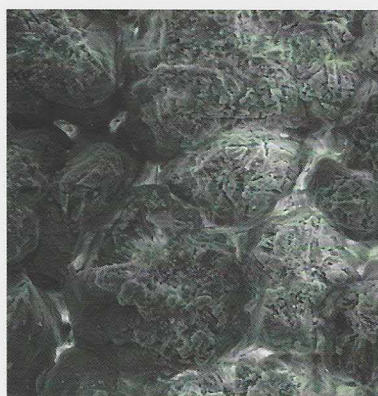
were used solely for religious purposes, probably

burned on altars for the sweet smell.

The Saxon period

The evidence for diet in the succeeding Saxon period suggests a dramatic reduction from the diversity of the Roman diet. Excavations within the Middle Saxon trading emporium, *Lundenwic*, particularly at the site of the Royal Opera House (ROH Developments Ltd), have produced evidence for contemporary diet in the 7th–9th centuries. Species diversity was very low, with the meat component comprising mainly cattle and sheep with limited amounts of pig. Chicken and geese bones were found, the geese in high quantities relative to the chicken when compared to the Roman period. Geese may have had other uses than simply meat and eggs, which may account for the numbers found in Saxon deposits. Some fish was consumed, but again, compared to the Roman period, very little, indicating that the meat was limited mostly to beef and mutton. The same is true of fruit and vegetables: cereal remains were dominant; relatively few fruit remains were recovered, and lack the more exotic elements found in Roman deposits, such as olives. Legumes did seem to play a part in the diet, with peas and horsebeans (a relative of the modern broad bean) being found in small quantities.

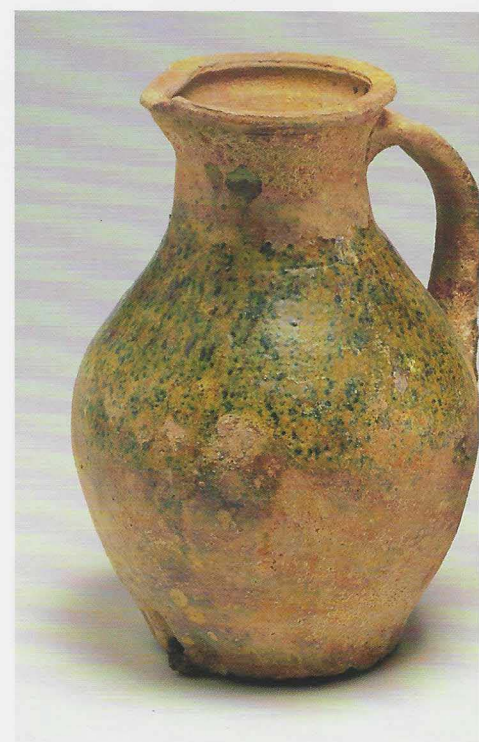
All in all, the diet of the Saxon period was apparently more similar to the prehistoric diet than the Roman. There are complex reasons for this change, both social and economic, but the collapse of the infrastructure supporting the Roman province of *Britannia* was rapid during the 5th century. The Roman roads, the shipping, the farms supplying produce to the city all provided an efficient agricultural trade network within Britain which extended throughout the Roman Empire. Foodstuffs – both luxury and staple – could be brought rapidly to the urban centres. Middle Saxon England, although a great trading nation, did not have large cities, no such infrastructure nor such an empire, and the country reverted quickly to subsistence agriculture.



Scanning Electron-Micrograph of goose egg shell (shown at x300) from the Royal Opera House excavations. Goose was, unusually, the most common bird and egg eaten by the Saxon occupants of the Royal Opera House site.

Study of diet in London is immensely rewarding. Each year, new species are recorded from archaeological horizons and fresh evidence is produced for trade with such far-flung locations as the Caribbean. The introduction of integrated publication projects means that information like this can be researched and placed wholly within its archaeological context, enabling detailed reconstruction not just of what people were eating, but also where it was bought and sold and how the food was prepared and produced.

Coarse Border ware rounded jug, late 14th to 15th century, from Britannia House 16–17 Old Bailey, EC4 (Hammerson UK Properties plc)



South Gaulish Samian ware – one sherd from a cup, depicts a boar on grass-tufts beside a tree with acorns; the other sherd from a bowl depicts a hare.

5

London's



markets

The laying of the foundation stone for the Baltic Mercantile and Shipping Exchange by the Lord Mayor in 1900. The site was excavated by MoLAS in 1995–6, and post-excavation research continues.

So how did people trade at different times in London's past? In 1998 the answers came from two key periods in London's history: Roman and Middle to Late Saxon.

The Roman forum

During 1998, work continued at 168 Fenchurch Street, EC3 (Marks and Spencer plc), a site which encompasses the south-east corner of both the first (Flavian) and second (Trajanic–Hadrianic) fora. Observations from the 1870s to the present day, including recent MoLAS evaluations in 1995 and 1997–8, have combined to make this among the most thoroughly investigated sites in the City. This work was followed by an excavation in early 1999, during which most of the remaining part of the area was recorded.



Trevor Brigham, excavating part of the north–south foundation that represents the eastern portico of the Second Forum. The masonry consists of alternating bands of angled ragstones and mortar, a typical technique recorded elsewhere in London.

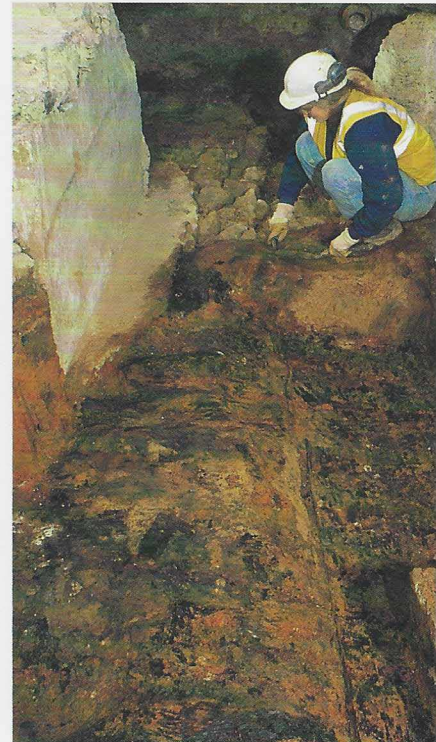
The pre-1995 work combined to establish a sequence which consisted of pre-Boudican and early Flavian occupation around a metalled area which may have been an early forum, with, at this stage, no more than the most basic function of a market and meeting place. It was replaced in the AD 70s by a small masonry forum-basilica, when the early trading settlement became more established and increasingly influential as the seat of the provincial governor was transferred from Colchester. The early forum, which now included rooms or offices presumably for traders, bankers and civic functionaries, soon proved too modest for the town as it continued to expand in the late 1st century, and it was substantially altered with the addition of a realigned south wing, and an inner portico to allow

more accommodation. Further growth, however, required a much larger forum, and this was constructed – apparently piecemeal – beginning some time around AD 100–20: the construction of the south wing, for example, had to await the demolition of the first forum, and the whole complex may not have been completed until around AD 130.

The second forum incorporated some of the piers from the rebuilt south wing of the first forum, perhaps only as an interim measure. The structure was probably demolished around AD 300, although some

elements may have been retained. The fate of the southern part of the forum, which stood at an important road junction, remains unclear, but it seems unlikely that such an important site would have remained empty for a century.

The recent evaluations confirmed this basic picture. Testpits excavated along the western (Gracechurch Street) frontage uncovered surfaces of the earliest market place, as well as walls of both fora, including the flint foundations of the Flavian building, and a brick pier of the rebuilt phase. There was clear evidence for the reuse of the pier in the second forum, since it was



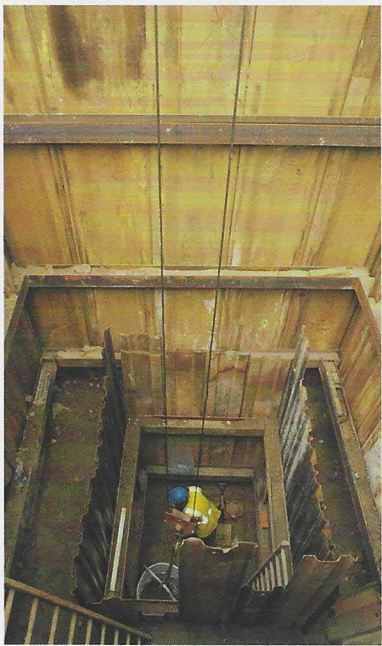
There were mudbrick (brickearth) buildings fronting onto the Roman road that became Fenchurch Street; the slot running right along the right of the picture, beneath archaeologist Val Griggs, represents the north wall of such a building, which was destroyed in the Boudican fire of AD 60–1. The buildings that succeeded it were themselves demolished to make way for the massive Second Forum.



Reconstruction painting showing the Roman city in c AD 90–100 with the Second Forum being built around the First Forum prior to its demolition (Peter Froste).



reconstructed at a higher level using pink mortar more characteristic of the early 2nd century. The ragstone foundations of the second forum walls crossed, rather than cut through those of its predecessor, although no floor levels survived the general truncation in this part of the site.



The Roman Forum was glimpsed in deep trenches, wherein excavation and construction work was kept to a minimum. Here, a foundation of the Second Forum is being recorded in advance of piling, along the modern Gracechurch Street frontage.

Further east, nearer Lime Street, the robber trench (all the masonry removed) of the south wall of the second forum was found beneath the modern pavement of Fenchurch Street under the remains of the disturbed graveyard of St Dionis Backchurch, a medieval church which survived until the 1870s. Inside the modern building, evaluation work revealed parts of the outer wall foundation of the east wing and the inner wall of the portico, both of which were partially robbed, apparently in the early medieval period. Extensive surviving areas of Boudican fire debris (AD 60–1) and other pre-forum deposits were also recorded, although there had clearly been considerable truncation during the construction of the present

building in 1976, since previous excavators had recorded over 1m of forum floor surfaces in the area, together with sections of ragstone and brick superstructure. Medieval chalk foundations of the tower of St Dionis were superimposed over the forum walls, obscuring the expected east-west return of the south wing's outer portico, which was also not recorded in 1976.

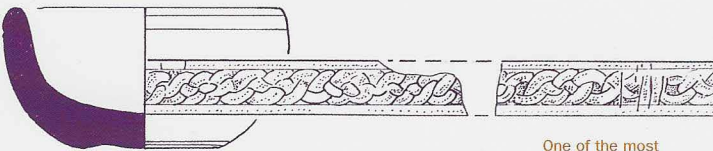
Middle and Late Saxon markets

Post-excavation analysis of the data from the Royal Opera House (ROH Developments Ltd) has produced a detailed picture of the form of the Middle Saxon settlement of *Lundenwic* and the degree to which it flourished as a market. Evidence includes not just the articles of trade but also the infrastructure necessary to support a community who became reliant on the goods and services passing through and provided by the settlement.

During the mid 7th century the buildings were cluttered and in dispersed plots similar to rural sites but by the end of the century previously large open yards were enclosed and surrounded by new buildings constructed within rigidly defined plot boundaries. These developments created linear access routes which became side streets linked by main roads through the settlement. Although less formalised than Roman street patterns, a similar arrangement can be discerned with an irregular grid bisected by the main roads and continuously occupied blocks of buildings further divided by narrow alleys. The buildings were shed-like rectangular structures displaying some specialisation of function at

A variety of ceramic, stone, bone and resin objects excavated at the Royal Opera House. These include whetstones, loomweights and a threadpicker, tools of the weaving trade.

both structure and room levels. One group of three buildings clustered around a courtyard, with a smithy, a residential block and a piggery in separate structures.

