

ANNUAL REVIEW

MOLAS 97

museum of
LONDON



ARCHAEOLOGY SERVICE

Annual Review
for 1996

MoLAS 97

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Cover: A balsamarium or incense-container in the form of a male bust, from the arrangement of the hair perhaps a representation of an Ethiopian; 2nd- or 3rd-century, from the excavations at 7-11 Bishopsgate. Made of copper alloy and 60mm high, it was probably used in the religious rites of the god Bacchus

The duties and powers of the Board of the Museum of London

‘... it shall be the duty of the Board:

‘to secure that those objects are exhibited to the public and made available to persons seeking to inspect them in connection with study or research;

‘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.

‘... the Board may:

‘provide archaeological services and undertake archaeological investigations and research in connection with land in London, publish information concerning such investigations and research and promote the provision of such services and the undertaking of such investigations and research and the publishing of such information ...

‘In this section, *London* includes all Greater London and the surrounding region’

Museum of London Act 1986

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Above: From Roman levels at Number 1 Poultry came two cones of the stone pine, a native of Mediterranean Europe, shown here with a modern specimen

Right: Limestone finial in the shape of a cone of the stone pine, from a mausoleum at Great Dover Street, Southwark. The pine cone is a symbol of the god Atys and is often found in association with Roman funerary monuments

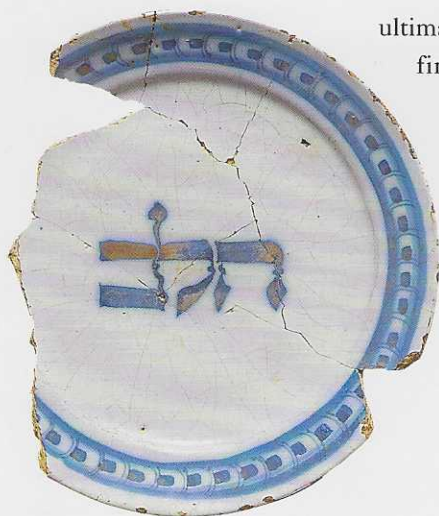


Foreword

This report outlines some of the considerable additions to knowledge that have been made by the Museum of London Archaeology Service over the last year. It is a tribute to the dedication of colleagues in delivering services to clients, while moving to new headquarters.

Walker House, in Queen Victoria Street, EC4, at last provides the archaeology service with proper facilities for its important work. Since 1975, when the Museum of London became involved in field archaeology in advance of redevelopment, the archaeologists have been in a succession of temporary premises in the City and elsewhere in London – none of them ideally suited to the task. Walker House enables high-quality work to be done in the core tasks of site evaluation, excavation and publication in London and also in an expanding range of scientific and specialist services which we can provide to other parts of the United Kingdom and abroad.

Delftware plate of the 1720s made in Lambeth, found in an excavation in Mitre Street, City of London, in 1986, but recognised in research of 1996. It is decorated in blue on white, with an inscription in Hebrew which reads 'chlav' ('milk'). The plate would have been part of two separate sets for meals; Jewish dietary laws required dairy and meat produce to be kept apart



Archaeological services are now provided in a free market and MoLAS has to compete. The key element in choosing MoLAS is the quality of service we provide both to developers and to the advancement of understanding of the archaeology of London. MoLAS has an excellent record of working with the planning authorities and English Heritage to match the sometimes conflicting priorities of archaeological preservation and the needs of the developer. We complete archaeological investigations within time and budget. A great many leading companies and institutions recognise the value of this and also the benefits that arise from supporting the expansion of knowledge. This ultimately benefits the public by providing collections of finds and data for research by present and future scholars, and by making exhibitions and programmes in the Museum of London up-to-date and authoritative.

Max Hebditch

Director, Museum of London

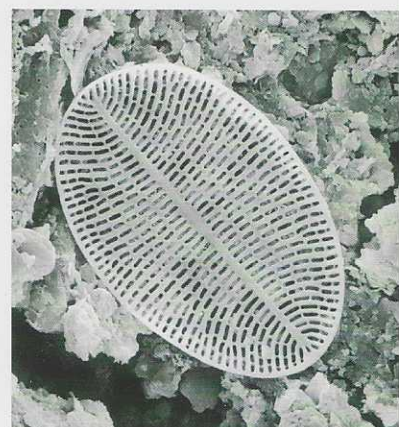
MoLAS in 1996

MoLAS Annual Reviews have become an established part of the archaeological literature produced on London every year. When we began the series in 1994 there were serious concerns about the way in which *PPG 16* would operate and the future of archaeology at the Museum of London. Therefore with the publication of *MoLAS 97* as we enter our sixth year it is my pleasant duty to record the organisation's gratitude to the Director of the Museum of London who is retiring in 1997. Max Hebditch fought long and hard to ensure the survival of an archaeological service at the Museum during the property market crash of 1990 and the economic recession. It is largely due to his support that the Board of Governors were able to continue to maintain an archaeological service albeit on a self-financing basis in a very competitive environment.

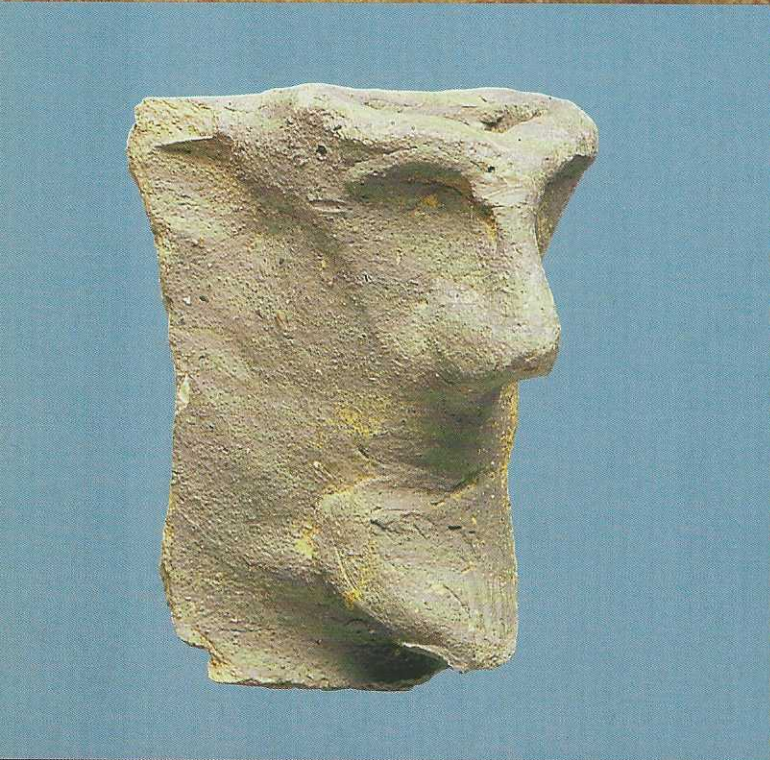
The research reported on in the Annual Reviews has justified the support given to the service and *MoLAS 97* is no exception. Regular readers will have noticed a gradual change to the content over the last five years; this reflects the way in which the organisation has adapted to changes in archaeology and development with increased emphasis on heritage management and scientific services. In 1996 development in the City of London and in the City of Westminster continued to increase, with the completion of groundworks on major sites such as Bull Wharf, Number 1 Poultry and the Royal Opera House; together with developments in Greater London, for example the Jubilee Line Extension and Perry Oaks Sludge Works. Although central London is one of the most extensively investigated urban areas in Europe substantial advances in knowledge still continue to be made as can be seen from our work at the Royal Opera House. MoLAS is now entering into a busy period of post-excavation work that will no doubt highlight other important archaeological discoveries.

MoLAS staff and volunteers have worked exceptionally hard during 1996 in cooperation with English Heritage and the Boroughs to manage the increased volume of fieldwork. English Heritage have also generously funded the main publication programme. We are very grateful to the City of London Archaeological Trust for its support and to our clients who recognise that by using the archaeological services of the Museum they are adding to knowledge and enhancing the cultural life of London through a world-class city museum.

Peter Chowne
Head of Service



Diatom valve (unicellular alga) magnified 5000 times. These algae are being analysed for the Jubilee Line Extension Palaeoenvironmental project. The presence of this organism can indicate the salinity of the water, which has implications as to whether the site could have been occupied in the past



Heritage Management

Clockwise from top left: central Gaulish face-mask decoration from a large beaker or jar of the 1st or 2nd century, found in Borough High Street; pewter male doll of late Tudor date; Roman copper alloy mount in the form of a theatrical mask, from Poultry; medallion engraved with a female bust, from Roman deposits at Regis House; medallion from the handle of a glass flagon, dating from the late 1st century, found at Poultry; anthropomorphic spouted jug in South Herts greyware dated to the 13th century, from St Mary Clerkenwell

MoLAS provides a range of services to the development industry and the community at large. Its first and overall concern is the management of the archaeological and built heritage. In conducting dialogue with developers, planners and those in charge of historical and archaeological assets, MoLAS seeks

- to solve problems
- to develop opportunities and
- to give objective advice.

Our heritage management work is of two main kinds: helping to preserve important archaeological deposits, especially on or near Scheduled Ancient Monuments; and recording historic standing buildings.

Three projects have concerned Scheduled Ancient Monuments. At **87–89 Aldgate / 37 Jewry Street, EC3** (GMS Estates Ltd), the state of the Roman city wall along one side of the development was carefully monitored during building works. The wall, though cut down to its bottom courses, was preserved. Medieval rubbish pits were dug into the edge of the medieval city ditch immediately south of Aldgate itself. Secondly, on the City waterfront at **Bull Wharf, Upper Thames Street** (Markborough Properties Ltd), after extensive excavations in 1990–4, a watching brief was carried out adjacent to Queenhithe, the ancient inlet in the present waterfront. Excavation for ground beams penetrated the top of the archaeological strata, mostly cellar walls and floors and debris of the Great Fire of London in 1666. The information from these observations complements the more detailed study already undertaken of this area south of Thames Street.



Four Frankish-type brooches from the site at Bull Wharf. They were found on the earliest Saxon foreshore and date to the late 9th century

North-west of the City at **Sans Walk, Clerkenwell** (Mercers' Company Housing Association Ltd), works ahead of residential accommodation elucidated part of the medieval nunnery of St Mary Clerkenwell, which has been excavated on several sites in the vicinity since the 1970s. The excavation lay mainly in the area of the nunnery garden, which after the Dissolution of the Monasteries in the 1530s became the garden of the Tudor mansion of the dukes of Newcastle. Medieval and Tudor walls, including one of the 12th century with part of a doorway still in place, were recorded before their preservation *in situ*.

Recording the 16th-century well at St John Street



Refurbishment within the basement of **99 St John Street, EC1** (P Harbutt) revealed the top of a backfilled brick well which proved to



Diamond drilling in progress at Benbow House

be 4.6m deep. It was probably of late 16th-century date, and will be retained as a feature within the refurbished building.

Historic strata have also been preserved on non-scheduled sites. At Covent Garden Piazza, as well as excavating a large area of Saxon *Lundenwic* on the Royal Opera House site (described below), MoLAS monitored the reconstruction by Westminster Borough Council of the old Victorian public conveniences in the churchyard of **St Paul Covent Garden**. Saxon strata beneath the present Covent Garden market complex, including a probable building with a hearth, were exposed in section behind the Victorian retaining walls. These deposits were recorded and then conserved *in situ* behind special sheeting and sand. The exercise confirms that the Piazza overlies important remains of the Saxon town of the 7th to 9th centuries.

A second case lay across the river at **Benbow House, Bankside** (Chelsfield plc), where a site evaluation of 1995 had highlighted the presence of significant 16th- or 17th-century remains and 17th-century glassworking waste. English Heritage and Southwark Council would only allow development to proceed if these remains could be preserved *in situ*. Accordingly, MoLAS monitored a geotechnical investigation designed to locate 19th-century and later intrusions and then to diamond drill them in order to identify areas where archaeological deposits had already been destroyed.

The 'Preserving Archaeological Remains in Situ' (PARIS) conference was hosted by the Museum of London in April 1996. The three-day event was jointly organised by MoLAS and the University of Bradford, and was attended by delegates from Britain, USA, Israel, Sweden, Denmark, Germany, Belgium and Latvia. The conference reflected the archaeological profession's current preference, internationally, for preserving archaeological sites, rather than excavating (and thus destroying) them – a policy underpinned in Britain by the Department of Environment's Planning Policy Guidance Note 16 of 1990. There are now widespread concerns about whether current techniques can be relied on to preserve archaeological remains (such as the Roman quay at Suffolk House, shown right), as the complex biological, chemical and physical processes in burial environments are poorly understood. During the conference preservation issues were debated by archaeologists, archaeological scientists, conservators, geologists, soil scientists, developers and engineers. Many proposals were put forward for future research, both in the laboratory and in the field; and the NERC Science-Based Archaeology Strategy Group is now working towards a thematic research programme



MoLAS is also experienced in the recording of standing buildings and has either in house or on call the necessary skills and services: building recording and analysis (including recording and interpreting stone and

timber mouldings); analysis of ceramic building material, mortar, window glass, plaster, fixtures and fittings; analysis of ancient timbers, which often bear marks both of previous uses and of the technology of construction; rectified photography and photogrammetry; and building reconstruction, in three dimensions and in both still and moving images.



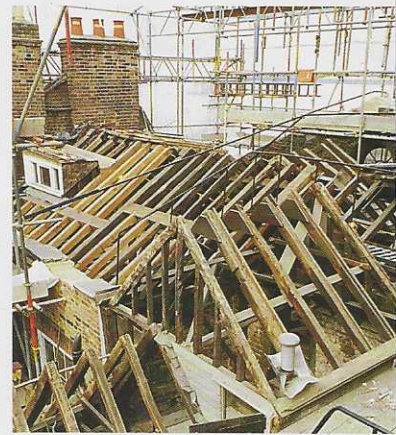
The recording work on the Gate, working from the accurate basis of plans and sections originally drawn by the architects for their own conservation work, studied the sequence of decoration of the panelling by sampling the layers of paint, and took samples for dendrochronology from the roof structure

At the **Middle Temple Gatehouse and 1–2 Middle Temple Lane** (Honourable Society of the Middle Temple), refurbishment of the late 17th-century buildings allowed a full record to be made of some important surviving structures and their internal furnishings. The Gate was built in 1683–4 to the design of Roger North, a lawyer who had studied architecture and enjoyed dabbling in it

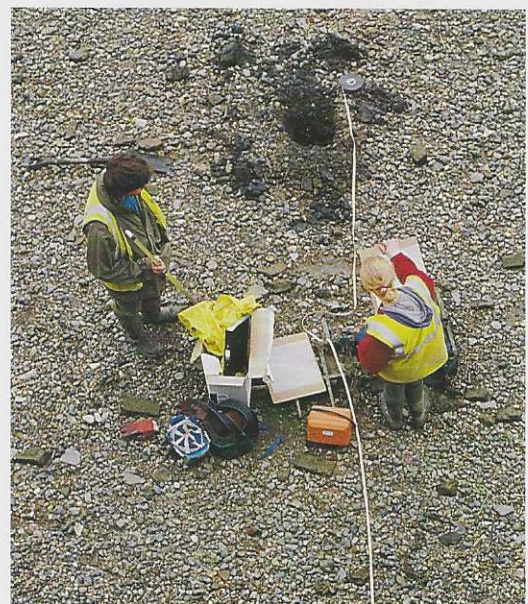
Topics of interest in this project included not only the construction and fitting out of the two buildings, both rare survivals of the late 17th century, but also how the design of the Gate may reflect North's own views on architecture. The internal arrangements in both buildings reflect contemporary ideas about how space should be arranged within a suite of rooms to

be occupied specifically by lawyers.

In London by 1600 there was a fashion for two staircases, often near each other or back to back within the house: a grand or formal stair, and one or more smaller stairs elsewhere in the building. Roger North approved of this in his essay *On planning a country house* of 1696; servants must have their own entrance and 'back-inferior' stairs. The stairs were also necessary to make individual suites for lawyers on each floor of the building. This is significant as at the opening of the 17th century in ordinary London houses, there were virtually no examples of buildings with tenancies on separate floors in the manner of modern flats. It is possible that professions such as lawyers, grouped together and yet needing individual offices, led the way in this important change.



The roof structures of the late 17th-century buildings around the top end of Middle Temple Lane were exposed and recorded; they provide information for dating the various periods of construction



Evaluating the Thames foreshore just downstream of Hungerford Bridge in association with London Underground Ltd



Site Assessments & Investigations

Clockwise from top left: surveying the foreshore at Hungerford bridge; recording timbers from St Ethelburga's Church, Bishopsgate; excavating the base of the 17th-century tin-glazed (delft) ware kiln at Hermitage Basin; cleaning Roman wall plaster at Lloyd's Registry, Fenchurch Street; steps leading down to the floor of an early Roman cellar at 7-11 Bishopsgate; an early medieval wood-lined well at 7-11 Bishopsgate

During 1996 MoLAS gained the status of a Recognised Archaeological Organisation with the Institute of Field Archaeologists, the professional body for UK archaeologists. Our experience on so many sites in London has resulted in a valuable predictive database, enabling us to advise on ground conditions and the depth and character of the archaeological strata. This unique and extensive database allows MoLAS to advise quickly on the likely impact of proposed development. MoLAS can also undertake large assessments for infrastructure schemes such as motorways, railways or airports. To date, MoLAS has produced over 250 desk-based assessments on sites within the Greater London area.

When required by the needs of planning procedures, MoLAS undertakes field evaluations. An evaluation normally follows a desk-based assessment, and includes observation of trial pits, limited excavation, or detailed survey of a property to be developed by all appropriate means (recording, photography, geophysics). MoLAS has produced 617 field evaluations in the past five and a half years.

