

The archaeology of Greater London

An assessment of archaeological evidence
for human presence in the area now
covered by Greater London

It is nearly 25 years since the last major survey of the archaeology of the London region was written. In that quarter-century some of the most extraordinary evidence of our past has come to light: a 9,000-year-old hunting camp in Uxbridge, a 2-mile-long prehistoric bank-and-ditch *cursus* monument at Stanwell, the spectacular Roman heart of the City, the Saxon trading emporium on the Strand, the largest medieval cemetery excavated in Europe at Spitalfields, and Shakespeare's Rose Theatre at Bankside.

This book, completed with the substantial support of English Heritage and the City of London Archaeological Trust, represents the latest and most comprehensive attempt to place these treasures in their context. It also draws together the knowledge of specialists and experts to provide a framework within which future archaeological discoveries and research may be considered. The result is an accessible and fascinating insight into the rich diversity of human experience that has combined over the last half-million years into the metropolis of Greater London today.

The Archaeology of Greater London is presented in 10 period-based chapters, with 13 accompanying full-colour maps and an extensive bibliography and gazetteer of sites and finds.



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evidence for human presence
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MoLAS monograph
Published by the Museum of London Archaeology Service
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ISBN 1-901992-15-2

Museum of London 2000

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Printed by the Lavenham Press,
Lavenham, Suffolk CO10 9RN

In publishing this volume, The Museum of London Archaeology Service gratefully recognises the extensive work undertaken by David Bentley on London's archaeology, especially that of modelling ancient hydrology and topography of central London, in a career that stretches across 22 years.

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C O N T E N T S

List of maps	vi
Foreword	vii
Preface	ix
Acknowledgements	xiii
List of abbreviations	xiv
Introduction	1
Assessing the archaeology of Greater London	2
How to use this book	5
PART ONE: THE ASSESSMENT	9
1 London's landscapes: the changing environment	11
Introduction	12
Solid geology	13
Drift geology	13
Holocene soils	17
The Thames: river levels	17
Environmental change during the Late Devensian and Holocene periods	19
Future research priorities	26
2 The Lower Palaeolithic period	29
Introduction and background	30
Past work and nature of the evidence	32
The archaeological evidence	34
Conclusions	36
Gazetteer	39
3 The Upper Palaeolithic and Mesolithic periods	45
Introduction and background	46
Past work and nature of the evidence	48
The archaeological evidence	50
Conclusions	54
Gazetteer	59
4 The Neolithic period	63
Introduction and background	64
Past work and nature of the evidence	65
The archaeological evidence	67
Conclusions	71
Gazetteer	76
5 The Bronze Age	81
Introduction and background	82
Past work and nature of the evidence	83
The archaeological evidence	84
Conclusions	90
Gazetteer	94
6 The Iron Age	101
Introduction and background	102
Past work and nature of the evidence	103
The archaeological evidence	105
Conclusions	111
Gazetteer	115
7 Londinium and its hinterland: the Roman period	119
Introduction and background	120
Past work and nature of the evidence	121
The archaeological evidence	124
Conclusions	157
Gazetteer	162
8 Saxon settlement and economy from the Dark Ages to Domesday	171
Introduction and background	172
Past work and nature of the evidence	174
The archaeological evidence	177
Conclusions	197
Gazetteer	199
9 From the Norman conquest to the Reformation	207
Introduction and background	208
Past work and nature of the evidence	208
The archaeological and historical evidence	212
Conclusions	232
Gazetteer	235
10 Post-medieval London: the expanding metropolis	255
Introduction and background	256
Past work and nature of the evidence	256
The archaeological and historical evidence	260
Conclusions	280
11 Summary: the past, present and future of Greater London	283
PART TWO: REFERENCE MATERIAL	287
Bibliography	288
Archaeological resources for London: a summary	316
Museum of London	316
Museum of London Archaeology Service	316
Museum of London Specialist Services	316
The London Archaeological Archive and Research Centre	316
English Heritage	317
Local museums and study libraries (by borough)	317
Regional societies covering parts of Greater London	320
Local societies	320
Publications	322
Index	323

M A P S

The maps are to be found in the separate wallet accompanying this volume.

Map 1	Greater London in the Palaeolithic period
Map 2	Greater London in the Mesolithic period
Map 3	Greater London in the Neolithic period
Map 4	Central London in the Neolithic period
Map 5	Greater London in the Bronze Age
Map 6	Greater London in the Iron Age
Map 7	Greater London in the Roman period
Map 8	Central London in the Roman period
Map 9	Greater London in the Saxon period
Map 10	Central London in the Saxon period
Map 11	Medieval settlement and infrastructure in Greater London
Map 12	Medieval domestic, religious, agricultural and industrial sites in Greater London
Map 13	Central London in the medieval period

F O R E W O R D

The year 1990 stands out as a watershed in the history of archaeology in England during the past half-century. In that year, the government published new guidance on archaeology and planning – ‘PPG16’ (Planning Policy Guidance Note 16) on *Archaeology and planning*.

The policies set out in PPG16 marked a decisive break with what had gone before. Previously, archaeology had lain largely outside the planning process, and state-funded ‘rescue’ excavations were the normal response to development threats. In other words, archaeology had been largely a reactive business. Now, under PPG16, archaeology was integrated into the planning process, administered by local authorities and with archaeological work being funded by developers on a commercial basis, rather than by grants from central government.

This new orientation resulted in a series of changes in archaeological organisation and practice. The functions of giving advice to local authorities within the statutory planning process and of carrying out work on behalf of developers were separated (to prevent conflicts of interest occurring); archaeological units adjusted to the new commercial environment; and English Heritage announced its intention to focus on developing strategic frameworks for archaeology in England. In essence, archaeology had matured from being a mainly reactive, and somewhat *ad hoc*, affair, to being a structured and strategic discipline located within the framework of the statutory planning and development process.

London was, in many ways, in the forefront of these changes. It was controversy over the discovery of the Rose Theatre in Southwark in 1989 that spurred the government into publishing PPG16 in the following year. 1990 also saw vigorous debate about the organisation of archaeology in London. English Heritage assumed the advisory role, setting up a Greater London Archaeological Advisory Service within its London Region, and taking responsibility for the Greater London Sites and Monuments Record. English Heritage also put its archaeology grants to the Museum of London on to a fully project-based footing, bringing London into line with practice in the rest of the country. For its part, the Museum of London reorganised its archaeological teams to form the Museum of London Archaeology Service (MoLAS) in order to meet the new demands of project-based, developer-funded archaeology.

Two further very important initiatives were born out of those discussions in 1990. The first was the Greater London Publication Programme. This was a major programme, funded by English Heritage and carried out by MoLAS, to publish the results of almost 20 years of ‘rescue’ excavation carried out in Greater London by the predecessor bodies of MoLAS. An account of this programme has recently been published elsewhere (Hinton & Thomas 1997). The second initiative was to produce an assessment of the current state of knowledge of the archaeology of Greater London. This project became known as the London Assessment Document (‘LAD’) and has resulted, finally, in the publication of this volume. It built partly upon an earlier initiative to provide an assessment of the City’s archaeological resource for the Monument Protection Programme.

Both the publication programme and the assessment document were rooted in the same premise. In London, as in many other parts of England, the 20 years or so prior to 1990 had witnessed a phase of archaeological work of unparalleled intensity and scale – the so-called ‘rescue boom’ of the late 1960s onwards. This had resulted in the accumulation of a prodigious quantity of archaeological data and material. However, much of this information remained unpublished, unsynthesised and largely inaccessible.

It was clearly both desirable and necessary to rectify this situation. From the outset, the aim of the LAD project was to bring together and to synthesise existing information about the archaeology of the Greater London area, and to assess the importance of London’s archaeological resource in a regional, national and, where appropriate, international context. By doing this, and by publishing a comprehensive overview of the archaeology of the Greater London area, it was hoped to achieve two, related, aims. The first was to advance academic understanding of, and interest in, the archaeology of the area. The second was to provide a better basis for judgements and decisions about appropriate archaeological responses, within the new framework of PPG16,

to future development threats to surviving archaeological remains. (The publication programme had broadly the same aims at the level of individual sites and monuments, thus complementing the regional-level approach of the LAD.)

The publication of this volume marks the conclusion of the LAD project. It has taken almost a decade to achieve this. More or less from the outset, the LAD proved to be a remarkably difficult and costly undertaking, and some comment on the reasons for this is warranted. A number of factors seemed to combine to make the project so seemingly intractable. These included the sheer volume of information which the project was trying to distil; uncertainty about the kind of publication that was needed and the purposes for which it was needed in the new, PPG16-oriented world; the challenges of managing such a large and complex project; and the difficulties of moving from site-based work to regional synthesis. The last factor merits elaboration. The intellectual outlook and technical skills required for the meticulously detailed excavation and recording of an individual site are very different from those needed for a broad-brush academic overview of the type attempted by the LAD. If there is one lesson to be learnt from the experience of the LAD project, it is probably this: that synthesis is a skill in its own right, and one which has been much less well developed in recent years than those of excavation and site-recording.

Now, though, the volume is published and that is what matters in the long run. In some ways, the appearance of this volume marks an end: the completion of the programme of change embarked on by English Heritage and the Museum of London in 1990. However, this publication also marks a beginning. The volume provides, almost for the first time, a substantial and accessible account of the archaeology of the Greater London area. It is greatly to be hoped that this in itself will stimulate debate, questioning of the ideas presented in the volume, and the formulation of new agendas. This was very much part of the original purpose of the project. Paradoxically, the more quickly this volume, *The archaeology of Greater London*, begins to seem in need of revision, the more successful it will have been in achieving its aims.

Roger Thomas
Inspector of Ancient Monuments
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P R E F A C E : T H E A R C H A E O L O G Y O F A W O R L D C I T Y

To Londoners, the archaeology of the London region is of the utmost importance. It is often the only way in which we can reach back and touch the physical existence of lives that have shaped the way we think, feel and live. The thousands of visitors that flocked to see the exhibition at Spitalfields and the Roman sarcophagus at the Museum of London, and the tens of thousands who have seen the Museum's Outskirts at, for example, the new London Bridge Underground Station, are a testament to this visceral desire to know about our past. But, as this volume amply demonstrates, the character and quality of the archaeological deposits of our region ensure that London's buried and built past has a very considerable potential to advance the understanding of human history and culture across national and international horizons as well.

Forming a complete synthesis of all that London's archaeology has to offer the world is not possible – the range and variety of the material, and our lack of detailed knowledge about the still-buried resource, preclude such a definitive statement. From the following pages, however, it is perfectly easy to see that in almost every period of London's complex history, the archaeology has internationally important status. Here are just a few reasons why our material past mirrors London's status as a world metropolis.

Our landscape and environment

Archaeology in London benefits enormously from the presence of the most extensive range of sedimentary environments to be found in any city or region in Britain. This, coupled with the unbroken occupation, from the Lower Palaeolithic to the present day, provides an unparalleled opportunity to examine in detail how ecological patterns have shifted and developed and so to glimpse the interrelationship of the people with their landscape.

The ancient gravel terraces of the Thames sequence provide such a complete geomorphological record, that London has one of the best-understood river sequences in Europe. Therefore, it is possible to place the archaeology contained within the sequence into a complex model of environmental and riverine change and thereby arrive at a better understanding of the prehistoric past.

Londoners as hunter-gatherers

Greater London possesses a number of sites where in situ Palaeolithic and Mesolithic sites, possibly with refitting flint artefacts in association with faunal remains, might well be found. Because of their rarity, such localities are of the highest importance in national and even international terms. Excavations at Three Ways Wharf, Uxbridge, for example, have only one British parallel (in Yorkshire). The combination of artefacts and animal bones some 10,000 years old provides an excellent example of how information from the Greater London area can enhance our understanding of the Mesolithic in Britain.

Agriculture, ritual and politics in the later prehistoric periods

Greater London possesses significant Neolithic sites and finds of potential importance to the study of the period in regional and national terms: the collection of monuments in west London including, at 3.4km, the country's second longest cursus monument, cannot be underrated. The development of ceramics in this period is still not fully understood, and London certainly has its part to play in clarifying the development of traditions such as Peterborough ware which would be of considerable interest in national terms.

The quantities of Bronze Age metalwork from the Thames are unparalleled in northern Europe, and will continue to play a prominent part in Bronze Age studies. Do they represent extraordinary survival, or was the Thames seen as some huge ritual repository? The sheer diversity of categories of other evidence for this period in the London area, and their richness in terms of quantity and quality, should make a significant contribution to the production of an integrated regional view of Bronze Age society.

Iron Age Londoners appear not to have taken any (so far) archaeologically visible part in the tribal politics that characterise the late pre-Roman period elsewhere in the south-east. This is a very curious factor and one that may actually have influenced the siting of Roman Londinium: the origins of the location of one of the world's great cities may be hidden in the roots of pre-Christian political and tribal territories.

The coming of Rome

Roman London is the most extensively excavated city of any great age in Europe. But there are other, deeper reasons why the first incarnation of this capital city represents an internationally significant resource. The possible political dimension to its siting and the current lack of a known pre-existing tribal *civitas* or centre makes London the city an entirely Roman creation. In this, London is very unusual within the western Empire. More than any other Romano-British site, Londinium was a city of Empire, and it has a unique contribution to make to Romano-British studies. It was an important frontier metropolis at the periphery of the Roman world, where the material expressions of imperial conquest, advance, consolidation and contraction seem to have been most compressed, extreme and most visible. In this way, and through the superb quality and quantity of finds, ecofacts and structures, the study of Roman London and its surrounding region forms a touchstone against which the great central cities of the Empire may be compared. In this context, the study of economy, for example the importation and production of Roman pottery, has benefited from advances in the use of powerful databases. The study of distribution and marketing, and the changes in spatial patterning across the period is of great international importance, and must, in tandem with the analysis of other types of artefact, be a leading priority for the future.

The early Middle Ages

The extramural settlement of *Lundenwic*, around the Strand area, is one of only three or four known examples of Anglo-Saxon trading ports that had developed into urban settlements by about AD 700. As such, elucidating the development of *Lundenwic* is very important for our

understanding of the early origins of English towns. Since it formed an integral part of a network of wics scattered around the North Sea littoral, its significance is international, in terms of cultural affinities and trade networks. This significance extends to the Late Saxon period, following the reoccupation of the walled city. This is one of the most extensively excavated burhs in England, and has provided a considerable body of evidence for this formative period in the development of English towns that is of both regional and national importance.

Medieval pre-eminence in Europe

The vigour of the city resulted in the fact that by 1100 (and probably by 1000), London was the wealthiest and largest city by population in Britain; it was also the major port of eastern England, through which goods passed to and from the rest of Europe. A century later, Westminster was becoming the permanent seat of royal government for England. This had enormous consequences for the wealth and material culture of many Londoners, and reinforced London's role (which had begun in the 11th century or before) as a provider of luxuries to the rich and powerful all over England. These two factors ensured the pre-eminence of London: by 1300 it was influencing a region which comprised much of south-eastern England with its demands for basic foodstuffs and fuel.

The City of London and Westminster together were places which were matched in their development and features by only a few other European cities. In the 12th century, for instance, there was a wave of monumental religious building in and around the central area which is paralleled only at the largest and richest continental centres. Within European states, having the main royal palace next to the country's largest port was unusual, and contributed to the archaeological character of the place and its immediate environs.

The medieval archaeology of London is unsurpassed in medieval Britain for its richness and variety, for its quantity and the precision of the dates that can be applied to the material. This precision is a combination of archaeological methods (such as the elucidation of complex stratigraphy and the widespread application of dendrochronology) and one of the richest collections of contemporary documentary evidence in Europe. This rich variety of material means that London can be used as a well-documented and well-studied example of a large and varied medieval city, to test theories about many facets of urbanism and living in towns. No other medieval city in Europe has an archaeological archive of this size and potential. Thus study of the London material will greatly aid and has the potential to influence the development of the discipline all over Europe.

London – the effects of a world city

In the period 1500 to 1800, London became a world city. This is a special category of city, a city at the centre of a world empire, both commercial and military. Within Europe, only Venice and Amsterdam had been world cities in the same sense. By 1750, London had overtaken Paris to become Europe's largest conurbation. This brought acute problems of housing, sanitation and infrastructure, and for government and religious provision. The feeding of the metropolis, or providing it with other basic necessities, involved much of England.

Even more than in the previous period, London was the arbiter of taste and culture throughout England and in the colonies abroad, in all kinds of artefacts from public buildings and houses to fabrics and ceramics. Thus developments in London had repercussions far and wide, on a scale not seen before. One need only consider how the discoveries of the Rose and Globe theatres have influenced scholarly understanding of Elizabethan playhouses!

Though the archaeological strata of this period are damaged to a degree, the remaining strata, together with an impressive number of standing buildings and a vast collection of printed and manuscript documentation, can provide a detailed history of the rise of this world city and the transformation of its environs into the conurbation we know today as Greater London, and are still enthusiastically questing to understand.

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A C K N O W L E D G E M E N T S

The archaeology of Greater London owes its existence to a very considerable number of people. Key among these are, of course, those who committed financial support to the project: English Heritage, who supported the majority of the research, preparation of the draft text and intermediate editing, and who made publication possible by a substantial grant; and the City of London Archaeological Trust, who generously supported the final editorial effort. The Museum of London, itself a sponsor, would like to extend grateful acknowledgement to these bodies.

Beyond the financial support, however, the project would not have been possible without the vision and forethought of those who conceived the idea of a Greater London assessment. Chief among these, and responsible for the initial project design and scope, were Roger Thomas of English Heritage, Gill Andrews, archaeological consultant, and Peter Hinton, formerly Head of Specialist Services at MoLAS and now Director of the Institute of Field Archaeologists.

Preliminary research on the period chapters and selective gazetteers was undertaken by James Rackham, John Lewis, Christopher Sparey-Green, Robert Cowie, Valerie Horsman, Barney Sloane, Charlotte Harding and John Schofield of the Museum of London; and Pamela Greenwood of the former Passmore Edwards Museum. This was updated by Gerald Wait of Gifford and Partners, Nigel Brown of Essex County Council, and Dominic Perring of the Greater London Archaeology Advisory Service, English Heritage. On behalf of all these contributors, we would like to extend our sincere thanks to the many individuals, society members and professional archaeologists who freely gave of their advice and time in helping the research development, and identifying new findspots. In particular, the support and help of Peter James, and later Ian Morrison of the Greater London Sites and Monuments Record, is recognised, as the data provided through their office formed a central plank of the research. Also to be thanked here are Lyn Blackmore, Damian Goodburn and Geoff Egan of Museum of London Specialist Services, Bruce Watson (MoLAS) and Mills Whipp Ptnrs for their comments on the text; John Wymer and Phil Gibbard for giving access to pre-publication copies of forthcoming publications, and Phil Gibbard for permitting MoLAS use of a pre-publication map of the terrace deposits of the lower Thames.

The maps were prepared initially by the authors; preliminary publication design was by David Bentley (MoLAS). Peter Rauxloh and David Bentley created the digital framework in which the publication plans were created, and Jeannette van der Post produced the final versions. The Museum of London acknowledges the assistance of John Cooper and the staff of Corporation of London Surveyors Department in mapping the borough boundaries, and permissions to reproduce geo-referenced data from the Ordnance Survey.

The first substantial edit of the draft texts was undertaken by Paul Garwood of the Institute of Archaeology, Oxford University. This was built upon by the period editors, Jonathan Cotton and John Schofield of the Museum of London, and Jane Sidell, Trevor Brigham, Robert Cowie and Julian Hill of MoLAS. The text was refereed by Dr Nick Merriman, Institute of Archaeology, University of London; Professor Martin Millett, University of Southampton; and Dr Derek Keene, Centre for Metropolitan Studies, Institute of Historical Research, London. Additional comments were received from Dennis Turner, Patricia Wilkinson, Laura Schaaf and Professor Martha Carlin. Barney Sloane would also like to acknowledge the help of Louise Rayner, Roz Sherris, Isca Howell and Sadie Watson in helping with the compilation and checking of the gazetteers of sites.

Project management was undertaken principally by Gill Andrews and Roger Thomas for English Heritage, and by Peter Hinton, Barney Sloane and Peter Rauxloh at MoLAS.

The introductory and concluding sections were written by Roger Thomas, Hedley Swain, Taryn Nixon, Barney Sloane and Francis Grew.

ABBREVIATIONS

AGL	The archaeology of Greater London (this volume; formerly LAD)
AMS	accelerator mass spectrometry
BAR	British Archaeological Reports
BP	before present (era)
CBA	Council for British Archaeology
DGLA	Department of Greater London Archaeology (of MoL)
DUA	Department of Urban Archaeology (of Guildhall Museum and MoL)
EH	English Heritage
EPRIA	Early Pre-Roman Iron Age
GL	Guildhall Library
GLSMR	Greater London Sites and Monuments Record (EH)
Gz	gazetteer (in this volume)
ILAU	Inner London Archaeological Unit (later part of DGLA)
KUTAS	Kingston upon Thames Archaeological Society
LAARC	The London Archaeological Archive and Research Centre (see Part 2 of this volume)
LAD	London Assessment Document (progenitor of this volume)
LAMAS	London and Middlesex Archaeological Society
LPRIA	Late Pre-Roman Iron Age
MoL	Museum of London (see Part 2 of this volume)
MoLAS	Museum of London Archaeology Service (see Part 2 of this volume)
MoLSS	Museum of London Specialist Services (see Part 2 of this volume)
MPRIA	Middle Pre-Roman Iron Age
NGR	National Grid Reference (Ordnance Survey)
NMR	National Monuments Record
OD	Ordnance Datum (mean sea level at Newlyn, Cornwall)
OIS	Oxygen Isotope Stage
PPG	Planning Policy Guidance
RCHM	Royal Commission on Historical Monuments (now part of EH)
RIB	<i>The Roman inscriptions of Britain</i> , R Collingwood & R P Wright (1965), vol 1: <i>Inscriptions on stone</i>
SAM	Scheduled Ancient Monument
SLAEC	Southwark and Lambeth Archaeological Excavation Committee
SWLAU	South-West London Archaeological Unit (later part of DGLA)
VCH	The Victoria History of the Counties of England (published by Oxford University Press)
WHS	Wandsworth Historical Society

INTRODUCTION

Assessing the archaeology of Greater London

There has been an enormous amount of archaeological work throughout the London region. Early antiquarian observations, in the 17th century, and research and collecting in the 18th and 19th centuries (see eg Sheppard 1991) were prolific, if somewhat spasmodic and uncoordinated, and relied heavily on individual initiative. These endeavours then gave way to 'rescue'-focused fieldwork, undertaken largely by museums and regional societies. The London Museum carried out fieldwork, particularly in west London. The Guildhall Museum dealt with the City, and major discoveries were made by W F Grimes and, later, Peter Marsden, often on bomb-damaged redevelopment sites. Elsewhere in London, the Surrey Archaeological Society undertook a number of projects south of the Thames, for example in Southwark, under the direction of Kathleen Kenyon.

By the 1970s, as experienced elsewhere in the country, a number of themes had received particular attention. There was a basic understanding of the size and nature of Roman London. The antiquarian collections based on material from the Thames highlighted the importance of the river in prehistory. Some larger monuments had been investigated, for example Bermondsey Abbey in Southwark and Caesar's Camp near Heathrow. However, much of Greater London received minimal attention.

In the early 1970s much of the fieldwork in London was part of a general 'rescue archaeology' movement taking place across England. A number of professional and semi-professional archaeological teams were established, notable among which were: the Department of Urban Archaeology (DUA), based in the City as part of the Guildhall Museum; the Southwark and Lambeth Archaeological Excavation Committee (SLAEC); the South-West London Archaeological Unit (SWLAU), set up by the Surrey Archaeological Society (SAS); the West London Archaeological Unit (WLAU), which grew from the London Museum team; and the Inner London Archaeological Unit (ILAU), set up by the London and Middlesex Archaeological Society (LAMAS). A logical development saw these services coming together under the stewardship of the Museum of London, which was opened in 1976.

From the mid 1970s to 1991, there was a strong regional approach to London archaeology, with three organisations taking upon themselves the 'responsibility' for different areas of Greater London. Almost all the professional archaeological work in the northern, western and southern Greater London boroughs was thus carried out by the Museum of London's Department of Greater London Archaeology (DGLA), which received some funding from the Greater London Council. The Museum's Department of Urban Archaeology (DUA) covered the City of London. The north-east London boroughs were covered by the Passmore Edwards Museum, part of Newham Borough Council; and archaeological work in the south-east was carried out by the Kent Archaeological Rescue Unit (KARU). Additionally, amateur archaeologists – normally members of local societies – continued to support the professional teams, and occasionally to run their own field projects. Much of the archaeological work throughout London was supported by environmental services from the Museum of London's Greater London Environmental Archaeology Section.

Without doubt the 1970s and 1980s saw a vast increase in archaeological knowledge. Important work took place on the prehistoric landscapes of west London. The record of Roman London was expanded to include an amphitheatre, major riverside and port facilities, large cemeteries to the east of the City, and important sites such as those at the Courage Brewery and Winchester Palace in the Roman 'suburb' of Southwark. Middle Saxon *Lundenwic* was identified, around the present Covent Garden. A number of medieval monastic houses were intensively researched, and some of London's medieval and post-medieval towns were investigated, notably Kingston, Brentford and Uxbridge. The Rose Theatre was partially excavated and preserved on the South Bank.

What became clear was that the abundance of archaeological site investigation in the 1970s and 1980s was creating problems for the future. Firstly, the fieldwork was reactive: excavation was a response to proposed development, and could only take place with funding from commercial sources. Unsurprisingly, therefore, much of the archaeological work took place in central London,

where there was the most property development and the best funding possibilities. Developer funding for archaeology gradually became more established from the late 1970s onwards but did not really become the norm throughout the region – or indeed throughout England – until new government guidance (PPG16, *Archaeology and planning*) was published in 1990. Secondly, there was so much work taking place, in the absence of any overall funding strategy, that the units failed to archive and publish their results rapidly. On the very simplest level, new fieldwork was therefore done without the benefit of knowledge from earlier work. Thirdly, and of great significance, was the fact that individual projects were, in the main, carried out independently of each other and without recourse to any overarching research strategy. There was therefore an overwhelming presumption, throughout the 1970s and 1980s, in favour of excavation as the first and most natural means of recording remains which were threatened and therefore likely if not certain to be destroyed.

Perhaps, then, one of the most significant steps, in the 1970s and 1980s, was the *de facto* integration of archaeological work with the planning process, as the established and professional archaeological units worked with local planning authorities to identify the threat of development to archaeological remains. This in itself led to a greater general awareness of archaeological potential across the whole region – although not necessarily to a more even-handed site-investigation strategy.

Not that the apparent bias in the emerging archaeological record went unrecognised: indeed, there were ambitious attempts to assess the archaeology of London to facilitate a more reasoned, planned approach. One of the first attempts to assess London as an archaeological resource was published in 1973, and was a landmark in terms of heritage management: *The future of London's past* (Biddle et al). It assessed the likely surviving archaeological remains in the City of London, compared them with what was known of London's history at that time, and recommended strategies for fieldwork and conservation. Elsewhere in London, small research archives were assembled by the archaeological units for discrete parts of London (which, much later, were developed as contributions to the borough Unitary Development Plans). In 1976, *Time on our side?* was published – a more superficial but wide-ranging assessment of archaeology in the whole of Greater London (Grimes 1976). Important works were published on the Roman city, most notably by Merrifield (1965; 1983), which have formed a basis for more recent syntheses (eg Marsden 1980; Milne 1995). Excavations in Southwark led to some synthesis of Roman material (Bird et al 1978; SLAEC 1988), but synthesis of Greater London's archaeological past was largely lacking (although see Canham 1978b).

By the late 1980s, at the end of a major property boom, during which over 400 professional archaeologists had been employed on projects in London, discussions took place between the Museum of London and English Heritage. New government policy was about to be published, which would signal a shift away from excavation and towards the physical preservation of important archaeological remains. The Museum of London had merged its three archaeological departments into the Museum of London Archaeology Service (MoLAS) to service all of Greater London and the surrounding region, and no longer received any government funding for archaeological services. Archaeological work was to be formally and procedurally integrated as a 'material consideration' into the planning process, with arrangements made to ensure that local authorities could either provide their own archaeological planning expertise in-house, or could obtain it from English Heritage.

What was therefore needed, to service these major changes in the organisation of archaeology in London (and indeed throughout England), was a framework of archaeological knowledge and understanding. It was proposed that such a framework would benefit archaeologists, planners and developers, and would assist in making decisions about where and how to direct future efforts to protect or record London's archaeological resource.

The outline specification for a London Assessment Document was produced in 1990, and it is useful to note the intentions behind it to trace its evolution in the context of changing policy and research strategies across the rest of England. As originally conceived, the document was planned to contain explicit recommendations of research priorities resulting from the synthesis of the current knowledge and identification of lacunae in that knowledge. Importantly, it was recognised

that such explicit recommendations would have been presented before sensible digestion of the results of the synthesis by the archaeological community would be possible. This section was therefore omitted from the structure. Thenceforth the project was – and still is – intended as the foundation for a research strategy, rather than providing the strategy itself. This aim has been maintained, in spite of the long period it has taken to complete the work, and indeed remains consistent with English Heritage’s urban archaeology strategy for England.

The original text and maps were produced between 1990 and 1992. The evaluation of the first draft in 1992 by (Gill Andrews and Roger Thomas for) English Heritage led to some minor format changes and an amended structure for the period chapters. Although there were some revisions, work remained incomplete and, after a long period of dormancy, doubts were raised over the currency of the document and the degree to which the original aim had been realised. English Heritage therefore commissioned a major editorial review (by Paul Garwood, of the Institute of Archaeology, Oxford). Unfortunately, the recommendations, in mid 1996, were such that substantial revisions and rewording would have been needed, at considerable additional cost and time. The decision was taken, instead, that it would be better to bring the original work up to date and publish that, and to leave it to other, consequent and parallel initiatives to develop research strategies for London from the Assessment Document.

There is now a major new drive in the Museum of London to draw out the full potential of London’s archaeological resource. The completion of the London Assessment Document is one, crucial, part of that drive. The Assessment Document itself – now titled *The archaeology of Greater London (AGL)* – represents a descriptive framework of our current knowledge of archaeology in the London region, across all 33 London boroughs. It specifically excludes strategic recommendations. Effectively, the *AGL* offers a series of London-wide overviews of the main archaeological periods, with references (through individual GLSMR numbers and/or site codes) to individual sites and primary source material.

How, then, does the *AGL* sit in its wider context? At the lowest level of enquiry, it synthesises data which can be readily and further interrogated through two major sources:

- 1 the Greater London Sites and Monuments Record (GLSMR) held by English Heritage – the regional index to all archaeological work ever undertaken in London and to the surviving resource itself; and
 - 2 the London Archaeological Archive (LAARC) based at the Museum of London.
- Summaries of most of the archaeological investigations carried out in the City and Greater London between 1907 and 1991 have now been published in three Archaeological Gazetteer volumes (Schofield with Maloney 1998; Thompson *et al* 1998; Shepherd 1998a). These volumes are cross-referenced and contain indexes which include theme and period entries, enabling the researcher to access the wealth of archaeological information by theme, period, subject, year of investigation, borough, national grid reference, and so on. The Gazetteers are seen as an index to the vast body of excavated material and records in the London Archaeological Archive.

As a synthesis, the *AGL* is crucial not only in identifying archaeological significance in local, regional and national terms, but also in identifying gaps in our understanding. As is generally agreed (Olivier 1996), assessment documents should relate to the broad canvas of archaeology, yet elucidate specific questions (English Heritage 1997); they should provide referenced detail, without being academically constraining. This has been the intention of the *AGL*, and it may be an early signal of its success in this regard that it is already prompting academic debate. With the benefit of ongoing, wide consultation, the *AGL* will underpin the creation of a dynamic and questioning research agenda. Indeed, as the debates and discussions progress, it is becoming clear that the *AGL* will serve as a framework both for those (archaeologists, planners and others) concerned with individual projects and individual sites, and for those concerned with the wider, regional management of the resource. In other words, the *AGL* serves both as a research framework and as a wider archaeological management framework, and will be used to meet local, regional and national enquiries. This achievement is seen as of fundamental importance, given the huge increase in archaeological data from fieldwork carried out since PPG16’s publication in 1990.

With this abundance of data in mind, one of the important aspects of the *AGL* must surely be the ability to update it, continually, into the future. Its use of digital maps for each of the defined periods (using spatial database information from the gazetteers and from the GLSMR) will mean that it may even be rereleased at regular intervals. The *AGL* can therefore be seen as one of a lasting portfolio of research tools – a portfolio to include a dynamic research agenda and research strategy for Greater London, for the use of archaeologists, researchers, students, planners, developers and amateurs alike.

How to use this book

The archaeology of Greater London covers the period from c 300,000 BP to approximately AD 1800 and considers evidence resulting from investigations in all 33 London boroughs. For the prehistoric periods, a wider area is considered to enable the Greater London evidence to be seen in its broader context, although the simple fact of scale has limited the scope of this regional view. Similarly, for the medieval and post-medieval chapters, the role of London as an emerging world city needed to be considered in exploring the archaeological character of the city and its region.

The book is in two parts. The first forms the assessment itself, and is divided into common-usage period chapters. Each period (except for the post-medieval) comprises a textual description of the archaeology of that period, and a selected gazetteer of sites and finds which relate to the period map(s) (both discussed in more detail below). The second part forms the reference material, and includes a very large (but not exhaustive!) bibliography, and a summary of regional and local archaeological resources to be found at museums, libraries and other institutions in Greater London. The maps are to be found in the folder at the back of the volume.

The period chapters are preceded by a description and interpretation of the accumulating evidence for changes in environment and river regimes across the whole time span under consideration, underlining the necessity for students of archaeology in London to face the dynamic dimension of topographical and climatic change as well as the spatial and chronological boundaries of the human activities represented.

The period chapters follow a common framework wherever the current state of archaeological evidence and understanding justifies it. The period is introduced and a brief summary is offered of the existing academic framework(s) within which it has previously been studied in London. A description of the nature of the evidence and a summary of past synthetic or research work then form an introduction to the third and central section, a summary of the archaeology of the period. A final concluding section highlights some of the more important discoveries made in recent decades and of the more obvious gaps in our understanding.

It is hoped that, in combination with the three volumes in the Museum of London’s Archaeological Gazetteer series, this publication will provide a major new tool in the study of London’s archaeology, and that the existence of this accessible ‘database’ will help to foster research by anyone with an interest in the past of this important region.

The gazetteers of sites and finds

The gazetteers of sites and finds, in conjunction with the period chapters and Maps 1–13, are designed to give a general view of the distribution of archaeological finds and sites in Greater London, for each period. They are *not* designed to replace the source data from which they have been compiled. Researchers should always consult those data. The only sites included in the gazetteers are those that appear on the period maps, so the gazetteers represent a selected sample of the total number of sites and monuments known from the London area.

In particular, the extensive Roman and medieval remains from the City and Southwark have not been listed individually. Here, the built-up areas in both periods are indicated by grey shading on the maps, with some of the more significant and unusual sites selected for the gazetteers.

Gz no.

The gazetteers are arranged alphabetically by a two-letter borough code. The number that follows this code is that given on the maps accompanying this volume. Note that for each period and each borough, the numbering starts at '1'. So 'IS1' on the Roman map will mean a different site to 'IS1' on the medieval map.

Type

The type field in the gazetteers is a summary field only. Many sites have multiple features (roads, buildings, wells, pottery, finds, and so on), but for the practical purposes of this publication, each entry has been given one type to match one symbol. Those readers wishing to research the sites in more detail are advised to cross-check with LAARC, excavation round-ups in the *London Archaeologist* magazine and the GLSMR.

GLSMR

The GLSMR is the unique reference number under which details of the site or find are stored in the Greater London Sites and Monuments Record database, currently managed by English Heritage. Certain sites have more than one GLSMR number. Only the highest level, or most appropriate number, has been included in the gazetteers. The GLSMR references are correct up to December 1998. Additional numbers will have been assigned by English Heritage since that date. Readers interested in detailed information are strongly advised to consult the GLSMR itself.

Eastings and Northings

These grid references have been quoted as six-figure references for the purpose of map generation. Because the symbol size on the 1:165,000 scale maps covers an area 'on the ground' of at least 400m x 400m, and because many of the older findspots are only general in their accuracy, it is not recommended that readers scale off these maps for purposes of acquiring detailed locations of finds and sites. For sites with a GLSMR number, the reader is directed to the information held in that database on the accuracy of their location. In every instance, the NGR square is TQ.

Site code

The entry here is in nearly all cases the specific site code assigned by the Museum of London for archiving purposes to archaeological investigations on the site. While a great effort has been made to ensure that all appropriate Museum of London site codes have been cross-referenced up to 1996, the reader is advised to cross-check with LAARC, excavation Round-ups in the *London Archaeologist* and the GLSMR for up-to-date information. Note, however, that archaeological work was undertaken in five north-east London boroughs by the former Passmore Edwards Museum (later the Newham Museum Service): Barking and Dagenham, Havering, Newham, Redbridge and Waltham Forest. Their site codes in the gazetteers are not Museum of London codes. The archives for Barking and Dagenham are held at the Vestry House Museum, Waltham Forest; Havering and Newham c/o Manor Park Museum, Newham; Redbridge c/o Central Library, Ilford, Redbridge; Waltham Forest c/o Vestry House Museum, Waltham Forest. For addresses, see Part 2 of this volume.

Notes

The notes field supplies some additional data and addresses for each entry. More information is available within the GLSMR and, where a Museum of London site code up to 1990 is given, in the three volumes of the Museum of London Archaeological Gazetteer series.

The maps

The maps are divided into two types: the Greater London maps and the central London maps. The symbols used on the maps indicate broad functional and typological groupings of sites and artefacts. A legend accompanies each map to explain the range of sites represented by each symbol type. In addition to the sites/finds symbols, they display the following information.

Drift geology

Based upon the British Geological Survey, updated in certain areas from information derived from Gibbard 1994. For the Palaeolithic period (Map 1), the brickearth (Langley Silt Complex) is omitted.

Hydrology

The principal drainage of this part of the Thames basin is shown. It has been compiled by David Bentley (MoLAS) from a variety of sources including the Ordnance Survey, Barton 1982 and archaeological observations (Bentley in prep). For the detailed central London maps, the actual course of the Thames and its channels has been simplified. The known and conjectured Roman hydrotopography is used for the Roman period (Maps 7 and 8) and the Saxon period (Maps 9 and 10). The medieval central London map (Map 13) shows a combination of the 16th-century waterfront identified in Lobel 1989, combined with evidence from Westminster (Thomas et al in prep) and Southwark (various archaeological sites).

Borough boundaries

The borough boundaries of all 33 Greater London boroughs are shown. They are correct at time of going to press.

Infrastructure and communication

The known routes of Roman and major medieval roads are shown on appropriate maps. The city walls are also shown on the central London maps. These have been drawn from previously published archaeological and historical sources, in particular from Lobel 1989 for the central London maps. The Roman infrastructure is repeated on the Saxon maps (Maps 9 and 10) in the absence of a detailed understanding of the Early and Middle Saxon infrastructure of London, although its appropriateness clearly diminishes for the Later Saxon period.

Other major features

The following archaeological features are shown both as symbols and as visible features, as they are either linear and extensive, or much larger than the symbols would imply:

Map 3	Neolithic	Stanwell cursus (HL34)
Map 8	Roman	Cripplegate fort (CT30) Amphitheatre (CT37)
Map 9	Saxon	Grim's Dyke earthwork (HW1-4)
Map 13	Medieval	Precinct boundaries of City and suburban religious houses and some mansions (various)

A note on scientific dating

The conventions used throughout this volume with regard to ¹⁴C measurements are as follows. The calibrated range (with two standard deviations) in calendar years BC or AD is given, followed by the laboratory reference number and the actual measurement in ¹⁴C years before present (1950).

In some cases several ranges may be given where the measurement and error band have crossed and then recrossed the calibration curve. The calibration curve used was that of Stuiver *et al* (1998) and the calibration programme was OxCal release 3.3 (Bronk Ramsey 1999).

In the Saxon period chapter onwards, dates are AD.

Part one: the assessment



**LONDON'S LANDSCAPES:
THE CHANGING
ENVIRONMENT**

James Rackham and Jane Sidell

Introduction

Environmental archaeology has been practised as an academic discipline in London for over 60 years, the major objective being to understand the nature and development of past societies within a wider topographic context. Before environmental archaeology became a recognised discipline in the capital, individual papers were published which included material of palaeoecological interest (eg Spurrell 1889b), but they were very rarely produced within an archaeological sphere. It was the appointment of the late Professor Zeuner as lecturer in Geochronology (Wheeler 1937) at the Institute of Archaeology that marked the beginning of this subject as a distinct branch of British archaeology. However, this level of recognition was unusual, and it is only in the last 20 years that environmental archaeology has taken off in London as an integrated science with a valuable contribution to make to mainstream archaeology.

Greater London is unparalleled in Britain for the diversity of environments preserving its archaeological remains, ranging from the vast wetlands of east London to the gravel plains of the Heathrow area. No other city boasts this diversity of topography and range of preserved material (although there are similarities at York), and no other region can claim a similar intensity of inhabitation throughout the archaeological record. The nature of evidence available for analysis includes firstly the soils and sediments themselves, including gravel, peat, tufa, alluvium, estuarine muds, colluvium and brickearth. Biological remains have been preserved within these and other depositional environments by waterlogging, charring and mineralisation, and range from diatoms, pollen, seeds and trees to ostracods, molluscs, foraminifera, insects and bones.

In many cases, the quality of the evidence recovered from archaeological sites in London is exceptional within the British context. Biological remains are rarely so consistently well preserved throughout the archaeological record, from the microscopic pollen grains used to reconstruct Late Devensian ecological conditions to larger remains, such as the Roman waterfront. Secondly, the extensive trade network of which the city was a part led to a great diversity of species being imported which have served to demonstrate the international nature of palaeoenvironmental evidence from the capital. Examples of this include primates from both the old and new worlds (Armitage 1983), *Pinus pinea* (stone pine) cones from the Mediterranean (Brigham 1996) and nuts from the Caribbean (Giorgi 1997a).

The value of environmental archaeology as a component part of archaeological research lies in several areas. Firstly, geoarchaeological and palaeoecological analysis can provide models of topographic and environmental systems. These may then be used as frameworks in which to place and understand the development of the archaeological communities. Secondly, study of the materials directly used by the inhabitants and communities themselves (such as animals, trees or cereals) can lead to detailed interpretations of the developing economic systems, craft, trade, spatial organisation and even ritual practices. The first of these points is fundamental, particularly with reference to the prehistoric period. Without a knowledge of the landscape through which communities were passing and eventually modifying to their own ends, much conventional archaeological interpretation is likely to be flawed, if not invalid. The second area of study adds the detail to the picture, and therefore makes the leap to intimate knowledge of past lives.

The subject is now viewed as one with a major role in national research, indicated by the inclusion of key environmental issues in recently devised national research guidelines for archaeology. These include *Exploring our past* (English Heritage 1991), *Frameworks for our past* (Olivier 1996) and the 'Archaeology Division research agenda' (English Heritage 1997).

This chapter summarises the current state of knowledge regarding palaeoecological research in the London region. It begins with a summary of geology and topography, in essence an outline of detailed work published elsewhere, but comprehensively referred to here. Following this, a summary of the development of the Thames during the Holocene is given. The body of this chapter, however, deals with environmental change in the London region during the Late Devensian and Holocene. The chapter concludes with a statement of the potential of environmental archaeology in London and some suggested areas of future research.

Solid geology

Greater London lies in the centre of the London basin, an area bounded by the exposed Cretaceous chalk of the Chiltern Hills to the north and north-west, the Berkshire Downs to the west, and the North Downs to the south-west and south. To the east, the Thames basin opens on to the North Sea (Sumbler 1996, 1). The chalk (laid down under marine conditions) extends beneath the entire basin and is overlain by Palaeocene and Eocene deposits. The Palaeocene deposits consist in parts of London of the Thanet sands and the Lambeth Group (Upnor, Reading and Woolwich formations) laid down approximately 60 million years ago. Thanet sands are restricted to the margins of the chalk in south London, with more extensive exposures to the east of a line between Greenwich and Sutton. In the north-west part of the region the Palaeocene deposits are represented by exposures of the Reading formation, typically composed of sediments formed in marshy flats (Ellison & Zalasiewicz 1996, 100). Exposures of Eocene deposits, particularly the London Clay (a marine unit laid down c 55 million years ago), are extensive. They are present to the east of the River Lea and as a band south of the Thames from Plumstead Common through Norwood, Kingston and Cobham, where they are capped by the Claygate member and the Bagshot Formation. In south-west London, the Bracklesham Beds (interbedded clays, sands and gravels) cover the Bagshot Formation (interbedded sands and clays) at Weybridge and St George's Hill.

Drift geology

Superficial drift deposits occur throughout the central part of Greater London along the course of the River Thames and its tributaries. These deposits are all Quaternary in origin, mostly formed by fluvial or fluvio-glacial action with some periglacial deposits. Boulder Clay or till of glacial origin is almost absent from the London area, though localised deposits of the Lowestoft Till occur at Chigwell and Havering on the north-east outskirts, and further west at Finchley Common, Belmont and Chase Side (the most southerly Boulder Clay deposits in Britain). The most extensive drift deposits are found in west London, where gravels relating to a number of phases of river downcutting and terrace formation cover most of the area from Hammersmith to Slough and Egham. Other substantial deposits occur in the Lea Valley, and to the north-east from Tower Hamlets to Havering. Significant deposits of Langley silts cap the gravel terraces in Kingston, Osterley, West Drayton, Slough, Hammersmith, Edmonton, Enfield, Ilford, Barking and Ockendon.

The latest (and lowest) of the terrace gravels in the river valleys are capped by alluvial deposits which occur along the river margins. To the east, there are extensive deposits in the Colne Valley, and in the Thames Valley from Staines to Weybridge. In central and east London these deposits become increasingly extensive from Westminster downstream, with significant deposits in the Thames, Lea, Roding, Darent and Mar Dyke valleys. These deposits can be extremely thick, measuring 16m in depth at Tilbury (Devoy 1980).

The river terraces of the London basin

London has one of the most complete sequences of Pleistocene deposits in the British Isles, consisting of a series of terraces on the sides of the valley basin formed by the downcutting of the River Thames and its tributaries over the Middle to Late Pleistocene. The archaeological significance of the terrace deposits lies in the fact that they formed while early human

Survival of environmental evidence: the massive timbers of the Neronian quay at Regis House, City of London (MoLAS)

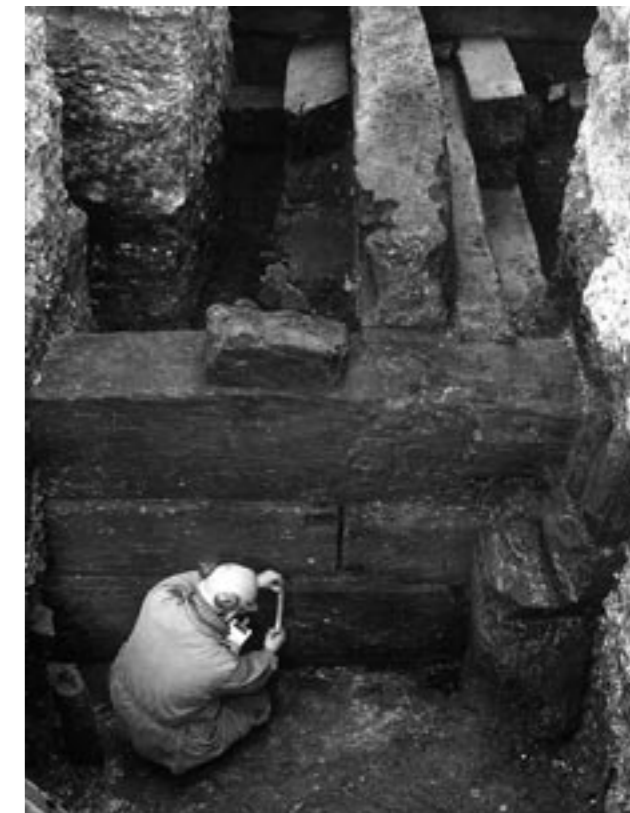


Table 1 Pleistocene strata of the London Thames – conflicting views (from Sidell et al 2000). Text in grey blocks represents temperate episodes of mainly fine-grained or terrestrial accretion

(Bridgland 1994; 1995)			(Gibbard 1985; 1994; 1995)	
OIS	Middle Thames	Lower Thames	Middle Thames	Lower Thames
1	Floodplain alluvium	Estuarine deposits	Floodplain alluvium	Estuarine deposits
4–2	Shepperton gravel	Submerged	Shepperton gravel	Submerged
5a, 5c, 3	Kensington, Sunbury, Isleworth	Submerged	Kensington, Sunbury, Isleworth	Submerged
5d–2	Kempton Park gravel	Tilbury Marshes gravel	Kempton Park gravel	Tilbury Marshes gravel
5e	Trafalgar Square and Brentford	Below floodplain	Trafalgar Square, Brentford	Aveley, Crayford, Ilford, Grays Thurrock, Purfleet, Northfleet
6	Kempton Park gravel/ Taplow gravel	Mucking gravel	Kempton Park gravel/Taplow gravel/Lynch Hill gravel	Mucking gravel/Taplow gravel/Corbets Tey gravel
7	None in London	Aveley, West Thurrock, Crayford, Northfleet		
8	Taplow/Lynch Hill gravel	Mucking gravel/Corbets Tey gravel		
9	None in London	Purfleet, Grays		
10	Lynch Hill gravel/ Boyn Hill gravel	Corbets Tey/Orsett Heath gravels		
11	None in London	Swanscombe deposits	None in London	Swanscombe deposits
12	Boyn Hill/Black Park gravel	Orsett Heath gravel	Black Park gravel	Orsett Heath gravel

populations were first present in Britain, and that some of the terrace deposits contain important evidence of Palaeolithic cultural activity (see chapter 2). The most recent analyses of these deposits are those by Gibbard (1985; 1994) and Bridgland (1994). These works have refined and corrected pre-existing Geological Survey maps and clarified the chronology of terrace formation (although the two authors do not agree in their interpretations of all elements of the sequence). Unfortunately, few radiometric dates exist for these deposits: they are generally assigned a relative chronology with reference to Oxygen Isotope Stages (OIS) (Shackleton & Opdyke 1973) on the basis of amino acid racemisation, vertebrate biostratigraphy and geomorphology (Bridgland 1994), and palynology and lithostratigraphy (Gibbard 1985; 1994).

The earliest terraces: pre-Anglian and Anglian formations (OIS pre-21–12)

The earliest terraces (the 'high-level gravels'), which are Early Pleistocene in date (pre-OIS 21), are present at Beaconsfield and Chalfont St Giles to the north-west of Greater London, at a height of 108m and 140m OD respectively (Bridgland 1994, 7). They extend into the Vale of St Albans (Bridgland 1985, 13), and were laid down when the course of the River Thames ran in a north-easterly direction to the north of its present course. In addition, 'Pebble Gravel' (Whittaker 1889) is present at over 100m at High Beach and 90m at Debden Green (Gibbard 1994, 13). Gravels of this date are also present between the Rivers Lea and Roding, and south of the Thames at Shooters Hill (130m OD) and in Darenth Woods (80m OD) (Gibbard 1994, 13).

The next group of deposits date to the Anglian cold stage (OIS 12: 478–423,000 years BP) (Gibbard 1985), the Gerrards Cross, Winter Hill and Black Park gravels to the west, and the Dartford Heath and Swanscombe lower gravel to the east (Gibbard 1985; 1994). Between the deposition of the Winter Hill gravels and the Black Park gravels in Late Anglian times, the course of the River Thames was diverted as a result of glacial advance from its course through the Vale of St Albans (Bridgland 1983) to a route slightly to the north of its current floodplain. Boulder Clay deposited by the Anglian ice sheet caps the ground above 60m OD in Finchley, and in the extreme north-east of the London area. The earliest evidence for human activity in the London region (artefacts in derived contexts in the Black Park gravels) probably reflects occupation during the Late Glacial phase, or an earlier interstadial episode, of the Late Anglian glaciation.

Hoxnian (*sensu Swanscombe*) interglacial deposits (OIS 11) 423–380,000 years BC

Interglacial deposits relating to the subsequent Hoxnian (*sensu Swanscombe*), correlated with the Dutch Holsteinian (Bridgland 1994, 13), have been found at Swanscombe, Kent (Conway et al 1996; Conway & Waechter 1977; Kerney 1971), in the form of fine-grained overbank and terrigenous deposits (lower and upper loams). The famous Swanscombe skull was found in the upper gravel (Wymer 1968), which is thought to date to a late interglacial phase (Bridgland 1994, 205), while in situ Clactonian and Acheulian artefacts are recorded from the 'loams'. Areas of the upper loam survive with preserved footprints of Cervidae (deer), *Equus ferus* (horse) and possibly *Dicerorhinus kirchbergensis/hemiteochus* (rhinoceros) and *Palaeoloxodon antiquus* (elephant) (Gibbard 1994, 137; Sutcliffe 1985), together with a reddish zone which is interpreted as a temperate buried soil, the earliest example of a Pleistocene ground surface recorded in the lower Thames area (Kemp 1985).

Saalian ('Wolstonian') deposits (OIS 10–6) 380–130,000 years BP

There is now considerable debate concerning the existence of a separate 'Wolstonian' glaciation (Shotton 1973), not least because the deposits at the type site at Wolston in the Midlands have recently been re-evaluated and are now thought to belong to the Anglian (Rose 1987; 1991). Gibbard (1985; 1994) continues to use the term 'Wolstonian' while Bridgland (1994) now uses the European stage name 'Saalian' instead, which is used here.

The highest and earliest of the terraces is the Boyn Hill gravel which is found on the north side of the Thames Valley and in central and south-west London. Its correlative, the Orsett Heath gravel, occurs extensively in east London and Essex, and both appear to have formed in a cold climate. The subsequent Lynch Hill gravels occur from just west of Lynch Hill, near Slough, across central London, and equate to the Corbets Tey gravel of Essex (Bridgland 1994; Gibbard 1985; 1994). Interglacial deposits of OIS 9 (Intra Saalian temperate episode), which Bridgland (1994) equates to the Hoxne type site in Suffolk, are found as organic channel fills at Cauliflower Pit, Ilford, Belhus Park, Purfleet and Grays, interdigitating with the Corbets Tey gravel. However, Gibbard (1994; 1995) attributes both these and those of Bridgland's 'Ilfordian' OIS 7 interglacial (see below) with the Ipswichian (OIS 5e). In the intervening mid Saalian (OIS 8), gravels continued to accumulate and have been equated to Corbets Tey upper gravel and basal Mucking gravels in the lower Thames and the upper Lynch Hill and basal Taplow gravels in the upper Thames.

Ilfordian interglacial deposits of OIS 7 have been found at various sites in east London and Essex including Aveley, West Thurrock, Uphall Pit, Ilford, Crayford and Northfleet. At Aveley, *Palaeoloxodon antiquus* (straight-tusked elephant) and *Mammuthus primigenius* (mammoth) were found in separate layers (West 1969), while a faunal assemblage from Crayford included *Ovibos moschatus* (musk ox), *Coelodonta antiquitatis* (woolly rhinoceros), *Mammuthus primigenius*, *Equus ferus*, *Microtus oecnomus* (northern vole), *Canis lupus* (wolf) and *Ursus sp* (bear). Many of these deposits are of considerable archaeological importance because of the presence of lithic assemblages in undisturbed or relatively undisturbed contexts (including probable palaeosols), sometimes associated with faunal material and organic remains.

The Late Saalian (OIS 6) is represented in the London region exclusively by deposits of Mucking, Taplow and, locally, the Spring Garden gravels (Gibbard 1985). These were formed in a braided river system that underwent successive downcutting associated with changes in relative sea level. Palaeolithic tools were recovered from these deposits (see chapter 2). Faunal remains, including *Mammuthus primigenius*, *Coelodonta antiquitatis*, *Equus ferus*, *Bos/Bison* (aurochs/bison) and *Ovibos moschatus*, indicate a cold climate, and anomalous finds of *Palaeoloxodon antiquus* may be derived material from older interglacial deposits.

Ipswichian interglacial deposits (OIS 5e) 130–110,000 years BP

Building work at Trafalgar Square and other sites nearby has revealed stratified fossiliferous deposits of Ipswichian date. The Spring Garden gravel, which overlies the London Clay at Trafalgar Square and St James, Westminster, is capped by the richly fossiliferous Trafalgar Square

sand and silt deposits containing mammal bones, insects, mollusc shells and plant remains. The environmental evidence for the Ipswichian interglacial is more detailed than that for earlier periods in the London region. The organic deposits at Trafalgar Square fall within West's (1969) zone IpIIa and IpIIb, a period of mixed oak forest with *Pinus* (pine), *Quercus* (oak), *Fraxinus* (ash), *Alnus* (alder) and high levels of *Corylus* (hazel) (Gibbard 1985). The Ipswichian faunal assemblage from Trafalgar Square includes *Panthera leo* (lion), *Palaeoloxodon antiquus*, *Dicerorhinus hemitoechus*, *Hippopotamus amphibius* (hippopotamus), *Megacerus giganteus* (giant deer), *Dama dama* (fallow deer), *Cervus elaphus* (red deer), *Bos primigenius* (aurochs) and *Bison* (bison) (Stuart 1976; 1982). Fossiliferous sands of similar date occur locally in Brentford, at Gunnersbury Park and Beecham House. It is notable that contemporary evidence for human activity has not yet been conclusively identified from any Ipswichian deposit (Sutcliffe 1995).

Devensian deposits (OIS 5d–2) 110–25,000 years BP

The remaining gravel terrace deposits in the London region, the Kempton Park, East Tilbury Marsh, Shepperton and Floodplain gravels, are of Devensian age. In west London, Gibbard et al (1982) have identified the extensive Kempton Park gravels which stretch eastwards in a narrow band along the north side of the river from Hampton, through central London to the City. These can be correlated with the East Tilbury Marsh gravels, which Gibbard (1994) also equates with a gravel deposit on the west side of the Lea Valley in Tottenham and Edmonton. Within these deposits are found localised temperate climate deposits in the form of organic channel fills. These have been correlated with OIS 5a (Cassington interstadial; Maddy et al 1998), 5c (Chelford interstadial; Coope 1959; Rendell et al 1991) and/or 3 (Upton Warren interstadial; Coope et al in press) by Bridgland (1994), notably at the South Kensington Ismaili Centre (Coope et al in press), Kempton Park (Gibbard et al 1982) and Isleworth (Coope & Angus 1975; Kerney et al 1982). A further period of downcutting occurred during OIS 3 leading to the formation of a buried channel, beneath the modern river, followed by accumulation of the Shepperton gravel, which at the present day is 1–2m below river level. On either side of the River Thames, the Kempton Park gravel is covered in places by up to 3m of 'brickearth', or the Langley Silt Complex (Gibbard 1994, 97), which is thought to have been deposited by a mixture of aeolian and colluvial processes at approximately 17,000 BP (Gibbard et al 1987).

Late Devensian/Holocene transition (OIS 2–1) 25,000 BP onwards

During the Devensian Late Glacial (OIS 2: 25–12,000 years BP) climatic amelioration of the Windermere interstadial (c 13,000–11,000 BP) many of the braided channels in the Shepperton gravel were abandoned (Wilkinson et al 2000). Within them, organic sediments accumulated during the Windermere interstadial, the Loch Lomond stadial (c 11,000–10,000 BP) and into the Early Holocene, including sites such as Masthouse Terrace, Isle of Dogs (Wilkinson 1995), Silvertown (Wilkinson et al 2000) and West Drayton (Gibbard & Hall 1982). Some of these abandoned channels seem to have been relatively large, and in one of them, Bramcote Green in Bermondsey, distinctive lacustrine sediments accumulated from before 11,000 BP until the Early Holocene (Thomas & Rackham 1996). Other than these channel fills little other sedimentation seems to have taken place in the Thames floodplain during OIS 2, although solifluction sequences are known from areas on chalk geology to the south. Notably, there is no conclusive evidence of gravel accretion in OIS 2. For example, Late Glacial sedimentation in the Colne, Lea and Wandle valleys consists of sand, clays and silts dated on the basis of Late Palaeolithic and Mesolithic artefact finds as well as directly dated sediments. The most significant archaeological material in this context so far uncovered comes from the site at Three Ways Wharf, Uxbridge where flint and bone scatters sealed beneath alluvial silts date to the Late Upper Palaeolithic (Lewis in prep a).

Holocene soils

The soils of Greater London largely reflect the underlying solid and drift geology, for example loess, which significantly affects the character of soils in some areas (Catt 1978; 1979). The major soil types in the region are thin free-draining calcareous silty soils on the chalk (Andover 1), well-drained acid sandy soils (Shirrell Heath 2), heavy slow-draining and clay soils (Wickham 4) and alluvial soils (Fladbury 1, Wallsea 1). The agricultural potential of some of these soils, even with modern farming methods, is limited.

North of the Thames, much of the area is covered by soils of the Windsor and Wickham 4 series, which developed on London Clay deposits from Uxbridge to Enfield, and east of the Lea from Chingford to Upminster. In the medieval period, grasslands and woodlands of *Quercus* and *Ulmus* (elm) covered large areas of these soils. The London Clay in Finchley and adjacent areas is overlaid by fine loam or fine silt that is poorly drained. Well-drained acidic coarse loam and sandy soils have also developed where the Bagshot sands overlie the clay on Hampstead Heath. The other major soils in the area to the north of the Thames are those which developed on the river terraces. Well-drained coarse loam and sand soils occur on the gravels of the Lynch Hill, Taplow and Kempton Park terraces. The soils on the Taplow terrace (Watertock) tend to be finer, well-drained loam soils, which are now often used for orchards. In other areas, deep stoneless well-drained soils (Hamble 2) occur where aeolian or brickearth deposits cap the gravels (eg at Enfield, Ilford and Heston). These soils are very productive, being used for cereal and field crop cultivation, market gardens and orchards.

South of the Thames, soils are more variable. Wickham 3 and 4 occur on the London Clay from Eltham to Esher. In south-east London, well-drained acid sandy soils overlie the Blackheath Beds between Woolwich and West Wickham. These are generally unsuitable for agriculture, and where not built over are usually covered with dry lowland heath (eg Blackheath and West Wickham commons), *Betula* (birch) and *Quercus* woodland, and conifer plantations. Other lowland heath habitats occur on the very acid sand over clay and loam that covers the plateau gravels at Wimbledon Common, Kingston, Richmond Hill and Esher Common. These areas of poor soils survive as commons, parks and woodlands because they were not considered worth enclosing in the post-medieval period.

In the extreme south of Greater London, the clay-with-flints that caps the chalk of the North Downs is covered by fine silt over clay and fine loam of the Batcombe series, with slow-draining subsoil. These soils are used for cereal cultivation, with areas of permanent grassland and damp *Quercus* woodland. To the north, shallow well-drained calcareous silt or coarse loams of the Andover (1) and Newmarket (2) series have developed on the chalk. On the northern edge of the chalk some well-drained, fine loam soils occur. The soils on the gravel terraces in south-west London are similar to those to the north of the river. The well-drained coarse loamy and sandy soils on the Boyn Hill and Floodplain gravels, and the coarse and fine loamy well-drained soils on the Taplow terrace, are generally covered by permanent pasture or deciduous woodland.