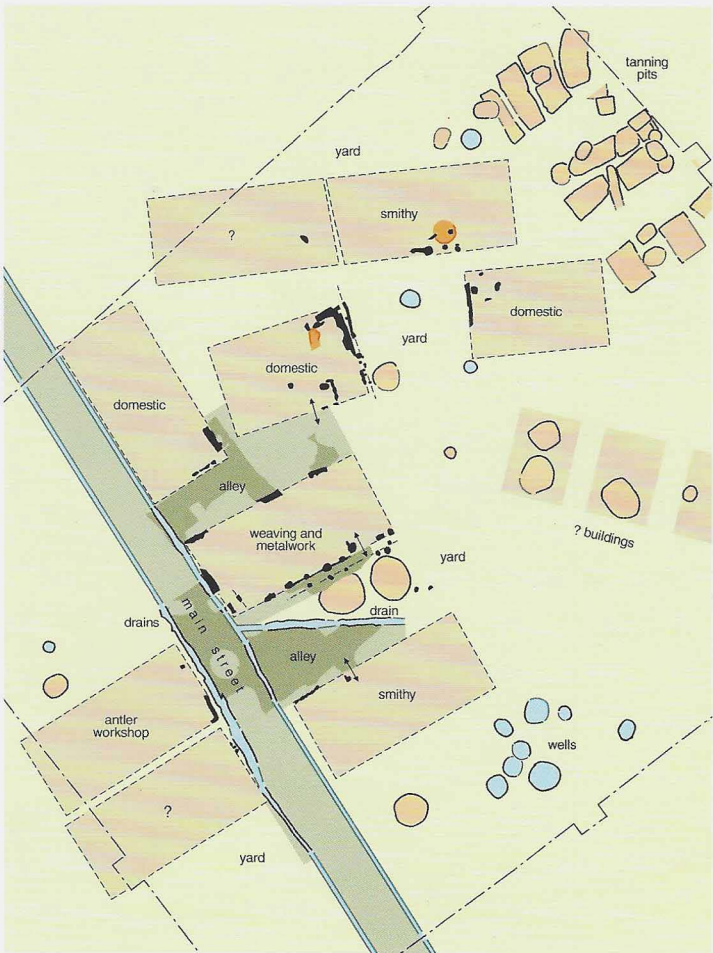


There was an increase in population and economic activity during the 8th century reflected by the volume of cultural material found on the site. This was the heyday of the settlement with intensive occupation and evidence for a large population sustained entirely by trade and manufacturing. Every available space was used for the erection of buildings with positions reflecting an established street pattern, the buildings lining both the main roads and the side streets.

Production and trading trends were intensified during the 8th century and expanded to create a vibrant urban landscape with a high degree of specialisation but based on cooperative diversity rather than the narrow craft-centred clustering of trades seen later in the medieval period. The amount of economic activity and the growth of population reached a level at which specialist craftspeople were able to support themselves from trade for the whole year, stimulating the growth of secondary support industries such as butchers and bakers.

One of the most striking finds from the Royal Opera House site is a stone lamp with a band of carved cord plait decoration, from a 9th century context but possibly of earlier date. Similar interface decoration can be seen in the 7th-century Book of Kells, but the tradition continued throughout the Saxon period.

Interpretive plan of the urban landscape at the Royal Opera House site in the mid-8th century.



During the 8th century the development of the market economy was reflected in an increasing awareness of the importance of location in the settlement. This is shown by the maintenance of the alleys and encroachment of properties on to the main roads. There was some realignment of structures to provide direct access to roads, reminiscent of shop fronts. The growth of the economy can be seen most readily in the production and trade in luxury goods such as jewellery, highly decorated bone handles and imported quern stones. Although the settlement of *Lundenwic* may have been established to provide a trading focus for the import of luxuries to satisfy the demands of a ruling elite, the items had filtered down to a much lower level of urban society by the 8th century as many of the finds from sites attest. Although the activities identified in the buildings show the occupants to be artisans and traders, their material culture points to a degree of sophistication – with glass vessels, imported pottery and all manner of dress fittings and personal items.

Principal industries included weaving and smithing; a number of buildings produced evidence of boneworking, with combs one of the main products. There was also compatibility of industries with bone-handle manufacturers located next to smithies producing metal objects, a trait suggesting cooperative relations between groups of artisans.

At the end of the 8th century a general economic decline is apparent, with fewer buildings and with abandoned

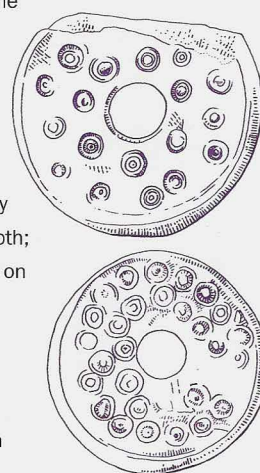
plots incorporated into new properties. Some manufacturing continued and the presence of items such as locks and keys indicates a new awareness of security. Iron smithing remained one of the main activities but the availability of recycled material seems to have outstripped demand for new objects. The overall impression is one of continuance but decline and further

specialisation on highly decorated objects – indicating that a market for high-status goods remained but that there had been a severe contraction of the market. Long-distance trade perhaps suffered less than regional links, with evidence of items paralleled at Birka in Sweden and other overseas settlements being common.

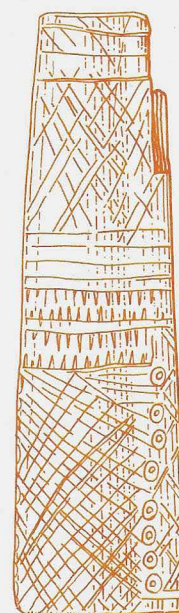
The market at *Lundenwic* developed rapidly in the later 7th century and reached its zenith during the 8th but political turbulence and the absence of well-developed

regional markets led to an equally rapid decline in the 9th century. Until now archaeology has had little to tell us on the transition from *Lundenwic* on the Strand to *Lundenburh* in the City, and there is little evidence of Viking occupation in London. The documentary evidence is also contradictory and confusing. The Danish raids of AD 842 and 851 may have attacked either *Lundenwic*, the walled city, or both; that of 872, however, is more likely to have focused on the city. The analysis of material from Queenhithe, EC4 (Thames Court – Markborough Properties Ltd) has shown that there are strong artefact links between excavated material from the Royal Opera House site and Queenhithe in the middle to late 9th century and that this material suggests a Viking presence, possibly a garrison, in the City. The range of well-preserved metalwork includes a Carolingian mount with foliate decoration, coin brooches, an equal-armed brooch with rounded terminals, a strap end in the Trehiddle style of a much smaller and simpler design than that from the Temple in the City, and a number of hooked tags. The lead artefacts include two ‘cartwheel’ amulets similar to a find from Domburg, an island in modern Holland, and two mounts, one paralleled at Domburg, the other a Borre-style (Norway) mount very similar to a find from Vesteras in Sweden. Other finds include a range of equal-armed brooches and disc brooches, and a copper-alloy connecting plate for a comb which is virtually identical to examples from Haithabu in Denmark, Birka in Sweden and elsewhere in Scandinavia. A disc brooch with a cruciform motif, closely paralleled at Mainz in Germany, is arguably the latest find from this period. Two Northumbrian stycas (copper coins), with a possible die-link to the hoard buried at the Royal Opera House, were also retrieved from the same deposit.

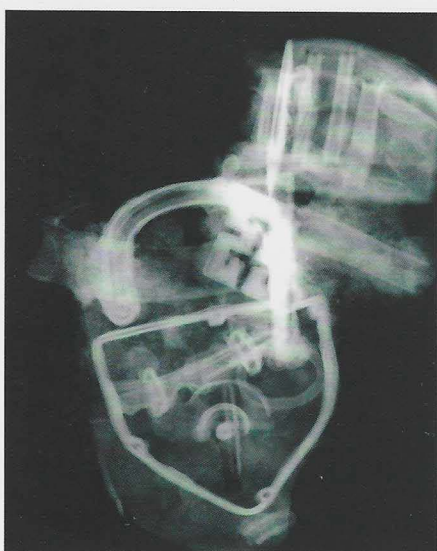
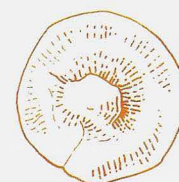
From these 9th-century beginnings the markets of the City developed rapidly from Queenhithe (Alfred’s hithe) while those on the Strand disappeared. In the 10th century there is evidence of street market activity at 1 Poultry (Altstadtbau Ltd for City Acre Property & Investment Trust, Advanta Management AG and English Heritage) with thick organic deposits adjacent to the Late Saxon buildings suggesting the presence of contemporary stock enclosures. These wattle and plank sunken-floored buildings were replaced by rows of surface buildings, and through the 11th and 12th centuries the open market around Cheapside developed into an area of wealthy merchants and financiers with small shops remaining along the street frontages of Poultry, Bucklersbury and Pancras Lane.



Decorated 8th- to 9th-century gaming pieces/spindlewhorls from the Royal Opera House site, carved from antler pedicles.



A highly decorated handle from the Royal Opera site. As there is no evidence of a slot, it is likely to be a handle for a small knife or awl, perhaps the property of a Saxon bone-worker.



This padlock, from the site at Monument House, EC3, was one of the many internal fixtures and fittings that were recovered from destruction debris in a series of medieval cellars destroyed in the Great Fire of 1666. With the aid of x-radiography it is possible to see the internal workings.

GRAPHICS

The MoLAS graphics team uses traditional and digital design and illustration techniques to produce the academic and popular publications and displays commissioned both in-house and by our clients.

Steven Cheshire, Jeannette van der Post, Gillie Newman, Tracy Wellman, Jane Sandoe, Kikar Singh, Susan Banks, Faith Pewtress, Pam Williams



6

Post-medi



Stacks of pedestal-base
ointment pots recovered from
61-69 and 71-75 Mortlake
High Street, Richmond, SW14.

eval industries

During 1998 and 1999 MoLAS analysed the results of excavations along the Thames waterfront for publication. Beyond the limits of the City of London the post-medieval riverfront was very often the centre of industrial activity. In the 17th century the southern Thames frontage was not as densely developed as that of the north bank, with Lambeth less crowded than Southwark. Anti-social trades like distilling, soap- and starchmaking were established in Lambeth by the late 17th century.

Southwark and Lambeth

Until the demise of the London Docklands the River Thames was the main highway for the arrival of bulk goods in London. For example, the tin-glaze pothouses of Southwark and Lambeth brought their raw materials from places accessible to river traffic – glaze was brought from mills on the Ravensbourne in Kent and on the Wandle in Wandsworth. The bulkiest cargo unloaded was potters' clay, from barges, in barrels or large dry blocks. A location along the Thames also brought ease of distribution for the finished product.

London was the centre of the economy, with merchants ready to invest in new businesses. As skilled craftspeople gravitated towards the City there was spare labour in London allowing opportunities for apprenticeship. Apprentices in the pothouses in Southwark and Lambeth came from families from, for example, Woburn, Bletchingley, Burton and Southend, as well as Hackney, Westminster, Shadwell and Rotherhithe.

Work has been undertaken for the English Heritage-funded publication of the excavations of six of the Southwark and Lambeth pothouses. Each of these manufactories produced tin-glazed ware, more commonly known as delft, between them producing pottery from 1612 through to 1846. Excavation at three of the pothouse sites – Pickleherring, Lambeth High Street and Glasshouse Street – revealed the remains of brick-built kilns. At the remaining sites, evidence was confined to pit fills and dump layers which contained large amounts of pottery and waste products.

Analysis of the pottery itself has produced a form and decoration typology to illustrate the range of products. The typology has shown, for instance, that the products

of the Pickleherring pothouse were similar to those of Rotherhithe, suggesting a continuity of technique. Documentary research underpins this by suggesting that there may have been a

flexible workforce, with

journeymen moving from workplace to workplace. Indeed, records indicate that apprentices taken on at one pothouse had moved on to another within the tenure of the apprenticeship. The mobile workforce was not confined to London: John Bird who had served his apprenticeship at Norfolk House, Southwark was recruited as manager of the Delftfield Pothouse, Glasgow, which began producing in April 1748. Even further afield, John de Wilde who had been apprenticed at Norfolk House in 1681 was involved in setting up a tin-glazed pothouse at Burlington, New Jersey in 1688.