In this report the dates of the broad archaeological periods have date-ranges as follows:

Lower Palaeolithic	c 500,000 - 38,000 BP
Upper Palaeolithic	38,000 - 10,000 BP
Mesolithic	9,700 BP (c 9,000 BC) - 5,500 BP (4,300 BC)
Neolithic	4,300 BC - 2,000 BC
Bronze Age	2,000 BC - 650 BC
Iron Age	650 BC - AD 43
Roman	AD 43 - 410
Saxon and Danish	410 - 1066
Medieval	1066 - 1500
Post-medieval	1500 - present day

BP stands for Before Present (taken as 1950), and is a measurement in *radio-carbon years*, which is then matched against a dendrochronological (tree-ring dating) chart. This chart does not, as yet, extend back before 9000 BC, and therefore dates and periods before the Neolithic are given as 'before the present'.

The London area in prehistoric times

The evidence of human occupation in the central London area for both the Mesolithic and Neolithic periods consists mainly of the distribution of flint objects, with the addition of pottery in the Neolithic. During this 7,000-year period, evidence from south and north of the Thames suggests that the environment was exploited in differing ways. On the eyots (islands within the marshy area) of Southwark fishing and hunting was the norm, whilst the well drained northern bank would have created an ideal environment for primitive farming. Despite the masking of London's ancient terrain by the present buildings, MoLAS is increasingly locating and investigating prehistoric settlements.

Evaluation of sites which are either large in area or occasionally (as along the sides of the present river Thames) very deep, is sometimes a matter of using machine-cut trenches or combining engineering and archaeological requirements in geoarchaeological prospecting, when boreholes are drilled and their samples analysed.

At the **Imperial Sports Ground, Sipson Lane, Hillingdon** (Henry Streeter (Sand and Ballast) Ltd), the evaluation of a large site involved the digging by machine of 96 trenches, each between twenty and thirty metres long. Evidence of a rich historic landscape included numerous ditches and pits of Bronze Age, Iron Age and Roman date, and four Bronze Age cremations (the burying in the ground, usually in pottery vessels, of burnt human bones).

At **Voyager's Quay, Copperfield Road, Thamesmead, Bexley** (Barratt London Ltd) two boreholes were sunk in waste ground on the present south bank of the River Thames to assess the stratigraphy where

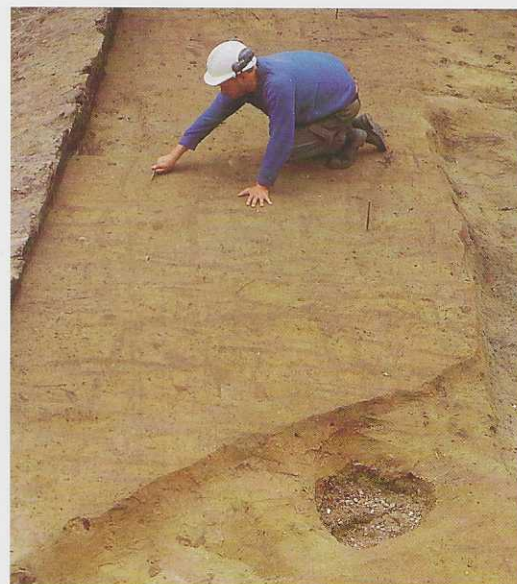
the depth of made ground was known to exceed five metres. The main element of interest were peats, which have been found on similar sites close to the Thames, and from which pollen, plant macrofossils, insect and mollusc remains have been recovered in order to reconstruct the

prehistoric environment. The sequence was dated by Carbon 14 samples to 3500–1020 BC, and the organic sediments observed were probably laid in the middle Neolithic to later Bronze Age periods (2700–1020 BC).

Vegetation included elm, lime, oak and hazel along with some ash, birch and pine. Pollen of 'cereal type' probably constitutes evidence for Neolithic activity, presumably agriculture.

MoLAS environmental specialists carried out a number of geoarchaeological projects in 1996, generally at the beginning of site fieldwork when borehole prospecting is used to supplement conventional site evaluation. This method is particularly useful on deeply stratified sites, which are increasingly being investigated in the Thames floodplain. It involves preliminary analysis of buried strata, construction of a dating framework and assessment of the local depositional environment. The archaeological importance of this type of investigation lies in the ability to identify strata where evidence of human activity could be preserved, and also the ability to assess the suitability of the wider area for human settlement and resource exploitation.

The **Silvertown Urban Village project** (Peabody Trust, East Thames Housing Group and Wimpey Homes Holdings Ltd) consisted of eight boreholes drilled in two transects across the site. Modelling of the sedimentary sequence indicated that a palaeochannel ran across the site at the end of the last Ice Age. Peat formation was consistent across the site, dating to between 5500 and 2500 BP, followed by alluvial inundation, possibly due to a rise in relative river level. A number of analytical techniques were applied to the samples collected from the



At Lafone Street, Southwark, SE1 (Raven Group), a soil horizon contained worked flints and possible prehistoric pottery; and nearby a number of criss-cross marks were revealed beneath the soil, cutting the natural sand. These were probably left by prehistoric ploughing, and similar marks have been recovered at the nearby sites at Phoenix Wharf and Wolseley Street

boreholes in order to fully characterise the sediments, one of which produced results which may tentatively indicate local human activity contemporary with the period of peat formation.

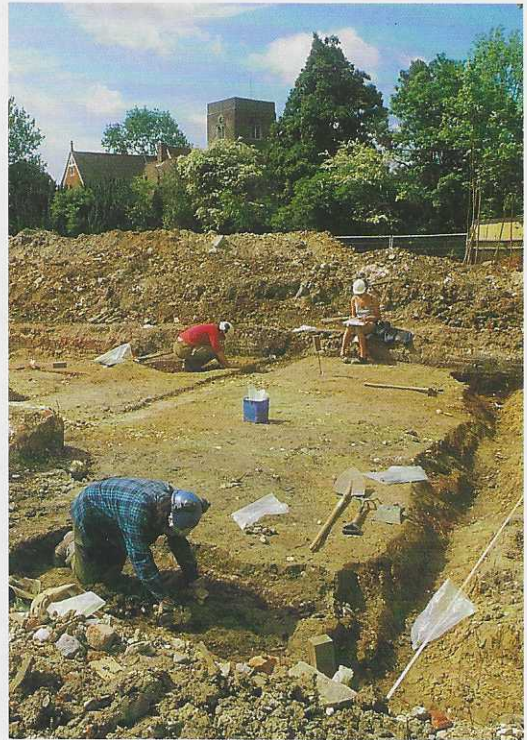
A watching brief on the line of the new spine road at Erith, now called **Bronze Age Way** (R P S Clouston (The Environmental Consultancy)) produced a sequence dating from slightly later in the Holocene, and provides information on the development of the Thames floodplain from the Late Mesolithic to the Bronze Age. The initial conditions suggest that the floodplain was intersected by channels associated with the main Thames system at a time of low sea level. Pollen analysis suggests that local woodland was present, probably on the higher ground to the south. A substantial Late Mesolithic flint

assemblage was recovered in the basal sands and silts, and indicates knapping on the floodplain, which must have been, at times, sufficiently dry for people to traverse it. The Bronze Age deposits indicate damper conditions, with local, probably on-site alder carr. A brushwood feature made of alder wood was found, possibly a 'facine' or area of timber filling a damp area between drier ground, constructed by people wanting to get into the wetland. This may simply have been to move between settlements, or to get into the marsh to collect food or other material such as firewood.

The main prehistoric project of 1996 has been in the west of London at **Heathrow Airport** (BAA plc). The area of the West London gravel terraces where Heathrow Airport now lies has long been recognised as containing the traces of ancient and historic landscapes from earliest

times. The presence of early hunter gatherer communities can be recognised in the archaeological record by the discovery of flint tools, usually derived from modern gravel extraction. By the Neolithic period, the landscape gradually became more organised and managed, and within the Heathrow area there is evidence that it was dominated by ritual or ceremonial monuments. During the succeeding Bronze and Iron Ages the landscape became more enclosed and divided

as agriculture and settlement intensified. A system of small settlements in a farmed landscape continued through the Roman occupation until early in the 20th century when the airport was constructed.



At Manor Farm Buildings, Church Road, Old Malden, Worcester Park, Surrey (Michael Shanly Group), a pit of possibly Iron Age date contained two fine flint adzes of Mesolithic date, perhaps placed there deliberately many years later. The site also revealed Iron Age postholes and pits for storage and rubbish, with many finds



One of the Mesolithic adzes from Church Road, Old Malden



Excavating a section through the Stanwell Cursus

In June MoLAS on behalf of BAA plc presented evidence to a Public Inquiry considering proposals for the construction of a fifth passenger terminal, located at the western end of the airport. This evidence included a comprehensive assessment of the archaeological impact of the development resulting from fieldwork and study over a number of years. In addition an innovative archaeological strategy, developed in conjunction with BAA's archaeological consultants, was presented to the Inquiry.

As part of the **Terminal 5** assessment, a programme of field evaluation was implemented in the early part of the year in airfield operational areas to the north, south and west of the sludge works. Working in the operational areas of the airfield presents significant safety and security constraints; despite these, MoLAS was able to trial trench in close proximity to the taxiways and aircraft stands. The work produced evidence of widespread Middle Bronze Age activity on the proposed development site. Other archaeological fieldwork at the airport has included evaluation and excavation of an office development in **Newall Road** and a significant number of evaluations of developments along the **Bath Road** to the north of the airport.



Preparing a site adjacent to the taxiways at the west end of Heathrow Airport



Middle Bronze Age field systems being recorded at the Perry Oaks Sludge Works

The most significant work undertaken by MoLAS at Heathrow Airport in 1996 was an extensive rescue excavation in the south-western area of the **Perry Oaks Sludge Works**. Commissioned by BAA plc and with the cooperation of Thames Water, this involved the stripping of a 5-hectare area which had been used for sludge stockpiling. There followed an innovative programme of excavation and recording designed to investigate the range of human activities across the ancient landscapes, the remains of which were found to be severely truncated and poorly preserved.

The investigations produced a number of significant results. As anticipated by earlier assessment, the site was crossed by the Stanwell Cursus, a Neolithic ceremonial avenue known to run at least from Stanwell in the south to Bigley Ditch, north west of Longford (a distance of 3.6km). A length of 120m of the monument was revealed, with indications that the avenue was originally formed by two ditches flanking a central bank. This is unusual in that the majority of cursus monuments are flanked by external banks. Presumably the raised central bank would have allowed processions to be viewed from the surrounding landscape,



Earlier Upper Palaeolithic (about 28,000–24,000 BP) flintwork found at the World Cargo excavations, Heathrow Airport

as well as providing extensive views. Another unusual aspect of the Stanwell Cursus was the presence within the ditches of a number of post holes, possibly defining a pre-existing avenue of posts.

By the Middle Bronze Age the cursus had gone out of use as a monument but was still visible. The investigations at Perry Oaks suggest that the central mounding was initially used to define one side of a settlement enclosure which, following further erosion, itself became enclosed within the settlement. The investigations produced evidence of a complex series of field systems, land boundaries, droveways and enclosures datable to the Middle Bronze Age over much of the site. The occupation area was identified not from structural evidence but from the presence of greater concentrations of artefacts within features in one area of the site. An extensive system of deposit sampling allowed statistical testing of the distributions of artefact and environmental assemblages across the site.



A ditch of the Stanwell Cursus prior to excavation at Perry Oaks Sludge Works

London in Roman times

Prehistoric sites of London often produce Roman pottery and other finds which indicate that they survived as part of the landscape of Britannia, the province of the Roman empire established by conquest in the years after the invasion of AD 43. The whole London area was clearly extensively occupied and farmed. It still seems that there was no precursor of the City of London before the 1st century, though there may have been some kind of settlement or farms on the Southwark side of the River Thames. From the start of the Roman invasion of Britain, however, the crossing of the Thames and the new civilian and military centre called Londinium on the north bank had a special role. Nowhere else in Britain reveals the same rapid growth and crowded conditions as London in the 1st and 2nd centuries.

We start at the Cripplegate Roman fort, in the north-west of the Roman city. During his programme of excavations after the Second World War, Professor W F Grimes proposed that in Roman times, probably by about AD 120, a fort lay north-west of the growing town. Archaeologists called it the Cripplegate fort because its north gate later became the medieval Cripplegate (now beneath the Barbican estate, near St Giles Cripplegate church). During 1996 MoLAS investigated several internal parts of this military establishment.

One investigation of 1996 at **Shelley House, Noble Street, EC2** (Royal London Mutual Insurance Society), was on a site excavated by Grimes when the building was originally constructed in 1957. A rectangular Roman military building recorded by Grimes still survived across the central part of the site. The 1996 excavation demonstrated that the stone



The excavations at Shelley House, looking east towards Wood Street

fort was built after at least one earlier large building of timber was burnt down. Both the botanical and faunal material from this site are in excellent condition for extracting information concerning the economy and environment of this site during the Roman and medieval periods. Several of the samples from this later period contained mineralised plant remains and coprolites from cesspits which, when further analysed, will give valuable direct evidence of diet.



Excavation of the cellar of a 12th-century building at Shelley House which cut into and affected the survival of Roman remains

Immediately to the east, at **Daiwa House, Wood Street**, no Roman features were found due to the destruction caused by modern basements, though there were medieval rubbish pits (as described in the medieval section of this report below) containing Roman sherds. A short distance to the south at **Garrard House, Wood Street** (Legal and General Assurance Society), testpits revealed disturbed strata of the road which led from the main street of Roman London, beneath modern Cheapside, to the south gate of the Roman fort.

South-east of the fort lay London's amphitheatre, which was first identified in 1988. Excavations at the **Guildhall Art Gallery, Guildhall Yard** (Corporation of London), which began in that year, resumed and continued throughout most of 1996, and have once again added significantly to our understanding of London's Roman amphitheatre and later developments on the site. In this final period of excavations, an area immediately north of the east entrance into the amphitheatre revealed

important new information about the bank of redeposited brickearth and gravel which provided the foundation for the amphitheatre's seating. Recording of the sides of a trench for a new drain running directly down the centre of the arena revealed more of the arena surfaces and added to our knowledge of the size and shape of the amphitheatre.



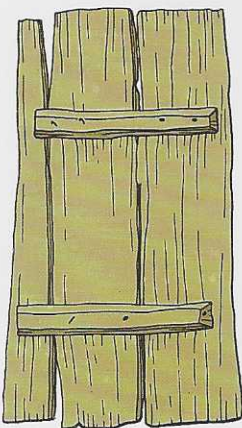
An early 3rd-century group from a well at Hibernian Wharf. The well preserved hunt-scene vessels in the foreground are from Cologne, and date to the first half of the 2nd century, while the other vessels are all Romano-British and belong to the later 2nd or beginning of the 3rd century

The east-west axis of the Roman city was formed by a major street running approximately beneath modern Cheapside, but diverging from it near Bank Underground Station. An excavation of this important thoroughfare, and buildings on both sides of it, at **Number 1 Poultry** (Altstadtbau Ltd for City Acre Property & Investment Trust and Advanta Management AG), was successfully completed in June 1996. Findings from Poultry, reported in the 1995 and 1996 editions

of this review, have included important evidence of the development of Roman London west of the Walbrook stream (which ran through the site of the Bank of England to join the Thames near Southwark Bridge) from about AD 50 onward.

The last area to be investigated was at the eastern apex of the development site, to the north of the main Roman road. The original course of the Walbrook lay immediately to the east, and as a result the archaeological sequence was particularly deep here, the earliest Roman layers lying nearly 10m below modern street level.

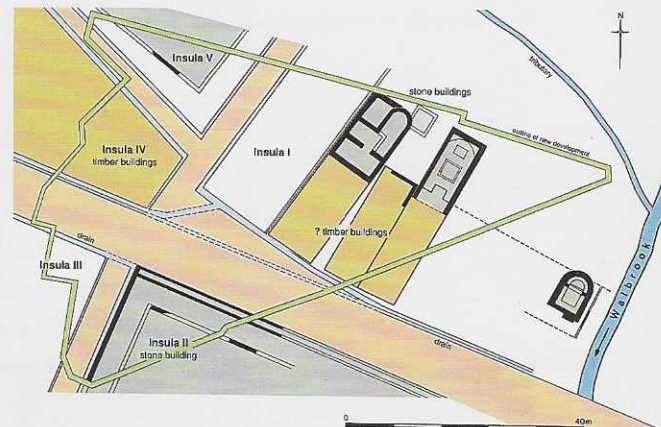
A Roman water tank built of planks at No 1 Poultry; it had a capacity of 2000 gallons



The most complete Roman door found in London came from the Poultry excavations. The three oak boards were planed and rebated to keep out the weather and held together by ledges of oak secured with hooked iron nails. No locks or hinges were found as the door had been cut down



Cobbled surfaces of the late 1st century were constructed almost entirely of broken quernstones. Over 1100 fragments of rotary querns were recovered. The majority were made of lava and had been imported from the Mayen-Niedermendig region of Germany. Many contained hoppers, feed pipes, spindle holes, and handle slots. Wear patterns indicate that the querns had been used prior to disposal, and it is possible that a mill or bakery lay nearby, although they may merely have arrived in London as ballast



Development of the site by the mid-late 3rd century, showing the large precinct enclosure to the south and stone-built extensions to the earlier roadside timber buildings

The wooden framework base of the water tank at No 1 Poultry

The earliest evidence of human activity comprised the landscaping or terracing of the slope along the western bank of the Walbrook in the mid 1st century. Clusters of driven oak piles may have been part of an early Roman structure parallel to the course of the stream, intended to consolidate the slope. The ground surface was raised substantially through the dumping of material, perhaps to reduce the threat of flooding from the stream, and a well-preserved small tank or trough was found in the area.