The Thames: river levels

The central London region has been influenced by the River Thames ever since it was diverted as a result of the Anglian glaciation c 450,000 BP (OIS 12) (Bridgland 1995). The extremely detailed accounts given by Bridgland (1994) and Gibbard (1994) of the terrace sequence should be referred to for details of the environmental conditions prevailing at the time of deposition. However, the period in question, the Late Quaternary, is one of limited human presence in the lower Thames Valley. It is not until the Holocene (OIS 1) that people began to occupy the area on a substantial scale. An understanding of the Holocene dynamics of both the estuary and the freshwater stretch of the river is therefore important if we are to reconstruct accurately the contemporary environment in which these peoples lived.

Research has been undertaken on Thames sediments and archaeology, with reference to the development of the river and estuary, for over a hundred years. An early example of this is the pioneering work of Spurrell in the late 19th century (Spurrell 1889b). These studies have led to the development of models of sedimentation and river-level/sea-level change (eg Greensmith & Tucker 1976; Devoy 1979). However, recent work in the inner Thames estuary (Sidell in prep) suggests that previous models may well be oversimplistic.

Devoy (1979) constructed the most comprehensive and most extensively referenced model, with a study area covering the Isle of Grain to Crossness. A sequence was constructed using facies-based modelling and ecological reconstruction. The now familiar 'Thames-Tilbury' model was proposed and has since been regarded as the seminal work in this area (Haggart 1995). Interdigitating peat and alluvial clay/silts were identified throughout the study area, characterised in terms of lithology and biostratigraphy, and classified as 'Tilbury' (organic) and 'Thames' (minerogenic) units. These units were considered to be equivalent to periods of relative sea-level rise (the five minerogenic units) and periods of a decrease in the rate of sea-level rise (4/5 organic units). The model commences with the initial rapid rise following the retreat of the ice sheet. This led to a rise of some 15m in relative sea level between the end of the Devensian and c 6000 BP, which is well paralleled in south-eastern England as a whole (Long & Tooley 1995). This would have had a significant effect upon any people occupying the outer and mid estuary floodplain, which would have been rapidly encroached upon by tidal waters. Settlement areas along the river margin progressively moved to higher ground as the land below was overtaken by the rising water levels.

Two age-altitude curves of relative sea-level height were constructed, one for Tilbury (mid estuary) and one using data from Crossness, Dartford and Broadness (inner estuary). The development in river levels is thought to be oscillating, rather than smooth, but indicating a general rise through time. Initially, at the beginning of the Holocene, this is thought to be rapid, and

compares with data from adjacent geographical areas, such as the Netherlands (Jelgersma 1961) and northern Britain (Tooley 1976). The rapid rise tails off towards c 6000 BP and from then river levels increase more slowly. A recent model suggested by Long (Long et al in press), discusses the changing rates of river level in the Thames estuary (along with the Severn estuary and Southampton Water). He proposes a contraction in the estuary between roughly 6000 and 3000 BP through a drop in the rate of sea-level rise, not a drop in relative sea level itself. This model proposes a subsequent increase in the rate of sea-level rise, continuing to the present day.

Therefore, although Devoy's (1979; 1980) model is the most detailed that exists, it presents certain difficulties, demonstrated by the need for two curves, that suggest it cannot necessarily be applied randomly to the whole of the lower Thames floodplain. Recent research on this problem indicates that the model is not easily applicable outside the study area, in terms of both lithology and age/altitude analysis. Data from the mid Holocene levels at West Silvertown urban village (Wilkinson et al 2000) indicate that the trends indicated by Devoy for the inner estuary are sound. However, there is some question over the altitude of mean high water of spring tides (MHWST) at any given time. A series of excavations in the wetlands

both north and south of the river – in Newham, Dagenham (Meddens 1996) and Thamesmead – suggest that the sedimentology certainly is not easily comparable with that recorded at Tilbury. Rather, the Thames floodplain during the Holocene was a complex environment of peat-forming communities, migrating channels and raised eyots (Sidell 1998).

More detailed data exist for the Thames in the historic period. This has been obtained by archaeologists examining the changes in the level of the Thames through analysis of archaeological structures and horizons (Brigham 1990b; Milne 1985, 79; Milne & Milne 1982). Such research has generally been confined to the Roman and later periods, for which more substantial archaeological evidence exists. A review of the evidence for river levels in central London (Milne et al 1983) concludes that the Thames was tidal to approximately London Bridge in the 1st century AD, with high tide at c 1.25m OD. The rising water levels also widened the river to nearly a kilometre at high tide, creating a number of tidal islands and mudflats (Graham 1978; Milne et al 1983). At the end of the 1st century, the evidence of the Roman quays from sites such as Regis House (Brigham 1996) indicates water levels dropped. This trend appears to have continued through to the 4th century, dropping by as much as 1.5m. This seems to have reversed during the Saxon period, but current research from Thames Court (City of London) indicates a trend similar to that from the Roman period, with river levels dropping between the 10th and 12th centuries (Wilkinson in prep; Sidell 1998). Evidence from both Thames Court and Westminster (Thomas et al in prep) indicates that the river levels began rising again from AD 1181. This would appear to be a result of the building of the stone version of London Bridge, with substantial stone piers causing a dam effect (Watson & Brigham in prep). However, the later medieval levels show a gradual but continual rise (Milne 1985, 79) which is continuing to the present day.

The whole area of relative river- and sea-level rise is one that has by no means been resolved and is highlighted here as a major area for future research.

Retrieving the data: the extraction of 'column samples' from archaeological deposits at Westminster (MoLAS)



Environmental change during the Late Devensian and Holocene periods

The environmental history of the London region is relatively poorly studied in comparison to the considerable research on the geology and geomorphology of the area. This is partly a result of research biases in archaeological work in the London region, which unsurprisingly has concentrated on urban archaeology and has given environmental and landscape studies a comparatively low priority until very recently.

Late Devensian environments: Dimlington stadial (Older Dryas), Windermere interstadial (Allerød), Loch Lomond stadial (Younger Dryas) (OIS 2) 13,000–10,000 years BP

Evidence relating to Late Devensian environments in the London region is limited, though a typical cold periglacial environment should be envisaged, with wide braided river systems and limited tundra-like vegetation. The deposition of loess and Langley silts probably occurred during the early part of this period (Gibbard 1994, 94) as a result of combined aeolian deposition and solifluction. The environment at the end of this period probably consisted of an open landscape dominated by herbaceous plants, particularly Poaceae (grasses) and *Artemisia* (mugwort). This is suggested by evidence from a range of sites including West Silvertown Urban Village (Wilkinson et al 2000), Three Ways Wharf, Uxbridge (Lewis et al 1992) and Bramcote Green, Bermondsey (Thomas & Rackham 1996). Finds of *Equus ferus* and *Rangifer tarandus* (reindeer) bones from Three Ways Wharf, Uxbridge, radiocarbon-dated to 10,900–9400 BC and 10,200–9200 BC (OXA 1778, 10,270±100 and OXA 1902, 10,010±120 BP) also suggest an open steppe or tundra landscape with migrating herds of reindeer and horse, possibly at different seasons. Britain at this time was still connected to the Continent by a land bridge, and seasonal movement across to the Continent by animals, if not humans, is likely (Jones & Keen 1993, 205).

Table 2 Chronology of OIS 1/2

OIS	Epoch	Stage	Period	Flandrian chronozones	Godwin zones	Cultural periods	Calendar years BC/AD	Calendar years BP	¹⁴ C years BP		
One	Holocene	Flandrian	sub-Atlantic	FI III	VIIc	post-medieval	AD 1000	1000	1000		
						medieval					
						Saxon & Danish					
						Roman					
			sub-Boreal		VIIb	Iron Age	0	2000	2000		
						Bronze Age					
			Atlantic		VIIa	Mesolithic	1000 BC	3000	3000		
							2000			4000	4000
							3000				
			Boreal		VIc VIb VIa	Mesolithic	4000	5000	5000		
5000	6000	6000									
6000											
7000	8000	8000									
8000			9000	9000							
pre-Boreal	V	Mesolithic			8000	10,000	10,000				
			9000								
Two	Pleistocene	Devensian	Loch Lomond stadial (Younger Dryas)	FI Ia	IV	Upper Palaeolithic	9000	11,000	10,000		
			Windermere interstadial (Allerød)				10,000	12,000	10,000		
			Dimlington stadial (Older Dryas)				11,000	13,000	11,000		
							12,000	14,000	12,000		

The earliest levels (Late Devensian) analysed at Bramcote Green show an environment dominated by herbs, including Poaceae, Cyperaceae (sedges), *Artemisia* and *Thalictrum* (meadow rue). Few tree species are recovered, and in very low percentages. *Salix* (willow) and, to a lesser extent, *Juniperus* (juniper) and *Spartanium* (bur reed) are the dominant taxa and present a picture of a cold, open Older Dryas landscape with dwarf shrubs. The next unit, equated with the Lake Windermere interstadial, shows a development to an open *Betula* woodland with *Salix* and *Juniperus* fringing a small lake. *Betula* declines sharply, replaced by a range of herb taxa including Poaceae, Cyperaceae, *Artemisia*, *Filipendula* (meadow sweet), Caryophyllaceae (pinks), *Rumex* (dock) and algal cysts of *Pediastrum*. The decline in *Betula* is dated to 11,250–10,900 or 10,800–10,700 BC (Beta 70409, 11,020 ± 60) (Thomas & Rackham 1996). No dates are available for the sequence below this point.

Examination of the sedimentary sequence from Meridian Point, Enfield (Bowsher 1996) indicates initial quiet water sedimentation followed by peat formation dating to 10,900–10,000 (Beta 96080, 10,450 ± 80 BP). These occurred in a mainly non-arboreal environment dominated by Poaceae and Cyperaceae, also *Alnus* and *Juniperus*. Limited *Pinus* and *Quercus* spores were present. The local wetland environment is represented by *Typha*, *Callitriche* and *Potamogeton* type. This develops into a more wooded environment after this date, marked by expansion of *Pinus*, with some expansion of *Quercus* and *Betula* (Scaife 1996).

Data collected from West Silvertown (Wilkinson et al 2000) indicate that conditions at the end of this period, 10,900–9700 BC (Beta 101867, 10,310 ± 90 BP), consisted of an arctic-alpine

tundra environment as well as the local marsh environment. Species reflecting these conditions include *Filipendula*, *Plantago media/major* (plantain), *P. maritima* and possibly *Dryas octopetala* (mountain avens). *Alnus* is also present from these levels and is now beginning to be viewed as a component part of the Late Devensian flora.

Pre-Boreal and Boreal (OIS I) 10,000–7000 years BP

Evidence for early post-glacial landscapes is also limited but gradually increasing, with evidence suggesting that vegetational changes in the pre-Boreal and Boreal periods generally followed those recognised elsewhere in southern England. The environmental changes of the pre-Boreal began with a transition from a treeless open steppe-like landscape in the Late Devensian, to *Betula* and *Pinus* woods in an open landscape (Godwin 1956, 27). This was later replaced by drier *Betula* forest and the development of *Pinus* woods on the sandy and gravel soils, with heaths and waterside areas of herb and scrub vegetation including *Carex*, Poaceae, *Juniperus*, *Salix* and *Corylus*. These are clearly recognisable in London, for instance at Bramcote Green (Thomas & Rackham 1996). The pre-Boreal biostratigraphy recorded here was reconstructed through analysis of pollen and molluscs. The sequence suggests the existence of a local deep-water lacustrine environment with falling lake levels and increasing aquatic vegetation subsequently infilling the lake basin. The evidence suggests a development of Boreal *Betula* and *Pinus* woodland with the first appearance of *Tilia* (lime/lindens), *Alnus* and *Corylus* from 7520–7130 or 7100–7080 (Beta 70408, 8280 ± 60 BP). Subsequent to this, there is evidence for the development of wood fen and finally alder carr within a *Quercus*, *Ulmus* and *Tilia*-dominated woodland.

A study of organic clay and peat deposits overlying gravels at Enfield Lock in the Lea Valley also shows a sequence of vegetational change during this period (Chambers & Mighall 1990; Chambers et al 1996). The earliest levels contain pollen characteristic of Late Devensian environments, including *Betula nana* (dwarf birch) and *Salix herbacea* (least willow). The pre-Boreal and Early Boreal pollen evidence suggests a change from an open environment with sedges dominating (equated with pollen zone IV: Godwin 1940), radiocarbon-dated to 9250–8650 BC (UB3350, 9546 BP), to a shallow-water environment with surrounding grasslands and *Betula/Pinus* woodland. Subsequent increases in arboreal pollen, with higher values of *Betula*, *Pinus*, *Salix* and ferns, indicate that the area was progressively forested with temperate pine and hazel.

The evidence from West Silvertown (Wilkinson et al 2000) confirms the picture of a transition from *Pinus*-dominated landscape at the beginning of this period. Unfortunately there is a hiatus in the sequence covering the Boreal. Evidence from Strathville Road, Wandsworth, however, dates to the beginning of the Boreal period, with radiocarbon results of 8610–8290 (Beta 76896, 9240 ± 60 BP) and 8690–8670 or 8640–8290 (Beta 76897, 9270 ± 60 BP) (Wilkinson et al submitted). These dates are from the base of an organic sequence, the pollen evidence from which indicates that the *Pinus*-dominated forest was indeed present in south London. Interestingly, *Pinus* was dominant over *Corylus avellana* type that is often recorded as co-dominant with *Pinus* at this date (Scaife 1995). This ecotype was subsequently replaced by *Quercus*, *Ulmus*, *Alnus* and *Tilia*-dominated woodland, with *Corylus*, *Sorbus* (rowan/whitebeam/wild service tree) and *Thelycrania* (dogwood).

The warmer conditions of the Boreal led to the development of a temperate forest across London, characterised by an expansion of *Corylus* and *Pinus*, the latter subsequently being replaced by temperate species, particularly *Ulmus* and *Quercus*, and later *Tilia* and *Alnus*, to produce the mixed oak forest characteristic of the succeeding Atlantic period (pollen zone VII). This can be seen at Meridian Point, Enfield (Bowsher 1996; Scaife 1996) associated with a date of 6900–6400 BC (Beta 96079, 7750 ± 80 BP). This process was clearly not uniform as wet *Alnus* woods and areas of Cyperaceae, fen and willow carr developed at an early date along the river margins.

Faunal remains from this period are extremely limited. Again, the site at Three Ways Wharf, Uxbridge indicates the presence of *Cervus elaphus*, *Capreolus capreolus* (roe deer), *Castor* (beaver) and *Cygnus* sp (swan) associated with an Early Mesolithic tool assemblage. The site also produced a pollen sequence for the Boreal period sediments above the cultural deposits

(Lewis et al 1992): the earliest phase is dominated by Cyperaceae and Poaceae, suggesting a sedge/reed swamp (supported by micromorphological evidence) probably dating to pollen zone V/VIA. *Pinus* was growing in the area, along with a number of temperate tree species, including *Quercus*, *Corylus*, *Ulmus* and *Betula*. The following phase, correlated with pollen zone VIb/VIc, shows an increase in *Pinus* and ferns, rises in *Ulmus*, *Corylus*, Poaceae and other herbaceous taxa, and a decrease in Cyperaceae and *Quercus*. A feature of both the Uxbridge and Enfield sediments was the high concentration of comminuted charcoal: the sediment colouring at Uxbridge was mainly due to charcoal. Similar 'black' layers are recorded elsewhere in the Colne Valley and also from Wandle Valley Hospital (Birley et al in prep) where the material was also identified as comminuted charcoal. While it is possible that this charcoal derived from camp fires, the extent and quantity of burnt material may indicate widespread natural or anthropogenic forest fires during the Boreal.

The archaeology of the London area in this period is extremely important because of both the very small number and their good preservation of Late Upper Palaeolithic and Early Mesolithic occupation sites which are generally found in the river valleys. The probable survival of archaeological sites in similar stratigraphic positions to that at Three Ways Wharf, adjacent to watercourses and under later alluvium, should be noted for predictive modelling. Such sites offer exceptional opportunities for the study of these cultures in conjunction with detailed palaeoecological and topographic studies of the river valleys.

Atlantic (OIS 1) 7000–5000 years BP

A temperate mixed deciduous forest existed over much of Britain by the end of the Boreal period, though little is known of the specific vegetational history of the London region at this time. The pollen sequence from West Heath Spa, which spans the Atlantic and succeeding periods (Girling & Greig 1977; Greig 1992), commences with a phase correlated with pollen zone VIIa, indicating a *Tilia*-dominated forest with *Ulmus*, *Quercus*, *Betula*, *Pinus* and *Corylus*. Cereal pollen is also present in small quantities in these early levels, suggesting Early Neolithic agriculture. The beetle fauna is consistent with the pollen evidence, with a range of woodland species associated with *Tilia*, *Ulmus*, *Quercus*, *Corylus*, *Ilex* (holly), *Hedera* (ivy), *Salix* and *Acer* (maple), as well as rotting wood. At Bramcote Green (Thomas & Rackham 1996), a pollen phase dominated by *Ulmus/Corylus* and *Tilia*, which may be Late Boreal or Early Atlantic in date, preceded the development of mixed forest. The opening up of the *Tilia*-dominated forest canopy on the lighter soils also seems likely in this period, and there is evidence for changes along river margins perhaps reflecting increasing wetness. There is no evidence for any significant human impact on the alder carr downstream from Southwark (Devoey 1979), and vegetational changes seem to have been influenced by changing water levels and marine influences.

Research undertaken on sediments from the Erith Spine Road development (Sidell et al 1997) indicates an initial Atlantic soil dating to 4550–4320 BC (Beta 88688, 5570 ± 70 BP) with pollen reflecting deciduous forest including *Tilia*, *Quercus* and *Corylus*. However, the sediments that formed above the level of this radiocarbon sample show a change to peat accumulation based on alder carr conditions. This appears to have continued undisturbed for several thousand years.

Sub-Boreal (OIS 1) 5000–2500 years BP

Pollen sequences for the sub-Boreal in London are disjointed, but a clearer picture of environmental change is beginning to emerge. The second phase at West Heath, correlated with Godwin's pollen zone VIIIb (1940), shows continuing *Tilia*-dominated forest with a dramatic decrease in *Ulmus* (the 'elm decline'). This is combined with the presence of ruderal vegetation and a significant increase in cereals, suggesting an expansion of agricultural activity (Greig 1992). The beetle fauna of this phase includes a high incidence of aquatic species, indicating surface water and pools, and is marked by the appearance of dung beetles. The decline in *Ulmus* appears to take place on a series of sites across London, at approximately 3750 BC. Unfortunately, on many sites in the floodplain, organic sedimentation begins just after this date, missing the important

horizons, but significant decreases of elm at this date are present at West Silvertown, 3960–3660 BC (Beta 120960, 5010 ± 70 BP) (Wilkinson et al 2000), and Union Street, Southwark, dating to just before 3650–3000 BC (Beta 119787, 4630 ± 110 BP) (Sidell et al 2000). The later Neolithic pollen sequence for this period from Runnymede indicates a *Quercus* and alder carr woodland with local clearings, and more distant *Tilia* and *Ulmus* woods (Greig 1992).

An interesting element of these forests which has only recently been observed in London is the presence of *Taxus baccata* (yew). The timber itself has been found on several sites in the floodplain, for example Wennington (Sidell 1996), Dagenham (Divers 1994) and Beckton (Meddens & Sidell 1995), while pollen is more rarely found. Both pollen and macrofossils were also present at Wennington (Sidell 1996) and this indicated a local densely covered mixed forest. Although the pollen content was low, the density of trees (over 20 recovered from within a trench approximately 20m x 20m) indicates a woodland type rarely recorded in this country, let alone London. There would appear to be taphonomic factors that result in such low pollen representation (Sidell 1996). The radiocarbon dates obtained for this site, place peat formation between 3960–3666 BC (Beta 76903, 5010 ± 70 BP) and 1690–1370 or 1340–1310 (Beta 76902, BP). One dendrochronology date was obtained from a sample of *Quercus* associated with the *Taxus*, and gives a result of 2262–2139 BC (Sidell 1996), indicating the *Taxus* forest may have been present approximately halfway through the period of organic sedimentation. *Taxus* is known from the Fenlands (Godwin & Clifford 1938), but has not been commonly observed in London before these recent sites, although it may simply have been misidentified as other softwood species, such as *Pinus sylvestris* (Scots pine).

A major ecological event, which appears to date fairly consistently to this period in London, is the lime decline. Prior to the Middle/Late Bronze Age, *Tilia* was the dominant tree species of woodland on well-drained soils (Birks 1989). However, sharp decreases in the presence of *Tilia* can be observed on a series of sites, eg Beckton Nursery (Scaife 1997) and Union Street, Southwark (Sidell et al 2000). This is generally associated with clear increases in cereal and associated ruderal pollen taxa. It may be that this is a purely anthropogenic cause, although the possibility that rising base levels played a part must not be discounted (Waller 1994).

In east London, a series of Bronze Age trackways and associated timber structures have been found within substantial peat horizons, but generally towards the upper contact where the alder carr peats have been submerged by riverine sediment (Sidell in prep). The pollen evidence from a group of these sites in Beckton (Scaife 1997) suggests that these structures were constructed as a response to rising base levels. This would coincide with the third phase of the model proposed by Long (Long et al in press) which suggests that c 3000 BP the Thames estuary expanded and the rate of relative sea-level rise increased. At Rainham, there is evidence for clearance and increased agriculture, at the same time as the local environment became wetter, changing from an alder carr to a reed swamp (Scaife 1991). This is also the case at Wilsons Wharf, Southwark, 900–870 or 840–400 BC (HAR 3927, 2570 ± 80 BP) (Tyers 1988), and Erith, where the environment appears to have been opened up and increases in fen taxa such as Cyperaceae, *Typha angustifolia/Sparganium* (bulrush/bur reed) and Poaceae are observed. There are also appearances of cereal pollen and ruderals at this point (Sidell et al 1997). The contemporary pollen zones at Bramcote Green indicate a *Quercus/Alnus* woodland and



The Bronze Age trackway at Atlas Wharf, Isle of Dogs: indications of climate, water levels and vegetational cover all rolled into one structure

a reduction in aquatic and herbaceous pollen types (Thomas & Rackham 1996), a pattern that changes at the top of the sequence in the Late Bronze Age with a resurgence of aquatic and herbaceous pollen and a decline in *Quercus* and *Alnus*.

At West Heath, the local environment shown in the Atlantic period changed in the sub-Boreal with a decrease in *Quercus*, *Tilia* and *Corylus*, an increase in *Ilex* (possibly colonising areas no longer covered by closed forest), the appearance of beech trees, and the presence of *Ericales* (heathers) indicating the development of heathland (Greig 1989). Local wetland habitats are indicated by aquatic *Ranunculaceae* among the macrofossils and the dominance of water beetles among the invertebrate fauna. The increase in *Alnus* pollen seen elsewhere may also be associated with a wetter environment and opening up of the forest. Evidence from Southwark (Tyers 1988) and the Bricklayers Arms site, Southwark (Sidell *et al* in prep; Branch 1987) reinforces this picture: the Bricklayers Arms sequence, which is undated but has been correlated with Bronze Age deposits identified by Devoy (1979), shows a local change from *Poaceae* and *Cyperaceae*-dominated pollen assemblages, to an *Alnus*-dominated fen carr. There is little evidence for cereal pollen although human impact is evident in later phases of the sequence.

The pollen sequence from Runnymede dated to the Late Bronze Age also shows a decrease in tree pollen, the arrival of *Betula*, the presence of species characteristic of dry chalk grassland, more cereal pollen and possible weeds associated with open land and crops (Greig 1992; Scaife in prep).

It is apparent from occupation sites that domestic animals were kept during this period, mainly *Bos taurus* (cattle) and *Ovis aries/Capra hircus* (sheep/goat), while evidence for wild game is limited (Sidell 1993). *Bos primigenius* has been identified from Harmondsworth (see chapter 4 below) and Rammey Marsh, Enfield (John Dillon, pers comm), indicating continued hunting of wild animals in the Early Bronze Age. The depositional context of the individual from Harmondsworth suggests that it may have had a ritual rather than/as well as economic significance.

The human impact on the vegetation of the London region is increasingly evident in pollen diagrams, with continuing *Tilia* decline at a number of sites and increasing clearance, indicating the expansion of farming land and pasture. A good example of this is present at Union Street, Southwark (Sidell *et al* 2000). Heath formation and podzolisation of poorer soils probably began at this time as a result of woodland clearances, grazing and an increasingly wet climate. Anthropogenic change in the environment is less visible in the pollen diagrams from the Thames estuary, where human activity was probably limited by waterlogging and tidal flooding (Devoy 1979). Archaeological evidence for Neolithic and Bronze Age occupation on the gravel terraces and brickearth is relatively widespread, but organic material survives poorly in these areas. Most of the environmental information relating to these periods derives from wetland contexts, in some cases associated with trackways presumably intended for the exploitation of marshlands and river habitats. The Neolithic occupation sites at Brookway (P Greenwood, pers comm, in Meddens 1996) and Fort Street, Silvertown (Wessex Archaeology 1994), both adjacent to areas of alluvium with buried peats, may offer a rare opportunity to relate environmental evidence to settlement activity.

Sub-Atlantic (OIS 1) 2500–0 years BP

Evidence for this period is in short supply in London. Iron Age sites are noticeably rare, the exceptions being to the extreme east and west, for instance Uphall Camp, Ilford (Greenwood 1989) and potentially the Norman Hay site, Heathrow (Heather Knight, pers comm). Unfortunately, preservation of biological remains is poor from these sites, which tend to have aggressive burial environments. The increasing urbanisation from the Roman period onwards tends to dominate the archaeological record and so often tends to preclude the recovery of undisturbed sediment dating to the historic period.

The pollen spectrum assigned to the Iron Age at West Heath, Hampstead, shows an increase in tree pollen from the previous phase, suggesting some woodland regeneration and a contraction of the heathland (Greig 1989; 1992). This may reflect local grazing of domestic stock on the

heath, an interpretation reinforced by the occurrence of dung beetles from these levels, and concentrations of charcoal possibly due to repeated clearance episodes. Iron Age deposits at New Palace Yard (Greig 1992) produced pollen indicating an alder carr habitat with *Quercus*, *Ulmus* and *Tilia* woods, and marshland and scrubland taxa. The succeeding pollen phase, possibly of Roman date, suggests a decrease in tree pollen and increasing herb and cereal pollen. This was followed by a late Roman or early post-Roman phase, in which tree pollen increased (especially *Tilia*) and *Ericales* disappeared, indicating regeneration of *Tilia* forest over heath and grasslands, though this was also associated with marked increases in cereals and weed species, indicating local agricultural activity.

Limited Iron Age evidence is available from the City of London, but preliminary study of the pollen from 1 Poultry (Scaife 1998) indicates a replacement of mixed deciduous forest by an expansion of herbs and ruderals in the pre-Roman horizons. It is suggested that this is taking place on the valley sides of the Walbrook tributary and higher ground to the north of the site. Even less information is available from the Roman period itself, except on a very local scale, most of which tends to be related to areas on the waterfront, indicating local marshy environments adjacent to the foreshore (Giorgi in prep a).

Very little work has been carried out on deposits of Roman date. This reflects the pattern of excavation, which has been concentrated upon sites of a deeply urban character. Such sites and their associated deposits yield very mixed biological assemblages from which it is extremely difficult to establish a true ecological picture. However, some data are currently available, and it is hoped that future work on the deposits from sites such as 1 Poultry (Burch *et al* 1997) and Regis House (Brigham 1996) may supplement this dearth of information. Copthall Avenue in the Walbrook Valley (Maloney with de Moulins 1990, 85) has produced evidence suggesting extremely limited tree cover, potentially derived from outside the local region with the majority of species deriving from wetland/meadowland and those associated with arable farming. This is also supported by pollen analysis from the Walbrook Mithraeum (Scaife 1982) and plant macrofossil analysis from Broadgate (Jones 1986), providing a general picture of the environment in Londinium as denuded of tree cover, with localised marshy areas and local arable agriculture.

Early Saxon deposits nearby at Cromwell Road indicate similar conditions to the pre-Roman picture of regenerating mixed deciduous forest (Greig 1992). The *Tilia* decline at Epping has been radiocarbon-dated to the Saxon–medieval period, AD 600–1250 (Birm 582, 1110±160 BP) (Baker *et al* 1978); though this contrasts markedly with results elsewhere which indicate woodland regrowth during this period and also suggest that there was a major *Tilia* decline across London in the sub-Boreal. The subsequent pollen stage at Epping is marked by a further decline of *Tilia*, with increases in *Betula*, *Quercus* and *Fagus*, and a dramatic rise in herb pollen, particularly *Poaceae*, *Cyperaceae* and *Plantago*, which suggest open woodland conditions.

Until recently, it was thought that all Early Saxon agricultural settlement was concentrated on the brickearths, particularly in areas adjacent to the rivers, for instance at Tulse Hill (Giorgi 1997b). This is in contrast to earlier Roman settlement that appears to have exploited a wider range of soil types, including those on the gravel terraces. However, recent evidence suggests that Early Saxon cereal production may have taken place close to the original Roman city of Londinium (Sidell & Scaife in prep). Although woodland clearances must have occurred across the claylands of north and south London, it is unlikely that these were cultivated on a large scale until the medieval and post-medieval periods, and even then most of the land was used for pasture for dairying and stock-breeding to feed the growing city.

Saxo-Norman microfossils from the streamside sequence excavated at Colham Mill Road, West Drayton (Knight 1998) indicate that *Quercus/Corylus* woodland was locally dominant with smaller numbers of *Tilia* and *Fagus* (both generally under-represented in pollen spectra). Initially, the site was thought to have prehistoric components, but radiocarbon assay confirmed the date as AD 680–980 (Beta 93671, 1190±60 BP) and AD 880–1170 (Beta 93672, 1040±60 BP). Local wetland taxa are thought to represent the streamside ecology, while the woodland component may well indicate regional forest cover in west London at this time. In addition, there is some evidence for arable cultivation and grassland/pasture. A valuable record of *Juglans* (walnut) was also recovered, perhaps indicating continuation from the time of its introduction in the Roman period.

The top of the pollen sequences at Epping and Hampstead appears to date to the medieval period. At Epping, *Betula/Fagus*-dominated woodland with *Quercus* and *Carpinus* (hornbeam) is suggested, similar to the present woodland. The final pollen zone at West Heath Spa is characterised by a drop in tree and scrub pollen (*Corylus* and *Alnus*), with a corresponding rise in herbaceous taxa including grasses, cereals and ruderals, indicating cultivation. The presence of *Aesculus* (horse chestnut) and *Fagopyrum esculentum* (buckwheat) at the top of the sequence reflects the introduction of exotic species.

Future research priorities

This study, in conjunction with the palaeoenvironmental analyses that are undertaken daily on archaeological sites in London, has identified the importance of this field of research as a contributory aspect of archaeological studies as a whole. However, there are a number of themes that are noticeably lacking either raw data, or synthetic treatment of those raw data. Several of these themes are listed below as selected research priorities for palaeoecological study in the Greater London area. This list cannot be exhaustive, but serves to identify key points and may be divided into data collection requirements, synthetic requirements and technological development.

Data collection

The ecology of the historic period

Information on the developing ecological conditions in the historic period is in very short supply. It is a highly problematic area, but it is an important component in understanding the development of London as a city, and the relationship with its environs.

Climate change in the Early Holocene

The transitional period from the Devensian into the Holocene is one of great climatic fluctuations. Although the vegetational development of the period is beginning to be better understood, finer detail is needed (perhaps through coleopteran analysis) to establish changes in temperature and precipitation levels.

The development of the estuary and river system

The river is likely to have been a focal point of London throughout the Holocene. The development of the tidal head is fundamental to understanding how the river was used for transport, and the relative altitude of the river is similarly important for looking at settlement patterns in the floodplain. Raw data are currently needed to address both these points.

Synthesis

Anthropogenic modification of the landscape

It has been shown that there has been anthropogenic modification of the landscape. The data now need to be analysed in detail to establish whether such events were synchronous across the region or whether there are geographical patterns. A further point is whether species selection was employed, for example retention and preservation of *Tilia* in the disappearing woodlands and the management of alder carr.

Synchronicity of natural vegetational changes throughout the landscape

This point is similar to the last – the series of natural ecological changes has been broadly established for the prehistoric period. Analysis and synthesis are now needed to demonstrate whether these events are synchronous within the area and also to make the comparison with south-east England and the rest of Britain. It is also important to establish why such changes came about.

Technological development

Chronology of the prehistoric period

Currently, problems exist with accurately establishing firm and tight chronologies for the prehistoric period. Radiocarbon assay is the most used technique, but problems exist with the calibration curve for the first millennium BC. Dendrochronological dates are very difficult to obtain for this period, although a chronology does exist, while the ranges produced by relative dating from pottery and flints are often large. There is an obvious need for research and development into chronological methods in order to advance archaeological research as a whole.

Development of cross-site chronologies

A significant part of understanding how sites relate to each other comes back to chronologies. In some cases, where dendrochronology may be employed, there should not be problems in linking horizons and structures across sites. However, in the remainder (and majority) of cases, other means must be sought to link sites closely. Research into the use of geochemical correlation (Wilkinson in prep) is needed to establish other ways of examining fine resolution change and development in sedimentation, vegetational change and basic similarities and differences in adjacent archaeological sequences.

Topographic modelling

Topographic models (or digital terrain models) are currently used in isolated cases to examine the place of individual or groups of sites within a topographic context. These can be enormously informative about spatial patterning of sites and monuments, selection of areas for habitation and anthropogenic modification of that landscape. Such models are currently relatively crude, but the development of these systems could vastly improve the way archaeologists interpret certain sites or groups of sites.

Predictive modelling

A final area of research lies in the identification of archaeological sites. It is apparent that the locations of some archaeological sites may be predicted on the basis of associated geological deposits. In the case of the Lower Palaeolithic, relatively undisturbed or *in situ* artefact assemblages are found only in brickearth deposits and at the junctions of the gravel deposits in the lower terraces. The most promising areas for future investigation are those where brickearth and silt or loam deposits may preserve Palaeolithic sites in relatively undisturbed conditions like those at Swanscombe (Conway *et al* 1996, 1). The Langley Silt Complex (Gibbard 1994, 94), the silt and sandy loams of Ilford, the soliflucted sands at Stoke Newington and the brickearth deposits at Aveley (Gibbard 1994, 59) are areas with especially high potential for the discovery of sites of this kind. Projects such as the Crayford Silt Complex (Wessex Archaeology 1998) point the way in this context.

It is possible that later prehistoric sites, which generally survive only as artefact scatters or as truncated features, may also be found in an exceptional state of preservation beneath the alluvial floodplain (Merriman 1992). The extensive excavations at Runnymede (Needham 1991) and the network of Bronze Age timber structures in the east London wetlands (Meddens 1996) illustrate the importance of prehistoric settlement sites preserved in alluvial contexts. This kind of preservation is not restricted to the prehistoric period: the early Roman timber warehouse at Courage's Brewery (Brigham *et al* 1995), and the Tudor Rose Theatre (Bowsher 1998, 34) are two notable examples.

2

**THE LOWER
PALAEOOLITHIC PERIOD**

John Lewis

Introduction and background

The Lower Palaeolithic period in Britain dates from the first indication of human activity (c 500,000 BP) until the end of the last glaciation (c 38,000 BP). This period, traditionally divided into the Lower and Middle Palaeolithic, is characterised by the presence of handaxes (bifaces), other core tools and flake tool industries which are associated with pre-modern humans (eg *Homo erectus*; *Homo heidelbergensis*; *Homo neanderthalensis*). These early human populations were entirely dependent on scavenging and/or hunting for meat, and foraging for vegetable foods. In contrast, the later part of the period – the Upper Palaeolithic – is characterised by blade-based lithic industries, and evidence for increasingly complex forms of social organisation and cultural expression associated with anatomically modern humans (*Homo sapiens*), present in north-west Europe from c 38,000 BP. The Upper Palaeolithic archaeology of the London region is discussed below in chapter 3.

Direct fossil evidence for the types of early humans who produced Lower Palaeolithic artefacts in Britain is extremely limited. The recent discovery of human remains at Boxgrove, West Sussex, suggests that a late form of *Homo erectus* or a parallel evolutionary development known as *Homo heidelbergensis* was associated with the flintwork assemblages recovered from the site (Roberts et al 1994; Stringer & Trinkaus 1999). Although there are conflicting lines of evidence, the small mammal fauna indicates that Boxgrove dates to OIS 13, thus predating the Anglian glaciation (dating techniques are discussed below). The famous Swanscombe skull (Ovey 1964), which belongs to the early part of the *Homo neanderthalensis* lineage (Bridgland 1994, 205), is much later in date. The Swanscombe sequence probably correlates with OIS 11 (Bridgland 1994, 214), a temperate phase of the Hoxnian interglacial following the Anglian glaciation (see chapter 1 above).

The study of Palaeolithic archaeology is more closely linked to geological and palaeoenvironmental studies than any other period, and cooperation and interchange of information between Quaternary earth science specialists and archaeologists are of fundamental importance. Most recent advances in our understanding of the Pleistocene sequence, for example, and the related construction of Palaeolithic chronologies in Britain, have been made in the Quaternary sciences.

It is not intended in this review to discuss the British Lower Palaeolithic sequence or the Thames Valley evidence in great detail, or attempt detailed correlations between sites in Greater London and the sites of Swanscombe and Hoxne (for which see Wymer 1991a). Rather, the main purpose of this chapter is to review what is known of the Lower and Middle Palaeolithic archaeology of Greater London, to evaluate critically the nature and range of the evidence, and to make an assessment of its importance for present and future research in regional, national and international terms.

The Palaeolithic cultural sequence in the Greater London area

The Palaeolithic cultural sequence in the Greater London area is most easily summarised with reference to lithic industries and environmental stages (for detailed discussions of the lithic industries and their stratigraphic relationships see Wymer 1968; 1985; 1988; 1991a; 1999; Roe 1981). In this discussion, the term Lower Palaeolithic includes all industries present in Britain until the appearance of the blade industries of the Upper Palaeolithic from c 38,000 BP. The term Middle Palaeolithic is not used here because the so-called Mousterian industries typical of this period are so poorly represented. In any case, the ambiguities of the British Quaternary sequence, the derived state of most lithic assemblages and the problem of relying on stone tool typologies to date sites reduce the interpretative value of a division between the Lower and Middle Palaeolithic.

It is important to note that the topography, landscape, drainage and climate of the London region underwent profound changes during the Lower Palaeolithic. The most significant process was the diversion of the proto-Thames, from its original course through the Vale of St Albans to its present route, due to the southward movement of the Anglian ice sheet. Subsequent climatic

and sea-level oscillations led to the formation of the Thames terraces, a sequence of former floodplains resulting from a progressive series of incisions into the valley floor, followed by aggradation of alluvial sediment. This repeated process gave rise to a sequence of progressively younger deposits down the valley side, the youngest being those beneath the modern river floodplain (Gibbard 1985, 4). Gibbard (1985; 1987; 1994) and Bridgland (1994) have done much to elucidate the Pleistocene sequence in the Thames Valley, and their work has been reviewed in chapter 1 above.

Acheulian

The Acheulian industry (named after the type site of St Acheul in the Somme Valley, France) is typified by handaxes and the distinctive flaking debris resulting from their manufacture. The Acheulian industry was present in Britain in various forms from the warm phase prior to the Anglian glaciation (c 500,000 BP) until late in the Wolstonian (now often referred to as the Saalian Complex; see chapter 1 above for discussion of this issue), a time span of almost 300,000 years. Some of the later Acheulian industries of Britain include artefacts manufactured using the Levallois technique (see below). The majority of Lower Palaeolithic finds in the Greater London area can be ascribed to the Acheulian industry, the earliest of which are found in Late Anglian deposits (the Black Park/Dartford Heath gravels), and they occur in extremely large numbers in Saalian Complex interstadial deposits (especially the Lynch Hill gravels).

Clactonian

The Clactonian industry, based on the removal of flakes from cores to produce flake tools, is the other principal lithic tradition of the Lower Palaeolithic recognised in Britain (named after the type site of Clacton-on-Sea, Essex). It is relatively simple technologically, producing flakes with wide striking platforms and prominent bulbs of percussion. Some of the resulting cores may have been used as tools themselves, although recent work suggests that this is unlikely (Ashton et al 1992). Handaxes appear to be totally absent from Clactonian assemblages (Roe 1981, 70).

It was once thought that Clactonian was the earliest stone industry in Britain (Wymer 1968, 34), but recent discoveries indicate that Acheulian industries were present both before and after the Clactonian. At Boxgrove in West Sussex, for example, a mature Acheulian industry appears to predate the Anglian glaciation (Roberts 1986). Evidence from sites at Clacton, Swanscombe and Little Thurrock suggests that the humans responsible for the Clactonian industry occupied the region just before and during the succeeding Hoxnian interglacial (Wymer 1988, 95; 1991a). The relationship between the Clactonian and Acheulian industries has been the subject of considerable debate (eg Ohel 1979; Wymer 1985, 375). While it is sometimes argued that the Clactonian is genuinely different from the Acheulian (eg Roe 1981, 70), recent excavations at Barnham in Suffolk (Nick Ashton, pers comm) and work on technological aspects of Clactonian assemblages (Ashton et al 1992) suggest that these were functionally rather than culturally distinct from assemblages with Acheulian bifaces.

The Levallois technique

The Levallois technique (named after the type site of Levallois-Perret near Paris) appears in Britain during the Wolstonian glaciation, with rich industries dating to the Late Wolstonian (Wymer 1985, 376). Bridgland (1994, 26) is more specific in dating the first occurrence of the Levallois technique to OIS 8 on the evidence from the Corbets Tey gravel deposits of the lower Thames. Bridgland also points out that the technique is present during the succeeding Stage 7, a temperate phase of his Saalian glaciation. This technique relied on the pre-shaping of the striking platform of a core and the face of the core to produce a flake of desired shape and size (a Levallois flake) and a characteristic ‘tortoise’ core. A development of this technique led to cores with striking platforms at opposing ends and the subsequent production of blades (Wymer 1968, 72).

The term 'Levalloisian' has been used by Wymer, among others, to define a distinct lithic industry, although as he himself acknowledges it is really a technique employed by people who otherwise used Acheulian or other lithic technologies (Wymer 1985, 376). Levallois flakes and cores can be found by themselves or as part of later Acheulian industries, although there are some sites such as Bakers Hole, Kent, where the Levallois technique was used virtually to the exclusion of handaxe manufacture. Wymer considers the Levallois material collected from the West Drayton area to have typological similarities with the assemblages from Bakers Hole (Wymer 1991a, 11).

The British Mousterian

The Levallois technique is also widely evident in the flint industries dating to the end of the Wolstonian and the Early Devensian glaciations, the British equivalents of the Mousterian industries of France. Roe (1981, 233) has produced a useful (though now somewhat dated) summary of the British evidence. Mousterian industries are characterised by more diverse and more elaborate flake tools than those of the preceding Acheulian industries. Extensive use was made of the Levallois technique, and in general bifaces are rare except for certain subdivisions (facies) of the Mousterian, such as the Mousterian of Acheulian Tradition (MTA).

The Mousterian is very poorly represented in Britain in general, but what there is seems to belong to MTA-type industries. The famous sites at Creffield Road in Acton fall into this category (Gz EL4; Brown 1886; Wymer 1988, 92). In Europe, there are several direct associations between Mousterian industries and *Homo neanderthalensis*, though such associations are lacking in Britain.

Past work and nature of the evidence

Past work

Greater London has a long history of Palaeolithic research, commencing around 1690 with the recognition of a large pointed handaxe as human handiwork (Bagford 1715). In the late 19th and early 20th centuries the quarrying of brickearth and gravel and the widespread construction of new houses with deep foundations and cellars led to numerous finds of Palaeolithic artefacts, mainly handaxes, and important observations of geological sections. It is fortunate that antiquaries such as J Allen Brown, Worthington Smith and Hazzeldine Warren took these opportunities to collect artefacts and record their contexts. Much of our understanding of the Palaeolithic in Greater London is based on their work. The increasing use of machine excavators for the extraction of aggregates for the building industry from the 1930s subsequently restricted opportunities for collecting artefacts, though important observations continued to be made by workers such as A D Lacaille.

A notable advance in our knowledge of the Palaeolithic in London was John Wymer's *Lower Palaeolithic archaeology in Britain as represented by the Thames Valley* (1968), which remains the standard reference work for the region. The same year saw the publication of Derek Roe's *A gazetteer of British Lower and Middle Palaeolithic sites in Britain* (1968) which is still an invaluable reference source. Aspects of the region's Palaeolithic sequence have been reviewed again more recently by Wymer (1985; 1988; 1991a), following contributions by Collins (1976; 1978). Wymer's most recent assessment of the evidence, based on the Southern Rivers and English Rivers Projects, is an indispensable compendium (Wymer 1999). Equally important for understanding the chronology and palaeoenvironmental sequence of the Palaeolithic in London is the work by Gibbard on the gravels of the middle Thames, which has at last defined the Quaternary sequence of the gravel terraces in west London (1985), and his companion work on the Pleistocene history of the lower Thames

(1994), which should clarify the complex geological sequence downstream. Bridgland has also recently published a major study of the Thames Valley during the Quaternary (1994). Although they are not in total agreement, the work of Gibbard, Bridgland and Wymer provides a detailed geo-environmental and archaeological framework for interpretations of the Quaternary sequence in the London region. (See chapter 1 above, for a summary of the work of both Bridgland and Gibbard, and for clarification of the environmental terminology and chronology used here.)

The nature of the evidence

The main types of archaeological evidence for Palaeolithic activity are lithic artefacts and (more rarely) associated faunal remains. Given the climatic and geological changes which occurred during the time span of the Lower Palaeolithic, it is unsurprising that the archaeological record is marked by great variation in the nature of sites, stray finds and their geological contexts. This variation cannot, however, be understood in terms of site function categories or clear behavioural distinctions; given the evidence often available, it remains difficult, for example, to distinguish between kill sites, butchery sites and occupation sites. At present, most site categorisations in Lower Palaeolithic archaeology are based on the relative degree of depositional disturbance and redeposition, and on the quantity and relative preservation of cultural, faunal and other palaeoenvironmental evidence.

The majority of the Lower Palaeolithic artefacts from Greater London were found in gravel deposits which accumulated mainly during cold climatic conditions, and it has long been recognised that a majority of these implements were redeposited, as most show signs of damage resulting from erosional processes. Interpretative confusion has still arisen, however, because of the misplaced assumption that these artefacts and associated faunal remains were broadly contemporaneous with the sediments in which they are found. With a few exceptions, such as Brown's work at Creffield Road and Worthington Smith's at Stoke Newington, very little is known of the stratigraphic contexts of many of the artefacts in museum collections. In some cases it is possible to assign them to individual gravel terraces, but even this is not always possible: of a total of 711 GLSMR entries only 193 have a grid reference precise to half a kilometre. Although several sites probably had *in situ* or relatively undisturbed artefact assemblages, for example Crayford, Stoke Newington and Creffield Road, Acton (Wymer 1991a, 11–13), all were discovered during the 19th century. The geological deposits in which they were situated are now largely destroyed or unavailable for re-evaluation (but see below for Crayford).

The few modern archaeological excavations of Lower Palaeolithic sites which have taken place in Greater London have focused on localities with known artefact concentrations such as Stoke Newington (Harding & Gibbard 1983), Creffield Road (Burleigh 1976; Bazely *et al* 1991) and Yiewsley/West Drayton (Lewis 1990). Unfortunately, none of these excavations located major deposits of Palaeolithic material, demonstrating that even where Palaeolithic artefacts are known to have been found, undisturbed lithic material is rarely encountered. The excavations at Stoke Newington and Creffield Road have also shown that even those sites which were thought to have *in situ* artefact deposits had, in fact, been subject to some degree of post-depositional erosion and movement (Harding & Gibbard 1983; Bazely *et al* 1991).

Due to the depth of the geological strata involved it is often difficult in practical terms, and generally expensive, to carry out large-scale archaeological excavations of Lower Palaeolithic sites. Gravel and brickearth deposits are usually several metres thick, and excavations often have to contend with groundwater problems. Even the observation of sections in gravel pits is frequently hindered by flooding. It is also apparent that mechanised gravel extraction constrains effective identification and recording of Palaeolithic finds (the large collections of handaxes in museums usually have a pit name as their only provenance), and that detailed contextual and stratigraphic information for the vast majority of Palaeolithic finds is lacking. In these circumstances, it is perhaps unsurprising that Palaeolithic archaeology in Greater London has received comparatively little attention in recent years, and that the destruction caused by continuing mineral extraction is largely overlooked.

The archaeological evidence

The geological sequence depicted on Map 1 is based on the British Geological Survey sheets for London, with modifications to the plotting of Pleistocene deposits based on the maps published by Gibbard (1985; 1994). The GLSMR provided the information for the accompanying gazetteer and distribution map: only those finds with grid references precise to half a kilometre are shown. The large numbers of handaxes dredged from the Thames are excluded as these generally lack even an approximate provenance, are often heavily rolled and have no contextual significance.

It would not be appropriate to become involved here in detailed arguments concerning the Pleistocene lithostratigraphy in the London region or to attempt correlations from one area to another. Instead, it is intended to illustrate the types of deposits and archaeological material present in Greater London, in broad chronological order, by drawing on examples of key sites and finds assemblages, and by referring to material from beyond the region where necessary. (For a more detailed regional analysis, see Wymer 1985; 1988; 1991a.)

Although it is now accepted that Britain was occupied before the Anglian glaciation, no definite evidence of occupation of this date has been discovered in the Greater London region. The earliest finds consist of handaxes from the Black Park/Dartford Heath gravels that Gibbard dates to the Late Anglian glaciation, following the diversion of the Thames to form its present valley. The findspots listed by Gibbard (1985, 123) include Hillingdon Town Pits (Gz HL4), Richmond Park (Gz RT1) and Dartford Heath, the latter producing Clactonian material. Lower Palaeolithic material also occurs away from the Thames gravel terraces, most notably just beyond the southern boundary of Greater London on the clay-with-flints deposits along the chalk outcrop of the North Downs. The age of these high-level finds within the overall sequence remains unclear, but as Wymer points out (1991a, 8) they show that activity was not restricted to the river valleys.

There are no known sites in Greater London to compare with those with stratified Hoxnian to Wolstonian sequences located further downstream at Swanscombe. The majority of artefacts from Greater London are found in the sequence of gravel terraces postdating the Hoxnian and predating the Ipswichian interglacials. Although the subject of much debate, this period is referred to here by its traditional name of the Wolstonian. In Greater London, the first gravel terrace dating to this phase is the Boyn Hill/Orsett Heath gravels, the Acheulian handaxes from which are mostly heavily rolled and few in number, which may indicate that they were redeposited from older sediments (Gibbard 1985, 128; Wymer 1988, 89).

The succeeding Lynch Hill gravels, and the equivalent Corbets Tey gravels in the lower Thames, have produced far larger numbers of Lower Palaeolithic artefacts than any other source area in Greater London. These artefacts, which are usually in a much fresher condition than those from earlier and later terrace deposits, are largely Acheulian in character, though Clactonian and Levallois material may also be present. Handaxes have been recovered from the Lynch Hill gravels at sites across north, east and central London, with especially large numbers of finds from the areas around Yiewsley and West Drayton (eg Gz HL1–3, HL5–9, HL12–13, HL16). These assemblages clearly illustrate the range and quantity of artefacts from this gravel deposit (eg Collins 1978, 27–42). Wymer (1988, 89) argues that the artefacts

concerned were manufactured close to streams, into which they were transported over short distances by erosional processes and incorporated within the gravel deposits which accumulated in the channels. Although not in situ, the relatively undamaged artefacts from the Lynch Hill gravels do suggest that human occupation was at least contemporary with their formation (Wymer 1998, 95). The few artefacts recovered from the succeeding Taplow/Mucking gravels are all in a rolled condition and are probably derived from the Lynch Hill deposits (Gibbard 1985, 128).

Although far less common, there are also several sites in Greater London where artefacts were found in situ or where very little post-depositional disturbance had occurred. In each case, this material was buried by or incorporated within fine-grained sediments of similar appearance known as 'brickearth', though it is now clear that this term has been used to describe sediments of widely differing ages and origins (eg Gibbard 1987). Unfortunately, while these sites are of considerable importance for an understanding of the British Lower Palaeolithic sequence, and potentially significant for studies of behavioural and cognitive aspects of human activity in this period, all are now largely inaccessible or have been destroyed.

The Stoke Newington 'Palaeolithic floor' observed by Worthington Smith in the early 1880s has often been cited as an example of an undisturbed Lower Palaeolithic flint scatter lying on an ancient land surface sealed by brickearth (Smith 1894; Wymer 1968, 297–301). The assemblage is dominated by small pointed handaxes and some side-scrapers, with no evidence for use of the Levallois technique (Wymer 1968, 318; Roe 1968, 61, fig 11). Recent excavations by Harding and Gibbard (1983) suggest that the artefacts from the 'floor' were probably redeposited from the Stoke Newington sands a short distance to the north, but the amount of movement may be relatively small, and Roe (1981, 175) reminds us that some of the flintwork refits. Harding and Gibbard (1983, 16) argue that the Stoke Newington sands and the artefacts they contain date to the Wolstonian glaciation; in contrast, Bridgland (1994, 227, 236) suggests that these deposits correlate with the temperate climate phases recognised within the Lynch Hill/Corbets Tey formation in the lower Thames.

In 1975, a watching brief by the Passmore Edwards Museum in advance of roadworks connected with the M11 motorway led to the discovery of an in situ Acheulian site at Woodford (Gz RB1). Four handaxes, a handaxe tip and nine flakes were recovered from the surface of, or just within, a gravel deposit sealed by brickearth. Wymer (1985, 298) correlates this with the 'floor' which Worthington Smith believed once covered much of north-east London. However, the recently published report on the site concludes that 'a satisfactory, cogent interpretation of the material depends on a greater understanding of the taphonomy ... than is currently available' (White et al 1998, 18).

The series of sites around Crayford recorded in the 19th century during quarrying also produced refitting flint artefacts like those found by Worthington Smith, but in this case in primary contexts and associated with important faunal remains. The flint industry represented included evidence for use of the Levallois technique to produce blade-like flakes (Wymer 1968, 324). At one of these pits (Stonehams; Gz BX5), F C J Spurrell (1880) recorded a Levallois flint-knapping deposit and was able to refit many of the flakes on to the nodule from which they were detached. He also noted that the jaw of a woolly rhinoceros was actually in contact with some of the flint flakes; from this it seems likely that some of the flint scatters in this area represent butchery sites. The surfaces on which these flint scatters lay were sealed by brickearth that contained abundant faunal remains and occasional artefacts. Roe (1981) argues that the flint scatters from the sites around Crayford are post-Hoxnian and pre-Ipswichian in date, while Wymer (1991a, 11–12 and table 1) attributes them to the Late Wolstonian. Bridgland (1994, 250) suggests that occupation at Crayford commenced during OIS 8 and continued into the temperate Stage 7 (the second of two new interglacials which Bridgland believes he has identified). Recent evaluation of borehole data by Wessex Archaeology (1999) has suggested that areas of undisturbed strata survive beneath modern housing, and within the floors of former brickearth quarries.

A site similar to that at Stonehams was also reported from Norwood Lane, Southall during the 19th century (Gz EL2), when an apparently complete mammoth skeleton was found in a brickearth deposit at a depth of 13ft (4m) and in close proximity to stone tools including a Levallois point (Brown 1889). Wymer (1991a, 13), however, takes a more sceptical view, based on the evidence provided by the single surviving flake held in the Sturge Collection at the British Museum.

In west London, the term 'brickearth' is generally applied to the fine-grained sediments which overlie the gravel terraces. Gibbard (1985, 57–62) has named this unit the Langley Silt Complex, and has stressed that it is a heterogeneous deposit of differing ages. Thermoluminescence-dating,



Survey and analysis of the Pleistocene terrace gravels at Swanscombe, near Dartford

for example, has shown that the brickearth overlying the Kempton Park gravel is Early Flandrian in date, while the brickearth overlying the Taplow gravel dates to the Late Devensian (Gibbard 1987; Rose 1999). However, two thermoluminescence dates from Yiewsley, of 150,000 BP and 75,000 BP, indicate that some brickearth deposits are considerably older. Numerous finds of Levallois implements were made in this locality in the 19th century by Garraway-Rice and Allen Brown (1896), among others. This flintwork probably originates from the base of the brickearth and is mostly in mint condition. Wymer (1988, 90) suggests that the Levallois industry from this area has affinities with that from Bakers Hole, Kent. A few miles to the south of West Drayton, an *in situ* *bout coupé* handaxe was recovered from the base of the brickearth at Sipson Lane (Gz HL14; Cotton 1984). *Bout coupé* handaxes recovered from the London area are listed by Roe (1981, 262), who considers this type of handaxe to be indicative of Mousterian industries (though this remains contentious; eg Coulson 1986). If *bout coupé* handaxes are characteristic of the Mousterian, then the Sipson Lane example would support an Early Devensian date for the base of the brickearth in that area.

The famous site observed by Brown in the 1880s at Creffield Road, Acton, was also stratified at the base of the brickearth overlying the Lynch Hill gravels (Gz EL4). The flintwork is composed of Levallois blades and 'points' and at least two *bout coupé* handaxes. Although the artefacts are in mint condition, Gibbard (1985, 125) has suggested that they may have been moved and redeposited by low-energy sedimentary processes, and recent excavations have supported this (Bazely et al 1991). Unfortunately, despite several attempts, no significant concentrations of artefacts from this depositional horizon have been relocated (Burleigh 1976; Bazely et al 1991).

Conclusions

It is apparent that the earliest Palaeolithic artefacts found in the London region, including both Acheulian and Clactonian implements, were recovered from the Late Anglian Black Park/Dartford Heath gravels. The majority of Lower Palaeolithic finds from Greater London, however, date to the cold phase between the Hoxnian and Ipswichian interglacials, referred to here by the traditional name of the Wolstonian glaciation (OIS 9 and 7; eg Bridgland 1994; see chapter 1 above). At present, there are no sites in Greater London comparable to Boxgrove in West Sussex, where rich artefactual and faunal assemblages and human remains dating to OIS 13 (pre-Anglian) have been found, nor comparable to those sites with Clactonian-dominated deposits at Hoxne and Swanscombe, which date to OIS 11 (the Hoxnian interglacial).

Lower Palaeolithic finds have been recovered from all three of the London gravel terraces which date to the Wolstonian. The Boyn Hill/Orsett Heath gravels have produced artefacts of Acheulian type, though these are abraded and thus probably in a derived context. No evidence for Clactonian industries has been found (Wymer 1988, 89). The richest Lower Palaeolithic artefact assemblages in the London region come from the Lynch Hill/Corbets Tey gravel terrace. These finds are also in a fresher condition than those from the Boyn Hill gravels, suggesting that they probably underwent far less post-depositional transportation than those found in the other gravel terraces. The implements are predominantly Acheulian, with some possible Levallois and Clactonian material, though Wymer (1988, 89) believes the presence of a Clactonian industry is doubtful. It is possible that some of the sites in the London region with *in situ* Lower Palaeolithic material may be associated with this terrace. The later Taplow/Mucking gravels have produced a few handaxes, probably derived from earlier deposits (the Lynch Hill terrace in particular), together with a number of Levallois flakes.

During the mid to Late Wolstonian glacial period the Levallois technique came to be widely utilised in Britain, sometimes to the exclusion of handaxe manufacture, though it is by no means present on all sites of this period. Bridgland (1994, 26) argues that the Levallois technique first

appeared during the cold conditions of OIS 8 and continued into the temperate Stage 7, c 200,000 BP. He cites evidence from lower Thames sites at West Thurrock, Ilford, Aveley and Crayford to support this interpretation, thus emphasising the potential value of the Levallois technique as a chronostratigraphic marker (Bridgland 1994, 250). The Yiewsley/West Drayton Levallois industry may date to this period as well. Wymer (1991a, 11) has also drawn attention to the similarities between this industry and that from Bakers Hole, just outside the Greater London boundary in Kent. This site is probably still the most important in Britain for study of the Levallois technique. Bridgland also correlates the Bakers Hole deposits with a Wolstonian age, OIS 8–7 (1994, 274).

A number of important *in situ* or relatively undisturbed sites have been recorded in Greater London. All are sealed by fine-grained sediments described as brickearth, a term which includes deposits of widely differing types and date. The dating of the Creffield Road assemblage in this context is unclear: if Bridgland's date for the appearance of Levallois material during OIS 8–7 is accepted, then the Creffield Road material – like that from Yiewsley/West Drayton – cannot be earlier than this phase and may well belong to it. Wymer, however, has drawn attention to the differences between the Creffield Road and Yiewsley/West Drayton assemblages (1988, 92; 1991a, 12), particularly the relatively high proportions of blades, Levallois points, and the presence of two *bout coupé* handaxes among the former, which may suggest that they belong to the 'British Mousterian' and date to the Early Devensian. It is possible, therefore, that this site was occupied during OIS 5d–2, during a period in which, according to Bridgland (1994, 7) (though not Gibbard), the Kempton Park gravels accumulated. Another *bout coupé* handaxe (Gz EL49) found at Berrymead Priory, Acton, also in the Kempton Park gravels, may provide some support for this interpretation. Despite the questionable association of artefact types with human evolutionary stages, and the problems in using an artefact type as a 'cultural marker' (Coulson 1986), the occurrence of *bout coupé* handaxes and the character of the Creffield Road assemblage may indicate the presence of *Homo neanderthalensis* populations in the London region associated with the British equivalent of a Mousterian industry.

The London evidence appears to support the argument that human settlement was non-existent in Britain during the Ipswichian interglacial period. Although this warm climatic stage would have been favourable for human populations, and there is plentiful faunal evidence for the colonisation of Britain by a wide range of temperate and subtropical plant and animal species (such as hippopotamus), it would appear that no human groups were present. This situation remains unexplained, though it is possible that a rapid relative sea-level rise due to sudden melting of ice sheets temporarily cut the British peninsula off from the rest of Europe and prevented northward movement of human populations.

The potential of the Lower Palaeolithic in London

Until recently, study of the Lower Palaeolithic archaeology of Greater London was constrained by the absence of a modern assessment of the Pleistocene deposits of the region, and by confusing interpretations of the chronological and stratigraphic evidence. The recent work by Gibbard (1985; 1994) and Bridgland (1994), though these authors are not in total agreement, has begun to address these problems, and provided a sound palaeoenvironmental basis for future research. In addition, the mapping of the Pleistocene gravel and brickearth deposits on which the distribution map in Map 1 has been based will at last allow archaeologists to assess the possible impact of development on the Palaeolithic archaeology of the region.

Our knowledge of the Lower Palaeolithic archaeology of London is still hampered, however, by insufficient contextual evidence. The shortcomings recognised in the location and mapping of early finds, and limited analysis of existing collections in museums, were addressed by the Southern Rivers Project (Wessex Archaeology 1993) and the English Rivers Project (Wessex Archaeology 1996), both of which contain much of relevance to the London region. Coordinated by John Wymer, these surveys sought to create a common database for each site, to relate the discoveries to their geological context, to assess the state of knowledge in each area, and to make the results available for more detailed study and for the appropriate management of the sites

(English Heritage 1998). In this context, Greater London is especially fortunate in having the most complete geological sequence in Britain for the period between OIS 12 and 6: the Thames river terraces are thus of enormous importance for studying the climatic and palaeoenvironmental sequence from the Hoxnian to the Ipswichian interglacials. Unfortunately, while most of the archaeological evidence for the Lower and Middle Palaeolithic periods in Greater London derives from these deposits, almost all of it is found in derived contexts. The Thames terrace sequence is exceptionally important for palaeoenvironmental and chronological study but it yields little information about the particular, local, environmental conditions in which human groups lived, and virtually nothing regarding the social or behavioural character of the human activities represented by the lithic assemblages.