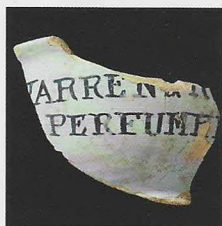
Mortlake

Further west, along the south bank of the Thames at Mortlake in the London Borough of Richmond, excavations at 61–69 (Crown Dilmun plc) and 71–75 Mortlake High Street (Michael Shanly Homes Ltd) have provided evidence for the nature of post-medieval industries. Mortlake began its association with light industry when Sir Francis Crane established the tapestry works at 99 Mortlake High Street in 1619, which closed in 1703.

At 61–69 Mortlake High Street the earliest industrial activity recorded on the site was sugar refining. The date of the construction of The Sugar House is not known, but the court rolls of 1688 noted that it was being run by Mucklow the Quaker and his partners; muscovado (raw molasses) was imported from the West Indies to Mortlake where the refining process included 'boiling with lime water and stirring with bullock's blood to bring up the impurities as a scum'. The Sugar House had closed by the 1740s. Although no structures connected with the refining process were identified, numerous fragments of pottery identified as sugarcone moulds were recovered from across the site.



London's light industry generated enormous quantities of waste. This 18th-century drainage channel, being recorded by Nick Elsdon at 159–161 Tower Bridge Road, was revetted with reused 16th- or 17th-century boat timbers. The skinning marks and butchery exhibited by the horse, cattle and sheep bones found in the channel suggest that the channel was used by the local tanning industry.



Tin glazed ointment pot inscribed with 'WARREN AND SON, PERFUMER', and the bases of two other pots decorated with the letter 'R' and the maker's cypher; from a group of pots from 61–69 Mortlake High Street, Richmond, SW14.



A selection of post-medieval shell buttons from Shelley House, Noble Street, EC2 (Royal London Mutual Insurance Society).



The sugar refinery was succeeded by a pothouse established by William Sanders between 1742 and 1745 on the waterfront at St Mary's Wharf. Perhaps most famously, Sanders' pottery was responsible for the birth of the toby jug. It had two kilns, one for whiteware, the other for coarser work. At 71–75 Mortlake High Street the remains of a circular brick-built kiln with fireboxes arranged radially around the circumference were recorded. In 1817 the pothouse was described by Sir Richard Phillips as 'a manufactory of delf[t] and stoneware for which, amongst potters, Mortlake is famous. The principle articles manufactured are browne stone jugs and the groups on the jugs were exactly similar to those on the common pottery of the Romans.' By the second quarter of the 19th century a rival pottery had been set up by Joseph Kishere on the south side of Mortlake High Street.

The products of Sanders' pothouse were recovered from the excavations at both 61–69 and 71–75 Mortlake High Street. Evidence for tin-glaze production consisted of biscuit sherds and vessels, copious quantities of kiln furniture and glazed waster sherds. The kiln furniture included saggars, pegs and shelves. The biscuit-fired assemblage was largely dominated by the presence of large quantities of ointment pots. Clearly there was a high degree of quality control, as many of these vessels were discarded with only minor flaws, such as poor coverage of glaze around the base. Other vessels displayed more significant faults such as discolouration of the glaze, bubbling and blistering and occasionally partial collapse of the vessel. The bulk of production from this portion of the site appears to be of a pharmaceutical nature, producing plain-glazed pedestal and straight-sided ointment pots and eye-ointment applicators.

Stoneware production is known, from documentary sources, to have been carried out at Mortlake between 1794 and 1804. The archaeological evidence for stoneware production at 71–75 Mortlake High Street consisted of wasters (pottery rejects) of large jars, tankards and bottles, and large quantities of kiln furniture.

built on one of the wharves at a cost of £1400 – this is believed to refer to the malthouse constructed in front of the church at 107 Mortlake High Street (Telstar Holdings Ltd). The survey of 1811 mentions five such malthouses in Mortlake. Two of the malthouses have been examined. Excavations at 107 Mortlake High Street identified five rooms inside one of the malthouses (built in 1791) – two coal stores, two fireboxes and one work/storeroom. The malthouse was demolished by 1865. Further along the High Street Sanders' pothouse was converted into a malthouse around 1830. The excavation at 61–69 Mortlake High Street identified the brick walls and foundations of a further malthouse. The excavated features were tied in with early plans of the site. Sanders' pothouse and the malthouse appeared to be successive separate structures, and there was no evidence that the malthouse reused the pothouse buildings.

Limehouse

On the north bank of the Thames in Limehouse (English Heritage), to the east of the City, analysis of the excavations at the site of the Limehouse porcelain manufactory has been undertaken. Limehouse takes its name from the local industry and limekilns are known there from the 14th century. During the 17th century two on the south side of Limekiln Dock were known as Cholke Lodge and Limekell Lodge. To the west of this, near Duke Shore, a pothouse dedicated to the manufacture of porcelain had opened during early 1744–5, preceded on the site by a distillery. The pothouse had ceased functioning by 1748. The failure of the venture is probably attributable to the fact that in this period the manufacture of porcelain was still an experimental process. It is probable that the Limehouse pothouse was preceded by only one other English attempt to manufacture porcelain – at Chelsea, founded 1743–4.

The excavations in Limehouse revealed a typical circular brick-built kiln, with evidence for fireboxes arranged around the exterior. Dumps and fills at the site provided evidence for the range of products of this short-lived pothouse. A total of 104kg of porcelain was recovered. Despite the short life of the pothouse an amazing range of items were manufactured, designed to appeal not only to the general household market but also for decorative purposes. These included household items such as vases, pickle dishes, butter boat cups, saucers, plates, tea bowls and pots, mustard pots, coffee pots, and children's or invalids' spouted feeding cups. Sauce boats were especially interesting because of their decorations of lion masks and feet. Miniatures included bowls, mugs, bottles and models of dogs and cats.

A selection of Limehouse waster porcelain sherds, produced in the mid 1740s.



Medieval metal-working crucibles made in Kingston-upon-Thames, from the site at Britannia House.



Collecting and surveying archaeo-magnetic dating samples from a tile kiln at Waddon, Croydon. The results, analysed in the Clark Laboratory at MoLAS, dated the kiln to between AD 1530 and 1560.

Malting was an important local industry, being supplementary to the brewing of beer, its importance being shown by a report that in 1791 a malthouse was

7

London's



rubbish

The neatly corbelled entrance into the Roman culvert at Monument House, EC3, seen in the side of a manhole shaft which led down into the culvert. Andy Daykin is cleaning the tiles prior to photographic recording.

Many sites in London have produced evidence of water supply and waste disposal. These two functions have always been of the highest importance and it is only since the Victorian era that they have become sufficiently organised that many of us take them for granted.

Soho

Excavations at 68 Dean Street, Soho (David Bieda with English Heritage) provided the opportunity to explore the 18th-century water supply and waste systems. The drainage features consisted of a domed, circular brick-lined pit into which two drains emptied. The pit was interpreted as a cesspit although it contained no usage fill, suggesting perhaps that it had been cleaned out by nightmen. The cesspit, situated within the street vault, is likely to have been in the servants' quarters. Another cesspit was previously recorded within the house under a ground-level privy and would have been for the use of the main resident. A hole in the vault roof to the pavement above suggested that water from the street may have

drained into the pit which perhaps also acted as a soakaway from cleansing the street. A drain was also recorded which could have functioned as an outlet taking liquids to the street sewer. During the 19th century the cesspit was rebuilt and further walls were inserted which were interpreted as part of a privy superstructure.

Spitalfields

Work at the Spitalfields Residential site (St George plc) has produced a vast array of cesspits dating from the 16th–18th centuries and waste-disposal management from the Priory and Hospital of St Mary Spital plus evidence of the priory's water supply.

The redevelopment of Spitalfields from the late 17th century onwards has been recovered in the form of the basements to the houses built there. In their back gardens numerous cesspits have been found, some

including enormous quantities of pottery as well as clay pipes and glass vessels. The cesspits were often constructed in brick but sometimes in timber where both oak and pine were utilised.

Sometimes drains fed the cesspits, some were actually privies – with evidence of the superstructure being found in one case – and sometimes they were 'stand-alone' structures. Similar cesspits were recovered dating to the late 16th and 17th centuries when houses were constructed close to the reused monastic buildings. These houses also utilised the priory's waste-disposal system. This consisted of a large pond divided into two by a chalk wall. To the south of the wall was a reservoir fed by an open ditch which led from a spring to the north-east. The water would have been fed to the monastic buildings, probably via pipes. To the north of the wall a stone drain fed the waste from the monastic buildings back into the pond. The reservoir seems to have gone out of use during the medieval period while the northern part where the waste was disposed was progressively reclaimed via a sequence of timber revetments during the 16th and early 17th centuries.



Two post-medieval chamber pots from the Spitalfields Residential site.

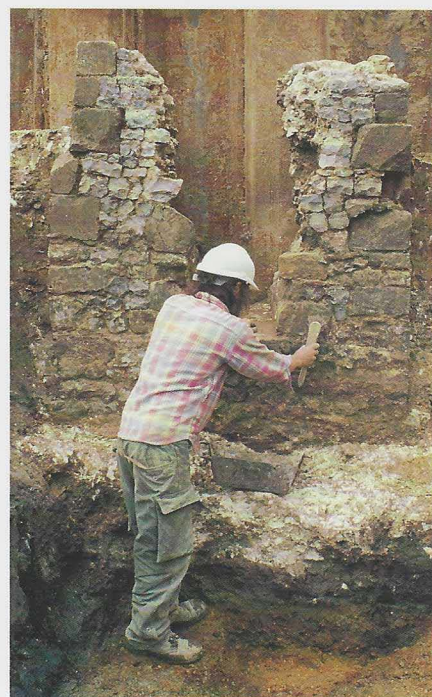
City

An excavation at Monument House in the City, 30–35 Botolph Lane, 29–31 Monument Street, EC3 (Berkeley Homes (Essex)), recovered evidence of a massive and well-planned redevelopment which included a substantial masonry building, terraced into the hillside. The most spectacular part of this new development was



Ryszard Bartkowiak recording an 18th-century cesspit behind houses fronting onto Spital Square, Tower Hamlets, E1. Spitalfields developed as a residential area from around 1660 onwards.

The exit from a medieval drain leading out of the cloister at St Mary Spital, Lamb Street, E1, being cleaned by Ryszard Bartkowiak.





Some of the contents of medieval and Tudor rubbish pits from Gateway House (25 Cannon Street Ltd). The pottery, animal bone and ceramic building material found in such pits reveals much about the diet and lifestyle of the inhabitants of London.

a unique Roman drainage culvert which ran southwards beneath the new building. The culvert was recorded over a distance of 20m and incorporated a 3.30m deep, square manhole shaft at its upper end. The construction of this culvert is made all the more impressive when it is considered that it would have been in excess of 80m (262ft) in length to reach the front of the contemporary waterfront and the River Thames, where it would have discharged.

The Monument House culvert and manhole is the first intact section of a truly subterranean Roman drainage system to have been found in over one hundred years of intensive redevelopment in the City and may well remain the only example of this type of structure to be found in years to come.

The walls of the culvert were built of Kentish ragstone with alternate tile string courses. These were set over a narrow tile drain with a partial plank base and three timber silt-traps set at intervals along its length. The



The first glimpse of the inside of the south end of the Roman culvert at Monument House, EC3, was provided by a CCTV survey carried out for us by the Corporation of London's Department of Technical Services.

roof was constructed of tiles fanned out on edge to form a curved vault to the structure. Impressions of the planks and the iron nails of the original timber form work (which appeared to have been left to decay *in situ*) were visible along its entire length. The culvert's internal dimensions varied from 1.83m x 0.65m at its north

end, to a more restricted 1.30m x 0.65m. One of the integral foundations for the overlying terrace building was incorporated at right angles through the body of the culvert and had been purposefully deepened at this point. This foundation was associated with a series of large, but shallower, linear robber cuts and mortar floors to the east that would have originally formed part of the same structure.