A Roman clay-and-timber building was located on higher ground, the sill beams and lower parts of the wattle walls preserved by the wet

conditions. A corridor in the same building was paved with the remains of an almost complete oak plank door.

It was only a short distance in the Roman city from the main east-west street to the waterfront area, which in early Roman times lay on the north, inland side of Thames Street. During 1996 the excavation of Roman quaysides immediately upstream of the Roman London Bridge at **Regis House, King William Street** (Land Securities plc), which was reported extensively in *MoLAS 96*, came to an end. One of its many highlights was the discovery of a Roman quayside wall or revetment which is dated by dendrochronology to AD 52, making it the earliest absolutely dated Romano-British structure found so far in Britain.

Nearby at **Suffolk House, 5 Laurence Pountney Hill & 154–156 Upper Thames Street** (Argent Development Consortium Ltd), much was revealed concerning the transformation of the natural hillside above the Thames into imposing terraces of Roman buildings during the 1st and 2nd centuries.

A pair of timber structures constructed from trees apparently felled in AD 84 were probably tieback braces for a quay running north-south, possibly the same as that which runs east-west beneath Upper Thames Street as far as the mouth of the Walbrook. To the east a post-and-plank quay front constructed in about AD 100 to 120 was built from reused building timbers. Further reclamation probably took place in AD 128 when a box-drain was inserted into the top of the post-and-plank structure, extending to the south and beyond the limit of excavation.



Part of the drum and capital of a Roman Tuscan order column, first observed in 1994, was recovered this year from a medieval pit in the area of the Roman town-house at Suffolk House



Elements of Roman masonry buildings of the 1st to 4th centuries with opus signinum and brickwork floors and painted walls were recorded. Some perhaps belonged to a high-status Roman town-house attached to the 'Governor's Palace' recorded under and around Cannon Street railway station in the 1960s

Finds of note included a group of late 1st- to mid 2nd-century pottery with an unusually high proportion of imported wares, an Iron Age coin of Eppillus (a 1st-century 'king' of the Atrebates of Sussex), and a pre-Conquest Roman coin of either Augustus or Tiberius. Leather objects included shoes, sandals and cobbling waste; metal objects comprised fragments of tinned bronze mirror, iron needles, and three copper alloy brooches; and among the wooden objects a double-sided comb and a stopper still in the neck of a glass bottle were well preserved in the waterfront dumps.

Further east and moving northwards away from the bridge, evidence of the earliest Roman marking-out of the land can be claimed on two sites. At **7–11 Bishopsgate** (Greycoat Construction Ltd), a short distance north-east of the Roman forum which lies beneath Cornhill and Leadenhall Market, excavation found several periods of Roman

settlement. Ditches may have been part of the laying-out of the earliest Roman city in the 1st century. An complex of clay and timber buildings, including a remarkably well preserved cellar, was revealed.

This building was burnt down and the fire debris contained deformed glass vessels implying that the owner had no time to clear the building before the conflagration overtook it. However, the storage vessels were not found; perhaps someone was able to retrieve a precious wine cellar before disaster struck.



The early Roman cellar, its steps leading down to what may have been a wine store, with scoops in the floor where wine or other storage jars once stood



A Roman pestle and mortar made from Purbeck marble found during excavations at 7-11 Bishopsgate

Evidence of early buildings over most of the site had been removed by the digging of an enormous quarry. It is possible that brickearth, sand and gravel were being extracted for use in one of the major construction projects of the late 1st century, such as the nearby forum. After the quarry was backfilled, a second series of clay and timber buildings was constructed; inserted beneath them were votive offerings in whole pots, probably to household deities or spirits of the place.

A second major fire swept away the clay and timber buildings around AD 200. This again

was an unforeseen catastrophe and a whole collection of table and kitchen ware was left for archaeologists to uncover. This included a fine Purbeck marble pestle and mortar. Also recovered from the fire debris was a balsamarium (incense burner) in the form of a Bacchic figure with north African features and hair.

A short distance to the north-east, at the **Baltic Exchange, St Mary Axe** (Trollope & Colls Ltd), Roman activity appears to have begun with the levelling of the area with a brickearth deposit, sealing at least one Roman feature. Quarrying of brickearth deposits and gravels had taken place, particularly to the north and east. A large Roman ditch in the west of the site cut through what was probably another, earlier, undated ditch. Over 50m long, the second ditch may have been used to demarcate the extent of the early Roman city. It produced a large amount of high quality pottery and amphorae (large jars used in transport and for storage), and fragments of at least three human skulls. To the south of this feature a third ditch contained a human burial. The truncated

Later Roman remains included a second cellar and a fragment of 4th-century mosaic, made from broken pottery chalk and shale, in the form of a chain guilloche circle enclosing a unique toothed design. Unfortunately the inner panel did not survive



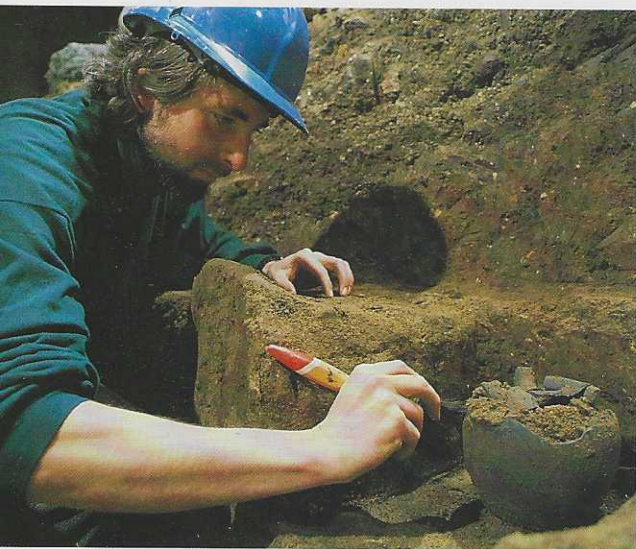
A 1st-century Roman ditch at Baltic Exchange



Excavating a late Roman burial at the Baltic Exchange

Ltd) found a Roman drainage channel and wooden piles, two of which were reused 1st-century house timbers of a type not found before in London. Surrounding and infilling the cuts for the timbers was a brickearth layer containing painted Roman wall plaster and 1st- and 2nd-century pottery. A later watching brief in another part of the site recorded part of a revetment on the eastern side of a second Walbrook tributary.

MoLAS work includes small-scale excavations like this warehouse refurbishment in Creechurch Lane in the City (Southern Properties (Kensington) Ltd). Excavation in the area of a new lift pit revealed a near-complete Roman pot



remains of a possibly apsidal building with a cellar lay in the centre of the site, producing considerable amounts of pottery and polychromatic painted wall plaster from its backfill.

The northern part of the Roman city was crossed by several streams which joined to form the Walbrook and thereafter flowed into the Thames. An excavation at **Winchester House, Winchester Street** (Morgan Grenfell & Co Ltd and 100 Old Broad Street

A well-preserved house timber of the 1st century from Winchester Street, with a tenon which fitted into another, horizontal beam. The faces of this timber had keying marks ready to take plaster



Excavation also took place outside the Roman city wall at **250 Bishopsgate** (Spitalfields Development Group), centred principally on a large part of the former Spitalfields Market car park on Steward Street. Roman ditches, probably field boundaries, indicate that the area was subdivided into plots. There is evidence of widespread Roman quarrying of the natural subsoils, brickearth and gravel, probably during the 1st and 2nd centuries, in this area north of the town. Two Roman skeletons and other disarticulated human remains provide evidence of the use of the area as a Roman cemetery, probably in the 3rd and 4th centuries. One of the burials had been lined in plaster but had been disturbed, probably by ploughing. Nevertheless, significant quantities of Roman finds were recovered, including ceramics, coins and other metal objects, and a quantity of painted wall plaster.



A small excavation at Winchester House revealed evidence of land reclamation, including a dump of painted wall plaster and house timbers, in the Upper Walbrook Valley

A large part of Roman London lay south of the river, and comprised a wide variety of buildings and activities. The landscape near the Thames comprised a series of irregular islands, connected by causeways. The most important of these was the approach to the bridge, which crossed the river immediately downstream of the present London Bridge.



Charred grain and charcoal from the Borough High Street site. Examination of the type of chaff and charred weed seeds may allow inferences to be made about harvesting and crop processing techniques

MoLAS work at London Bridge Station for the **Jubilee Line Extension Project** (London Underground Ltd) ended in 1996. A watching brief alongside the **Borough High Street Ticket Hall** (see *MoLAS 96*) revealed the line of the main Roman road running up to the southern bridgehead of the Roman bridge. Locating the exact position of this road is very important for understanding the layout and development of Roman Southwark.

An excavation under the arches on Station Approach uncovered part of a large masonry building of the 1st century. A large sunken room with a concrete floor and drain running off it was recorded, and quantities of painted wall plaster with luxurious designs were recovered. This room was a continuation of a building first revealed in an excavation ahead of the Jubilee Line Extension in 1995, and its initial interpretation as a warehouse may have to be reassessed in the light of the new evidence.

The Ticket Hall site produced a large assemblage of Roman plant, and animal remains recovered by normal excavation ('hand-collection') and by the special techniques of wet-sieving and flotation. Several bulk soil samples produced an unusually large number of charred cereal grains, particularly of wheat and barley, cereal chaff, and charred seeds from wild plants possibly growing amongst the cereal crops. These included plants associated with cultivation and waste ground such as brome and campion.

Almost 500kg of well-preserved animal bones were also recovered; they mainly represent food and butchery waste. Much of this material showed clear butchery marks and the group is a valuable source of data on the animal component of human diet. The wet-sieved soil samples also yielded a diverse 'wild' fauna of small, non-consumed species; particularly amphibians (frogs and toads), birds (blackbirds, pigeons) and mammals (rats, mice, voles, shrews).



The approach roads in Roman Southwark, as in all the outer areas of the city, were lined with cemeteries and prominent monuments. At **Great Dover Street, Southwark, SE1** (Berkeley Homes (Hampshire) Ltd), excavation found traces of a Roman road and its associated ditches, probably the main highway called Watling Street. A large timber building near the road was dismantled when the area was a cemetery. Four distinct structures from the cemetery, possibly all contemporary, were found. The first was a walled enclosure within which were five human burials around a central mortar plinth which may have been the base of a sarcophagus or monument. Nearby was a small masonry building which may have been a mausoleum. The third structure was a large enclosure around a masonry feature which had been removed or



Work has now started on the analysis and publication of the results of all the excavations undertaken in and around London Bridge Station as part of the Jubilee Line Extension Project over the last five years. A successful exhibition of some of the finds from the excavations was mounted in the Cottons building on the Southwark waterfront in the autumn of 1996

robbed, though fragments remaining included several pieces of moulded stone and a stone pine cone. Nearby, in the roadside ditch, was a stone head of a river god, its lopsided appearance suggesting that it came from a frieze. The fourth structure was a masonry building with a stone well, possibly the inner part of a larger enclosure. Outside these buildings and enclosures were further burials and cremations.



Pottery of the 1st and 2nd centuries found in the stone-lined Roman well at Great Dover Street

Away from the Roman city the landscape of roads, villas and fields is also being elucidated, and sometimes new sites are discovered. An evaluation at **5-15 Galena Road, Hammersmith, W6** (Bellway Homes (North London)) on a site which lies on the projected line of the London to Silchester Roman road found a substantial ditch containing prehistoric pottery. The ditch may be associated with a Roman road, or its prehistoric precursor.



Stone head of a Roman river god from the excavation at Great Dover Street. It would have been part of a relief decorating a mausoleum near one of the roads out of Londinium

To the south-east of Roman London, along the route of the **Thames Water Utilities Pipeline (Farnborough Reservoir to Berry's Green), Bromley** (Thames Water Utilities Ltd), a watching brief found traces of a previously unknown Romano-British site, in the form of several ditches, a large pit and postholes. It was probably a farmstead or small local settlement; perhaps it was a villa, as some fragments of masonry and Roman roof tiles were recorded.

Further new discoveries were made near Gravesend, on the **North Downs Crossing** site of the **Channel Tunnel Rail Link**, when a watching brief was carried out on a series of geotechnical exploratory holes dug over several miles of open country. Archaeological stratigraphy was found in two areas. The first comprised a buried prehistoric land surface, which contained several waste flakes in its weathered horizon. The second was seen in a borehole cut through a disused railway embankment. Under 11m of embankment, dark silts of a land surface contained Roman pottery, almost certainly part of the small town or stopping-place of *Vagniacis*, which is mentioned in the 3rd-century travel handbook called the *Antonine Itinerary*.



Part of the works on the North Downs Crossing section of the Channel Tunnel Rail Link, near Chatham (Kent)

Saxon London

In the early 5th century the province of Britannia was abandoned by the Romans, and London was probably deserted. But small settlements or encampments have been found in recent years in the countryside roundabout, such as at Tulse Hill, Clapham, and during 1996 at **107 Mortlake High Street** (Telstar Holdings Ltd), where trial trenches and



This the earliest known example of such an arrangement of Saxon oven and sunken-floored building in Greater London

Above the Middle Saxon strata at Covent Garden was about 0.70m of dark earth, a homogenous deposit indicating abandonment and absence of human settlement. A hoard of Northumbrian stycas including coins of Eadred (810–41), Aethelred II (841–9), Redwulf (844) and Osbert (850s) were found within this deposit



excavation revealed a series of boundary or drainage ditches that had been used in the Roman period through to the late 5th century. The site, on the edge of the Thames, was temporarily occupied in the late 5th or 6th centuries; two buildings with characteristic sunken floors were dug, one with an attached oven with its mouth inside the building.

As ever in London's history, business resumed. By about 670, a mercantile settlement called *Lundenwic* had grown up west of the Roman city, along and north of what is now the Strand. By the 8th century this new London was becoming an increasingly important part of a kingdom which stretched from Chester to the Channel.

During the summer and autumn of 1996 the largest open area excavation so far within the Middle Saxon (650–850) settlement of *Lundenwic* was undertaken at the **Royal Opera House Development site, Covent Garden, WC2** (ROH Developments Ltd). The main excavation area encompassed 2500 square metres of the former car park of the Royal Opera House, to the east of the Covent Garden Piazza.

At the base of the stratified sequence natural brickearth was cut by a number of undated features including stakeholes, postholes, curving gullies and a ditch and the fragmentary remains of a human burial. The burial may be roughly contemporaneous with others in the Covent Garden/Long Acre area, two of which have been dated to the mid-to late 7th century. Although severely truncated, the gullies and ditch were similar to features at *Hamwic* (Middle Saxon Southampton) where shallow ditches have been found around inhumations.

The first major development on the site occurred during the late 7th century when the site was cleared and a road was laid out. A layer of occupation debris was imported and was dumped on the adjacent open areas, and perhaps as many as five alleys laid out at right-angles.



Over a four-month period an impressive sequence of buildings, pits and roads was recorded in advance of construction for the new Opera House scenery store



The road was about 3m wide and flanked by narrow gullies or drains; a 26m length survived within the limits of the site. It was metalled with very compact gravel, and resurfaced ten times

Seven or eight building plots were identified in the areas next to the road and alleys, and appear to have been continuously occupied by successive rectangular buildings, most aligned with the alleys. The external walls of the buildings were made of various materials including planks, earth-fast posts and wattle and daub on sillbeams. Hearths inside the buildings consisted of rectangular or circular areas of scorched brickearth sometimes incorporating Roman tiles. Most of the buildings had been destroyed by fire; numerous fragments of burnt wall daub were recovered, many with wattle and timber impressions, and some with limewash-coated surfaces, giving an indication of the external appearance of the buildings. A yard surfaced with gravel metalling was enclosed on at least three sides by buildings and during one phase had apparently been roofed over.

Numerous large circular rubbish pits and cesspits were found, some of which predated the earliest buildings. A midden of animal bone, oyster shell and other domestic debris accumulated above two backfilled pits in a narrow open area between a building and an alley. On the eastern side of the site at least six large pits, mostly rectangular in form, were probably used in the fulling or tanning process and may have been housed within a large building.



Finding a spindle whorl, which was used in the making of cloth



The surround of a metal-working hearth, made of animal bones

The site appears to have been abandoned during the mid 9th century. At about this time a large V-shaped defensive ditch was dug along the north side of the site. Stakeholes in the south side of the ditch suggest that this defence was strengthened by a formidable array of sharpened stakes. The ditch may have been a response to increasing unrest during the 9th century, with documented Viking raids on London in 842 and 851.

Documentary sources and archaeological evidence suggest that the site was open ground from the time *Lundenwic* was abandoned until the early 17th century, and that during the medieval and early Tudor periods it formed part of the garden of the convent of St Peter's, Westminster. The findings on the site relating to the Covent Garden of the 17th century are detailed below.



A section through 7th- to 9th-century deposits, representing pits and buildings, at the Royal Opera House site

The waterfront area of *Lundenwic* was also investigated on a small scale. At **Globe House, Temple Place, WC2** (Hammerson UK Properties plc) the Saxon foreshore overlay prehistoric peat deposits. Saxon finds include a complete copper alloy strap-end. Mixed rubbish in one of the upper levels contained the vertebra of a small whale.



A 9th-century copper alloy strap-end found at Globe House. It has some unique decoration for this type of Saxon find, although it is also similar to the type found at Trewhiddle in Cornwall and Talnotrie in Scotland



A medieval iron spur from Globe House, unusually complete. The site lay at the river side of the medieval town-house of the bishops of Bath

In 886 King Alfred repossessed the old Roman city from Viking invaders, and the people of London moved back inside the Roman walls. By 1000 London's overseas trade, which had been interrupted by the Vikings, was growing and the concomitant development of the bridge, wharves and Billingsgate was matched by timber buildings and the host of new churches.