Only in situ or relatively undisturbed sites, preferably with refitting flint artefacts in association with faunal remains, can provide information suitable for detailed study of the economy and behaviour of Lower Palaeolithic populations, as the work at Boxgrove has amply shown (Roberts 1986). Greater London possesses (or once possessed) a number of sites in this category, including those at Crayford and possibly the Southall mammoth kill site, the M11 site in Redbridge (Gz RB1), and sites in Stoke Newington which purportedly produced sharpened birch stakes and other organic material (Smith 1894). Although now largely inaccessible, these localities are of the highest importance in national and even international terms. This is also true of the Late Wolstonian/Early Devensian sites beneath the Langley Silt Complex in west London. Creffield Road, for instance, would rate highly in any list of British Mousterian sites, even though modern work suggests that the assemblage is in a slightly derived context. Reinvestigation of these sites

and the identification of similar deposits should be a major concern of future work. It is also essential, if potentially important Palaeolithic deposits are believed to be threatened, that their archaeological significance is evaluated by trial excavation undertaken in such a way that the work has a realistic chance of identifying and sampling lithic and faunal material. Opportunities to examine geological sections through deposits at well-known sites should also be grasped. The recording and sampling of a section through the deposits now known to survive at Crayford, for example, would prove invaluable for re-evaluating the observations made in the 19th century.

In conclusion, it can be seen that the Lower Palaeolithic archaeology of Greater London is represented by a rich artefactual record (though relevant contextual information is generally deficient), and that deposits containing archaeological sites of national importance, which were inadequately recorded in the past, survive in the region. It is clear that future work in Greater London has the potential to add greatly to our understanding of the Lower Palaeolithic in Britain, a potential which has been overlooked for too long.

A rare *bout coupé* handaxe of Mousterian type, from the base of the brickearth (Langley Silt deposit) at Wall Garden Farm, Sipson



GAZETTEER

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
BD1	BARKING AND DAGENHAM	FLINTWORKING SITE	060512	550900	185500		Rainham Road.
BD2	BARKING AND DAGENHAM	BIFACE	060510	550900	185500		Rainham Road.
BD3	BARKING AND DAGENHAM	FLINT ASSEMBLAGE	060537	544000	183500		Wallend.
BD4	BARKING AND DAGENHAM	FLINT ARTEFACT	060538	549190	186930		Beacontree Heath.
BD5	BARKING AND DAGENHAM	FLINT ASSEMBLAGE	060539	547760	188400		Chadwell Heath.
BD6	BARKING AND DAGENHAM	FLINT ASSEMBLAGE	060541	547610	184000		Gale Street.
BD7	BARKING AND DAGENHAM	BIFACE	0	551100	185400		Two bifaces. Near May and Bakers Factory.
BD8	BARKING AND DAGENHAM	BIFACE	0	549100	184600		Bifaces. Church Elms.
BD9	BARKING AND DAGENHAM	BIFACE	0	550500	185200		Bifaces and flakes. Boyers Pit.
BD10	BARKING AND DAGENHAM	BIFACE	0	548600	186000		Ten bifaces. Five Elms.
BX1	BEXLEY	FLINTWORKING SITE	0	551900	176800		Furners Old Pit.
BX2	BEXLEY	FLINTWORKING SITE	0	552000	176600		Furners New Pit.
BX3	BEXLEY	FLINTWORKING SITE	0	552000	176300		Talbots Pit.
BX4	BEXLEY	FLINTWORKING SITE	070448	551400	176500		Rutters Pit.
BX5	BEXLEY	FLINTWORKING SITE	070460	551830	175680		Stonehams Pit.
BX6	BEXLEY	ANIMAL REMAINS	070474	551500	176500		North End.
BX7	BEXLEY	FLINT ARTEFACT	070316	551600	174600		Crayford.
BX8	BEXLEY	FLINT ARTEFACT	070317	551100	178100		Erith.
BX9	BEXLEY	FLINT ARTEFACT	070436	550500	174100		Hall Place.
BX10	BEXLEY	FLINT ARTEFACT	070445	550200	172900		Tile Kiln Lane.
BX11	BEXLEY	FLAKE	070452	552000	176300		Slade Green.
BX12	BEXLEY	FLINT ARTEFACT	070471	552500	176500		Slade Green.
BX13	BEXLEY	FLINT ARTEFACT	070473	550400	177100		Northumberland Heath.
BX14	BEXLEY	FLINT ARTEFACT	070476	551700	175800		Crayford.
BX15	BEXLEY	FLINT ARTEFACT	070504	548300	171800		The Grove.
BX16	BEXLEY	FLAKE	070513	549500	173500		Bexley.
BX17	BEXLEY	FLINT ARTEFACT	070537	552520	175030		Thames Road.
BX18	BEXLEY	FLAKE	070542	546700	171150		Warwick Road.
BX19	BEXLEY	FLAKE	070559	551900	176800		Erith.
BX20	BEXLEY	BIFACE	070560	551200	177500		Northumberland Heath.
BX21	BEXLEY	FLAKE	070561	551400	176700		Erith.
BX22	BEXLEY	FLINT ARTEFACT	070571	551500	176500		North End.
BY1	BROMLEY	BIFACE	070647	541850	163000		Keston Church.
BY2	BROMLEY	FLINT ARTEFACT	070696	546600	166400		Orpington Church.
BY3	BROMLEY	BIFACE	070697	547350	166320		Tintagel Road.
BY4	BROMLEY	BIFACE	070726	545800	162800		Horwoods Gravel Pit.
BY5	BROMLEY	BIFACE	070727	545800	162300		Little Molloms Wood.
BY6	BROMLEY	FLINT ARTEFACT	070729	544600	161500		Cudham Lane.
BY7	BROMLEY	FLAKE	070730	545000	161500		Snag Farm.
BY8	BROMLEY	FLAKE	070731	540400	166300		Alexander Close.
BY9	BROMLEY	BIFACE	070733	548900	163500		Hewitts.
BY10	BROMLEY	FLINT ARTEFACT	070734	542000	172800		Court Farm Road.
BY11	BROMLEY	BIFACE	070769	545500	162000		Little Molloms Wood.
BY12	BROMLEY	BIFACE	070809	545200	163500		Old Hill.
BY13	BROMLEY	FLAKE	070816	541300	164300		Keston.
BY14	BROMLEY	BIFACE	070864	549800	165000		Skeet Hill.
BY15	BROMLEY	BIFACE	070865	548900	166100		Loan Barn Farm.
BY16	BROMLEY	FLAKE	070868	545800	161000		Upper Brooms Wood.
BY17	BROMLEY	BIFACE	070869	549500	162400		Broom Hatch.
BY18	BROMLEY	FLAKE	070870	546800	167200		Lower Road.
BY19	BROMLEY	BIFACE	070871	546050	166890		Nursery Close.
BY20	BROMLEY	BIFACE	070872	547100	165400		Goddington House.
BY21	BROMLEY	FLAKE	070873	546700	166500		Church Field.
BY22	BROMLEY	FLAKE	070874	546400	166400		Bruce Grove.
BY23	BROMLEY	BIFACE	070875	546030	165680		Sevenoaks.
BY24	BROMLEY	SCRAPER	070952	546830	165450		Goddington.
CA1	CAMDEN	BIFACE	081700	530600	181300		Kingsway.
CA2	CAMDEN	BIFACE	081701	530550	181380		Kingsway.
CA3	CAMDEN	BIFACE	081703	530100	181450		New Oxford Street.
CA4	CAMDEN	BIFACE	081704	529800	181460		Tottenham Court Road.
CA5	CAMDEN	FLINT ARTEFACT	081706	530500	181600		Southampton Row.
CA6	CAMDEN	BIFACE	081707	530500	181500		High Holborn.
CA7	CAMDEN	BIFACE	081708	530700	181650		Eagle Street.
CA8	CAMDEN	BIFACE	081710	531100	181400		Chancery Lane.
CA9	CAMDEN	FLINT ARTEFACT	081711	530800	182300		Gray's Inn Road.
CA10	CAMDEN	BIFACE	081714	530100	182150		Woburn Place.
CA11	CAMDEN	BIFACE	081715	529800	181950		Malet Street.
CA12	CAMDEN	BIFACE	081716	531000	181500		Holborn.
CT1	CITY OF LONDON	ANIMAL REMAINS	040190	533160	181090		Lime Street.
CR1	CROYDON	BIFACE	020003	529800	158700		Fairdene Road.
CR2	CROYDON	BIFACE	020004	533700	163300		Croham Hurst.
CR3	CROYDON	BIFACE	020005	531500	165500		Wandle Park.
CR4	CROYDON	BIFACE	020006	532500	165400		Park Lane.
CR5	CROYDON	BIFACE	020009	531300	161200		Wilmot Road.
CR6	CROYDON	BIFACE	020010	536680	165060		Palace View.
CR7	CROYDON	ANIMAL REMAINS	020013	532950	165800		East Croydon Station, Cherry Orchard Road.

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
CR8	CROYDON	BIFACE	020053	533520	160450		Mitchley Wood, Dunmail Drive.	GR1	GREENWICH	BIFACE	0	542700	179300		Woolwich Docks.
CR9	CROYDON	BIFACE	020054	533550	160510		Mitchley Wood, Dunmail Drive.								
CR10	CROYDON	BIFACE	020055	534300	161400		Sanderstead.	HK1	HACKNEY	FLINT ARTEFACT	080002	534800	186550		Upper Clapton Road.
CR11	CROYDON	IMPLEMENT	020056	530900	162100		Russell Hill.	HK2	HACKNEY	FLINTWORKING SITE	080023	534350	186750		Geldston Road.
CR12	CROYDON	BIFACE	020168	532000	165000		Croydon.	HK3	HACKNEY	FLINTWORKING SITE	080037	533950	186800		Alkham Road.
CR13	CROYDON	BIFACE	021156	529180	157850		Woodfield Close.	HK4	HACKNEY	FLINT ARTEFACT	080039	533750	186250		Bayston Road.
EL1	EALING	KILL SITE	050023	511900	179700		Gasworks.	HK5	HACKNEY	FLINTWORKING SITE	080043	533850	186550		Stoke Newington Common, Railway Cutting.
EL2	EALING	KILL SITE	050024	513900	179300		Norwood Lane.	HK6	HACKNEY	BIFACE	080047	534200	186800		Fontayne Road.
EL3	EALING	FLINTWORKING SITE	050030	515800	179200		Sewards Grand Pnt.	HK7	HACKNEY	BIFACE	080054	534050	186880		Osbaldeston Road.
EL4	EALING	FLINTWORKING SITE	050109	519350	180800		Creffield Road.	HK8	HACKNEY	BIFACE	080074	533950	187000		Kyverdale Road.
EL5	EALING	FLINT ARTEFACT	050001	517010	180180		Somerset Road.	HK9	HACKNEY	FLAKE	080001	533400	186800		Abney Park Cemetery.
EL6	EALING	FLINT ARTEFACT	050002	520430	180190		Alfred Road.	HK10	HACKNEY	ANIMAL REMAINS	080003	533850	185500		Shacklewell Lane.
EL7	EALING	FLAKE	050003	520400	180300		Churnfield Road.	HK11	HACKNEY	FLINT ARTEFACT	080004	535000	186020		Newick Road.
EL8	EALING	FLINT ARTEFACT	050006	517490	180760		Longfield Road.	HK12	HACKNEY	FLINT ARTEFACT	080007	534200	186700		Northwold Road.
EL9	EALING	FLINT ARTEFACT	050007	518200	180200		Grange Road.	HK13	HACKNEY	FLINT ARTEFACT	080008	534800	187300		Springfield Gardens.
EL10	EALING	FLINT ARTEFACT	050012	520450	180450		Shakespeare Road.	HK14	HACKNEY	ANIMAL REMAINS	080009	534100	183100		Hackney Road.
EL11	EALING	BIFACE	050025	514200	179600		Windmill Bridge.	HK15	HACKNEY	BIFACE	080010	534500	184800		Graham Road.
EL12	EALING	FLAKE	050026	514400	179300		Windmill Lane.	HK16	HACKNEY	BIFACE	080013	534500	185700		Hackney Downs.
EL13	EALING	BIFACE	050027	515000	181000		Bristows Pit.	HK17	HACKNEY	FLAKE	080020	533300	184700		Kingsland.
EL14	EALING	CORE	050037	520200	180400		Shakespeare Road.	HK18	HACKNEY	FLINT ARTEFACT	080022	534600	184300		London Fields.
EL15	EALING	FLINT ARTEFACT	050038	519200	182100		Masons Green.	HK19	HACKNEY	BIFACE	080024	535140	184670		Paragon Road.
EL16	EALING	FLINT ARTEFACT	050046	520350	180530		Woodhurst Road.	HK20	HACKNEY	BIFACE	080025	534400	186500		Reighton Road.
EL17	EALING	BIFACE	050047	518200	180100		Warwick Road.	HK21	HACKNEY	BIFACE	080030	533500	187500		Dunsmure Road.
EL18	EALING	BIFACE	050048	516100	180200		Grosvenor Road.	HK22	HACKNEY	BIFACE	080031	534050	187400		Firsby Road.
EL19	EALING	FLINT ARTEFACT	050049	518000	180200		The Park.	HK23	HACKNEY	FLINT ARTEFACT	080035	533000	186000		Albion Road.
EL20	EALING	BIFACE	050050	518000	179900		Marlborough Road.	HK24	HACKNEY	BIFACE	080036	533540	185590		Belgrade Road.
EL21	EALING	FLINT ARTEFACT	050051	515790	179710		Oaklands Road.	HK25	HACKNEY	ANIMAL REMAINS	080037	533950	186800		Alkham Road.
EL22	EALING	BIFACE	050052	517800	179800		Ranelagh Road.	HK26	HACKNEY	BIFACE	080040	534030	186500		Benthal Road.
EL23	EALING	FLINT ARTEFACT	050053	512500	179100		Norwood Road.	HK27	HACKNEY	BIFACE	080041	534000	186900		Cazenove Road.
EL24	EALING	FLINT ARTEFACT	050054	520620	180400		Lorne Terrace.	HK28	HACKNEY	FLINT ARTEFACT	080045	533800	186200		Darville Road.
EL25	EALING	FLINT ARTEFACT	050055	517550	179850		Beaconsfield Road.	HK29	HACKNEY	BIFACE	080046	534300	186800		Durlston Road.
EL26	EALING	FLINT ARTEFACT	050056	517600	180200		Disraeli Road.	HK30	HACKNEY	FLINT ARTEFACT	080050	533800	186400		Rectory Road.
EL27	EALING	FLINT ARTEFACT	050057	519600	181000		Lynton Road.	HK31	HACKNEY	FLAKE	080051	534600	186400		Ickburgh Road.
EL28	EALING	BIFACE	050071	516600	179800		Hessel Road.	HK32	HACKNEY	FLINT ARTEFACT	080052	533670	186240		Leswin Road.
EL29	EALING	BIFACE	050072	517500	179600		Conigsby Road.	HK33	HACKNEY	FLINT ARTEFACT	080055	534350	186550		Narford Road.
EL30	EALING	FLINT ARTEFACT	050073	516300	180400		Avenue Road.	HK34	HACKNEY	BIFACE	080056	533800	184850		Tyssen Street.
EL31	EALING	FLINT ARTEFACT	050074	517500	180700		Town Hall.	HK35	HACKNEY	FLINT ARTEFACT	080057	533640	186260		Tyssen Road.
EL32	EALING	FLINT ARTEFACT	050075	517200	180700		Craven Road.	HK36	HACKNEY	BIFACE	080059	535680	185600		Clapton Park.
EL33	EALING	FLINT ARTEFACT	050076	517700	180600		High Street.	HK37	HACKNEY	SCRAPER	080063	534500	184800		Graham Road.
EL34	EALING	BIFACE	050077	517800	180800		New Broadway.	HK38	HACKNEY	FLINT ARTEFACT	080068	533980	186630	NWR81	Northwold Road.
EL35	EALING	FLINT ARTEFACT	050078	518600	180600		North Common Road.	HK39	HACKNEY	BIFACE	080073	537500	185500		Temple Mills.
EL36	EALING	FLINT ARTEFACT	050079	517200	181100		Carlton Road.	HK40	HACKNEY	BIFACE	080075	535800	185600		Dunlace Road.
EL37	EALING	FLINT ARTEFACT	050080	517900	181000		Haven Green.	HK41	HACKNEY	ANIMAL REMAINS	080086	533600	185200		Kingsland High Road.
EL38	EALING	BIFACE	050081	518300	180100		Elm Grove.	HG1	HARINGEY	FLINT ARTEFACT	080260	531600	187350		Finsbury Park.
EL39	EALING	FLINT ARTEFACT	050082	518300	180800		The Mall.								
EL40	EALING	FLINT ARTEFACT	050083	515300	180900		Macklins Pnt.	HW1	HARROW	FLAKE	052000	515000	187000		Harrow Hill.
EL41	EALING	FLINT ARTEFACT	050084	516300	180900		Drayton Green.								
EL42	EALING	FLINT ARTEFACT	050085	518180	180650		Florence Road.	HV1	HAVERING	AXE	060001	552225	188190		Globe Road.
EL43	EALING	FLINT ARTEFACT	050087	518000	180100		Kernison Road.	HV2	HAVERING	AXE	060013	552700	183400		Albysn Farm South Hornchurch.
EL44	EALING	BIFACE	050088	518100	181100		Madeley Road.	HV3	HAVERING	SCRAPER	060023	553690	183300		Berwick Road.
EL45	EALING	BIFACE	050089	519600	180400		Chatsworth Gardens.	HV4	HAVERING	FLINT ARTEFACT	060044	552800	182000		Rainham.
EL46	EALING	BIFACE	050090	519800	180600		Buxton Gardens.	HV5	HAVERING	AXE	060053	556395	185740		Coniston Avenue.
EL47	EALING	BIFACE	050092	517400	179500		Dorset Road.	HV6	HAVERING	AXE	060065	554400	181800		Lauders Lane.
EL48	EALING	FLAKE	050093	517750	179250		Ealing Road.	HV7	HAVERING	AXE	060074	554800	182950		Warwick Lane.
EL49	EALING	BIFACE	050102	520370	179940		Berrymead Priory.	HV8	HAVERING	AXE	060604	553700	183150		Berwick Road.
EL50	EALING	FLINT ARTEFACT	050103	517550	179900		Lamas Park Road.	HV9	HAVERING	AXE	060605	555400	184000		Gerpins Pit.
EL51	EALING	FLINT ARTEFACT	050104	517850	180510		Grove Road.								
EL52	EALING	FLAKE	050105	520360	180370		Chaucer Road.	HL1	HILLINGDON	FLINT ARTEFACT	050004	508500	179700		Odells Pit.
EL53	EALING	FLINT ARTEFACT	050107	518800	180300		Tring Avenue.	HL2	HILLINGDON	FLINT ASSEMBLAGE	050010	507900	180900		Gould's Green.
EL54	EALING	FLINT ARTEFACT	050112	518800	180800		Freeland Road.	HL3	HILLINGDON	FLINT ARTEFACT	050011	507200	181000		Chapel Lane.
EL55	EALING	FLINT ARTEFACT	050113	518400	180800		Hamilton Road.	HL4	HILLINGDON	BIFACE	050016	507200	182400		Town Pits.
EL56	EALING	FLINT ARTEFACT	050120	520460	180380		Lorne Terrace.	HL5	HILLINGDON	FLINT ARTEFACT	050017	508500	180400		Maynards Pit.
EL57	EALING	FLINT ARTEFACT	050121	517300	180900		Gordon Road.	HL6	HILLINGDON	FLINT ASSEMBLAGE	050018	507300	180200		Claytons Little Wonder Pit and Eastwoods Pit.
EL58	EALING	FLINT ARTEFACT	050122	517210	181630		Castlebar Hill.								
EL59	EALING	FLINT ARTEFACT	050123	517280	178720		Ealing Park Gardens.	HL7	HILLINGDON	BIFACE	050020	508900	179700		United Glass Company Works.
EL60	EALING	BIFACE	050410	512200	179400		Featherstone Road.	HL8	HILLINGDON	BIFACE	050021	509500	179500		EMI Company Works.
EL61	EALING	FLINT ARTEFACT	050892	519000	180800		Daleys Pit.	HL9	HILLINGDON	FLINT ARTEFACT	050022	510600	179600		Botwell.
EL62	EALING	BIFACE	050896	519200	180900		Oakley Avenue.	HL10	HILLINGDON	BIFACE	050036	508000	179600		Public Records Office.
EL63	EALING	FLINT ARTEFACT	050902	520120	180360		Derwentwater Road.	HL11	HILLINGDON	FLINT ARTEFACT	050044	504200	190300		Colne Valley.
EL64	EALING	FLAKE	050905	520300	179500		Ramsay Road.	HL12	HILLINGDON	BIFACE	050106	507900	180600		Warren Lake.
EL65	EALING	FLINT ARTEFACT	050909	517700	180300		Ealing Green.	HL13	HILLINGDON	FLINT ARTEFACT	050124	507500	180500		Sabeys.
EL66	EALING	FLINT ARTEFACT	050910	520350	182300		Park Royal.	HL14	HILLINGDON	BIFACE	050463	507800	178400	WGF84	Bout coupé Moustertian handaxe, Wall Garden Farm, Sipson Lane.
EL67	EALING	FLAKE	050913	514500	180200		Hanwell.								
EL68	EALING	FLINT ARTEFACT	050916	519400	180800		Creffield Road.	HL15	HILLINGDON	FLINT ARTEFACT	050461	506800	178400		Holloway Lane.
EL69	EALING	BIFACE	050918	516970	181100		Denbigh Road.	HL16	HILLINGDON	FLAKE	050763	508200	180700	SPD85	Stockley Park.
EL70	EALING	BIFACE	050919	518650	180400		Gunnersbury Avenue.	HL17	HILLINGDON	FLINT ASSEMBLAGE	0	507270	174500	CDS95	Cargo Distribution Centre, Heathrow.
EL71	EALING	FLINT ARTEFACT	050920	517570	180480		Public Library.								
EL72	EALING	FLAKE	05												

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
IS1	ISLINGTON	KILL SITE	080351	530900	182600		King's Cross Road.	ST5	SUTTON	FLINT ARTEFACT	030357	527670	165870		Culvers Avenue.
IS2	ISLINGTON	SCRAPER	080340	532300	185500		Highbury New Park.	ST6	SUTTON	FLINT ARTEFACT	030358	527350	161000		Croydon Lane.
IS3	ISLINGTON	BIFACE	080341	532770	182500		Old Street.	ST7	SUTTON	FLINT ARTEFACT	030359	528400	164300		Ruskin Road.
IS4	ISLINGTON	BIFACE	080342	533200	185100		Kingsland.								
IS5	ISLINGTON	BIFACE	080343	531000	183100		Pentonville.	TH1	TOWER HAMLETS	BIFACE	080060	536200	183800		Victoria Park.
IS6	ISLINGTON	BIFACE	080344	531600	182100		Clerkenwell Road.	TH2	TOWER HAMLETS	FLAKE	080720	533800	181100		Mansell Street.
IS7	ISLINGTON	FLINT ASSEMBLAGE	080345	531000	183300		Pentonville.	TH3	TOWER HAMLETS	ANIMAL REMAINS	080727	534050	182400		Busby Street.
IS8	ISLINGTON	BIFACE	080346	532500	182500		Bath Street.	TH4	TOWER HAMLETS	ANIMAL REMAINS	080732	538600	180550		Blackwall Tunnel.
IS9	ISLINGTON	FLAKE	080347	532900	185100		Mildmay Park.	TH5	TOWER HAMLETS	ANIMAL REMAINS	080735	539100	180800		East India Dock.
IS10	ISLINGTON	FLINT ARTEFACT	080349	531450	182850		Rosebery Avenue.								
IS11	ISLINGTON	BIFACE	080352	531300	182300		Clerkenwell.	WF1	WALTHAM FOREST	BIFACE	060271	537050	188800		Third Avenue.
KC1	KENSINGTON AND CHELSEA	FLAKE	081543	528000	178680		Sloane Square.	WF2	WALTHAM FOREST	BIFACE	060551	537800	193500		Chingford Avenue.
KC2	KENSINGTON AND CHELSEA	FLINT ASSEMBLAGE	081545	524450	179500		Addison Road.	WF3	WALTHAM FOREST	BIFACE	060552	538000	186500		Leyton.
KC3	KENSINGTON AND CHELSEA	FLAKE	081551	528200	178600		Bourne Street.	WF4	WALTHAM FOREST	BIFACE	060554	538800	186100		Birbeck Estate.
KC4	KENSINGTON AND CHELSEA	BIFACE	081552	527000	178800		Pelham Street.	WF5	WALTHAM FOREST	FLINT ARTEFACT	060555	538800	187000		Bents Farm.
KT1	KINGSTON UPON THAMES	FLAKE	030509	518850	167580		Park Road.	WF6	WALTHAM FOREST	FLINT ARTEFACT	060556	539000	187300		Fillebrook Valley.
KT2	KINGSTON UPON THAMES	FLINT ARTEFACT	031710	518820	167440		Park Road.	WF7	WALTHAM FOREST	BIFACE	060557	538900	186900		Grove Green Lane.
KT3	KINGSTON UPON THAMES	BLADE	031730	518100	168500		Penrhyn Road.	WF8	WALTHAM FOREST	FLINT ARTEFACT	060559	539000	187500		Leytonstone.
LA1	LAMBETH	BIFACE	090003	529500	172500		Abbotswood Road.	WF9	WALTHAM FOREST	BIFACE	060560	539470	187460		High Road.
LA2	LAMBETH	FLAKE	090050	531500	173500		Trinity Rise.	WF10	WALTHAM FOREST	BIFACE	060562	539300	186900		Leyton.
LA3	LAMBETH	FLAKE	090051	531700	174100		Brockwell Park.	WF11	WALTHAM FOREST	CORE	060563	538700	186300		St Patrick's Cemetery.
LA4	LAMBETH	FLAKE	090054	531250	178600		Kennington Road.	WF12	WALTHAM FOREST	FLAKE	060565	539000	186000		West Ham Union Pt.
LA5	LAMBETH	FLINT ASSEMBLAGE	090057	530950	170850		Rookery.	WF13	WALTHAM FOREST	BIFACE	060567	537100	188800		Exeter Road.
LA6	LAMBETH	FLINT ARTEFACT	090146	531150	175100		Effra Road.	WF14	WALTHAM FOREST	BIFACE	060568	537280	188970		Central Station.
LA7	LAMBETH	CORE	090147	530400	178000		Vauxhall.	WF15	WALTHAM FOREST	FLINT ARTEFACT	060569	536000	190000		Higham Hill.
LA8	LAMBETH	BIFACE	090454	528700	174900		Clapham Common.	WF16	WALTHAM FOREST	BIFACE	060570	536800	188170		Markhouse Common.
LA9	LAMBETH	FLAKE	091086	529300	175500		Rutherford Road.	WF17	WALTHAM FOREST	BIFACE	060571	536000	187500		River Lea.
LW1	LEWISHAM	IMPLEMENT	070025	536700	175600		Wickham Road.	WF18	WALTHAM FOREST	BIFACE	060572	536850	188850		Hoe Street.
MT1	MERTON	FLAKE	030602	527000	168000		Kingston Road.	WF19	WALTHAM FOREST	BIFACE	0	539400	185800		Cann Hall Road.
MT2	MERTON	ANIMAL REMAINS	030706	526070	168000		Morden.	WF20	WALTHAM FOREST	BIFACE	0	537300	187100		Park Road.
NH1	NEWHAM	FLINT ARTEFACT	060231	542200	185720		Carlyle Road.	WF21	WALTHAM FOREST	FLOOR	0	538000	187100		Walnut Tree House.
NH2	NEWHAM	BIFACE	060575	542840	183010		High Street.	WW1	WANDSWORTH	FLINTWORKING SITE	030872	526100	174100		St Anne's Hill.
NH3	NEWHAM	BIFACE	060577	542800	185500		Little Ilford.	WW2	WANDSWORTH	IMPLEMENT	020703	528100	175600		Acanthus Road.
NH4	NEWHAM	BIFACE	060580	541000	182000		Prince Regent Lane.	WW3	WANDSWORTH	FLAKE	020709	526800	174400		Davies Estate.
NH5	NEWHAM	BIFACE	060581	543000	180600		Royal Albert Dock.	WW4	WANDSWORTH	IMPLEMENT	020716	527000	171620		Fountain Road.
NH6	NEWHAM	BIFACE	060582	541050	180590		Victoria Graving Dock, Silvertown.	WW5	WANDSWORTH	FLINT ARTEFACT	020787	522400	174400		Roehampton.
NH7	NEWHAM	BIFACE	060584	538000	185400		Temple Mills.	WW6	WANDSWORTH	BIFACE	020788	527500	174000		Wandsworth Common.
NH8	NEWHAM	BIFACE	060585	541200	184000		Green Street.	WW7	WANDSWORTH	FLINT ARTEFACT	020804	523930	172760		Glen Albyn Road.
NH9	NEWHAM	BIFACE	060586	543300	183700		Wallend.	WW8	WANDSWORTH	BIFACE	030804	523300	174600		Chartfield Avenue.
NH10	NEWHAM	FLINT ARTEFACT	060587	541600	186300		Wanstead Flats, Manor Park.	WW9	WANDSWORTH	BIFACE	030805	524400	174700		Keswick Lane.
NH11	NEWHAM	BIFACE	061621	543400	185500		Little Ilford.	WW10	WANDSWORTH	BIFACE	030826	526200	174200		Allfarthing Lane.
NH12	NEWHAM	FLAKE	061624	541000	184000		Upton Park.	WW11	WANDSWORTH	BIFACE	030827	526100	174700		East Hill.
NH13	NEWHAM	FLINT ARTEFACT	061625	543000	183000		East Ham.	WW12	WANDSWORTH	FLAKE	030832	525380	174680		Garratt Lane.
NH14	NEWHAM	FLINT ARTEFACT	061627	540450	184000		Forest Gate.	WW13	WANDSWORTH	BIFACE	030841	525300	173400		Merton Road.
RB1	REDBRIDGE	FLINT ASSEMBLAGE	060215	541870	189520		Woodford Bridge Road.	WW14	WANDSWORTH	FLAKE	030886	526000	175400		Mears Pit.
RB2	REDBRIDGE	BIFACE	060590	542500	187600		Griggs Estate Gants Hill.	WW15	WANDSWORTH	BIFACE	031124	526000	175300		Watneys Estate.
RB3	REDBRIDGE	BIFACE	060592	543300	188400		Cranbrook Road.	WW16	WANDSWORTH	ANIMAL REMAINS	031540	527000	171620		Fountain Road.
RB4	REDBRIDGE	BIFACE	060593	541500	188300		The Red Bridge, Ilford.	WM1	WESTMINSTER	BIFACE	081100	526000	183300		Charlton Hill.
RB5	REDBRIDGE	BIFACE	060594	542270	188170		Stonehall Avenue.	WM2	WESTMINSTER	FLINT ARTEFACT	081101	530200	179000		Millbank.
RB6	REDBRIDGE	BIFACE	060595	541900	188800		Red House.	WM3	WESTMINSTER	FLINT ASSEMBLAGE	081102	527800	180100		Hyde Park.
RB7	REDBRIDGE	BIFACE	060596	545200	187200		Seven Kings.	WM4	WESTMINSTER	BIFACE	081103	527500	182000		Marylebone Road.
RB8	REDBRIDGE	BIFACE	060598	540600	186700		Aldersbrook Pit, Wanstead.	WM5	WESTMINSTER	BIFACE	081104	528900	181300		John Princes Street.
RB9	REDBRIDGE	FLAKE	060599	541900	187000		Parish Pit.	WM6	WESTMINSTER	BIFACE	081105	530500	180700		Strand.
RB10	REDBRIDGE	BIFACE	060600	541400	186300		Wanstead Flats Pit.	WM7	WESTMINSTER	BIFACE	081106	530400	181200		Drury Lane.
RB11	REDBRIDGE	FLAKE	061661	543810	185260		Uphall Road.	WM8	WESTMINSTER	BIFACE	081108	529000	181600		Great Portland Street.
RT1	RICHMOND	BIFACE	020847	521000	173000		Richmond Park.	WM9	WESTMINSTER	BIFACE	081109	528400	181300		Wigmore Street.
RT2	RICHMOND	IMPLEMENT	020840	518200	174200		Richmond Hill.	WM10	WESTMINSTER	BIFACE	081110	528650	181200		Vere Street.
RT3	RICHMOND	BIFACE	020843	518000	175000		Richmond.	WM11	WESTMINSTER	BIFACE	081111	529050	181270		Oxford Street.
RT4	RICHMOND	FLINT ARTEFACT	020845	514000	169500		Hampton.	WM12	WESTMINSTER	FLINT ARTEFACT	081112	52870	181200		Hennietta Place.
RT5	RICHMOND	FLAKE	020846	518500	177000		Kew Gardens.	WM13	WESTMINSTER	FLINT ASSEMBLAGE	081113	529470	180700		Glasshouse Street.
RT6	RICHMOND	FLAKE	020848	515000	173000		Twickenham.	WM14	WESTMINSTER	BIFACE	081114	529500	180500		Jermyn Street.
RT7	RICHMOND	BIFACE	020852	520000	175000		Sheen Common.	WM15	WESTMINSTER	BIFACE	081115	529450	180900		Great Putney Street.
RT8	RICHMOND	FLINT ARTEFACT	020853	520500	175500		Mortlake.	WM16	WESTMINSTER	BIFACE	081116	529000	180700		Old Bond Street.
RT9	RICHMOND	FLAKE	020861	519000	175700		Richmond Gasworks.	WM17	WESTMINSTER	SCRAPER	081117	528500	179900		Piccadilly.
RT10	RICHMOND	BIFACE	020862	519100	177500		Style Hall.	WM18	WESTMINSTER	BIFACE	081118	528600	180500		Hill Street.
RT11	RICHMOND	BIFACE	020863	520500	176000		Mortlake Brewery.	WM19	WESTMINSTER	BIFACE	081119	528400	180600		Mount Street.
RT12	RICHMOND	BIFACE	020867	518500	174000		Richmond Hill.	WM20	WESTMINSTER	FLINT ASSEMBLAGE	081121	530050	180200		Whitehall.
RT13	RICHMOND	FLINT ARTEFACT	020844	518260	172900		Earl of Dysart's Pit, Ham.	WM21	WESTMINSTER	BIFACE	081122	526000	181600		Paddington.
SW1	SOUTHWARK	FLAKE	090715	535500	175500		Nunhead Cemetery.	WM22	WESTMINSTER	FLAKE	081123	530550	180950		Catherine Street.
SW2	SOUTHWARK	ANIMAL REMAINS	090763	535700	179200		Canada Dock.	WM23	WESTMINSTER	BIFACE	081125	529500	180650		Piccadilly.
SW3	SOUTHWARK	FLINT ARTEFACT	091092	536000	179000		Rotherhithe.	WM24	WESTMINSTER	BIFACE	081127	528500	181100		Oxford Street.
ST1	SUTTON	FLINT ARTEFACT	020336	530720	165030		Aldwick Road.	WM25	WESTMINSTER	FLAKE	081128	530300	180950		Floral Street.
ST2	SUTTON	ANIMAL REMAINS	020001	528000	164500		Carshalton.	WM26	WESTMINSTER	ANIMAL REMAINS	081150	530050	180330		Charing Cross.
ST3	SUTTON	BIFACE	030206	530600	164500		Waddon.	WM27	WESTMINSTER	ANIMAL REMAINS	081282	530100	180540		St Martin's Place.
ST4	SUTTON	SCRAPER	030337	527840	164560		Carshalton.								

3

**THE UPPER
PALAEOLITHIC AND
MESOLITHIC PERIODS**

John Lewis

Introduction and background

The archaeological evidence for the Upper Palaeolithic and Mesolithic periods in Britain indicates the presence of small-scale hunter-gatherer communities and the development of complex social and economic systems for the exploitation of the cold, cool-temperate and later temperate environments which existed in north-west Europe during the Devensian glaciation and Early Flandrian period. In material culture terms, these periods are largely characterised by lithic technologies based on the production of blades that had replaced Lower Palaeolithic industries dominated by flake tools.

The beginning of the Upper Palaeolithic in Europe is associated with the appearance of anatomically modern humans (*Homo sapiens*), and the disappearance of indigenous Neanderthals (Stringer & Gamble 1993). This population replacement was accompanied by the adoption of a range of new material culture items and new patterns of settlement and resource procurement, which suggest profound social and economic changes among human communities at this time. The Upper Palaeolithic in Britain is usually dated to the latter part of the Devensian glaciation, c 38,000–10,000 BP; a period further subdivided into the Earlier Upper Palaeolithic (c 38,000–23,000 BP) and the Later Upper Palaeolithic (13,000–10,000 BP), with an apparent intervening gap in human occupation during the severe full glacial period.

The economic practices of the hunter-gatherers of the Upper Palaeolithic appear to have been focused on the hunting of migrating animal herds (especially reindeer and horse), with movements of settlements and dispersion/aggregation of communities depending on seasonal changes in resource availability and weather conditions. In this context, the limited presence of human groups in southern Britain probably marks occasional hunting trips into steppe-like areas at the northern limit of territorial ranges. Artefacts that can be dated to the Upper Palaeolithic are very scarce in Greater London, as indeed they are elsewhere in the British Isles.

The amelioration of climatic conditions at the end of the Devensian glaciation marks the beginning of the Mesolithic, which spans the period from c 10,000–6000 BP (8000–4000 BC). The temporal and cultural definition of the Mesolithic, however, is ambiguous. The beginning of the Mesolithic, for example, is defined in environmental rather than cultural terms, unlike the end of the Mesolithic, which is traditionally associated with the appearance of agricultural technologies and monumental architecture during the late 5th to early 4th millennia BC. It is also now recognised that the technological and behavioural adaptations of the hunter-gatherer communities of the Early Flandrian had begun or were achieved before the end of the Late Glacial phase (Jacobi 1987, 163). In this context, the Later Upper Palaeolithic and the Mesolithic are perhaps most appropriately studied as a single period of cultural change, in which the hunter-gatherer communities of north-west Europe gradually turned from extensive and largely nomadic resource procurement strategies to intensive food production and increasingly sedentary lifestyles.

The environmental changes that took place in Britain during the Early Flandrian were far-reaching. The progressive retreat and melting of the northern ice sheets resulted in sea-level rises and isostatic downwarping that inundated vast tracts of low-lying land, separating Britain from the Continent by 8000 BP. The former tundra landscape of the Late Glacial was colonised by birch and pine forest, followed by hazel, and increasingly by oak and elm after 8000 BP, developing eventually into mixed deciduous forest. The faunal record reflects a warming climate and colonisation by woodland plants as the herds of reindeer and horse of the Late Glacial became extinct and were replaced by a rich diversity of woodland fauna including red deer, elk, aurochs, wild boar and numerous bird species. The change in flora and fauna directly influenced the economies, settlement patterns and social organisation of north-west European hunter-gatherers.

The British Upper Palaeolithic: chronology and cultural traditions

The Earlier Upper Palaeolithic is very poorly represented in Britain (see Jacobi 1980b). The first appearance of cultural material of this period is dated to c 38,000 BP on the basis of comparisons with continental parallels and a single ¹⁴C date from Kents Cavern, Devon (Green & Walker 1991, 33).

Roger Jacobi has tentatively identified three chronological horizons within the British sequence (1980b): (1) c 38,000–34,000 BP, typified by leaf points; (2) c 33,000–30,000 BP, typified by specialised tools such as Aurignacian II busked burins; and (3) c 28,000 BP, typified by the rare occurrence of Font Robert tanged points. The extreme rarity of artefacts that might date to the period after 28,000 BP and their apparent absence after c 23,000 BP suggest that hunter-gatherer communities abandoned their former hunting grounds in Britain and moved progressively southwards in response to the increasingly severe environmental conditions which prevailed with the onset of the full Devensian glaciation.

The climatic warming which began after c 16,000 BP eventually favoured renewed human activity in Britain, though at first probably in the form of seasonal hunting trips rather than a year-round human presence. ¹⁴C determinations suggest that the recolonisation of Britain by Later Upper Palaeolithic hunters did not begin until the Windermere or Late Glacial interstadial, from c 13,000 BP (Housley 1991; Jacobi 1991). Although the archaeological evidence for Later Upper Palaeolithic communities is more abundant than that for the Earlier Upper Palaeolithic, it remains poorly represented compared to later periods. British Later Upper Palaeolithic material is often characterised in terms of a single ‘culture’, the Creswellian, first defined by Dorothy Garrod (1926). This is compared with the Federmesser and Hamburgian assemblages of the Low Countries and north Germany, which in turn may be viewed as variants of the Magdalenian Technocomplex recognised over a wide area of north and north-west Europe (Smith 1992, 3). Roger Jacobi (1991) has recently suggested a new definition of the Creswellian lithic industry as a ‘technology with trapezoidal side blades ... lacking microlithic backed bladelets’. Barton (1992, 189–200) has also recently re-evaluated the British and continental evidence and identifies two separate lithic assemblage types, the ‘angle-backed Creswellian’ and the ‘straight-backed blade’ assemblages, both of which were present during the British Late Glacial interstadial, which he dates to the period c 13,000–11,500 BP.

Human occupation of Britain appears to have declined during the return of more severe climatic conditions during the Loch Lomond stadial, between 11,000 and 10,000 BP. Although the evidence is limited, the British Late Glacial and early pre-Boreal ‘long-blade’ assemblages can be compared with components of the continental Ahrensburgian Technocomplex (Barton 1991, 239). It is likely that the British long-blade industries continued in existence into the early pre-Boreal period, until the more familiar elements of Mesolithic tool kits, such as core adzes, and oblique and triangular microliths, appeared from c 9700 BP (Barton 1991, 240–2).

The British Mesolithic: chronology and cultural traditions

Although the term ‘Mesolithic’ was used by Allen Brown as long ago as 1893 to denote a flint assemblage that was intermediate in date between the Palaeolithic and the Neolithic, it was not until the early 1920s that the term began to be applied systematically to such material. Antiquarian and early archaeological interest in the Mesolithic as a separate cultural stage was thus extremely limited in comparison with earlier and later periods. It was only in 1932, when J G D Clark published *The Mesolithic Age in Britain*, that the Mesolithic was firmly established as a distinct period in British archaeology.

The current chronological framework for the Mesolithic of southern Britain was proposed by Roger Jacobi over 20 years ago (1973; 1976), based largely on microlith shapes and forms together with comparative analyses of lithic assemblages, site stratigraphies and ¹⁴C dates. A general distinction is also usually drawn between broad-blade microliths of the Earlier Mesolithic and narrow-blade microliths of the Later Mesolithic. It is important to note, however, that this distinction is an oversimplification and may be misleading unless assemblages are studied as a whole: broad-blade microliths, for example, may be found in narrow-blade assemblages. It is also now apparent that the sizes of microliths and the relative proportions of different microlith types in contemporary use changed over time (eg Smith 1992, 5).

The Earlier Mesolithic in Britain (c 10,000–8500 BP) is characterised by ‘broad-blade’ lithic industries from sites such as Broxbourne 102 and 104 (Warren *et al* 1934) and Thatcham IV (Wymer 1962). Obliquely backed points dominate the microlithic component in these assemblages.

Alongside flint, bone and antler were also worked, and the characteristic barbed harpoon points have been found in both Late Glacial and Earlier Mesolithic contexts; the site at Star Carr in the Vale of Pickering has produced nearly two hundred, for example (Clark 1971). Other tool types encompass antler base- and beam-mattocks, which to judge from the available ¹⁴C dates have a somewhat wider chronological spread (eg Smith 1989; Bonsall & Smith 1989).

The 'Horsham' or 'Wealden' flintwork industries of Surrey and surrounding counties appear to date to between c 9000 BP and 8000 BP (Ellaby 1987, 62). These industries are distinguished by points with hollowed or inversely retouched bases, associated with a restricted range of early microlith types such as obliquely backed points, triangles of isosceles shape and bitruncated rhombic points (Jacobi 1978, 20). Where present, the Horsham industry would thus appear to occupy an intermediate stage between the Earlier 'broad-blade' and the Later 'narrow-blade' industries of the British Mesolithic, though supporting ¹⁴C evidence is limited (Ellaby 1987, 59).

The Later 'narrow-blade' Mesolithic industries of southern Britain, which appear to date from c 8500–c 6000 BP, are characterised by microliths of the rod and narrow scalene microtriangle types (Jacobi 1980a, 20). The general adoption of narrow-blade technology roughly coincides with the final separation of Britain from mainland Europe due to rising sea levels. From this point on, technological development in Mesolithic Britain appears to have been entirely insular (Jacobi 1976, 80).

Past work and nature of the evidence

Past work

Very little research has been carried out on the Upper Palaeolithic of Greater London, and both stray finds and excavated sites are extremely rare. This may reflect the sporadic nature of human activity in southern Britain during the extended cold phases of the period. But it is also likely, given the known environmental history of the lower Thames, that a large part of the potential archaeology of this period lies buried beneath metres of alluvium along the floodplains of the Thames and its tributaries (Bates & Barham 1995). The recent excavation at Three Ways Wharf, Uxbridge appears to confirm this view (Lewis 1991). Due to the paucity of Upper Palaeolithic material, much of the following discussion concentrates on the Mesolithic.

In Greater London, as in the rest of Britain, research on the Mesolithic was extremely limited before the 1930s, though tranchet axes and so-called 'pygmy flints' (microliths) were collected by fieldworkers such as Clinch (1902) and Johnson and Wright (1903). Only after Clark's first study of the British Mesolithic (1932) was there serious work on this period in the London area, most notably by Wilfred Hooper (1933) and W F Rankine in Surrey (1949; 1956), and by S H Warren at Broxbourne, Hertfordshire (Warren et al 1934), and further east in Essex (Warren 1913).

Since the 1940s, local archaeological societies in Greater London have carried out fieldwork and excavations in their areas, particularly the Beddington, Carshalton and Wallington Archaeological Society, the Croydon Natural History and Scientific Society, Orpington and District Archaeological Society, and the Hendon and District Archaeological Society. Until recently, these societies were responsible for most of the fieldwork undertaken on Mesolithic sites in the London region.

At a more general level, the work of Lacaille (1961; 1963; 1966) included summaries of the Mesolithic evidence in the London region and drew attention to the potential Mesolithic evidence preserved beneath the alluvium of the Thames and its tributaries (an observation that was largely overlooked until recently). There are further brief assessments of the Upper Palaeolithic and Mesolithic by Collins (1976). There has been no recent review of the Mesolithic in Greater

London comparable to those produced for Surrey (Ellaby 1987), Essex, Kent and Sussex (Jacobi 1980a and 1996; 1982; 1978, respectively), except for Clive Bonsall's paper presented at the *Greater London to 1500* conference held in 1986, the proceedings of which remain unpublished. Nonetheless, our understanding of the Mesolithic in London has improved enormously since the 1970s, when knowledge of the period was based mainly on isolated finds, artefacts recovered during gravel extraction, and excavations carried out by local societies. There are now several in situ sites which have been excavated to a very high standard, and far more detailed environmental evidence, as well as increasing recognition of the significance and potential of Upper Palaeolithic and Mesolithic archaeology in the London region by those involved in fieldwork.

The nature of the evidence

Upper Palaeolithic

The evidence for Upper Palaeolithic activity within the London area, despite recent important finds, remains pitifully restricted (eg Bonsall 1977; Jacobi 1980b). Earlier Upper Palaeolithic material comprises a handful of distinctive flint artefacts found by chance and, with one exception, lacking any meaningful context. At present there are no faunal associations of any kind. The situation improves somewhat in the Later Upper Palaeolithic, in terms of both the quantity and the quality of the available evidence. Most notable are two important in situ 'long-blade' assemblages of latest Upper Palaeolithic date from Three Ways Wharf, Uxbridge and Church Lammas, Staines in the Colne Valley, which comprise a range of utilised and retouched tools together with debitage (Lewis 1991; Phil Jones, pers comm). Still more significant, both are associated with restricted assemblages of faunal material.

Mesolithic

Along with flint and stone artefacts, the full range of Mesolithic bone and antler items is represented in London (Wymer 1977, xii). There are, however, serious difficulties in assigning this kind of material to the Mesolithic on typological grounds alone (some Mesolithic artefacts are similar to Later Upper Palaeolithic or Neolithic artefact types), and there are major problems of uncertain association and provenance (Wymer 1977, viii).

The vast majority of Mesolithic artefacts from Greater London consist of isolated finds of flintwork from surface or riverine contexts. Most of these finds were made by collectors who were rarely able to record the precise provenances or depositional contexts of the artefacts recovered (eg Lawrence 1929). Of a total of 305 entries classed as isolated finds of Mesolithic date on the GLSMR (excluding those from the Thames), only 100 have grid references precise to 1km. It is also apparent that the finds recovered by flint collectors were rarely characterised except in broad material terms. In the absence of diagnostic typological features and independent chronological evidence, many of the finds presently attributed to the Mesolithic could easily belong to other periods.

The artefacts found in the Thames share these problems, and as with river finds of other periods their significance is uncertain. The apparent concentrations of core tools such as axes and adzes found along the Thames (eg Wymer 1977; Field 1989) may be the result of systematic recovery bias, these objects being over-represented because of the selective collection of larger and more easily recognisable tool types during dredging operations. Alternatively, the large numbers of core tools from river contexts may indicate some kind of ritual deposition (suggested for river finds of Neolithic axes; eg Bradley 1990). Jacobi (1987, 166), in contrast, argues that core tools found in rivers were probably used for constructing and maintaining fish weirs and traps. Indeed, given the known occurrence of Mesolithic sites beneath alluvial deposits along the Thames tributaries, it is reasonable to suppose that many of the finds from the main floodplain and river represent losses during hunting and fishing activities, or material from settlement sites disturbed by dredging and river erosion. An important series of bone and antler finds from the River Thames, including several barbed points and a range of perforated antler mattocks, has provided a number of AMS ¹⁴C dates (Bonsall & Smith 1989).



Earlier Upper Palaeolithic flintwork (c 28,000–24,000 BP) from the Cargo Distribution Service site, Heathrow

In addition to stray finds from surface and riverine contexts, there is a large body of Mesolithic material from excavations and watching briefs which remains unpublished or partially published. The NMR Excavation Index for Greater London lists approximately 60 sites which have produced Mesolithic flintwork, though in most cases this material was recovered from post-Mesolithic contexts. The site at Croham Hurst, Croydon, for example, produced mixed flintwork assemblages from several phases of prehistoric occupation (Gz CR32; Drewett 1970), and excavations at Percy Gardens, Tolworth, in the Hogsmill Valley, produced Mesolithic flintwork from Iron Age contexts (Gz KT4; Robin Neilsen, pers comm). The value of such redeposited material for interpretative purposes is limited, but it does indicate early hunter-gatherer activity in the vicinities of the sites concerned. Fully published excavations of Mesolithic sites are rare in Greater London, and important sites such as that at Creffield Road, Acton (Gz EL4) remain largely unreported (but see Burleigh 1976; Bazely et al 1991). Fortunately, the recent or impending publication of several important Mesolithic sites should provide a sound basis for future work on the Mesolithic in the region. These include West Heath, Hampstead (Gz CA5; Collins & Lorimer 1989), the B&Q site in Southwark (Gz SW9; Sidell et al in prep; Rogers 1990), Three Ways Wharf, Uxbridge (Gz HL8, HL14; Lewis 1991) and most recently the Erith Spine Road (Bennell 1998).

Environmental evidence

Interpretation of the Upper Palaeolithic and Mesolithic cultural sequence in the British Isles is very closely related to an understanding of environmental conditions and the far-reaching environmental changes recognised during these periods. Environmental evidence from Greater London is far from abundant, though the situation improved considerably in the 1990s (see chapter 1 above). As yet, there are no sites in the region which have yielded continuous unbroken environmental sequences from the Late Glacial (Upper Palaeolithic) to the Boreal (Earlier Neolithic) periods, though several partial sequences are available and the environments of particular cultural phases at a number of sites are well understood.

The most complete sequence at present is that from Bramcote Green, Bermondsey (Thomas & Rackham 1996), which has basal deposits dating from c 12,000–10,000 BP. These are dominated by pollen indicative of a typical open tundra landscape, followed by a gap in the sequence in the Early Flandrian (with the absence of pollen assemblages typical of pollen zones IV and V), and a succeeding phase represented by an increase in alder (Thomas & Rackham 1996, 232). An elm decline is also present, though it coincides with a sharp stratigraphic boundary suggesting the truncation of overlying deposits, and may be misleading as a result. The evidence from the Three Ways Wharf site at Uxbridge in the Colne Valley, which produced stratified mammal bone assemblages, and molluscan evidence from a sedimentary sequence, is especially significant for charting the transition from Late Glacial to early post-glacial environments (Lewis et al 1992). The pollen and charcoal evidence from the Boreal peat deposits sealing the lithic and faunal material here is also contributing to the construction of a general environmental framework for the London region during the Early Flandrian (Lewis et al 1992; Bowsher & Sidell in prep). Though not secured by independent dating methods, the pollen sequence from West Heath, Hampstead helps to clarify the local change from forest to open heathland caused by woodland clearance during the Mesolithic and Earlier Neolithic (Greig 1989).

The archaeological evidence

It is apparent from the preceding section that the number of *in situ* and unmixed cultural assemblages of Upper Palaeolithic and Mesolithic date from sites in Greater London is very small, associated faunal remains are rare and ¹⁴C dates are scarce. The distribution of Upper Palaeolithic and Mesolithic sites and surface finds in Greater London is shown on Map 2, and the gazetteer provides a full list of the sites marked, based on data drawn from the GLSMR. As finds from the River Thames are under-represented in the GLSMR, this category of material has been excluded.

Upper Palaeolithic

Earlier Upper Palaeolithic (c 38,000–23,000 BP) finds are very rare in London. A leaf point from the Earl of Dysart's Pit at Ham (PAL Gz RT13) is dated to this period on typological grounds (Ellaby 1987, 53), as are similar finds from sites just outside Greater London at Rikhoff's Pit, Hertfordshire and White Colne, Essex (Bonsall 1977). A single Font Robert tanged point is also recorded from Godalming in Surrey (Winbolt 1929). Given this paucity, the recent recognition of a small lithic assemblage comprising fragments of robust modified blades and flakes, and a single crested piece from the World Cargo site at Heathrow, is particularly welcome (Lewis in prep b). On analogy with comparable material from eastern Europe and from Beedings in West Sussex (Jacobi 1986) this assemblage can be dated to between 28,000 and 24,000 BP. It points to activity on a low gravel rise set in an open, steppic, locally undulating periglacial landscape, much of which was later cloaked by brickearths of the Langley Silt Complex.

Later Upper Palaeolithic (13,000–10,000 BP) material in south-east Britain is also scarce. A few shouldered and tanged points have been found in Essex (Jacobi 1980a), and similar material has been recorded in Kent (Jacobi 1982). The collection of flintwork from Brockhill near Woking in Surrey, just outside Greater London, is considered by Barton to be typologically and technologically similar to the Later Upper Palaeolithic straight-backed blade assemblage from Hengistbury Head, Hampshire (Barton 1992, 182). In London itself, a single somewhat atypical shouldered point recovered from the Thames at Syon, Middlesex may date to this period (Roger Jacobi, pers comm). The site at Creffield Road, Acton (Gz EL8), which was described as Upper Palaeolithic by the excavators (Burleigh 1976), is more likely to belong within the traditional Earlier Mesolithic (Jon Cotton, pers comm; see below).

The apparent scarcity of Upper Palaeolithic sites in Greater London may be due to a number of factors. The periglacial conditions which existed in the region between 23,000 and 13,000 BP will have disturbed Earlier Upper Palaeolithic sites which existed on the exposed gravel terraces. Merriman (1990), among others, has also suggested that archaeological remains of this and the Later Upper Palaeolithic period may have been buried beneath alluvium deposited in the river valleys. ¹⁴C dates are available for beds of organic sediment beneath alluvial deposits at Colnbrook 14,900–13,200 BC (Q-2021, 13,405± 170 BP) and West Drayton 11,850–11,700 or 11,550–10,950 BC (Q-2020, 11,230± 120 BP), though no cultural material was found at either locality (Gibbard & Hall 1982; Gibbard 1985, 120). Evidence of this kind suggests that Later Upper Palaeolithic sites may exist in sub-alluvial contexts in the London area, which may be comparable with the slightly later sites in the Colne Valley at Three Ways Wharf, Uxbridge and Church Lammas, Staines (see below).

The Late Devensian–Early Flandrian transition and the Earlier Mesolithic

It is not until the very end of the Loch Lomond stadial (c 11,000–10,000 BP) that there is good evidence for consistent human occupation of south-east Britain. Wymer (1991a, 15) suggests that at least three different cultural groups can be recognised through their flintwork: a group utilising long elegant blades and few microliths (so-called 'long-blade' assemblages); a group utilising shouldered and tanged points; and a further group using large numbers of oblique microliths and core axes. Securely stratified sites of the period have been excavated at Broxbourne in the Lea Valley (Warren et al 1934) and at Three Ways Wharf, Uxbridge in the Colne Valley (Gz HL8, HL14; Lewis 1991), while numerous stray finds and surface scatters from a range of locations across the area can be assumed to date to this period on typological grounds. It is clear that by the end of the Late Glacial period the Thames Valley and its tributaries were being widely exploited by hunter-gatherer communities.

The particular environmental settings of these sites, and the character of the cultural activities represented, are now much more clearly understood. The Broxbourne '102' site in Hertfordshire, for example, consisted of an Earlier Mesolithic flint scatter located on a gravel bank, probably originally a bar or island in a braided river system, subsequently buried by peat dating to the Boreal period (Warren et al 1934). A similar topographical position seems to have been occupied

in the Late Glacial and early post-glacial periods at Three Ways Wharf, Uxbridge (Gz HL8, HL14), where recent excavations have produced two *in situ* flintwork and faunal assemblages stratified within fine-grained alluvium deposited by the River Colne (Lewis 1991). The flint artefacts from 'Scatter A' and 'Scatter C east' have typological affinities with the true Later Upper Palaeolithic 'long-blade' industries of north-west Europe, including bruised-edge blades used for chopping antler (eg Barton 1989; 1991; 1997, 131; 1998). The associated fauna of horse and reindeer are indicative of a cold tundra landscape. A Late Glacial date for this phase of activity, c 10,000 BP, is supported by two AMS ¹⁴C determinations on a horse mandible and tooth. Some of the animal bones bore cut marks produced by flint implements, possibly suggesting that butchery had taken place on the site. A second long-blade assemblage associated with remains of large fauna has recently been recovered further down the Colne Valley at Church Lammas near Staines (Phil Jones, pers comm). Initial work on this material has identified the characteristic bruised-edge blades, although there is a higher retouched tool element than at Three Ways Wharf.

Two further concentrations of flintwork and faunal remains at Three Ways Wharf were recorded within the same layer of sediment as 'Scatter A'. The largest of these ('Scatter C west') consisted of a dense concentration of lithic and faunal material. The flintwork is Earlier Mesolithic in character, with tranchet axe fragments, obliquely backed points, burins, scrapers, cores, microburins, hammerstones, blades and flakes. Much of this material refits, which suggests that it has undergone very little post-depositional disturbance. The faunal material largely consists of red deer, indicating a change from tundra to warmer wooded conditions in the early post-glacial period. Some of the red deer bones also show evidence of butchery, and a small proportion of the faunal remains and flint artefacts are charred. A thermoluminescence date of c 8000 BP was obtained from a piece of burnt flint, though the flintwork would appear to date to between 10,000 and 9000 BP on typological grounds (Lewis 1991). The layer of sediment containing Scatters A and C was sealed by a charcoal-rich organic clay, presently dated to the Late Boreal period, c 9000–7500 BP (zones VIa–VIc; Lewis et al 1992). It is clear that the site at Three Ways Wharf provides some of the most important evidence in Britain for hunter-gatherer activity and cultural life during the Late Devensian and Early Flandrian eras.

Another small scatter of Earlier Mesolithic flintwork, including refitting material, has been excavated at a site 1 km to the south of Three Ways Wharf at Cowley Mill Road, Uxbridge (Gz HL10; Ian Stewart, pers comm). The flintwork lay on the surface of the basal gravel, sealed by an organic clay of similar date and composition to that at Three Ways Wharf. The excavation at Cowley Mill Road also confirmed the depositional sequence recorded at a site 500 m to the west on the opposite bank of the Colne at Sandstone, Buckinghamshire (Lacaille 1963), where Earlier Mesolithic artefacts were recovered from the same stratigraphic horizon. Lacaille also collected Earlier Mesolithic artefacts in mint condition from a number of other localities in the Colne Valley, almost all from stratigraphic sequences similar to those described at Cowley Mill Road and Three Ways Wharf (Lacaille 1961; 1963; Lewis et al 1992).

Sites that have produced undisturbed Earlier Mesolithic material elsewhere in Greater London are very rare. A flintwork assemblage from Creffield Road, Acton (Gz EL8; Burleigh 1976) was recovered from the upper levels of the brickearth that covers the gravel in this area. The excavators assumed that the artefacts were contemporary with the formation of the brickearth (Gibbard's (1985) Langley Silt Complex), the upper loess-rich parts of which are thought to be Late Devensian (Gibbard 1987). However, recent scanning of the flintwork suggests that it is more likely to be Earlier Mesolithic on typological grounds (Jon Cotton, pers comm). The lithic artefacts were probably deposited on a palaeo-land surface and incorporated in the sediment beneath by bioturbation processes. It is unclear exactly how much lateral disturbance the flint scatter has undergone, but it may be relatively little.

An important assemblage of *in situ* flintwork of probable Earlier Mesolithic date has also recently been excavated at the so-called 'B&Q' site, adjacent to the Old Kent Road in Southwark (Gz SW9; Rogers 1990). Nearly 1800 artefacts were recovered, including obliquely backed points, microburins, scrapers and hammerstones (Jon Cotton, pers comm). The location of this site is especially interesting as it appears to be close to the former shoreline of a large lake which in the Earlier Mesolithic existed to the north in Bermondsey (Jones 1988).

The most recently published Mesolithic site in the London region is that at West Heath, Hampstead (Gz CA5), which produced an extremely large flintwork assemblage of over 60,000 artefacts (Collins & Lorimer 1989) and important environmental evidence, most notably the pollen sequence from a nearby bog which charts vegetation changes during the Mesolithic and Mesolithic–Neolithic transition (Greig 1989). Although the microlithic component in the West Heath assemblage is dominated by Earlier types such as obliquely backed points, the presence of Later Mesolithic lithic types is demonstrated by a Horsham point and geometric microliths such as scalenes and a rod. The excavators date the assemblage as a whole to the Earlier Mesolithic on typological grounds (Collins & Lorimer 1989, 60) and thermoluminescence dates on burnt flints which give an average age of c 9625 ± 900 BP (Ox TL 238; Collins & Lorimer 1989, 100). Collins admits, however, that the presence of small numbers of Later Mesolithic microliths may indicate that more than one phase of occupation occurred at the site, resulting in a mixed assemblage. This possibility is supported by the distribution of refitting flintwork that suggests the site has undergone some disturbance.