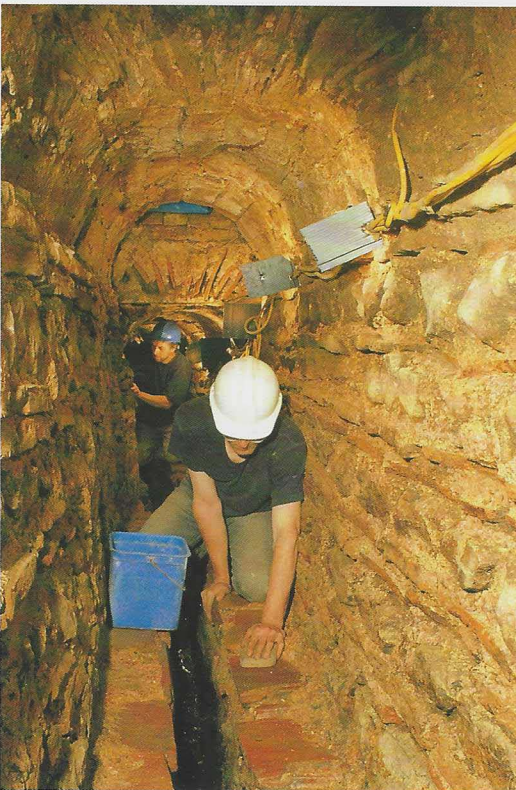
The unusually large size and capacity of the culvert suggest that it is unlikely to have served only the terrace building which overlay it, and that other buildings, located on the high ground to the north, are also likely to have utilised it. Possibilities include a large bath-house or, given the culvert's close alignment to the east side of the 2nd-century forum and basilica, that it possibly formed the lower end of an extensive and well-planned drainage system which took waste water from the forum buildings. There was also some suggestion that the culvert lay along a natural spring line and that it would also have served as an overflow to channel these waters beneath the terrace buildings.



Nick Holder records this part of the 13th-century wall dividing a large reservoir, which fed the Priory buildings, from the waste water, at the Hospital and Priory of St Mary Spital, Lamb Street, E1.

Although small sections of culvert have been found throughout the City they are generally very short and were mostly constructed to allow the passage of a timber drain through the walls of a masonry building. It is clear that culverts that were made large enough to access and maintain were a rarity in Roman Londinium and few appear to have been constructed. The closest, though incomplete, parallel from the City was of a similar 3rd-century date, and was found flanking the south side of the *via decumana* at 1 Poultry. It is notable that even here, adjoining the principal road across the Roman city, that the majority of the drains along its edges continued to be made of timber.

Following the completion of the archaeological excavation the culvert and manhole were lined with a protective membrane and then filled and covered with clean sand so that this unique and important example of Roman engineering could be preserved in its entirety beneath the new residential building.



The final stages of cleaning the southern stretch of the Roman culvert at Monument House, EC3, for photography.

8

Burial



practices

Roman burials

This belt buckle was found in one of the many Anglo-Saxon 6th–7th century graves at Cuxton, Kent, in excavations for the Channel Tunnel Rail Link (Union Railways (South) Ltd.

In 1998 MoLAS was involved in two sites with Roman burials. A watching brief at Swanscombe (Kent County Council – County Education Department) found a Roman ditch. This was the final phase of an excavation begun in 1997 that found a large walled Roman enclosure measuring 35m x 33m that contained rubbish pits, a possible corn dryer, a cremation burial and a pottery vessel buried upright. Postholes indicated the presence of one or more buildings. A mortared flint foundation, 3.5m square, may be the base of a shrine. Ditches on two sides of the enclosure produced evidence of metalworking. Most of these features dated to the 3rd century AD.



A cremation group from Great Dover Street consisting of lamps and tazze. One lamp shows a gladiator; another depicts the Egyptian god Anubis.

Excavations at Great Dover Street in Southwark (Berkeley College Homes Ltd) recorded four structures alongside a Roman road: a late 1st–2nd-century AD possible temple or temple-mausoleum, two mid 2nd-century walled cemeteries and a probable mausoleum. Fragments of moulded and architectural stone (including a head of a possible river god and a pine cone) came from structures within one of the walled cemeteries. Thirty burials, mainly inhumations, were found. Of particular interest is a group of three packed with chalk and dating to the late 2nd to 3rd century AD. A possible *in situ* cremation pit included eight ceramic lamps and eight tazza pots dating from the late 1st to 2nd century AD.

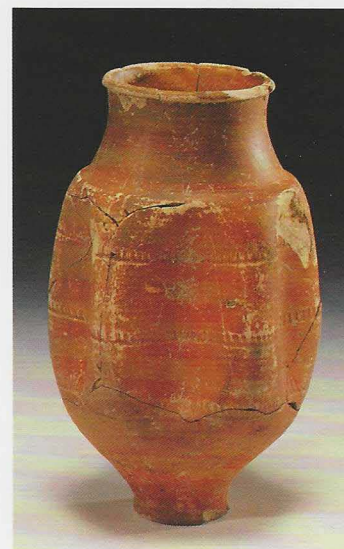
In 1998 MoLAS completed the analysis and publication of archaeological excavations conducted between 1983

and 1990 at different sites within an area covering about 12ha in the modern London Borough of Tower Hamlets, to the east of the City of London, which have produced evidence for a large Roman cemetery. It is part of an English Heritage publication programme and will appear in print in 1999 as part of the MoLAS Monograph series.

This cemetery was one of several serving Roman London, and lay immediately to the east of the town.

During these excavations 136 cremation burials and 550 inhumation burials were recorded, together with a further 165 features identified as disturbed burials, but without surviving human remains, reasonably well dated from the 1st to the 5th century AD.

Before the first burials took place towards the end of the 1st century AD, the landscape to the east of the Roman town was quarried to extract sand and gravel. At sometime around the end of the 1st century a road was built running eastwards from the town into this area, which by then was beginning to be used for burials. At least 29 distinct plots are identified as having been



From one of the burials at Great Dover Street came this 1st-century Nene Valley beaker with elongated indentations.

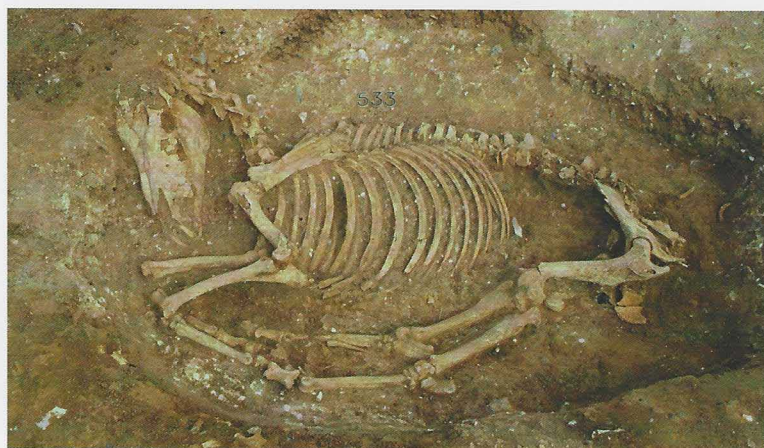
Excavation of a cremation burial covered by an amphora: from the forthcoming MoLAS Monograph on the Roman cemetery to the east of London.





used for burials, demarcated by ditches (including some of the previous field boundaries) and possible paths.

There is ample evidence for a variety of burial rites, as well as funerary structures, inscriptions, ditches and pits. The majority of inhumations were buried in wooden coffins and 81 'chalk burials' were identified. At least 70 cremation burials were contained in urns. Secondary containers for the urns included amphorae, wooden boxes and a tile cist. At least 137 inhumations and 33 cremations were accompanied by burial goods of varying types including glass and pottery vessels, jewellery, hobnailed shoes, coins and food remains.



Skeleton of an adult horse found at Northumberland Bottom, near Gravesend (Union Railways (South) Ltd). The burial is of Iron Age date and its content indicated it was probably of ritual significance.

Monastic burials

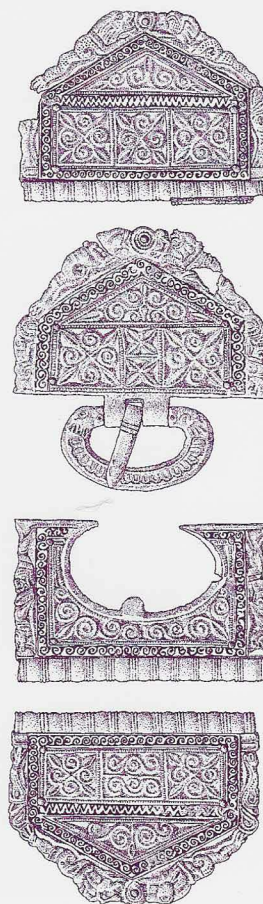
Various excavations took place within monastic burial grounds during 1998. At 43 St Bartholomew's Close, EC1, within the precincts of the Priory of St Bartholomew the Great, a watching brief (Presto Plan Design and Build) located the chapter house and slype (covered passage) of the priory. The surviving chapter-house walls consisted of the lower courses of chalk foundations. Within it were the partial remains of at least three inhumations, parts of which are still *in situ* beneath the present slab. Burials of this date and type were traditionally laid from west to east with the head at the western end of the grave. These were, however, laid from south-west to north-east so that they were aligned with the long axis of the chapter house. They formed two rows and were located in the central area of the building. The slype foundations were similar to those of the chapter house – the slype formed a passage leading from the cloister to the area east of the cloister buildings, usually the cemetery.

To the north of the chapter house lay an early cemetery where the remains of three burials, probably dating from the 12th century, were recorded. This cemetery may have been reserved for the priory brethren. A dark stain around one burial may have represented the decayed remains of a coffin. In the north-western part of the site the cemetery appears to have been partly cleared during the later 12th century.

A number of people were buried beneath the entrance to Guildhall Yard, in a crypt belonging to the church of St Lawrence Jewry. Julian Ayre is recording the lead coffin of Mrs Lucy Orton, who died in her 35th year on 16 February 1898.

In Charterhouse Square, EC1, an evaluation (Charterhouse Estates and The Royal Commission on the Historical Monuments of England, Survey of London) sought to establish the existence of the traditional site of one of the Black Death burial grounds later incorporated within the precincts of a Carthusian monastery, and to test a geophysical survey which was thought to have located the chapel in the Square, built in 1481.

No evidence of the chapel was located but a single burial of a child was found, laid in the traditional manner, probably within a burial shroud. It is highly likely that this burial was interred during the Black Death of 1348–9. Tradition has it that 50,000 burials were interred there although this now seems much too high a figure. Previous excavations at the East Smithfield Black Death burial ground at the Royal Mint have indicated a much smaller population of perhaps 2–3000 burials laid either in individual graves or in mass burial trenches. Similar estimates for the Charterhouse burial ground seem more likely.



A chip-carved copper-alloy belt set, found in one of the burials at Mansell Street, and to be published in a MoLAS Monograph in 1999. This set comes from a belt worn as a badge of office by a 4th-century soldier.

Post-medieval burial grounds

Studies of the various types of post-medieval burial continued in 1998, with work being carried out in churchyards, family vaults and crypts.

A small vault at St Lawrence Jewry, EC2 (Corporation of London City Surveyor) produced 60 burials in lead coffins from a wealthy parish in the City of London, dating between 1819 and 1845. Although the actual burials were not studied, documentary evidence showed that most of the people had lived around the area of the church. Nearly half the burials were of children

Archaeologist Howard Burkhill excavating at the Anglo-saxon cemetery site at Cuxton, Kent (Union Railways (South) Ltd).



under the age of 10. They were mainly from the families of merchants, particularly involved in the clothing industries, although there was also a butcher, fishmonger, plumber and an innkeeper. The coffin fittings recorded included an elaborately etched brass plate with lid motifs and escutcheons in the form of cherubs.