Excavations in recent years on both sides of Cheapside have shown that streets and buildings were spreading across the landscape, to form the neighbourhoods of the medieval city. Because of the destruction caused by 19th- and 20th-century buildings, the remains are sometimes incomplete, but still make contributions to the growing picture. At **Daiwa House, 84-89 Wood Street** (Kajima UK Engineering Ltd) excavation revealed 11th- to 12th-century pits, confirming that the area within the former Roman Cripplegate fort was occupied in this period. These substantial domestic pits, although truncated, contained large amounts of datable material and organic residues including plant and animal remains. The plant remains retrieved from the samples taken from



Medieval layers at Daiwa House produced many ancient seeds. Wetland plants included buttercup, sedge and rush. Plants of disturbed ground habitats included goosefoot, dock, cabbage family, dyer's rocket, corncockle, opium poppy, brome and fumitory. The last four are common seeds of arable habitats. Brome and corncockle may be found in stored grain deposits as well as on disturbed ground



the pits were well preserved and consisted of seeds of apple or pear, elder, blackberry or raspberry, charred barley, oat, breadwheat and possibly rye. There were also foundations of medieval buildings.

A superb group of late Saxon shoes was found in 10th- and 11th-century refuse pits beneath the remains of the parish church of St Benet Sherehog at Number 1 Poultry. The shoes include a number of styles, some with decorative stitching and embroidery



Medieval London and its region

In the Middle Ages London had two urban centres: the City of London and Westminster, the site of the royal palace from the 11th century. Around these two places was a landscape of fields, farms and villages, with the occasional small town, linked by roads but especially by the River Thames and its contributory creeks. In many ways this medieval landscape was changed only in the 18th and 19th centuries during the period of London's most spectacular growth.

In 1996 there were several excavations within the medieval city. At **Guildhall Art Gallery** (Corporation of London) the main excavation of 1996 took place in the area immediately south of the Guildhall and underneath Guildhall Yard. The excavation site was bisected centrally by a hitherto unknown north-south street provisionally dated to the 11th century. At its northern end an unbroken sequence of metallings and surfacing up to modern levels implies the existence of a yard here prior to the earliest documentary references in the 13th century. In the Saxo-Norman period, the street was flanked by buildings on both sides. On the west side preservation of timber was extremely poor, and the building footprints were identifiable by internal surfaces and hearths. Several phases of two buildings lying parallel to the street were excavated. On the east side, there was better preservation of timber. At least one large and complex 11th- to 12th-century post-and-wattle building was



Excavating the 12th-century street metalling at Guildhall Yard



The 11th- or 12th-century ditch lined with wattle at Guildhall Yard



In the foundations of George Dance's porch facade of the late 18th century were a number of well-preserved medieval carved stones. These derived from the early 15th-century Croxton porch facade which was demolished to make way for the new work. The group includes part of the decorated blind panelling of the frontage, arch mouldings, and a (?) statue plinth, a detail of which is shown here

uncovered, and features such as internal partitions, hearths and doorways were apparent. The north wall of a similar building, the greater part of which was recorded in the 1993-4 excavations, was also identified. The two buildings were themselves separated by a narrow alleyway and a drain.

Underpinning of Guildhall Porch, which was constructed in the middle of the 15th century and rebuilt by George Dance in 1788-9, continued into early 1996 and many more moulded stones from the medieval porch were recovered. These had been reused in the new foundations of the 18th century.

During monitoring of underpinning, two ashlar blocks were found at the base of the 15th-century north aisle wall of the Chapel, which

was dedicated in 1444. Each of these had an inscription, painted in Black Letter Gothic script characteristic of the mid 15th century. The names of Thomas Knollys and Henricus Frowyk can be identified. Frowyk was an alderman who was appointed in 1440, along with two



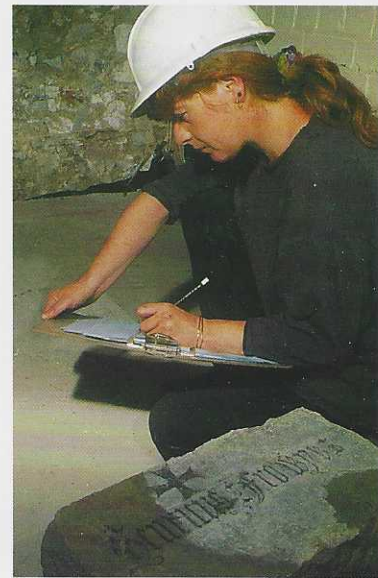
Two 15th-century dedication stones, recovered from the foundations of the Guildhall Chapel. The one above has the name of Thomas Knollys, the one below that of Henricus (Henry) Frowyk

others, to supervise the rebuilding of the chapel by the mason John Croxton. Thomas Knollys (or Knolles) was a common councilman appointed to supervise the continuation of work in 1442. The stones would appear to have been laid as 'invisible' dedicatory stones.

Several notable city residences were also investigated. At **Suffolk House, 5 Laurence Pountney Hill & 154–156 Upper Thames Street** (Argent Development Consortium Ltd), medieval chalk walls and foundations

were recorded in the east along the Laurence Pulteney or Pountney Lane frontage and in the west on the site of the Manor of the Rose or Pountney's Inn. This was a 14th-century mansion of note which belonged at one time to John Pountney, a prominent merchant who also built Penshurst Place in Kent. At **7–11 Bishopsgate** (Greycoat Construction Ltd) the excavated area comprised part of medieval properties given to the Merchant Taylors' company in 1405; their hall, chapel and kitchen still border the site to the west. Two main houses, the 'Starre' and the 'Great Messuage' faced each other across a central court or garden. They were linked by a series of lesser buildings and shops that fronted onto Bishopsgate. Cesspits and other foundations of these notable houses have been recorded, and study of the material will illustrate the daily lives of the upper stratum in medieval London society. At a third site, **Shelley House** in Noble Street (Royal London Mutual Insurance Society Ltd), intriguing faunal remains included three almost complete skeletons of birds of prey (of two differing species which are not yet identified). These were discovered, with a wide range of other bones from animals such as roe deer, kitten and dog, in large medieval cesspits associated with a cellared building.

At the **Baltic Exchange** (Trollope & Colls Ltd), medieval industry was the theme. Several pits with pottery possibly of 11th- and 12th-century date were excavated near St Mary Axe (street). In the southern part of the site were several pits containing fragments probably of bell-moulds along with bronze metal waste and stone crucible fragments. Close to



On-site recording of one of the dedication stones from Guildhall Chapel



A complex of late medieval and Tudor chalk- and wood-lined cesspits at 7–11 Bishopsgate. Further work on documentary records will help reconstruct these town-houses and the lives of their occupants



The chalk foundation and floor of a medieval cellar on the Baltic Exchange site. Medieval stone buildings are not common finds in this northern part of the city



St Mary Axe, a clay-lined pit which showed signs of burning may have been used in the casting of bells and has been provisionally dated to the 11th-13th centuries. There is a concentration of these features towards St Mary Axe and Brown's Buildings.

Medieval London was encircled by many religious houses: priories, monasteries, and hospitals. These are the subject of several research programmes by MoLAS, and parts of their extensive precincts, in each case now beneath several streets, continue to come up for investigation during redevelopment. Three relevant sites were excavated in 1996.

At **10 Bouverie Street** (Scottish Provident Institution) several ragstone and chalk pier bases were recorded, probably part of the nave arcade from the second church of the Carmelites or Whitefriars, built around 1348-50. Human burials which would have lain in the nave were also recorded, along with information on the underlying topography in this riverside zone.

At **96-100 Clerkenwell Road** (Texaco Ltd) four evaluation pits were dug in the forecourt of a petrol station. They showed that the area, within the precinct of St John Clerkenwell, was used for the dumping of rubbish and digging of pits to dispose of rubbish in the Middle Ages. The plant remains found here consisted of a small amount of charred grain (oats, wheat and barley) and chaff. Their poor preservation could indicate that they were hearth debris rather than from storage or processing. Pit-fills produced a small but well preserved and diverse group of animal bones indicative of kitchen waste and refuse from the table.

From the mid 13th century onwards much of the site at **250 Bishopsgate** (Spitalfields Development Group) formed part of the outer precinct of the priory and hospital of St Mary Spital, where the institution conducted its business with the outside world. Large numbers of postholes across the site were evidence of several wooden structures. At least one of the structures was circular. Two stone buildings were excavated, along with a substantial boundary wall, although much of its stone had been robbed out at a later date for reuse.

At medieval Westminster, investigation continued, on a new development site, of an unusual horse burial ground first encountered in 1994. At **Assets House, Elverton Street** (United House Construction Ltd), excavation revealed about 190 pits cut into terrace sand. About 24

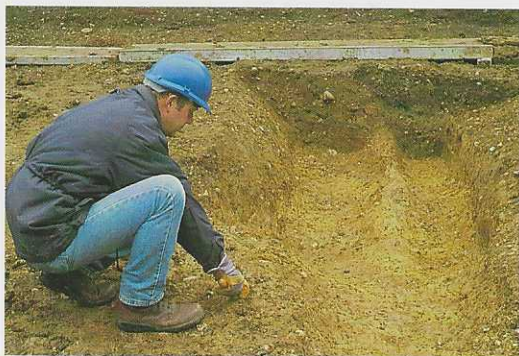


A general view of the site at 250 Bishopsgate, looking east towards Spitalfields Market and Christchurch Spitalfields church

contained animal bones, including those of three dogs and a considerable number of horses. In most cases the horse burial pits contained the dismembered remains of more than one individual. The bones were often in a poor state of preservation, and it is likely that some did not survive burial in the acid sand, which would explain why most pits were apparently empty. The pits are probably contemporaneous with the medieval horse burials at 1 Elverton Street reported in *MoLAS 96*; and these remains now constitute probably the largest group of medieval horse bones excavated in Britain.

The thousands of bones so far studied from these two sites have given a clear impression of the horse population of the time. The horses all seem to have been well into adulthood with many elderly animals, some exhibiting tooth-wear patterns indicating that they were more than 20 years old at death. In all cases, the horses had been partially dismembered before burial and then deposited as piles of large carcase parts derived from up to ten individual animals in each pit. The dismemberment had been skilfully done, probably with knives, and as a result there is minimal butchery evidence. No slaughter marks have yet been identified. The stature of the animals so far recovered varies between 1.1–1.6m (11–16 hands) roughly equivalent to the variation between a modern Shetland pony and a large modern Welsh cob. The majority of the horses were of a withers height of 1.4m, roughly 14 hands, the equivalent of a modern Dales pony. No females have definitely been identified as yet, the dental and pelvic characteristics so far suggesting that the buried horses were stallions and/or geldings.

MoLAS 96 included a photograph of a 12th- or 13th-century gravestone recovered from the church of St Benet Sherehog at Number 1 Poultry. An initial attempt at translating the inscription elicited a response from a reader of MoLAS 96, Dr John Blair of Queen's College Oxford, and we now know that it reads Here lies in the tomb Alice the wife of Peter



Excavating a medieval boundary ditch at Uxbridge High Street

Further out were the small towns and rural settlement; here we can study management of the waterways and of the agricultural hinterland, increasingly geared to feeding the urban centres of London. At **Uxbridge High Street** (Royal Sun Alliance) two areas of excavation showed marked differences in the level of preservation. The western half of the site produced evidence of 12th- or 13th-century boundary ditches and pits as well as a gully and stakeholes that may be associated with a shallow prehistoric pit. To the east, the archaeological remains of the same period were better preserved, and included pits, a well, boundary ditches and a hearth or kiln. The archaeological evidence of laying out of burgage plots therefore corroborates the sparse evidence from documents, which first mention Uxbridge in the 12th century.

There are sometimes opportunities to study the character and development of the Saxon and medieval countryside around the capital. One such was at **Colham Mill Road, West Drayton** (Acton Housing



The modern surroundings of the excavation at Uxbridge High Street

Association) on the west side of a stream called Fray's River. The area was part of Colham manor in 1086, when it was briefly noted in Domesday Book, and lay close to the site of the medieval Colham Mill, a water mill for the grinding of the corn from the Saxon and medieval estate. Evaluation was followed by a small excavation which found two pits lined with wattle, linked by a line of alder stakes. An organic layer nearby contained a fragment of Saxon or early medieval cooking pot, and two wood samples from one of the pit linings gave a date of between the late 7th and mid 11th centuries.

London and its region after 1500

Though archaeologists often imply a break or transition between the 'medieval' and 'post-medieval' periods somewhere around 1500 (or coinciding with the Dissolution of the Monasteries in the 1530s), the archaeological evidence does not change dramatically. Rather, there is much evidence of continuity and only gradual change. Though we follow archaeological convention in this report, the results themselves may suggest that this division is in time abandoned.

Excavations have been taking place on the north side of **Spitalfields Market, E1** (St George North London Ltd) on the residential part of the Spitalfields redevelopment. The western part of the site lies within the precincts of St Mary Spital and inside an area known as the prior's garden. The boundary between the western and eastern parts of the site is a narrow lane known as Nantes Passage under which there is evidence of a high earth bank, possibly with timber posts along its top. This may form the 'mud wall' which documents state formed the eastern boundary of the priory precinct. Excavations within the precincts have uncovered part of a large 13th-century pond and garden features such as trenches for the laying of plants from the 16th and 17th centuries. This area was obviously used as a garden both before St Mary Spital was dissolved in 1538 and afterwards.



A group of 17th-century earthenware vessels from Spitalfields: a jug, a chamber pot and a tripod pipkin (cooking pot)

The eastern part of the site lay in Lollesworth (later Spital) Fields outside the hospital. Evidence of large-scale quarrying of the natural subsoil (brickearth) for brick-making during the 16th and early 17th centuries was found. The area was subsequently developed for housing from 1660 when the land was bought by Sir George Wheler. Basements of some of the houses were found, their cesspits containing significant quantities of pottery, glass, and clay pipes.

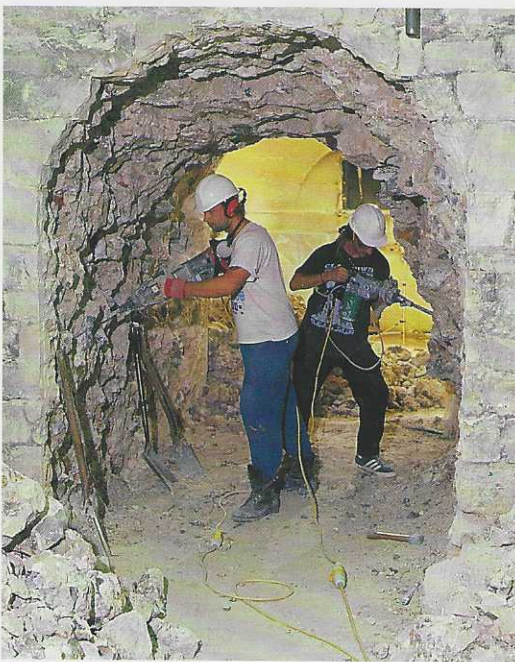
A similar picture of gradual change during the medieval and later centuries was recorded at **Northampton Hall, Chiswell Street, EC1** (City University), where an evaluation carried out prior to demolition revealed evidence for the quarrying of gravel, possibly in the Roman and

certainly during the medieval period. The lowest fills of the medieval quarries were waterlogged, and contained scraps of leather waste, worked and animal bone. Environmental samples produced a range of biological remains including evidence of plant foods (for example fig) and plants indicative of wetland and disturbed habitats. The animal remains included marine and terrestrial molluscs and a diverse group of animal bones including small mammals, fish, poultry and cattle, sheep/goat and pig. There was a considerable number of finely sawn antler fragments, some definitely derived from fallow deer. These pit fills were sealed in one trial trench by levelling deposits of late medieval or 16th-century and 17th-century date. Metal detection produced a number of tokens, jettons, powder measures, musket balls, and a possible barrel key.



Inspecting the inside of Wren's foundations, exposed in the new tunnel. A small section of the foundations will be visible behind a panel in the tunnel

These were suburban sites around the core of the City of London, which had buildings to match its status as the nation's capital and, later, as the heart of the British Empire. The most significant event for the building history of London during the two centuries after 1500 was the Great Fire of London in 1666, which destroyed five-sixths of the old city. Buildings within the area of the conflagration included Guildhall, many parish churches, and St Paul's Cathedral itself (Old St Paul's); so that our understanding of the various periods of building at the cathedral before 1666 is poor. In 1996, there was however a welcome new addition to our knowledge. At **St Paul's Cathedral Crypt** (Dean and Chapter of St Paul's Cathedral), excavation of a tunnel through the Wren foundations of the south-west tower produced 70 fragments of carved stone from the pre-Fire



A tunnel was dug through one of the foundations of the south-west tower of St Paul's Cathedral as part of a conversion into a conference centre. All ancient carved stones reused in the foundation were carefully removed by hand

cathedral, the majority from the Inigo Jones portico of 1639. This is the first time that parts of the portico, a building of European importance in the 17th century, have been recovered.

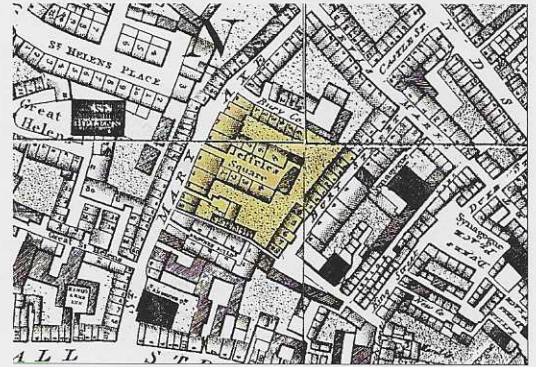
The foundations of houses of Tudor and Stuart London are also found on archaeological sites in the city centre. At **7-11 Bishopsgate**, cesspits and walls of houses probably occupied by two of London's most prominent merchants of the 16th and 17th centuries were uncovered. The principal tenant from 1545 to 1570 was Alderman Thomas Rowe,

The walls of the crypt of Wren's St Paul's are constructed largely of the stones of Old St Paul's Cathedral; but only two stones, like the 12th-century one shown here, have their mouldings displayed so they can be seen



Master of the Merchant Taylors' Company in 1557–8, Sheriff 1560–1, President of St Thomas's hospital 1567–8 and Lord Mayor 1568–9. He was knighted in 1569 and died in 1570. Cesspit and wells excavated on the site were probably from his house.