Later Mesolithic

Evidence for Horsham-type artefacts in Greater London is largely confined to stray finds, though several Horsham points have been found at excavated sites such as West Heath (Gz CA5), Orchard Hill (Gz ST15) and Waterloo 'C' (Gz LA3). The rarity of these finds in London may indicate mixing of lithic material rather than the presence of distinct Horsham assemblages. Unfortunately, the lack of securely stratified sites and the scarcity of ¹⁴C dates leave the status of Horsham industry finds in London open to question.

Similar problems are apparent in the case of Later Mesolithic assemblages. In contrast to the numerous excavations of such sites in areas adjacent to the London region (eg Farley 1978; Jacobi 1982; Ellaby 1987; Jacobi 1980a; 1978), there are as yet no sites within the region itself that can be securely and exclusively dated to this period. Although Later Mesolithic microlith types are sometimes recovered during excavations in London, in most cases these derive from secondary contexts (such as the rod microlith from 15–23 Southwark Street; Gz SW5), or they are present in assemblages which combine Earlier and Later types, which may be mixed. The excavations at Orchard Hill in Carshalton, for example, produced over 10,000 artefacts including a tranchet axe (Gz ST15; Turner 1965), but the presence of both broad- and narrow-blade microlith types, and several Horsham points, suggests repeated occupation over a long period, possibly because of the close proximity of good flint sources and a spring (Turner 1965; Ellaby 1987, 65). Excavations near Waterloo Station (eg Gz LA3) also produced typical Later Mesolithic microliths, but the assemblage contains flintwork (and pottery) of later prehistoric periods (Nick Merriman, pers comm). Lithic assemblages of possible Later Mesolithic date excavated in the Sanderstead area (eg Little 1948) have not been re-evaluated.

The Mesolithic–Neolithic transition

The virtual absence of securely stratified Later Mesolithic sites and the rarity of Earlier Neolithic deposits in Greater London severely limit discussion of the transition from hunter-gatherer to farming societies in the region. A recent excavation at Brookway on the edge of Rainham Marsh (Gz HV4, HV5) recovered a number of Later Mesolithic microliths and Earlier Neolithic flintwork and pottery from the same layer (Pamela Greenwood, pers comm), but it is impossible to estimate the length of time separating the Mesolithic and Neolithic phases. Elsewhere, fieldwork along the



Excavations at Three Ways Wharf, Uxbridge, revealed a sequence of hunter-gatherer butchery sites on gravel islands in the floor of the Colne Valley

route of Bronze Age Way, Erith, has located flintwork of Later Mesolithic type sealed beneath peats ¹⁴C-dated to 4550–4320 BC (Beta-88688, 5570 ± 70 BP) (Bennell 1998, 11), while further along the route sherds of Earlier Neolithic carinated bowl were sealed by peats ¹⁴C-dated to 4040–3700 BC (Bennell 1998, 23).

In north London, the pollen diagram from West Heath (Greig 1989, 93–4) suggests local clearance of mixed deciduous woodland and the presence of cereal pollen (phase WHS 1b) prior to the elm decline, the latter still sometimes used to date the Mesolithic–Neolithic transition (see chapter 2 above). There was also evidence for burning, in the form of charcoal. As the pollen diagram was not independently dated, it is difficult to know if this phase should be attributed to the Later Mesolithic or Earlier Neolithic in conventional chronological terms. The succeeding phase (WHS 2a) is represented by the onset of the elm decline, large-scale woodland clearance, and the presence of cereal pollen, which certainly suggest agricultural activity. However, the recovery of the elm bark beetle *Scolytus scolytus* 200mm below the level of the elm decline may imply a biogenic rather than anthropogenic explanation for this phenomenon (Girling & Greig 1985; Girling 1988; 1989).

Conclusions

Our current knowledge of the Upper Palaeolithic and Mesolithic periods in Greater London can be summarised as follows.

Upper Palaeolithic

Evidence for human occupation during the Earlier Upper Palaeolithic period is very scarce in Britain as a whole. This is certainly the case in Greater London where the evidence consists of a few stray finds and the small lithic assemblage from the World Cargo site at Heathrow, though these finds suggest that the area was at least occasionally visited, possibly in the course of long-range hunting expeditions from areas further south. The Kempton Park and Shepperton gravels, together with the layers at the base of the Langley Silt Complex, probably hold the most potential for studying sites of this period in the future. Artefacts dating to the earlier part of the Later Upper Palaeolithic (the Windermere or Late Glacial interstadial) are also extremely rare in Britain, and the only major collection of artefacts of this period found close to the London region is that from Brockhill, Surrey (Barton 1992, 182). It is likely, however, given the known presence of human groups in southern Britain at this time, that sites in London may come to light. There is evidence for increasing exploitation of the Thames Valley and its tributaries, especially the Colne Valley, during the latter part of the Later Upper Palaeolithic, for example (the end of the Loch Lomond stadial and beginning of the early pre-Boreal phase, c 10,300–9700 BP), with the presence of the long-blade assemblages and fauna at Three Ways Wharf, Uxbridge (Lewis 1991) and Church Lammas, Staines. In general, the Upper Palaeolithic evidence is so limited that an interpretation of settlement patterns is perhaps best made with reference to the Mesolithic period. The most productive areas for future archaeological and environmental investigation, in this context, are probably the alluvial deposits along the Thames and its tributaries.

Mesolithic

Knowledge of the Mesolithic period in Greater London is dominated at present by Earlier Mesolithic sites and surface finds. Assemblages containing Horsham points are known, but given the poor quality of the information stored in the GLSMR and the present inaccessibility of some of the finds, further research is needed to assess their distribution. It is also apparent that current knowledge of Later Mesolithic activity in Greater London is very limited, and that securely stratified, well-dated and undisturbed occupation sites need to be found to redress this situation.

The considerable potential for discovering Later Mesolithic deposits of this kind in the London region is suggested by the excavations at sites just outside the Greater London boundary in the Alderbourne and Misbourne valleys, tributaries of the Colne in Buckinghamshire (Farley 1978; 1983).

The major impression gained from the map of Upper Palaeolithic and Mesolithic sites and stray finds (Map 2) is their concentration along the Thames tributaries, especially the Colne in west London, the Wandle in south London and the Cray in south-east London, and their rare occurrence in north London and in south-east London between the Wandle and Cray. The lack of evidence in north London may be explained in part by the extensive tracts of London Clay, which appears to have been unattractive for prehistoric settlement and was perhaps less productive compared to areas with lighter soils. The few flintwork concentrations which have been recorded in north London are located on more sandy outcrops, such as the West Heath site in Hampstead (Gz CA5), or on the Langley Silt ‘brickearth’ deposits at sites such as Aylands Allotments, Enfield (Gz EN1) and Northwold Road, Stoke Newington (Gz HK1). Sporadic finds elsewhere on the Thames terrace gravels and brickearths suggest that these areas were also widely exploited during the Mesolithic. The apparent concentration of sites in the Acton area (Gz EL4–5, EL8–9) may simply reflect the long history of work on Lower Palaeolithic sites in the locality (eg at Creffield Road; Gz EL4, EL8).

The lack of evidence from east London is less easy to explain and is likely to reflect a biased rather than a real distribution due to the relative lack of fieldwork in this area. The small cluster of sites along the junction of the Mucking gravels and the overlying alluvium in east London (such as Brookway, Rainham; Gz HV4, HV5) may well indicate the existence of well-preserved Mesolithic (and later) sites in the Rainham Marshes. The association between Mesolithic sites and alluvial deposits is further evident in the distributions of sites in river valley locations in west and south London, with notable concentrations at Kingston and Richmond, at the Brent and Wandle confluences with the Thames, and in north Southwark. A further concentration of Mesolithic sites in Greater London is located on the spring line which runs along the edge of the chalk outcrop in south London (eg Carpenter 1958), and includes the site at Orchard Hill, Carshalton (Gz ST15). Such a location may have been important for easy access to good-quality flint.

It would appear from this distribution pattern that river valleys and their floodplains were especially favoured by Earlier Mesolithic hunter-gatherers for settlement and resource procurement. Such locations would have offered a wide diversity of habitats and food resources, and waterborne transport may have been important for both subsistence strategies and group mobility. The evidence from Three Ways Wharf, Uxbridge would suggest that islands and bars in braided river systems were locations used for animal butchery during hunting expeditions, and possibly for temporary encampments. Other sites recorded in the Colne Valley and at Broxbourne in the Lea Valley share similar topographic and stratigraphic positions. It is likely, therefore, that alluvial areas will be especially important for Mesolithic studies in the future. However, sites such as West Heath and Orchard Hill are important reminders of the varied nature of the settlements and subsistence strategies of communities that were partly or wholly nomadic, occupying extensive territories that probably traversed different ecological and topographical zones.

The most widely used method for detecting flintwork scatters is systematic fieldwalking and surface collection of artefacts. Although this is impractical for much of Greater London, areas of agricultural land around the periphery could still be examined in this way, including areas of brickearth on the gravel terraces. More sophisticated analyses of settlement patterns lie in the future. Inter-site analyses of material culture assemblages and faunal remains, for example, have not been undertaken in the London region because of the rarity of well-excavated, securely stratified and well-dated deposits. As a result it is presently impossible to distinguish between ‘task-specific’ sites (except perhaps at Three Ways Wharf) and settlement sites, or to identify group territories.

The London evidence is relevant, however, to a discussion of the relationship between environmental change and cultural change during the Late Glacial and early post-glacial periods, a theme that pervades present studies of the Mesolithic in north-west Europe. Two environmental factors, in particular, must have had an impact on settlement patterns and economy during the Mesolithic. Firstly, the thickening of forest cover, which commenced during the pre-Boreal period

(pollen zone IV), and led to the development of the mixed deciduous woodlands of the Later Mesolithic and Neolithic (see chapter 1 above). Secondly, the rise in relative sea levels due to melting ice sheets, which inundated low-lying coastal plains in the present Thames estuary, causing increased sedimentation and floodplain development upstream, followed by peat formation along the major tributaries of the Thames. This process is clearly evident at sites in the Lea and Colne valleys, and in the Wandle Valley at Streatham House, Merton, where peat formation had begun by 8000 BC (see Wilkinson *et al* submitted; David Saxby, pers comm).

The effects of environmental change on the economies and settlement patterns of Mesolithic communities are open to debate, though progressive abandonment of occupation sites in low-lying floodplain locations and along the lower reaches of the river valleys would certainly have been necessary, with a shift to new settlement sites further upstream or higher up the valley sides. This model has been proposed for the Kennet Valley on the basis of faunal evidence (Carter 1976), and reviewed in more general terms for the Thames basin by Holgate (1988a). Environmental and archaeological evidence from recent excavations tends to support this interpretation. At Three Ways Wharf, for instance, rising water levels and subsequent peat formation in swamp conditions probably led to the abandonment of the area for hunting activities. The large quantities of charcoal in the peat at Three Ways Wharf (probably from fires nearby), and at other Thames tributary sites, also suggest widespread burning of woodland on the valley sides (Lewis *et al* 1992). The beneficial effect of burning forest cover for hunter-gatherer groups has been discussed by Mellars (1976; see also Bennett *et al* 1990), though an alternative interpretation would explain these charcoal deposits in terms of intensive occupation of river-edge locations. The simple model of settlement migration to higher ground will probably need to be modified as more evidence from Earlier and Later Mesolithic sites becomes available. It is worth noting that several valley sites with Earlier Mesolithic assemblages (*eg* Thatcham and Broxbourne) are close to sites in similar locations with Later Mesolithic material (Healy *et al* 1992).

Assessment of importance and potential

It is now recognised that the archaeology of the Upper Palaeolithic and Mesolithic in London should be regarded as having the same importance as the archaeology of other periods. The site at Three Ways Wharf, for example, is of national importance for the study of the Late Glacial and Earlier Mesolithic transition. The excavation of an *in situ* lithic and associated faunal assemblages dating to the end of the Late Glacial period is extremely rare, and to excavate similar and even more prolific Earlier Mesolithic assemblages on the same site is even rarer. The only British parallel is Seamer Carr in North Yorkshire (Schadla-Hall 1989). The Three Ways Wharf assemblages will not only allow for the study of cultural and environmental change during the Late Glacial to early post-glacial periods, using a sound chronology based on ¹⁴C dates, but also more detailed study of topics such as seasonality, hunting strategies, butchery and caching practices, tool manufacture and utilisation. The site may thus provide us with a 'snapshot' of the activities of mobile hunter-gatherer bands during part of their seasonal cycle of economic and other activities. The principal requirement in the future is for excavation of contemporary lithic and faunal assemblages from valley floor and other topographic locations, to compare with the evidence from Three Ways Wharf for an understanding of the wider structuring of social and economic practices.

English Heritage has made the study of well-preserved prehistoric occupation sites with organic remains a national research objective (English Heritage 1991, 36). It is now evident that there are likely to be numerous sites of Earlier Mesolithic (and probably also Later Mesolithic) date sealed beneath alluvial deposits in the Thames Valley and its tributaries. Three Ways Wharf provides an excellent example of the archaeological potential of these deposits, and how information from the Greater London area could enhance our wider understanding of the Mesolithic in Britain.

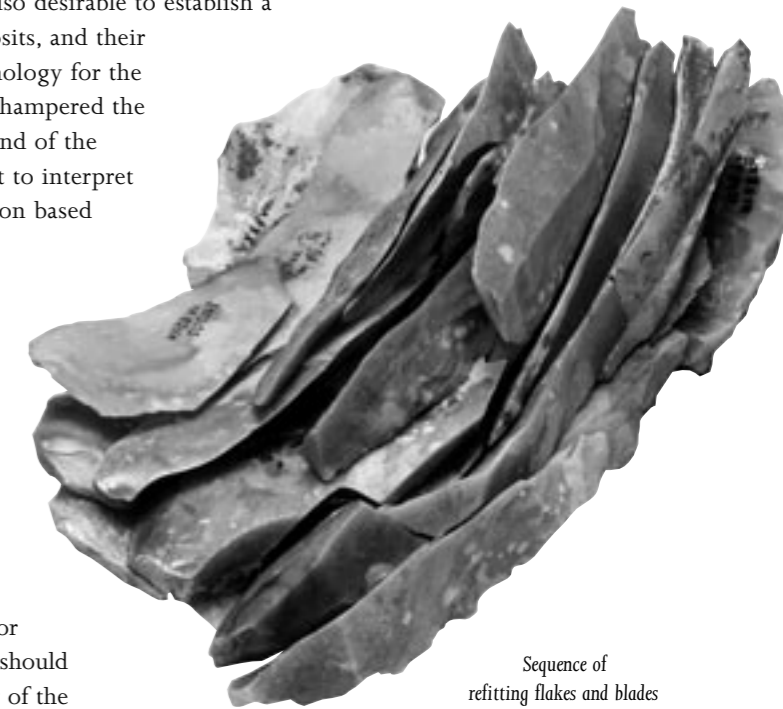
Compared to the relative wealth of data available for the Earlier Mesolithic, the Earlier Upper Palaeolithic and Later Mesolithic are poorly known. At present, there are no well-stratified and well-dated assemblages from excavated sites of either period, faunal remains are scarce and there

are very few ¹⁴C-dated deposits. Stray finds apart, we have only the recent handful of flints from Heathrow to show for the entire Earlier Upper Palaeolithic (Lewis in prep b), and mostly unstratified or residual pieces for the Later Mesolithic. It is evident that for both periods the future identification of potential sites requires particular attention. These same limitations also undermine studies of the Mesolithic–Neolithic transition, which has been highlighted as a research theme of national importance by English Heritage (1991). Environmental evidence from sites such as West Heath and Bramcote Green certainly illustrates the potential evidence available in London. The pollen and coleoptera sequence for the Mesolithic–Neolithic transition from West Heath, for example, is relevant to the wider debate concerning possible pre-Neolithic clearances and horticultural innovation, and the connection between Dutch elm disease and the elm decline (Girling & Greig 1985; Girling 1988). Direct evidence for cultural change, however, is lacking from the London region. The identification of sites of this period is clearly a major priority in regional terms, and potentially significant for European studies of the cultural transformation from hunter-gatherer to agricultural society and economy.

In more general terms, a programme of absolute dating is needed to establish a reliable chronological framework for the region. This programme should focus on the dating of artefacts and organic material from securely stratified contexts. Excavators should be aware of the importance of collecting material for ¹⁴C-dating, and should prepare systematic on-site sampling strategies. The dating of sedimentary sequences is also desirable to establish a chronology for the development of tributary valley peat deposits, and their relationship to Mesolithic activity. The lack of a general chronology for the Upper Palaeolithic and Mesolithic periods in Britain has also hampered the study of the major cultural transitions at the beginning and end of the Mesolithic, and change within the Mesolithic itself is difficult to interpret because of the lack of a detailed regional typological succession based on a solid chronological framework.

The location and excavation of more *in situ* Mesolithic sites are of great importance, those buried by alluvium obviously having the best-surviving stratigraphic and environmental sequences as well as the best archaeological preservation. Future excavation should adopt standardised recording systems and sieving using a standard mesh size to allow inter-site comparison of faunal and lithic assemblages, and all recovered lithic assemblages should be assessed for their suitability for functional analysis, which again would ideally be carried out on a standardised basis. Future projects should also be multi-disciplinary in their approach: fieldwork should not, for example, be restricted to the archaeological material alone, but should involve detailed recording, analysis, characterisation, and dating of the sedimentary sequences in the immediate vicinity. Such 'off-site' environmental work provides critically important information about changing environments and human responses to those changes, establishing a wider explanatory context for understanding individual sites.

It is clear that the alluvial deposits of the Thames floodplain and its tributary rivers offer the greatest archaeological and environmental potential for Upper Palaeolithic and Mesolithic studies in Greater London. Unfortunately, due to mineral extraction, large areas of the buried Late Glacial and early post-glacial landscapes which once existed in the Colne and Lea valleys have been destroyed with little or no assessment of archaeological sites. A starting point for future work would be a study of existing alluvial deposits using planning authority records and geological surveys, with a further study of the enormous amount of borehole data accumulated in Greater London by developers and planners to establish the depth and nature of alluvial deposits. By mapping the contemporary topography, it may be possible to identify favoured settlement or activity locations such as low-lying bars in braided river systems. Unfortunately, by their very



Sequence of refitting flakes and blades recovered from the site at Three Ways Wharf, Uxbridge

nature, sites buried beneath alluvium are difficult to detect: at present the only reliable way of finding these sites is by trial excavation, though future fieldwork programmes may well find selective borehole surveys, supplemented by geophysical survey, to be useful for site prospection.

Future studies of the Upper Palaeolithic and Mesolithic in Greater London would benefit enormously from a comprehensive review of all artefacts in collections, perhaps starting with a re-examination of information compiled for the CBA Gazetteer (Wymer 1977) and now held on a card index. Such a survey would hopefully adopt approaches similar to those of the Southern and English Rivers Palaeolithic Projects (Wessex Archaeology 1993; 1996). The artefacts themselves and associated records, housed in museum, local society and private collections, should also be re-examined to improve our knowledge of finds contexts and to provide a clearer picture of the distribution of Upper Palaeolithic and Mesolithic sites. This process may also help identify new localities for investigation and help prioritise the publication of existing site assemblages and collections.

A key aim for future Upper Palaeolithic and Mesolithic studies in London should be the publication of those large Mesolithic assemblages from sites occupying distinct topographical and geological locations, including Creffield Road, Ealing, Orchard Hill, Carshalton and the B&Q site in Southwark. This work would facilitate inter-assemblage comparison, allow for more sensitive identification of assemblage types in functional and cultural terms, and provide further information for studying spatial changes in resource exploitation and settlement patterns. It should also be possible to evaluate the suggestion that the lighter sandy soils of lowland Britain are associated with hunting assemblages, and that heavier clay and alluvial soils may be associated with more diverse lithic assemblages relating to a wider range of economic and settlement activities (Mellars & Rheinhardt 1978). Perhaps most important, however, is the need to identify deposits which have particular potential for enhancing our understanding of cultural life in this period. If in situ sites are threatened by development they should certainly be excavated, or if preserved in situ they should be sampled so that the site may be dated and characterised to aid future planning and improvement of subsequent research designs. In many respects, given that the potential of the evidence is of considerable significance in both national and international terms, the study of the Upper Palaeolithic and Mesolithic periods in the London region has barely begun.

GAZETTEER

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
BA1	BARNET	FLAKE	081836	523150	196250		Galley Lane.
BA2	BARNET	FLINT ARTEFACT	081901	517740	193530		Brockley Hill.
BA3	BARNET	FLINT ASSEMBLAGE	081935	525600	186900		Golders Hill Park.
BA4	BARNET	SCRAPER	081942	518100	194990		The Leys.
BA5	BARNET	PICK	081948	519320	192430		Edgewarebury Lane.
BA6	BARNET	FLINT ASSEMBLAGE	081950	519500	193950		Bury Farm.
BA7	BARNET	FLINT ARTEFACT	081995	524800	190500		Hendon Lane.
BX1	BEXLEY	FLINT ARTEFACT	070484	548600	172200		Stable Meadow Allotments.
BX2	BEXLEY	AXE	070446	551100	174100		Crayford Station.
BX3	BEXLEY	FLINT ARTEFACT	070447	550200	172800		Coldblow.
BX4	BEXLEY	FLINT ARTEFACT	070475	551000	175100		Crayford.
BX5	BEXLEY	AXE	070480	548028	171124		Harvill Road.
BX6	BEXLEY	FLINT ARTEFACT	070511	548900	172100		Bunkers Hill.
BX7	BEXLEY	IMPLEMENT	070514	548000	180500		Erith.
BX8	BEXLEY	FLINT ARTEFACT	070519	550500	174100		Hall Place.
BX9	BEXLEY	FLAKE	070529	550100	174300		Bourne Road.
BX10	BEXLEY	AXE	070569	550000	173300		Coldblow.
BX11	BEXLEY	FLAKE	070595	550600	172800		Baldwyns Park.
BX12	BEXLEY	CORE	070596	547500	171300		Foots Cray.
BX13	BEXLEY	FLINT ARTEFACT	070478	547500	171200		Foots Cray.
BX14	BEXLEY	FLINT ARTEFACT	070312	549500	173500		Bexley.
BX15	BEXLEY	FLINT ASSEMBLAGE	071552	550600	178800	BAW95	Bronze Age Way.
BY1	BROMLEY	FLINTWORKING SITE	070643	543940	163900		Mill Hill.
BY2	BROMLEY	OCCUPATION SITE	070646	541860	163930		Keston Common.
BY3	BROMLEY	FLINT ASSEMBLAGE	070741	546620	167050		The Greenway.
BY4	BROMLEY	FLINT ASSEMBLAGE	070852	546700	167600		Poverest Road.
BY5	BROMLEY	FLINT ARTEFACT	070654	542050	164060		Keston Common.
BY6	BROMLEY	FLINT ASSEMBLAGE	070736	544940	165540		The Ridge.
BY7	BROMLEY	AXE	070737	539550	169260		Martins Road.
BY8	BROMLEY	FLINT ASSEMBLAGE	070738	547850	165000		Goddington Park.
BY9	BROMLEY	AXE	070740	546610	166830		High Street.
BY10	BROMLEY	FLINT ARTEFACT	070742	546660	166670		Priory Gardens.
BY11	BROMLEY	FLINT ARTEFACT	070748	544200	164900		Darrick Wood.
BY12	BROMLEY	FLINT ARTEFACT	070749	543100	163600		The Larches.
BY13	BROMLEY	FLINT ARTEFACT	070753	545300	162000		Great Molloms Wood.
BY14	BROMLEY	FLINT ARTEFACT	070755	548500	170200		Ruxley Manor Farm.
BY15	BROMLEY	FLAKE	070788	543630	165860		Jasmine Close.
BY16	BROMLEY	FLINT ARTEFACT	070850	544990	165070		Tubbenden Lane.
BY17	BROMLEY	FLINT ARTEFACT	070851	545700	164800		Sevenoaks Road.
BY18	BROMLEY	FLINT ARTEFACT	070853	546660	165370		Park Avenue.
BY19	BROMLEY	FLINT ARTEFACT	070854	546760	167670		May Avenue.
BY20	BROMLEY	AXE	070855	546500	165300		St Olave's School.
BY21	BROMLEY	PICK	070856	546400	166400		Bruce Grove.
BY22	BROMLEY	AXE	070857	544300	164100		Farnborough Park.
BY23	BROMLEY	FLINT ARTEFACT	070858	545800	162800		Horwoods Gravel Pit.
BY24	BROMLEY	FLAKE	070859	544800	164200		Farnborough Hill.
BY25	BROMLEY	PICK	070861	544000	164000		Farnborough.
BY26	BROMLEY	IMPLEMENT	070863	547050	167250		Wellington Road.
BY27	BROMLEY	CORE	070936	541900	166100		Oakley Road.
BY28	BROMLEY	FLINT ARTEFACT	070948	547000	166720		Zelah Road.
BY29	BROMLEY	FLAKE	070958	544700	164600		Tubbenden Lane.
BY30	BROMLEY	FLINT ARTEFACT	070961	546950	167250		Lower Road Allotments.
BY31	BROMLEY	FLINT ARTEFACT	070964	547000	166200		Gillmans Road.
BY32	BROMLEY	FLAKE	070970	545400	166500		Lynwood Grove.
CA1	CAMDEN	AXE	081712	530800	182300		Gray's Inn Road.
CA2	CAMDEN	AXE	081717	526900	186500		Hampstead Heath.
CA3	CAMDEN	AXE	081761	525800	185800		Redington Road.
CA4	CAMDEN	FLINT ARTEFACT	081763	531200	181600		Holborn.
CA5	CAMDEN	OCCUPATION SITE	081726	525660	186760		West Heath, Hampstead.
CA6	CAMDEN	CORE	081702	530600	181300		Kingsway.
CT1	CITY OF LONDON	MATTOCK	041113	532120	181360		St Martin's-le-Grand.
CT2	CITY OF LONDON	MATTOCK	041114	532710	181690		Moorfields.
CT3	CITY OF LONDON	MATTOCK	041115	532920	181675		Finsbury Circus.
CT4	CITY OF LONDON	AXE	041110	531280	181160		River Fleet.
CT5	CITY OF LONDON	MACE	041111	532010	180930		Queen Victoria Street.
CR1	CROYDON	OCCUPATION SITE	020060	534180	161500		All Saints Church cemetery, Church Way, Sanderstead.
CR2	CROYDON	OCCUPATION SITE	020081	537400	164700		Jacksons Common, Shirley.
CR3	CROYDON	AXE	020017	532000	170000		Upper Norwood.
CR4	CROYDON	FLINT ARTEFACT	020019	532500	161500		Purley Downs.
CR5	CROYDON	AXE	020020	531550	163000		Foxley Wood, Purley.
CR6	CROYDON	FLINT ARTEFACT	020024	534600	163900		Ballards Plantation, Lloyd Park, South Croydon.
CR7	CROYDON	BLADE	020034	536700	163700		Addington Park.
CR8	CROYDON	BLADE	020040	530250	158250		Chaldon Way.
CR9	CROYDON	FLAKE	020042	532200	165300		Friends Road.
CR10	CROYDON	AXE	020043	531800	163100		Pampisford Road, South Croydon.
CR11	CROYDON	FLINT ARTEFACT	020044	532700	163600		Mansfield Road, South Croydon.

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
ST9	SUTTON	AXE	030223	529830	166800		Beddington Lane.
ST10	SUTTON	FLINT ARTEFACT	030225	528900	165010		Croydon Road.
ST11	SUTTON	FINDS	030227	529140	165240	BPK80	Beddington Park.
ST12	SUTTON	FLINT ARTEFACT	030228	530000	164500		Bandon Hill.
ST13	SUTTON	FINDS	020052	530720	165030		Aldwick Road.
ST14	SUTTON	FLINTWORKING SITE	030214	527900	164080		The Park.
ST15	SUTTON	OCCUPATION SITE	030216	527900	164400		Orchard Hill.
ST16	SUTTON	MATTOCK	020572	529795	165763	BSF87	Beddington.
ST17	SUTTON	FLINT ARTEFACT	021200	528750	166500	BST88	Beddington Lane.
TH1	TOWER HAMLETS	FLAKE	080739	533700	180400		Tower Bridge.
TH2	TOWER HAMLETS	FLAKE	081089	533600	180700	FSW14	ILAU excavation. Tower Bridge.
TH3	TOWER HAMLETS	FLINT ASSEMBLAGE	081093	533500	180700	THW85	ILAU excavation. Tower Hill.
WF1	WALTHAM FOREST	FLINT ARTEFACT	061173	539100	193400		Friday Hill, Chingford.
WF2	WALTHAM FOREST	FLINT ARTEFACT	061174	539400	194980		Chingford Plain.
WF3	WALTHAM FOREST	AXE	060272	535000	188000		Walthamstow Reservoir.
WW1	WANDSWORTH	AXE	031141	527400	175100		Battersea Rise.
WW2	WANDSWORTH	BLADE	031147	526100	174400		St Anne's Hill.
WW3	WANDSWORTH	FLAKE	031175	526900	171700		Khartoum Road.
WW4	WANDSWORTH	FLINT ASSEMBLAGE	031176	525900	175100		Wandsworth Town Centre.
WW5	WANDSWORTH	FLINT ARTEFACT	031180	522500	172300		Wimbledon Common.
WW6	WANDSWORTH	BLADE	031181	524700	175200		Putney Bridge Road.
WW7	WANDSWORTH	AXE	031182	525300	173400		Merton Road.
WW8	WANDSWORTH	AXE	031183	528900	177600		Battersea Waterworks.
WW9	WANDSWORTH	FLINT ARTEFACT	031184	523710	175000	HOW4/74	WHS excavation. Gwendolen Avenue.
WW10	WANDSWORTH	BLADE	031187	525700	175200		Point Pleasant.
WW11	WANDSWORTH	AXE	031188	524300	174000		Royal Hospital.
WW12	WANDSWORTH	AXE	031191	526310	174570		Bramblebury Estate.
WW13	WANDSWORTH	FLINTWORKING SITE	031192	523280	176000	SEF2/70	Sefton Street.
WW14	WANDSWORTH	FLAKE	020718	523300	174000		Putney Heath.
WW15	WANDSWORTH	FLAKE	020726	526000	174200		St Anne's Hill.
WW16	WANDSWORTH	AXE	020727	526000	175000		Ruckens Gate.
WW17	WANDSWORTH	FLINT ARTEFACT	021149	525200	175200	PPW89	DGLA excavation. Point Pleasant.
WW18	WANDSWORTH	FLAKE	031140	524600	174400		West Hill.
WW19	WANDSWORTH	AXE	031132	526300	174600		Bramblebury Estate.
WM1	WESTMINSTER	AXE	081126	530000	179000		Horseferry Road.
WM2	WESTMINSTER	PICK	081130	530300	179800		Victoria Embankment.
WM3	WESTMINSTER	AXE	081131	529600	180300		Pall Mall.
WM4	WESTMINSTER	FLINT ASSEMBLAGE	081149	530190	179550	WCG78	St Margaret Street.

4

THE NEOLITHIC PERIOD

John Lewis

Introduction and background

The Neolithic is traditionally defined as the period when hunting and gathering gave way to agricultural economies, the use of pottery, and the construction of communal monuments such as megalithic tombs, long mounds and ceremonial enclosures. These changes began in Britain during the late 5th millennium BC, roughly coinciding with a sharp decrease in the percentage of arboreal pollen, especially elm, which is usually interpreted as evidence for deliberate forest clearance.

It is currently accepted that the British Neolithic can be divided into an Earlier phase, c 4000–3200 BC, and a Later phase, c 3200–2000 BC (eg Whittle 1980). Some workers prefer a tripartite division into Early, Middle and Late, dated to c 4000–3400 BC, 3400–2800 BC and 2800–2000 BC respectively, in which the Early Neolithic is characterised by the Grimston Lyles Hill pottery style and the construction of the first long barrows and causewayed enclosures, the Middle Neolithic by the appearance of more elaborate pottery styles such as Peterborough wares, and the Late Neolithic by henge monuments and ceramic traditions such as Grooved ware and Beakers. The Earlier/Later notation is used here.

The Neolithic in southern Britain: material culture and chronology

Lithic artefacts

Earlier Neolithic lithic assemblages consist of a range of tools such as scrapers, awls, sickles, and flaked and polished axes of flint and stone. There is a tendency for narrower flakes in the Neolithic compared to the Mesolithic (Pitts & Jacobi 1979), and for the replacement of Later Mesolithic geometric microlith points by leaf-shaped arrowheads (Kinnes 1988, 4). Later Neolithic lithic assemblages are marked by the replacement of leaf-shaped arrowheads by transverse types, which were supplemented in the latter part of the period by barbed and tanged forms. The latter are often, though not exclusively, associated with Beaker ceramics. Other lithic types include maceheads and planoconvex knives, both of which have associations with Grooved ware pottery.

Ceramics

As fired clay technologies were unknown in the British Mesolithic, the introduction of ceramics is also a distinctive feature of the Earlier Neolithic. Herne (1988) has argued that the finely made Grimston-type carinated bowls may be chronologically limited to the late 5th to early 4th millennium BC and as such represent the first ceramic tradition in Britain. The majority of ¹⁴C dates associated with the succeeding Decorated Pottery styles of south-eastern Britain (Mildenhall, Abingdon and Windmill Hill styles) have been shown to date to the mid to late 4th millennium BC (Herne 1988, 12, table 2.1a). Herne also points out that there is little or no chronological overlap between carinated bowls and the ceramic traditions of the latter part of the Earlier Neolithic (Herne 1988, 23).

Formerly considered late in the sequence, Peterborough wares are now best regarded as belonging to a developed stage of the Earlier Neolithic ceramic tradition running on into the Later Neolithic (Gibson & Kinnes 1997, 67). However, the internal stylistic sequence of Ebbsfleet-Mortlake-Fengate is 'a matter of typological perception and cannot be supported by associations, stratigraphy or C14' (Gibson & Kinnes 1997, 70). Peterborough pottery is usually associated with what have been termed 'domestic' contexts, though its presence in the secondary silts of a number of causewayed enclosure ditches, together with a reappraisal of 'domestic' contexts such as pits, warns against too simplistic an interpretation of this pottery tradition.

The major remaining pottery tradition of the Later Neolithic proper, Grooved ware, is frequently found in pit deposits and at henge sites elsewhere in Britain, but is comparatively rare in Greater London, as indeed are Beaker ceramics (see chapter 5 below).

Monuments

Causewayed enclosures are among the most distinctive monuments of the Earlier Neolithic period, and usually comprise a series of concentric interrupted ditches, the latter often containing carefully placed deposits such as pottery, flint tools, and human and animal bone. The functions of causewayed enclosures were probably diverse, encompassing funerary, ceremonial and 'domestic' activities, and may well have changed over time (Mercer 1990). In south-eastern Britain mortuary sites consist mainly of long barrows and so-called 'mortuary enclosures' (eg Ashbee 1970; Kinnes 1992). The characteristic enclosure types of the latter part of the Earlier Neolithic include late causewayed enclosures, long mortuary enclosures and cursus monuments. Cursus monuments are thought to have been used for processional ceremonies in the late 4th and early 3rd millennia BC. The introduction of Beakers into Britain in the mid 3rd millennium BC can be linked to an increasing emphasis on single burial and round barrow funerary monuments, although these also appear earlier (eg Kinnes 1979). Later Neolithic henges, datable to the 3rd millennium BC, appear to have had ceremonial functions, perhaps in some cases linked to the solar calendar.

Evidence for Earlier Neolithic settlement sites and domestic houses is very sparse, both in London and more widely in the British Isles (eg Darvill & Thomas 1995; but see Runnymede below). Equally, there is no evidence for the existence of flint mines within the London region, although examples have been claimed on the Chilterns at Pitstone Hill, near Tring, and on the North Downs at East Horsley, Surrey (Holgate 1991).

Past work and nature of the evidence

Past work

In her 1976 survey of the Neolithic in Greater London, Jean Macdonald observed that 'Until about 30 years ago, the Neolithic phase in the London area was known almost entirely from chance finds, predominantly flint and stone tools, many of which had been recovered from the Thames during nineteenth-century dredging' (Macdonald 1976, 19). While the number of stray finds is still significant, the last 20 years or so have seen intensive fieldwork both inside and just outside Greater London which has greatly increased our database. However, current understanding still relies heavily on the use of inappropriate models imported from the better explored areas of the country – a recurrent theme in the later prehistory of the region.

The nature of the evidence

The distribution maps (Maps 3 and 4) and gazetteer are based on information from the GLSMR (1998), supplemented on occasion by additional unpublished information. Perhaps the most striking aspect of the maps is the comparatively rare occurrence of Neolithic finds over most of the region, with the exception of the west London gravels, the chalk outcrop in south London and Thames-side localities. The overall distribution pattern of Neolithic sites and finds is, on the face of it, little different from that of over 20 years ago (Macdonald 1976, 19), though there is now far more detailed evidence from individual sites and an emerging pattern of landscape development in particular areas such as west London.

A large part of the region is covered by London Clay, which is thought to have been unsuitable for Neolithic farming practices and settlement. It is also apparent, however, that the considerable area of London for which there is little evidence of Neolithic activity largely coincides with the area built on during the growth of London in the late 19th and early 20th centuries, when archaeological investigation was extremely limited. Neolithic studies in Greater London were dependent for many years on the large numbers of stray finds in museum and private collections. This material varies greatly in terms of contextual information and provenance (many artefacts, for example, were amassed by 19th-century collectors from dredging operations), and much remains unpublished.

The scatter of flint and stone axe finds across the claylands of north London is misleading, as most were recovered from sites in the valleys of the Thames tributaries (eg Gz BA3, HG2), and on the edge of outlying brickearth, sand and gravel deposits (eg Gz HG1). There are a few exceptions (eg Gz WF2), but these are likely to represent transient activity rather than permanent settlement, even allowing for the effects of urban development. This is similar to the pattern observed in Surrey (Field & Cotton 1987, 79). Concentrations of axes are also known on the Thames floodplain, on the gravel terraces and on the chalk outcrop in south London. This distribution is paralleled by the general distribution of Neolithic sites and finds (and those of the Mesolithic as well). There may, in addition, be some distinct patterns within the evidence. Most of the stone axes known from Surrey, for example, were recovered from the Thames (Field & Woolley 1984), and it is possible that this pattern is repeated in Greater London given the number of provenanced stone axes from the river and the comparatively rare occurrence of stone axes on the gravel terraces (Jon Cotton, pers comm). It is also worth noting the dichotomy in the distribution of arrowhead types from the region: the few well-provenanced Earlier Neolithic leaf-shaped arrowheads have a markedly riverine distribution, but Later Neolithic transverse forms are more widely scattered.

It is unsurprising, given the urban character of the area and its long history of occupation, that earthworks and extant field monuments are extremely scarce in Greater London. Of the major classes of Neolithic field monument, only one, the cursus at Stanwell (O'Connell 1990), is represented within the Greater London boundary. Causewayed enclosures have been located to the east at Orsett (Hedges & Buckley 1978) and to the west at Dorney, Eton Wick and Yeoveney Lodge near Staines (Carstairs 1986; Ford 1986; Robertson-Mackay 1987). It seems inconceivable that the gap in the distribution of field monuments in Greater London is a result of anything other than differential site preservation and problems of site identification. Claims that earthworks in Richmond Park, on Wimbledon Common and at Bedford Hill, Tooting comprise long barrows fail to convince (see Field & Cotton 1987, 80), however, though these remain uninvestigated. References to earthworks by early antiquarians must be treated with equal caution.

The use of aerial photography to detect sites in London has been limited due to the extensive urban coverage, and other factors such as unsuitable geology and flying restrictions in the vicinity of Heathrow Airport. Despite these handicaps, aerial reconnaissance has proved useful for detecting sites such as the enigmatic double-ditched enclosure at Mayfield Farm, East Bedfont and the Stanwell cursus, and potential Neolithic sites on the Hillingdon/Surrey border (Longley 1976a; Cotton 1986a). The Passmore Edwards Museum also had some success with air photographs in east London, though much of this work remains unpublished. Unfortunately, aerial photography and other remote-sensing techniques are unable to locate sites that are buried beneath alluvial deposits in the Thames floodplain. As Merriman (1990, 21) and others have pointed out, the level of the Thames and its tributaries would have been as much as 5m lower during the Neolithic, and the cloaking effect of alluvium on the floodplains should not be underestimated. The combined effect of centuries of alluviation and urban development can make access to Neolithic levels extremely difficult. At Corney Reach, Chiswick, for example, a gully containing Neolithic pottery was buried beneath 4m of alluvium and modern urban deposits (Gz HO17, HO19–21; Lakin 1996).

Neolithic material from excavations falls into two main categories. On some sites Neolithic artefacts have been recovered from contexts of later date which, while not in situ, do at least point to Neolithic activity in the area. In other cases, Neolithic material has been recorded in primary contexts. These finds were once restricted to a few large monuments and isolated features, but the last decade has seen a considerable increase in excavations of Neolithic sites as fieldwork has expanded on the gravel terraces of west, south-west and east London (eg Cotton et al 1986, 32–9; Merriman 1990, 22–4). The British Museum excavations at Runnymede Bridge (Needham 1991) have also provided an important insight into Neolithic riverine settlement, of considerable significance for a general understanding of the Neolithic in Greater London. Remarkably, in situ Neolithic material has also been recovered from sites in central London, including the Thames intertidal zone at Chelsea (Mike Webber, pers comm) and from Fort Street, Silvertown (eg Meddens 1996, 329). Excavation here has also provided accompanying suites of environmental information, including pollen sequences from Bramcote Green, Bermondsey (Thomas & Rackham 1996) and Bricklayers Arms, Southwark (Jones 1991) (see chapter 1 above).



!Wooden 'beater' or club from the Thames intertidal zone at World's End, Chelsea, ¹⁴C-dated 4660 ± 50 BP (Beta-117088)

Environmental evidence

The environmental evidence for the Neolithic is summarised in chapter 1 above, and only selected points will be discussed here. The effects on settlement of sea-level changes, inundation of low-lying areas, expansion of the Thames floodplain, and peat development in the Thames Valley and its tributaries during the Neolithic are likely to have been considerable. Although the variety of local environmental sequences in valley situations was far more complex than this unilinear scheme suggests, sea-level fluctuations must have had some indirect impact on Neolithic settlement patterns and economies throughout the Thames basin.

An important advance for interpretations of environmental sequences in the London region during the Neolithic is the provision of new pollen sequences, the best known of which is perhaps that for West Heath, Hampstead. Although not independently dated, the pollen diagram indicates a rapid decrease in elm and the presence of occasional grains of cereal pollen prior to the elm decline (Greig 1989). It is suggested that this early clearance initiated a process of soil erosion that led to the deposition of sediments at West Heath Spa (Girling & Greig 1989). One of the pollen diagrams from Runnymede Bridge also dates to the latter part of the Earlier Neolithic (Greig 1991), when the surrounding area appears to have been widely forested with alder/oak woods, scrubland close to the river, lime/elm woods on higher ground, and nearby grasslands. The most open conditions, with evidence for grasses, *Plantago lanceolata*, and cereal grains, were probably contemporary with the main phase of Neolithic settlement (Needham 1991, 373), although this was apparently preceded by a phase of activity associated with a segment of ditch (Needham & Trott 1987). Runnymede also provides evidence for Neolithic subsistence practices: carbonised cereals have been recorded (Stuart Needham, pers comm) and the faunal evidence suggests that stock-rearing was an important part of the economy, with large numbers of cattle, sheep/goat and pigs (Done 1991, 328–31). Food residues identified on pottery include pork dripping, fish products and honey (Needham & Evans 1987).

Further limited evidence for cereal cultivation has been recovered from a number of Peterborough Neolithic pits excavated on the west London gravel terraces, with individual grains of barley, emmer and bread wheat (John Giorgi, pers comm). Direct evidence of cultivation in the form of ard marks, recovered from several sites in north Southwark, appears to be significantly later in date (see chapter 5 below).

The archaeological evidence

Although an attempt was made to distinguish between Earlier and Later Neolithic material, and between funerary or ritual sites and domestic sites, the information held in the GLSMR was often insufficiently detailed to allow these divisions to be made with confidence. To a large extent this simply reflects the history of research and publication of Neolithic sites and finds in the Greater London area, but it also indicates the difficulties archaeologists now recognise in attempting to differentiate between ritual and domestic activity. Discussion of the distribution patterns of Neolithic sites and finds thus encounters the problem of a record biased by uneven fieldwork coverage, uneven data collation, limited publication and inherent interpretative ambiguities.

Earlier Neolithic

The ceramic style associated with the earliest agricultural communities in Britain, the so-called Grimston Lyles Hill ware, does not occur in any quantity at monumental sites such as causewayed enclosures (Kinnes 1988, 5). In the Thames basin, as elsewhere in Britain, this type of ceramic occurs as isolated and fragmentary finds, often in locations close to rivers. Unstratified sherds of a Grimston bowl were found during excavations on Taplow gravel at Rectory Grove, Clapham

(Gz LA1; Densum & Seeley 1982); others were sealed beneath peats dated 4040–3700 cal BC at Bronze Age Way, Erith (Bennell 1998, 23). Upstream from London, at Cannon Hill, Maidenhead, Grimston Lyles Hill pottery was recovered from a number of pits close to the Thames (Bradley et al 1975–6).

Ceramic styles tend to show increased decoration after the mid 4th millennium BC (Herne 1988, 12). Several ceramic groups from sites in Greater London and the Thames Valley have been dated to this period, such as the Abingdon/Mildenhall pottery recovered from the causewayed enclosures at Abingdon (Case & Whittle 1982), Yeoveney Lodge, Staines (Robertson-Mackay 1987) and Orsett (Hedges & Buckley 1978). Furthermore, several riverside sites of this period in Kingston and Twickenham (eg Gz KT11, RT3) have produced thick-walled, round-based and usually undecorated bowls, though in most cases their depositional contexts and the extent of later disturbance remain uncertain. At Eden Walk, Kingston (Gz KT11; Penn et al 1984), for example, Neolithic pottery, flint artefacts and worked antler were found within a naturally silted-up channel of the Thames. The material from Church Street, Twickenham (Sanford 1970), however, may be of potentially greater interest, as it has been suggested that the narrow 'stream channel' in which it lay can perhaps be reinterpreted as a ditch rather than a natural feature (Jon Cotton, pers comm).

At the Courage Brewery site, Southwark (Gz SW2), burnt and struck flint, including a leaf-shaped arrowhead, were found in humic waterlain silts overlying remnants of the contemporary foreshore, in which a number of hollows containing fragments of burnt clay were recorded (Merriman 1992, 264). Excavations at the B&Q site in Southwark (SW18; Rogers 1990) also revealed a scatter of flintwork including a leaf-shaped arrowhead, which may relate to settlement activity close to the large expanse of peat wetlands which existed in this period in the area of Bermondsey.

In east London, at Brookway, Rainham (Gz HV14), flintwork and pottery dating to the Earlier Neolithic, including leaf-shaped arrowheads and scraps of Mildenhall ware, were recovered from an alluvial layer overlying gravel at the edge of Rainham Marsh (Pamela Greenwood, pers comm). The gravel was cut by a number of possible pits and postholes, which may indicate the presence of a settlement. It is also notable that the very small size of the sherds from Brookway contrasts sharply with the large sherds of carefully placed Mildenhall pottery recovered from the ring-ditch set back on the adjacent gravel terrace at Launders Lane, Rainham (Gz HV2; Macdonald 1976, 21).

Without doubt the best evidence for Earlier Neolithic settlement in the lower Thames Valley comes from the site at Runnymede Bridge, just outside Greater London (Needham 1991). Runnymede produced *in situ* waterlogged Neolithic structures consisting of pile-driven timber uprights sharpened with stone axes, part of a possible stake-built longhouse (Stuart Needham, pers comm), and artefact assemblages including flintwork, bone points, pottery of the Earlier Neolithic decorated bowl series, stone axes and worked bark. ¹⁴C evidence suggests a period of occupation between c 4000 and 3500 BC (Needham 1991). Although the publication programme is still in progress, the wealth of information from Runnymede is outstanding and clearly illustrates the extraordinary archaeological and environmental potential of waterlogged sites sealed beneath alluvial deposits along the Thames Valley. Startling confirmation of this point has recently been provided by the recovery of a wooden 'beater' or club from the Thames foreshore at Chelsea, ¹⁴C-dated to 3530–3340 cal BC (Beta-117088, 4660 ± 50 BP) (Mike Webber, pers comm), and also by the redating of the Dagenham Idol to 2459–2110 cal BC (OxA-1721, 3800 ± 70 BP) (Coles 1990).

Causewayed enclosures are at present unknown in Greater London. The nearest example is located just to the west at Yeoveney Lodge, north-west of Staines town centre (Robertson-Mackay 1987), where a double-ditched enclosure was situated on a spit of gravel in the Colne floodplain, c 1.6km from the Thames. Excavations within the enclosure revealed pits, postholes, gullies and burnt flint, and large amounts of cultural material including flintwork, a pottery assemblage that has affinities with the Abingdon/Mildenhall ceramic style, and a faunal assemblage which consisted mainly of cattle, with sheep and pig. Although the site could perhaps be interpreted as a settlement, the nature of the finds recovered from the ditches (which included human remains

in one segment of the outer ditch) suggests that diverse social and religious activities were undertaken at the site. Sherds of Ebbsfleet pottery of the Peterborough ceramic tradition, recovered from the upper silts of part of the outer ditch, probably indicate a late phase of activity prior to the abandonment of the site at the end of the 4th millennium BC.

Other types of monuments constructed during the Earlier Neolithic are also known in the London region and in the areas immediately outside. At Launders Lane, Rainham (Gz HV2), large fragments of Mildenhall pottery together with some Beaker sherds were recovered from a pit, surrounded by a ring-ditch which also produced Mildenhall pottery. At Staines Road Farm, near Shepperton, Surrey, a series of placed deposits recovered from the primary fill of an interrupted ring-ditch included two human inhumations and sherds of undecorated open bowls. Reuse of the site involved the re-excavation of the ditches and the deposition of worked and unworked red deer antler, a wolf skull and large fragments of a number of Peterborough bowls. ¹⁴C dates from the primary fill of the phase 1 ring-ditch bracket the period 3640–3100 cal BC (OxA-4057, 4670 ± 85 BP). The crouched human burial also fell within this range. An axe-hewn oak pile from a waterhole nearby was dated 2280–1750 cal BC (GU-5278, 3630 ± 90 BP), a date clearly later than the main period of the ring-ditch (Jones 1990; Phil Jones, pers comm).

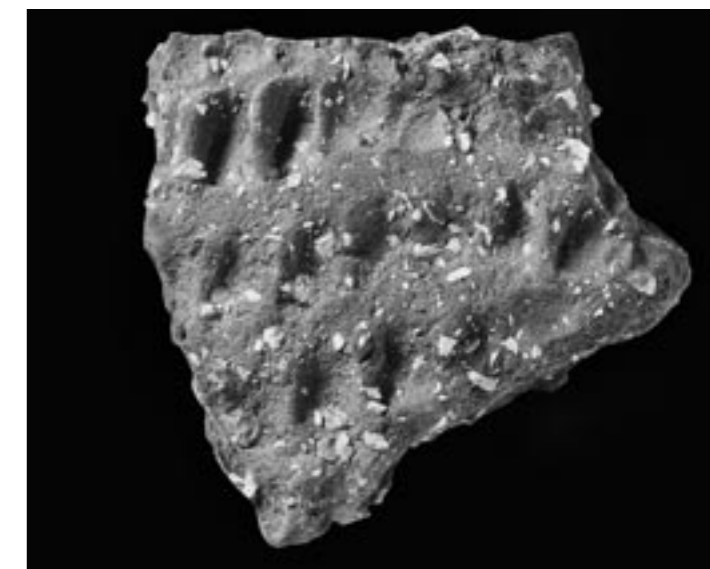
Another interrupted ring-ditch, unfortunately undated, has been excavated at Heathrow (Gz HL4; Canham 1978a; Cotton et al 1986, 33–40), and both Longley (1976a) and Cotton (1986a) have drawn attention to a number of cropmark sites in the Stanwell area which may have affinities with the Shepperton and Heathrow ring-ditches. A double-ring-ditch has also been excavated at Horton, in the lower reaches of the Colne Valley just outside Greater London. This consisted of a horseshoe-shaped enclosure later enclosed by an oval ditch, the fill of which produced a hybrid Mortlake/Fengate Peterborough bowl and a series of sewn birch bark containers (Digby nd; Steve Ford, pers comm). It is evident from this that the organised landscape of Neolithic and Early Bronze Age monuments which is now recognised on the western fringes of Greater London may have its origins in the latter part of the Earlier Neolithic (Field & Cotton 1987, 81).

Later Neolithic

Later Neolithic settlement sites in the London are extremely rare, and none is comparable to Runnymede Bridge. Domestic activity, if present, is represented mainly by scatters of lithic and ceramic material, and by shallow pits at a few excavated sites. The distribution of these finds indicates a general movement of settlement from Earlier Neolithic riverside locations to the gravel terraces and brickearth areas of the Thames and its tributaries. Scatters of Later Neolithic flintwork have been recorded in several parts of Greater London (eg Warren 1977). At Mayfield Farm, East Bedfont, systematic fieldwalking across a large double-ditch enclosure known from air photographs (Gz HO18) produced a large assemblage of Later Neolithic/Bronze Age flintwork. This material may represent the plough-damaged remains of a Later Neolithic settlement, probably unrelated to the enclosure which, it has been argued, may date to the Late Bronze Age (Cotton et al 1988; see chapter 5 below). A contrary view is suggested below.

In the Colne Valley, a silted-up stream channel at Packet Boat Lane, West Drayton (Gz HL27) contained sherds of Peterborough ware, flintwork and cattle bones showing traces of butchery. Adjacent to the channel was a pit containing an end scraper, and a further sub-rectangular pit packed with burnt flint and charcoal. It is possible that this material, similar to that recovered from Eden Walk, Kingston (Serjeantson et al 1991–2), derived from a nearby settlement. Other Later Neolithic 'cooking pits' of Packet Boat Lane type have been located at Staines Road Farm, Shepperton (Jones 1990) and Purley Way, Croydon (Tucker 1996); similar

Fragment of Neolithic pottery dating to 4500 BC



features have been recorded for the Bronze Age (see chapter 5 below). Sherds of Peterborough pottery (usually Mortlake style) and Grooved ware have also been recovered from sites on the Thames gravel terraces in the area around Heathrow (eg Cotton *et al* 1986; Andrews & Crockett 1996; Lorraine Mephram, pers comm). Grooved ware has also been found at Mucking, Essex (Clark 1993, 18). These sites usually consist of isolated shallow pits and scoops containing pottery, flintwork, sometimes bones of sheep or goat, and charred fruit pips and hazelnut shells (Dominique de Moulins, pers comm).

There is similar evidence from the gravel terraces of the Wandle Valley. Sherds of Ebbsfleet ware have been recovered from later contexts at King's College Sports Ground, Merton (Gz MT3), for example. Excavations at Baston Manor, Bromley (Gz BY3) produced a mixed ceramic assemblage representing at least 50 vessels, including Earlier Neolithic types, Ebbsfleet, Mortlake and Fengate styles of Peterborough ware (which predominate), and Beaker material, together with a large flintwork assemblage of c 2000 artefacts (Philp 1973a; Macdonald 1976, 24). A further flint assemblage was recovered from a peat-filled 'lake' at Wilmington in the Darent Valley, Kent (Philp *et al* 1998).

It is possible that pit sites and flint scatters are all that remain of Later Neolithic settlements, the main structures of which have been destroyed by ploughing or other kinds of disturbance (Cotton *et al* 1986). Conversely, however, some pits may have had more overt ritual connotations (Thomas 1991). This is certainly true in the case of Grooved ware deposition. A pit at Holloway Lane, Harmondsworth (Gz HL7), for example, contained over 500 sherds of Grooved ware (Durrington Walls sub-style) apparently stacked in the base of the feature. This pattern of deliberate placement of Grooved ware in pits together with carbonised hazelnuts and other wild foodstuffs has been noted in other parts of the country (eg Moffett *et al* 1989). Another smaller pit containing Grooved ware at Holloway Lane was cut by a large pit in which the quartered remains of an aurochs had been placed, associated with six barbed and tanged arrowheads of Later Neolithic/Early Bronze Age date (see chapter 5 below; Cotton 1991). It is important to note that the monument type most commonly associated with Grooved ware, the henge, is virtually absent from London. There is nothing to compare with the large henges known elsewhere in southern Britain, particularly in Wessex, and at present only a few possible 'hengiform' monuments have been identified (see below).

Although Later Neolithic ceremonial monuments are rare in most areas of Greater London, there is clear evidence for the development of an extensive 'ritual landscape' on the west London gravel terraces. The most impressive feature of this landscape was the second longest cursus monument in the country (after the Dorset cursus in Cranborne Chase), running from the Bigley Ditch (Colne) for 4km across the gravel terrace before it disappears under built-up areas of Stanwell (O'Connell 1990). Such a monument would probably have required the clearance of a large tract of woodland, and the scale of construction implies considerable investment and long-term planning on the part of local communities. Cursus sites are probably the most enigmatic of Neolithic monuments, though they appear to have served as foci for ritual practices such as ceremonial processions (Hedges & Buckley 1981). Although scraps of Peterborough pottery have been found in the tertiary silts of the Stanwell cursus ditches, datable artefacts were absent from primary contexts (O'Connell 1990), a problem frequently encountered with this class of monument. It has been suggested that the Stanwell cursus is of more than one phase, having been extended in length (Cotton in O'Connell 1990, 32). Recent work at Perry Oaks has confirmed earlier suggestions of a central internal bank instead of the more usual external twin bank arrangement, and has also demonstrated that, at least in parts of its course, the cursus was preceded by a substantial post-built 'avenue' (Andrews *et al* 1998). Air photographs may indicate an additional cursus and a mortuary enclosure once existed nearby (O'Connell 1990), but these structures have since been destroyed by gravel extraction. A further rectangular ditched structure measuring 40m x 20m, and interpreted by its excavator as a possible long mortuary enclosure, has been located at Imperial College Sports Ground, Harlington, to the north-west (Gz HL32; Wessex Archaeology 1998; Andrew Crockett, pers comm). Although not yet independently dated, it clearly underwent a number of phases of modification and formed an important part of the local prehistoric landscape.

Earlier monuments appear in some cases to have been adapted or reused during the Later Neolithic. Peterborough ware, for example, was deposited during the later phases of the Staines Road Farm and Horton ring-ditches, and the causewayed enclosure at Yeoveney Lodge, Staines had Ebbsfleet ware deposits in the upper silts of the outer ditch. In addition to the continued use and reuse of ring-ditches, other small circular ditched sites are known in the area from air photographs. A partially excavated site at Mayfield Farm, East Bedfont (Gz HO16) has been interpreted as a small Later Neolithic 'hengiform' monument on morphological grounds (Cotton *et al* 1988). Similar hengiform monuments at Dorchester-on-Thames were found adjacent to the large cursus (Atkinson *et al* 1951), an association which parallels the arrangement of monuments at Stanwell and East Bedfont.

Conclusions

Current knowledge and understanding

Much of the discussion in this section will focus on the west London brickearth-capped Thames gravel terraces. This is the only area in Greater London where the development of a characteristic Neolithic landscape of ceremonial and funerary monuments is recognisable, and the only area where a range of domestic and ritual sites can be examined.

The Mesolithic–Earlier Neolithic transition

The Mesolithic–Neolithic transition in north-west Europe is still poorly understood, especially the nature of economic and social interactions between hunter-gatherers and early farmers. Archaeological evidence for the presence of farming societies in Britain in the 5th and early 4th millennia BC has recently been reviewed by Kinnes (1988), who points to a general lack of stratified sites and the scarcity of reliable ¹⁴C dates. The evidence relating to the Mesolithic–Neolithic transition in the London region is very limited, and suffers from particular problems of preservation and recovery bias.

The Grimston bowls from Clapham and Erith are indicative of some activity in Greater London in the Earlier Neolithic, but at present these remain isolated finds. The Clapham example is of interest in that it indicates early activity away from the valley bottom. The West Heath, Hampstead pollen diagram hints at pre-elm decline exploitation of the high ground to the north of the Thames, elsewhere dated to c 3900 BC, though Kinnes (1988) is cautious about placing too much emphasis on the occurrence of cereal grains and pollen in early contexts.

At present, the paucity of the London evidence, and the absence of well-dated stratigraphic sequences to establish a regional chronological framework, severely limit our understanding of settlement patterns, subsistence economies and cultural change in the 5th millennium BC. It is possible, however, that Later Mesolithic cultural traditions continued in the London region far longer than is generally assumed, perhaps well into the 4th millennium BC, and that the appearance of Earlier Neolithic pottery was a relatively late phenomenon. Sites where Later Mesolithic flintwork and Earlier Neolithic flintwork and pottery occur in the same stratigraphic layer as at Brookway, Rainham (Gz HV14), hint at a chronological overlap, though there is generally no way to measure the time gap (if any) between phases of Mesolithic and Neolithic activity.

Barrett (1994b, 143–6) and Thomas (1991, 20–1) have suggested that hunting and gathering continued to play an important part in the economy of the Neolithic. Assessments of the evidence from southern Britain (eg Holgate 1988a; 1988b) also assume that farming was initially practised by indigenous Later Mesolithic hunter-gatherer populations, and that a reliance on cereals and domesticated animals only became prevalent in the 3rd millennium BC. Given the rise in river levels during this period, sites that may elucidate this problem are probably buried in the deep alluvial deposits of the Thames floodplain.

Earlier Neolithic

Archaeological evidence becomes relatively more common for the latter part of the Earlier Neolithic (after c 3500 BC). Earlier Neolithic finds distributions are biased towards riverine locations, though there is also evidence for exploitation of the higher river-terrace gravels and Thames tributaries. Excavations in the Wandle Valley, for instance, have produced relevant pottery finds, while pottery and flintwork (including several broken leaf arrowheads) have been recovered from Cranford Lane on Taplow gravels in the Crane Valley in west London (Jon Cotton, pers comm). The exposure of large areas of alluvium-covered land in river valleys during the Tilbury III

regression (which broadly corresponds with the Earlier Neolithic) would have allowed for increased exploitation of summer pastures, which may help to explain the predominantly riverine distribution of sites and finds of this period.

The evidence from the Thames gravel terraces of west London suggests that these areas were increasingly used for monument building during the latter part of the Earlier Neolithic, as at Staines Road Farm, Shepperton and Launders Lane, Rainham. The early to mid 4th-millennium BC ¹⁴C dates for the first phase of the Staines Road Farm ring-ditch provide confirmation.

The other characteristic monument type of the Earlier Neolithic, the causewayed enclosure, is also absent from the London region, which appears to be a blank area in the distribution of these monuments (Mercer 1990, 11). The Thames Valley causewayed enclosures to the west have been seen by Palmer (1976) as a distinct regional group, and there are further sites to the east at Orsett in Essex (Hedges & Buckley 1978) and less certainly at Chalk in Kent (Jessup 1970, 73; see Barber 1997, 80–3). It is questionable whether this gap reflects the real distribution of these enclosures given the problems in identifying prehistoric sites in the built-up areas of Greater London. The enclosures at Staines, Abingdon and other sites in the middle Thames are located near confluences with tributaries, suggesting that other enclosures may exist at similar locations in London, perhaps near the mouth of the River Lea, which has a causewayed enclosure in its upper reaches at Sawbridgeworth, Hertfordshire (Wilson 1975a, 183).