A graveyard investigation was carried out at St John, Wapping (The London Diocesan Fund and Goldcrest Homes Construction Ltd), which looked at the burial ground around the church, a communal vault and 10 individual family vaults around the perimeter. Again, the burials were taken for immediate reburial and were not examined. However, the good preservation of the inscriptions on the lead coffin plates allowed an analysis of the documentary information on some of the 126 identifiable individuals buried there. The burials in the main graveyard were split into those in earth graves and those in brick-lined graves. Where the burials were identifiable, it was clear that the brick graves were usually family plots. The date range of these graves was up to 58 years, with the Johnston family grave having its first burial in 1795 and the last in 1853. The date range for the whole burial area was 1761–1854.

Before 1813 the cause of death was usually indicated in the burial register. This tended to be a general description rather than a medical cause, and relied on what the parish clerk was told. Some of the terms used are unambiguous but many others are non-specific and difficult to interpret in relation to modern medical terminology. These include decline and consumption – both of which are synonyms for tuberculosis – dropsy, convulsions, apoplexy, smallpox, St Anthony's fire, erysipelas, palsy and putrid fever; cases of all of these were found in Wapping registers.

Archaeologist Rachel Gardner excavating a human skeleton of Early Bronze Age date at Northumberland Bottom, near Gravesend, Kent (Union Railways (South) Ltd). The burial was accompanied by a pottery beaker which might originally have contained mead or beer.



The most complete of the family vaults was that of the Hubbucks, who also had family members in the main crypt under the church itself. By studying the parish registers the various members of the family can be traced to the turn of the 19th century. The family business of white zinc paint manufacturing, for which they held the patent, was traced right up to it being taken over in 1970.

Post-excavation work commenced on the cemetery of St Benet



A Saxon shield boss – one of the many grave goods excavated during work at Cuxton, Kent (Union Railways (South) Ltd).

Sherehog, part of the 1 Poultry excavations, a small parish in the City of London, where the archaeological, documentary and osteological data are all being combined to present a picture of the parish in the post-Fire period. Work also continued on the analysis of the information obtained from the St Bride's Lower Churchyard and from New Bunhill Fields, Islington, while the Cross Bones burial ground volume was published in early 1999 as part of the Jubilee Line Extension Project series.



The College burial ground – an illustration from MoLAS's 1998 publication *The Cross Bones Burial Ground*, Redcross Way, Southwark, London.



FIELD TEAM

Representing the MoLAS field team is the Spitalfields project team of 80 archaeologists, 7 supervisors and their on-site project manager, with some of the site support team from the Museum of London Specialist Services (MoLSS).

Joe Abrams, Neil Adams, Ros Aitken, Kevin Appleton, Rortia Askew, Julian Ayre, Simon Bailey, Bruno Barber, Ryszard Bartkowiak, Jackie Bates, Jessica Beattie, Jeremy Bell, Kate Berteleshaw, John Birnie, Ian Blair, Dick Bluer, David Bowsher, Julian Bowsher, Alex Brett, Trevor Brigham, Raoul Bull, Mark Burch, Aidan Burford, Howard Burkhil, Damien Carr, Steve Chew, Elizabeth Corrin, Carrie Cowan, Robert Cowie, Lorraine Darton, Heather Daunt, Kristen Davies, William Davies, Andrew Daykin, James Drummond Murray, Leslie Dunwoodie, Elaine Eastbury, Ben Eaton, Nick Eidsen, Margaret Footitt, Rachel Gardner, Rhodri Gardner, Mark Gocher, Malcolm Gould, Valerie Griggs, Charles Harward, Friederike Hammer, Anies Hassan, Kieron Heard, Richard Hewett, Julian Hill, Stewart Hoad, Nick Holder, Liz Howe, Richard Hoyle, Luis Huscroft, Mark Ingram, David Jamieson, Nigel Jeffries, Philip Jeffries, Rosemary Joyson, Matthew King, Heather Knight, David Lakin, Mark Landymore, Daven Lankstead, Richard Lee, Sid Lever, Ben Lowe, Tony Mackinder, Gordon Malcolm, Mandy Marshall, Andrew Mayfield, Malcolm McKenzie, Adrian Miles, Pat Miller, John Mirkin, Blaze O'Connor, Michael Parker, Ken Pitt, Gina Porter, Chris Rees, Matthew Reynolds, Peter Rowsome, Alan Roy, John Russell, David Sankey, Simon Savage, David Saxby, Joe Severn, Noreen Shephard, Anthony Sighorne, Alison Steele, Simon Stevens, Timothy Stevens, Daniel Swift, John Sygrave, Emma Taylor, Jeremy Taylor, Arthur Taylor/Nottingham, Alison Teifer, Lucy Thompson, Peter Thompson, Phil Treveil, Chris Tripp, Stephen Tucker, Richard Turnbull, Mark Turner, Kieron Tyler, Jo Wainwright, Diane Wallis, Bruce Watson, Sadie Watson, Andrew Westman, Mark Wiggins, Matthew Williams, Jo Wood, Aidan Woodger, Robin Wroe-Brown

9

Outside



the city

We have learned a great deal in recent years about prehistoric and Roman Southwark – both through English Heritage-funded research and research on the work for the Jubilee Line Extension (London Underground Ltd). In 1998, largely due to the pattern of developer-funded fieldwork, our gaze shifted towards the north-west and north-east.

Newgate

Just outside the Roman city at 3–9 Newgate Street, EC1 (Sun Life Assurance Society plc) a large, hitherto unknown stream or river channel was discovered. It would have been at least 25m wide and 7 or 8m deep and have been quite a remarkable feature in the Roman urban landscape. What had been expected was a much smaller watercourse that was thought to clip the eastern edge of the site, running south down to the Thames. (This stream had been recorded during work on the Paternoster Square development in the 1960s.) But upon excavation that channel was found to turn to the south-west, presumably flowing into the River Fleet. The main stream appeared to have been fast-flowing and was probably diverted to the south-east during the early Roman period and deliberately infilled, possibly in the late 2nd century, about the time that the city wall was built. Later clay and timber Roman buildings were found built over the infilled banks of this stream.

Nearby, on the same site, there were the remains of a very substantial Roman foundation. It was 6m square, and has been conjectured as part of the base of a large and imposing structure, perhaps a triumphal arch straddling the western entrance to the Roman city. The foundation appears to predate the construction of the city wall in approximately AD 200.

For centuries within urban communities the disposal of waste and sewage has been a problem. One of the favoured solutions was to dig pits and simply bury all the rubbish. Archaeologically these pits are very important, as they are normally rich in food waste – which provides good information for diet – and they often contain broken pottery vessels which are important for dating the sequence of human activity on site. These rubbish pits, of varying sizes, were apparently dug in people's backyards, which gives us an insight

into the use of the associated buildings (along the street frontage) as well as the external areas to the rear of the buildings.

The excavation of a number of trenches some distance back from the Newgate Street frontage at the new Merrill Lynch Regional Headquarters (Merrill Lynch Europe Property Ltd) has revealed dozens of early Roman pits and accumulations of midden material

that were periodically sealed by dumps of soil. Some of these rubbish deposits proved to be packed with pottery; particularly numerous were sherds of Spanish amphorae, which would originally have contained fish sauce and olive oil. Interestingly, the early dates from some pits confirmed that this area on the north-western edge of the Roman city was occupied before AD 70, and perhaps as early as AD 50. Occupation along Newgate Street, as evidenced by rubbish pits, continued until about AD 400, when the area was abandoned.

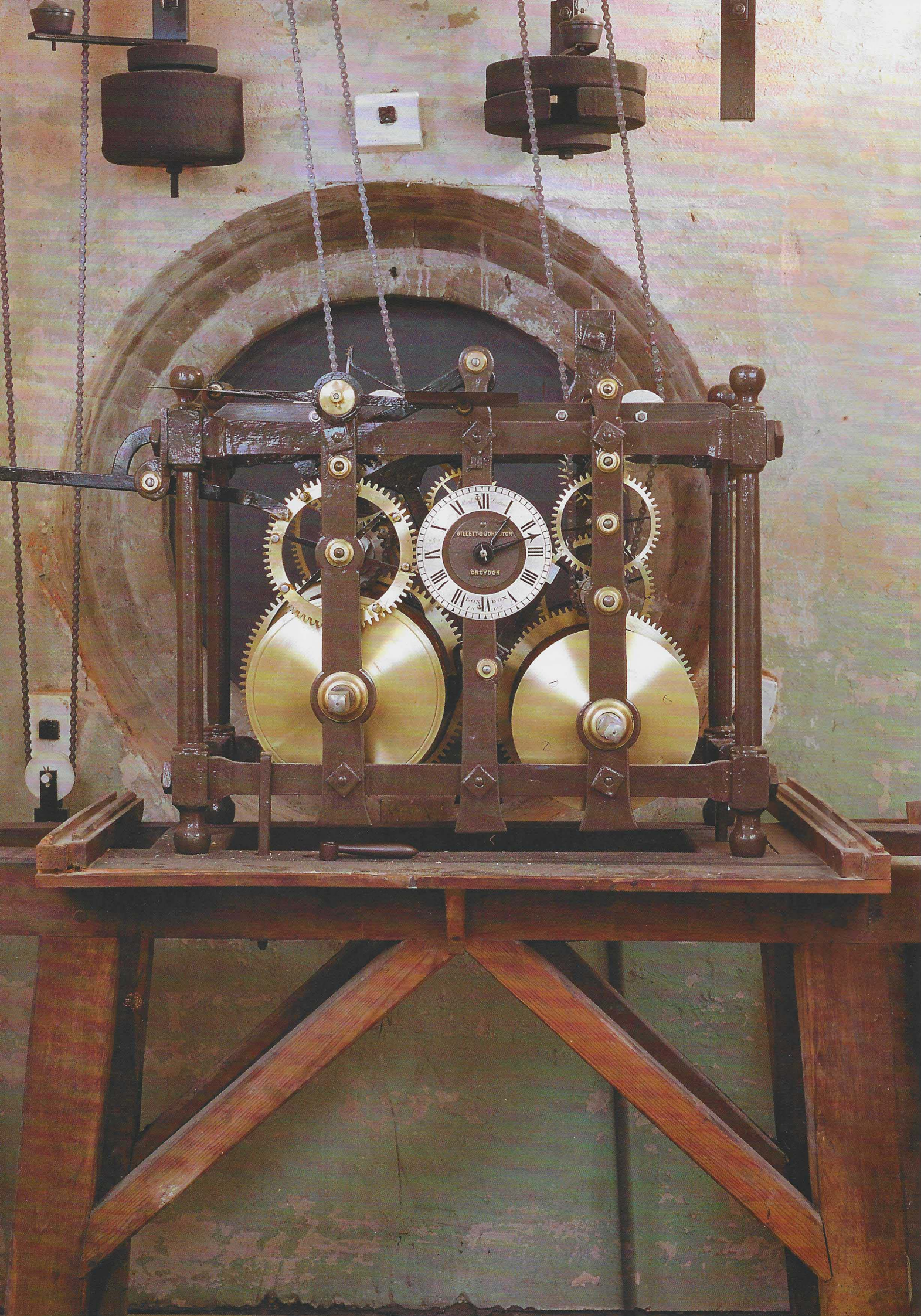
The area does not appear to have been resettled until about AD 950–1000, as we know from Saxon pits. Increasingly, more and more pits were dug, until, in the 14th century, the practice had to stop, as the growing population of the City of London had resulted in a very high density of buildings and, consequently, very few external areas available for pit-digging. Instead, people started to construct stone-lined pits which could be emptied and remained in use for centuries.