Though the relevant layers are often damaged by modern foundations, even more recent buildings and their contents survive to be recorded. At the **Baltic Exchange** site in St Mary Axe, three well-built brick cellars appear to be aligned with Jeffrey's Square, probably from three houses depicted on the Horwood map of 1799. The backfills of these cellars produced a wide range of bottles, chamber pots and other domestic refuse.



Detail from the Horwood map showing Jeffrey's Square which eventually became the site of the Baltic Exchange

North and east of the City were suburbs, largely given over to industries or warehousing. Large quantities of 17th- and 18th-century horncores (the bony part of horns after the outer layer of the horn has been removed for making into objects) were recovered from a large pit at **250 Bishopsgate EC2** and from a culvert at **Spital Square, EC2**. In both

cases the horncores had been used as a building material, to line the inside of the pit and the interior walls of the culvert. Horncore-lined pits have also been found at other early post-medieval sites, in particular at the Royal Navy Victualling Yard (The Royal Mint) E1, Crosswall EC3 and Cutler Street E1. These features can probably be interpreted as tanning pits, although it has been suggested, owing to the very large size of some of these pits at Cutler Street and also at Crosswall, that they may have been associated with the casting of cannon.



A pit lined with horn cores at 250 Bishopsgate. These curious pits have now been found at a number of sites in the eastern part of the City and immediately outside

As well as providing evidence for craft industries, and indirectly for the vast quantity of cattle brought into the city to supply the meat demand, the horncores can also be used to suggest the type (or types) of animal used at this time. A distinctive feature of a large proportion of the cores found at 250 Bishopsgate, and indeed at all of the above named sites, is their large size. These animals would have been truly formidable, measuring at least 1.5 to 2 metres from horn tip to horn tip (with the larger specimens possibly 2.5 to 3 metres across). These cores are likely to belong to the unimproved British longhorns.



In the rapidly growing villages and small towns outside the City and Westminster, the remains of this period take various forms. To the east, at **Victoria Wharf, Narrow Street, Wapping** (Barratt London Ltd)



A detail of the landward tie-back braces for the revetments at Victoria Wharf



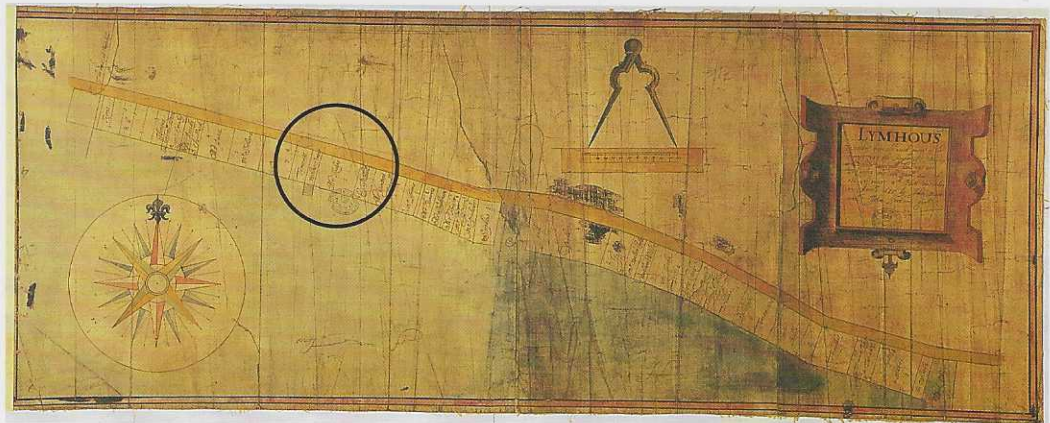
The gnomon from a sundial recovered from land reclamation dumps which are closely dated to 1584 to 1585 at Victoria Wharf. This is the only one of its type known from excavations in London

an evaluation was carried out to find out the character and date of the first reclamation of the foreshore to the south of Narrow Street.

The excavation revealed the timber wharf: upright posts were fixed to a wooden base plate, and held in place by long braces fixed to the posts with iron bolts or straps, a technique known from 17th century, but not

seen in a waterfront context before. Initial dendrochronological analysis provides a date of 1584-5 for the timber used in the waterfront. After the construction of the waterfront the tiebacks and were covered with landfill material containing fragments of Spanish Olive jars, pottery from Persia and northern Italy, Dutch slipware and German stoneware, with coins from Portugal, Spain, and possibly Havana. A discarded ship's rudder was also found in the foreshore deposits.

The Elizabethan waterfront at Victoria Wharf being uncovered



Nearby at **Hermitage Basin, Wapping** (London Docklands Development Corporation), the known site of the 17th- and 18th-century Hermitage delftware pottery was investigated and evidence suggestive of nearby kilns was uncovered.

It was known from documentary evidence that the Hermitage Pothouse was located within the site's limits, at the head of the now infilled Hermitage Dock. The pothouse was functioning from c 1665 to c 1773, making tin-glazed or delftware pottery. After 1781 the pothouse became the Jones Foundry, which was itself demolished to make way for the northern extension to the Hermitage Dock, built around 1800.

The earliest map of the area (Public Records Office) is dated to 1635, and it demonstrates that one of the properties on the site at Victoria Wharf was owned by a Capt. William Bushell (circled). On 4 December 1629 he was in dispute with his neighbour Edward Kiddens, a baker of Kidney Stairs, over the contents of The Joan which was docked at the site. On 8 December, after the goods had been locked in the ship, Bushell broke the locks on the hatches, took the goods away, and subsequently had to answer for contempt. In October 1635 Bushell wrote to the Admiralty saying that he had rescued 30 captives from Algiers, and was proposing to rescue more. In November relatives of captives petitioned for him to be allowed to do so

This was the first occasion that a delft manufactory has been excavated north of The Thames. Waste pits and two phases of brick-built kilns and related brick surfaces dated to the late 17th and 18th centuries were recorded, along with kiln furniture, and 'biscuit' (semi-fired) and finished tin-glazed ware.



Seventeenth-century revetments incorporating reused boat timbers at Magdalen Street. Pieces of several river vessels and elements of larger sea-going ships were used to reinforce the bank

Across the river to the south, at **Magdalen Street, Southwark** (Hollybrook Ltd), excavation uncovered a channel which ran across the site and which was repeatedly revetted and rebuilt from the early 16th century onwards. Four phases of lining were identified and these were constructed using oak planking nailed to upright oak, elm and ash posts. The timbers had been reused from at least two earlier boats, probably clinker-built barges, and parts of larger carvel-built ships. In the final rebuilding of about 1600, timbers from other sources were used,

including barrel staves and parts of a handbarrow. A number of late 16th- or early 17th-century structures had been built on top of the revetted channel (which was little more than an open sewer at this time) including timber-lined cesspits, a sluice and the remains of a privy. The channel was backfilled about 1620 with domestic refuse. This deposit was particularly rich in artefacts, including many complete pots, delftware wasters, stoneware jugs with the distinctive 'Bellarmine' face-mask, glass, leather, pewter and wooden objects.

To the west, between the City and Westminster, at the **Royal Opera House Development site, Covent Garden, WC2** (ROH Developments Ltd) the excavation revealed works of the 1630s when Covent Garden Piazza and the surrounding streets were laid out by the Earl of Bedford. Foundations and vaults of the original Italianate Piazza arcade designed by Inigo Jones were discovered along the west side. Areas of the site were subsequently redeveloped on a number of occasions, as evidenced by numerous post-medieval walls (notably the south wall of Sir Robert Smirke's Theatre Royal of 1809, which ran along the north side of the site), brick-lined cesspits and wells. The post-medieval buildings included the Shakespeare's Head Tavern and at least three coffee houses which flourished during the 18th century.

Archaeological remains of the period after 1500 are also often found in the suburbs or small towns around the larger historic centres of London. At **107 Mortlake High Street, Richmond** (Telstar Holdings Ltd), for instance, a particularly well-preserved sequence of industrial archaeology was recorded. During the 17th century the site was progressively built over commencing with a revetment, a kiln, a square building on the Mortlake High Street frontage and large posthole



One of the buildings recorded at Mortlake High Street was a well preserved late 18th-century malthouse which included floors, wall foundations and drainage system

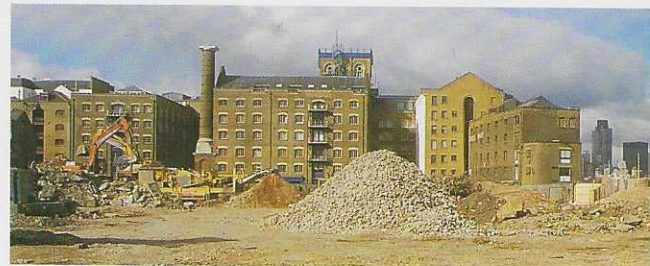
structures. During the 18th century the activity was intense, with a wharf, gardens, drains, buildings and road (connecting the High Street with the wharf) being constructed, used and successively built over.

Other examples fill out the picture. At the **Magistrates' Court Extension, Bath Passage, Kingston-upon-Thames** (Royal Borough of Kingston-upon-Thames) an evaluation revealed over 2m of strata comprising Tudor and later buildings on alluvial deposits indicating flooding from the nearby Thames in the medieval period. The walls which represented the lowest parts of 16th-century and later buildings were of brick, or in one case of reused blocks of stone which included moulded pieces from an earlier building of some status, perhaps acquired from

demolition nearby in the medieval town centre.

Some sites retained their countryside feeling, even as London grew around them. At **Hanover Park, Peckham** (Safeway Stores plc), an evaluation was undertaken on the site of an extension to a Safeway store. In one trench, an 18th-century ha-ha (a special ditch designed to keep deer in a park without the need of an obtrusive fence) was found; it had been backfilled and recut to form a more pedestrian boundary ditch not long after in the late 18th or early 19th century.

The archaeology of Victorian London is also of interest. At **Islington Green** (Groveworld Ltd) the commercial removal of a 19th-century burial ground was observed and the type and nature of the coffins and fittings recorded where possible. The large group of coffin plates recovered form a unique collection for London.



*At **Jacobs Island SEI** (Environmental Assessment Group Ltd) another post-medieval river channel was located. Finds from it include a male torso from a post-medieval statue, several leather shoes, coins and tokens; and parts of a mill, with reused ship and boat timbers*



Analysis, Publication & Teaching

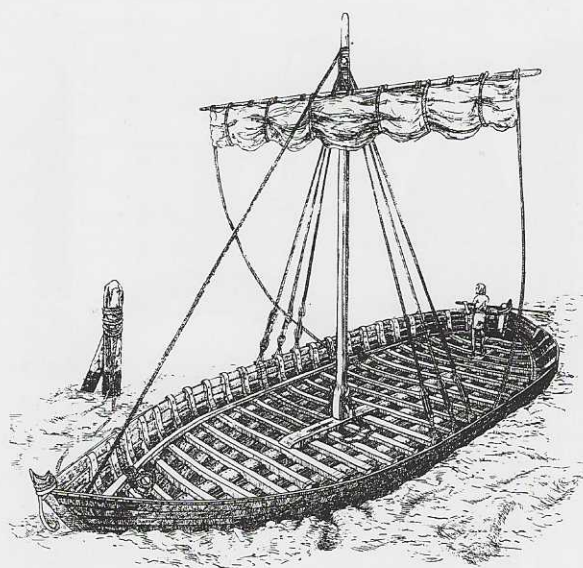
Clockwise from top left: copper-alloy plate brooch of the 1st century from Poultry in the form of a ship with three figures, imported from the continent; 2nd-century carnelian intaglio from a finger ring found at Mansell Street, carved with a figure of the god Sol; gold ring with an amatory inscription from excavations at the Rose Theatre site in Southwark; pair of enamelled head stud brooches with chain from the site at Poultry, typical of the costume jewellery of the 2nd century; 9th-century glass bead with inlaid zig-zag decoration from the site of the Royal Opera House, the largest glass bead found so far from Saxon London and the only one of its type

Several 1996 publications derive from the City of London programme originally funded by English Heritage, and which now continues thanks to the support of the City of London Archaeological Trust. One of these was a report on the buildings predating the Roman forum and basilica on the Leadenhall Court site in the City. It showed how the site developed from a cremation cemetery of around AD 60 to an insula (street-block) of clay and timber buildings by AD 75. They were replaced by the huts, offices and stores used during the construction of the basilica in the 2nd century. By integrating the results of studying the excavation record, the finds and biological remains, the authors were able to describe the status and degree of 'Romanisation' of the excavated households.

A survey of Saxon and medieval churches in the City of London, based on antiquarian and archaeological discoveries of the last 180 years and the copperplate map of c 1559, was also published in 1996. The study identifies and discusses the architectural and archaeological characteristics of over 50 parish church sites which have been excavated, and points to some of the peculiar features of the capital's churches. It includes a gazetteer and makes recommendations for future research.

The first project to come to print in the Greater London Post-Excavation Programme (the successor to the City programme and like it funded by English Heritage) was the report on a substantial Roman timber building found in Southwark in 1987. Analysis of the tree rings evident in the oak timbers has shown that the building was constructed in AD 152–3: it was probably a short-lived structure such as a warehouse.

Most of Roman Southwark lay to the east and south of the Courage Brewery site. In 1996, a great deal of work has gone into assessing 72 excavations here, with a view to planning an ambitious series of publications which will also include the results of excavations in advance of the Jubilee Line Extension, funded by London Underground Ltd. Already some interesting discoveries have been made about the Roman pottery from these sites.



The second volume of research into the ships of the port of London appeared in 1996. It is the first full study of the remains of 12th- to 17th-century ships from London, and draws on excavated vessels, timbers reused in waterfronts and other structures, and contemporary documents. Special attention is paid to a later 12th-century boat which ended its life revetting the riverbank at Custom House, a 15th-century sailing barge (shown here), and a barge which sank at Blackfriars about 1670 laden with bricks for rebuilding London

Substantial groups of both early imported pottery and local coarse wares dating to the pre-Boudican period provide further evidence of early Roman activity in Southwark, particularly in the Borough High Street area. Research continues on the identification of pre-Roman ceramics and the persistence of Iron Age ceramic traditions into the early Roman period.

Secondly, a number of 3rd-century groups of intact vessels have been recovered from wells in Southwark. These assemblages are not only important as evidence of later Roman activity, but the high number of uncommon ceramic forms including triple-cupped vases, lamps and tazze (incense burners), accompanied by articulated animal skeletons may suggest ritual deposition. Vessels from a well at 107 Borough High Street may also be evidence for local pottery production.



A mid-1st to 2nd century Tazza from 7-11 Bishopsgate. These objects were probably used as lamps or as incense burners



Several of London's medieval religious houses feature in the analysis and publication programme. As part of the report on the nunnery of St Mary Clerkenwell, reconstruction views of the church and cloister have been prepared in the AutoCAD software package by combining archaeological plans, antiquarian surveys and drawings of architectural elements identified from study of the moulded stones which have survived. In this way the vanished church has been made available for study in three dimensions for the first time since 1538, and the computerised images have prompted comparisons and contrasts with other nunnery churches and ecclesiastical buildings in medieval London

The final stages of the assessment of the 12th- to 16th-century Augustinian priory of St Mary, Merton were undertaken in 1996, funded by Ramheath Properties Ltd for J Sainsbury Plc and English Heritage. The areas of the church, chapter house, cloister, infirmary, cemeteries, and precinct wall, first receiving archaeological attention as early as the 1880s, were excavated in 1976–88. The priory was an important house of the Augustinian order in Britain; it was a favoured country retreat of royalty, who possessed lodgings within its walls. Over 700 skeletons were recovered from different parts of the priory, allowing us to explore links between burial place and characteristics of the skeletons, such as diet, health, hygiene and stature. The full-scale analysis of the archive of this project will be reported in next year's review.

Although the work towards publications on many sites of the 1970s and 1980s is funded by English Heritage, it is a fundamental assumption in the government's guidance note PPG16 of 1990 that developers will also fund appropriate publication of the discoveries on their development site. MoLAS seeks to encourage this by reviewing the achievements

of each project, and presenting proposals for the work leading to a publication; thereby gaining a commitment from the client to the next step of a process which is endorsed by English Heritage and expected by the public at large.



*Of the developer-sponsored reports published in 1996, perhaps the most significant is that on **Bramcote Green, Bermondsey, SE16** (South London Family Housing Association). Excavation in 1992 located deep deposits of alluvial clays and peats, formed since the last ice age, about 12,000 years ago. The site may lie at the junction of two ancient rivers with the Thames. Over one filled-in channel on the east side of the site two phases of wooden trackway were laid (on the left). By this time the channel may have migrated eastwards. The lower trackway consisted of two parallel lines of alder logs held in place by stakes. The second consisted of a single line of oak logs with alder stakes along one side. Radiocarbon dating of the second trackway places it in the middle of the second millennium BC. The track may have been laid across the marsh to provide access from the high ground on the south to the high ground of Bermondsey Island to the north*

Computing & Surveying

The IT section were involved on a number of projects during 1996 which were aimed at providing updated computing facilities as part of a revised IT strategy. The first stage in this process was the introduction of a new network system based around a Compaq server running the Windows NT server operating system. This system replaced a UNIX server which provided word processing and database applications.