In regional terms, the Staines enclosure (Robertson-Mackay 1987), a possible pre-settlement enclosure at Runnymede Bridge (Needham & Trott 1987), and the enclosure sites

discovered at Eton Wick (Ford 1986) and Dorney Reach (Carstairs 1986), form a remarkably dense concentration adjacent to and upstream of the confluence of the Rivers Colne and Thames. Although the precise chronologies of the building and occupation at these enclosures are uncertain, it is clear that this part of the Thames Valley was an important focus for ritual, ceremonial and settlement activity in the latter part of the Earlier Neolithic. There seems no reason why similar sites should not occur in central London, although ancient alluviation and modern development have probably masked or destroyed most sites of this period, whose whereabouts are unlikely to be detected on small, deeply stratified sites within the modern urban context.

Neolithic Runnymede remains an extraordinary site by any reckoning, considering its preservation beneath later alluvial deposits, its survival, discovery and excavation, and the sheer quality and quantity of the evidence it has yielded. Comparable sites may yet be discovered elsewhere within the intertidal zone – an area that was dry land during the Neolithic and was only later inundated by rising water levels. The potential of this zone is only now becoming apparent, as the recent discovery of a wooden club or beater from Chelsea demonstrates.

Later Neolithic

Peterborough ware ceramics have been found at a number of sites in Greater London, particularly the Mortlake sub-style, with more frequent recent finds of Ebbsfleet ware, but relatively few occurrences of Fengate ware. Grooved ware pottery is relatively rare in the region, except for the west London gravel terraces, where these ceramics have been found in a number of isolated pits. It is interesting to note the scarcity of Beaker material in Greater London compared with the relative abundance of Later Neolithic material.

Most Neolithic finds in Greater London date to the later phase of the period when more widespread occupation of the Thames gravel terraces and tributary valleys occurred. This broadly corresponds with a rise in sea level (see chapter 1 above). While it is too simplistic to explain the exploitation of the gravel terraces as a result of the inundation of areas close to the river, rising sea level must have had a gradual impact on Neolithic settlement along the Thames Valley.

Henge enclosures, which are characteristic of the Later Neolithic in Wessex and other parts of Britain, are conspicuously absent from the region, though it is possible that the large double-ditched enclosure at East Bedfont, c 240m in diameter, is a large and somewhat atypical example. The site has been interpreted as a Late Bronze Age defended settlement (Cotton *et al* 1988; see chapter 5 below), but recent assessment of the archive of the trial excavation casts doubt on the dating evidence. A few sherds of post-Deverel-Rimbury pottery of the early 1st millennium BC were recovered from the tertiary silts in the inner of the two ditches. This suggests that the ditch had largely silted up by the Late Bronze Age, but does nothing to indicate the date of construction of the monument. It is worth noting that a much smaller ‘hengiform’ monument a few hundred metres to the west also contained early 1st-millennium BC pottery in the upper ditch silts. The Later Neolithic flintwork recovered by fieldwalking from within the enclosure may also have a bearing on its date, which only further work will fully elucidate.

The overall pattern of Later Neolithic sites on the west London gravels is perhaps most similar to the landscapes of the period recognised in Essex. Here, air photographs show distributions of smaller cropmark sites interpreted as hengiform monuments and ring-ditches and only two possible henge sites, both in the Stour Valley (Harding & Lee 1987, 148–52; Holgate 1996). This is similar to the pattern observed in west London (Longley 1976a). It has been suggested that small ring-ditches and hengiform monuments in the middle/lower Thames Valley (below the Goring Gap) fulfilled the function of large henges (Gates 1974). Earlier ring-ditches also appear to have been reused in this period, including the sites at Staines Road Farm, Shepperton, Horton, and Launders Lane, Rainham (where a few sherds of Beaker pottery were recovered). Deposits of Peterborough ware at the Staines causewayed enclosure, and in the ditch silts of the Stanwell cursus, indicate that these monuments continued to function as foci for material deposition in the latter part of the Earlier Neolithic and the Later Neolithic.

The impressive Later Neolithic landscape now recognised on the fertile alluvial terraces and brickearths in the great loop of the Thames between the mouth of the Colnebrook at Runnymede and the River Crane, is perhaps the most important result of recent fieldwork on Neolithic sites in the London region. It would appear to be a landscape dominated by ritual and funerary monuments, including the Stanwell cursus, hengiform monuments, ring-ditches and possible long mortuary enclosures. Older sites, such as causewayed enclosures, were in their final phases of use or already ancient monuments in the landscape of the period. Thames-side settlements such as Runnymede may also have been abandoned and replaced by dispersed settlements on the gravel terraces, though rising water levels may have required only local adjustments to the settlement pattern, with most Later Neolithic settlements still located on the river floodplains. Indeed, this might explain the absence of a ‘domestic’ landscape in west London, now masked by alluviation and urban development, leaving the remnants of the ‘ritual’ landscape visible on the higher gravel terraces. The spatial separation of different kinds of practices accords with the recent interpretation of the Later Neolithic landscape on Cranborne Chase in Dorset (Barrett *et al* 1991), where monuments appear to have been situated at the edge of settled territories.

It is possible that the Peterborough ware and Grooved ware deposits found in isolated pits in west London, associated with faunal remains (including bones of wild animals such as deer) and gathered foodstuffs such as crab apples, sloes and hazelnuts, represent deliberate structured



Excavation of part of the Neolithic cursus monument at Perry Oaks, Heathrow

deposits serving some ritual purpose. If so, these materials may have been specially selected for deposition and bore little relation to the wider economy. Alternatively, if these sites do represent domestic activities, they may indicate that hunting and gathering still played an important part in the Later Neolithic economy. The scattered nature of the pits has led Jon Cotton (pers comm) to speculate that they were located in small clearings in a wooded landscape, which may also point to hunting and gathering practices. In this context, the unique aurochs burial at Holloway Lane, Harmondsworth may perhaps be seen as a culmination of the Neolithic 'structured pit deposit' tradition in west London.

At present, it is unknown whether similar ritual landscapes existed in other parts of Greater London during the Later Neolithic. Fieldwork on the Wandle gravels has produced Later Neolithic material but no monuments have yet been identified. The picture is similarly sketchy on the east London gravel terraces where, Mucking apart, very little Grooved ware has been recorded, though sites such as Launder Lane and Brookway suggest that the area has considerable potential.

The importance of the River Thames as a ritual focus in the Neolithic should not be underestimated. Bradley (1990) and others have interpreted the deposition of large numbers of stone axes in the Thames (including items transported from as far afield as Cornwall, Westmorland, Wales, Ireland and Europe) as having a ritual significance. Conversely, axes recovered from an area of submerged forest on the intertidal zone at Purfleet were interpreted as being 'compatible with a woodland environment' and indicative of a specialised activity area (Wilkinson & Murphy 1995, 98). Field and Woolley (1984) have noted that most of the stone axe groups in Surrey date to the Later Neolithic, and that there are significant concentrations of finds from the confluences of the Thames and its tributaries. This again suggests that these locations were important during the Neolithic. The presence of imported axes has implications for the study of long-distance trade and exchange systems, and Cummins (1979, 12) has suggested that London acted as a secondary distribution centre for Group 1 axes from western Cornwall though this interpretation has recently been challenged by Berridge (1994).

The rarity of Beaker and Early Bronze Age sites and finds in Greater London (see chapter 5 below) severely limits studies of the Later Neolithic–Early Bronze Age transition. Cropmarks which have been interpreted as a linear barrow cemetery at Stanwell may date to this period, possibly indicating continuity in the ritual use of this landscape during the Early Bronze Age. Cotton has suggested that this period in London may have been marked by cultural continuity, with some localised adoption of selected items of the Beaker 'package'

such as barbed-and-tanged arrowheads, while other aspects such as Beakers and copper axes were ignored in favour of traditional alternatives (Cotton et al 1986, 41). The absence of Beaker pottery from the large expanses of the west London gravel terraces now examined and the respect afforded the Stanwell cursus at Perry Oaks could be taken as corroboration of this view.

Assessment of importance and potential

It is apparent that despite the physical obstacles to field archaeology and the fragmentary nature of the material record for the Neolithic, Greater London possesses significant sites and finds of potential importance for the study of the period in both regional and national terms. One of the major obstacles to the study of the period in London, the non-publication of fieldwork results, is currently being addressed by the MoLAS publication programme, funded by English Heritage. This will make available the results of work on the west London gravels, in the form of consolidated reviews of the evidence from a number of sites, rather than isolated discussions of prehistoric material in site reports mainly concerned with the evidence of later periods.

To further realise the potential of Neolithic archaeology in Greater London it will be necessary to address some serious deficiencies in the evidence and in current interpretative approaches. There is no regional chronological framework and very few ¹⁴C dates with which to structure studies of the material evidence. Although parallels have been sought from outside the region to date pottery and flintwork, this is far from satisfactory, given the distinct regional character of the cultural succession in London (there is little Grimston-type pottery or Beaker material, for example, and no henge monuments). The ¹⁴C dates that are available have been obtained on a piecemeal basis, with no consideration of long-term aims; it is evident that the implementation of a coherent dating programme is of primary importance. Similarly, an overview of Neolithic flint and pottery assemblages is required to establish regional flintwork and pottery typologies. In this context, petrological analysis of pottery may clarify the development of Peterborough ware in the London area (which would be of considerable interest in national terms). An analysis of the association of different types of pottery with different types of site might also prove illuminating.

English Heritage (1991, 36) has highlighted the study of the Mesolithic–Neolithic transition as a major academic priority, and suggested that deposits which are likely to span all or part of this period should be targeted. The deep alluvial sequences in the Thames floodplain and its tributaries may well prove especially important in this regard. Already we have traces of a plank-built trackway at Fort Street, Silvertown dated 3030–2700 cal BC (GU-4409, 4280 ± 50 BP), and of an oak club or beater from Chelsea, together with traces of submerged forests at Bankside and Chelsea. The same document also identifies the period 2500–2200 BC as a significant period of change in settlement, burial and monument types, with a broadening of the economic base, and that there is a need to direct research to investigate the processes involved. It is clear that these changes can be observed in Greater London on the gravel terraces, where work over the last 15 years has begun to put the rich Thames finds in a wider context, and where future work will probably provide the best opportunities in the London region for landscape-based studies of the period. Sites such as Runnymede have provided deeply stratified, high-quality environmental and archaeological evidence which allows information from these other sites to be put into sharper focus. It is clear that the alluvial deposits in Greater London have the potential for excellent preservation of lithic, ceramic and organic material, together with excellent environmental evidence. Merriman (1992), among others, has called for more work on these deposits, and has suggested that further use could be made of borehole data to establish the palaeotopography of sub-alluvial areas and for predicting site locations.

This assessment has illustrated the huge increase in our knowledge of the Neolithic in Greater London since the last review in 1976. Considering the densely populated and built-up character of the Greater London conurbation, it is perhaps surprising that we know so much, rather than so little, of the period. Although there are still many aspects of the Neolithic in the region which remain obscure, the potential significance of the archaeology of Greater London for increasing our understanding of the period is undeniable and should be more widely recognised.



The wooden Dagenham Idol, found in Rainham Marshes in 1922 and ¹⁴C-dated 3800 ± 70 BP (OxA-1721). © Colchester Museum

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
SW8	SOUTHWARK	FINDS	090827	532520	180110	15KS580	Southwark Street.
SW9	SOUTHWARK	FLINT ASSEMBLAGE	090840	532510	179830	207BH572	Borough High Street.
SW10	SOUTHWARK	FLINT ASSEMBLAGE	090854	532550	179670	AB78	Arcadia Buildings.
SW11	SOUTHWARK	FLAKE	090862	532590	180050	107BH581	Borough High Street.
SW12	SOUTHWARK	FLINT ARTEFACT	090916	532600	179930		Borough High Street.
SW13	SOUTHWARK	POTSHERD	090999	532800	180170	11STS77	St Thomas Street.
SW14	SOUTHWARK	FLINT ARTEFACT	091065	532530	179700	SB76	Silvester Buildings.
SW15	SOUTHWARK	FINDS	091168	533350	179800	WG87	Whites Grounds.
SW16	SOUTHWARK	FINDS	091174	533800	178500	BLA87	Bricklayers Arms Railway Yard, Rolls Road.
SW17	SOUTHWARK	KNIFE	091238	534800	179700	PW89	Platform Wharf.
SW18	SOUTHWARK		0	0	0	BAQ90	Old Kent Road.
SW19	SOUTHWARK	FIRE DEBRIS	090846	532505	179930	124BH577	Borough High Street.
ST1	SUTTON	FLINT ARTEFACT	021185	524330	163770	PRO90	Park Road.
ST2	SUTTON	OCCUPATION SITE	030231	527930	162360		Queen Mary's Avenue.
ST3	SUTTON	POTSHERD	020366	530100	165500		Beddington Lane.
ST4	SUTTON	MATTOCK	020572	529795	165763	BSF87	Beddington Lane.
ST5	SUTTON	AXE	020573	529795	165763	BSF87	Beddington Lane.
ST6	SUTTON	SICKLE	030231	527930	162360		Queen Mary's Avenue.
ST7	SUTTON	BOWL	030234	529830	166610		Beddington Lane Transport Depot and Warehouse.
ST8	SUTTON	AXE	030237	527930	165700		Dale Park Avenue.
ST9	SUTTON	SCRAPER	030238	528800	162600		Woodcote Road.
ST10	SUTTON	AXE	030239	530140	164260		Bandon Hill.
ST11	SUTTON	FLINT ARTEFACT	030242	529680	165500		Beddington Park.
ST12	SUTTON	AXE	030243	530710	162370		Hillcrest Road.
ST13	SUTTON	FINDS	020116	530720	165030		Aldwick Road.
TH1	TOWER HAMLETS	FLINT ASSEMBLAGE	081086	533603	180810	TRT85	Trinity Square.
TH2	TOWER HAMLETS	AXE	081088	533600	180200	FSW14	Tower Bridge.
TH3	TOWER HAMLETS	FLINT ASSEMBLAGE	081093	533500	180700	THW85	Tower Hill.
TH4	TOWER HAMLETS		0	0	0		Albert Dock.
WF1	WALTHAM FOREST	AXE	060723	538000	186100		Frenchs Pit.
WF2	WALTHAM FOREST	AXE	060848	539050	193050		Hatch Lane.
WF3	WALTHAM FOREST	AXE	060851	536476	190545		Manor Road.
WF4	WALTHAM FOREST	ARROWHEAD	060865	537550	189850		Farnham Avenue.
WF5	WALTHAM FOREST	FLINT ARTEFACT	060269	539170	193050		Chingford Hatch.
WW1	WANDSWORTH	AXE	020732	523400	174100		Putney Heath.
WW2	WANDSWORTH	FLINT ARTEFACT	020733	524000	175200		Fairfax Estate.
WW3	WANDSWORTH	AXE	020789	526400	174800		Huguenot Place.
WW4	WANDSWORTH	AXE	020790	526600	174700		Wandsworth Common.
WW5	WANDSWORTH	AXE	020791	526800	174600		Spencer Park.
WW6	WANDSWORTH	FLINT ARTEFACT	020792	527100	174900		Clapham Junction.
WW7	WANDSWORTH	FINDS	020806	523960	175150		Lawn Estate.
WW8	WANDSWORTH	FINDS	031193	523200	175200		Dealtry Road.
WW9	WANDSWORTH	FLINT ARTEFACT	031198	525200	174700		Ruckers Estate.
WW10	WANDSWORTH	AXE	031199	525010	174610		West Hill.
WW11	WANDSWORTH	AXE	031201	527500	175460		Lavender Hill.
WW12	WANDSWORTH	AXE	031202	523720	173220		Inner Park Road.
WW13	WANDSWORTH	AXE	031235	523800	174500		Putney Hill.
WW14	WANDSWORTH	AXE	031240	522300	175000		Huntingfield Road.
WW15	WANDSWORTH	FLINT ASSEMBLAGE	031242	523460	176010	DANI1/73	Danemere Street.
WW16	WANDSWORTH	AXE	031243	522900	175700		Putney Lower Common Cricket Pitch.
WW17	WANDSWORTH	SCRAPER	031244	526100	175200		Eltringham Street.
WW18	WANDSWORTH	SCRAPER	031245	525800	174800		Fairfield Street.
WW19	WANDSWORTH	AXE	031246	528000	175600		Sisters Estate.
WW20	WANDSWORTH	FLINT ASSEMBLAGE	031248	523710	175000	HOW4/74	Gwendolen Avenue.
WW21	WANDSWORTH	SCRAPER	031249	524800	175200		Wandsworth Park.
WW22	WANDSWORTH	FLAKE	031250	524300	174000		Royal Hospital.
WW23	WANDSWORTH	FLINT ARTEFACT	031254	528200	174930		Clapham Common.
WW24	WANDSWORTH	FINDS	031255	523800	175600	BEM3/72	Bemish Road.
WW25	WANDSWORTH	FLINTWORKING SITE	031192	523280	176000	SEF2/70	Sefon Street.
WW26	WANDSWORTH	AXE	081106	530400	181200		Drury Lane.
WM1	WESTMINSTER	AXE	081133	530200	179700		Westminster.
WM2	WESTMINSTER	AXE	081134	528300	179800		Hyde Park Corner.
WM3	WESTMINSTER	AXE	081135	529420	179180		Francis Street.
WM4	WESTMINSTER	AXE	081136	530200	181000		Long Acre.
WM5	WESTMINSTER	FLAKE	081139	530250	179000		Millbank.
WM6	WESTMINSTER	AXE	081240	530100	179940	TRG60	Whitehall.
WM7	WESTMINSTER	AXE	081253	530200	179900		Richmond Terrace.
WM8	WESTMINSTER	FLINT ASSEMBLAGE	081316	530220	179620	NPY73	New Palace Yard.
WM9	WESTMINSTER	PIT	083649	528400	180100	PRL96	Curzon Gate, Park Lane.
WM10	WESTMINSTER	FLINT ASSEMBLAGE	083686	528400	180100	PRL96	Curzon Gate, Park Lane.



THE BRONZE AGE

Nigel Brown and Jonathan Cotton

Introduction and background

The Bronze Age is conventionally divided into three: Early Bronze Age (c 2000–1500 BC), Middle Bronze Age (c 1500–1000 BC) and Late Bronze Age (c 1000–650 BC). These periods were originally defined largely on the basis of distinctive artefact types, mostly during the 19th and early 20th centuries. Few settlements were then known (as indeed is still the case for the Early Bronze Age), and most of the evidence was derived from funerary monuments, burials, metal hoards and single metal finds. A number of key overviews of the period have been published, many of the older of which concentrated on the available material evidence. More recent works have sought to downplay the centrality of artefact typologies and have attempted instead to reconstruct the nature of Bronze Age societies, and to examine the ways in which these might have changed and developed over time.

Material culture, chronology and research themes

Characteristic metal artefacts of the Early Bronze Age include copper and bronze flat and flanged axes, and less common items such as daggers, spearheads and halberds. Pottery of this period from Greater London consists of Beakers (Clarke 1970) and Collared Urns (Barrett 1973; Longworth 1984; Needham 1987), though neither class is particularly well represented. The region is not alone in having produced little in the way of settlement evidence although, untypically, the funerary record is scarcely better, with only a handful of barrows surviving down to the modern era.

The Middle Bronze Age is characterised by new forms of metalwork, notably a particular form of axe (the palstave), and narrow-bladed swords or rapiers (Rowlands 1976). Pottery of this period in south and south-east Britain is represented by Deverel-Rimbury ceramics, dominated by bucket-shaped vessels and finer globular urns (Barrett 1973; 1980). Many such vessels were recovered from small flat grave cremation cemeteries uncovered principally in west London during 19th- and early 20th-century brickearth and gravel extraction; only recently has accompanying settlement activity begun to be widely recognised.

The Late Bronze Age is marked by changes in metalwork types and also metallurgy, with the introduction of lead-bronze leaf-shaped swords and socketed axes (O'Connor 1980), many of the former deposited in the Thames and the latter in large hoards buried on dry land. The pottery of this period comprises a wide range of post-Deverel-Rimbury ceramics including a variety of fine vessel types (Barrett 1980). Formal funerary rites are hard to discern in the archaeological record although a wide range of settlement types now existed, together with evidence for large-scale land division in the form of linear ditches and complex field systems.

In the last 30 years, relative dating based on typological sequences has been augmented by ¹⁴C dates, although there is still a shortage of such dates from London. The Bronze Age in the surrounding counties has been synthesised in a series of papers: Couchman (1980) and Brown (1996) in Essex; Champion (1982) and Champion and Overy (1989) in Kent; Needham (1987) in Surrey; Holgate (1995b), Bryant (1995) and Farley (1995) for the Chiltern areas of Buckinghamshire and Hertfordshire; and at a regional level for the eastern counties by Brown and Murphy (1997). Furthermore, in two important recent papers, Needham (1993; 1996) has reviewed the Bronze Age chronology of Britain, with particular reference to the south-east and Europe, respectively.

In developing our understanding of the Bronze Age in Greater London a number of key factors should be borne in mind. The influential 'core area–buffer zone' model proposed for the Thames Valley by Barrett and Bradley (1980), to explain the dominance of the upper Thames in the Early Bronze Age and the dominance of the lower Thames in the Middle and Late Bronze Age, was first mooted 20 years ago. This model still provides a useful point of departure, if only because it seeks to integrate and account for the dynamics of Bronze Age activity along the whole length of the Thames Valley (eg Thomas 1999). Since Greater London is a peculiarly artificial concept for the study of prehistory, it is important that its Bronze Age is explored with due regard for evidence from neighbouring areas. Until recently, Greater London had little to contribute to the debate beyond its poorly contexted Thames metalwork and antiquarian cemetery finds. However, recent a

nd ongoing fieldwork has begun to supply hitherto missing settlement and contextual data that will allow coherent explanations to be developed. The potential for study of the interplay between human activity within the changing floodplain environment, and on the adjacent gravel terraces, has been highlighted by recent work. The requirements of PPG16 offer a number of opportunities to extend the range of our understanding, not least on the hitherto under-investigated areas such as the claylands. A recent broad-brush assessment of the situation in the London region (Phillipotts 1997) suggests that of all the prehistoric periods the Bronze Age has benefited most from developer-funded archaeology.

The challenge for the future is to use this growing body of data. Explanations need to be developed that address issues recently identified as central to an understanding of the Bronze Age (eg Barrett 1994b; Bradley 1998). There is little doubt that the Bronze Age data from Greater London can be used to make positive contributions to our understanding of the period, not only in Britain, but of a wider region of north-west Europe. In order to achieve this it will be necessary to develop programmes of integration and synthesis, and this is particularly vital if the full potential of PPG16 work is to be realised.



Early Bronze Age aurochs burial, Holloway Lane, Harmondsworth

Past work and nature of the evidence

Past work

Until recently, the Bronze Age of the London region was overshadowed by the embarrassment of metalwork riches recovered from the Thames during programmes of 19th- and early 20th-century dredging, much of which found its way into the collections of local antiquarians or on to the London antiquities market via dealers such as G F Lawrence (see Smith 1920; Lawrence 1929). Contemporary fieldwork extended little beyond the desultory opening of the largest of the few surviving earthen barrows (Akerman 1855), and the salvaging of the contents of a handful of cremation cemeteries accidentally uncovered during gravel-digging and housebuilding (eg Roberts 1871). The contents of these cemeteries were drawn together by John Barrett (1973) in a paper which, alongside earlier contributions from Francis Celoria and Jean Macdonald to the 1969 Victoria County History and his own subsequent chapter on the Bronze Age in the *Current knowledge and problems* volume (Collins et al 1976), sought to place Bronze Age studies in the region on a firmer footing.

Since then the excavation campaigns of the late 1970s, 1980s and 1990s have proceeded apace, though largely without the benefits of the aerial photographic cover or field survey usually available in other regions – the presence of Heathrow Airport and diminishing acreages of open land having conspired largely to nullify these approaches. Nevertheless a surprising range of data is now available with which to begin to reconstruct Bronze Age settlement activity on the gravel



Bronze Age arid marks etched into the surface of Horsleydown island, Wolseley Street, Bermondsey

terraces and, following PPG16 (Phillpotts 1997), the areas beyond (Map 5). This has brought particular rewards across the modern Thames floodplain and along the intertidal zone, where a series of wooden structures including trackways and accompanying palaeoenvironmental sequences has recently emerged (eg Meddens 1996). As a result the expanded London data set now allows us to contextualise the famous metalwork assemblages from the river, and is beginning to bring the region into line with the better-researched areas upstream and downstream.

The nature of the evidence

The distribution map (Map 5) and site gazetteer are derived from a printout of the GLSMR (up to 1998) and the NMR list of Bronze Age excavations, augmented by references in the annual excavation reviews published in the *London Archaeologist* and personal knowledge. However, detailed information concerning individual finds contained in the GLSMR, particularly metal objects, is often limited, and it has not been possible to distinguish particular artefact types within broader artefact categories such as swords and axes. This archive also contains very little specific information concerning the metalwork finds from the Thames, even though the prodigious quantity of bronze metalwork recovered from the river is the most famous aspect of the Bronze Age of the London area, and the subject of considerable ongoing analysis and discussion (eg Rowlands 1976; Needham & Burgess 1980; O'Connor 1980; Bradley 1990; Needham et al 1997; Thomas 1999).

A glance at the sites and finds plotted on the distribution map (Map 5) reveals some obvious concentrations and blank areas. The numerous finds in central London are a measure of the long history of antiquarian study in this area and the intensity of more recent development and archaeological investigation. Few finds are known to the south of this concentration, which

may reflect the rapid urbanisation of this area and limited archaeological recording in the 19th century. This blank zone is surrounded by a swathe of findspots from Croydon eastwards to the Thames estuary, which probably reflects the greater interest shown in archaeological remains during the development of these suburbs in the early 20th century, coupled with more recent investigations (eg Adkins & Needham 1985; Needham & Burgess 1980). In north-east London, there are numerous finds along the Lea Valley, including important discoveries made during drainage work and reservoir construction in the late 19th and early 20th centuries (Hatley 1933), and a scatter of finds to the east of the Lea, found in the course of early 20th-century urban development and recent archaeological work, the latter often conducted in advance of gravel extraction. The few findspots in north London may in part reflect a lack of archaeological investigation because of the assumption that the claylands in this area were unsuitable for prehistoric settlement; this is something that future work generated by PPG16 requirements may redress. In west London, mineral extraction has attracted considerable antiquarian interest since the 19th century, and more intensive archaeological fieldwork in recent years (eg Cotton et al 1986), resulting in a dense concentration of sites and finds. South-west London has also benefited from a long history of antiquarian study, especially in Surrey, and considerable recent fieldwork (eg Needham 1987; Field & Needham 1986; Jones 1987; O'Connell 1990).

The archaeological evidence

The evidence from London is described and discussed below on the basis of the tripartite-period division outlined earlier, but it is important to note that this framework is arbitrary in relation to many of the cultural distinctions evident during the Bronze Age, and that there was considerable

continuity from the Later Neolithic to the Early Bronze Age, and from the Late Bronze Age to the Early Iron Age. Certain sites and finds thus appear on both the Neolithic and Bronze Age maps, and on both the Bronze Age and Iron Age maps. Where this occurs, the sites and finds concerned are cross-referenced in the gazetteer.

Early Bronze Age

A wide range of diagnostic Early Bronze Age metal objects have been recorded in the Greater London area, many of which have come from the Thames, prefiguring the vast array of Middle Bronze Age and Late Bronze Age metalwork from the river (Needham 1987, 99, fig 5.2). Early metalwork finds include a copper knife from Mortlake and two halberds from Lambeth, one from the site of County Hall (Gz LA2) and another from the adjacent Thames (Barrett 1976, 37 and fig 5.1), and flat axes from a number of locations (eg Gz BY6, HL17, TH3; Needham 1987). Finds of flanged axes, which are somewhat later, are again dominated by river finds (Rowlands 1976), although examples are known from elsewhere in the London area (eg Gz CR25, HL11, LW2, ST8, WM2).

A number of Beakers have also been recovered from the Thames, particularly from stretches of the river in west London (Clarke 1970, 487, 489; Cotton & Wood 1996a, 12–14). Elsewhere in the region complete Beakers are rare, with a few examples from sites in south-west London close to the concentration of river finds (eg Gz RT3, RT20), and at sites across south-east London (eg Gz BX2, BY1), possibly part of a distribution which extends over the Thames into south Essex, with Beaker burials at Orsett (Milton 1984–5) and Mucking (Couchman 1980, 42). Recent discoveries include a complete Beaker bowl buried in a small pit at Hopton Street, Southwark (Gary Brown, pers comm). The distribution of flint daggers (eg Gz BX7, SW1, WW11) shows a similar pattern across south and south-east London. Collared Urns are also scarce in London; a few examples occur among finds from the Thames (Longworth 1984, 200), while those from Kingston Hill (Gz KT4; Field & Needham 1986) and Ham Common (Gz RT18) are probably part of a wider regional distribution which extends across Surrey (Needham 1987). The last 20 years or so of fieldwork have added a few new finds including single complete vessels from the western headwaters of the Wandle at Carshalton (Skelton 1992) and from Hurst Park, East Molesey – the latter containing a double cremation and three segmented faience beads within a ploughed-out barrow overlooking the Thames (Andrews & Crockett 1996, 61–3). By far the most widely distributed Late Neolithic/Early Bronze Age artefact type in the Greater London area is the barbed-and-tanged arrowhead, which may indicate that settlement in this period was more widespread than other evidence implies, though these arrowheads occur in both burial and settlement contexts (Green 1980), and may have become stray losses when used for hunting and fighting.

Many of the ring-ditches and barrows recorded in the London region could belong to the Early Bronze Age, but few of these sites have been excavated or dated and it is possible that some, like the Neolithic example at Staines Road Farm, Shepperton (see chapter 4 above), are of different date anyway. Ring-ditches appear to be concentrated on the gravels of west London and north-west Surrey (eg Longley 1976a; Cotton 1986a) and include a linear cemetery of nine or so monuments on the edge of the Taplow gravels between Stanwell and West Bedfont. There are also numerous antiquarian records of barrows or possible barrows both here and in south-east London around Greenwich Park, and in the Richmond/Wimbledon area in south-west London (eg Johnson & Wright 1903, 65–6; Grinsell 1934). It is unlikely, however, that the current distribution of known sites is representative of their original distribution. The actual burial evidence from Early Bronze Age barrows is extremely limited and confined to a handful of sites, including Hurst Park, East Molesey, mentioned above, Sandy Lane, Teddington (Akerman 1855) and Fennings Wharf in north Southwark (Sidell et al in prep). Mid 19th-century excavations at Sandy Lane revealed a primary unurned cremation accompanied by an Early Bronze Age dagger (since lost) and indications of secondary urn burials (Gz RT24). At Fennings Wharf token deposits of cremated bone were inserted into the fills of a circular ring-ditch underlying the southern approach to medieval London Bridge (Gz SW2). Both sites hint at a complex sequence of funerary

activity perhaps comparable to burial sequences known from Early Bronze Age funerary monuments elsewhere in Britain. A ring-ditch at Launder Lane, Rainham, whose fill produced large fresh sherds of Neolithic pottery (see chapter 4 above), also yielded Beaker sherds from a central pit (Gz HV11; Macdonald 1976, 21), suggesting reuse or continued use of an earlier monument, another common feature of Final Neolithic and Early Bronze Age ritual practices.

A different sort of burial revealed during excavations at Holloway Lane, Harmondsworth comprised the partly articulated remains of an aurochs (rare by the Early Bronze Age) associated with six barbed-and-tanged arrowheads, and deliberately placed in a pit (Gz HL15; Cotton 1991). The use of cattle parts is known in a variety of Final Neolithic/Early Bronze Age ritual contexts, including the Beaker burial at Hemp Knoll, Wiltshire (Robertson-Mackay 1980), and at Irthlingborough, Northamptonshire, where the remains of at least one aurochs occurred among a large quantity of cattle bone capping a Beaker burial beneath a round barrow (Parker-Pearson 1993, 78–81). The Holloway Lane aurochs burial occurred within an area containing a number of Neolithic ritual monuments, and cut a pit containing Grooved ware (see chapter 4 above).

Early Bronze Age settlement evidence, which is quite rare nationally (Gibson 1993), is largely lacking from the Greater London area, though if any pattern can be discerned it is that of the exploitation of low sandy eyots within the modern Thames floodplain. The pit containing a Beaker bowl at Hopton Street, Southwark has been mentioned above, while a gully and posthole associated with Beaker pottery were found at 15–23 Southwark Street (Gz SW4; Cowan 1992), a little further downstream. Beaker sherds have also turned up on Thorney Island, Westminster, and Beaker and Collared Urn sherds at the Prince Regent Community School, Custom House (Nick Holder, pers comm). The sequence of Early to Middle Bronze Age activity at Phoenix Wharf, Bermondsey commenced with a shallow rectangular ‘cooking pit’ and ploughed-out ‘burnt mound’. Charcoal from the fill of the cooking pit is ¹⁴C-dated to 1690–1490 BC (BM-2766, 3310 ± 40 BP) (Bowsher 1991; Merriman 1992, 264); elsewhere such deposits are usually interpreted as evidence of communal feasting or even bathing (Barfield & Hodder 1987; O’Drisceoil 1988). Similar pits containing burnt flints have been recorded at sites in both south-east and south-west London (eg Gz BY15), and surface scatters of burnt flint in ploughed fields in north and north-west London may have derived from similar features (eg Gz EN4; Smithson 1984). Cooking pits and burnt mounds are common in the Middle and Late Bronze Age, though curiously enough the handful of dated examples from the London region appear, like Phoenix Wharf, to be earlier. These include Staines Road Farm, Shepperton, 2580–2510/2500–2280/2250–2230 cal BC (GU-5279, 3930 ± 50 BP) (Phil Jones, pers comm) and Purley Way, Croydon, 2500–2130 cal BC (Beta-68582, 3860 ± 70 BP) (Tucker 1996). Some of the surface finds of flintwork from the fringes of the Greater London area, particularly those associated with barbed-and-tanged arrowheads, may also be indicative of Early Bronze Age settlements.

Middle Bronze Age

From the beginning of the Middle Bronze Age, the lower Thames Valley appears to have been at the forefront of bronze production and consumption in the British Isles (Rowlands 1976; Needham 1987). Weapon types and associated equipment are particularly common, including narrow-bladed rapiers, spearheads and occasional shields (eg Burgess & Gerloff 1981; Coles 1962; Needham 1979). Much of the metalwork is of European origin or inspiration, including broad-bladed swords of Rosnön type and leaf-shaped flange-hilted swords of Hemigkofen and Erbenheim types, dating from the end of the Middle Bronze Age (Burgess & Colquhoun 1988). This may be a reflection of the importance of the Thames as an artery for transport to and from Europe. Graphic reminders of the importance of water transport at this time are the recent discoveries of a Middle Bronze Age wooden paddle in the Crouch estuary at Canewdon, Essex (Wilkinson & Murphy 1986; 1995, 152–7), and the Dover boat (Parfitt 1993). The amount of metalwork deposited in the Thames increased dramatically in this period: most of the artefacts recovered have been listed and mapped by Rowlands (1976) and their nature and importance discussed by Needham (1987, 111–16), among others. Deposition of weapons also occurred

along the tributaries of the Thames, including an exceptionally long basal-looped spearhead from the eastern headwaters of the Wandle at Wandle Park, Croydon (Gz CR4; Coleman 1899–1900), spearheads and a shield from the Lea Marshes (Gz NH3, WF5; Coles 1962) and Erbenheim and Hemigkofen swords from the River Lea and Barking Creek (O’Connor 1980, map 31).

While the bulk of such finds are usually lacking in context or associations, the recent recovery of a pair of side-looped spearheads adjacent to a substantial wooden pile-built ‘jetty’ on the Thames foreshore at Nine Elms, Vauxhall is exceptional (Cotton & Wood 1996a, 14–16). The spearheads are, typologically, of 14th–13th-century BC date, which compares favourably with dates of 1617–1296 cal BC (Beta-122969, 3180 ± 70 BP) and 1748–1527 cal BC (Beta-122970, 3380 ± 40 BP) recently provided for timbers from the jetty itself (Alex Baylis, pers comm). A number of other wooden structures broadly datable to the same period are also now known from the floodplain. The two-phase log-built trackway at Bramcote Green, Bermondsey appears to be the earliest in the sequence (Gz SW11; Thomas & Rackham 1996). Other, more sophisticated cradle-supported structures at Beckton are somewhat later (Meddens 1996). Individual wooden artefacts like the Canewdon paddle are beginning to appear too, both from the floodplain and beyond. The deliberate discarding of a c 1.5m long wooden shaft originally attached to a large basal-looped spearhead following its recovery from the Thames at Hammersmith (Hooper & O’Connor 1976) ranks as one of the saddest losses to the region’s artefactual record.

Away from the Thames floodplain, surface finds of palstaves are also quite common and widely distributed in the Greater London area. It is unlikely that these represent casual losses, though the relationship between palstaves and occupation sites is unclear. The relatively rich settlement evidence from south-east Essex suggests that palstaves may have been deposited at the edge of settled areas (Wymer & Brown 1995). A few Middle Bronze Age metal hoards have also been found in the London region (eg Gz MT9, WF11), those in east London possibly being part of a wider distribution of such deposits across south Essex (Couchman 1980, fig 16).

Ceramics of Deverel-Rimbury type, characterised by relatively simple bucket-shaped forms, are well represented in the London region, especially the assemblages from cremation cemeteries in west and north-west London (Barrett 1973) and from settlement sites in west and south-west London (Cotton et al 1986; Needham 1987). Deverel-Rimbury pottery is divided into a number of regional groups (Ellison 1975; 1980), the London material belonging to the lower Thames group, which includes material from south and central Essex (Brown 1984–5; 1995). Globular urns, the fineware component of the Deverel-Rimbury tradition, are not common in this group (Ellison 1975), although they are now being found in settlement contexts (Needham 1987, 111; Phil Jones, pers comm). Some highly distinctive stamp-decorated pottery from Sipson Lane in west London (Cotton et al 1986, fig 29) can be closely matched by material from sites around the Thames estuary (Brown 1984–5; 1996, 26).

The cremation cemeteries in west and north-west London, recorded in the late 19th and early 20th centuries in areas of gravel quarrying, have been reassessed by John Barrett (1973; see also Cotton 1993). Contextual information is extremely limited due to the circumstances of discovery, though there are references to the arrangement of burials in rows and the presence of pits with burnt material (Barrett 1973, 112), which may indicate burial practices comparable to those known in Wessex (White 1982; Barrett et al 1991), and at sites in Essex (Brown 1996, 26). More recently, at Prospect Park, Harmondsworth, faint traces of a circular ring-ditch have been uncovered, adjacent to two urned cremations and a deposit of pyre debris (Andrews & Crockett 1996, 14–16), while at Imperial College Sports Ground, Harlington, 2.5km to the east, a small cemetery comprising at least five urned cremations has been recognised (Wessex Archaeology 1998, 14; Lorraine Mephams, pers comm).



Reconstruction of a near complete Middle Bronze Age Deverel-Rimbury urn from Cranford Lane, Cranford

Settlement evidence is plentiful compared to the Early Bronze Age, and current fieldwork programmes are adding to it all the time, though most published sites consist only of a few pits, postholes and short lengths of ditch, as at Sipson Lane (Gz HL16; Cotton *et al* 1986, 44). A more coherent settlement plan is known from Muckhatch Farm, Surrey (Needham 1987), where post-built circular houses appear to have been set within ditched or palisaded enclosures. Similar evidence has been recorded at Hayes Common, Kent (Gz BY10; Philp 1973a) and possibly Harefield Road, Uxbridge (Gz HL24, HL39; Barclay *et al* 1995). Artefact assemblages from these sites include Deverel-Rimbury pottery, flintwork, fragments of saddle querns, and loomweights. A number of similar sites are known further east along the Thames and Blackwater estuaries in Essex (Brown 1996, 27–8; Wymer & Brown 1995). Although economic and environmental evidence from settlements excavated in London is relatively sparse, a growing number of sites, particularly in Southwark (Merriman 1992), are associated with Middle and Late Bronze Age peat deposits which have protected stratigraphic sequences and provide opportunities for environmental sampling. Some of the most striking evidence comes from Phoenix Wharf,

Bermondsey, where a cooking pit (discussed above) was overlaid by traces of cross-ploughing and subsequent cultivation using hoes or spades (Merriman 1990, 25). Preliminary micromorphological analysis of the ploughsoil suggests that the field had been manured (Drummond-Murray *et al* 1994, 254). Further traces of ard marks have since been recognised at Wolseley Street (Drummond-Murray *et al* 1994, fig 2) and Lafone Street close by, and at Hopton Street a little way upstream, while the tip of a wooden ard has been recovered from Three Oak Lane (Proctor 2000).

Late Bronze Age

Late Bronze Age finds in London are dominated by the metalwork from the Thames (Needham & Burgess 1980), though Late Bronze Age socketed axes and ‘utilitarian’ hoards are also widely distributed in certain areas away from the river. The dry-land hoards, which generally consist of a variety of tools and weapons, often fragmentary, and pieces of copper ingots, are generally regarded either as ‘founders hoards’ of scrap-metal stockpiled for recycling or as surplus bronze removed from circulation to maintain its rarity value

within society. The hoards found in London probably form part of a wider distribution which runs along both sides of the Thames to the mouth of the estuary (Couchman 1980, fig 17; Champion 1982, fig 14), with a concentration in south London, particularly on the North Downs dip slope around Croydon (Needham & Burgess 1980; Needham 1987). The majority of these finds were discovered during building work, quarrying, or more recently by metal detector, often with little regard paid to context. A notable exception is the hoard from Petters Sports Field, Egham, immediately to the west of London, which was recovered from a settlement site during controlled excavation (O’Connell 1986). The full publication of this hoard provides a detailed account of the discovery and nature of the deposit, together with a general discussion of Late Bronze Age hoards in Britain (Needham 1990). Further light has also been shed on technical details of the metalworking process through the recognition of fragmentary clay moulds on a number of sites across the region. These include part of a bifid razor mould case with miscast razor from Runnymede Bridge (Longley 1980) and sword mould fragments from a pit set just inside an entrance way at Cranford Lane, Harlington (Gz HL43; Nick Elsdén, pers comm). The latter deposit recalls two large deposits of sword mould fragments from the butt ends of the ring-fort enclosure ditches at Springfield Lyons, Essex (Buckley & Hedges 1987, 11–12).

The means by which the dead were disposed of during the Late Bronze Age is difficult to detect archaeologically (eg Brü ck 1995), though it has long been assumed that some of the

metalwork from the Thames was deposited during funerary rites (see Merriman 1990, 34, for a graphic reconstruction). This view is lent support by the ¹⁴C dates on samples from human skulls recovered from the Thames, several of which span the later Middle Bronze Age and the Late Bronze Age (Bradley & Gordon 1988). Similar evidence has been recovered from the Lea Valley (Bradley & Gordon 1988) and from Fenn Creek to the north-east in Essex (Wilkinson & Murphy 1995, 132–5). Skulls were also occasionally deposited within settlements, as at Runnymede Bridge (Needham 1993). Direct evidence for Late Bronze Age burial practices in the region is represented by several unaccompanied cremations at Cranford Lane and by an isolated unurned cremation burial at Kingston Hill (Gz KT4; Needham 1987, 116). An early reference to the discovery of a number of cremations outside the Late Bronze Age enclosure at Queen Mary’s Hospital, Carshalton, including a partially burnt child’s skeleton placed on a saddle quern, is of great interest, though sadly it remains unconfirmed (Gz ST22; Adkins & Needham 1985, 46).

Late Bronze Age settlement evidence is widespread in London, especially on the west London gravel terraces (Cotton *et al* 1986, 48; Grimes & Close-Brooks 1993), where traces of circular post-built houses set amid extensive field systems linked by trackways have been located (eg O’Connell 1990; Elsdén 1996). Large-scale and ongoing landscape projects currently under way are certain to add to the data set (eg Imperial College Sports Ground, Harlington; Wessex Archaeology 1998). The exceptional riverside site at Runnymede Bridge to the west of London, with its remarkable range of structural, artefactual and environmental evidence (Needham 1991; 1993), is still more informative, though its full significance will clearly take years to assess and is discussed further below. It is already apparent, however, that there is an intriguing bias in the environmental data currently available from the site, suggesting that the floodplain 4km upstream may be better represented than are the terraces 400m inland (Needham 1991, 369). Some 7.5km to the north-east an enigmatic double-ditched circular cropmark over 200m in diameter at Mayfield Farm, near Heathrow Airport (Gz HO18; Merriman 1990, 31) has been interpreted as a larger version of the enclosed ‘ring-fort’ settlement type found increasingly in south-east Britain (Needham 1993), though its attribution to the Late Bronze Age is not beyond doubt (see chapter 4 above). A smaller single-ditched ring-fort investigated in the early 20th century at Queen Mary’s Hospital, Carshalton (Gz ST22; Adkins & Needham 1985), is close to several other Late Bronze Age sites in the Beddington area, and is situated 11km from a second enclosure at Nore Hill, Surrey (Needham 1993). It may be significant, in this context, that the Late Bronze Age ring-forts excavated in Essex (to which can be added a further atypical example from South Hornchurch; Guttmann *nd*) often appear to have a paired distribution (Buckley & Hedges 1987; Brown 1996, 30). The range of finds from Kingston Hill (Gz KT4; Field & Needham 1986), the barbed spearhead from a small pit at Park Wood, Ruislip (Gz HL2; Cotton 1986b) and a series of animal bones and saddle querns in pits at Westcroft Road, Carshalton (Gz ST26; Proctor 1999) may – like some of the metalwork hoards already mentioned – represent deliberate ‘placed deposits’ of the kind now recognised within and around Late Bronze Age settlements (Needham 1993).

The peat deposits recently investigated in Southwark are also associated with Late Bronze Age sites, notably a brushwood platform at Bricklayers Arms (Gz SW8; Cotton 1991; Merriman 1992). The remarkable series of recent discoveries in east and south-east London, of wooden trackways and other sites sealed by peat deposits (Gz BD4–5, BD8, NH6–7), is especially important for an understanding of both Middle and Late Bronze Age settlement patterns and the economic exploitation of marshland and floodplain areas (Meddens 1996, 331–3). This new evidence appears to support Bronze Age dates for many of the wooden structures previously recorded along the Lea Valley (and most recently at Rammey Marsh, Enfield: John Dillon, pers comm) and in former marshland areas in east London (eg Gz WF2–3). These sites may prove to be comparable with the Late Bronze Age timber revetment at Runnymede (Needham 1991), and the range of Late Bronze Age wooden structures recorded in the Essex estuaries (Wilkinson & Murphy 1986; 1995); they clearly also open up further areas of enquiry connected with woodland management and technology (eg Coles *et al* 1978).



Recording the section of a large waterhole. The silted fills of this feature indicated that the waterhole was used over a period of hundreds of years from the Middle Bronze Age and had finally silted up during the Later Bronze Age

Conclusions

Current knowledge and understanding

Early Bronze Age

Although the Early Bronze Age evidence from London is relatively slight, and cannot compare with the range of burial and ceremonial evidence from Wessex and the upper Thames, it is directly comparable to, and in some ways richer than, the Early Bronze Age evidence from Kent (Champion 1982) and Essex (where Early Bronze Age metalwork is extremely rare; Couchman 1980; Holgate 1996, 22). Within this lower Thames zone, 'Wessex-type' prestige burials are scarce, and seemingly confined to Thames-side localities (eg East Molesey and Teddington); there are also smaller-scale variations in material culture distributions such as the local concentrations of Beakers and Beaker-related artefacts along the west London Thames and in north-east Surrey (Needham 1987, 101) and of Collared Urns in east Essex (Couchman 1980).

The present lack of Early Bronze Age settlement evidence from London may be illusory. Gibson (1993) has stressed the importance of river-valley locations for Early Bronze Age occupation, and the likely effects of alluviation since the Bronze Age, which may have obscured but preserved fragile settlement evidence. Traces of such have been recovered from a series of low-lying sandy eyots in the modern floodplain in the areas around Hopton Street, Southwark, Phoenix Wharf, Bermondsey and the Prince Regent Community School, Custom House, for example. Further barrows like that at Fennings Wharf may also be preserved beneath river alluvium (Needham 1987), like those in the Fens where barrow cemeteries are currently emerging from eroding peat (eg Hall 1987, 60), and similar sites in the upper Thames Valley (Bowler & Robinson 1980). The alluvial deposits in the Thames and its tributaries in Greater London may thus contain a wealth of sites of considerable importance for the establishment of a regional sequence, to be compared with those of the upper Thames, Wessex and the Fenland. Equally, further sites are likely to lie undiscovered beneath expanses of open space flanking the Thames, such as the various Royal Parks (the Hurst Park barrow lay beneath a former racecourse, while the Sandy Lane barrow lay on the eastern edge of Bushy Park).

The local sequence of Neolithic to Early Bronze Age ritual activity in the vicinity of the Springfield cursus in central Essex may be paralleled by the monument sequence in the area around the Stanwell cursus and ring-ditches in west London (Cotton *et al* 1986; O'Connell 1990). The linear cemetery of nine or so ring-ditches between Stanwell and West Bedfont visible on air photographs (Longley 1976a), for example, is clearly sited to take advantage of the edge of the Taplow terrace gravels. As such, the group seems to reinforce the break of slope on the southern side of a block of gravel terrace whose western edge was already marked by the Stanwell cursus, an existing Middle Neolithic monument clearly respected well into the Bronze Age (Andrews *et al* 1998). The quality of evidence which may survive in this area is further illustrated by the aurochs burial at Harmondsworth to the north-east. The presence of the latter, however, should not be allowed to obscure the scarcity of other prestige placed deposits and conspicuous personal display items for which, it seems, local Early Bronze Age communities had little use. It could be that this was due to the openness of the preceding Neolithic societies (Andrews *et al* 1998, 16), a suggestion worthy of further research.

Middle Bronze Age

The Middle Bronze Age settlement evidence from the London area is not extensive, but it is by no means insignificant, especially if considered in conjunction with the evidence from the north bank of the Thames estuary in Essex, where a wide variety of sites have been investigated (Couchman 1980; Brown 1996). The settlement evidence from Muckhatch Farm (Needham 1987), for example, is comparable to that recovered from North Shoebury, Essex (Wymer & Brown 1995), where a series of fragmentary rectilinear enclosures containing clusters of small

pits were situated within a wider field system. Evidence from the lower Thames area as a whole suggests small settlements of linked compounds, rather like the more intensively investigated sites on the chalklands of southern England (eg Burstow & Holleyman 1957; Drewett 1982). Indeed, despite very different locations, the resources exploited at North Shoebury (Wymer & Brown 1995) appear to have been similar to those at downland sites (Drewett 1982). Moreover, evidence of increasing exploitation of the floodplain is provided by the traces of cross-ploughing on the higher areas of sandy eyots in Southwark and Bermondsey, and by the construction of wooden trackways in lower-lying areas further downstream. It is possible too that the lime decline noted in a number of pollen sequences from the region (eg Beckton Nursery and Union Street Southwark; see chapter 1 above) was due to rising base levels which sparked this local upsurge in activity.

The structured deposition of artefact assemblages at Middle Bronze Age settlement sites, and the relative lack of faunal and plant remains, tend to undermine simple economic interpretations of the artefactual evidence (Barrett 1989). The ceramic assemblages recovered from the North Shoebury and Mucking settlement sites, for example, appear for the most part to derive from deliberately placed deposits, rather than accumulations of refuse. By the same token, an outstanding feature of the period is the deposition in the Thames of quantities of metalwork, particularly weaponry, which serves once again to underline the interplay between activity in the floodplain and on the terraces.

The funerary evidence from the area of the lower Thames group of Deverel-Rimbury pottery (Ellison 1975) contrasts with that from the area of the Ardleigh group and areas further north in East Anglia (Brown 1996, 26; Healy 1993), suggesting strong regional variation. The cemeteries associated with Ardleigh ceramics, which consist of dense clusters of ring-ditches and numerous burials, clearly contrast with the burial evidence from the Thames estuary (Brown 1995), where ring-ditches and burials are more widely scattered, and where the relationship between burial sites and settlements appears to be comparable to the pattern on the chalklands of southern England (cf Bradley 1981; Wymer & Brown 1995). The location and excavation of further cemetery sites in London may clarify this relationship and help define regional variation more clearly.

Late Bronze Age

There is a relative wealth of Late Bronze Age settlement in London in contrast to the Early and Middle Bronze Age evidence, though it is still limited in comparison with that from areas to the east (eg Buckley & Hedges 1987; Bond 1988; Brown 1988a; 1996) and west (eg Longley 1980; O'Connell 1986; Needham 1991; Moore & Jennings 1992). Few Late Bronze Age ceramic assemblages have been recovered from the London area, and the larger assemblages mostly derive from work by antiquarians (Adkins & Needham 1985; Field & Needham 1986). Nevertheless, characteristic Late Bronze Age ceramic assemblages are starting to appear and are well known in areas adjacent to London, particularly from the Runnymede/Egham area (Longley 1980; O'Connell 1986; Needham 1991). These ceramics exhibit traits derived from preceding Deverel-Rimbury pottery (Brown 1988b) and new features derived from continental urnfield ceramics (Longley 1980; Needham 1987). It is likely, given the geographical context, that the lower Thames and Thames estuary area were central to the development of Late Bronze Age material culture types in southern Britain, and perhaps the social changes these may represent (Barrett 1980; Needham 1987). As the London region is situated at the heart of this zone, the recovery of large and well-stratified material assemblages from sites in London is clearly important.



General view of the Bramcote Grove excavations, showing oak and alder logs from the prehistoric trackway

The occurrence of ring-forts in Greater London at Carshalton and perhaps Mayfield Farm, together with other possible examples elsewhere (eg Osterley and Nore Hill; Needham 1993), may indicate a concentration of these sites as dense as that in Essex (Buckley & Hedges 1987; Brown 1996). The range of artefacts recovered from Carshalton Camp (Adkins & Needham 1985) is certainly broadly comparable to that from sites more recently excavated in the latter county (eg Bond 1988; Buckley & Hedges 1987). None the less, the temptation to generalise about these Late Bronze Age enclosures should be resisted as each site had a particular history, and excavations have revealed considerable variation in defensibility, internal arrangements of buildings and other features, and the presence or absence of external structures and placed deposits including human remains (Needham 1993; Brown 1996). What role these sites played in the movement of resources such as metalwork, salt and agricultural surpluses remains to be determined. Equally unclear is their relationship with floodplain sites such as Runnymede Bridge, whose location was well suited to the control of riverborne traffic.

With its wealth of structural data, evidence of craft production and deeply stratified midden deposits, the island/riverside site at Runnymede Bridge (Needham 1991; Needham & Spence 1996) remains quite exceptional within the region. Whether or not it represents a Thames Valley equivalent of the huge midden sites now appearing in Wessex (eg Potterne and East Chisenbury; McOmish 1996) – the latter perhaps generated by repeated episodes of feasting – remains uncertain, though it is unlikely to be unique as excavations further upstream at Wallingford have demonstrated (Thomas et al 1986). In Greater London proper, the potential clearly exists for further similar discoveries within the modern floodplain: the site at Old England, Syon, for example, which lies within a complicated and still too little understood shifting floodplain environment at the Thames/Brent confluence, is a prime candidate following earlier work by Wheeler (1929).

Environmental evidence from carbonised plant remains, pollen and patterns of alluviation, and the evidence for field systems and settlement distributions in areas adjacent to London, indicate agricultural intensification during the Late Bronze Age (Brown 1988a; Wilkinson 1988; Needham 1991; Murphy 1996). Indeed it may be that control of agricultural land became of paramount importance at this time (eg Thomas 1989, 278; Yates 1999). Published evidence is still rare in the London area (Needham 1987), though the potential information from sites associated with peat deposits sealed by river alluvium is considerable. The investigation of the peats, and of the well-preserved wooden trackways and other structures in Bermondsey and east and south-east London, has revealed the presence of a buried Middle and Late Bronze Age landscape across much of the

Thames floodplain. These sites are situated close to others on the gravel terraces. There is clearly an opportunity here to integrate the evidence from the river floodplains with the evidence from the adjacent gravels. This should form the basis for an understanding of Late Bronze Age settlement and landscape in the lower Thames and allow us to establish a social and economic context for the Thames metalwork and the evidence from Runnymede (eg Thomas 1999; Yates 1999).

Assessment of importance and potential

It is evident that Greater London, like all regions defined by modern boundaries, represents an entirely arbitrary geographical division in relation to the overlapping spatial extents of prehistoric cultural traditions and practices, which will have shifted and

transformed over time at different rates in response to changing social, economic, religious and political conditions. It is essential, therefore, to relate the London evidence to wider models of cultural practices and cultural change. In this context, London is perhaps fortunate in being situated between areas where extensive research has already taken place (cf Brown 1996; Moore & Jennings 1992; Needham 1987; 1991).

The great quantities of metalwork from the London area have long played, and will doubtless continue to play, a prominent part in Bronze Age studies. However, a growing body of other evidence, outlined above, now augments these finds. This encompasses the spatial data, settlements, field systems and the like, available from the expanses of the gravel terraces, and the wealth of evidence sealed within the floodplains of the Thames and its tributaries. The potential richness and the fine resolution of this latter material have been discussed by Merriman (1992), who outlines methods for locating further sites and highlights the potential role of subsurface terrain modelling through borehole surveys. It is encouraging to note that predictive modelling of this type has already proved successful at the Prince Regent Community School, Custom House (Nick Truckle, pers comm), and that feasibility studies for further predictive modelling within the Thames floodplain are currently under way (Martin Bates, pers comm).

Following the promulgation of PPG16, it should also now be possible to address the lack of evidence from the clay areas of north London. Bronze Age settlement evidence from the claylands of Essex is known to be widespread (Brown 1988b; 1996), and prehistoric evidence of all kinds is beginning to be revealed in the clay areas of Hertfordshire (Macdonald 1993). It is important in this context that metalwork finds are not simply regarded as uninformative stray losses, but that they are integrated with wider settlement evidence. The recovery of a number of single items of flint and metalwork from the complex soils around the headwaters of the River Pinn in north-west Middlesex (Cotton & Wood 1996a, 29), for instance, may indicate the presence of hitherto undiscovered sites. In some peripheral areas of London, where ground conditions are favourable, inspection of available air photographs (eg Longley 1976a; Cotton 1986a) and, more particularly, fieldwalking may also prove to be a valuable means of locating further sites. The North Downs dip slope in the Croydon area is but one obvious locality which would repay work of this sort.

Although the majority of research priorities suggested here will require further fieldwork, museum and desk-based studies should not be neglected. The metalwork from river deposits in the London area, for example, remains an important resource for study, as Needham et al (1997) have demonstrated. Research into dredging records will enhance our understanding of the circumstances of its deposition and recovery and the rather scant records of the GLSMR should be elaborated to incorporate this. In addition, detailed study of the composition, technology and metallurgical make-up of the hoard record can be expected to throw further light on the position of metalwork within Bronze Age society, especially as new and better recorded finds become available. Systematic survey of the intertidal zone in the Greater London area, now underway, should also be extremely helpful in this context, especially in providing a correlation between palaeoenvironmental sequences and cultural deposits sealed by alluvium. The value of such work has already been demonstrated in the outer Thames estuary and along the Essex coast (Wilkinson & Murphy 1986). One of the future aims of intertidal survey should be to explore the contexts of metalwork deposits in the Thames at locations such as Old England, Brentford and Syon Park (eg Needham & Burgess 1980), the latter comprising the only stretch of natural, unembanked foreshore surviving in Greater London. A potential bonus is the likely recovery of further wooden structures and artefacts from this and other waterlogged contexts; such data, as noted above, open up further areas of enquiry connected with woodland management and technology (eg Coles et al 1978).

The diverse categories of evidence which are now available in the London area are often extremely rich in terms of their quantity and quality, and should make a significant contribution to the production of an integrated regional view of Bronze Age society and economy. All the more vital then that this evidence, so much of which is currently unpublished, should be brought to publication as a key part of this process.

Artist's reconstruction of the Late Bronze Age ring-fort at Queen Mary's Hospital Carshalton



Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
WW1	WANDSWORTH	SPEARHEAD	031272	528820	177560		Socketed spearhead found in 1865 near Grosvenor Railway Bridges. Battersea Power Station.
WW2	WANDSWORTH	AXE	031263	528000	177000		Battle axe. Battersea.
WW3	WANDSWORTH	PALSTAVE	031264	528000	177000		Palstave. Battersea.
WW4	WANDSWORTH	ARMLET	031265	528000	177000		Armllet, now lost. Battersea.
WW5	WANDSWORTH	PALSTAVE	031270	528800	176700		Palstave. Queens Road Station.
WW6	WANDSWORTH	PALSTAVE	031271	524530	175260		Palstave. Burstock Road.
WW7	WANDSWORTH	PALSTAVE	020830	525500	175000		Palstave. River Wandle.
WW8	WANDSWORTH	FOUNDERS HOARD	031257	525800	175200		Hoard: eight ingot fragments, eight axes and a chisel. Wandsworth Gasworks.
WW9	WANDSWORTH	DAGGER	020826	527000	176000		Dagger. Battersea.
WW10	WANDSWORTH	SPEARHEAD	020799	525000	174000		Bronze spearhead, hammer and axe in Greenwell collection.
WW11	WANDSWORTH	DAGGER	020798	525000	174000		Flint dagger found 1890. Wandsworth.
WW12	WANDSWORTH	IMPLEMENT	020797	524200	174000		Perforated stone hammer. Merton Road.
WW13	WANDSWORTH	SPEARHEAD	031273	525640	174670		Spearhead. Ram Brewery.
WW14	WANDSWORTH	DAGGER	031267	525580	174680		Rapier. River Wandle.
WW15	WANDSWORTH	POTTERY	020771	526200	174400		Five pots, possibly Late Bronze Age. St Ann's Crescent.
WW16	WANDSWORTH	BARROW GROUP	031266	523500	173600		Barrows demolished 18th century, some possibly Bronze Age. Tibbets Corner.
WW17	WANDSWORTH	ARROWHEAD	020824	525000	173000		Barbed-and-tanged arrowhead. Southfields.
WM1	WESTMINSTER	PALSTAVE	081141	528870	181150		Palstave found 7ft deep in 1849. Harewood Place.
WM2	WESTMINSTER	AXE	081143	529560	180380		Flanged axe said to have been found 40ft deep in clay in 1957. Charles II Street.
WM3	WESTMINSTER	AXE	081142	528750	180140		Bronze socketed axe found 10ft deep in 1955. Yarmouth Place.
WM4	WESTMINSTER	KNIFE	081313	529500	179000		Bronze knife or sickle. Westminster.
WM5	WESTMINSTER	SWORD	081310	529500	179000		Sword cut down into dagger. Westminster.
WM6	WESTMINSTER	PALSTAVE	081140	528800	179000		Looped palstave found 1912. Buckingham Palace Road.
WM7	WESTMINSTER	PALSTAVE	081145	529300	178300		Palstave. Pimlico.
WM8	WESTMINSTER	SPEARHEAD	081312	530550	180650		Spearhead. Savoy Place.
WM9	WESTMINSTER	SWORD	081144	530800	180700	FWM10	Sword. Victoria Embankment.
WM10	WESTMINSTER	AXE	081307	530500	180500		Bronze socketed axe. Victoria Embankment.
WM11	WESTMINSTER	REVETMENT	0	530300	179800		Baseplate and upright of alder, radiocarbon date 2540±70BP (HAR-6393). Richmond Terrace.
WM12	WESTMINSTER	FINDS	081148	530205	179565	WHL75	Possible Deverel-Rimbury pottery, stratified below later material. St Margaret Street.
WM13	WESTMINSTER	AXE	081309	530000	179000		Socketed axe. Horseferry Road.
WM14	WESTMINSTER	SWORD	081252	530100	178600		Leaf-shaped sword. Millbank.