At Britannia House, 16–17 Old Bailey, EC4 (Hammerson UK Properties plc) there was also abundant evidence for pit-digging during the Roman period. This waste disposal took place in a concentrated area towards the top of



A 12th-century wattle-lined cesspit at Newgate Street, being recorded by James Drummond Murray.

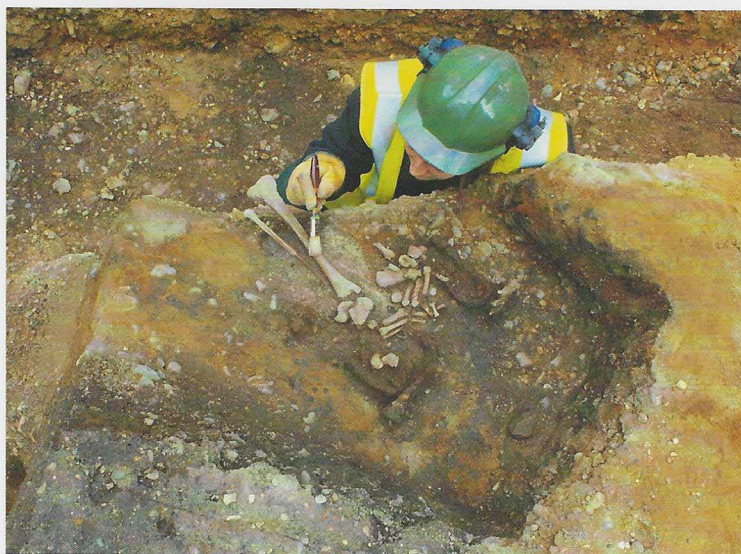
Outside London a standing building survey was undertaken hand in hand with archaeological work, as part of the Channel Tunnel Rail Link scheme (Union Railways (South) Ltd). Julian Ayre is seen here at a Second World War anti-aircraft gun battery at Northumberland Bottom, Kent.



top of the natural slope, where the subsoil was a free-draining band of gravel. The pits contained large groups of Roman pottery. One circular pit, which was nearly 2m deep and was associated with a linear flue, or gully, contained *in situ* burnt deposits. An unusual ritual lamp was found in the pit backfill. In the Roman period the site would have been beside a road, and immediately outside the city walls; unsurprisingly, therefore, Roman burials were found, including parts of three inhumations and four cremation burials.

The Britannia House excavations indicated that outside the City walls in the 13th and 14th centuries, substantial medieval buildings were constructed, around courtyards, as attested by the presence of large, well-constructed chalk-lined cesspits. Earlier activity indicates a similar pattern to that found at the new Merrill Lynch Regional Headquarters. A number of large Saxon pits were also excavated, some of which contained redeposited human remains from Roman burials disturbed by the pit-digging.

This 19th-century clock mechanism was photographed at the City of London Freeman's School in Ashstead, Surrey during a photo survey of the clock tower (Corporation of London Department of Building and Services).



Rosey Joynson cleaning the truncated remains of a Roman inhumation found in the Roman cemetery immediately outside the city wall at Britannia House (Hammerson).

Moorgate

To the north of the Roman City of London, along Moorgate, excavations at 50 Finsbury Square, EC2 (Standard Life Assurance Company) indicated that there had been widespread quarrying of brickearth, which formed the natural subsoil, in the late 15th century. This material was used for making bricks and tiles, and it is quite possible that this quarrying was for the local brick production associated with the repairs to the City wall in 1476. During the 16th century the quarries were backfilled with domestic refuse, and also some industrial refuse including discarded brick fragments, bell moulds and metal-working debris. A ditch of the same period may have been either a property boundary or a marker dividing the quarry area.

Excavations at 127–139 Finsbury Pavement, EC2 (Tafoni PTE Ltd) were sited on or close to the east side of the documented location of the moated Finsbury

Manor House; it was first documented in AD 1104 and lay close to the northern edge of the early and later medieval Moorfields Marsh. The earliest activity took the form of early medieval pits, postholes and gullies probably associated with the earlier phases of the manor. Some limited structural remains survived, with what appears to have been a yard area probably associated with the manor. Along the eastern edge of the site a large north–south aligned ditch was found. This was thought to be part of the moat defining the eastern extent of the manor. The moat had at least two phases of use: it was backfilled during the 13th–15th centuries, and later, during the 16th and 17th centuries, was partially revetted with a post and plank structure. Further east there was a second large channel or ditch, of similar date to the moat and also later revetted, possibly for drainage to the south.

A number of features which probably postdated the manor house were identified and excavated. These dated from the later 17th–20th centuries and consisted of brick drains, cesspits, make-up levelling dumps and rubbish pits.

An evaluation at 11–23 City Road, EC1 (The Church Commissioners), further to the north, located the base of a post-medieval ditch and a pit. On the eastern side of the site was a sequence of rubbish and brickearth dumps used to consolidate the marshy ground found in this area. One of these rubbish dumps contained a large quantity of artefacts of late medieval/early post-medieval date. In the south-west part of the site there was evidence for quarrying. One pit was infilled with a rubbish deposit containing several medieval decorated Penn tiles.



Roman ritual lamp from excavations at Britannia House (Hammerson).

The MoLAS geomatics team carried out an accurate survey of ancient ditches and banks surviving in the largely undamaged ancient woodland in Highgate Woods.



The eastern hinterland

The River Lea flows into the Thames just east of the Isle of Dogs, marking the ancient boundary between the counties of Middlesex and Essex. In recent years the Thames flood plain and gravel terraces of east London and Essex have proved a fertile ground for archaeological discovery with sites ranging from 19th-century industrial works back to Neolithic timber trackways. In 1998 several important sites were excavated providing evidence for the human exploitation of this rich landscape over the last 4000 years.

At the LESSA sports ground at South Hornchurch in the Borough of Havering (Barratt East London Ltd) rare and important evidence was found of the transition from 'Roman Britain' to 'Anglo-Saxon England' in the 5th century. The existing Roman field system seemed to have been partly maintained in the 5th century. Furthermore a deep well, backfilled with domestic rubbish, suggested that an Early Saxon settlement site must have lain very close by. The crucial evidence that enabled us to date the well to this transitional period was the presence of both very late Roman and Early Saxon pottery in the same backfill. Geophysical and archaeological work is continuing in 1999 and more evidence of the Saxon settlement should be revealed.

A ditch excavated at Church Street Dagenham (Boleyn & Forest Housing Society Ltd) turned out to be even older: the Late Bronze age pottery fragment found in its fill suggested that it was part of a prehistoric field system.

Twentieth-century development has all but obscured what were once small medieval farming villages like Stratford, Barking or Dagenham. At Church Street in Dagenham part of this rural village past was revealed when a sequence of post-medieval and medieval

buildings were excavated. Underlying the 19th-century buildings, a 17th-century brick-built house with cellar, garden and well was found. This building had itself replaced an earlier medieval timber building.

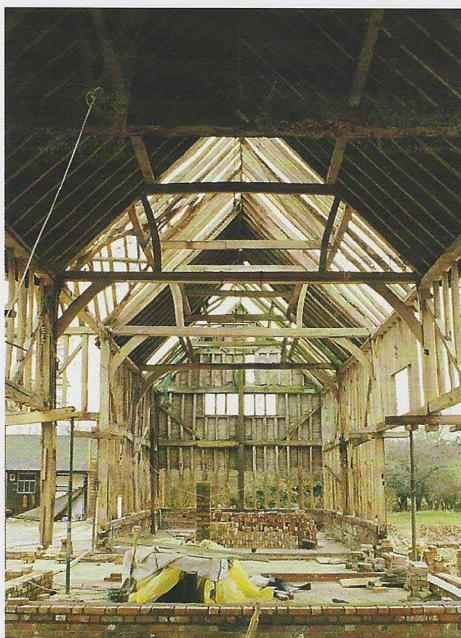
At Howe Green Moat Farm in Essex (Croft Homes Ltd) both archaeological and architectural recording work were carried out on the fine 17th- or 18th-century timber



One of London's hidden landscapes is a complex Bronze Age field system. Here David Saxby is recording stakeholes in a cut feature that formed part of that prehistoric field system, at Dagenham.

barn that stored grain in this moated farmstead. In Waltham Abbey in Essex (Environment Agency) a watching brief monitored repair works to the Cornmill Stream riverside walls. Here a stream of the River Lea acted as a 'leat' that provided the water power for the mill to grind flour for baking. The watching brief recorded evidence for repairs to the riverside wall that had been made in the 18th century and earlier in the 16th century. Parts of two medieval watermills were recorded and were dated to the 13th century or earlier.

Internal view of the timber barn at Howe Green Moat Farm, Essex.

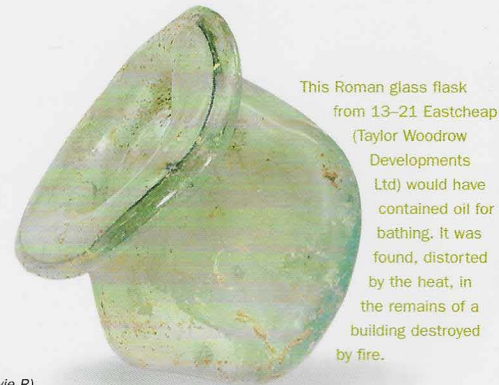




CLARK LABORATORY

The Clark Laboratory at MoLAS specialises in archaeogeophysics; the range of prospection techniques includes archaeomagnetic dating (continuing the pioneering work of Dr Tony Clark), ground penetrating radar, and resistivity and magnetometer survey. Seen here at Vinthers Place, the site of a major waterfront excavation by MoLAS in the 1980s, with Cannon Street Station and Southwark Bridge in the background, the Clark Lab is often engaged on non-archaeological work, including fault detection in ancient masonry and pile location.

site list



Barking and Dagenham

Church Lane/Church Street, Dagenham, RM10 (*Bowsher D*)

Bexley

Grassington Road, Sidcup, DA14 (*Bateman S*)
172–176 Old Road, Crayford, DA1 (*Cowan C*)
West Street Sites, Erith, DA8 (*Bates J*)

Bromley

Cray Valley Road, Orpington, BR5 (*Heard K*)
Farnborough Hospital, Locksbottom, Orpington, BR2 (*Holder N*)
25 Lynton Avenue, St Mary Cray, Orpington, BR5 (*Cowan C*)
Sevenoaks Way, Orpington, BR5 (*Bluer R*)
Youngs Timber Yard, 157 Sevenoaks Way, Orpington, BR5 (*Drummond-Murray J*)

Buckinghamshire

Marlow Brewery, High Street, Marlow (*Elsden N*)

Camden

Holborn Town Hall, Stukeley Street, WC2 (*Wiggins M*)
77–97 Kingsway, WC2 (*Wiggins M*)
Lacon House and Adastral House, Theobalds Road, WC1 (*Heard K*)