The year also saw the transfer of the UNIX-based ORACLE systems to a version that operates under Microsoft Windows. The transfer involved the recreation of existing tables, inputting forms and reports, and made full use of the new versatility of the latest ORACLE release that brought major benefits in data validation (error-checking), speed and uniformity of application development and the administration and security of the system as a whole. The system went live on the last days of 1996 following the transfer of some 280,000 rows of data. Existing on the Windows platform, the new ORACLE system can readily pass data amongst other Windows applications such as the word processor and spreadsheets. On a more exciting level it is able to communicate directly with the ArcView Geographical Information System (GIS), which is described below.

To support the data capture process MoLAS has extended its mapping control network of reference points on the Ordnance Survey national grid in key areas using static relative positioning with the GPS and



*Surveying the Stanwell
Cursus at Perry Oaks*

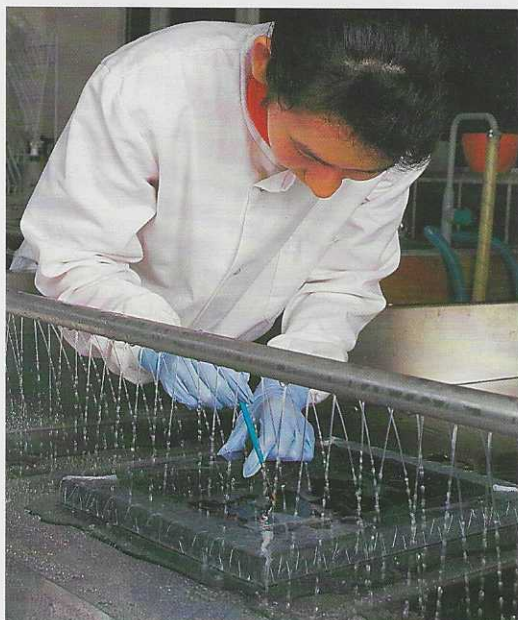
conventional traversing with total stations. All data is held on the MoLAS central ORACLE database.

During 1996 the ArcView package was implemented and tested with data from some recently excavated sites around Heathrow Airport and was also used as part of an investigation into prehistoric Southwark and Saxon *Lundenwic*. The software enables spatial information to be related to attribute data allowing one to pose questions such as *Where are all the burials with grave goods dated to the late 10th century?* if one were interested in changing burial rites, or perhaps *What percentage of fine Roman pottery is located within 50, 100 and 300 metres of the forum?* during an investigation of social status groupings in the Roman town. At a higher level it allows spatial groupings to be statistically assessed for significance, and enables interpreters to unite spatial and attribute data so as to derive their own maps of data to illustrate and test their own interpretations.

Conservation

Besides contributing to the projects already described, the team of conservators at MoLAS have also been making their own discoveries.

*A textile conservator
washing and unravelling
delicate archaeological
textiles as part of the work
towards the publication of
the site of the Rosary and
Fastolf's Place in
Southwark*



The section deals with approximately 2000 objects a year, both on site and in the labs. Some of these objects are very large indeed and can only be lifted by several people or by cranes. Recently a number of large waterlogged timbers had to be moved from the Guildhall yard site to a storage facility off site. Before the timbers were even handled, consideration had to be given to the cut of the timber as well as to its condition. The cell structure of wood itself dictates that timber will be stronger along the grain than across the grain. Added to this,

deterioration during burial will have resulted in breakdown of the cellulose content of the wood, weakening its cell structure. Thus large pieces of waterlogged wood often cannot bear their own weight. This weakness is then aggravated by the additional weight of the water within the swollen wood cells.

A programme of innovative research into the non-destructive analysis of metals from wet sites has produced two recent publications and brought new insights into the understanding of Roman coin manufacturing techniques. The surfaces of metals from waterlogged sites have usually been naturally etched during burial (anaerobic bacterial corrosion) and can be examined in the scanning electron

microscope, which reveals the metal grain structure. The type of grain structure recorded relates to the way an object was manufactured. For example, 'dendrites' indicate that a find was cast from molten metal, and polygonal grains with various features mean that the metal has undergone specific hammering and heat treatments.

This research project has mainly involved case studies of Roman and medieval copper alloys. In particular, the analysis of Roman coin production techniques includes an examination of how coin blanks have



Conservators preparing fragile Roman wall plaster for removal from the site at Lloyd's Registry, Fenchurch Street

been made, as well as their striking methodology. A study collection of 'Roman coins' was made using two different alloys, three different blank production types and both hot and cold striking (the experiments, and results of MoLAS coin research, were part of a living display at the Historic-Archaeological Experimental Centre in Lejre, Denmark; they were also funded by the City of London Archaeological Trust). This work has resulted in new discoveries about coin

production techniques (for example, radial cracks on coins indicate that blanks have been hammered to shape); areas for further investigation (especially aspects of surface enrichment of 'silver' coinage,); and a reference collection of metallographic structures resulting from known methods of manufacture.

The Clark Laboratory

The Clark Laboratory was established at MoLAS in 1995 in recognition of the major contribution of Dr A J Clark to the development of geophysical techniques for archaeological purposes. The Laboratory has successfully established itself in the United Kingdom as the only provider of archaeogeophysical services which include archaeomagnetic dating, ground penetrating radar (GPR) and the full range of the more traditional geophysical techniques.

1996 has been a busy year for the Laboratory in terms of archaeomagnetic sampling and dating, with work being conducted on a wide variety of sites and features throughout Britain including an 18th-century brick clamp at **274 New Cross Road, London** (Pre-Construct Archaeology), a 6th-century sedimentary deposit and oven at **107 Mortlake High Street, London** (Telstar Holdings Ltd), a 5th–6th-century stone hearth at **Whitley Farm, Shropshire** (Birmingham University Field Archaeology Unit) and a large sampling project at the **Royal Opera House, Covent Garden** (ROH Developments Ltd) which, whilst providing useful information on the development of the



Taking archaeomagnetic samples from the Saxon oven at Mortlake High Street

site, has also considerably increased the national archaeomagnetic database for the 6th to 9th centuries.

The benefits of GPR as a fast non-destructive prospection tool are numerous and the last year has seen the Clark Laboratory's team of specially trained field archaeologists conducting GPR surveys nationwide at numerous locations which include the greenfield scheduled ancient monument site of the Franciscan Friary at Greyfriars, Winchelsea (J Haynes), the Civic Centre, Carlisle (Carlisle City Council) a pilot survey within the Southgate Development, Bath and an ongoing survey of the site traditionally known as the palace of the Roman governor at Suffolk House, 5 Laurence Pountney Hill & 154-156 Upper Thames Street in the City (Argent Real Estate (Knightsbridge) Ltd). The Lab provides detailed, user friendly, reports for a wide range of private and institutional clients.



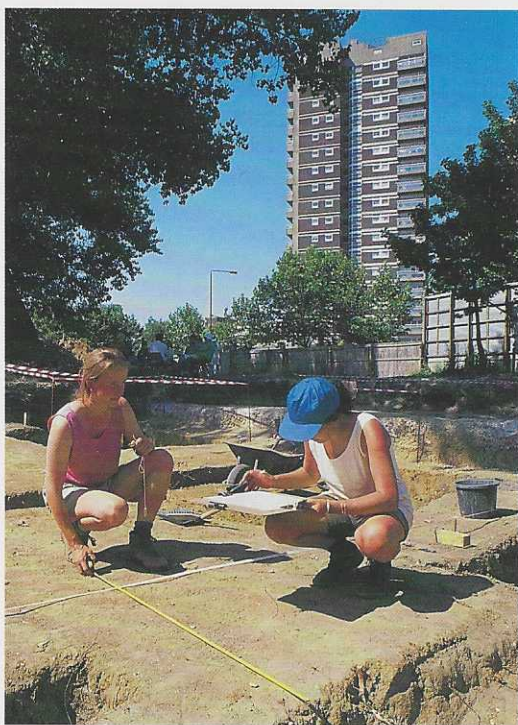
MoLAS is the only archaeological organisation in Britain that employs a full-time specialist in the recording, processing and analysis of ancient woodwork, and a team of specially trained individuals who carry out timber recording and interpretation (shown left reassembling timbers of the medieval belfry at St Ethelburga Bishopsgate). We have studied timber remains of building carpentry, shipwrightry and cooperage and woodland crafts such as hurdle-making. MoLAS has also established the first Ancient Woodwork Reference collection, with samples from the Roman period to the 17th century

During 1996 MoLAS was called on to provide specialist assistance to a number of archaeological teams and museums in the London region, tackling material from the Bronze Age to the 18th century, but most of the work is carried out as part of a MoLAS brief. Projects have included the replication of a section of Roman timber-framed building for the new Roman period gallery in the Museum of London, which opened in 1996; study of timbers from Roman buildings in exceptional condition, reused in the waterfront structures at Suffolk House; proposed reconstruction on paper of a remarkable 10th-century building reused as part of a wharf at Bull Wharf and neighbouring sites in the City; and recording of many traces of ship-building and ship-breaking on Thames-side sites in east London, such as at Victoria Wharf, Limehouse



Teaching, conferences & lectures

For the second year running, MoLAS joined Birkbeck College (University of London) and the London Borough of Southwark in



On the training excavation at Leo Street, Southwark, site recording techniques were explained. Students from Birkbeck College London were joined by others from abroad, including the United States

providing tuition and equipment for an archaeological training excavation in Southwark. Birkbeck and MoLAS supervisors worked together to provide comprehensive training in excavation and recording techniques, and other MoLAS specialists provided sessions on surveying, photography, finds identification and analysis, environmental archaeology and conservation. This year the excavation ran for five weeks and over 100 students took part.

The site was at Leo Street, on the Old Kent Road. Excavations in the vicinity have produced evidence of prehistoric settlement and the Old Kent Road is thought to follow closely the course of Watling Street, the major highway linking Roman London with the East Kent ports.

Despite the potential for remains of earlier periods, the archaeological evidence uncovered during the excavation suggested that the first significant human activity here was in the 16th or 17th centuries, when the area was used for grazing. The first structures appeared at the beginning of the 19th century, with the construction of a terrace of houses along the Old Kent Road frontage. Among the features excavated and recorded were early brick drainage features and Victorian quarry pits.

MoLAS staff frequently give papers and talks to archaeological conferences and to local and national archaeological and historical societies, describing MoLAS work and informing the public who are an important source of support. A wide range of such invitations in 1996 has included the Society of Antiquaries, the Societies for Medieval Archaeology and Post-Medieval Archaeology, London and Middlesex Archaeological Society, the Department of Continuing Education of Oxford University, the Tilemakers' and Brickmakers' Company, and the Mid-Anglia group of the Council for British Archaeology, the European Archaeological Association, the Institute of Civil Engineers, the Institute of Field Archaeologists' Annual Conference, the International Medieval Congress, the London Centre for the Study of the Crusades, the Society of Museum Archaeologists Conference, Birkbeck College (University of London), Regent's College London, the University of Westminster, British Museum Society, Study Group for Roman Pottery, Standing Committee on London Archaeology, the Association of Cathedral Archaeologists, Medieval Pottery Research Group, Computer Applications in Archaeology (International), International Institute for Conservation and the International Council of Museums. The Museum of London Lunchtime Lecture Series and several of the conferences were fully taken up by MoLAS contributions

Tin-glazed tiles made at the factories at Pickleherring and Platform Wharf, Rotherhithe, from recent excavations. These tiles were one of the subjects of a colloquium at the British Museum in 1996



MoLAS overseas

The Museum of London has a world-wide reputation as probably the one of the finest examples of a city museum. This reputation is built, in part, on the contribution of MoLAS and its predecessor departments to archaeological research and the theory and practice of urban archaeology. MoLAS is also recognised internationally as a successful example of how archaeology can be carried out in a competitive, commercially financed environment. As part of its wider role in archaeology, MoLAS will be managing the Secretariat for the European Association of Archaeologists from January 1997 for a three-year period.



Stamps on samian ware made at Lezoux, in central France, from a recent site in Lower Thames Street.

Three of these, by the potters Mercator, Paulus and Censorinus, all occur on the cup form known as Dragendorff 33. The last one, by Cinnamus, is a stamp within the decoration of a Dragendorff 37 bowl, and it is also a unique example of a stamp used to replace the part of the decoration called the ovolo, instead of merely being placed in the decoration, as an advertisement

During 1996 work outside Britain included consultancy and joint projects. In Portugal, MoLAS is working closely with the Gabinete de Arqueologia Urbana of the Câmara Municipal do Porto to establish a GIS-based development control system for archaeology. Training in urban archaeology techniques, computing and surveying is also being provided, and MoLAS contributed to the conference which celebrated 100 years of Portuguese archaeology held in Barcelos and Villa do Conde.

MoLAS has recently become involved in two projects which are part of the European Commission's Raphaël programme, and a third, larger scientific project under the rubric of *Training and Mobility of Researchers*, also funded by the European Commission. All these were agreed in 1996, and work starts in earnest in 1997.

The first Raphaël project is called *CAESAR: Validation project for archaeological ceramics at European Atlantic ports*. It aims to achieve a harmonised methodological approach in the treatment of the Roman pottery from three recently-excavated waterfront sites at Regis House, London, at Calle Santiago, Irun (near San Sebastian in the Basque region of northern Spain), and at Place Camille Jullian, Bordeaux, in south-western France.



The second Raphaël project is *A database for samian wares from Lezoux*. Lezoux, a small town near Clermont-Ferrand in the Auvergne region of France, was the second largest pottery manufacturing centre in western Europe during the 1st, 2nd and 3rd centuries. Its principal product, terra sigillata or samian ware, was exported all over the north-western provinces of the Roman Empire, and is often of critical importance for dating pottery assemblages and therefore layers. This project

aims to conduct a general survey of Lezoux samian ware, and to create the beginning of a centrally-organised computer database, including the



data which has already been gathered by the three partners in the project. These are MoLAS in Britain, the Centre for National Archaeology at Louvain-la-Neuve in Belgium, and the Römisch-Germanische Zentralmuseum at Mainz. The resulting database will be regularly updated, and made available for ceramics researchers throughout Europe.

A third European project is entitled *Network Of International Reference Collections For Ceramics In Western Europe: A Multi-Disciplinary Approach Based On Mineralogical And Chemical Analysis*, or IFRC for short. It is envisaged that this project will involve the linking together of a network of some five archaeological science laboratories and four archaeological centres, which will jointly create an International Reference Collection for Ceramics of the Roman Period in Western Europe. The laboratories involved are at Louvain-la-Neuve (Belgium), Lyon (France), Berlin (Germany), Padua (Italy), and Fribourg (Switzerland). The archaeological centres are at London (MoLAS), Louvain-la-Neuve, Vienna (Austria) and Lausanne (Switzerland). The purpose will be to create a unified classification of Roman pottery, to exchange and share results between the laboratories, and to carry out complementary research projects on poorly understood or problematical pottery types.



The Roman town of Leptis Magna in Libya with a view of a temple and the harbour wall (J Sidell)

MoLAS continues to widen its contacts with colleagues in other European countries. In the Netherlands, MoLAS provided specialist advice to ROB (the state archaeological service) in Amersfoort on the use of pen computers for surveying. In Poland, a programme of exchanges and discussions is being set up, with the support of the British Council, to assist colleagues at the City Museum in Gdańsk (medieval Danzig), where large urban excavations are planned in the near future.

MoLAS staff also take part in projects abroad in a private capacity. During 1996 this involved faunal analysis in Sparta, Greece (British School at Athens, Institute of Archaeology and King's College London); similar analysis and excavation in Leptis Magna, Libya (Tripolitanian Archaeological Department, King's College London and Libyan Society); work on plant remains at Byzantine excavations at Amorium, central Anatolia and from the forum in Rome (IsMEO, Rome); field survey in Butrint, Albania (British School of Rome); processing of soil samples and preparation of a fish bone reference collection at Sir Bani Yas Island, Abu Dhabi, United Arab Emirates (Abu Dhabi Islands Archaeological Survey Project) and supervision of a prehistoric excavation at Marsaxlokk, Malta (University of Malta).