THE IRON AGE

Gerald Wait and Jonathan Cotton

Introduction and background

Within a century of the Roman conquest, London as a planted urban centre appears to have been nationally pre-eminent in political, economic and possibly cultural terms, with a status arguably similar to that enjoyed by the city since the Middle Ages. In this context, researchers have often imagined London in the Iron Age to have been an embryonic city and capital. As John Kent observed (1978, 53), 'we are so used to thinking of the site of London as destined by nature to be the focal point of England's political and economic entity that it requires a considerable effort to envisage those times when it was otherwise'. As we shall see, by the Late Pre-Roman Iron Age (LPRIA) the London region lay at the boundaries of a number of different ceramic and political groupings, and was not – at least on present evidence – a nodal point in its own right until the founding of Londinium in the middle of the 1st century AD. Ironically, it is the physical and psychological presence of Londinium itself that has most hampered study of the period immediately preceding it.

Material culture, chronology and research themes

The Iron Age is characterised by a series of major social, economic and technological changes, many of them prefigured in the preceding Late Bronze Age (see chapter 5 above), of which the adoption of ironworking was but one. The period is conventionally regarded as one of expanding population and worsening climate, necessitating the utilisation of previously marginal or difficult land (ie heavy clay). The ownership of land indeed may have superseded the control of bronze as the ultimate mark of social prestige, a development that encouraged the adoption and widespread use of iron and which led to the break-up of established long-distance exchange networks (Thomas 1989). Certainly the period is one in which major innovations in farming can be detected across southern Britain (eg Jones 1981; 1984), with increasing evidence for agricultural specialisation and settlement interdependence. For purely practical purposes it is common to divide the Iron Age from the Bronze Age in the 8th to 7th centuries BC, and to equate the end of the Iron Age with the Roman conquest of AD 43. The conventional tripartite chronological division of the Iron Age into Early Pre-Roman Iron Age (EPRIA) (8th/7th to 5th centuries BC), Middle Pre-Roman Iron Age (MPRIA) (4th to 1st centuries BC) and Late Pre-Roman Iron Age (LPRIA) (1st century BC to AD 43) will be used here to describe the evidence. An independently dated chronology for southern Britain is hard to come by for the early part of the period due to problems with the ¹⁴C calibration curve, though matters improve after c 400 BC on the basis of recent work on brooches and coins (eg Haselgrove 1987; 1997).

More than any other period, the Iron Age has been dominated by concepts of invasion from the continent of Europe. The reasons for this are not far to seek, for Julius Caesar makes explicit reference to the migration of the Belgae from northern France who 'came to raid and stayed to till'. Earlier generations of prehistorians accepted such comments at face value, despite the difficulties of identifying these migrations in the archaeological record. Indeed, they used the idea of the mass movements of people as a means of accounting for the construction of hillforts, the use of iron and, later, the re-emergence of identifiable burial rites. The high-water mark for such concepts was the period from the 1930s to the early 1960s and the work of Christopher Hawkes (eg 1931; 1959), whose ABC system was based on the concept of successive waves of invasion from the Continent. Following Hodson's (1964) critique of Hawkes's system, a broader approach to culture history held sway, incorporating explicitly economic and socio-economic approaches (eg Peacock 1968; Harding 1974; Collis 1977). Far and away the most influential work of this type to appear was Cunliffe's *Iron Age communities in Britain*, first published in 1974 and revised through two subsequent editions (1978; 1991). This was underpinned by the author's own promptly published fieldwork at sites such as Danebury and Hengistbury Head in Wessex (Cunliffe 1984; 1987; Cunliffe & Poole 1991).

In recent years concepts borrowed from anthropology and the social sciences have been used to deconstruct these culture-historical models, with their emphasis on processes, in an attempt to begin to construct a social archaeology for the period which takes greater account of the people themselves. Adam Gwilt and Colin Haselgrove's jointly edited volume *Reconstructing Iron Age societies: new approaches to the British Iron Age* (1997) provides a flavour of this new thinking, and examines issues such as the role of the agricultural cycle, household architecture and notions of space, boundaries and liminality, structured deposition, and so on.

Past work and nature of the evidence

Past work

As early as Camden (1586), study of the Iron Age in the London area has been beset by various distractions, most notably the location of the Roman crossing-points of the Thames in 54 BC and AD 43 (eg Roots 1844; Cuming 1857; 1858; Sharpe 1906) and the search for an Iron Age centre beneath Roman Londinium (eg RCHM 1928; Marsh 1979; Merriman 1987, 318). Writing in 1930, Vulliamy had little to go on save the Iron Age metalwork dredged from the river in the 19th and earlier 20th centuries, which, while the subject of extensive art-historical study, remains to this day notoriously difficult to integrate with settlement evidence. As late as the mid 1970s the situation had scarcely improved (Celoria & Macdonald 1969b; Canham 1976; Grimes 1976). However, following Grimes's pioneering lead (1948; 1961; Grimes & Close-Brooks 1993), several programmes of fieldwork located sites of the period in the area around Heathrow (eg Brown 1972; Farrant 1971; Canham 1978a). Somewhat earlier, as was then the fashion, defended enclosures of hillfort type had claimed most attention (eg Elliston Erwood 1916; Lowther 1945; Piercy Fox 1969), though small settlements on the North Downs dip slope had not been ignored (eg Little 1964; Hastings 1965; Cotton in prep).

Fieldwork since the mid 1970s, latterly aided by PPG16 requirements (Phillpotts 1997), has concentrated on the areas of remaining gravel terrace east, west and south of central London, where a number of large-scale and ongoing projects have examined sites within their landscape contexts. This has usually been undertaken without the benefit of aerial photographs or fieldwalking. Other important groups of sites have begun to emerge in the Hogsmill and Wey valleys in the south-west. With the exception of north Southwark, where it has been possible to establish something of the contemporary late prehistoric topography (eg Heard 1996), finds from central London have largely been the result of simple serendipity, though by this means a series of Thames-side sites has begun to emerge in recent years. As a result, the traditional picture of the London region as a backwater now seems unduly harsh, bearing in mind that the major documented settlement of the post-Roman Iron Age, *Lundenwic*, itself defied identification until the 1980s (eg Biddle 1984; Vince 1984a; see chapter 8 below). Latterly the period has been well served by Pamela Greenwood. Her work has encompassed the excavation of a range of enclosed and unenclosed sites on the east London gravels (eg Greenwood 1982; 1986; 1989), careful scrutiny of the Thames foreshore and its hinterland in the Putney/Wandsworth area, and culminated in the publication of an important synthesis of the London evidence incorporating a useful Gazetteer of over 50 excavated sites (Greenwood 1997). This synthesis is all the more timely since adjacent county summaries have tended to regard the London area as peripheral to their concerns (eg Cunliffe 1982 for Kent; Hanworth 1987 for Surrey; Drury 1980; Hawkes 1980; Drury & Rodwell 1980; and Sealey 1996 for Essex).



Early Iron Age iron dagger in bronze-bound wooden sheath, from the Thames at Mortlake

The nature of the evidence

The present synthesis is based on material available in the GLSMR and in published sources including Greenwood (1997) (Map 6). The GLSMR, like all such resources, is neither complete nor definitive: it takes time for the results of fieldwork to be entered, while the original entries may need revision after post-excavation analysis, and finds descriptions are sometimes incomplete. The gazetteer, as a consequence, includes references to Iron Age sites for which very little detailed information is available, and even the use of so nebulous and all-inclusive a label as 'settlement' is often a matter of opinion. It is also apparent that there are very few Iron Age sites in London for which detailed published information is yet available, which inevitably restricts interpretation of the period within the region.

There are a number of other difficulties relating to the evidence for the Iron Age in London. Notably the temptation to try and tie the scrappy archaeological evidence to known individuals (eg Julius Caesar), the historical mismatch between the justly famous metalwork finds from the river and the settlement evidence from dry land, and the impact and early date of destructive redevelopment. A reasonable guide is, however, provided by the local geology, which is likely to have been influential in the selection of areas for settlement. Virtually a third of the region is composed of free-draining Pleistocene river gravels, for instance, and it is here that much of the evidence has been recovered, usually in the context of gravel and brickearth extraction. Further sites lie on the chalk dip slope to the south. By contrast the large expanses of London Clay are virtually devoid of sites. This may reflect deliberate avoidance of London Clay areas and their poorly draining soils, although the survey work on Boulder Clay at Stansted Airport (Brooks & Bedwin 1989, 7–11) serves as a reminder that this should not be assumed without further site evaluation. Indeed, recent work along the Hogsmill Valley in south-west London has begun to identify a range of sites on 'difficult' clay soils (eg Hawkins & Leaver 1999).

A more general issue is the quality of preservation of Iron Age sites and artefacts in a heavily developed area and the relative value of this material for interpretative purposes. The identification of Iron Age settlement sites, even if they contain diagnostic Iron Age material, is often difficult.

Of the defended enclosures, only Caesar's Camp (Bensbury) on Wimbledon Common survives in anything like a recognisable state. Uphall Camp, Ilford, the largest enclosure in the region, has been virtually obliterated, while other possible examples, such as the earthwork enclosures in Hadley Wood and Bush Hill Park (eg Celoria & Macdonald 1969b, 51), remain undated. Moreover, Iron Age pottery is generally fragile and rarely survives in ploughsoil, and subsequent disturbance often truncates Iron Age deposits, redepositing artefacts in later contexts. This is a particular problem in areas such as north Southwark where early Roman material occurs in quantity. In some cases, it is difficult to recognise an Iron Age phase of occupation unless a relatively large area is available for examination, while in the Late Iron Age it is often impossible to separate pre- and post-Conquest pottery, coins and brooches, all of which continued in use. The survival of relevant material in the sub-alluvial deposits of the modern Thames floodplain might also be anticipated, although so far such material is sparse in comparison with the Neolithic or Bronze Age periods (see above).

Caesar's Camp on Hounslow Heath, Heathrow. An artist's reconstruction (MoL)



The archaeological evidence

In the following section the archaeological evidence from the London region is examined thematically under the following three headings: 1) settlement, landscape and subsistence economy; 2) material culture and technology; and 3) burial, ritual and belief. Within each theme, the evidence is arranged chronologically as far as possible.

Settlement, landscape and subsistence economy

This section summarises the evidence for settlement types, organisation of the landscape and subsistence economy. Although the database is still restricted in comparison with other areas within southern lowland Britain, there is a striking diversity of settlement form, ranging from a handful of defended enclosures of hillfort type to the more numerous but smaller open and enclosed settlements.

Early Pre-Roman Iron Age

Few of the region's defended sites of hillfort type have been subjected to anything more than cursory examination, and such excavation as has taken place has usually been in the context of salvage or survey work. Consequently, our knowledge of their date and methods of construction is sketchy. Nevertheless, several of the smaller univallate examples appear to belong within the transitional Late Bronze Age/EPRIA: these include the enclosures on Wimbledon Common (Gz MT1; Caesar's Camp/Bensbury) and Warren Farm, Romford (Gz HV1), the former producing evidence of a possible timber-revetted rampart. Early material – mostly pottery – is associated with the interior of several other hillforts, as at Ambresbury Banks and Loughton in Essex and St Ann's Hill, Chertsey, in Surrey (Morris & Buckley 1978, 22; Needham 1987, 123). By contrast, recent large-scale work within St George's Hill, Weybridge has failed to locate any trace of Iron Age activity (Rob Poulton, pers comm). The ring-forts of the Late Bronze Age, many of them in defensible positions if not necessarily defensive in intent, provide a local point of reference for these sites (Needham 1993; see chapter 5 above).

EPRIA settlements remain thin on the ground, and their scarcity has sometimes been used to suggest a diminution of activity within the region compared with the Late Bronze Age. However, concentrations of pits and/or pottery indicate a number of sites scattered across a diverse range of topographies. These include the terrace gravels at Heathrow Runway 1 west extension (Canham 1978a), Feltham Marshalling Yards (Isca Howell, pers comm), Hunts Hill Farm, Upminster (Greenwood 1997, 155) and Beddington Sewage Works, and the tributary valleys at Brooklands, Weybridge (Hanworth & Tomalin 1977) and Old Malden (Hanworth 1987). Further activity is attested on the floodplain at Petters Sports Ground (pottery overlying the Late Bronze Age metalwork hoard) (O'Connell 1986; Needham 1987, 123), Mixnam's Farm and Snowy Fielder Waye, Isleworth (Gz HO5; Bell 1996), for instance, while wooden structures have been located at Richmond Terrace, Westminster (Gz WM1; Andrews & Merriman 1986) and within the intertidal zone at Nine Elms, Vauxhall (Mike Webber, pers comm). Other sites of the period may be sealed beneath alluvium elsewhere, though few have been recorded during recent surveys.

Although the settlement evidence is limited compared with the Late Bronze Age or the MPRIA, where investigations have occurred on a sufficiently large scale there is some evidence for the establishment, or at least the continuance in use of, an organised landscape. Thus elements of field systems of transitional Late Bronze Age/EPRIA date have been located on the east London gravels at Whitehall Wood, Upminster (Gz HV13; Greenwood 1986) and at Gun Hill near Tilbury (Drury & Rodwell 1973); and in west London at Park Road, Stanwell (O'Connell 1990). The balance between pastoral and arable farming is difficult to detect as information relating directly to the subsistence economy of the period remains limited. However, it is conceivable that some of these divisions within the landscape were connected with stock-raising rather than arable cultivation (eg Haselgrove 1989, 5). Such seems to have been the case with the possible droveways

located at Holloway Lane, Harmondsworth (Gz HL4; Cotton *et al* 1986, 48–9) and Harefield Road, Uxbridge (Barclay *et al* 1995, 22–3). Direct evidence for the subsistence economy includes charred spelt wheat from Snowy Fielder Way (Bell 1996) and Rectory Road, Orsett (Wilkinson 1988); dung beetles, indicating stock-raising, at Hunts Hill Farm (Greenwood 1997, 156); and several small faunal assemblages, as at Heathrow and Snowy Fielder Way (Canham 1978a; Bell 1996). The latter are notable for the occurrence of several elderly horses at Heathrow and the higher proportion of sheep than might be expected on the low-lying Isleworth site. Here too molluscan analysis of a soil horizon suggests the existence of seasonally inundated hay meadows alongside the Thames.

Middle Pre-Roman Iron Age

The MPRIA is altogether easier to document in settlement terms, and includes large defended enclosures of hillfort type at Holwood Hill, Keston (Gz BY7; Piercy Fox 1969) and Uphall Camp, Ilford (Gz RB3; Greenwood 1989), for example, and extensive open settlements as at Stockley Park, Dawley (Gz HL3), Caesar's Camp, Heathrow (Gz HL8; Grimes & Close-Brooks 1993), Perry Oaks, Heathrow (John Lewis, pers comm) and Hunt's Hill Farm, Upminster (Greenwood 1997).

The best dated of the large enclosures is the 42 acre hillfort at Holwood Hill, Keston, where excavations in the 1950s and 1960s recovered diagnostic pottery beneath the ramparts themselves (Piercy Fox 1969), though the interior of the 48 acre Uphall Camp is so far the most extensively explored. Excavations here revealed a diverse range of late MPRIA structures including porched roundhouses, post-built 'granaries', stock compounds and smaller rectangular sleeper-beam 'sheds'. The site's location, adjacent to the historically navigable River Roding, led Greenwood (1989, 100) to suggest that it could have accommodated shipping, a possibility equally plausibly advanced for the heavily defended site adjacent to the Thames at Woolwich Power Station (Gz GR1; Greenwood 1997), though further details regarding this site remain obscure. The relationship between Uphall and Woolwich is clearly of interest, however, and will doubtless form the subject of future research. This is also true of the relationship between the Woolwich site and the small defended enclosure at Maryon Park, Charlton, which overlooks it, the latter all but destroyed during 19th-century sand quarrying (Elliston Erwood 1916). Claims for the existence of other riverside sites upstream, on the basis of stray finds and topographic settings (eg Greenwood 1997, 158), will require further corroboration before they can be accepted.

More typical of the region perhaps are the open settlements datable to the MPRIA, of which a number are known, and to which can be added others uncovered in the context of current ongoing mineral extraction and infrastructure projects such as the Channel Tunnel Rail Link in north-west Kent. These are typified by the terrace gravel sites at Stockley Park and others in the Heathrow area, together with those east of the River Lea at Hunts Hill Farm and Mucking (eg Clark 1993). Sites off the gravels include an interesting series in the valleys of the Hogsmill and Wey to the south-west. Those in the lower Wey are overlooked by the large defended enclosure on St George's Hill, near Weybridge, at whose foot lie the Bracklesham Beds which contain deposits of iron-bearing carbonates almost certainly exploited by a number of the surrounding smaller settlements (Hanworth & Tomalin 1977; Phil Jones, pers comm).

Despite the relative wealth of settlement evidence, landscape organisation and subsistence economy are less easy to document, though once again it is plausible to suggest that earlier field systems continued in use. Ditched fields and trackways datable to the MPRIA have been located on the higher gravel terraces at Stockley Park and Hunts Hill Farm, and probably at Beddington Sewage Works. Floodplain environments are, so far, poorly represented, though there are traces of linear ditches at Snowy Fielder Way, Isleworth, and in the Lea Valley at Stratford Market and Rammey Marsh, Enfield (John Dillon, pers comm). Environmental data are scarce too, and there is still little with which to demonstrate directly the mixed farming economy usually assumed for the period. Charred cereal grains, spelt typically predominating, are known from Stockley Park and Uphall Camp, though no large faunal assemblages are yet available. Indirect evidence is more plentiful, in the form of post-built 'granary' structures, storage pits, quernstones, spindlewhorls and loomweights, varying combinations of which have been recovered from a majority of the named sites.

Late Pre-Roman Iron Age

A characteristic feature of settlement and social change in southern Britain in the late 2nd and 1st centuries BC is the appearance of a diverse range of large, more or less defended sites gathered together under the umbrella term *oppida* (Haselgrove 1989, 10–12). These usually consist of extensive linear earthwork defences situated in low-lying areas, often enclosing large tracts of land in which both nucleated and more dispersed settlement activity was located (Cunliffe & Rowley 1976; Cunliffe 1988, 154–5). A number of *oppida* are known in southern Britain, but as yet there is no definite evidence for such a site in the London area. Kent (1978) has argued that an *oppidum* could have existed to the west of central London on the basis of the distribution of Gallo-Belgic B series gold coins and local Class I potins. If it existed, the most likely location for this site is somewhere in the Brentford/Kew area. Although nothing resembling the level of activity expected of an *oppidum* has yet been found on the ground, a little Late Iron Age material was certainly recovered during the excavations carried out in Brentford (eg Canham 1978b; Parnum & Cotton 1983). A further possible candidate is the site at Uphall Camp, which encompassed a wide range of late MPRIA activities often associated with *oppida*. The large site at Woolwich Power Station, Greenwich (Gz GR1) remains enigmatic, as does the extensive complex on the Isle of Grain at the mouth of the Medway (Williams & Brown 1999, 17).

A number of other settlement types have begun to emerge in recent years, particularly on the gravels to the east, west and south of the city and on the North Downs dip slope in north-east Surrey and west Kent. These encompass both open and enclosed settlements, though actual structures are hard to come by and may well have been founded on timber sleeper beams which have left little trace; a single post-built rectangular structure was located at Lower Warbank, Keston (Philp *et al* 1991), for example. A series of small rectangular enclosures overlooking the Essex Marshes include Moor Hall Farm, Rainham (Gz HV11) and Gun Hill, Tilbury, and, as Greenwood (1997, 160) has noted, these share certain similarities with continental *Viereckschanzen* or 'quadrangular enclosures', the latter often interpreted as cult sites (eg Brunaux 1988, 35–7). Though not closely dated (and no longer extant) the Maryon Park, Charlton enclosure could perhaps be added to this group on morphological grounds. So too could the main earthwork enclosure at Caesar's Camp, Heathrow, for the ploughed-down rampart must surely postdate a number of the circular houses belonging to the MPRIA settlement, and may have been intended to surround the well-known but equally poorly dated rectangular 'shrine' (Grimes & Close-Brooks 1993; see below). Other small enclosures, such as Imperial College Sports Ground, Harlington (Wessex Archaeology 1998), Farningham Hill (Philp 1984), Lower Warbank, Keston (Philp *et al* 1991) and Beddington Sewage Works either enclosed or were attached to small farmsteads. The last two later developed into villas, as did a further small settlement at Orpington, though strict continuity is difficult to demonstrate. Further scraps of evidence, in the form of short lengths of ditches and gullies, have also been recovered from a series of sites along the Thames in inner London. These include Galena Road, Hammersmith (Gz HF2; Partridge 1998), Marloes Road, Kensington (Howe 1998), 15–23 Southwark Street, Southwark (Gz SW3; Cowan 1992, 10–11) and others on the Horsleydown and Bermondsey islands (eg Gz SW5; Drummond-Murray *et al* 1994; Heard 1996). Other sites appear to have exploited the heavier clay subsoils, notably at Percy Gardens, Old Malden, where traces of a possibly defensive ditch have been located (Gz KT5–7; Nielsen 1993), and on the northern heights in Highgate Wood (Paul Tyers, pers comm).



Excavation of an Iron Age roundhouse defined by an eavesdrip gully, Stockley Park, Dawley

Once again, details of landscape organisation and subsistence economy are difficult to document, although a number of early Roman field systems probably had their origins in the LPRIA (eg Gz HL11; Lakin 1994). A case in point is the site at Imperial College Sports Ground, Harlington, where a major Roman ditch system incorporating a 30–35m wide track or driveway adopted the pre-existing M/LPRIA alignment, which was itself a departure in orientation from everything that had gone before (Gz HL12; Wessex Archaeology 1998, 16–18). The enigmatic linear earthwork known as Grim's Dyke on the London Clay in north Middlesex was similarly influential. This could date in part to the LPRIA, if a single ¹⁴C determination on a hearth sealed within the make-up of the bank is accepted (Gz HW2; Ellis 1982, 176), though other stretches of earthwork further east in Pear Wood are of later Roman date (Castle 1975). Further undated linear banks and ditches have been surveyed in Highgate Wood (Lees 1998), to the south of an LPRIA circular structure identified during earlier excavations (Brown & Sheldon 1974, 222, there termed the 'Early working area'; Paul Tyers, pers comm). In common with much of the rest of the Iron Age, environmental data are sparse. Small plant assemblages have been recovered from Beddington Sewage Works and Moor Hall Farm, Rainham, for example, while animal bone assemblages are available from Beddington and Lower Warbank, Keston (Greenwood 1997, 160). Relevant data from the City itself are rarely recovered for obvious reasons (eg Merriman 1987), although pollen evidence from 1 Poultry indicates a replacement of mixed deciduous forest by an expansion of herbs and ruderals in the pre-Roman horizons (see chapter 1 above).

Material culture and technology

Iron Age metalwork, of both iron and bronze, has been recovered from the Thames and its tributaries and, more recently, from a number of excavated settlement contexts. There are, however, clear distinctions to be drawn between these two groups of material. Artefacts from the river, for instance, incorporate a range of prestige objects that can be divided into two main classes. Firstly, war and parade gear such as swords, daggers, shields, harness equipment and probably spears (though the latter have yet to be satisfactorily dated); secondly, rarer feasting paraphernalia such as cauldrons, buckets and tankards. By contrast, artefacts from dry-land contexts mainly comprise small iron tools, brooches of iron and bronze, various fittings and coins (though all can also occur as river finds too). With the exception of a single iron spearhead from an LPRIA context at Lower Warbank, Keston, weapons and feasting equipment are notably absent. Compared to the Middle and Late Bronze Age, the Iron Age marks a gradual decline in 'watery deposition', reflecting a European-wide trend (eg Fitzpatrick 1984, 181–2). Conversely, the number of small metalwork finds from dry land appears to increase throughout the period, culminating in Haselgrove's (1997) 'brooch horizon' of the 2nd and 1st centuries BC, though the latter is so far difficult to discern within the London region because of the lack of published data.

While certain technical details present on E/MPRIA pieces make it clear that British metalworkers were aware of and receptive to continental practices (eg Jope 1961; Macdonald 1978; Hull & Hawkes 1987), few direct imports can be identified much before the 2nd century BC (Stead 1984). Even here, as Millett (1990) among others has noted, the actual quantities involved are relatively small. Coins remain the exception, and it is likely that the origins of British Iron Age coinage are to be found in northern France in the 2nd and 1st centuries BC. The earliest Gallo-Belgic imports were of gold, and gave rise to a series of British copies in chill-cast high-tin bronze or 'potin', the latter perhaps produced in north Kent (Haselgrove 1988). John Kent (1978) used the concentration of Gallo-Belgic B gold staters and Class I potins in west London to argue for the presence of an *oppidum* in the decades before Caesar's British campaigns of the mid 50s BC. In Haselgrove's terms (1987, 217), however, the London region represents a 'gold-using periphery' on the edge of a coin distribution centred further north and east. Coins from the London region have turned up both as strays and in hoards – the latter often composed of potins (eg Cotton & Wood 1996a, 25–8) – and often from, or close to, the river on the western side of London. Further stratified examples have been recovered from excavations across the eastern part of the region (eg Stifford Clays, Ardale School and Uphall Camp in Essex, and Farningham Hill and Lower Warbank, Keston in Kent); Beddington Sewage Works apart, sites further west have yet to produce comparable material.

Apart from the finished objects, direct evidence of metalworking is provided principally by metal slags, which have been found on a number of sites. It is possible that the site at Brooklands in the lower Wey Valley near Weybridge specialised in the production of iron during the E/MPRIA, with separate areas set aside for smelting and forging (Hanworth & Tomalin 1977), though even here the output was likely to have been relatively small. Local deposits of iron carbonates lie at the foot of St George's Hill a little way distant from the site and were still being worked early in the 19th century (Sherlock 1962, 58). Other M/LPRIA settlements, particularly those along the North Downs scarp, may have been obtaining iron from Wealden sources further to the south, and from the Folkestone Beds and the Thanet sands (eg Champion & Overy 1989, 39). Clay crucibles of characteristic triangular form have also been found, and indicate the casting of bronze, though only Mucking has so far produced mould fragments, one of which – an incomplete ingot mould – contained traces of silver and gold (Bayley in Clark 1993, 34).

At present, close study of the region's available pottery assemblages seems to hold out the best hope for characterising the range of influences operating within the area, though whether the various styles of vessel can be equated with social and/or economic groups remains an open question. Morris (1994, 380) advocates combining Cunliffe's (1974; 1978; 1991) 'style-zones' with 'the chemical characterisation of fabrics, clay and temper resource identification and the quantification of both the stylistic and vessel form spatial patterns'. Although an agreed sequence is not yet available (Greenwood 1997), broadly speaking the region's pottery can be dated using the filling agents as a rough guide: thus crushed burnt flint is usually attributable to the EPRIA, sand to the MPRIA, and grog and shell-loaded fabrics to the LPRIA.

The EPRIA vessels appear to develop out of the Late Bronze Age 'post-Deverel-Rimbury' forms identified by Barrett (1980) and comprise a range of jars and finer bowls characterised by strong shoulders and marked carinations. A significant proportion of the jars are decorated with fingertip and fingernail impressions at the rim and shoulder, while the bowls often bear furrowed or incised decoration above the carination, and are occasionally finished off with an iron-rich surface treatment known as 'haematite-coating'. There are similarities over wide areas and the London region falls within Cunliffe's Darmsden-Linton style-zone that is distributed across much of eastern Britain. A number of local assemblages have now been recovered and published. These include Petters Sports Ground (O'Connell 1986), Heathrow Runway 1 west extension (Gz HL9; Canham 1978a), Feltham Marshalling Yards (Louise Rayner, pers comm), Brooklands old land surface (Hanworth & Tomalin 1977) and Snowy Fielder Way (Bell 1996), alongside others from Warren Farm, Romford (Gz HV1) and Hunts Hill Farm, Upminster (eg Greenwood 1997, fig 2). Morris (1994, 372) has suggested that such assemblages were predominantly locally produced, within a 7 to 10km radius of the findspots, though this has yet to be confirmed in London.

This situation appears to change within the M/LPRIA, with the establishment of 'concentrated production locations' and the use of products at considerable distances from the source area (Morris 1994, 377). The apparent ceramic homogeneity of the EPRIA fragments and the London region is open to MPRIA influences from neighbouring areas, with as yet no readily identifiable vessel styles of its own. This is particularly noticeable in the latter part of the period, with the appearance of straight-sided saucepan pots of Cunliffe's Hawk's Hill–West Clandon style in assemblages in the south-west of the region, smooth-surfaced plain and curvilinear-decorated globular bowls of his Stanton Harcourt–Cassington style in west London, and plain and decorated S-profile jars and bowls of Mucking–Crayford style (Brown's (1991) Mucking–Oldbury style), some in 'glaucconitic' fabrics from the Medway area, in west Kent and south Essex.

Isobel Thompson (1982) laid the foundations for LPRIA pottery research in the area with her study of grog-tempered wares, now widely found in pre-Conquest contexts (eg Greenwood 1997, 158–9). More recently, Tyers (1996) and Greenwood (1997, 158–9) have sought to trace the origins of the various ceramic groups current in the region at this time, while Pollard (1988) has provided a brief review of the Kent material. 'Aylesford Complex' wheelthrown vessels appear on the eastern and north-eastern fringes of the area, as do amphorae of Dressel 1 form, the latter perhaps now datable to the earlier part of the 1st century BC (Medlycott et al 1995; Greenwood 1997, 159). The number of large ceramic assemblages awaiting study from all parts of the region suggests that further significant advances in our understanding are within sight. No pottery



Artist's reconstruction of Uphall Camp, c 100 BC

production sites have yet been located and nor, if Morris's (1994, 377) model of the diminution of local pottery production in certain areas in the M/LPRIA holds, should they necessarily be expected. The earliest kilns at Highgate Wood (Gz HG1) were not in use until after c AD 50 (Paul Tyers, pers comm).

In addition to metalwork and ceramics, other important elements of material culture comprise objects connected with the production of textiles (spindlewhorls and loomweights), flour (saddle and rotary querns) and salt ('briquetage'). Textiles were clearly widely produced throughout the period, and many sites have yielded spindlewhorls and fragments of

the characteristic triangular loomweights. Such weights were presumably locally produced, although no work has yet been done to confirm this; however, a spindlewhorl in a glauconitic fabric has been identified at Barn Elms (Pamela Greenwood, pers comm). With the exception of several examples from the Thames at Mortlake and Wandsworth (Celoria & Macdonald 1969b, 56), no bone 'weaving combs' have been recovered from the region. Saddle querns were superseded by rotary querns in the MPRIA, and examples of both types are recorded from the region. Those from sites along the North Downs dip slope appear to have utilised stones of Wealden origin (eg Hanworth & Tomalin 1977, 81–5), though little concerted work has been undertaken. Salt is likely to have been a major commodity in later prehistory, and appears to have been exploited on a number of sites around the greater Thames estuary in the LPRIA and earlier (eg Rodwell 1976, 298–301; Champion & Overly 1989, 39; Morris 1994; Sealey 1995). Fragments of vessels for evaporating salt ('briquetage') have been recovered from a number of sites in the eastern half of the region in particular (eg Greenwood 1997, 159), to whose number can be added the small defended enclosure at Maryon Park, Charlton (Elliston Erwood 1916). To round off the picture, glass beads and bone toggles have also been recovered from several LPRIA sites.

Burial, ritual and belief

The transition from the Late Bronze Age to the EPRIA is sufficiently blurred for it to be possible that some cremation burials, such as those at Moor Hall Farm (Gz HV11–12) and Sunnings Farm (Gz HV8), could belong to either period, though cremation ceased to be a normative funerary rite in southern Britain during the Late Bronze Age (eg Brück 1995). Scraps of human bone, burnt and unburnt, have been recorded from a handful of EPRIA sites, as at Snowy Fielder Waye, Isleworth (Bell 1996, 52), and somewhat more widely in M/LPRIA contexts, as for example at Stifford Clays, Essex (Wilkinson 1988) and Lower Warbank, Keston (Philp et al 1991). The mortuary practices that generated these remains are archaeologically undetectable, though they may have included excarnation and perhaps river burial (Whimster 1981; Wait 1985).

The reintroduction of the cremation rite from the Continent in the LPRIA barely affects the London region, though several poorly recorded burials are present at Corbets Tey, Upminster (Gz HV6; Greenwood 1997, 160) and possibly Ewell (Orton 1997). Prestige cremations of Welwyn type are so far unknown. If any pattern is discernible it is a fashion for simple, unaccompanied inhumations, of which a number have been excavated (Greenwood 1997, 160), though dating is usually problematical. The status of the numerous human skulls, many belonging to young males, from the lower fills of the Walbrook stream within and beyond the later Roman city remains unclear. However, Marsh and West (1981) argued persuasively that these represent evidence of Iron Age cult practice rather than the result of the Boudican sack of the fledgling Londinium in AD 60/61.

The ritual deposition of fine metalwork along the Thames and the lower courses of its major tributaries the Wey and Lea is an outstanding feature of the Iron Age within the region and has attracted much interest (Fitzpatrick 1984; Wait 1985, 15–50; Bradley 1990). The steadily diminishing numbers of objects actually deposited over the period appears to be in inverse

proportion to their likely prestige value, as the fine M/LPRIA parade pieces such as the Battersea shield, Waterloo Bridge helmet and, most recently, the all-metal shield from Abbey Meads, Chertsey demonstrate (Stead 1985; 1991). A number of other items, including the LPRIA/early Roman smith's ironwork hoard from a former course of the Lea at Waltham Abbey, appear to have been deliberately bent, possibly to dispatch them to the spirit world (Manning 1972; Merrifield 1987, 29–30).

These watery offerings can now be matched by a range of 'placed deposits' of various sorts discovered on dry land. The latter encompass the burial of complete vessels in pits at Hunts Hill Farm (Greenwood 1997, 156) and Heathrow Runway 1 west extension (Canham 1978a) and dumps of sherds – perhaps derived from episodes of feasting – at Petters Sports Ground (O'Connell 1986) and Snowy Fielder Waye (Bell 1996). Further large groups of LPRIA vessels were recovered from a well in one corner of the triple-ditched enclosure at Moor Hall Farm, Rainham (Greenwood 1982), and from a pit at Farningham Hill. Both may represent the remains of a termination rite, although a ritual explanation was explicitly denied at the latter site (Philp 1984, 32). Recent reassessment of the well-known hoard of bronze animal figurines, comprising three boars, two 'dogs' and a model wheel, dug up in Hounslow in 1864, suggests that the figurines were accompanied by a bronze-bound 'crown' and a number of earlier, Bronze Age, pieces (Gz HO6; Stead 1995, 80–1). The circumstances of the discovery inevitably invite comparison with the now infamous 'Salisbury' hoard, whose contents appear to have included Iron Age miniature votives (shields and cauldrons) alongside metal objects spanning the Bronze Age (Stead 1998).

One final site remains to be mentioned here, that of the M/LPRIA 'shrine' at Caesar's Camp, Heathrow, which, like the Hounslow hoard, is located far to the west of central London, in a peripheral position as far as the estuarine 'contact' zone was concerned (eg Creighton 1995, 298). The original interpretation of the shrine structure was controversial (Grimes 1948; 1961), but recent discoveries and more detailed publication have resolved some of the ambiguities (Grimes & Close-Brookes 1993, 312–18). However, its concentric rectangular plan comprising an inner cella marked by a beam slot and an outer peristyle of postholes, if all of one phase, remains unique, though a number of other single rectangular structures are now known, including small examples at Stockley Park and Uphall Camp. It is possible that the major Caesar's Camp earthwork itself was thrown up to enclose both this structure and the small 'secondary enclosure' to the north-east, although none of these features is well dated. The complex may represent an elaboration of the rectilinear enclosures which overlook the Essex Marshes further east, and which have been likened morphologically to continental *Viereckschanzen* (eg Greenwood 1997, 160).

Conclusions

Current knowledge and understanding

Early Pre-Roman Iron Age

Knowledge of the earlier part of the EPRIA in the London region is dominated by the artefactual record, particularly the metalwork from the Thames and other 'watery' contexts, though in strictly numerical terms this comprises a diminution of interest compared to the Middle and Late Bronze Age. These artefacts can be interpreted in two main ways: as evidence of exchange networks and associated social relationships among elite groups; and as evidence of the ritual practices and religious beliefs of those with access to prestige items (eg Fitzpatrick 1984; Bradley 1990).

This is the period when hillforts began to appear across the landscape of southern Britain, the London region being no exception. The role of these early hillforts is still poorly understood, due to a lack of large-scale investigation. It may be, however, that they can be linked with the possession and utilisation of land, which appears to have superseded control of the bronze supply

as a key determinant of prestige (eg Thomas 1989). Significant changes in ritual practices also occurred at this time, particularly the abandonment of recognisable burial rites, which suggests a wider transformation of cultural life and belief.

The similarities between the pottery styles of the middle and lower Thames and those of northern France and the Low Countries (Champion 1975) indicate some continuing cultural contact with societies in Europe. It is also assumed that local exchange networks continued to function, but there is virtually no evidence for this in the London area. There is also little evidence concerning the adoption of ironworking technology, although there appear to have been attempts to imitate bronze forms in iron, as iron socketed axes indicate (Celoria & Macdonald 1969b, 52). Ironwork of this early period is rarely found, probably due to careful recycling and poor survival.

Evidence for EPRIA settlement is limited compared, say, with the Late Bronze Age and the MPRIA, though a general picture is emerging of small-scale dispersed farmsteads, set in organised landscapes of field systems and trackways, with occasional larger defended enclosures of hillfort type. This pattern is consistent with the evidence from other parts of southern Britain, notably the upper Thames Valley (eg Hingley & Miles 1984, 64–5).

Middle Pre-Roman Iron Age

The MPRIA in central southern Britain is typified by large, heavily defended hillforts situated to dominate extensive blocks of territory. The function of these hillforts as elite residences, storage and trade centres, village settlements and/or as refuges in times of social unrest is still debated. Most of the few hillforts in London appear to have had their origins in this period (Cunliffe 1982, 44), yet the region seems to have remained on the periphery, looking more to a wider East Anglian cultural landscape in which open settlements predominated.

In ceramic terms the London area lies at the eastern edge of the distribution of saucerpan pots and globular bowls of Wessex and the upper Thames, and at the western edge of the distribution of Medway greensand fabrics. From this admittedly somewhat narrow perspective, the integrity of the region as a distinct geocultural entity is arguable; it appears to have lain between more extensive, contrasting cultural zones to the east and west. In other respects, however, the character of settlement and economic production was probably broadly similar to that elsewhere in southern Britain: typified by small farmsteads set among field systems whose inhabitants pursued a mixed farming economy, with occasional evidence for specialisation and interdependence. River deposits of metalwork suggest a continuing ritual tradition concerned with water. While clearly aware of continental practices, British metalworkers were also quite capable of displaying ingenuity in the adoption and innovative adaptation of a range of constructional and decorative features.

Late Pre-Roman Iron Age

The late 2nd and early 1st centuries BC witnessed a dramatic increase in contact with the Continent in certain areas. Wheelthrown Gallo-Belgic pottery was quickly and widely acquired across some areas of south-eastern Britain, giving rise to local imitations of imported forms and styles. Coinage, again consisting at first of Gallo-Belgic imports, became widely used with a range of local imitations and variants. The practice of burying urned cremations in flat cemeteries, often with grave goods ranging from brooches to imported Roman wine-drinking and feasting paraphernalia, suggests the presence of a social elite who chose to express their prestige through funerary ritual. This evidence also indicates a remarkable extension of trade and other contacts with continental societies, though it would be unwise to seek to link it with any historically attested migration, such as that of the Belgae. The increase in European contacts was initially centred on the south coast, but later shifted to focus on the Thames estuary and the Essex coast. Bronze coins of Cunobelin from Canterbury and Colchester feature the sort of high-sided, flat-bottomed ship that presumably plied the sea-lanes and estuarine waters (Muckleroy *et al* 1978; Sealey 1996, 62). It is striking, in this context, that London has few cremation burials (none of which includes rich grave goods), and that Gallo-Belgic pottery styles bypass the region.

The effect of the Roman conquest on LPRIA society in London is difficult to gauge, principally because sites of the period remain frustratingly hard to locate. It does seem clear, however, that there are still no traces of anything approaching an LPRIA urban centre in the region, the evidence from the later MPRIA Uphall Camp and possibly Woolwich notwithstanding. Indeed, London appears to have been peripheral to events taking place further to the north and east, which may account for the distribution of fine metalwork in the Thames, the various potin coin hoards, the Hounslow hoard of animal figurines and the Heathrow shrine. It may be, as Millett (1990, 89) has argued, that it was precisely *because* there was no strong tribal presence in the area that Londinium was placed where it was. For most of the local population the Conquest probably had little immediate effect anyway; continuity rather than change was likely to have been the order of the day.

Assessment of importance and potential

Compared with the wealth of contextual evidence for the preceding period, the Iron Age in the London area is somewhat disappointing. If present evidence is anything to go by, the region appears to have lain beyond the main hillfort-dominated zone in the E/MPRIA, and its inhabitants seem to have taken no archaeologically visible part in the tribal politics that characterise the LPRIA elsewhere in the south-east. Nevertheless, the record has begun to expand in recent years, and we now possess a certain amount of firm evidence, particularly from the higher gravel terraces away from central London, with which to document some of the principal characteristics of the period. This is not to say that major problems do not remain – we still lack many complete settlement plans and economic data, or a good grasp of the ceramic sequence, while the LPRIA remains significantly poorly served.

Nonetheless, the temptation to import inappropriate, hillfort-based, models from Wessex to structure future work in the region should be resisted. It may be preferable to look to the upper Thames Valley for inspiration, where work has focused on the interplay between the various gravel terraces and the floodplain, and issues such as seasonality, transhumance and the agricultural specialisation and interdependence of different types of site have been examined (eg Hingley & Miles 1984; Miles 1986; Allen & Robinson 1993). Whether or not such a model is adopted, it is certainly clear that future work within the region must be outward looking, and integrated with that taking place elsewhere within the greater Thames estuary. The sites now coming to light along the Hoo peninsula on the Isle of Grain (Williams & Brown 1999, 17), for example, are certain to have relevance for London, although this is impossible to assess in the absence of full publication – a problem which bedevils this period above all others.

It seems clear that, at least as early as the MPRIA, the London area lay at the junction of several ceramic zones, having no recognisable style of its own. This notion of London as a ‘liminal’ region may be reinforced by the offerings which continued to be made to the Thames and its tributaries throughout the period, and by the LPRIA tribal dispositions, if the coin evidence is to be believed. Certainly the region appears to lie on the edge of the ‘contact zone’ of

Excavation of an Iron Age and Roman settlement in the grounds of St Mary Abbots Hospital, Marloes Road, Kensington



continental influence at this time, and beyond the distribution of prestige imports and 'Aylesford Complex' burials, though as Haselgrove (1987, 59–60) and others have pointed out, discontinuities at boundaries often conceal intensive interaction across them.

The presence of Londinium itself has encouraged too narrow a view to be taken of the LPRIA, one that simply seeks to provide background for its foundation. Rather, future evidence should be accumulated and studied in its own right for what it might tell us about late prehistoric settlement within the lower Thames Valley. We still have too little of this from central London, and what we do possess is often, as noted above, the result of simple serendipity rather than problem-orientated fieldwork and research. North Southwark provides an indication of the sorts of evidence that might be anticipated (eg Heard 1996), and such evidence is just now beginning to emerge from a handful of sites along the Thames further upstream (eg Bruce 1998; Partridge 1998; Howe 1998).

If we are serious about understanding the reasons for the siting of Londinium then a conscious and consistent effort must be made to move the study of the later first millennium BC further up the archaeological agenda. Once again, a start can be made by gathering up and publishing important backlog sites and their attendant pottery and environmental assemblages. Moreover, in addition to PPG16 requirements, air, ground and documentary surveys should be commissioned and undertaken in areas likely to add to our knowledge. Grim's Dyke and other hitherto undated earthworks in the woodlands of the northern heights (eg Lees 1998) might be useful places to start.

G A Z E T T E E R

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
BD1	BARKING AND DAGENHAM	POTTERY ASSEMBLAGE	060183	546080	185420		Iron Age pottery assemblage may be part of a large Romano-British cemetery, Westrow Drive.
BD2	BARKING AND DAGENHAM	POTTERY	061906	543910	183910	BA-185	Iron Age settlement. Abbey Road, Barking.
BA1	BARNET	ENCLOSURE	080562	526300	197200		Iron Age enclosure/hillfort. Monken Hadley Common, Hadley Wood.
BA2	BARNET	PIT	081947	517500	193900		Pit with a 'Belgic' pot. Brockley Hill.
BA3	BARNET	POTSHERD	052072	517880	193400		Belgic pottery settlement. Brockley Hill, Watling Street.
BX1	BEXLEY	POTTERY	070462	551010	175070		Iron Age settlement dated as very late Middle Iron Age and into Late Iron Age. Watling Street, Old Road, Crayford.
BX2	BEXLEY	DITCH	070472	551500	175800		Iron Age settlement. Perry Street, Crayford.
BX3	BEXLEY	OCCUPATION SITE	070434	550630	173440		Ditches with Iron Age Roman pottery. Wansunt Road.
BY1	BROMLEY	POTSHERD	070664	547100	167400		Iron Age pottery. High Street.
BY2	BROMLEY	DITCHED ENCLOSURE	070692	547250	166260		Iron Age farm. ?100 BC–AD 100. A double-ditched enclosure in the Roman period. Ramsden School, Orpington.
BY3	BROMLEY	HUT	070630	545420	165830		Iron Age settlement below Orpington Roman villa. Civic Hall, Crofton Road.
BY4	BROMLEY	PIT	070661	546990	164980		Pit with Early Iron Age pottery. Court Road.
BY5	BROMLEY	PIT	070812	540150	164080		Late Iron Age/early Roman settlement. North Pole Lane, West Wickham.
BY6	BROMLEY	HILLFORT	070638	541650	163910		Iron Age single bank and ditch defending a promontory. Keston Common.
BY7	BROMLEY	HILLFORT	070639	542200	163900		Middle Iron Age hillfort. Pottery said to be late Middle Iron Age important assemblage. Caesar's Camp, Keston Common.
BY8	BROMLEY	EARTHWORK	070642	542750	163350		Huge ditch to south-east of Caesar's Camp. No evidence to prove it is an outlying defence. Shire Ditch, Shire Lane.
BY9	BROMLEY	OCCUPATION SITE	070827	541370	163230		Iron Age settlement, important Late Iron Age pot assemblage. Lower Warbank Field, Keston Common.
BY10	BROMLEY	OCCUPATION SITE	070716	539780	161110		Iron Age farmstead with local pottery ditches of possible rectangular enclosure found under ?villa. Sheepbarn Lane.
CT1	CITY OF LONDON	VESSEL	041158	532420	181750		Late Bronze Age/Early Iron Age sherds. Cripplegate area.
CT2	CITY OF LONDON	HELMET	041176	533010	180830		Small bronze boar mount from a ?drinking vessel. Eastcheap.
CT3	CITY OF LONDON	POTTERY	044413	532160	181310		Base fragments from pedestal urn.
CR1	CROYDON	OCCUPATION SITE	020192	532000	165500		Iron Age pottery. Rectory Grove.
CR2	CROYDON	OCCUPATION SITE	020299	533070	165040		Pottery of Late Bronze to Romano-British date. Stanhope Road, Redcourt, Waddon.
CR3	CROYDON	TRACKWAY	020672	534370	160550		Prehistoric trackway marked on Bourne Society map as linking Kingswood Romano-British settlement with Atwood Iron Age settlement. Lime Meadow Avenue.
CR4	CROYDON	OCCUPATION SITE	020263	534300	160500	ATW90	Settlement site connected by a 'road' to the Romano-British site at Kingswood 020297. Late Iron Age pot and La Tène iii brooch. Atwood School, Limsfield Road.
CR5	CROYDON	DITCHED ENCLOSURE	020297	535200	160800		D-shaped enclosure. Late Iron Age burial. Kings Wood, Sanderstead.
CR6	CROYDON	DITCHED ENCLOSURE	020279	530200	159500		Ditched enclosure, probably Iron Age. Coulsdon Woods, Deepfield Way.
CR7	CROYDON	FIELD SYSTEM	020339	530010	158810		Celtic field system, Iron Age sherds occur all over the area. Farthing Down, Coulsdon.
EL1	EALING	POTSHERD	050983	516300	184400	HH87	Pottery found during 1987 excavations. Previous finds include the enamelled terminal of a linchpin or harness mount. Horsenden Hill, Greenford.
EL2	EALING	POTSHERD	050939	519850	179660	AGA81	Pottery dated to Late Bronze Age–Early Iron Age. Avenue Gardens, Acton.
EN1	ENFIELD	PIT	082191	535300	199100	AYL90	Three shallow pits with Late Bronze Age/Early Iron Age pottery. Aylands Allotment.
EN2	ENFIELD	ENCLOSURE	080566	532200	195700		Scheduled probable univallate hillfort? With west side surviving, sub-circular with diameter of c 120m. Bush Hill Park.
EN3	ENFIELD	POTSHERD	081471	532980	194330		Excavation of pottery dated to Middle Iron Age c 450–400 BC. Church Street, Edmonton.
GR1	GREENWICH	DITCH	070992	543600	179300		Two very large LPRIA V-shaped ditches possibly enclosing a settlement of roundhouses and pits. Possible <i>oppidum</i> .
HF1	HAMMERSMITH AND FULHAM	OCCUPATION SITE	054298	525180	176570	PGN96	Lady Margaret's School.
HF2	HAMMERSMITH AND FULHAM	DITCH	052778	522800	178660	GAN96	5–15 Galena Road.
HG1	HARINGEY	POTTERY KILN	080276	528290	188970		Kilns, probably of the Flavian period; earliest phase of site produced pottery dated to c AD 40. Highgate Wood Roman pottery.
HG2	HARINGEY	SWORD	060860	535260	190250		La Tène or variant iron sword and scabbard was found in Walthamstow, during the construction of the Lockwood Reservoir c 1901. Lockwood Reservoir.
HW1	HARROW	POTSHERD	052164	517350	194140		Several rims of Early or Middle Iron Age pottery. Brockley Hill.
HW2	HARROW	DYKE	05216002	513105	191910		Section of Grim's Dyke. Ditch c 1.8m deep, 22.8m wide with low wide bank. Quantities of Belgic pottery recovered from ditch.
HV1	HAVERING	ENCLOSURE	060110	548870	189320	RO-WF88	Large partially double-ditched enclosure measured c 100m diameter. The ditch contained bone, charcoal and frequent large fragments of Early Iron Age (c 600 BC) pottery. Probably a hillfort? Eastern Avenue West (Warren Farm), Romford.
HV2	HAVERING	DITCHED ENCLOSURE	061279	548990	189520	RO-WF88	Large rectangular enclosure could be part of a sacred temenos, multiple ditched. Whalebone Lane, Romford.
HV3	HAVERING	FIELD SYSTEM	060276	548910	189250		Aerial photographs show clear traces of early field system was part of the Late Iron Age/early Roman agricultural exploitation of the area. Eastern Avenue (Warren Farm), Romford.

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
HV4	HAVERING	POTSHERD	061472	555940	186950		Pottery dating from the Late Iron Age to the early Roman period. Waldegrave Gardens.	LA1	LAMBETH	PIT	091252	530330	177690	COR89	Middle Iron Age occupation site. South Lambeth Road.
HV5	HAVERING	POTTERY	060104	553400	184500	HORA71	Late Bronze Age/Early Iron Age pottery. Hornchurch Aerodrome.	MT1	MERTON	HILLFORT	030731	522400	171070		Early Iron Age hillfort enclosing 4.75ha. 250m diameter. Early Iron Age pot assemblage. Caesar's Camp, Wimbledon Common.
HV6	HAVERING	BUILDING (UNCLASSIFIED)	06009601	555805	184750	COR62	Iron Age/Roman occupation within a large ditched enclosure. Late Iron Age (early 1st century AD) and post-Conquest (late 1st–early 2nd century AD). Late Iron Age burial. Harwood Hall Lane, Corbets Tey, Upminster.	MT2	MERTON	JAR	030645	526000	171600		Iron Age cremation jar? Early Iron Age, could be part of grave goods or could be votive rather than funerary. Tooting, near Copper Mills.
HV7	HAVERING	FIELD SYSTEM	060099	557410	185610		Field system, short driveway. Cranham.	MT3	MERTON	DITCH	021173	527200	169800	KCG89	Iron Age enclosure? Part of banjo enclosure? King's College Sports Ground, Western Road.
HV8	HAVERING	FARMSTEAD	060094	557010	184500	UP-GS83	Iron Age farmstead or settlement. Tentatively dated to the Late Iron Age or early Roman period. Early Iron Age cremations, important Late Iron Age pot assemblage. Sunnings Lane.	NH1	NEWHAM	OCCUPATION SITE	061935	538900	183500	HW-OP-91	Iron Age occupation site/religious? Complex of pits including horse burial and crouched inhumation. Moderate amounts of pottery. Provisionally dated Iron Age/Roman, suggested as a ritual or religious site. Stratford Market Depot.
HV9	HAVERING	OCCUPATION SITE	060092	557900	184350	UP-MF83	Iron Age occupation. One hut circle of the Early Iron Age period. Manor Farm, Ockendon Road, North Ockendon.	RB1	REDBRIDGE	FIELD SYSTEM	060335	546450	189070		Field system, crop soil marks. Aerial photographs. Eastern Avenue, Ilford.
HV10	HAVERING	OCCUPATION SITE	060070	554250	182650	R/JC	Isolated finds of Iron Age and Roman pottery, animal bones and building material have been found at the Jewish cemetery in Rainham. The finds would seem to indicate a sizeable farmstead or settlement on the site dating to the Late Iron Age and early Roman periods.	RB2	REDBRIDGE	FARMSTEAD	060802	546640	189050		Iron Age farmstead, earlier Iron Age features. Goodmayes Hospital.
HV11	HAVERING	DITCH	06006002	554450	181980	R-MHF79	Large triple-ditched enclosure/hillfort. The enclosure was dated by pottery to the Late Iron Age. Late Bronze Age/Early Iron Age cremations, important Middle and Late Iron Age pot assemblages. Launderers Lane.	RB3	REDBRIDGE	HILLFORT	061655	543590	185290	ILF-UC83	Middle Iron Age hillfort, 19ha area, planned interior? Middle Iron Age pot assemblage and field systems, blacksmithing, weaving and agriculture all evidenced. Uphall Camp, Ilford.
HV12	HAVERING	ROUNDHOUSE	060059	554450	182050	R-MHF79	Excavations revealed part of an Middle Iron Age settlement or farmstead. Launderers Lane.	RB4	REDBRIDGE	RING-DITCH	062105	546230	189960	IG-HR93	Redlands Quarry.
HV13	HAVERING	OCCUPATION SITE	060090	557050	182500	UP-VVW82	Late Bronze Age/Early Iron Age occupation. Early Iron Age landscape/field systems. Whitehall Wood, Upminster.	RB5	REDBRIDGE	PIT	062106	546230	189960	IG-HR93	Redlands Quarry.
HV14	HAVERING	CREMATION CEMETERY	061699	557010	184500	UP-GS83	Sunnings Lane, Upminster.	RB6	REDBRIDGE	ENCLOSURE	062108	546230	189960	IG-HR93	Redlands Quarry.
HV15	HAVERING	OCCUPATION SITE	0	556600	183100	UP-HH84	Late Bronze Age to Late Iron Age occupation site comprising field systems, enclosures and roundhouses. Hunts Hill Farm, Aveley Road, Upminster.	RB7	REDBRIDGE	POSTHOLE	062110	546230	189960	IG-HR93	Redlands Quarry.
HL1	HILLINGDON	DYKE	052254	510500	188900		Multi Iron Age dyke? The possible line of Grim's Dyke to the west of Cuckoo Hill, Pinner. Grim's Dyke (western extension) Haydon Hall to Uxbridge Common.	RT1	RICHMOND	PIT	021013	523443	176233	BEV1	Middle Iron Age occupation site. North Thames Gas Terminal, Barn Elms.
HL2	HILLINGDON	OCCUPATION SITE	050243	505600	184020	UX84IV	Heavily flint-tempered pottery probably of Bronze/Iron Age date. High Street, Uxbridge.	RT2	RICHMOND	OCCUPATION SITE	021015	523700	176200	FHM06	Iron Age occupation site. Barn Elms Playing Fields.
HL3	HILLINGDON	ROUNDHOUSE	050760	508250	180750	SPD85	Unenclosed Iron Age settlement comprising four roundhouses and at least 10 post-built granary structures, considerable quantity of pottery and metal slag (6th–4th centuries BC). Stockley Park, Dawley.	RT3	RICHMOND	COIN HOARD	021007	516500	173100	FRM03	Potin coin hoard. Eel Pie Island.
HL4	HILLINGDON	ENCLOSURE	051159	506800	178400	HL82	Iron Age occupation, partially overlain by a sub-oval Romano-British enclosure, also part of a Middle Iron Age roundhouse gully. Substantial double-ditched track. Hallstatt brooch found in secondary silted, Holloway Lane, Harmondsworth.	RT4	RICHMOND	PIT	021594	516450	173650	APR94	Amyand Park Road.
HL5	HILLINGDON	OCCUPATION SITE	051167	507800	178400	WGF84	Iron Age features including several pits and gullies. Some may be associated with iron smelting. Wall Garden Farm, Sipson.	RT5	RICHMOND	POSTHOLE	021595	516450	173650	APR94	Amyand Park Road.
HL6	HILLINGDON	OCCUPATION SITE	051191	509000	177500	CLH90	Enclosure, ditches and pits with Late Bronze Age/Early Iron Age pottery. Cranford Lane.	RT6	RICHMOND	DITCH	021596	516450	173650	APR94	Amyand Park Road.
HL7	HILLINGDON	POTTERY	051098	509350	177150	CLH90	One of two distinct periods of activity dating to Late Bronze Age/Early Iron Age. Cranford Lane, Harlington.	SW1	SOUTHWARK	DITCH	091376	532410	180200	CO87	Iron Age field or enclosure boundary. Park Street (Courage Brewery).
HL8	HILLINGDON	OCCUPATION SITE	050881	508450	176580		Excavated 1944 by Grimes. May have been an open settlement, later enclosed, contained roundhouses, a Middle Iron Age temple/shrine and other features such as pits, hollows and isolated gullies. Temple is of Middle Iron Age date. Middle Iron Age pot assemblage.	SW2	SOUTHWARK	ROUNDHOUSE	091159	532410	180200	CO87	Late Bronze Age possibly Early Iron Age posthole structure. Park Street (Courage Brewery).
HL9	HILLINGDON	OCCUPATION SITE	050219	505600	176530	HEA69	Occupation site. Heathrow Airport, runway 1 extension.	SW3	SOUTHWARK	POSTHOLE	090827	532520	180110	15SKS80	Iron Age structures. Potsherds. Southwark Street.
HL10	HILLINGDON	ENCLOSURE	050349	509100	175100		Univallate sub-circular enclosure seen as a cropmark in aerial photograph. Fernhill, Hatton.	SW4	SOUTHWARK	POTSHERD	090999	532800	180170	11ST577	Iron Age excavation. St Thomas Street.
HL11	HILLINGDON	BUILDING (UNCLASSIFIED)	052677	507800	185230	LLP94	Possible rectangular structure and associated gullies. Long Lane Playing Fields.	SW5	SOUTHWARK	PIT	091284	533540	179150	170GRA89	Pit containing quantities of Late Iron Age/early Roman material. Grange Road.
HL12	HILLINGDON	ENCLOSURE	052761	508100	177700	IMP96	Imperial College Sports Ground.	ST1	SUTTON	ROUNDHOUSE	02057501	529700	165800		Settlement/ditched enclosure with field systems, with roundhouses of Late Bronze Age to Late Iron Age date. Occupation continued from the Iron Age into the Roman period on this site.
HO1	HOUNSLOW	ENCLOSURE	050437	517510	177650		Possible site of Brigantian camp guarding Old England ford could be traced on old maps. Somerset Road, Brentford.	ST2	SUTTON	ENCLOSURE	030262	528850	165100		Possible Iron Age fortified enclosure. Ditch and bank fortifications. Iron Age potsherds found. Beddington Park.
HO2	HOUNSLOW	DITCH	051095	517170	177280	BRF89	Series of Iron Age/Roman property boundaries running east–west. Brentford.	ST3	SUTTON	OCCUPATION SITE	030250	530720	165030		Iron Age occupation site. Aldwick Road, Beddington.
HO3	HOUNSLOW	OCCUPATION SITE	050223	507530	173800		Large ditch enclosing hut circles, gullies, ditches and pits. Middle–Late Iron Age. Esso Compound, Bedford.	ST4	SUTTON	POTSHERD	030267	529950	164610		Iron Age and Belgic sherds found in excavations. Bandon Hill, Beddington.
HO4	HOUNSLOW	ROUNDHOUSE	051030	507700	173600	MFEB88	Iron Age roundhouses on multi-period site. Middle–Late Iron Age pot assemblage. Mayfield Farm, East Bedford.	ST5	SUTTON	HILLFORT	030338	526850	164000		Hillfort? Field system. Area originally studied in 1905. Suggested as a bivallate hillfort. Excavations indicated that bank and ditch was agricultural terracing. The interpretation as a hillfort is therefore suspect.
HO5	HOUNSLOW	OCCUPATION SITE	052698	516620	176200	SFW96	Ditches and pits of Early Iron Age/Middle Iron Age date. Snowy Fielder Way.	ST6	SUTTON	ENCLOSURE	021194	527800	162480	QMH89	Iron Age settlement beyond ditched enclosure 500ft diameter excavated 1903–4 and 1937–9. Iron Age sherds found. Queen Mary's Hospital, Carshalton.
HO6	HOUNSLOW	METALWORK HOARD	050870	514000	176000		The Hounslow hoard of animal figurines. Hounslow (in a field north of the High Street).	TH1	TOWER HAMLETS	HUMAN REMAINS	080784	533660	180990		Excavation for Minorities sewer in 19th century found stratum of black earth with Roman debris and a Late Iron Age inhumation below it. Minorities Sewer Construction.
IS1	ISLINGTON	DITCH	080358	531490	182160	ENG84	Pit or ditch with Iron Age pottery. Engineers Car Park, Clerkenwell.	TH2	TOWER HAMLETS	PIT	081466	533640	180500		Excavation 1976–7. Large pit 1.5m x 2.0m x 1.45m. Shallow grave sealed by Roman deposits: Late Iron Age inhumation? The Tower of London.
KT1	KINGSTON UPON THAMES	DITCH	030598	518260	169180	KB67	V-shaped ditch containing Early Iron Age pottery. Fairfield Road.	WF1	WALTHAM FOREST	POTTERY ASSEMBLAGE	060256	536730	193460		Belgic pottery c AD 40. Girling Reservoir.
KT2	KINGSTON UPON THAMES	OCCUPATION SITE	030099	521250	166200		Iron Age occupation site, possible Early Iron Age hillfort, 200m diameter. Church Road, Old Malden.	WF2	WALTHAM FOREST	PILE DWELLING	060838	536430	191630		A series of rows of wooden piles at the mouth of the River Ching interpreted as part of a crannog or pile dwelling site. Banbury Reservoir.
KT3	KINGSTON UPON THAMES	POTTERY	032027	520060	165830		Iron Age settlement site datable by characteristic pottery to the Middle Iron Age. Alpine Avenue.	WF3	WALTHAM FOREST	VESSEL	060841	535300	189650		Two bronze cauldrons now in the British Museum. Maynard Reservoir.
KT4	KINGSTON UPON THAMES	ADZE CACHE	0	521130	166280		Pair of flint adzes in pit whose upper fills contained Early/Middle Iron Age pottery. Manor Farm Buildings.	WF4	WALTHAM FOREST	PILE DWELLING	060840	535140	189600		Construction of the low Maynard Reservoir at Walthamstow 1869 revealed a series of timber piles interpreted as a crannog or pile dwelling site. Maynard Reservoir.
KT5	KINGSTON UPON THAMES	DITCH	021386	521000	166340	PRY91	Percy Gardens.	WF5	WALTHAM FOREST	PILING	060837	534730	188380		Iron Age wooden piles c 0.15m and spaced c 0.17–0.23m apart. Warwick Reservoir.
KT6	KINGSTON UPON THAMES	PIT	021390	521000	166340	PRY91	Percy Gardens.	WW1	WANDSWORTH	POTSHERD	031277	523970	175580	FEL176	Sherds dated to Early Iron Age (5th–3rd centuries BC) and Late Iron Age/early Roman. Felsham Road.
KT7	KINGSTON UPON THAMES	POSTHOLE	021391	521000	166340	PRY91	Percy Gardens.	WW2	WANDSWORTH	POTTERY ASSEMBLAGE	031279	523800	175600	BEM3/72	Middle Iron Age/Iron Age pottery. Putney.
KT8	KINGSTON UPON THAMES	PIT	021393	520060	165830	ALP91	Old Government Offices.	WW3	WANDSWORTH	PILE DWELLING	031591	525000	175000		Iron Age settlement postulated between the Wandle and Putney Bridge on the Surrey side. Putney Bridge Road.
KT9	KINGSTON UPON THAMES	POSTHOLE	021394	520060	165830	ALP91	Old Government Offices.	WW4	WANDSWORTH	OCCUPATION SITE	031278	526200	174600		Possible occupation site. Pottery Early Iron Age (5th–3rd centuries BC). St Ann's Crescent.
KT10	KINGSTON UPON THAMES	HUT	022244	521130	166280	MAF95	Manor Farm Buildings.	WW5	WANDSWORTH	COIN HOARD	106027	524300	175800		Putney Bridge.
KT11	KINGSTON UPON THAMES	PIT	022245	521130	166280	MAF95	Manor Farm Buildings.	WM1	WESTMINSTER	STRUCTURE (UNCLASSIFIED)	081461	530230	179860	CEU259	Part of a timber structure at –1.4m OD immediately overlying a peaty deposit, itself resting on alluvial clays. Radiocarbon dating of the timber gave a result of 2540±70 BP 590±70 BC (uncalibrated). Richmond Terrace Mews.
KT12	KINGSTON UPON THAMES	DITCH	023169	521200	166150	OLM97	St John's Vicarage, Church Road, Old Malden.	WM2	WESTMINSTER	FINDS	081148	530205	179565	WHL75	Excavation identified three prehistoric strata including a blue-grey clay with pottery and spindlewhorl Late Bronze Age to Early Iron Age. St Margaret Street, Westminster.
KT13	KINGSTON UPON THAMES	PIT	023170	521200	166150	OLM97	St John's Vicarage, Church Road, Old Malden.	WM3	WESTMINSTER	COIN HOARD	081146	529600	179800		Potin coin hoard. St James's Park.
KT14	KINGSTON UPON THAMES	POTSHERD	023171	521200	166150	OLM97	St John's Vicarage, Church Road, Old Malden.								