City of London

Atlantic House Holborn Viaduct, EC1 (*Watson B*)
Barrington House (East), 59–67 Gresham Street, EC2 (*Howe E*)
43 Bartholomew Close, EC1 (*Roycroft N*)
Blackfriars Court, EC4 (*Tyler K & Bowsher D*)
Billingsgate Bath House, 100 Lower Thames Street, EC3 (*Askew P & Rowsome P*)
5 Burgon Street, EC2 (*McKenzie M*)
30–35 Botolph Lane, EC4 (*Blair I*)
Britannia House, 16–17 Old Bailey EC4 (*Steele A*)
Broadgate Phases 12 & 13, EC2 (*Chew S, McKenzie M, Turner M & Swift D*)
Christchurch Greyfriars: Graveyard Survey EC1 (*Ayre J*)
80 Coleman St, EC2 (*Watson S*)
4, 6, 8 Creechchurch Lane, EC3 (*Barber B*)
Dr Johnson's Buildings, Hare Court, Inner Temple, EC4 (*Watson S*)
23–45 Fann Street, EC2 (*Sankey D*)
168 Fenchurch Street, EC3 (*Dunwoodie L*)
Gateway House, 25 Cannon Street, EC4 (*Elsden N*)
Kent Kouse, 11–16 Telegraph Street, EC2 (*Wroe-Brown R*)
15–17 King Street, EC2 (*Blair I*)
29–32 King Street, EC2 (*Blair I*)
King Edward Buildings, Giltspur Street, EC4 (*Watson B & Pitt K*)
147–148 Leadenhall Street, EC3 (*Sankey D*)
London House and Museum, 171–178 Aldersgate Street, EC1 (*Sankey D*)
Northern House, 29 Gresham Street, EC2 (*Howe E*)
Middle Temple Hall, EC4 (*Watson S*)
6–9 Newgate Street, EC4 (*Pitt K*)
8–12 Old Jewry, EC4 (*Lakin D*)
St Pauls Cathedral, EC4 (*Wroe-Brown R*)
1–10 St Swithin's Lane, EC4 (*Porter G*)
Sudbury House, Warwick Lane, EC4 (*Askew P*)
Tanner's Hall 13–21 Eastcheap, EC3 (*Sankey D*)
25–26 Throgmorton Street, EC2 (*Chew S*)
Trinity Bridge, Queensbridge House, Upper Thames Street, EC4 (*Ayre J*)
Wardrobe Court, 146a Carter Lane, EC4 (*Tyler K*)
90–91 & 100 Wood Street, EC2 (*Howe E*)
Woolgate House, 10 Coleman Street, EC2 (*Bowsher D*)

Croydon

49–61 High Street, CRO (*Bowsher J*)
Marmi Works, Grafton Road, CRO (*Cowie R*)
30 Onslow Gardens, Sanderstead, CR2 (*Roycroft N*)
414 Purley Way, Croydon CRO (*Saxby D*)
Water Palace, Purley Way, CRO (*Saxby D*)
Rutland Works, Vulcan Way, New Addington, CRO (*Hewett R*)

Essex

Cornmill Stream, Waltham Abbey, Epping Forest, EN9 (*Blair I*)
Howe Green Moat, Great Hallingbury (*Ayre J*)

Greenwich

A102 & Bugsbys Way, Greenwich Peninsula, SE10 (*Bowsher J*)
Dreadnought Seamen's Hospital, SE10 (*Bowsher J*)
Meridian Skyway, Millennium Exhibition, SE10 (*Bowsher J*)
84 Norman Road, Greenwich, SE10 (*Bowsher J*)
Neptune Hall, National Maritime Museum, Romney Road (*Bowsher J*)
Royal Arsenal Outfall Pipe, Woolwich SE18 (*Bowsher J*)

Hackney

9 Appold Street, EC2 (*Sankey D*)
97–113 Curtain Road, EC2 (*Pitt K*)

Hammersmith

Fulham Palace Tree Planting, Bishop's Avenue, SW6 (*Cowie R*)
Junction of Rigault Road & Burlington Road, SW6 (*Roycroft N*)
St Paul's Green, Queen Caroline Street, W6 (*Lakin D*)

Harrow

301/303 Lawsons Timber Yard, Burnt Oak Broadway, HA8 (*Steele A*)
24 Roxeth Hill, Harrow on the Hill, HA1 (*Wiggins M*)

Havering

Lessa Sports Ground, Rainham Road, South Hornchurch, RM9 (*Holder N*)
London Road/Kensington Road (motorpoint), Romford, RM7 (*Chew S*)
2–4 St Mary's Lane, Upminster, RM14 (*Holder N*)
Romford Brewery, Romford, RM1 (*Chew S*)

Hillingdon

388 Bath Road, Harmondsworth, UB7 (*Knight H*)
Bath Road, Norman Hay Site, Harmondsworth, UB7 (*Hoad S*)
BFI Quarry, Harmondsworth Lane, UB7 (*Hoad S*)
364 High Street, Harlington, UB3 (*Knight H*)
Whitehall Close, Uxbridge, UB8 (*Knight H*)

Hounslow

23–25 Chiswick High Road, W14 (*Mackinder T*)
Ferry Lane, Brentford, TW8 (*Hoad S*)
Former Rank Audio & Trico Site, Great West Road, Brentford, TW8 (*Hoad S & Cowan C*)
High Street, Feltham, TW14 (*Hoad S*)
The Pinnacle, Chiswick Roundabout, W4 (*Cowie R*)

Islington

6–9 Benjamin Street, EC1 (*Pitt K*)
13–16 Britton Street, 70–75 Turnmill Street, EC1 (*Lakin D*)
107–110 Bunhill Row, EC1 (*Wroe-Brown R*)
Charterhouse Mews, Preacher's Court, EC1 (*Barber B*)
Charterhouse Square, EC1 (*Thomas C*)
11/23 City Road, EC1 (*Mackinder T*)
52 Cross Street, EC1 (*Barber B*)
1–7 Dallington Street, EC1 (*Thompson P*)
27–30 Finsbury Square, EC2 (*Pitt K*)
50 Finsbury Square, EC2 (*McKenzie M & Lakin D*)
Hat and Feathers Site, 4–10 Clerkenwell Road, EC1 (*Thompson P*)
Honourable Artillery Company, Vicarage site, EC1
Northampton Hall, 25–32 Chiswell Street, EC2 (*Cowan C*)
89–97 St John Street, EC1 (*Hill J*)

Kensington

Infirmary Building, Royal Hospital Chelsea (*Roycroft N*)

Kent

Ashenbank Wood Pond, Kent (*Gould M*)
Beechbrook Wood, Kent (*Chew S*)
Cobham Golf Course (*Westman A*)
Cobham Park Brewers Gate, Kent (*Westman A*)
Cuxton, Kent (*Mackinder T*)
Dunkirk Road, Dunkirk (*Ayre J*)
Great Wood, Kent (*Westman A*)
Knights Place, Kent (*Appleton K*)
Lealow Lane, Kent (*Westman A*)
Leda Cottages, Kent (*Westman A*)
Parsonage Farm, Kent (*Westman A, Thompson L & Blair I*)
Northumberland Bottom, Kent (*Heard K & Askew P*)
Northumberland Bottom Army Camp, Kent (*Ayre J*)
Old Sea School Commercial Place, Gravesend (*Mackinder T*)
Pested Bars Road, Boughton Monchelsea, Maidstone (*Mackinder T*)
Sandling Construction Site, Kent (*Askew P*)
Scalers Hill, Kent (*Askew P*)
Singlewell, Kent (*Westman A*)
Tollgate, Kent (*Askew P*)
Tutt Hill, Kent (*Westman A*)
Watling Street, Kent (*Westman A*)
Westwell Leacon, Kent (*Blair I*)

Kingston

Kingston Bridge (south side), Kingston, KT1 (*Saxby D*)
Waitrose, Claremont Road, Surbiton, KT6 (*Hoad S & Cowan C*)

Lambeth

Bishops Palace, Lambeth, SE1 (*Hewett R*)
Millennium Wheel, Jubilee Gardens, SE1 (*Mackinder T*)
43 Turret Grove, SW4 (*Cowan C*)

Lewisham

Grove Street North, Pepys Estate, Deptford, SE8 (*Mackinder T*)
Marine Wharf, Lough Way, Deptford, SE8 (*Bowsher J*)
Pepys Park, Pepys Estate, Deptford, SE8 (*Mackinder T*)

42–52 Rushey Green, SE6 (*Hoad S*)

Sainsbury's Development Bromley Road, Catford, SE6 (*Bowsher J*)

Merton

Copse Hill, Wimbledon, SW20 (*Saxby D*)
110 The Ridgeway, Wimbledon, SW19 (*Hewett R*)
Wimbledon Indoor Tennis Club, North Road, SW19 (*Westman A & Hewett R*)

Newham

East Ham Baths and Tramsheds, Nelson Street, East Ham, E6 (*Holder N*)
91 The Grove, Safeway Site, Stratford, E15 (*Mackinder T & Miles A*)

Redbridge

Former Hainault High (Lower) School, Manford Way, IG7 (*Bluer R*)
The Grotto, Wanstead Park, Wanstead, E11 (*Burch M*)

Richmond

Harrods Depository, Barnes, SW13 (*Cowie R*)
The Royal Mews, Hampton Court, East Molesey, KT8 (*Cowie R*)

Southwark

All Saints Annexe, Imperial War Museum, Austral Street, SE1 (*Askew P*)
7–25 Bermondsey Street & 2–10 Magdalen Street, SE1 (*Daykin A*)
Foreshore Survey Bankside Pontoon, SE1 (*Sloane B*)
Former Paragon Centre, Searles Road, SE1 (*Ayre J*)
Globe Theatre Anchor Terrace, SE1 (*Barber B*)
Horseshoe Wharf, Clink Street, SE1 (*Roycroft N*)
8–18 London Bridge Street, SE1 (*Askew P*)
8–20 Pocock Street, SE1 (*Cowan C*)
Risborough Street, SE1 (*Watson S*)
167 Rotherhithe Street, SE16 (*Mackinder T*)
The Watch House, Bermondsey Street, SE1 (*Saxby D*)
159 Tower Bridge Road, SE1 (*Elsden N*)
Wineworld, Stoney Street SE1 (*Drummond-Murray J & Rowsome P*)

Surrey

Church Road, Egham, TW20 (*Hoad S*)
Long Lane, Bedfont Road, Stanwell, TW19 (*Hoad S*)

Sutton

Banstead Place Mobility Centre, Banstead Place, SM7 (*Mackinder T*)
26 The Broadway, Cheam, SM2 (*Holder N*)
585 London Road, North Cheam, SM3 (*Cowan C*)
Sutton Grammar School, Manor Lane, Sutton, SM1 (*Bowsher J*)

Tower Hamlets

Atlas Wharf, Westferry Road, Isle Of Dogs, E14 (*Lakin D*)
288 Bishopsgate, E1 (*Holder N*)
28–36 Brushfield Street, E1 (*Holder N*)
228 Cable Street, E1 (*Ayre J*)
Tower of London Foreshore Survey (*Wroe-Brown R*)

Waltham Forest

Avenue Road Estate, Leytonstone, E15 (*Chew S*)
88–92 Shernhall Street, Upper Walthamstow, E17 (*Chew S*)

Wandsworth

South Thames College, 71–77 Tooting High Street, SW17 (*Sankey D*)

Westminster

Artillery Mansions, Victoria Street, SW1 (*Mackinder T*)
68 Dean Street, Covent Garden, WC2 (*Cowan C*)
36 King Street, Covent Garden, WC2 (*Holder N*)
Marlborough House, Pall Mall, SW1 (*Bowsher D*)
52–54 Marylebone High Street, Marylebone, W1 (*Wiggin M*)
5–6 Picton Place, W1 (*Roycroft N*)
12–20 Praed Street, Paddington Basin, W2 (*Westman A*)
Royal Opera House, Covent Garden WC2 (*Bowsher D & Malcolm G*)
St Catherine's House, Kingsway, WC2 (*Malcom G, Wood J, & Swift D*)

West Sussex

Site H2, Newbridge Road, Billingshurst (*Stevens S*)
Site H5b Billingshurst (*Mackinder T*)

PHOTOGRAPHY

The photographic team, here seen with the tower of St Mary Somerset in the background, carry out a wide range of architectural and studio photographic assignments, as well as standing building recording and archaeological photography. The team have also developed the use of digital imaging and in-house reprographics, facilitating the increased use of photographic images in MoLAS publications and exhibitions.

Andy Chopping, Maggie Cox, Edwin Baker





SUPPORT SERVICES

MoLAS's archaeological work is supported by its own Finance office, IT support team, Human Resource management, secretarial assistance and tools/equipment management, here pictured in what would have been the centre of London's Roman amphitheatre, excavated by MoLAS 1987-96. In the background is the early 15th-century Guildhall, built by the master mason John Croxton.