Fieldwork 1996

*Clockwise from top left:
1st-century copper alloy
seal box, which would
have been attached to a
document, with an
appliquéd frog on the lid;
Roman copper alloy
Bacchic figure holding
baskets of grapes; 1st-
century oil lamp from
Lyon decorated with
dancing figures, found in
Borough High Street; lead
casting with part of whelk
shell still remaining,
probably a specialised
weight (crab claws with
similar lead casting were
used for measuring goods);
Roman mount in the form
of a female panther (an
animal frequently
associated with the god
Bacchus), probably from
an item of furniture or a
cart; early 15th-century
Canterbury souvenir badge
representing Thomas
Becket's episcopal gloves*

Buckinghamshire

Marlow Brewery, High St, Marlow (MBS96) (*Holder N*)

Barnet

The Priory, Totteridge Lane, N20 (TOG96) (*Mackie P*)

Bexley

Erith School Site (former), Belmont Rd, Erith (BMT96) (*Hutchings P*)

Voyager's Quay, Copperfield Rd, Thamesmead, SE28 (CPP96) (*Spurr G*)

Acorn Industrial Park, Crayford Rd, Crayford (CFD96) (*Hutchings P*)

19-25 Crescent Rd, & 61-65 Manor Rd, Crescent Rd, Erith (CSN96) (*Bates J*)

The Mount, Hazel Drive, Slade Green, Erith (HZD96) (*Tucker S, Hutchings P*)

Broomhills, Old Bexley Lane, Bexley (BMH96) (*Hutchings P*)

Viking Way, The Former Sports Ground, Viking Way, Erith, Kent (VIW96) (*Bowsher J*)

Bromley

Glebe House, Church Rd, Keston (GLE96) (*Tucker S*)

Old Bakery and Saville works, Croydon Rd, Elmers End, Beckenham (GDO96) (*Thompson P*)

The SE Area Darent Scheme Pipeline, Farnborough – Berry's Green (DRT96) (*Heard K*)

357 Kent Rd, St Mary Cray, Orpington (KER96) (*Stevens S*)

Cray Valley Paper Mills, New Mill Rd – now Main Rd, Orpington (NMR96) (*Tucker S*)

Camden

Kingsway Hall, 66-68 Great Queen St, WC2 (KWH96) (*Pitt K*)

Mount Vernon, Froggnal Rise, NW3 (MTV95) (*Hutchings P*)

151-165 Shaftesbury Ave, WC2 (SHF96) (*Bowsher D*)

Holborn Town Hall, Stukeley St, WC2 (STY96) (*Barber B*)

City of London

20-21 Wormwood Street, EC2 (WOM94) (*Sankey D, Pilkington J*)

Suffolk House Part 2, 154-156 Upper Thames St, EC4 (SUF94) (*Woodger A*)

Shelley House, 3 Noble Street, EC2 (NST94) (*Lakin D, Thomas T*)

Regis House, 41-46 King William Street, EC4 (KWS94) (*Watson B, Brigham T*)

Little Britain, EC1 (LBT86) (*Mackinder AT*)

36-37 Jewry Street, EC3 (JRY95) (*Tyler K*)

Guildhall Main Excavation, EC2 (GYE92) (*Bateman N, Porter G, Blair I*)

Fore St/Fore St Ave, EC2 (FOS95) (*Askeaw P*)

Daiwa House, 84-89 Wood Street, EC2 (DWA95) (*Miller P*)

52-60 Cannon Street, EC4 (CND95) (*Thomas A*)

5-8 Bow Churchyard, EC4 (MLB92) (*Mackinder AT*)

3 Amen Court, EC4 (AMC96) (*Tyler K*)

7-11 Bishopsgate, EC3 (ETA89) (*McKenzie M, Sankey D*)

City Tree Project – Bread St/Cannon St, EC4 (CYG96) (*Dunwoodie L*)

All Hallows by the Tower, Byward St, EC3 (ALH96) (*Lakin D*)

Gateway House, 25 Cannon St, EC4 (CAO96) (*Bowsher D*)

1 Carter Court & 77 Carter Lane, EC4 (CTE96) (*Askeaw P*)

Woolgate House, 10 Coleman St, EC2 (CLM96) (*Askeaw P*)

City Tree Project – Coleman St/London Wall, EC2 (CYE96) (*Dunwoodie L*)

4-8 Creechurch Lane, EC3 (CEE96) (*Miller P*)

City Tree Project – Creechurch Lane, EC3 (CYL96) (*Dunwoodie L*)

Lloyd's Register of Shipping, 68-71 Fenchurch St, EC3 (FCC95) (*Bluer D, Nielsen R*)

85 Gracechurch St, EC3 (GRC95) (*Malcolm G, Birley M*)

1-4 Great St Helen's, EC3 (GSH96) (*Edwards M*)

Garrard House, Haberdasher's Hall, 31-45 Gresham St, EC2 (GAH95) (*Howe E*)

Great Eastern Hotel, Liverpool St, EC2 (LPS96) (*Miles A*)

City Tree Project – Lower Thames St, EC3 (CYI96) (*Dunwoodie L*)

City Tree Project – Mark Lane/Hart St, EC3 (CYJ96) (*Dunwoodie L*)

1-4 Middle Temple Lane, EC4 (MTE96) (*Taylor J*)

1 Poultry, EC4 (ONE94) (*Burch M, Hill J, Jones S, Lees DMB, Miles A, Rowsome P, Treveil P*)

Thames Court, 16-21 Queenhithe, 66 Upper Thames St, EC4 (BUF90) (*Ayre J, Wroe-Brown R*)

3 South Kings Bench Walk, EC4 (SKB96) (*Taylor J*)

Baltic Exchange, 14-21 St Mary Axe, EC3 (BAX95) (*Howe E, Nielsen R*)

St Paul's Cathedral (West Crypt), St Paul's Churchyard, EC4 (SPU96) (*Schofield J, Thomas A*)

Staple Inn Hall, 1-3 Staple Inn, EC1, WC1 (STI96) (*Bluer R*)

2-4 Tudor St, EC4 (TOR96) (*Pitt K*)

2 Wardrobe Place, EC4 (WAB96) (*Wiggins M*)

City Tree Project – Watling Street, EC4 (CYF96) (*Dunwoodie L*)

St Bartholomew the Great, West Smithfield, EC1 (SBL96) (*Dunwoodie L*)

Croydon

Home Farm, Addington Palace Golf Club, Addington Village Rd, Addington (HMF96) (*Tucker S*)

42-46 Bramley Hill, South Croydon (BMY96) (*Stevens S*)

Canterbury Rd, Mitcham Rd (junction), Croydon (CTB96) (*Stevens S*)

190-218, Gloucester Rd, Selhurst (GLR96) (*Saxby D*)

Methodist Church, Limsfield Rd, Sanderstead, Croydon (LPR96) (*Stevens S*)

Mayday University Hospital, New Enery Centre, Mayday Rd, Thornton Heath (MDY96) (*Stevens S*)

145-147 North End, Croydon (NOE96) (*Potter G*)

68-74 Park Lane, Croydon (PLN95) (*Tucker S*)

3-7 Park St, Croydon (PKT96) (*Tucker S, Miller P, Roycroft N*)

Pollard's Hill Recreation Ground, Pollards Hill, Norbury, SW16 (PHG96) (*Thompson P*)

St Thomas Moore School, Russell Hill, Purley (RSH96) (*Stevens S*)
 The Drummond Centre (Phase II), Tamworth Rd, Croydon (TAM96) (*Taylor J*)
 Rutland Works, Vulcan Way, New Addington (VCW96) (*Tucker S*)

Ealing

Belvue Park, Ealing Road, Northolt (BPN96) (*Lakin D*)
 3 Islip Manor Rd, Northolt (IMR96) (*Wiggins M*)

Enfield

Meridian Point, Glover Drive, Edmonton, N18 (GDE96) (*Bowsher D*)
 Glover Drive, Edmonton, N18 (GLO96) (*Hutchings P*)
 Edmonton Lower School, Little Bury St, Enfield, N9 (EDS96) (*Hutchings P*)
 Ponder's End Mill, Wharf Rd, Enfield, EN3 (WHF96) (*Hutchings P*)

Greenwich

Port Greenwich Millenium Site, Blackwall Lane, SE10 (PGM96) (*Bowsher J*)
 DLR Lewisham Extension, Deal's Gateway, Greenwich, SE10 (DXK96) (*Bowsher J*)
 Gallions Reach Urban Village, Merbury Road, Thamesmead, SE18 (GAT96) (*Spurr G*)
 53 Norman Road, SE10 (NRG96) (*Askew P*)
 The National Maritime Museum, Romney Rd, Greenwich, SE10 (NMT96) (*Bowsher J*)
 Neptune Hall, National Maritime Museum, Romney Rd, Greenwich, SE10 (NPH96) (*Bowsher J*)
 1-2 & 38-47 Simnel Rd, Lee, SE12 (SRL96) (*Miller P*)
 8 Wilmount St, Woolwich, SE18 (WMS96) (*Bowsher J*)

Hackney

Geffrye Museum, Kingsland Road, E2 (GMK93) (*Bates J*)
 108-122 Shacklewell Lane, E8 (SKL95) (*N Holder*)
 27-37 Well St, Hackney, E9 (WLL96) (*Pitt K*)

Hammersmith & Fulham

William Morris Way, Townmead Road, SW6 (WLM95) (*Bowsher J*)
 St Mark's School, Ackmar Rd, SW6 (SMO96) (*Hutchings P*)
 Petrofina Wharf, Carnwath Rd, Fulham, SW6 (CNR96) (*Tucker S*)
 5-15 Galena Rd, SW6 (GAN96) (*Partridge J*)

Haringey

Highgate Wood, Archway, Highgate, N6 (HWO96) (*Tyler K*)

Havering

Romford Town Redevelopment, South St, Romford (SUH96) (*Dunkley M*)

Hillingdon

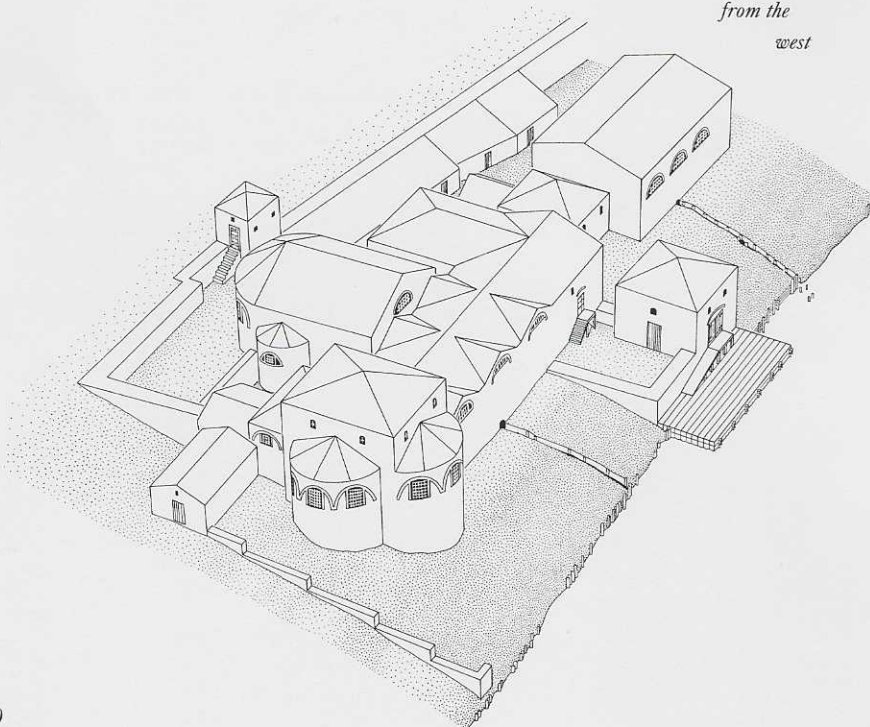
Wall Garden Farm, Sipson Lane (WGD95) (*Hammer F, Knight H*)
 Cranford Lane, Harlington, Hayes (CFL94) (*Elsden N, Birley M*)
 Cargo Distribution Services, Terminal 4, Heathrow Airport (CDS95) (*Hoad S*)
 450 Bath Rd, Longford (BAO96) (*Taylor J*)
 120-138 Bath Road, Harlington, Hayes (BTD96) (*Hoad S*)
 Blunt's Field, Blunts Ave, Sipson, West Drayton (BTF96) (*Chew S*)

St Martin's Church, Church Rd, West Drayton (MWD96) (*Partridge J*)
 Colham Mill Rd, Colham Mill Rd, West Drayton (CMR96) (*Knight H*)
 St Dunstan's Church, Cranford Park, Cranford, Hounslow (STD96) (*Wiggins M*)
 Cowley Retail Park, High Rd, Cowley (HRY96) (*Knight H*)
 Cowley Business Park, High St, Cowley, Uxbridge (CBP96) (*Knight H*)
 High Street, Uxbridge (HSU96) (*Knight H*)
 The Triangle Site, Mondial Way, Harlington (MWH96) (*Partridge J*)
 Site5 Heathrow Airport Redevelopment, Newall Rd, Heathrow Airport (NAL96) (*Durnford P, Partridge J*)
 Nobel Drive, Harlington (NDH96) (*Elsden N*)
 Perry Oaks Rescue Excavation, Perry Oaks Sludge Works, Heathrow Airport (POK96) (*Hoad S*)
 Heathrow Airport CP 200, Sanctuary Rd, West Bedfont (SNC96) (*Durnford P*)
 Cargo Terminal Fuel Tanks, Sandringham Rd, Heathrow Airport (SDG96) (*Elsden N*)
 Imperial College Sports Ground, Sipson Lane, Harlington (IMP96) (*Hoad S, Knight H*)
 Wessex Road (South), Heathrow Airport (WXB96) (*Elsden N, Hoad S*)
 Wessex Road (South-East), Heathrow Airport (WXC96) (*Elsden N, Hoad S*)
 Perry Oaks Cottages, Wessex Road, Heathrow Airport (WXD96) (*Elsden N, Hoad S*)
 Wessex Road (North), Heathrow Airport (WXE96) (*Elsden N, Hoad S*)
 Perry Oaks Sludge Works, Western Perimeter Rd, Heathrow Airport (WXA96) (*Hoad S*)
 Terminal 4 Fuel Pipeline, X Stands, Heathrow Airport (SRH96) (*Mason S*)

The Huggin Hill Roman bath complex excavated in Upper Thames Street. This reconstruction for publication was based on AutoCAD work, and shows the baths in about

AD 120 viewed from the

west



Hounslow

Ham Wharf, The Ham, Brentford (HWB96) (*Knight H*)
130-146 Twickenham Rd, Isleworth (TRI96) (*Tucker S*)

Islington

Sans Walk, Clerkenwell, EC1 (SAN95) (*Dunwoodie L*,
Wiggins M)
15-18 Aylesbury Street, EC1 (AYB95) (*Grainger I*)
Allied Brewery, 148-180 St John Street, EC1 (SJO95)
(*Tyler K*)
St Luke's Estate, Bath St, EC1 (BAH96) (*Miles A*)
Northampton Hall, 25-32 Chiswell St, EC1 (CSU96)
(*Grainger I*)
94-100 Clerkenwell Rd, EC1 (TCR96) (*Pitt K*)
127-139 Finsbury Pavement, EC1 (FIS96) (*Pitt K*)
Islington Green, Gaskin St, N1 (IGN96) (*Miles A*)
St Luke's Church Yard, Old St, EC1 (SLU96)
(*Wroe-Brown R*)
New River Walk, Willow Bridge, N1 (NRW96) (*Miles A*)
70-88 Pentonville Rd, N1 (PVL96) (*Heard K*)
99 St John St, EC1 (SJT96) (*Sloane B*)
5-7 & 22-24 Singer St, EC2 (SIG95) (*Holder N*, *Sankey D*)

Lambeth

51-57 Effra Rd, SW2 (EFA96) (*Askew P*)
St Anne's Primary School, Harleyford Rd, Vauxhall,
SE11 (SAP96) (*Miller P*)
River Thames Dredging (Flood Mitigation 3),
Hungerford Bridge N side, SE1 (TDR96) (*Bowsher J*)
Thames Foreshore, Jubilee Gardens, SE1 (TFJ96)
(*Stevens S*)
4-20 North St, Clapham, SW4 (NTS96) (*Saxby D*)
Oxo Tower, Old Barge House Alley, SE1 (OBH96)
(*Potter G*)
Broomgrove Rd, 103 Stockwell Rd, Stockwell, SW9
(BMG96) (*Askew P*)
79-81b Vauxhall Walk, SE11 (VXH96) (*Miller P*)
126-156 Westminster Bridge Rd, SE1 (WBG96)
(*Partridge J*)

Lewisham

Lewisham Methodist Church, Albion Way, Lewisham,
SE13 (ANW96) (*Bowsher J*)
DLR Lewisham Extension, Transection A, Beck Close,
St Johns, SE8 (DXE96) (*Hunter P*)
DLR Lewisham Extension, Transection B, Brookmill Rd,
St Johns, SE8 (DXF96) (*Hunter P*)
47 Deptford Broadway, Deptford, SE8 (DFB96) (*Thomas C*)
Grove St South, Pepys Estate, SE8 (GVS96) (*Spurr G*)
The Island Site, Plassy Rd, Catford, SE6 (PRC96)
(*Bowsher J*)

Merton

The Well House, 21 Arthur Rd, Wimbledon, SW19
(ARR96) (*Taylor J*)
The Oval plant site, Byegrove Rd, Colliers Wood, SW19
(BYE96) (*Miller P*)

Newham

Silvertown Urban Village, Barnwood Court, (BWC96)
(*Sidell J*)
Stratford Freight Terminal (Channel Tunnel Link),
Temple Mills Lane, Stratford (SFT96) (*Thomas T*,
Bluer R)

Richmond

1 Duck's Walk, Twickenham (DUC96) (*Cowan C*)
29-31 King St, Twickenham (KST96) (*Cowie R*)
107 Mortlake High St, SW14 (MTK96) (*Roycroft N*)
Drake House, Willoughby Rd, Twickenham (WBV96)
(*Bowsher J*)

Southwark

Wardens Grove, Southwark SE1 (WGR95) (*Askew P*,
Heard K)
96-120 Old Kent Road, Massinger St, SE1 (MSG94)
(*Heard, K*)
Canada Yard South, Redriff Road, SE16 (CYS95)
(*Hutchings, P*)
Borough High Street Ticket Hall, SE1 BGH95)
(*Drummond-Murray J*, *Thompson P*)
Battlebridge and Lateral Sewers SE1 (BSE94)
(*Drummond-Murray J*)
Bellamy's Wharf, SE16 (BEY95) (*Saxby D*)
Anchor Terrace 1-15 Globe Theatre, SE1 (GLT95)
(*Barber B*)
Area 1 London Bridge St Escape Shaft JLE, SE1 (LBA95)
(*Bowsher J*)
Area 8 Station Approach Ex JLE (LBI95)
(*Drummond-Murray J*, *Wills O*)



Conservator lifting a 12th-century ceramic vessel from 250 Bishopsgate.