7

**LONDINIUM AND ITS
HINTERLAND: THE
ROMAN PERIOD**

Dominic Perring with Trevor Brigham

Introduction and background

The pace of archaeological research over the last half-century makes London one of the best studied cities of the Roman Empire, at least in terms of its material culture. The potential of the site to contribute to our understanding of the ancient world has, however, been poorly realised. There is an intimidating amount of detailed information available and although this has been put to use in reconstructing urban narratives and topographies, London is infrequently mentioned in works of broader synthesis on the character of Roman provincial society. Its hinterland is even less well served, despite a growing body of fieldwork.

Current research in classical archaeology is preoccupied with the nature of the dialogue between Roman and native, and about the divergent ways in which provincial culture was formed, experienced and expressed. Such research is part of the broader debate on the nature of imperialism, the definition of cultural identity and the replication of power. These themes can be explored in rewarding detail in London. The site both articulated the economic and political relationships on which the provincial administration relied, and was a theatre for the demonstration and mediation of social relationships. There is much to be learnt here, from a wealth of archaeological information, about the way in which power was expressed and society organised, about the economic and administrative structures that prevailed, and about the ways in which these changed through time. Here too there is scope to explore the

ideological nature of urbanism and the context in which towns could flourish, or to contribute to the current argument over the nature of the Roman urban economy. Such thinking needs to be drawn on in order to make sense of the excavated results.

The main purpose of this survey is to provide a review of the archaeological information presently available in order to inform such thinking. It starts with an overview of the historical context for the Roman period settlement at London and offers a brief summary of some of the factors which have influenced approaches to sampling and recovery. The greater part of the chapter is concerned with the nature of the evidence uncovered. A final section on the possible directions that future research might take had originally been prepared for publication but has not survived the test of time and has sensibly been omitted. Some arguments have, however, been integrated into the descriptive text.

The Roman conquest brought about a fundamental transformation in the cultural landscape of the London area,

central to which was the foundation of the town itself. From modest origins as a planned trading settlement around the new river crossing, this was to become the largest and most significant town in the Roman province. The lower Thames Valley, previously peripheral to the tribal polities of the Late Pre-Roman Iron Age, centred on Verulamium, Colchester and Canterbury, became the economic and political heart of Britain.

The history of the Roman period in Britain, from the Claudian conquest of AD 43 to the break with Rome c AD 410, is reasonably well established (see Frere 1987a; Salway 1981). The conquest, as described in Roman histories, was accomplished in stages: by c AD 50 the south-east was subjugated and military attention turned north and west. Towns developed within the pacified area (notably Colchester and Verulamium), and a provincial administration was imposed. London itself is first mentioned as a trade centre in connection with the events of AD 60/61, when it was destroyed by British rebels led by Boudica (Tacitus, *Annals* 14.32). Recent work has shown that the restoration of the town began within two years of the revolt.

Northward expansion recommenced after AD 70 and by the end of the 1st century the final shape of the province was broadly established. The Trajanic period (AD 98–117) was one of consolidation, followed by the construction of frontiers under Hadrian and Antoninus Pius. A visit to Britain by the Emperor Hadrian in AD 122 may have stimulated important programmes of reconstruction, but imperial attention in the 2nd century increasingly turned to frontiers elsewhere in the Empire. The army in Britain was progressively reduced from about 50,000 men in AD 150 to no more than 33,500, possibly 15,000 or less, by the 4th century (James 1984, 166–9).

In the 3rd century Rome faced serious economic, social and political problems, the effects of which may have been felt in Britain. While these effects cannot be dismissed, it would be simplistic to suggest that all of the changes apparent in London at this time were related purely to such factors, and it is clearly an area where much remains to be done. Among these changes were the decline and eventual dismantling of the port facility around the middle of the 3rd century (Brigham 1990a, 158–60), and the demolition of the great forum-basilica on Cornhill c AD 300 (Milne 1992a, 93–5). Saxon raids became a problem and forts were built around the south-east coast (subsequently known as the ‘Saxon shore’); at the same time, London was given a riverside defensive wall. Towards the end of this period, London was briefly the capital of a ‘British empire’ under the usurper Carausius and his successor Allectus (AD 286–96); the massive foundations of a building which has been identified as a possible Allectan palace have been excavated in the south-western part of the City (Williams 1993), although other interpretations are possible.

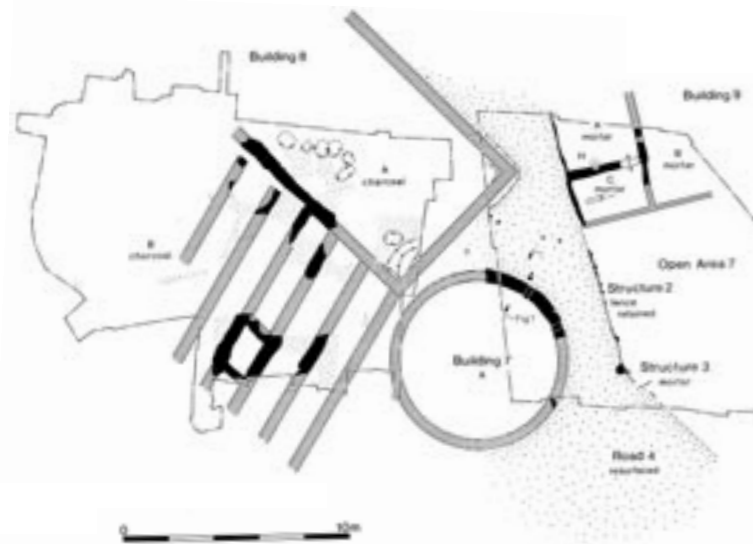
Administrative and military reforms of the 3rd and early 4th centuries, initially under Severus, and subsequently under Diocletian and Constantine, resulted in the division of Britain into two, and subsequently four (or five) provinces grouped in a diocese. London remained the main metropolis of Britain as the probable seat of the vicarius, the senior government official of the diocese of Britannia. The latest historical references to Roman London refer to the breakdown of order after barbarian attack in AD 367. From these references we also know that London was given the title of *Augusta* (Ammianus Marcellinus 28.3). Campaigns under Stilicho in AD 396–8 are the last known to have been conducted by a Roman general in Britain; a section of riverside wall constructed at the Tower of London (Parnell 1985) has previously been put forward as one result of his visit, although this cannot be supported from other evidence. When Britain next sought imperial assistance during further barbarian incursions in AD 408–10, it was not forthcoming. The communities of Britain may, at this time, have expelled the remaining Roman officials (Zosimus 6.5.2–3), though the historical sources are ambiguous and open to contrasting interpretations.

Past work and nature of the evidence

Past work

Antiquarian interest in the origins of London was well established by the end of the 17th century, but serious work did not start until the 19th century. The pioneering efforts of Charles Roach Smith deserve particular mention.

The first detailed study of the Roman city and its surroundings was published in the Victoria County History in 1909, by which time there were some 300 discoveries to report. Salvage excavation and recording continued in the early 20th century. Although mainly concerned with the recovery of finds for the collections of the London and Guildhall Museums, much fine work was undertaken by Frank Cottrill, Gerald Dunning, Frank Lambert and others, and was regularly published. A Royal Commission on Historic Monuments volume on Roman London (RCHM 1928) summarised much of the early work, and remains a valuable source of information. After the 1939–45 war, systematic fieldwork was organised by the Roman



Interpretative drawing of late 1st-century buildings excavated at the Winchester Palace site in Southwark in 1983 (MoLAS)

and Mediaeval London Excavation Council in response to the pace of redevelopment in the City (Grimes 1968), and Professor Grimes's work on the city wall, the Cripplegate fort (Shepherd in prep) and the Temple of Mithras (Shepherd 1998b) transformed knowledge of the Roman city. The Council's field activities fell off sharply after 1963, when the burden of recording remains in the City fell to Peter Marsden at the Guildhall Museum. In difficult circumstances major discoveries were recorded at Huggin Hill (the baths complex), Cannon Street (the buildings identified as a possible governor's palace) and in the forum area. Despite poor conditions for recording throughout the 1960s and much of the 1970s, Marsden's work provided a framework for subsequent re-examination of these three monuments in more controlled situations in the following decades.

The creation of the Department of Urban Archaeology at the Museum of London in 1973, and the publication of *The future of London's past* (Biddle et al 1973), established institutional and research frameworks for archaeological work on the Roman city. The considerable increase in developer funding (especially since 1980) has provided resources for excavations on most threatened sites, and the Department of the Environment (subsequently English Heritage) has invested in programmes of research and publication. This work was concentrated in the City, and focused (disproportionately) on the study of Roman archaeology.

Outside the City, only Southwark has received consistent attention. Kathleen Kenyon and the Surrey Archaeological Society were the first to undertake excavations in the Roman suburb in 1945, and this was published relatively quickly (Kenyon 1959). From 1972 work was organised on a full-time basis by the Southwark Archaeological Excavation Committee (which joined with Lambeth in 1975 to form SLAEC), subsequently part of the Department of Greater London Archaeology (DGLA), Museum of London. Many of the findings made during the 1970s were published shortly afterwards (eg SLAEC 1978; 1988). There has also been important work by local units and groups in surrounding areas, including excavations of roadside settlements (eg Old Ford), villas (eg Beddington) and pottery kilns (eg Brockley Hill). The formation of professional units in these areas, most of which were merged in the DGLA, increased professional archaeological cover, but the publication of fieldwork results of both this department and the Department of Urban Archaeology was slow and episodic. The two units were merged in 1991 to form the Museum of London Archaeology Service, and the undoubted benefit of this has been the development of more regionally based strategies for publication, and the increased pace of such publication with the creation of a new MoLAS monograph series. However, investigation of the Roman archaeology of the London region is now increasingly decentralised, as other professional archaeologists compete for work in the Greater London area, and this has led to the fragmentation of knowledge of particular areas. The development of a pan-London regional research strategy which includes all units working in the area is therefore of pressing importance.

In summary, the Roman city of London has probably been excavated more extensively than any comparable urban centre of the Roman world. The current importance and research potential of the site are owed, above all, to the high-quality evidence obtained from hundreds of recent archaeological excavations. Most of this evidence has been summarily quantified and described, but has not yet been exploited in interpretative terms. At present, the most rewarding area for further work on the urban core (particularly the City and Southwark) is likely to lie in detailed study of this research archive. The existing data, which are unparalleled in terms of quality and quantity, allow for a more effective study of urban development than is presently possible for other Roman cities. The considerable body of data concerning the town's hinterland which has also accumulated needs to be reorganised and studied thematically. To realise the research potential of the evidence, the results so far obtained are now being made more accessible through wider and more coordinated use of computerised databases to organise and interrogate the archive, the opening of an Archive Centre (LAARC) to facilitate public access, and a wide-ranging programme of publication, including two series of MoLAS monographs and study papers.

The nature of the evidence

Roman sites are generally rich in archaeological finds, including assemblages of precisely dated and well-provenanced pottery and coins. Inscriptions, notably funerary and altar dedications, are an important if limited supplementary source of information. Dendrochronology is of particular importance for work in London, where preserved structural timbers are often found in waterlogged contexts close to the Thames and in tributary valleys: precise dates for the construction of several buildings and other structures are now available. These include a revetment of AD 52 found at Regis House (43–46 King William Street: Gz CT17) in 1995–6 (Brigham et al 1996; Brigham & Watson in prep), and a timber drain at 1 Poultry (Gz CT63), also found in 1995–6. The timbers had felling dates of winter AD 47/48 and spring AD 48. It is the earliest absolutely dated Roman structure in the country, and one which provides a *terminus ante quem* for the foundation of London itself (Rowsome 2000; in prep).

The most important areas for discovering well-preserved Roman remains are those parts of the City with the greatest depth of archaeological deposits alongside the Rivers Thames and Fleet, and the Walbrook stream, where waterfront structures and waterlogged reclamation deposits containing organic refuse and well-preserved artefacts are found. These include not just objects of wood, cloth and leather, but votive iron and bronze items such as the series of tools and military objects from the Walbrook, statuettes and other cast decorative pieces dredged from the Thames near London Bridge in the 19th century. The nature of the archaeological evidence in this part of London – particularly the presence of extensive waterlogged deposits, the established potential of dendrochronological-dating already referred to, and the quality of artefact assemblages – adds significantly to the importance of sites in London. London almost certainly has a more accurate and precise dating framework, and a richer resource of preserved organic finds (much of which is still to be exploited), than any other Romano-British urban centre. Several important areas of research will consequently be better served by studies of the evidence from London than from any other site.

Waterlogged deposits have been intensively studied in recent City excavations, but continue to have enormous potential. It can be argued, for example, that the precisely dated refuse deposits preserved along the Thames, Fleet and Walbrook valleys are a more valuable resource than the timber quays which have so far received a great deal more attention (and which remain a conservation priority, given the diminished nature of the resource). It is also apparent that fluctuating water tables in the City directly threaten the preservation of this resource and that water levels should be closely monitored. In some cases, the process of dewatering should call into question the presumption in favour of conservation *in situ*.

Of particular importance are several types of organic finds such as wooden writing tablets, industrial waste and environmental evidence. Wooden writing tablets may yet transform our understanding of the nature of commercial relationships in London, and references to London itself may clarify the changing title and status of the city; one example from 19 Throgmorton Avenue records ownership of a wood in Kent (Tomlin 1996). London should be a rich source of such documents, though very few have so far been recovered. Industrial waste from crafts rarely represented in the archaeological record is also particularly important. The tanning and leatherworking industries were extremely significant, and work on stamped items such as shoes may throw considerable light on the organisation of the industry. Further discoveries of house timbers, furniture offcuts and fragments, and other evidence of woodworking would be valuable in enhancing the already increasingly well-understood study of carpentry techniques and the management of timber resources. More extensive sampling is also needed to recover palaeoenvironmental evidence for the study of changing regional landscapes, agricultural systems, environmental conditions (including pollution), tidal levels, water-supply management and navigability of rivers in the region. The effect of Roman activities in marshland areas, including possible reclamation, is of special interest.

Over large parts of the City, however, post-Roman activity and more recent cellars and basements have virtually eradicated Roman occupation horizons, particularly those of later date. This has been more severe in some areas, notably to the south of St Paul's and Ludgate, and between the Tower and Aldgate, although at Colchester House, Pepys Street in the latter area, a possible late Roman public building or cathedral has been identified (Sankey 1998a; 1998b).

There is also considerable chronological variation in the character of the occupation evidence. The frequent rebuilding of early timber and clay structures has left abundant evidence for the construction, function and organisation of buildings in the early Roman city, although the transition from Late Pre-Roman Iron Age (LPRIA) to Roman occupation in London requires a great deal of further work and analysis of existing records. In this context, the scant evidence for LPRIA settlement in Southwark is very important, and sites where significant stratigraphic sequences survive from the earliest phases of the Roman settlement deserve careful investigation. It is also essential that these early deposits are examined over sufficiently large areas to allow for the identification of structures, and for the retrieval of large and well-stratified material assemblages for reliable dating and contextual analysis.

In contrast to the evidence from the first two centuries, few late Roman buildings are known, and our understanding of the Roman city in the 3rd and 4th centuries is correspondingly limited. The decline of Roman London is especially difficult to study, as there are few artefacts that can be used as indicators to identify 5th-century activity, and there is little opportunity to study later levels in the detail necessary to recognise ephemeral traces of late Roman occupation.

The study of Roman London's hinterland is complicated by the extent of modern urban cover. The imprecise nature of the records relating to casual discoveries, and the lack of field survey and useful air-photographic evidence for much of the study area, limit comparison of the London region with neighbouring areas where the evidence is generally more accessible. A further source of confusion in the London region is the comparatively large number of finds which may be antiquarian imports, such as, for example, a rare circus token (contorniate) of Trajan found in Walthamstow (Hatley 1933, 21–2). The robust nature and easy identification of Roman artefacts, particularly pottery, mean that they have survived reworking particularly well. The GLSMR entries for the Roman period obviously reflect these problems. Some 'settlements' have been categorised as such on the basis of finds clusters, rather than structural evidence; others may be farmsteads rather than more substantial nuclei. Discoveries made during recent redevelopment of suburban areas offer some compensation for these distortions, but our knowledge of the countryside around London remains less well developed than our understanding of the city itself. Recent work has, however, begun to fill in the picture of a hinterland composed of small-scale agricultural settlements with a ring of more substantial key sites such as Old Ford (Gz TH8) and Staines. Generally, the pattern of occupation and exploitation of land that is emerging is more similar to that of the Bronze Age than the Iron Age. Agricultural activity resumed in Harlington north of Heathrow airport, for example, where Iron Age occupation was largely absent, quite probably because previously exploited low-lying areas became increasingly waterlogged marginal land. This is a reflection of the more favourable climatological conditions prevailing in the Bronze Age and Roman period compared with those of the Iron Age. The attractiveness of water as a resource means that there was a concentration of Roman settlement along the Thames and its tributaries, including the Cray, Darent and Lea. These and the lower-lying gravels are areas where organic deposits and artefacts may be expected; one group of timbers, including a ladder, house timbers and possibly part of a ship timber, were recovered from Wall Garden Farm, Sipson (Gz HL11). Good conditions for preservation in wells or waterholes can also preserve environmental and artefactual evidence. Examples from Hunts Hill Farm, Upminster preserved wood, seeds, dung beetles and a honey bee (P Greenwood, pers comm).

The archaeological evidence

Communication systems

London was at the centre of Roman Britain's communication system. The importance of London as a port for continental trade and the movement of traffic along the Thames are indicated by the presence of traded goods, waterfront structures and the remains of vessels such as the Blackfriars

ship (Gz CT23; Marsden 1994). The river was tidal in London for most if not all of the Roman period, and essentially in the same position as it is now (Milne 1985, 79–86), although the tidal head appears to have moved downstream as the river level fell during the period by at least 1.5m (Brigham 1990a, 143–9). At high tide in the 1st century, low-lying areas including the Isle of Dogs and much of present Southwark and Westminster were largely submerged, leaving small islands of higher land. The larger tributaries of the Thames, notably the Lea and Roding, but also the Wandle, Brent and Fleet, were presumably navigable and are likely to have been important routeways in the Roman period. The Lea, for example, may have been used to supply the London area both with agricultural produce and, in the late period, with pottery from Much Hadham, via the Stort, although more work needs to be done on the navigability of these rivers. The Thames itself was used to supply late pottery products from Oxfordshire and Farnham, both upstream (Fulford & Hodder 1975; Millett 1979).

The London basin was crossed by a network of Roman roads which converged on the Thames crossing at London, linking the city with its hinterland and the rest of the province (Margary 1967, 53). The most important of these routes was the road now known as Watling Street which ran from the Channel ports via Canterbury and came into the London area initially through Westminster, although this is questioned (Margary 1967, 54; Esmonde Cleary 1987, 117; Bird 1996, 227 n 7). Regardless of its initial crossing-point, by c AD 50 Watling Street passed through Southwark, necessitating the construction of a bridge, and continued north-west to St Albans and beyond. The road west to Silchester and south-west Britain diverged from Watling Street at Marble Arch. Another road of primary importance ran from Aldgate eastwards to Colchester. Other important routes include the roads north to Lincoln via Enfield (Ermine Street), and south through the Weald to Chichester (Stane Street). No milestones have been recorded in the London region, though the names of Ossulstone, near Marble Arch, and Leytonstone may refer to the sites of road markers.

A network of minor roads is also known from archaeological observations, settlement patterns, medieval routes and place-name evidence. A road on the line of Old Street may have been a bypass to the north of the city (linking the Colchester and Silchester roads). The Colchester, Silchester and Canterbury roads consisted of thin gravel surfaces up to 20m wide flanked by ditches (Parnum & Cotton 1983; Sheldon 1971; 1972; Redknap 1987). In Southwark, the main road to the Thames bridge was carried across marshy ground on a timber corduroy causeway dating from c AD 45–60 (Graham & Hinton 1988). A second, narrower road that converged on the same point from the west may not have been laid until after AD 60. On the north bank, the bridge-approach road was certainly in place by AD 63–4, and was probably constructed c AD 50 (Brigham & Watson in prep). A metallised surface of possible Roman date at Fulham (Gz HF1–4) may have been part of a riverside road, perhaps a towpath (Arthur & Whitehouse 1978).

Forts and other military sites

It is clear now that in the frontier provinces of the Roman Empire, the distinction between 'civil' and 'military' was blurred to a greater degree than would be expected nearer the centre. Army labour and engineering skills would have been widely used, and military staff seconded to the civil administration. The ubiquity of items of military equipment, including armour fittings, buckles, studs, even weaponry, demonstrates the interaction between the two communities, and certainly the presence of military personnel among the wider community. Purely military sites of the immediate post-Conquest period probably existed in the London area, but apart from a sword found in the Thames at Fulham and military fittings from early levels at Southwark (British Museum 1951, no. 5; Hammerson & Sheldon 1987), there is little concrete evidence. It has been suggested that a major fort must have been situated to the south of the river where the army awaited Claudius' arrival before advancing to Colchester (Morris 1982, 78; Fuentes 1985), but no certain remains of marching camps or garrison forts have been found.

A wider review will include a comprehensive study of the available evidence for the presence of the army in early Roman London in terms of the context, distribution and significance of finds of military equipment in the City and Southwark (Bishop in prep).

Ditches found on early sites on the fringes of the City, with characteristic V-shaped profiles and square cleaning-trenches at the base, are sometimes offered as evidence for a Claudian military presence, but few would now support this interpretation. Ditches of this type have been found on either side of the Colchester road near Aldgate (Chapman & Johnson 1973; Rivière & Thomas 1987; Heathcote 1989, 50), but excavations within the angle formed by two of these demonstrated that there were no internal buildings, and it is more likely that they represent livestock enclosures (Bowler 1983; Perring 1991, 8–9). Similar features in the earliest levels at Park Street, Southwark (Dillon et al 1991, 256) and at 133 Fetter Lane (Gz CT3; Chris Sparey-Green, pers comm) were probably roadside ditches. Early Roman ditches of this form have also been found at roadside settlements at Enfield (Gz EN12, EN15, EN17), in Surrey, and Springhead in Kent (Gentry et al 1977; Smith 1987, 6; Crouch & Shanks 1984). The ditch recorded on the west bank of the Fleet beneath St Bride (Gz CT38), interpreted as part of a small military camp (Merrifield 1983, 36–7; Grimes 1968), is not of a military type. More recently, a wide east–west ditch was found crossing the Regis House excavation. As it was probably the earliest feature in the northern part of the site, this could be interpreted as a ditch surrounding a bridge-building encampment; a revetment dated AD 52 contained two reused hastate palisade timbers (Brigham & Watson in prep). Military equipment, including a section of scale armour and a number of well-preserved tent fragments, was found in the infill of a post-Boudican quay on the site, dated AD 63. A stamp on the end of the longest quay timber has been interpreted as implying the presence of a hitherto unsuspected Thracian *cohors* or *ala* (Hassall & Tomlin 1996, 449). If not part of the existing pre-Boudican establishment in Britain, for which a complete list does not survive, this may have been one of several regular and auxiliary units drafted in from continental Europe as part of the clearing-up and reconstruction process (Tacitus, *Annals* 14.38).

The discovery of a Flavian timber amphitheatre at Guildhall Yard (Gz CT37) may be taken to imply that the masonry fort constructed immediately to the west in the early 2nd century also had a 1st-century predecessor. The amphitheatre could have acted as a parade ground or *gyrus*, as well, perhaps, as being a facility for the civilian settlement. Supporting this supposition was the presence of a contemporary street at 7–10 Foster Lane, which lay on a direct line between the position of the Hadrianic fort's south gate and the main east–west street of the town. However, a re-excavation of Professor Grimes's site at Shelley House, 3 Noble Street, near the fort's Via Decumana failed to locate evidence for an earlier military installation, although rectangular timber-framed buildings were present (Howe in prep). At present, therefore, it still appears to be the case that the fort was established in the early 2nd century, probably to accommodate soldiers serving on the governor's staff and bodyguard (Hassall 1973, 231–7).

Situated on high ground just to the north-west of the Roman city, which at the time was without a permanent defensive circuit, the fort's defences consisted of a stone wall backed by an earthen rampart enclosing an area of nearly 5ha, with internal towers in the corners, smaller turrets between these and the gates, and a V-cut ditch in front (Grimes 1968, 17–40; Shepherd in prep). The west gate consisted of a double portal flanked by square towers. The proportions and layout of the fort suggest that it had a typical 'playing-card' shape, although excavations at Lee House in Wood Street (Gz CT61) did not locate the *via praetoria* as anticipated and instead revealed fragmentary timber buildings (G Brown, pers comm). Little has survived of the interior of the fort except for the stone foundations of what were probably barrack blocks on the former St Alban's Church site at 37 Wood Street (Gz CT30), and buildings at 3 Noble Street, possibly officers' quarters, one decorated with painted walls and a tessellated floor. The east ditch of the fort was filled in after the city wall was built in the early 3rd century, at which time the north and west walls were reinforced. The west gate was later blocked, probably in the late Roman period. It is not clear whether occupation continued within the fort after the Antonine period, and it may have been abandoned.

The Cripplegate fort is clearly an area where present knowledge is deficient, although the results of Professor Grimes's work and several excavations in the area in the 1990s will be published, and should answer some of the questions which remain (Howe in prep; Shepherd in prep). The close association between a fort and urban centre is not unique, particularly in the frontier provinces, but is nonetheless evidently of importance, particularly for studies of the

relations between civic, imperial and military institutions. The chronology of the fort is poorly understood at present, but it should be possible to obtain more reliable dates for its establishment and use without the need for extensive fieldwork. The internal organisation of the fort is also uncertain, though this will require more extensive excavation in the few areas where deposits are known to have survived post-war reconstruction. Such work should pay due attention to the character of occupation within the fort, and in particular should identify its social and economic character to compare it with other fort sites and changing occupation patterns in the city.

Tombstones, inscriptions and finds of military equipment testify to the presence in London of a wide range of military and administrative personnel, some of whom were buried in cemeteries to the east and west of the city (RIB 3, 17, 19, 21; Painter 1963, 123–8; Bishop 1983, 31–48; Bowman & Thomas 1991; Hassall & Tomlin 1985, 317–22; Yule 1989, 35; Roxan 1983; Bishop in prep). Late military-style belt equipment, including bronze 'chip-carved' buckles of the late 4th or early 5th century, have been found at Fulham Palace (Gz HF1–4), Enfield (Gz EN7, EN22) and in two city cemeteries (Hawkes & Dunning 1961, 62; Arthur & Whitehouse 1978; Barber et al 1990), although this was not confined to military personnel, as it was also issued to government officials (Bishop & Coulston 1993, 178). Among the epigraphic evidence is an important fragment of a marble inscription from Winchester Palace in Southwark, which appears to be a list of soldiers by cohort, possibly part of a vexillation brought in for official duties or for building work (Yule & Rankov 1998).

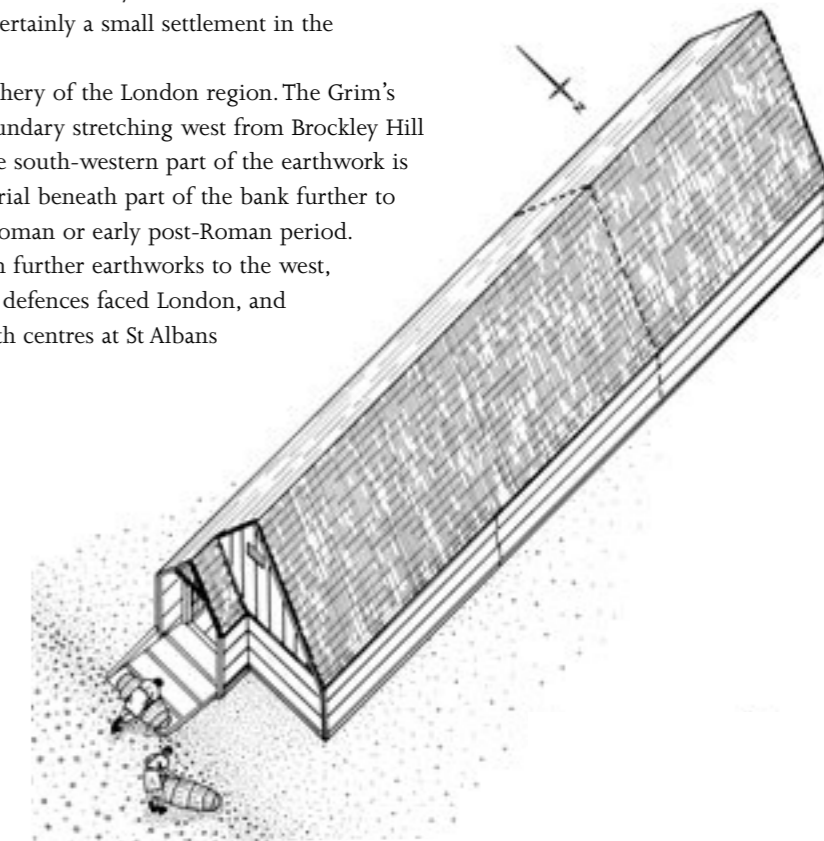
A mid or late 3rd-century building at Shadwell, 1.2km east of the City, has been interpreted as a watch-tower positioned for observing traffic on the Thames and probably abandoned soon after AD 360 (Johnson 1975, 278–80). There are, however, other possible interpretations. It could have been a beacon for aiding navigation along the winding course of the river; alternatively, cremation burials found on the site (Gz TH24–26) imply that the structure may have been a mausoleum or funerary structure (Lakin in prep b). There was almost certainly a small settlement in the proximity.

Linear earthworks have been noted around the periphery of the London region. The Grim's Dyke/Pear Wood earthwork may have been part of a boundary stretching west from Brockley Hill to the River Pinn (Castle 1975, 274; Wheeler 1935). The south-western part of the earthwork is likely to date to the Late Iron Age, but 4th-century material beneath part of the bank further to the north-east indicates that it was restored in the late Roman or early post-Roman period. A bank and ditch on the east side of the Cray Valley, with further earthworks to the west, may have had a similar function (Wheeler 1935). These defences faced London, and were perhaps the boundaries of post-Roman polities with centres at St Albans and Canterbury.

The Roman city of London

Infrastructure

The main settlement of Roman London was built on two low hills separated by the valley of the Walbrook stream. The site was well drained, except for the marshy upper reaches of the Walbrook (Maloney 1990), and was plentifully supplied with water. Excavation work has revealed some evidence of prehistoric activity along the terraced south-facing slope between the bridgehead and Tower Hill, and there may well have been small farmsteads in the area, although extensive deturfing at the beginning of the Roman period would have removed much of the evidence. On the south bank in Southwark, a smaller settlement occupied several gravel islands, expanding through the period by a process of steady reclamation to become an important centre with its own history and characteristics. Here too, there was evidence for earlier occupation, although during the pre-Roman Iron



Reconstruction and detail of the mid 2nd-century timber warehouse found on the Courage's site, Southwark Street, in 1988 (MoLAS)

Age the area appears to have been almost entirely inundated, at least during exceptional tides, and was abandoned. There is some debate about the status of Southwark, which was formerly considered a suburb, but is now thought to have been a more integral part of Roman London.

The heart of the Roman town lay on the eastern hill to the north of London Bridge where a regular street grid was established at a very early stage. The settlement boundaries have not been conclusively located, but the distribution of early burials and areas of less regulated activity surrounding the ordered town centre suggest that only a small area was initially planned in this way (Perring 1991; Williams in prep). A small, early cremation cemetery and related boundary ditches in the earliest phases at Leadenhall Court, for example, imply that the summit of the hill was initially the northern boundary. This was succeeded after the Boudican revolt by what appeared to be classic urban-fringe development of rural type, including low-density, simple rectangular buildings, perhaps consisting of a single room (Milne & Wardle 1993, 29–32). South of the river, the earliest settlement was confined to a narrow strip to either side of the bridge-approach roads, of which the eastern was slightly earlier; this was necessitated by the marginal nature of the area, although embankments were probably already under construction (Watson & Brigham in prep). Channels within the settlement were controlled by revetments.

Dendrochronological evidence from a backfilled quarry at 72–75 Cheapside suggests that the main settlement had outgrown its limits in the west by AD 53 (Gz CT36; J Hill & A Woodger, pers comm), and by AD 60 occupation had covered the western slopes of the Walbrook Valley (Shepherd 1987; Perring & Roskams 1991). This has been amply confirmed by major excavations at 1 Poultry (Gz CT63), where an important road junction was laid out in the 50s, with a street fanning out to the north side of the existing main east–west road at the point where it crossed the west side of the Walbrook Valley (Rowsome 1998a; 1998b; 2000; Treveil & Rowsome 1998). The existence of a Roman road from Ludgate Hill to a crossing of the Fleet has also been confirmed (McCann & Orton 1989, 105). The street system here and in other peripheral areas was not orthogonal: main roads were continuations of those in the central area but others reflected the local topography. Despite this, the provision of drains, water pipes and regular resurfacing demonstrates that these elements were planned and maintained in exactly the same way.

Additions to the road system appeared during the Flavian period (Perring 1991; Ellis 1985, 117; Heathcote 1989, 50–1; Rivière & Thomas 1987). At 1 Poultry, for example, two new streets were laid out to either side of the existing junction; a street dated to c AD 70–80 at 7–10 Foster Lane has already been mentioned. A timber box structure at Pudding Lane (Gz CT48) has been interpreted as a pier-base for an interim phase of the bridge across the Thames built c AD 85–90 and dismantled probably before the 120s (Milne 1985, 46–53). Road alignments on both sides of the river indicate that the position of the crossing remained broadly unchanged, although the southern abutment was probably closer to that of the present bridge than its medieval counterpart. The earlier 1st-century and 2nd- to 4th-century bridges almost certainly occupied the same position as their Saxon and medieval successors, beneath the present Fish Street Hill (Watson & Brigham in prep). New streets were also laid out to fill the area between the Walbrook stream and the Cripplegate fort c AD 120. This required the drainage and reclamation of the upper Walbrook marsh (Maloney 1990; Shepherd 1987) and the construction of gravel metallings up to 2m thick on timber and turf causeways flanked by timber drains. Although most streets were maintained until the late 3rd century, some in the upper Walbrook Valley were abandoned a century before, and several were covered by dark earth by AD 300 (Maloney 1990; Shepherd 1987; Rowsome 1987b), including a minor road next to the north side of the basilica at Leadenhall Court (Gz CT40; Brigham 1990b). It has also been suggested from the incidence of coin loss that the Thames bridge was no longer standing by AD 330, though the evidence is inconclusive (Rhodes 1991). The removal of late Roman river silts by dredging and the small size of the contemporary coins may have led to the dispersal of 4th-century material.

In Southwark, the expansion of the original settlement from the Flavian period onwards was facilitated by the construction of new revetments and embankments on the Thames frontage and along the main channels. Within the enlarged area, the infilling of minor channels allowed yet

more space for buildings and the laying out of a series of minor roads to serve them. The road layout was constrained by both the topography and the existing arterial roads to the bridgehead, and it therefore resembled the north bank in its sacrifice of symmetry for practicality (SLAEC 1978; 1988). One minor road served a metalworking area and warehouse in the north-west at Courage's Brewery (Cowan in prep; Hammer in prep), others must have reached the precursors of the Winchester Palace complex (Yule in prep), and buildings to the east of the bridge at Fennings and Toppings Wharf (Watson & Brigham in prep), although these have not been identified.

By the 2nd century, the northern and eastern boundaries of the main settlement may already have been fixed on the line later followed by the city wall; a 2nd-century ditch found at 5–9, 13–16 Bevis Marks certainly antedates the eastern part of the wall (Maloney 1979; 1983, 97; Marsden 1980, 46). The distribution of 1st- and 2nd-century burials, however, indicates that London's western boundary, which in the mid 2nd century reached the line of the later city wall, had previously lain further east (Maloney 1983, 97). Monumental arches may have been erected where the main roads crossed early boundaries. A foundation which may be part of one such arch was located in 1844 at the east end of Newgate Street (D Bentley, pers comm), and a second at the west end of the same street in 1999 (Pitt in prep). West of this, however, late 1st- to early 2nd-century structures have been found beneath the earth bank of the north-western corner of the city wall in the former GPO Yard, Giltspur Street (Gz CT26; Watson 1993b, 1998a).

A network of metalled paths and lanes allowed access to properties and houses within the urban area. Large urban blocks of buildings, alleys and minor byways have now been excavated in London, for example at Leadenhall Court (Milne & Wardle 1993), 1 Poultry (Treveil & Rowsome 1998) and near London Bridge Station, Southwark (Drummond-Murray & Thompson 1998). There is evidence for regulation of property divisions, and detailed records were probably maintained, a classic example being the replacement of buildings at the former GPO building, 76–81 Newgate Street (Gz CT47), following the Hadrianic fire (Perring & Roskams 1991). Where buildings were not replaced along the same lines, this can be assumed to have been deliberate; a block of warehousing in the port area at Regis House, 43–46 King William Street, was destroyed as a result of the same fire and overlaid by a quite different pattern of development (Brigham et al 1996; Brigham & Watson 1998; in prep).

In the early Roman period, domestic rubbish and cess were disposed of in purpose-dug pits and disused quarries, although these were frequently cleared out before being backfilled with brickearth, gravel or building debris, often to provide a stable and level surface for building. No sewers have been found in London, and large quantities of waste including cess and stable refuse were used as landfill deposits in the Walbrook and Thames-side reclamations, providing a useful cross-section of dietary information and environmental evidence alongside often well-preserved artefacts. Later pits are much rarer (Marsden & West 1992) and organic refuse may instead have been added to the dark earth (see below), although waterfront reclamation continued until the early 3rd century, and large quantities of rubbish were dumped in the mouth of the Walbrook when it was canalised following the construction of the later 3rd-century riverside wall, for example at 14–16 Dowgate Hill (Gz CT60) and Cannon Street Station (Gz CT18).

In most areas of the city there is no evidence for the systematic provision of water and drainage. Wooden water pipes have been found in the Cripplegate and forum areas, at the Bank of England (Gz CT15), the Mithraeum (Gz CT12) and 12 America Square. This may indicate that the upper spring line on both hilltops was exploited for public supply, although this would have been of limited capacity. The densely occupied eastern core of the town seems to have been much better served with water pipes, and there is a possibility that at least some were fed from an aqueduct. No such aqueduct has been found, but it may have been no more than a pipeline, perhaps entering the town alongside Ermine Street; the Clerkenwell area just outside the town provided water for the medieval city in the same way. Cisterns at the Huggin Hill baths (Gz CT21) and the pool at the 'palace' under Cannon Street Station (Gz CT18) presumably tapped springs on the hillside above the Thames, and the bath-house at 100–116 Cheapside (Gz CT10) was supplied from a cistern sunk to the water table. A concentration of wells also existed on the west side of the Walbrook Valley, where the water table was unusually high (Philp 1977a, 15; Wachter 1978; Wilmott 1982b; 1984).

At 1 Poultry an elaborate timber water-tank, complete with wooden piping, and a revetted pond are strongly indicative of water-holding facilities, possibly for industrial use (Rowsome 1998a, 43). A similar mid 2nd-century tank and drain were found near Guy's Hospital, Southwark (Taylor-Wilson 1990), and wells of 1st- to 4th-century date have been found on a number of sites on the south bank, although the low-lying nature of the settlement must have resulted in rather brackish drinking water.

As well as timber-lined street side drains, substantial masonry culverts were occasionally constructed. A brick-lined culvert at 1 Poultry drained into the Walbrook stream and seems to have been constructed as part of the neighbouring property, rather than being a public provision. Another example took rainwater from the south side of the forum-basilica, leading into the street on its eastern flank (Marsden 1987, 61). At least 20m of a complete roofed masonry culvert with a brick manhole shaft have recently been found at Monument House in St Botolph Lane (Gz CT69), continuing southwards towards Thames Street and the waterfront (Blair in prep a). This was not a roadside drain, and may have been part of a private development, although if so, it clearly must have run beneath several other properties before reaching the river, unless the intervening area was under the same ownership.

The evidence from Poultry and Monument House emphasises that more work needs to be done to determine what proportion of services was centrally provided on the one hand, or was the responsibility of property-owners and tenants on the other.

The city wall

The city wall built around the landward approaches to London c AD 200 enclosed an area of 125ha, and is estimated to have stood to a height of about 6.4m (Maloney 1983). The wall was built of Kentish ragstone with tile courses, probably surmounted by a parapet walk and breastwork with internal turrets (Whipp 1980, 47–67). The city ditch, set close to the wall, was V- or U-shaped in profile. Inside was an earth rampart up to 2m high. The north-west angle of the wall reused the Cripplegate fort defences, which were thickened. A road inside the wall line at 12 America Square appears to have been used for access during construction (Heathcote 1990, 160). Five major gates allowed access to the city. Roman Newgate (Gz CT35) had a double portal, apparently flanked by two square towers projecting in front of the wall (Marsden 1980, 124); plinth levels suggest that these predated the wall itself. The towers at Aldgate (Gz CT34), Bishopsgate (Gz CT33) and Ludgate (Gz CT31) were all at some stage reconstructed to project some 8m from the wall line. Aldersgate (Gz CT32) was a later insertion, perhaps to substitute for the blocked west gate of the Cripplegate fort; an earlier road and associated building were recorded to the east of modern Aldersgate. This suggests the presence of a postern in that area, although the road may have gone out of use and been replaced by a second on its present line as the wall was built. Posterns may also have existed at Aldermanbury, Tower Hill and Moorgate to provide access at intervals of 250–350m along the circuit between the main gates.

A riverside wall, dated by its timber piles to AD 255–70, has been recorded at several points beneath Thames Street (Sheldon & Tyers 1983, 358; Hiram & Morgan 1986, 83–4), most recently at Three Quays House (Gz CT64) near the Tower of London. A gate in the wall at London Bridge can be assumed; further gates or posterns presumably existed to give access to the quaysides but none has yet been located. A watergate leading through the riverside wall to a protected haven at the mouth of the Walbrook stream can be ruled out: although this area may well have been available for off-line mooring during the 1st- and 2nd-centuries' heyday of the port, it was infilled with organic refuse after the quays around the basin had apparently been deliberately dismantled. This activity could be dated by the recovery of several hundred barbarous radiate coins of the later 3rd century at 14–16 Dowgate Hill and Cannon Street Station. There are some indications that an earlier riverside wall may have existed on the north side of Thames Street, possibly constructed in the late 2nd or early 3rd century, potentially therefore at the same time as the landward wall (Brigham 1990a, 140 n 45).

There is no indication that any later 3rd- or 4th-century activity other than rubbish dumping took place in the area between the riverside wall and the shoreline, which between Bull Wharf (Gz CT66) near Queenhithe in the west and Old Custom House (Gz CT22) in the east was largely occupied by the remains of the final wharves. These provided little anti-erosion protection for the wall in the post-Roman period when the river level began to regain its former range. The gradual disappearance of the riverside wall, complete by the 13th century, is perhaps one reason why it was not re-established as part of the medieval defensive circuit, although the line of the southern pavement of Thames Street preserves its former position for much of its length, despite modern alterations to the line of the street at the west end of the City.

The modification of the town gates may have coincided with the late 4th-century addition of solid D-shaped bastions, at approximately 50m intervals, to the wall circuit east of the Walbrook (Maloney 1979; 1983, 108; Marsden 1980, 172; Heathcote 1989, 52), starting near the Tower of London (Gz TH64–66). A contemporary flat-bottomed ditch continued round to the west side of the circuit, and bastions may also have been added along the eastern end of the riverside wall (Parnell 1981; Maloney 1983). The surviving bastions on the west side of the city are medieval additions, and it is not clear if any of these replaced late Roman predecessors. At the west end of the city an apparent gap of 100m between the riverside wall and the earlier city wall was closed by a wall found during the Baynard's Castle excavations along Upper Thames Street (Gz CT27), which incorporated reused architectural and sculptural stonework in its foundations (Hill *et al* 1980, 57–64; Sheldon & Tyers 1983).

A late Roman defensive structure inside the line of the riverside wall at the Tower of London was built in the last decades of the 4th century, possibly incorporating a postern or watergate (Parnell 1981, 69–73; 1985; Painter 1981). Its construction has previously been connected with the visit of Stilicho in AD 396, but this cannot be supported independently. There is no certain evidence to suggest that Southwark was also provided with a defensive circuit in the late Roman period, although a very large linear feature in Tooley Street contained late 4th-century fills (Graham 1988, 46), and it is possible that there was a ditch and bank, at least to the east of the river crossing. Much more excavation work would be required to determine whether this is the case.

In summary, the city defences have attracted a considerable amount of attention in recent years, but virtually nothing is known about any defence of the city before the construction of the landward wall, and little is known of any gateways through the riverside wall. Late additions to the defences, such as the bastions and a south-eastern section of the riverside wall, reused earlier Roman building materials and tombstones. Reused masonry often provides evidence for the appearance of London's public buildings, and funerary inscriptions are an important source of social information: conservation of defensive structures should allow for the study of reused stonework before the structures are consolidated or otherwise made inaccessible.

The waterfront

Substantial timber quays of 1st- to 3rd-century date have been traced for at least 450m below and approximately 600m above London Bridge. The earliest quays were found at 1st- and early 2nd-century sites including Regis House (Gz CT17), Miles Lane (Gz CT50), Pudding Lane/Peninsular House (Gz CT48), Suffolk House (Gz CT68), Cannon Street Station (Gz CT18) and the Thames Street Tunnel near St James Garlickhythe (Gz CT8). Areas further to the east and west saw less waterfront development, although there was still limited reclamation work at sites like Billingsgate Buildings (Gz CT29) and Dominant House (Gz CT21), site of the western part of the Huggin Hill baths complex. Between AD 63–4 and the second quarter of the 3rd century, the waterfront was extended in stages some 40–50m from the natural riverbank near the bridge (Milne 1985; Miller *et al* 1986; Brigham 1990a; 1998). Sites with later 2nd- and early 3rd-century quays include Old Custom House, Billingsgate Lorry Park, New Fresh Wharf (Gz CT28), Seal House (Gz CT49), Swan Lane (Gz CT58), Thames Exchange (Gz CT19), Vintry (Gz CT25) and Bull Wharf. Less intensive development took place east of Custom House at Three Quays House near the Tower of London, and to the west of Bull Wharf, where there is no indication of late activity. Both 1st- and

late 2nd- or early 3rd-century wharves were present on the east bank of the Walbrook at Cannon Street Station, and these were presumably mirrored on the west bank, although there is no evidence for this. Later 1st- and 2nd-century embankments and a late 2nd- or early 3rd-century quay at 14–16 Dowgate Hill House (Gz CT60) seem to have divided the mouth of the Walbrook stream into two separate channels.

According to Brigham (1990a, 143–9), this pattern of advancement, which on average occurred every 25–30 years, is now thought to have taken place largely because of the need to maintain a deep-water facility against a background of falling tidal levels ('regression'). Perring (1991, 99) is instead unconvinced of the importance of deep-water facilities to fluvial ports and has alternatively argued that the reclamations were used to restore civic control over the taxation of imports. The projected fall in river level was of the order of at least 1.5m between the late 1st and mid 3rd centuries, although there is evidence from sites such as Summertown Way, Thamesmead (Gz BX22) that it continued to at least the end of the Roman period. The regression can be identified broadly with Devoy's 'Tilbury V' event (Devoy 1979), although this cannot be extrapolated to the City, and is absent or difficult to trace in many areas. Recent work based on analysis of sediments from below a very late 2nd-century quay at Bull Wharf seems to show that the river was only weakly saline in the later Roman period (Wilkinson 1998, 118), although it was still sufficiently brackish in the early 2nd century for a small colony of barnacles to grow at Regis House. The earliest timber-faced waterfront appears to have been part of a coordinated programme of construction, with jetties and open-framework landing stages. The lower Walbrook and Fleet valleys were also tidal and the calculated level of the river suggests that they were

navigable in the 1st century, to the point where they were crossed by road bridges. They were provided with their own quays and revetments, those on the east bank of the Fleet being no later than the early 2nd century in date. The various tributaries of the Walbrook were revetted for most of their course, but the mouth was lined with quays which were extensions of those in the main river. The intention here seems to have been to create off-line moorings, perhaps influenced by the proximity of the buildings identified as the 'governor's palace'. Although there has been recent debate about the function of the 'palace' complex (Milne 1991; 1996; Perring 1991, 33), the 1st-century wharf recorded between Suffolk House and Cannon Street Station coincided in extent with the width of the insula containing the buildings. Since these could only have been extended when the quay was built, it raises the possibility that the quay was built primarily to allow their construction.

Several possible warehouses have been identified near the waterfront. The earliest of these was a masonry block constructed in AD 63–4 as part of the quay at Regis House. This contained four, later six, rectangular bays opening on to the wharf through sliding or folding doors, with the block continuing west below modern King William Street. A large stone building or building platform built beside the east side of the bridge-approach road at 37–40 Fish Street Hill c AD 60–75 may have had a commercial function, although it was of very different form (Bateman 1986, 233–8). To the south at Pudding Lane, two warehouse blocks, each containing five bays, were constructed in the late 1st century to mirror those at Regis House (Milne 1985). Possible warehouses have also been located on the east bank of the Fleet and the west bank of the Walbrook at Bucklersbury (a waterlogged stave-built structure). Traces of early 3rd-century framed buildings were

recorded behind the final quays at Seal House and Swan Lane, Upper Thames Street; although their function cannot be determined, the Seal House building had a robust timber floor which would have been more suitable for supporting heavy loads than for domestic use. A 3rd-century building located at 61 Queen Street (Gz CT11), 40m to the west of the Walbrook, fronted by brick piers for a double colonnade, may have been a public warehouse, although by the time that it was constructed, it would have been some distance from the river (Merrifield 1965, site 125; Burch 1987, 9–12; Williams 1993). It was demolished later in the 3rd century, perhaps after the erection of the riverside wall which would have had a major impact on the use of the waterfront.

Perhaps the most significant aspect of the final quays is that from east to west they were apparently deliberately dismantled around the middle of the 3rd century. The retaining tiebacks were crudely axed through in some cases, and the upper levels of the frontage removed to about contemporary high-tide level. Why this was done remains in the realms of speculation, but there would clearly need to be a compelling political or economic reason why a town which had prospered from trade should destroy its own waterfront. The destruction predated the construction of the riverside wall, possibly by 20–30 years, although there was a short-lived and very local phase of rebuilding at Billingsgate Lorry Park: tree-ring samples taken from timbers used in the rebuild crossmatched examples from beneath the wall at New Fresh Wharf. The rebuild may have been purely to aid in the landing of materials for the wall.

On the south bank of the Thames, mid to late 1st- and early 2nd-century embankments have been identified along the main frontage, but there is no evidence for massive timber quays like those on the north bank (Yule in prep; Watson & Brigham in prep). What is clear is that reclamation took place, particularly in the north-west of the main island, which allowed the settlement to expand across what were formerly intertidal mudflats. Most of the post-1st-century waterfronts along the Thames frontage were destroyed by erosion in the medieval period, and are represented in the archaeological record only by the remains of reclamation dumps and buildings constructed behind. The channels which separated the islands forming the settlement were also revetted: the most substantial structure yet found was a well-built mid 2nd-century revetment on the eastern side of the main island at Guy's Hospital. This was repaired by the addition of front-bracing in the later 2nd century (Taylor-Wilson 1990). Not far inland and in the same channel, a boat interpreted as a river lighter was abandoned at the end of the century (Gz SW31; Marsden 1994). At the western end of the main island, the well-preserved remains of a sunken-floored timber warehouse constructed in AD 152 were located at Courage's Brewery (Brigham et al 1995). Reached by a ramp from a minor road to the east, this structure was probably designed for cool storage, as its floor lay below contemporary high-tide level.

A line of piles driven into the channel bed in front of the Guy's Hospital revetment c AD 240 was the latest recorded activity on the Southwark waterfront until a broadly contemporary structure was found in 1999 north of Tooley Street near Battlebridge Lane, east of the main core settlement (D Seeley, pers comm). This is comparable to the date of the demise of the north bank facility, implying that whatever factors were at work in the main settlement did not leave the south bank untouched.

The history of the port clearly illustrates the importance and changing fortunes of the city. The conservation of what little survives of waterfront sites must clearly be a priority, and answers to some questions undoubtedly lie in the existing archive. Surviving deposits and structures under Fish Street Hill and the adjacent section of Lower Thames Street remain crucial for resolving important questions concerning the date and construction of the bridge, and the location and character of the main entrance into the city across the river from the south. A substantial masonry gatehouse could be expected as a major addition after the construction of the late 3rd-century riverside wall. Study of the Walbrook mouth to ascertain the presence of a 1st- to 2nd-century harbour basin would be revealing, particularly if it threw light on the status and history of the 'palace' site to the east. The area south of Thames Street has largely been redeveloped, but evidence for a late port should be sought wherever possible. A distribution study of late Roman pottery has so far failed to identify any concentrations which might identify the presence of a late 3rd- or 4th-century facility, and this may indicate that any wharves serving London lay outside the main settlement during this period.

A part of the masonry Roman amphitheatre, used between the early 2nd and mid 4th centuries, now preserved under Guildhall Yard, City of London (MoLAS)



The forum

At the centre of the city lay the forum, a public open space surrounded by civic buildings where the affairs of the community were organised. In the first decade of occupation, a gravelled area was laid out, surrounded by timber and earth-walled structures. One of these, a substantial mudbrick structure at 168 Fenchurch Street (Gz CT2), lay on the main east–west road. At the time it was destroyed in the Boudican revolt, the building contained a large quantity of imported grain – mainly spelt wheat – suggesting that at least one room may have served as a store (Philp 1977a, 7–9; Marsden 1987, 19–22; Dunwoodie & Brigham in prep). The structures that were built in the area after the revolt were replaced in the AD 70s by a large rectangular forum set at a slight angle to the main east–west road. A basilican hall on the north side consisted of a central nave with a raised floor, flanked by aisles of unequal width. Cross-walls at the east end of the nave may have supported a raised dais for the magistrates, and there was a sunken room in the north aisle. The curia (council chamber) and offices have yet to be identified (Marsden 1987, 26–8). The three wings of the forum consisted of narrow ranges of rooms which probably served as storerooms, shops or offices. The south range had a portico facing on to the street outside, while the east and west ranges apparently faced inwards. The exterior walls may have been decorated with engaged columns. A change in the courtyard level and other structural features suggest that the complex was split into an upper piazza and a larger, lower courtyard to the south.

In the late 1st century, the south wing appears to have been demolished and realigned in relation to the street, and seems to have been supported by a series of rectangular brick piers. Additional sleeper walls added to the east and west ranges supported internal arcades which were probably part of the same reconstruction. This might suggest that the east and west ranges now consisted of a double row of rooms, and that the expansion of the town required a forum with a correspondingly larger capacity.

The continued expansion through the later 1st and early 2nd centuries was almost certainly the main reason for the replacement of the first forum by a much larger complex c AD 100, although it may have taken 20–30 years to complete (Marsden 1987; Milne 1992a; Brigham 1990b). The new forum-basilica covered some 2ha, five times the size of the Flavian forum. The basilica, on the north side of the complex as before, consisted of a nave and flanking aisles c 4500m square in extent. A single row of chambers and a possible northern portico extended the full length of the basilica. The curia and other offices connected with provincial administration have not been located, though the apse may have been used as the tribunal, and tessellated floors recorded under present Gracechurch Street (Gz CT16) may indicate a centrally located chamber on the north side of the basilica of some importance. The courtyard to the south was enclosed by double ranges of rooms and porticoes to east and west, and a single range to the south, where some rebuilt piers from the first forum were incorporated. A possible pool, more probably a passage, may have divided the area from east to west. Foundations on the east side of the forum suggest side entrances, and others to the south may have supported statues. There is no clear evidence for a monumental entrance facing the road to London Bridge, although one ought to have existed, given the imposing position which the forum occupied on the eastern hill.

Excavations on the eastern half of the basilica at Leadenhall Court (Gz CT40) revealed much of the history of the building. Early phases of restoration within the basilica were necessitated by subsidence and a severe fire, which on balance was probably a little later than the Hadrianic event recorded across much of the town. Silts on the floors of some rooms suggest a period of comparative neglect in the late 2nd or early 3rd century. After late 3rd-century repairs, most of the building, except perhaps for the apse and one or two other areas, was dismantled to the final floor level, and apparently sealed by dark earth deposits, which also extended to cover the minor street to the north. It is possible that the masonry was reused elsewhere, perhaps to construct the riverside wall, which certainly incorporated some such material.

Temples and religion

On the west side of the Flavian forum complex at 17–19 Gracechurch Street (Gz CT24) was a small south-facing building, probably a temple (Marsden 1987), with a central room (cella) and

a polygonal apse to the north. The temple facade consisted of a portico flanked by columns, reached by a small flight of steps. The builders used roof tile laid flange outward to resemble brick, although it may have been stuccoed with relief moulding to embellish an otherwise drab appearance. A gravelled area around the building was possibly surrounded by precinct walls. This building did not survive the rebuilding of the forum c AD 100, and there is no evidence that it was replaced in the new scheme.

A larger temple may have stood on the western hill, where two parallel walls recorded along Knightrider Street (Gz CT14), one of which was at least 115m long, retained a raised terrace and possibly enclosed an open precinct (Marsden 1976, 49–51; Williams 1993). This structure may alternatively have been part of a circus (Humphrey 1986, 431; Fuentes 1986b, 144–7). Massive foundations noted at several sites between the river and Knightrider Street were possibly associated with this complex (Marsden 1967b; Merrifield 1965, sites 103 and 104). Dumps of building material at St Peter's Hill (Gz CT59) also indicate that large monumental buildings of the 1st or 2nd century stood nearby. Fragments of a late Antonine or 3rd-century arch decorated with representations of classical deities – and other sculptured stones including a relief of mother goddesses, a screen of gods, and two inscribed altars – were reused in the foundations of the south-west angle of the riverside defensive wall near Baynard's Castle (Gz CT27; Blagg 1980, 125–93; Hill et al 1980). The altar inscriptions refer to temple restorations (Hassall 1980, 195–8): one is dated to the mid 3rd century and possibly refers to Jupiter, the other concerns a temple of Isis. These may in fact have been derived from a temple complex near Peter's Hill which was demolished to provide material for the riverside wall; this has recently been tentatively reconstructed as a classical structure similar to that of the Temple of Sulis Minerva at Bath. The entrance of the precinct would have faced east, with the monumental arch possibly marking the gate. Part of the site was reused for a structure identified as an Allectan palace (Williams 1993; Bateman 1998, 49–50), although another possibility is that it was a temple podium, and intended to continue the traditional use of the area.

Masonry foundations recorded at Goldsmiths' Hall, south-west of the amphitheatre, might also have been part of a temple podium or shrine. An altar from this site, probably of the 2nd century, may depict Diana or Atys (Toynbee 1962, 152). Another temple may have been built c AD 170 on the east bank of the River Fleet at 19–25 Old Bailey (Gz CT57), where the remains of a possible octagonal Romano-Celtic temple surrounded by an ambulatory were identified (Bayliss 1988; Heathcote 1989, 52). In retrospect this is perhaps more likely to have been part of a secular complex. The walls of this building were robbed c AD 300–15.

The best-recorded religious building in the city was the Temple of Mithras on the east bank of the Walbrook (Gz CT12; Grimes 1968, 98–118; Merrifield 1983; Henig 1984b, 113; Toynbee 1986; Shepherd 1998b), which was probably constructed in the 240s. This consisted initially of a sunken nave with an apse at the west end, flanked by colonnaded aisles. A narthex at the east end was attached to a private house from which entry was gained, although the house itself and most of the narthex did not survive. In the early 4th century, when Mithraic and other sculptures were buried, the nave floor was raised, the columns removed and an eastern courtyard added. It has been suggested that the later temple was dedicated to Bacchus (Shepherd 1998b).