Sarah Taylor, Su Nandy, Liz Brock, Richard May, Prasun Amin, Stephen Conquest, Julie Corpuz, Gary Warr Not pictured: Betty Gunn, Fiona MacDonell, Harry Matthews, Joanne Thomas

clients



Rare Dutch or English wall tile of mid 18th-century date from the site of the new Merrill Lynch Regional Headquarters, Newgate Street, EC2.

100 Old Broad Street Ltd
25 Cannon Street Ltd
68 Dean Street
A Lewis & Sons
ABB Power Generation Ltd
Acton Housing Association
Addison Redevelopments Ltd
Aldi Stores Ltd
Andrew Martin Associates
ARC Southern
Argent Development Consortium Ltd
Arkeolan
Armourium Project
Artillery Mansions Ltd
BAA Lynton plc
Balfour-Beatty Costain Joint Venture
Ballast Wiltshire plc
Barnet Healthcare Trust
Barratt East London Ltd
Barratt London Ltd
Barratt West London Ltd
Beazer Homes Ltd
Bellway Homes Ltd
Benchmark Group plc
Berkeley Homes (Essex) Ltd
Berkeley Homes (North London) Ltd
Berkeley Homes (Surrey) Ltd
Berkeley Homes (Thames Valley) Ltd
Birkbeck College Faculty of Continuing Education
Bishop's Stortford High School
Blastland Ltd
Boleyn and Forest Housing Society Ltd
Bookhouse Group of Companies
Bride Hall Developments Ltd
British Council
Broadgate Properties plc
Broadgate West TI Ltd
Broomleigh Housing Association
Bruce Castle Museum
BT Property
Buxton Homes
Cabinet Office
Camden Parks & Open Spaces
Canterbury Archaeological Trust
Caroe And Partners Architects
CBA Mid-Anglia
Central & Provincial Estates
Central Securities Ltd
Centros Miller Ltd
CgMs Consultants
Charles Chanon & Partners
Chelsfield plc
Chineplex Ltd
Church Commissioners
Circle 33 Housing Trust Ltd
City & Provincial Properties plc
City of London Archaeological Trust
City of Westminster
City University
Citygrove Leisure plc
Co-operative Insurance Society Ltd
Colebrook Estates Ltd
Cophthorn Homes Ltd
Corniche Builders Ltd
Corporation of London
Costain Construction Ltd
Costall Allen Design Ltd
Croft Homes Ltd
CSC Uxbridge Ltd
D J Higgins & Sons Ltd
Dean & Chapter of St Paul's Cathedral
Delta Mitre Ltd
Department of Environment Transport & the Regions
Development Securities plc
Diocese of London
DJ Higgins & Sons Ltd
Dr Ian Haynes, Birkbeck College
Drysdale Timber & Mouldings Ltd
Early English & European Theatre Association Ltd
East Thames Housing Group
Elvin & Hunt Developments Ltd
English Heritage

English Partnerships
Environment Agency
ERM Hong Kong Ltd
Erskine Estates & Properties plc
Fashion Crest Ltd
Faun Healy, Chartered Surveyors
Fenchurch Estates Ltd
Fibbens Fox Associates
Frogmore Investments Ltd
Fuller Smith & Turner plc
Funding Agency for Schools
Future Fitness Ltd
Gabriel (Contractors) Ltd
GAD Holdings
Gary Butler, Chartered Architects
Geotechnical Developments (UK) Ltd
Gifford & Partners
Gill Andrews
Glasspoole Thomson
GLE Property Developments Ltd
Goldcrest Homes plc
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Greycoat Construction Ltd
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Grocer' Company
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Found on the waterfront site at Regis House, King William Street, EC4, this copper alloy ornament or fitting shows a reclining lion with its front paw on a human head.

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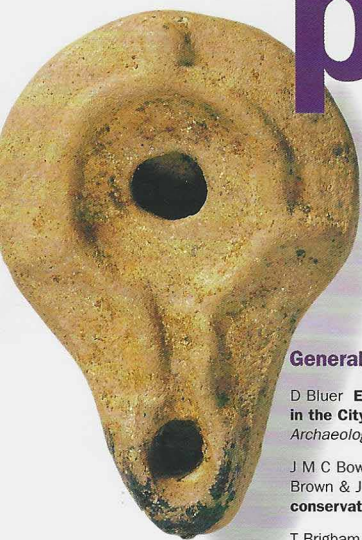
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publications



Roman oil lamp
from 13–21 Eastcheap
(Taylor Woodrow
Developments Ltd) made
locally in a mica-dusted
fabric.

General/multi-period sites

D Bluer **Ermine Street and St Ethelburga: observations at Bishopsgate in the City of London** *Transactions of the London and Middlesex Archaeological Society* 48 (1997) pp 15–32

J M C Bowsher **Coins from excavation to publication** in D Goodburn Brown & J Jones (eds) **Look after the pennies: numismatics and conservation in the 1990s** Archetype Publications (1998) pp 81–4

T Bringham & B Watson **Time marches on** *About Time* 2 (1998) pp 42–6

J Davison & G Potter **Excavations at 14 Whitgift Street, Croydon 1987–88 and 1995** *London Archaeologist* 8 (Summer 1998) pp 227–32

R Densem & H Sheldon **Popular archaeology: recent training digs in Southwark, London** *Rescue News* 76 (1998) p 4

J Drummond-Murray, C Thomas & J Sidell with A Miles **The big dig: archaeology and the Jubilee Line Extension** (Museum of London Archaeology Service 1998)

D Lakin **Excavations at Corney Reach, Chiswick W4, 1989–1995** *Transactions of the London and Middlesex Archaeological Society* 47 (1996) pp 61–77

P Mackie & W McCann **The Clark Laboratory** *Current Archaeology* 158 (July 1998) p 66

G Malcolm (ed) **Excavations at Island site, Finsbury Pavement, London EC2** *Transactions of the London and Middlesex Archaeological Society* 48 (1997) pp 33–58

T Nixon **Practically preserved: observations on the impact of construction on urban archaeological deposits** in M Corfield, P Hinton, T Nixon & M Pollard (eds) **Preserving archaeological remains in situ: proceedings of the conference of 1–3 April 1996** (Museum of London Archaeology Service 1998) pp 39–46

P Rowsome & P Treveil **No 1 Poultry** *Current Archaeology* 158 (July 1998) pp 50–6

J Schofield, D Malt & C Thomas (eds) **MoLAS 98: annual review for 1997** (Museum of London Archaeology Service 1998)

J Sidell **Geoarchaeology of the River Thames** *Current Archaeology* 158 (July 1998) p 64

A Steele **Beneath the Trocette: evidence for Roman and medieval Bermondsey** *London Archaeologist* 8 (Autumn 1998) pp 265–70

A Thompson, A Westman & T Dyson **Archaeology in Greater London 1965–90: a guide to records of excavations by the Museum of London** (Museum of London 1998)

B Watson **Excavations and observations at Minster Court & Minster Pavement, Mincing Lane in the City of London** *Transactions of the London and Middlesex Archaeological Society* 47 (1996) pp 87–102

B Watson **The future of London's past revisited and expanded – a conference review** *London Archaeologist* 8 (Spring 1998) pp 213–20

Prehistoric and Roman

N Bateman **Public buildings in Roman London: some contrasts** *Journal of Roman Archaeology* 24 (1998) pp 47–57

D Bluer & R Nielsen **Lloyd's Register: the end of Roman London** *Current Archaeology* 158 (July 1998) p 74

T Bringham **The port of Roman London** *Journal of Roman Archaeology* 24 (1998) pp 23–34

T Bringham & B Watson **Regis House: the Romans erect their port** *Current Archaeology* 158 (July 1998) pp 44–7

J Conheaney **Health and hygiene in London** *Current Archaeology* 158 (July 1998) p 65

J Drummond-Murray & P Thompson **Did Boudica burn Southwark? The story of the Jubilee Line Extension** *Current Archaeology* 158 (July 1998) pp 48–9

N J Elsdon (ed) **Excavations at Nobel Drive, Harlington, and six sites to the north of Heathrow Airport, Hillingdon** *Transactions of the London and Middlesex Archaeological Society* 48 (1997) pp 1–13

S Geddes & E J Sidell **The animal bones** in J D Shepherd (ed) **The Temple of Mithras, London: excavations by W F Grimes and A Williams at the Walbrook** English Heritage Archaeology Report 12 (1998)

M Hutchinson **The Jubilee Line excavations: recent work on Roman Southwark** *Journal of Roman Archaeology* 24 (1998) pp 58–60

J Partridge **Prehistoric ditch found in Hammersmith** *London Archaeologist* 8 (Winter 1998) pp 304–5

P Rowsome **The development of the town plan of early Roman London** *Journal of Roman Archaeology* 24 (1998) pp 35–46

D Sankey **Cathedrals, granaries & urban vitality in late Roman London** *Journal of Roman Archaeology* 24 (1998) pp 78–82

D Sankey **London's first cathedral** *Current Archaeology* 158 (July 1998) p 73

D Sankey & B Watson **London's first Christians** *Ecclesiology Today* 16 (1998) pp 14–17

J Sidell & K Reilly **New evidence for the ritual use of animals in Roman London** *Journal of Roman Archaeology* 24 (1998) pp 95–9

R Tomber & J Dore **The National Roman fabric reference collection: a handbook** (Museum of London Archaeology Service/English Heritage 1998)

B Watson **A brief history of archaeological exploration in Roman London** *Journal of Roman Archaeology* 24 (1998) pp 13–22

B Watson **'Dark earth' and urban decline in late Roman London** *Journal of Roman Archaeology* 24 (1998) pp 100–6

B Watson (ed) **Roman London: recent archaeological work, including papers given at a seminar held at the Museum of London** *Journal of Roman Archaeology* 24 (1998)

A Westman **Publishing Roman Southwark: new evidence from the archive** *Journal of Roman Archaeology* 24 (1998) pp 61–6

Anglo-Saxon and medieval

P Askew **Early medieval Purbeck marble slabs from Southwark** *Journal of the Church Monuments Society* 13 (1998) pp 15–6

L Blackmore, D Bowsher, R Cowie & G Malcolm **Royal Opera House** *Current Archaeology* 158 (July 1998) pp 60–3

J Cherry & B Watson **Two medieval statues from London Bridge, England** *Minerva* 9:5 (1998) pp 26–7

M Hutchinson **Edward IV's bulwark: excavations at Tower Hill, London, 1985** *Transactions of the London and Middlesex Archaeological Society* 47 (1996) pp 103–44

P Treveil & P Rowsome **Number 1 Poultry – the main excavation: late Saxon and medieval sequence** *London Archaeologist* 8 (Autumn 1998) pp 283–91

R Wroe-Brown **Bull Wharf, Queenhithe** *Current Archaeology* 158 (July 1998) pp 75–7

1500–present day

J M C Bowsher **The Rose Theatre: an archaeological discovery** (Museum of London 1998)

G Potter **The first Hampton Court bridge** *Transactions of the London and Middlesex Archaeological Society* 48 (1997) pp 169–72

D Saxby & D Goodburn **Recent maritime archaeological discoveries on the Thames waterfront at Bellamy's Wharf, Rotherhithe, London SE16** *London Archaeologist* 8 (1998)

D Saxby & D Goodburn **Seventeenth-century ships' timbers and dock on the Thames waterfront at Bellamy's Wharf, Rotherhithe, London SE16** *Mariner's Mirror* 84:2 (1998)

K Tyler **Excavation of an early-modern site at the German Hospital, Dalston, London Borough of Hackney** *Transactions of the London and Middlesex Archaeological Society* 47 (1996) pp 151–71

contact:



A Dutch wall tile of late 17th/early 18th-century date, with a mounted military figure, from the site of the new Merrill Lynch Regional Headquarters, Newgate Street, EC2. Also shown are details of other tiles from the site.

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'generally to promote understanding and appreciation of historic and contemporary London and of its society and culture, both by means of their collections and by such other means as they consider appropriate.

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MoLAS 99

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