Royal Borough of Kensington & Chelsea

61-62 Cheyne Walk, SW3 (CHY96) (*Partridge J*)
Russell Rd (W side), W14 (RSL96) (*Barber B*)
St Mary Abbott's Hospital, Marloes Rd, W8 (MAK94)
(*Howe E*, *Nielsen R*)
The Royal Brompton Hospital, (North Block), Fulham
Rd, SW3 (RBH96) (*Askew P*)

Royal Borough of Kingston-upon-Thames

16 Acre Rd, Kingston (ACR96) (*Pickard C*)
Manor Farm Buildings, Church Rd, Worcester Park,
Kingston (MAF95) (*Nielsen R*)
Kingston Guildhall, Magistrates' Court Extension, Bath
Passage, High St, Kingston (MGM95) (*Stevens S*)
Borax Research (former), Cox Lane, Chessington
(COX96) (*Birley M*)
Lower Marsh Lane, N side, Lower Marsh Rd, Kingston
(LML96) (*Cowan C*)
Birchmoor, Warren Cutting, Kingston Hill (WEN96)
(*Bowsher J*)

Globe Theatre and Anchor Terrace Car Park, 1-15
Anchor Terrace, SE1 (GLB96) (*Taylor J*)
Benbow House, Bear Gardens, SE1 (BAN95) (*Saxby D, Barber B*)
Jacob's Island, Bermondsey Wall West, SE1 (JAC96)
(*Saxby D*)
207-208 Grange Rd, Bermondsey, SE1 (GNG96) (*Steele A*)
165 Great Dover St, SE1 (GDV96) (*Mackinder AT*)
Safeway Stores Extension, Aylesham Centre, Hanover
Park, Peckham, SE15 (HAN96) (*Askew P, Birley M*)
10-16 Lafone St, SE1 (LAF96) (*Bates J*)
The Five Estates, Lisford St, Peckham, SE15 (LFS96)
(*Holder N*)
239 Long Lane, Bermondsey, SE1 (LGN96) (*Bates J*)
26 Magdalen St, SE1 (MGS96) (*Chew S*)
71-97 Plough Way, Rotherhithe, SE17 (PWA96)
(*Stevens S*)
Bull Head Wharf, Rotherhithe St, Rotherhithe, SE16
(RSR96) (*Bates J*)
The Knot Garden, 125 Rotherhithe St, SE16 (RTH96)
(*Chew S*)
St Thomas Street Grout Shaft, 15 St Thomas St, SE1
(TOM95) (*Stevens S*)
Surrey Quays Parcels D, E, F, Surrey Quays Rd,
Rotherhithe, SE16 (SUQ96) (*Hutchings P, Spurr G*)

Sutton

The Link Primary School, 138 Croydon Rd, Beddington,
Mitcham (COY96) (*Taylor J*)
The Crescent, Belmont, Sutton (TCS96) (*Partridge J*)
Sears Park Nursery, Love Lane, Sutton (SEE96)
(*Woolridge K*)
Furlong Close, Mile Rd, Hackbridge (FLC96) (*Nielsen R*)
Recreation Ground, Orchard Ave, Hackbridge, Mitcham
(OAR96) (*Partridge J*)

Tower Hamlets

Quaker Street Corner, Brick Lane (QAT95) (*Bowsher J*)
250 Bishopsgate, 240-276 Steward St, EC2 (STE95)
(*Dunwoodie L, Thomas C*)
Whitechapel Sports Centre Site, Durwood St (DUR96)
(*Bates J*)
DLR Lewisham Extension, Mudshute Station Tr 1,
East Ferry Rd, E1 (DXA96) (*Chew S*)
DLR Lewisham Extension, Mudshute Station Tr 2,
East Ferry Rd, E1 (DXB96) (*Chew S*)
DLR Lewisham Extension, Mudshute Station Tr 3,
East Ferry Rd, E1 (DXC96) (*Chew S*)
Free Trade Wharf, The Highway, E1 (FTW94)
(*Bowsher J*)
Millwall Wharf, Manchester Rd, Isle of Dogs, E1
(MWF96) (*Chew S*)
Victoria Wharf, Narrow St, E1 (VIT96) (*Tyler K*)
Spitalfields Market, Steward St, E1 (SPM96) (*Thomas C*)
Spital Square, Lamb St, E1 (SQU94) (*Holder N, Thomas C*)
Hermitage Basin, Vaughan Way, E1 (HIT96) (*Tyler K*)
Hermitage Riverside, Wapping High St, E1 (HMR96)
(*Pitt K*)

Waltham Forest

Leucha Rd, Walthamstow (WS-LU96) (*Bluer D*)
Monoux Almshouses, Church Hill, Walthamstow, E17
(MND96) (*Wheeler L*)

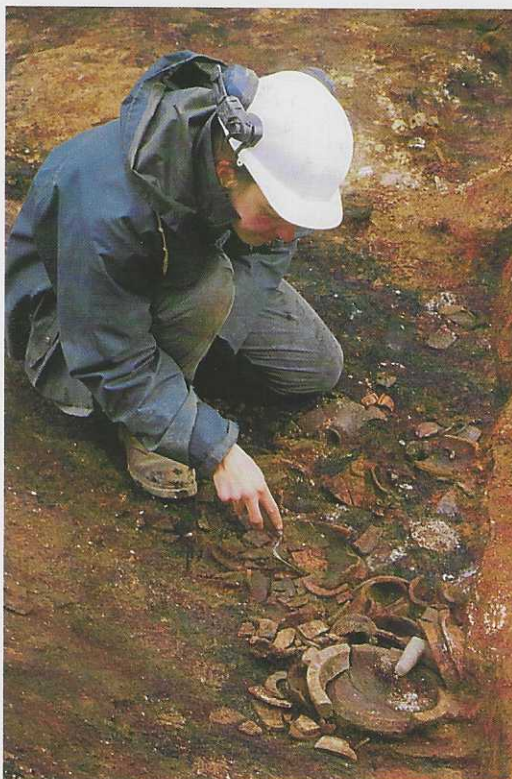
Wandsworth

127 Albert Bridge Rd, SW11 (ALT96) (*Thomas C*)
5 Bolingbroke Walk, Battersea, SW11 (BLW96) (*Bates J*)

38-38a Danemere St, Putney, SW11 (DEM96) (*Lakin D*)
168-174 East Hill, SW18 (ESH96) (*Stevens S*)
Imperial College Boat Club, Embankment, Putney,
SW15 (ICB96) (*Barber B*)

Westminster

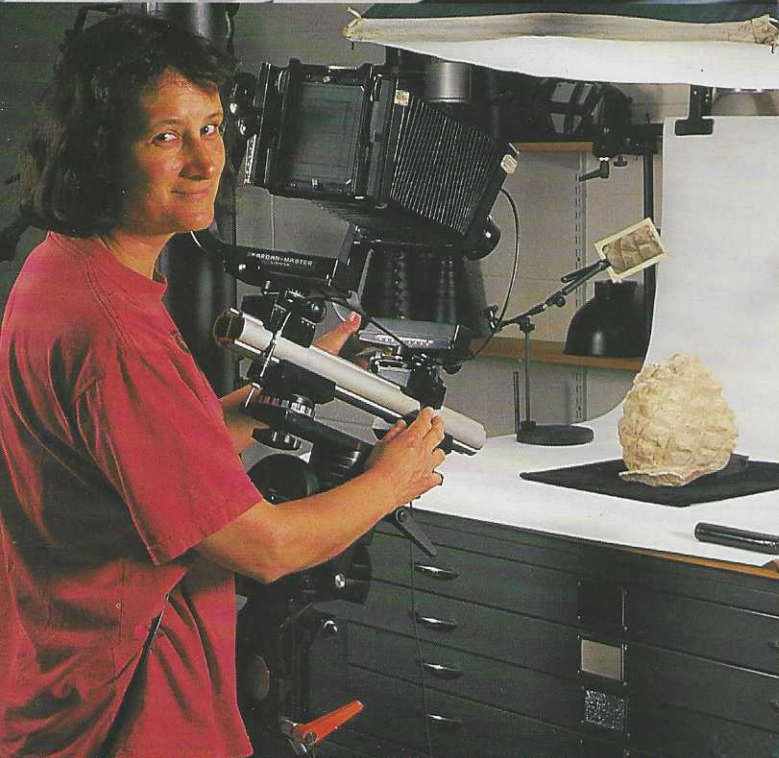
Westminster Hall Palace (WEH95) (*Thomas C*)
55-57 Marylebone High Street (MYB95) (*Wiggins M, Bates J*)
Low Level Sewer No1 Parliament Sq (PLQ95) (*Thomas, C*)
15-17 Long Acre, Westminster WC2 (LNG95) (*Partridge, J*)
18 Great Peter Street, Westminster (SAL94) (*Grainger I*)
121-125 Edgware Road, Westminster (EDW97) (*Hoad S*)
Assets House, 17 Elverton Street (EVT95) (*Cowie R*)
Bishop's Depository, Hugh St, SW1 (HUH96) (*Wiggins M*)
51 Berkeley Sq, W1 (BSU96) (*Wiggins M*)
Royal Opera House, Bow St, WC2 (ROP95) (*Bowsher D, Cowie R, Malcolm G*)
40-41 Conduit St, W1 (CDT96) (*Bowsher J, Wiggins M*)
15-18 Great Marlborough St, W1 (GMS96) (*Bowsher J*)
55 Grosvenor St, W1 (GVR96) (*Dunwoodie L*)
Curzon Gate, Park Lane, W1 (PRL96) (*Miller P*)
St Paul's Church Yard, Covent Garden, WC2 (CGD95)
(*Holder N*)
Somerset House, The Strand, WC2 (SST96) (*Chew S*)
Globe House, Temple Place, WC2 (TMP96) (*Bowsher J*)



Pottery debris in a room of
a 3rd-century Roman
building at 7-11
Bishopsgate

MoLAS Clients 1996

100 Old Broad Street Ltd	Conran Shop Holdings Ltd	Hill Samuel Property Service Ltd	MK International Ltd	Scottish Amicable Investment Managers
ABB Power Generation Ltd	Corcel Investments Ltd	Hollybrook Ltd	Moat Housing Society Ltd	Scottish Life Assurance Company
Acorn Storage Equipment Ltd	Corporation of London	Honourable Society of the Middle Temple	Morgan Grenfell & Co Ltd	Scottish Provident Institution
Acton Housing Association	Crest Nicholson Properties	Jonathan Horne	Mount Anvil Construction Ltd	Scottish Widows' Fund & Life Assurance Society
Addington Palace Golf Club Ltd	Crown Dilmun 2	Hufvudstaden (Marlborough) Ltd	Mowlem Civil Engineering	Sears Property Development Ltd
Air BP Ltd	Crowngap Construction Ltd	Iceland Frozen Foods plc	National Maritime Museum	Sedwick Group plc
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Pewter toy of a mounted knight (55mm high), dating to c 1500. This and the following illustrations are from G Egan, *Playthings from the Past*



Miniature copper alloy anchors, all that remains from toy wooden vessels probably of the 18th or early 19th century

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Brass toy guns and ramrod, 17th century. These were able to fire a small piece of shot



Pewter toy jugs, 14th/15th centuries. The decoration on some of these is similar to that on full-sized ceramic vessels of the period

Summaries

Résumé

Les revues annuelles de MoLAS ont acquis une bonne renommée dans la littérature archéologique de Londres produite chaque année. Toutefois, les lecteurs habituels auront pu s'apercevoir que durant ces cinq dernières années le contenu des revues a peu à peu changé. Ces modifications reflètent la manière dont l'organisation s'est adaptée aux changements dans l'archéologie et dans l'aménagement, en mettant l'accent sur la gestion du patrimoine et les services scientifiques. En 1996, les exploitations dans les cités de Londres et de Westminster continuaient de prendre de l'ampleur avec l'achèvement des premières phases de développement sur des sites majeurs tels que: Bull Wharf et Numéro 1 Poultry (tout deux à la cité de Londres); Royal Opera House, Covent Garden (à la cité de Westminster); l'extension de la ligne de métro Jubilee, Perry Oaks Sludge Works, et l'aéroport de Heathrow (dans la région londonienne). Bien que les enquêtes archéologiques au centre de Londres soient parmi les plus approfondies en Europe les connaissances archéologiques continuent de réaliser des progrès considérables. Les découvertes couvrent une longue période historique: des artefacts qui remontent à l'époque mésolithique; aux diverses occupations dans la région londonienne durant la préhistoire; jusqu'aux découvertes datant des époques romaine, saxonne et médiévale, avec enfin l'analyse architecturale des restes d'édifices datant des 17^{ème} et 18^{ème} siècles.

Actuellement, MoLAS rentre dans une période de "post-fouille" et d'analyse qui permettra sans doute de mettre en lumière d'autres découvertes importantes. En 1996, on a vu la parution de plusieurs livres et monographies sur les bateaux antiques, les bâtiments datés du début de l'époque romaine trouvés sur les deux rives de la Tamise et les églises médiévales. En outre, diverses publications plus petites et des expositions ont vu le jour.

Bien que les bureaux de MoLAS soient situés au centre de Londres et que nous réalisons la plupart des travaux dans Londres et ses environs, le service archéologique a très envie de s'ouvrir à des collaborateurs et des clients européens et internationaux. Au cours de l'année 1996 plusieurs projets européens soutenus par l'Union Européenne et le Conseil Britannique ont été établis.

Nous sommes très reconnaissant envers nos clients et parrains qui reconnaissent que leur collaboration avec le service archéologique aide au développement des connaissances. Ainsi la vie culturelle de Londres et celle de son musée sont mises en valeur. Nous attendons avec impatience de partager notre expertise avec des collègues dans d'autres cités historiques du monde.

Resumen

El Informe Anual del MoLAS se ha consolidado como parte importante de la literatura arqueológica producida en Londres cada año. Los que han seguido la serie completa de Informes publicados hasta la fecha, han podido ver que el contenido de estos Informes ha cambiado poco a poco durante los últimos cinco años. Estos cambios reflejan de hecho la adaptación del MoLAS a los cambios y desarrollos que ha experimentado la Arqueología en los últimos tiempos, caracterizados sobre todo por un incremento paulatino del énfasis en la gestión del Patrimonio Cultural y en los servicios científicos. Durante 1996, el desarrollo de la City de Londres y la City de Westminster continuó creciendo, completándose los trabajos en solares con yacimientos de gran importancia como Bull Wharf o Number One Poultry (en la City de Londres) y la Royal Opera House, Covent Garden (en la City de Westminster). Al mismo tiempo continúa el desarrollo del Gran Londres, con obras como la ampliación de la línea del Jubileo o los trabajos en Perry Oaks Sludge Works en las proximidades del Aeropuerto de Heathrow. Aunque el centro de Londres es una de las zonas urbanas más intensivamente estudiadas en Europa, todos estos trabajos están produciendo un incremento muy sustantivo del conocimiento. Los descubrimientos realizados comprenden desde artefactos mesolíticos, hasta el análisis de edificios todavía existentes de los siglos XVII y XVIII, pasando por diferentes tipos de asentamientos en el área de Londres durante la prehistoria, la época romana, el periodo Sajón y la Edad Media.

El MoLAS está en la actualidad entrando en un periodo de gran actividad en trabajos de post-excavación y que sin duda permitirá alcanzar importantes descubrimientos arqueológicos. Durante 1996 han salido de imprenta libros y monografías sobre barcos antiguos, edificios romanos en ambas márgenes del Támesis e iglesias medievales. Además han aparecido pequeñas publicaciones de diferentes tipos y se han montado exposiciones.

Aunque la base del MoLAS se encuentra en el centro de Londres y desarrollo la mayor parte de su trabajo en el área de Londres, su Unidad Arqueológica trabaja con colegas y para clientes de otros países europeos y extraeuropeos. Durante 1996 se han desarrollado diferentes proyectos financiados por la Unión Europea y el British Council.

Queremos agradecer a todos nuestros clientes y promotores que han reconocido que con la utilización de los servicios arqueológicos del Museo contribuyen a la revalorización del conocimiento y a la animación de la vida cultural de Londres y su Museo. Al mismo tiempo ansiamos compartir nuestra experiencia con colegas de otras ciudades históricas en todo el mundo.

Zusammenfassung

MoLAS' Jahresrückblicke sind heute ein fester Bestandteil der Londoner, archäologischen Literatur. Regelmäßige Leser werden über die letzten fünf Jahre einen allmählichen Wandel des Inhalts bemerkt haben: Dieses spiegelt den Grad wieder, in dem sich die Organisation dem Wandel in Archäologie und Entwicklung mit größerem Gewicht auf Denkmalspflege und den schon im Vorjahr erwähnten wissenschaftlichen Dienstleistungen angepaßt hat. 1996 war gekennzeichnet durch wachsende Bautätigkeit in der City und im Westend. Dieses ging einher mit der Beendigung mehrerer großer Ausgrabungen wie Bull Wharf und Number One Poultry in der City und am Royal Opera House in Covent Garden, Westminster, sowie im Zusammenhang mit dem Ausbau der Jubilee Line in Groß-London und den Perry Oaks Kläranlagen beim Flughafen Heathrow. Obwohl Zentral-London zu den intensivst ausgegrabenen Gegenden in Europa gehört, werden doch immer neue Erkenntnisse gewonnen. Diese reichen von mesolithischen Artefakten, über verschiedenste prähistorische, römische, sächsische und mittelalterliche Siedlungen im Londoner Gebiet bis hin zur Analyse stehender Gebäude aus dem 17. und 18. Jahrhundert.

Das Veröffentlichungsprogramm lief weiterhin auf vollen Touren und umfaßte, um nur einige zu nennen, altertümliche Schiffe, römische Gebäude beiderseits der Themse und mittelalterliche Kirchen.

Obwohl der Schwerpunkt unserer Arbeit in London liegt, sind wir bemüht, Kollegen und Kunden besonders im europäischen Ausland aber auch darüber hinaus zur Verfügung zu stehen. So wurden 1996 mehrere europäische Vorhaben mit Unterstützung der Europäischen Kommission und des British Council in Angriff genommen (siehe MoLAS Overseas).

Das Museum of London und wir danken all unseren Kunden und Sponsoren, die die Archäologie in London unterstützt haben.



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