An inscription from London may record the restoration of a temple or shrine dedicated to the mother goddesses, and another may make reference to the imperial cult, although this is uncertain (RIB 2; RIB 5). A small east-facing rectangular chamber with simple painted decoration beside a road at St Dunstan's Hill was possibly a roadside shrine (Gz CT67; Marsden 1980). Another shrine may have been associated with the bridge over the Thames, where votive deposits have been found; a lead *defixio* found on the foreshore nearby was addressed to Metunus (Neptune) (Hassall & Tomlin 1987, 360–3; Rhodes 1991). The votive offerings included numerous bronze figurines, many of which were ritually 'killed' by bending or mutilation. Votive deposits and pits used in connection with fertility rites have also been found elsewhere, particularly in suburban areas. The 2nd and 3rd centuries seem to have been a popular period for such deposits.

Although there is a reference to a bishop of London in AD 314, no churches have been securely identified, and there is no direct archaeological evidence for Christianity in London except for a few portable objects, including several pewter ingots from Battersea with Christian

inscriptions (Merrifield 1983, 256). Excavations in 1992 at Colchester House, Pepys Street, however, uncovered the remains of a very large mid to late 4th-century basilical building which was aligned east–west. Although other interpretations are possible, this was one of the largest buildings in late Roman London, and may have served as the cathedral of the early bishops, since it had a close resemblance to continental examples such as the contemporary church at St Tecla, Milan (Sankey 1998a; 1998b). This, and indeed the entire Tower Hill and Tower of London area (where a late Roman administrative complex may have been located), needs far more detailed investigation. Several medieval churches in and around London were built over Roman remains (e.g. St Bride, St Andrew Holborn, All Hallows Barking, St Michael and St Peter Cornhill), but there is no evidence for continuity of use. As late Roman churches were not always architecturally distinguishable from secular structures, they may also have existed elsewhere in the city, and comparison with some continental sites suggests that suburbs and cemeteries are likely places to find early church buildings.

There are therefore still several important elements of religion in the Roman town yet to be identified. Chief among these is confirmation of the presence of a *capitolium*, or principal temple complex. The area between St Paul's Cathedral and the Thames is perhaps the most promising location, given the concentration of religious sculptures in the south-western quarter, although deposits generally survive poorly here, and it will be important to define areas with well-preserved deposits. Enigmatic features such as the Knightbridge Street wall would also repay further attention.

Other public buildings

A building complex surrounding a courtyard containing an open pool at Cannon Street Station, in the angle between the lower Walbrook and Thames, has been interpreted as a Flavian palace, possibly that of the provincial governor (Marsden 1975; 1978). Marsden suggested that a massively built upper terrace wall and rooms in the north were the main state rooms, and since the largest room had underfloor heating this is a possible location for a triclinium. The rooms on two further terraces to the south, which included a bath suite, were seen as forming later residential wings. Clearly there were either several phases of a single building complex or a series of separate and unconnected buildings on three terrace levels, but the development of the terraces was clearly integrated, and would have required a great deal of planning and coordinated effort. The central 'garden terrace' with its pool was supported on the south side by a second massive wall embellished with alternating rectangular and apsidal recesses recorded in 1988, and so far unique in the City (Gz CT18). The lack of clear evidence for the purpose of the building or buildings has led to alternative interpretations being put forward, including the suggestion that the remains formed a temple and public or private baths complex (Milne 1991; 1996; Perring 1991, 33). The presence of a hypocaust would, however, seem to preclude the main hall being a temple podium as has been suggested.

It is now clear that the southward development of the complex was not piecemeal because it represented different properties, but rather because it depended on successive phases of reclamation. The northern area of the 'state rooms' lay above the area of tidal influence and marsh, and the original Flavian core of Marsden's 'palace' therefore lay in the area between the hypocausted hall and present Cannon Street. Excavations on the waterfront south of the 'palace' at Suffolk House (Gz CT68) and Cannon Street Station (Gz CT18) have demonstrated that a substantial quay was not built in front of the insula until AD 84 (Brigham with Woodger in prep). Before this date, the construction of the southern and eastern part of the complex on the marshy open foreshore would not have been possible, and the southernmost sections were arguably not constructed until further reclamation work had occurred in the early 2nd century and thereafter. The buildings comprising the southern and eastern 'wings' may eventually have extended as far south as the 3rd-century riverside wall, developing around a series of courtyards. Subsequent alterations included the infilling of the pool and subdivision of some of the rooms during the late 2nd and 3rd centuries. The bath suite was added in the south-east at this time. The complex appears to have been demolished in the later 3rd century, at around the same time the forum was

levelled. This is perhaps supporting evidence for a 'public' function, as other apparently 'private' buildings along the waterfront continued to flourish. Although there are arguments against the existence of a 'governor's palace', not just in London, but anywhere in Britain, it is possible that these buildings still represent a major residence or administrative complex with residential elements, perhaps associated with the procurator.

A large apsidal masonry building at Winchester Palace on the Southwark waterfront may also have been a public building (Yule 1989, 33–5; in prep). Tiles bearing the stamp of the *Classis Britannica* (Channel Fleet) as well as the procurator (PPBRILON) have been found (Crowley & Betts 1992), sumptuously decorated rooms were installed in the early 2nd century and a 3rd-century inscription from the site lists soldiers who may have had a base or a guild headquarters in the area. It has also, however, been suggested that the named individuals were part of a vexillation on official duty, perhaps associated with building works (Yule & Rankov 1998). The building might have been the house of a high-ranking imperial official (Perring 1991). The alternative, that it was the private house of a wealthy individual, would depend on the significance of the stamped tiles, and whether they were reused.

A substantial building with massive reused ashlar blocks in its foundations, constructed near St Peter's Hill (Gz CT59) in the south-west corner of the city c AD 293–4 (Williams 1993; Hillam et al 1984), may be the site of an imperial palace built for the usurper Allectus, or perhaps an addition to the temple complex believed to have existed nearby. If the former, it could be argued that the Cannon Street 'palace' was demolished in anticipation of its replacement. The walls were partly robbed before timber buildings were erected on the site c AD 340. There were several other high-status buildings in the late Roman city to the east of Cannon Street Station, to the south of the Cripplegate fort, at the Tower and in the area of St Thomas Street in Southwark, some of which may have had an official function. Historical and numismatic sources certainly indicate the presence of both a treasury and a mint in late Roman London. The presence of late 4th-century defensive structures in the south-east corner of the city and the discovery in this area of a small hoard of late 4th- to early 5th-century silver coins with an ingot have prompted suggestions that the treasury and mint were sited within the area of the Tower of London (Vince 1990, 12).

Buildings for more general public use are relatively rare in London. Elaborate public baths at Huggin Hill (Gz CT21) flourished in the late 1st and early 2nd centuries. The early baths, set into a terrace overlooking the Thames, consisted of a single range of rooms with a probable eastern entrance, an apsidal hot room at the west end and marble decoration. The baths were later enlarged with the addition of at least two more hot rooms on the northern and eastern sides, both probably demolished in the mid 2nd century. The remains were backfilled, terraced and used as the site of much more modest timber-framed structures until at least the 3rd century (Marsden 1976; Rowsome & Wooldridge 1989). At Guildhall Yard (Gz CT37) a timber amphitheatre that had been built to the north-west of the early city c AD 70 was replaced in the early 2nd century by a larger building with a curved stone wall that enclosed an oval gravel-floored arena c 6000m square in extent. The inner wall retained an earth bank which would have supported tiers of wooden seats capable of holding some 7000 spectators. The eastern entrance tunnel was flanked by two small chambers, and the southern entrance may have been similar, but splayed (N Bateman, pers comm). A large wooden drain crossed the arena, and gutters followed the inside of the retaining wall. Coins from the site suggest continued use to c AD 370, and the walls, which had been rebuilt during the Roman period, were subsequently robbed, in most cases to foundation level (Bateman 1990; 1997a). Although the amphitheatre has now been found, no evidence of a theatre has yet been uncovered.

A late 1st- or early 2nd-century buttressed aisled hall, close to the forum at 5–12 Fenchurch Street (Gz CT45), may have been a public meeting place for a *collegium* (guild) or perhaps a market hall (*macellum*). Partitions divided the aisles into rooms and others were subsequently added to the sides of the building. In later phases there is evidence of metalworking in some rooms, and others were decorated, with one containing a store of amphorae, prompting the suggestion that it was used as a tavern (Hammer 1987; Williams in prep). A large courtyard building at 15–23 Southwark Street, dated by its timber pile foundations to AD 74, has tentatively been identified as a *mansio* (Beard & Cowan 1988, 376–8; Sheldon & Tyers 1983; Cowan 1992), although this interpretation has no independent supporting data.

Houses, shops and workshops

The earliest houses in Roman London were timber-framed structures with wattle and daub panelling, earth floors and probably thatch, plank or shingle roofs, many of which lasted for only five to 10 years before being replaced. Window glass and cement floors were rare, although thin, poor-quality wall plaster was relatively common, and there is evidence that the facades of buildings were rendered. Different building traditions are evident, with Roman-style buildings in the central part of the city and native-style circular structures in peripheral areas. In the earliest pre-Boudican phases of the major 76–81 Newgate Street excavation (Gz CT47), several examples of small circular structures, c 6.5m in diameter, were excavated (Perring & Roskams 1991, 3–6). A slightly later Flavian building at Toppings Wharf in Southwark had an estimated diameter of at least c 10.0m, although only the west wall was found (Watson & Brigham in prep). Significantly, the earliest floor contained charcoal and was littered with metalworking debris, mainly iron slag with some bronze. The second and third floors had hearths that were possibly associated with further metalworking. A total of c 8.4kg of slag implies a small-scale industry. There were no similar industrial finds among the Newgate Street structures, although two were identified as possible ancillary buildings, and some kind of craft activity which left no archaeological trace, such as clothworking, could be envisaged. It is likely that all were workshops rather than dwellings, and did not necessarily reflect the ethnicity of the occupants, since ‘roundhouses’ are more characteristic of the local MPRIA communities than those of the LPRIA.

The majority of early timber-framed buildings were rectangular; some are likely to have had upper floors and several had small cellars. Although many buildings on slopes were terraced to form half-cellars, such as a timber-framed example at Regis House, an excellent late 1st- or early 2nd-century example of a true cellar was excavated at 7–11 Bishopsgate (Gz CT65; Sankey & McKenzie 1997). This was substantial, 5.2m x 4.9m, 2.7m deep, and reached from ground level by a flight of stairs. The eastern half of the cellar had an *opus signinum* floor; the western area was unfloored, but depressions, possibly left by storage jars, cut the exposed natural gravel. A beam separating the two areas probably supported posts which in turn supported the ground floor. The walls were of timber-framed construction with wattle and daub panelling finished with plain plaster.

A considerable number of reused building timbers have now been found on several sites, particularly at Cannon Street Station, and these have added technical detail to the study of domestic Roman carpentry. Morticed baseplates set in trenches or on dwarf walls supported tenoned posts, and examples of diagonal bracing are also known (Goodburn 1991b). Several possible top plates or purlins with angled notches cut to seat the diagonal rafters have been recorded, at Regis House for example, although no roof timbers have been positively identified. To the corpus of timber structures should be added the mid 2nd-century post-and-plank warehouse from Courage’s Brewery, with its extensive use of the mortice-and-tenon and other joints (Brigham et al 1995).

As infill in timber-framed walls, mudbrick and tile nogging began to be employed as an alternative to wattle and daub in the late 1st and early 2nd centuries. Mudbrick was certainly used as mass walling material before the Boudican revolt, at 168 Fenchurch Street for example, and buildings of the later 1st to early 2nd centuries, although still predominantly of timber and unfired clay, were increasingly replaced by earth-walled structures, whether of mudbrick, rammed earth, or clay slab construction. The earliest masonry buildings generally had foundations of flint nodules, occasionally with chalk and sometimes set in clay rather than mortar. Flint was rarely used above ground level except as a core material, and was replaced almost universally by ragstone towards the end of the century, interspersed above ground level by brick string coursing. There are examples of chalk being used above ground in place of ragstone, although this was extremely rare, and was probably restricted mainly to internal walls. It was widely used in foundations from the late 3rd century. Brick was initially used in the 1st century for string coursing, and for quoining around doors and at corners, but increasingly from the early 2nd century brick-faced concrete and solid brickwork were used for piers, mass walling and culverts. Occasionally, roof tile was used with the flanges turned outwards to resemble brick. *Opus signinum* and mortar coloured with crushed tile appear to have been a late 1st- or early 2nd-century innovation, perhaps related to the increasing use and availability of brick.

Many fragments of black and white mosaics have been recorded in London, and a mosaic school may have been based in the town by c AD 100. Composite terrazzo and tessellated floors also illustrate a familiarity with continental decorative styles. Wall veneers of continental marbles, first used in buildings of the late 1st century, are found with greater frequency in early to mid 2nd-century contexts (Perring & Roskams 1991; Milne & Wootton 1990; Perring 1991).

‘Strip-buildings’ were common in the early city and in its suburbs. These narrow structures were probably divided between commercial areas on street frontages (shops and bars), with workshops and stores behind and residential quarters at the back. By the end of the 1st century some strip-buildings included reception areas with painted walls and concrete floors (Perring & Roskams 1991). It is also possible that some buildings of this period were occupied by several tenants: narrow single-storey buildings behind the early forum included rows of rooms with small hearths which could have been simple one-room lodgings (Milne 1992a; Milne & Wardle 1993); similar rooms existed behind a strip-building at 76–81 Newgate Street (Perring & Roskams 1991). Buildings of the same general form have been recorded in Southwark, notably a row of several examples near London Bridge Station which included at least one pre-Boudican ironsmithing workshop and, after the revolt, possible baker’s and butcher’s premises (Drummond-Murray & Thompson 1998).

The crowded city was devastated by several fires: destruction layers of Boudican, late Flavian, Hadrianic and Antonine date have been recorded. In most cases recovery was prompt, although some sites were not developed for up to a decade afterwards (Dunning 1945; Marsh 1981; Roskams & Watson 1981; Perring 1991; Brigham & Watson in prep). The first substantial masonry or composite houses in London were erected after the Hadrianic fire (Perring & Roskams 1991; Shepherd 1986; 1987; Milne et al 1984), and small bath suites were sometimes attached to private houses, for example at Pudding Lane (Milne 1985, 140) and 100–116 Cheapside (Marsden 1976). Latrines with brick drains were rare facilities: one has been identified in a pre-Flavian building at 5–12 Fenchurch Street and another was added to the Pudding Lane baths, but other houses made use of cesspits.

There were fewer houses in London in the early 3rd century, although those that remained were often large buildings with masonry elements and mosaic floors heated by hypocaust. Buildings of this kind have been found throughout the walled area, though they were perhaps less common in the western part of the city. Many of the better houses were located in the Walbrook Valley where several mosaic pavements, probably the product of a London school of mosaicists, have been found (Jones 1988, 10). In general, London has more examples of mosaics than any other British urban centre, mostly recorded in the 19th and early 20th centuries; their distribution probably adequately reflects that of higher-status houses of the later period. Smaller houses, possibly belonging to tradespeople, still survived, however, and these could sometimes be of considerable pretensions. At 1 Poultry, existing timber-framed buildings appear to have been upgraded in the 3rd century by the simple expedient of adding masonry annexes to the rear of the streetfront elements. One of these was apparently converted to a small bath block at the end of the century. The masonry addition to a neighbouring building was reduced eventually to a single room, albeit a room with an elaborate mosaic (Treveil & Rowsome 1998).

The remains of the late 1st-/2nd-century bath-house at Huggin Hill, City of London (MoLAS)



The city was well supplied with good building material at this time; dumps at New Fresh Wharf, for example, contained decorative stone wall veneers, tesserae, painted wall plaster, window glass and roofing slate (Rhodes 1986b, 95). A number of similar houses are known in Southwark, mostly in the northern part of the settlement, some of which may not have been built until the late 3rd century (Perring 1991, 117–18). These include the substantial structure represented at Winchester Palace (Yule in prep). Timber buildings were still constructed in this period (DUA 1987, 46; Williams in prep; Maloney with de Moulins 1990). In the 3rd century, timber and clay-walled buildings, possibly iron and glass workshops, were built on the levelled site of the Huggin Hill baths (Marsden 1976), and similar structures were erected on part of Regis House behind a range of masonry buildings (Brigham & Watson in prep).

Building activity continued in the 4th century, including a late but localised revival in the Pudding Lane area of the waterfront, although many properties were being abandoned (Perring 1991, 118, 125). In Southwark, some ruined late 3rd-century houses were buried by a dark earth layer cut by late 4th-century graves (Beard & Cowan 1988; Dillon 1988). Dark earth at 36–37 King Street (Gz CT44) was cut by a late 3rd- or early 4th-century timber-framed structure (Richardson 1986). Evidence for early 5th-century occupation is rare, but can be argued for a few sites including several along the waterfront (Marsden 1985, 107; Milne 1985, 33; Vince 1990; Perring 1991).

One aspect of the town which requires further investigation is the creation and maintenance of property boundaries, and evidence for patterns of ownership: it is clear, for example, that some property boundaries established in the 1st century survived for a considerable period, whereas others were not respected. It may be that what archaeologists regularly term ‘properties’ as defined by building and fence lines were in fact simply leased or rented subdivisions of much larger blocks under single or joint ownership, encompassing the whole or parts of insulae. Individual ‘properties’ may therefore disappear, while the outer boundary of the main estate remained unchanged. Such a pattern of ownership may be reflected in the distribution of large town houses surviving in the late period.

Industry

There is abundant evidence for milling and baking in the area around the forum, where grain deposits burnt in the Boudican revolt and three late 1st-century tiled bread ovens were found at 168 Fenchurch Street (Gz CT2; Philp 1977a, 22–3; Richardson 1988, 382; Dunwoodie & Brigham in prep). Millstones and grain have also been found in the Cheapside area, including large quantities of charred grain associated with fragments of stone querns in buildings also destroyed in the Boudican revolt (Westman 1992, 389; Frere 1992, 292; Shepherd 1987). Over 1000 fragments of lava quernstone were found reused as paving around a water-tank at 1 Poultry, although no complete examples were recovered (Treveil & Rowsome 1998). Grain deposits in a Flavian context were also found at Regis House near a clay oven, although not necessarily associated (Brigham & Watson in prep). Part of a donkey mill found in the Walbrook, and the canalisation of areas of the lower Walbrook, together with the find of a large millstone of German lava, may indicate the site of a watermill (Marsden 1980, 72). An early 2nd-century timber structure built on an eyot adjacent to the east bank of the River Fleet, north of Ludgate Circus, may also have been used for milling purposes. A water channel nearby, which was filled with wheat chaff, may have been a mill-lead (B McCann, pers comm).

There is considerable potential for further studies of the milling and baking trades, and of grain supply to Roman London. Carbonised grain survives from precisely dated contexts in fire-destruction horizons and is preserved in waterlogged conditions in mill-leads and drainage channels datable by dendrochronology. It may also be possible to identify particular agricultural and processing practices, and changes in the nature of grain supply where imports are recognisable because of the presence of foreign weeds in the grain sample.

A small-scale fish-processing industry is indicated by finds of timber tanks, possibly used for the production of fish sauce and paste, near the waterfront in London and Southwark, and an amphora containing the residue of a locally produced fish sauce (Milne 1985, 87). Very large

quantities of oysters were found on both sides of the northern bridge abutment, at Pudding Lane and Regis House, where layers of shells up to 2m thick were encountered. These may have been entirely for local consumption, although they were clearly part of a processing industry, as there was very little other food or waste debris present. It seems quite possible that oysters were pickled for use in the town and its hinterland, and possibly even further afield (Milne 1985, 91–5).

London was also a significant leather and clothworking centre. In the middle Walbrook, pegged-out skins were found near the Mithraeum site at Bucklersbury House, indicating tanning (Grimes 1968, 97; Shepherd 1998b). Wood-lined tanks and channels in the upper Walbrook Valley may have been used for tanning, fulling and dyeing (DUA 1987, 193; RCHM 1928, 145–7; Heathcote 1989, 51). A barrel containing leather fragments was found in the Walbrook Valley, and there is further evidence for these industries from sites in the suburbs (Lees et al 1989, 119; Wilmott 1991; Grimes 1968, 97; Shepherd in prep; Sheldon 1978, 31). A large quantity of small leather offcuts, some displaying tanner’s marks, were present in reclamation dumps on the banks of the Walbrook. In the centre of this area, at 2–3 Cross Keys Court, layers consisting of hundreds of fragments survived, many probably waste from shoemaking. Other products included cattle-hide jackets and leather breeches (Rhodes 1986b, 89; 1987a, 173–81). Leatherworking was clearly one of the most important urban industries in London, and well-preserved organic waste dumps in the City make it highly amenable to study. The importance of research into early industrial development in Roman Britain has been emphasised (eg English Heritage 1991, 42). Dendrochronological dates from tanning pits and organic waste deposits in the Thames and Walbrook reclamation dumps would allow for detailed studies of the development of this industry.

Boneworking was another by-product of the butchery trade; at Cross Keys Court, for example, numbers of cattle scapulae were recovered which had been cut to remove flat plates from the blades, presumably for mounts and inserts (Groves 1990, 82).

Short-lived pottery kilns were set up in the suburbs. Pottery and ‘wasters’ thought to be from a Neronian kiln operated by an immigrant potter were found at Sugar Loaf Court, 14 Garlick Hill (Gz CT46; Tyers in prep), although this interpretation is no longer universally accepted (R Symonds, pers comm). Several Flavian kilns have been noted behind the ribbon development along the main east–west road (Marsden 1969b; Heathcote 1989, 52). Kilns found during the construction of St Paul’s Cathedral (Gz CT5) were probably part of this group. Moulds for lamps, some decorated, and deposits of coarseware wasters at 20–28 Moorgate in the upper Walbrook Valley also suggest kilns in this area (Marsh & Tyers 1976, 228). Pottery wasters have also been found in a late 3rd-century well in Southwark (Yule 1982, 243–6).

Evidence of glassmaking has been recorded in several areas of the City and at Spitalfields. In most cases the evidence consists of glass-coated burnt clay and waste glass, but in the upper Walbrook area the quantity and substantial nature of the furnace debris, including part of a tank furnace at 55–61 Moorgate (Gz CT62), suggest that workshops existed nearby (Shepherd 1986, 141–3; Richardson 1988, 386; Maloney with de Moulins 1990, 124; Bayley & Shepherd 1985, 72–3). This debris, of late 1st- and early 3rd-century date, includes fragments of jars, unguentaria and bottles of blue-green glass. Broken material (‘cullet’) from imported vessels was collected for reprocessing and used for glass manufacture rather than producing new glass from local sand. To the east of the amphitheatre at Guildhall Yard, very extensive dumps of cullet were found as part of the infill of a large cut feature (Bateman 1997b). At Regis House one of the warehouse bays was used as a glass workshop, possibly from its construction in AD 63–4 until the reign of Vespasian (AD 69–79). The workshop included a short succession of small furnaces, only one of which appears to have been in use at any given time, and considerable quantities of waste and broken products, which included twisted stirring rods for cosmetics or medicines and small bottles or jars (Brigham et al 1996). Further analysis of recent material, particularly from the Guildhall Yard and Regis House excavations, may reveal a great deal about the glassworking industry in London.

Evidence for small-scale iron- and bronzeworking is widespread. Pits associated with pre-Flavian timber buildings at 5–12 Fenchurch Street contained a small amount of metalworking waste (Hammer 1985, 9). Finds from the Walbrook, which include tongs, punches, hammers,

an anvil, a large furnace bar, knives stamped with makers' names and tinworking debris, suggest a variety of manufacturing activities, including the production of cutlery and the presence of a tin industry before c AD 155 (Maloney with de Moulins 1990; Wilmott 1991; Sheldon 1978, 31; Jones 1983, 49–59). Both 1st- and early 2nd-century buildings at 76–81 Newgate Street contained evidence for small-scale mixed metalworking (Perring & Roskams 1991), and dumps of iron slag were found nearby at 7–12 Aldersgate Street. There was some evidence for possible ironworking in buildings which replaced the Huggin Hill baths. At 5–12 Fenchurch Street, just south of the forum, ironworking took place before the Boudican fire and probably also on a small scale in workshops abutting a Flavian hall (Hammer 1987). Crucible fragments occur in small numbers on most Roman sites.

In Southwark, furnaces and smithing slag have been found at several sites, notably Courage's Brewery, where there was a widespread industry extending from the AD 70s to the end of the Roman period. Workshops, about 70 hearths, slag, hammerscale, and both coal and charcoal used for fuel were represented, although there was no indication of the range of products (Hammer in prep). Pre-Boudican iron smithies lay near the bridge-approach road at London Bridge Station (Drummond-Murray & Thompson 1998), re-established in the later 1st and 2nd centuries. Copper-alloy casting was also recorded further south along the same road at 106–114 and 201–211 Borough High Street. Ironworking was also present in a Flavian roundhouse at Tooley Street (Watson & Brigham in prep).

The working of precious metals is shown by the discovery of crucibles used for refining gold in late Flavian pits near the 'governor's palace' at Suffolk Lane (Marsden 1975, 9–12), and more recently at Suffolk House (Brigham & Woodger in prep). Evidence for goldworking has also been found in Southwark (Sheldon 1978, 31). A crucible containing liquid mercury for soldering from 62–64 Cornhill (Gz CT53) suggests decorative goldsmithing. A cache of intaglios from a mid 1st-century pit at 27–29 Eastcheap, one of which was not completed, may be evidence for specialist gem craftspeople (Henig 1984a, 11–15). Coin-forging debris of 3rd-century date has also been found on sites close to the city wall (Marsden 1970, 2–6; Heathcote 1989, 52).

Mosaic schools operating in London in the late 1st to early 2nd centuries, and in the mid to late 3rd century, have already been mentioned. A quantity of small, apparently unused tesserae found in a pre-Hadrianic fire phase of one of the Regis House warehouse bays may represent the stock of a mosaicworker. Plastering and decorating would also have been important industries, since even the humblest dwellings were given an internal coat of plain or painted plaster, and were probably rendered externally to protect vulnerable daub from the elements. Painted plaster at its best was comparable with examples from towns such as Pompeii, as can be seen from the panel recovered from the Roman building at Winchester Palace, now restored and displayed in the Museum of London. The expensive pigments cinnabar and Egyptian Blue were both used, generally for highlights rather than body colour, and the finest work was finished by polishing. The vast majority of painted work was, however, basic, and mainly consisted of simple panel designs, often in red and white.

Quarrying for brickearth and gravel took place throughout the city and for some distance around, though generally in peripheral areas and rarely after the 2nd century. The earliest bridge-approach road in Southwark was constructed from gravel extracted from small quarries cut along its length, which had to be backfilled before the area could be occupied.

Other industries which may prove to be important areas of research in London include ship- and housebuilding. Some riverside locations might yield evidence of shipbuilding and boat repair, and distinctive tools and evidence of woodworking waste, discarded timbers and nails could point to the location of such yards. Although no such evidence has been found, it is probable that shipbuilding and repair were undertaken in the area: a writing tablet referring to the making of a ship and a steering-oar was found in Walbrook in 1927 (Merrifield 1983, 99). Surprisingly little physical evidence for building industries in London has yet been recorded, and many building materials were probably prepared or manufactured elsewhere or on site rather than in builders' yards: areas for the preparation of ragstone, and plank-lined platforms and pits for mortar-mixing, were identified in the basilica construction levels at Leadenhall Court, for example (Brigham

1990b, 58–65). The study of building materials, including brick, mortar, plaster and structural timbers, will, however, provide further information about the organisation of the industry. The standardisation of timber sizes is apparent from many types of wooden structure, including wells, buildings and waterfronts, and this in itself reflects organisation in supply, and probably in pricing.

Trade

The city waterfront structures built between the late 1st and mid 3rd centuries represent a substantial investment in port facilities. Unfortunately, most of the goods which passed through London have left no trace and pottery still offers the best measure of the direction and scale of trade (Grew *et al* 1985, 103–19). Preserved texts of business contracts on wooden writing tablets from the Walbrook have so far shed little light on commercial dealings (Wheeler 1930, 54–5; Richmond 1953, 206–8; Turner & Skutsch 1960).

London apparently imported a higher proportion of Roman pottery than any other British town: 20–25% of the pottery found in 1st-century deposits was imported compared to 10% or less in most other towns (Fulford 1987). At port sites concentrated near the bridgehead, 40% of all pottery was imported, although this proportion is almost as high for important commercial sites in the town centre (Symonds in prep). Imports were dominated by fine tablewares, particularly samian (Rhodes 1986a, 199–203). Large quantities of samian appear to have been stored in warehouses along the waterfront; 1st- and early 2nd-century concentrations have been located at Regis House, mid to late 2nd-century groups at Three Quays House further downstream, and late 2nd- to mid 3rd-century groups near New Fresh Wharf and Billingsgate Lorry Park. Samian makes up some 20–25% of all vessels discarded in pre-Boudican and later 1st-century levels near the waterfront, and 10–20% of those in the town centre and the suburbs. This may reflect the development of the market system beyond the provincial capital, although the Hadrianic fire may have severely disrupted supply to London. Some locally produced wares from Verulamium and Highgate Wood (Gz HG1) appear to have ceased production by the middle of the 2nd century (Symonds & Tomber 1994, 82).

Local products, including mica-dusted fine wares which partly replaced imported samian, supplied a large proportion of all tablewares used in London in the period to AD 140. In the later Roman period, needs were met by southern British industries, notably from Oxfordshire, Alice Holt in Hampshire, the Nene Valley and, to a lesser extent, Hadham in Hertfordshire. The pottery trade along the river and east coast may have grown in importance during the 2nd century, but the overall level of trade apparently declined (Green 1980, 77–8; Rhodes 1986b, 94). The distribution of some north Gaulish fine wares of this date also suggests trans-shipment through London, connecting with an east-coast supply route (Richardson & Tyers 1984, 133–41). Pottery finds in foreshore dumps at New Fresh Wharf indicate that tablewares from Germany and Gaul, perhaps shipped from the Rhine and including wares from the Eifel and Mayen regions, continued to reach London in reduced quantities in the 3rd and 4th centuries (Rhodes 1986b, 91). Imported pottery was, however, at a level of around 10% of the total by this period.

Imports of amphorae containing wine or oil, or in some cases olives or fish sauce, peaked by c AD 100. Amphora finds in the outer parts of the city are rare and it is possible that consignments were divided and sold in smaller measures by merchants operating on the waterfront and in the forum. In Neronian levels amphorae make up about 40% (by weight) of all pottery, reaching perhaps 70–75% at prime import sites such as Pudding Lane and Regis House, but by the middle of the 2nd century this had fallen to between 10–20% (Tyers & Vince 1983, 303–4). Later Roman London was supplied with modest quantities of oil and wine, increasingly from sources in North Africa and the east Mediterranean rather than Italy and Spain (Tyers 1984, 367–74), although wine was also shipped in silver-fir barrels, perhaps from the Rhineland, and there is no evidence for the volume of this trade. Finds of amphorae of this period are more evenly distributed, perhaps indicating that imports were sent directly to urban households. Very late examples, possibly still imported into the early 5th century, are represented by a sherd from a Palestinian amphora found at Billingsgate bath-house, 100 Lower Thames Street (Gz CT13), which suggests

that it remained in use to the end of the period (Symonds & Tomber 1991, 77). A large corpus of information on pottery supply and distribution patterns has now been built up, and the use of databases to compare assemblages within London, between towns in Roman Britain and with continental sites, is helping to establish the development and changing patterns of trade routes and to document the changing balance between imports and local or regional products. The significance and function of the Southwark waterfront in comparison with the quays on the northern side of the river, in terms of the quantities and types of amphorae present behind the waterfront, for example, deserve investigation. It should now be possible to determine whether different waterfront areas attracted different assemblages, with the possibility that some quayside areas served specialist import functions. The concentration of the samian trade at several sites between the 1st and 3rd centuries, and 1st-century amphora importation, are two examples of possible zoning that already emerge.

Some goods were imported in wooden casks, probably mostly wine from the Rhineland, although wine from other sources, and pickled or dry goods, may also have been stored in these containers. The casks were almost universally of silver fir, and were often reused complete as well linings or broken up for other purposes, perhaps including the production of writing tablets, which may have been a minor industry. Recent unpublished analysis of wine barrels shows that many were stamped by the shipper, producer, retailer or more than one of these. An example from 1 Poultry was stamped across a bung (D Goodburn, pers comm), indicating that bungholes in the sides were stopped up and stamped after filling to prevent tampering in transit.

The decreasing proportion of amphorae recovered suggests that the wine trade, at least from the western provinces and the Mediterranean, seems to have been at its peak in the late 1st to early 2nd centuries (Wilmott 1982a; 1984), although this does not take into account wine imported in casks, which is not so easily quantified. It is possible that imported wine was replaced

by local products, such as beer, or even locally produced wine, and this may also have applied to other products: olive oil was replaced by lard and imported garum by local substitutes, some perhaps manufactured in tanks found at Pudding Lane (Perring 1991, 85).

Apart from imported grain, such as that destroyed at 168 Fenchurch Street during the revolt of AD 60/61, preserved seeds found in London indicate that luxury fruit and vegetables (e.g. peaches, olives, figs, grapes, cucumber and coriander) were imported (Armitage et al 1983, 29), together with edible stone pine kernels and walnuts. Other imports included textiles and jewellery, such as ivory bracelets, amber beads, and gold and emerald necklaces.

A wide range of building materials, both British and foreign, was also imported; even locally available building stones such as chalk and flint had to be brought some distance by road or river. The main trade was in Kentish ragstone, Purbeck marble from Dorset, and limestone which was probably imported from Lincolnshire. Some architectural elements, including dwarf columns, were probably brought down river from the Cotswolds or Oxfordshire. Clay roofing tiles and bricks mainly came from the London region, including Hertfordshire and Kent, but some Yorkshire roofing slates have also been found. In the later Roman period London depended on supplies of quern- and millstones from Yorkshire (rather than continental Europe). Coal was imported from the same region, although the main fuel encountered on most sites was oak charcoal, probably produced from local coppices, and presumably faggots or waste timber. The chief source of iron – and possibly the charcoal fuel – was almost certainly the Weald, but lead was imported from the Mendips, as has been demonstrated by the discovery of three Vespasianic ingots at Regis House (Brigham et al 1996; Hassall &

Tomlin 1996, 446–8). Several probably late 4th-century Roman pewter ingots were also found at Battersea; these were also, incidentally, stamped with Christian inscriptions (Merrifield 1983, 256–7).



The head of Mithras excavated from the Temple of Mithras, City of London, in 1954. It was made between AD 180 and 200, and deliberately buried in the temple c AD 320

Exports from London are less amenable to study. Strabo (4.5.2) is often quoted with reference to Britain as an exporter of grain, slaves, hunting dogs, cattle, gold, silver and iron, but he refers to a period before the Roman conquest. Tacitus (*Agricola* 10–12) repeats some of this perhaps a century later, but London was not necessarily involved in the trading of these items. Later writers also refer to hunting dogs, although these were no doubt a minor element in the economy (Oppian, *Cynegetica* I.468–80; Nemesianus, *Cynegetica* 225; Claudian, *On the consulship of Stilicho* 3.301). Pearls, perhaps a by-product of the oyster industry (see below), also receive mention (Pliny the Elder, *Natural history* 9.116; Aelian, *On the characteristics of animals* 15.8). It is likely that the principal exports were raw materials and possibly agricultural products, but it is uncertain whether this would have passed through London, or more directly from the production areas. Some of the exports were for redistribution within the province rather than to the Continent: a letter found at Vindolanda indicates that the products of an ironworking and cutlery industry in London reached Hadrian's Wall (Bowman et al 1990a). It could be suggested that the long-lived Southwark ironworking industry was exporting beyond London itself, as production appears to have continued regardless of fluctuations in the town's economy or population, as far as these can be measured (Hammer in prep; Westman 1998, 63–4). Ceramics from the Brockley Hill kilns also reached the northern military market in some quantities in the 1st and 2nd centuries (Marsh & Tyers 1978, 534).

Ship remains from London are limited (Marsden 1965a; 1965b; 1967c; 1994), but include a modest seagoing merchantman found at Blackfriars (Gz CT23), a river barge from County Hall (Gz LA1) and a flat-bottomed lighter from New Guy's House, Southwark (Gz SW31). The Blackfriars ship contained a cargo of Kentish ragstone, possibly destined for use in the construction of the city wall. A wreck in the Thames estuary at Pudding Pan Sand contained a cargo of samian, presumably also headed for London (Smith 1907). The base of a dugout canoe may be represented in the 3rd-century quay at Billingsgate Lorry Park, next to a possible crane base. Reference has already been made to the possibility that ships were built and repaired in the London area.

Open spaces and dark earth

The built-up area of the Roman town contained many gravelled yards and forecourts. Gardens and orchards were no doubt present, and it is likely that sparsely occupied areas within the walled area were cultivated, particularly in the south-west and south-east corners, although the whole area was apparently deturfed as a preliminary step to building, even in areas which were to remain open. Cultivated soils seem to have been present in the late 1st century at 1–7 Whittington Avenue (Gz CT20), with signs of possible plough, ard or spade marks (Brown & Pye 1992). Although accessible from a road which later bounded the basilica, the cultivated area may have been a field or orchard behind a block of buildings recorded further west at Leadenhall Court. Spade marks cut into the brickearth at Warwick Square (Gz CT9; Marsden 1980, 67) may have formed the edge of a garden bed, and ard marks were recognised in excavations at 19 Throgmorton Avenue (Gz CT42; Richardson 1987, 274). Ditches and banks which probably formed field systems and stock enclosures have been identified in peripheral locations near major routes into the early city at Rangoon Street, 61–65 Crutched Friars (Bowler 1983) and 7–12 Aldersgate (G Egan, pers comm), and also at 28–32 Bishopsgate (Evans & James 1983), where associated 1st-century 'garden soils' and a ditch were found.

Open spaces in the late Roman city are generally recognised as 'dark earth' deposits which began to develop or were deposited in some areas from the end of the 2nd century. The significance of dark earth has been the subject of much discussion (MacPhail 1981; MacPhail & Courty 1985; Yule 1990; Perring 1991, 78–81). Soil micromorphology and stratigraphic evidence indicate that a variety of factors contributed to the formation of this material: thick dumps of soil were sometimes deliberately introduced, and in other cases dark earth developed from in situ reworking of earlier deposits (MacPhail 1981; Watson 1998a). Dark earth usually contains the weathered debris of building materials (brickearth and mortar, perhaps also rotted-down wattle and thatch), domestic sweepings and midden dumps, including human coprolites, ash, cereal

waste and decayed floor coverings. Pollen from some deposits is indicative of open wasteland and grassland habitats, some of which may have become incorporated during storage elsewhere. The creation of these open areas appears frequently to have been intentional, as buildings were often levelled before dark earth formation began. This was presumably to prepare the land for agricultural or horticultural use, although no evidence of such use has been recovered, probably as a result of later natural and artificial reworking and weathering processes. Few of these deposits were sealed before the medieval period, and they therefore often contain later artefacts, usually pottery of the 10th to 11th centuries. The discovery of a late 3rd- or early 4th-century timber-framed building within the dark earth at 36–37 King Street indicates unequivocally that in some areas such deposits had begun to form in the Roman period (Rowson 1987a). By comparison, dark earth overlying the possible late Roman church at Colchester House, Pepys Street, was well mixed, and contained Tudor pottery down to its basal layers.

It is apparent that buildings, pits, wells and quarries dating to the first third of the Roman period in London are two or three times more common than those dating to the latter third (Marsden 1980, 148, 213; Yule 1982, 246; Wilmott 1982b; Marsden & West 1992; Perring 1991). The scarcity of late Roman rubbish pits may be partly explained by the fact that later refuse was directly worked into the dark earth: 3rd- and 4th-century coins are often found in some numbers, and to a lesser extent pottery is also present, including Portchester D, a reliable indicator of occupation in the second half of the 4th century. It now seems probable that while there were more buildings than open spaces in London in AD 100, by AD 200 the reverse was true. Settlement contraction may have been most marked in Southwark and the western suburb. Further expansion of the area covered by dark earth seems to have occurred in the 4th century.

The nature of cultural change at the end of the Roman period is an especially important area of research. Evidence from sites such as Wroxeter and Verulamium suggests that the final phases of Roman settlements cannot be identified or understood without scrutinising extensive areas of buildings and their destruction horizons. Patterns of surface wear and traces of reuse of earlier walls and floors are not easy to recognise in smaller-scale excavations. The most promising areas for the study of the latest phases of Roman London are beside the Thames and Walbrook, although priority should be given to the preservation of relevant deposits where these survive, rather than allowing piecemeal excavation. Further definition of areas of priority is required, though the deposits protected beneath Thames Street are likely to form an important part of the resource. These may yield evidence for any late focus of occupation in the waterfront area.

Considering the lack of reliable structural evidence from much of the City, attention should also be given to the evidence provided by reworked and residual material from levels which have been destroyed. In most parts of the City it is likely that the 4th and 5th centuries can only be studied effectively through residual material. Detailed mapping of the distribution of chance finds of certain classes of later Roman pottery (weighted as proportions of residual assemblages) is urgently needed to define areas of activity and possibly occupation in this period. In this regard, the study of dark earth also remains a priority. There are still unanswered questions concerning the date, character and significance of dark earth deposits, and studies of their soil micromorphology and of artefact distributions may well add to our understanding of the later Roman town. A comparison between parts of buildings sealed by dark earth and parts of the same buildings sealed by ramparts is likely to add to our understanding of the ways in which dark earth deposits were formed. A strategy for sampling and analysing these deposits has been developed in response to the discovery of sealed dark earth at the GPO Yard, Giltspur Street, and it is to be hoped that this will form a model for further work as other sites become available (Watson 1993b; 1998a). The results of any analysis must, however, be tested against models developed for other Roman urban settlements: dark earth is not simply a London phenomenon, and it would be dangerous to study it in isolation. More generally, late 4th- and early 5th-century London should be studied alongside comparable aspects of other towns to throw more light on late Roman urban demise and changes in the socio-political structure of Roman Britain.

Southwark and the 'suburbs'

Southwark (Gz SW1–77) was the largest and most complex area of development outside the main core of the north bank settlement, occupying an estimated area of some 20–24ha in the early 2nd century. There is no evidence, however, that it was administered separately, and it perhaps should not be treated as a suburb but as an outlying area of London, albeit with its own characteristics and pattern of development. Aspects of this area have already been discussed, but further consideration of selected aspects is summarised here.

Finds of military equipment and a high incidence of Claudian coin loss suggest a military influence in the early settlement, which some consider may have been established before the settlement on the north bank of the Thames (Hammerson & Sheldon 1987). Recent work in the City has, however, produced evidence that both were developed as soon as the first bridge was constructed c AD 50, including revetments dated AD 52 from Regis House next to the bridge itself (Brigham *et al* 1996), and in the Walbrook at 1 Poultry dated AD 52–5 (Rowson 1998b, n 17).

The initial settlement layout was based around the two approach roads to the river crossing and constrained in area by the surrounding river channels, intertidal mudflats and foreshore. Although the actual evidence for subsidiary streets is limited – an example was identified at Courage's Brewery serving the north-western metalworking area and mid 2nd-century timber warehouse (Cowan *in prep*; Hammer *in prep*) – at least five different building alignments have been recorded, suggesting a complex and irregular plan. In this it resembles the pattern of the north bank settlement as it developed rapidly beyond the main core near Cornhill. It should be emphasised that in both areas, the street system seems to have been designed to take the best advantage of the irregular topography and existing main roads, being carefully planned rather than representing haphazard organic growth. The most substantial buildings were the suggested *mansio* site at 15–23 Southwark Street and the structures at Winchester Palace.

From the Flavian period onwards, the occupied area was able to expand considerably as the river level fell, particularly in the north-western quadrant, although in the 4th century Southwark may have contracted to a core near the bridgehead and along the waterfront, which contained several high-status buildings.

Ribbon development grew rapidly along the major roads into London, especially along the line of Watling Street (Perring 1991, 15). To the north of the river, early occupation extended west along Watling Street (Cheapside), east along Aldgate and north along Bishopsgate. All of these were probably absorbed into the city before or during the Hadrianic period, and certainly by the time the defensive wall was constructed c AD 200. The northern 'suburb' showed little growth before the Flavian period, but the others were well established by AD 60. These 'suburbs' were characterised by ribbon development of street-side buildings, bordered by cemeteries, kilns, quarry sites and livestock enclosures. They were not as well ordered as city properties, and there is evidence that boundaries were less rigorously maintained (Williams *in prep*). Some buildings were built in native rather than Roman styles (Perring & Roskams 1991; Frere 1992, 292), although these rare occurrences were not repeated beyond the early Flavian period. The study of pottery assemblages may suggest that 'suburban' populations made more use of 'native' pottery types than contemporary households in the centre (T Williams & B Davies, *pers comm*), although this is likely to be a reflection of disposable wealth rather than ethnicity.

'Suburban' redevelopment after AD 70 may have resulted in more organised property boundaries and extensive development of areas beyond the principal roads. Suburban roads on the north side of the river are known from the Tenter Street cemetery area (*eg* Gz TH38, TH41, TH45), and on either side of Bishopsgate. The houses of this period were also more Romanised in style (Perring & Roskams 1991). After the building of the city wall c AD 200 Southwark became the only substantial extramural area. Isolated buildings to the west of the city, indicated by walls or tessellated pavements at Westminster Abbey (Gz WM13–15) and St Bride (Gz CT38) are of sufficiently high quality to suggest that these belonged to suburban villas (Bentley & Pritchard 1982; DUA 1987, 28, 138; Grimes 1968, 128; RCHM 1928, 147; Merrifield 1983, 133). The main area of settlement was, however, defined by the wall, and the sites of earlier 2nd-century lower-status structures – such as buildings under the GPO Yard, Giltspur Street and 7–12 Aldersgate Street – were now extramural or covered by the line of the wall itself.

Cemeteries

Most early Roman burials found in London are cremations, including examples found beneath the later basilica at Leadenhall Court, although early inhumations have been found in Southwark and at the Tower of London (Parnell 1985, 5–7; Goodburn 1978, 453; Dean & Hammerson 1980, 17–22). Isolated or *ex situ* finds have also been found, for example at the amphitheatre. A neonatal infant was buried beneath a warehouse floor at Regis House, and adult skulls, body parts, arm and leg bones were also found in the floor make-ups and the Neronian quay infill (Brigham & Watson in prep). The deposition of skulls in the Walbrook and other wet places, mostly of young to middle-aged men, many exposed for some time before deposition, has been considered as representing a Celtic ritual (Marsh & West 1981, 86–101), though this is disputed (Knüsel & Carr 1995, 162–9). It does seem unlikely that such rituals would still take place in a cosmopolitan and Romanised town (C Sparey-Green, pers comm), and if they existed would surely have been replaced by a more acceptable token form of sacrifice. This could take the form of the deposition of tools and other items which seems also to have characterised the Walbrook. It is more likely that the Walbrook heads and the body parts found in the Neronian quay at Regis House represent displaced remains from deposits associated with clearance after the Boudican revolt, the only period when ‘suitable’ conditions for the uncontrolled disposal of human remains could have occurred.

Nucleated cemeteries of the 1st and 2nd centuries in the western ‘suburb’ were set behind house-plots along the main roads out of town, three of which were later brought within the walled area. The Warwick Street cemetery (Gz CT9), on a prominent point overlooking the Fleet Valley, contained high-status burials with lead ossuaries and glass and stone urns (RCHM 1928, 154). A cemetery of similar status may be represented by finds in the Aldgate area; the reused tombstone of Julius Alpinus Classicianus, a procurator of the province of Britain, which was found in the base of the late Roman Bastion 2 at Trinity Square, may have come from this cemetery (Cottrill 1936).

Large cemeteries close to the principal town gates were established by c AD 100. The most intensively studied lay to the east of the city and south of Aldgate (Gz TH27–54), and was at least 12ha in extent, remaining in use as late as the early 5th century (Ellis 1985, 115–20; Evans & Pierpoint 1986; Whytehead 1986; Richardson 1985, 63–7; Frere 1986, 408–9; 1987b, 336; 1988, 464; Barber *et al* 1990; Barber & Bowsher 2000; Hall 1996, 73–4). Cremation, by far the most popular burial rite in London in the 2nd century, became rare during the 3rd century. The 141+ cremations in the eastern cemetery were placed in pots, amphorae, lead urns, tile cists, stone containers and wooden casks. Pits in which cremations took place have been found, and the presence of rubbish normally found on domestic sites suggests that funerary rituals may have involved either feasting or the deposition of offerings. Such offerings, mainly chicken and pig, occurred with 50% of cremations (compared with only 3% of accompanied inhumations), and were either cremated, presumably as part of the pyre, or non-cremated as formal offerings (Sidell & Rielly 1998). At least 684 inhumations have been recorded, mainly coffined, only a small proportion accompanied by grave goods. At least 79 were ‘plaster’ burials (or perhaps ‘lime’ burials in the case of London). Little evidence for surface memorials has been found, although a masonry structure with a marble veneer at Tenter Street is likely to have been a mausoleum, at least four foundations for masonry monuments were recorded in the Mansell Street cemetery and timber structures have been recorded surrounding two cremations (Barber & Bowsher 2000). Several tombstones have been recorded, including those of Olussa of Athens and Flavius Agricola, a legionary soldier. The inscribed stonework naming the mid 1st-century procurator, Julius Alpinus Classicianus, formed part of an altar tomb.

Cemeteries covering an area of over 16ha to the north of the city, principally to the north-west of Bishopsgate (eg Gz IS5–7), are less well studied and appear to be more dispersed (DUA 1987, 193; Heathcote 1989; Hall 1996, 64–73). A major cemetery existed at Spitalfields (Gz TH67–71), some 500m beyond the walled area and set well back from Ermine Street. The 25 recorded cremations are limited to the 1st and 2nd centuries; they included a double cremation in a single amphora, and one each in glass, lead and limestone containers. Over 87 inhumations have been recorded, none apparently ‘plaster’ burials, but there were double burials in both a

stone coffin and a brick arched vault. Ten tombstones survive, including one of a boy, Marcus Aurelius Eucarpus, and a legionary, Sempronius Sempronianus. This cemetery included the largest variety of pottery, including samian, flagons, unguentaria and tazze, as well as other everyday items.

The western cemetery (Hall 1996, 58–64) is notable for an extensive area of cremation burials, presumably part of a cemetery that predated the city wall, extending for 24ha from Holborn to the Cripplegate fort. Over 171 later inhumations have also been found, notably on the east bank of the Fleet and around St Bartholomew, arranged in clusters suggestive of family groups. Burial here may have continued into the early 5th century (Bentley & Pritchard 1982). The later Roman burials are notable for their strict orientation and relative lack of grave goods. Twelve were in wood coffins, four in stone coffins, some with traces of plaster packing, and at least three lead-lined coffins were recorded, which have also been identified in Bishopsgate and may represent a distinct class of 4th-century burial. Uncoffined inhumations close to the late Roman building under St Bride may be early post-Roman burials of the 5th century, or Early Saxon graves predating the church. Tombstones found in the Ludgate area suggest another cemetery in the vicinity. There were also some individual burials beside the main roads beyond the cemetery areas, especially along Holborn.

South of the river, burials occur on the bridgehead islands and in an area of over 30ha between Stane and Watling Streets (Gz SW1–48). Debris from elaborate monuments has been recovered from secondary contexts, including sculptures and funerary items found in a well beneath Southwark Cathedral. Late Roman inhumation graves were cut into derelict buildings around the shrunken bridgehead settlement. At least 38 cremations and 48 inhumations have been identified (Dean & Hammerson 1980; Dean 1981; Beard & Cowan 1988; Dillon 1988, 3; Hall 1996, 74–83).

The main 4th-century burial areas continued to be those near Aldgate, Bishopsgate and Newgate, and in Southwark. Inhumations in the eastern cemetery, of which 60–70% were male (Waldron 1986, 115; K Whittaker, pers comm), were generally laid out parallel or at right angles to the road line. One burial was accompanied by the belt and brooch of a late 4th- to early 5th-century official. Most burials were contained in wooden coffins, a few of which were lead-lined, and in some instances marked by masonry monuments. Stone coffins, funerary inscriptions and sculptures of this period have been recovered elsewhere in London, and several tomb structures were reused for the construction of late 4th-century bastions.

The results of much of the more recent work on the cemeteries of London have yet to be properly assessed, although important advances have been made in this direction, particularly the study of the eastern cemetery (Barber & Bowsher 2000). Programmes of post-excavation analysis and research on the other cemeteries should also receive a high priority in the future. Particular emphasis should be placed on the integration of studies of cemetery layout, burial assemblages and skeletal analysis. The structure and composition of burial groups require detailed research: are richer burials, for example, associated with others of simpler character, suggesting the existence of broadly based inclusive social groups, or are richer burials isolated, suggesting exclusive class or caste distinctions, perhaps marked by major funerary monuments?

Information from skeletal analysis regarding age, sex, disease, family groupings and mortality suggests several important lines of research. Inhumation groups of the 2nd, 3rd and 4th centuries can in some instances be identified, and sufficiently large samples will allow for the study of demographic changes, particularly in relation to changing age/sex ratios in cemetery populations. Certain classes of pathology (including dental evidence) may also allow for an understanding of standards of hygiene and quality of life, which may be important for interpretations of the likely socio-economic composition of cemetery groups. The chemical analysis of bone can now be used to identify trace elements from diet, and the contamination of food supplies. Some elements such as lead introduced through drinking water, food, or perhaps occupational exposure, can be sourced in some cases, which could lead to the geographic origins of some individuals being determined. The research potential of population genetics should certainly be addressed where it seems likely that human DNA samples can be retrieved; such samples should certainly be taken wherever possible to build up a database. This may permit research into the ethnic composition of the population of Roman London, and possibly comparative analyses of the relations between ethnic groups and their material culture as expressed through grave goods.

Comparative data from cemetery sites have special potential for the study of the social character of urban and rural settlements, particularly in relation to the suggestion that men were more likely to be favoured with urban burial than women (Perring 1991). It would be useful to know if urban populations were longer- or shorter-lived, had richer or poorer diets, or were generally either more or less healthy than contemporary rural populations. Present interpretations suggest that in the later Roman period town-dwellers included a greater number of more prosperous citizens, who were likely to be better fed and longer-lived. Further fieldwork on rural cemetery sites may be needed to provide an adequate sample for comparison.

Roadside settlements

The pattern of settlement outside London itself was undoubtedly influenced by the development of the town. The relationship was symbiotic: both the small towns or villages and London acted as markets, producers and collection/distribution points for the interchange of a wide range of industrial, craft, domestic, luxury and agricultural products. These were both consumed within the system and dispersed by road or river out of the area. Small nucleated settlements in the London hinterland were located along the major roads leading to the city, many at river crossings (Sheldon & Schaaf 1978), mostly situated in a ring 15 to 20km from the city (Bird 1996, 222). Settlements of this kind have been recognised at Brentford (Gz HO5–15), Brockley Hill (Gz BA1–2, HW1–7), Enfield (Gz EN4–22), Crayford/Dartford (Gz BX10–16), Croydon (Gz CR8–28), Wickham (Gz BY38) and Ewell (Merrifield 1983, 124–5). More distant settlements were located at Springhead, Kent (centred on the temple complex) and Staines in Surrey (around the bridge and waterfront). There is also evidence for small roadside hamlets at Welling (Gz BX2–4; Garrod & Philp 1992) and Mitcham (Gz MT1–5), although some were no more than a collection of farms.

These settlements were clearly sited in relation to the road system, though the villages at Croydon and Wickham were also located close to villas (Beddington and Keston). Some, such as Enfield on Ermine Street, Ewell on Stane Street, Crayford (Noviomagus) on Watling Street south of the river, Staines (Pontes) on the London–Silchester Road, and Brockley Hill (Sulloniaca) on Watling Street between London and Verulamium, may have originated in the early period as posting stations that developed into important local villages or small towns. An unrecognised staging post probably lay between London and Staines, perhaps at Brentford; the *Antonine Itinerary* refers to another settlement (*Durolitum*) on the Colchester road which awaits secure identification, and may have originated as the first posting station on the London–Colchester road. This could be expected to lie in the Romford area, where burials have been found (Fuentes 1986a), although there are no structural remains to support this hypothesis. An important pottery and tile industry was centred around Brockley Hill (see below), while from its presumed original core, Ewell spread for almost 1.2km along Stane Street. Enfield was occupied throughout the period, and was clearly a substantial centre. At Staines the settlement was in existence before the Boudican revolt and, like London, was destroyed in AD 60/61, despite being 30km further west. Pottery kilns producing fine wares lay somewhere in the vicinity of the subsequently rebuilt village.

All the roadside settlements appear to have become prosperous in the early 2nd century. These sites generally cover an area of 4–6ha, in some cases with a smaller subsidiary settlement within a 2km radius, in other cases, as at Enfield and Brockley Hill, these were set further along the same road. The Crayford/Dartford settlement had two distinct centres at the crossings of the Cray and Darent, each of which had subsidiary areas of occupation along the valley axes.

The settlement at Old Ford (Gz TH1–19) was located only 4km to the north-east, and developed in the period after AD 270 – perhaps as a centre for supplying London with produce from the inland villa estates – although a kiln, possibly for tile production, was established there in the 4th century (Sheldon 1971, 52–4). Its position at a ford on the River Lea also implies that the settlement could have had a role as an interchange point between road and river traffic, at a time when the port of London had declined and been dismantled, perhaps to be replaced by a network of smaller local landing places serving rural markets and estates.

Intercommunication between the hinterland and the Thames may have been facilitated by roadside villages adjacent to the river such as Brentford and Putney (Gz WW1–9), where the road from Ludgate probably crossed. These settlements appear to have developed before c AD 80, and Putney at least must have been a substantial settlement in the late Roman period: large quantities of samian and coins have been recovered in the area. A settlement at Charlton on the Canterbury road produced briquetage, suggesting exploitation of the river for another purpose, salting, although this may be related to an Iron Age defended enclosure (Gz GR6). Roman Charlton, occupied from the 1st to the early 3rd centuries, covered an area of some 7ha, in which insubstantial timber buildings, a circular masonry structure (possibly a mausoleum) and traces of industrial activity have been recorded (Elliston Erwood 1916). A 3rd- to 4th-century settlement further downstream is suggested at Thamesmead, where the remains of what may be a field system associated with hearths have been found on what had been foreshore in the 1st and 2nd centuries (Gz BX22). Debris from a late masonry building in the area was found in the 19th century (Lakin in prep a).

The settlements were made up of modest timber buildings with earth floors and wattle and daub walls, associated with wells, hearths and pits. Evidence for small-scale industrial activity has been found at several sites, and cereal processing is represented by an oven at Enfield that could have served as a corn dryer or malting oven. Several pottery kilns close to the settlement at Brockley Hill have also been investigated, and have provided evidence for an extremely important local industry. Early production, which concentrated on specialist forms not normally found in the repertoire of native potters (eg mortaria and flagons), reached a peak in the Flavian–Trajanic period, but declined rapidly thereafter, and there is no evidence for manufacture after c AD 160 (Marsh & Tyers 1978, 533–82; Castle 1972). Tiles stamped PBR.LON (probably the mark of the 'Procurator of the Province of Britain at London') found on the sites of late 1st- and early 2nd-century public buildings in London may also have been made in the Brockley Hill area (Marsden 1975, 70–1; Bird 1985). Burials, both cremations and inhumations, are also found within most of the roadside settlements. Burials on high ground above the settlement at Enfield (Gz EN3, EN6, EN7–8, EN18, EN22) were clearly separated from the occupied area, but others, mostly cremations, were located in the settlement itself. At Old Ford (Gz TH3–19), notable for its extensive high-status cemetery, a more dispersed group of burials seems to overlap with the equally ill-defined settlement area. A cemetery was also found at Shadwell (Gz TH23–4) near the later masonry feature interpreted as a signal station or beacon, but which may in fact have been a funerary structure.

Several roadside settlements around London, including Brentford, Ewell, Enfield and Staines, show signs of contraction in the late 2nd or early 3rd century, but revived in the 4th century when a few buildings with masonry walls and tile roofs were built (Parnum & Cotton 1983, 325; Pemberton 1973, 1–26; Ivens & Deal 1977, 59–65; Crouch & Shanks 1984, 3; Laws 1976, 182). Finds of late 4th- and early 5th-century coins at Old Ford also indicate unusually late economic activity at a roadside settlement (Sheldon 1971, 42–7).



2nd- and 3rd-century glass vessels recovered from burials in the eastern cemetery of Roman London (MoLAS)

Although a broad picture of London's hinterland has emerged, the intensive work carried out on the Roman city has not been matched by equivalent attention in this area. This is mainly a consequence of more limited opportunities and resources for fieldwork in the past. Many major areas of research have yet to attract even preliminary study: no settlements in the region have been comprehensively excavated, and in most cases basic information concerning settlement origin, morphology and socio-economic character has yet to be gathered. Although London is not surrounded by sites of great intrinsic value or importance, the low density of occupation in the area is itself of interest, and the study of the region has considerable potential for developing our understanding of the city. Indeed, the past bias towards the study of the urban core now makes this one of the most important research areas for an understanding of both the Roman city and the London region as a whole.

The countryside

The Roman landscape and rural economy

The diverse landscapes along the Thames Valley and its tributaries in the Roman period included marshes and braided river channels in the Southwark area, fertile floodplains at Erith, Rainham and in the Lea Valley (buried by marsh development following the rise in river levels in the post-Roman period), and salt marshes or former mudflats along the lower Thames, for example at Thamesmead. These were largely too damp for corn growing, but suitable for pasture. It is likely that some areas with gravel and sand subsoils already supported heathlands at the time of the Conquest, including extensive tracts to the west of the region on Bagshot Heath. Some of these areas might have served as pasture, although they were not all unoccupied.

The extent of forested areas on the London claylands is uncertain, but Roman timber requirements in the early period of urban growth could be expected to have led to major woodland clearance. The creation of London might also have led to clearance for agricultural exploitation, in order to feed the expanding urban population, though there is no evidence as yet to support this. Indeed, the scarcity of known settlement sites and field ditches in clayland areas might instead indicate that the woodlands remained intact. Studies of structural timbers recovered from sites in London suggest that the bulk of these came from managed woodlands (Goodburn 1991b, 182–204; Bringham *et al* 1995, 39–42). Charcoal for fuel was also probably a product of sustainable resources. It is therefore likely that extensive areas of woodland managed for coppice and timber existed on the clay soils, many established well before the Roman period.

The gravel terraces and brickearth of east London and the varied soils of the downland valleys in south London supported the most intensive Iron Age and Romano-British activity in the region. Settlement sites were often located at the junction of two differing soil types, either to exploit springs or to take advantage of the differing conditions needed for mixed farming (Bird 1996, 220). Settlements on the gravel terraces, for example, were able to exploit the river floodplains and nearby wetlands for pasturage, and settlements along the downland valleys had access to a variety of soil types which would have supported the intensive mixed-farming economy suggested by occupation sites and field systems in this area. Some of the best soils were based on the Thanet sands in the Orpington and Darent Valley area. Even clayland, avoided for ploughing, supported woodland which could be exploited for fuel, structural timbers, rods for wattlework and basketry, pannage, seasonal fruits and nuts. Its unsuitability for most other purposes would have allowed clear-felled areas to be left to regenerate in a form of 'managed exploitation'.

Organised land division may be indicated by the setting out of a road parallel to and north of the Colchester road, and the existence of a rectilinear field system in the area to the south-east, from North Ockendon eastwards (Rodwell 1978, 90–3; 1979, 136; Dilke 1971, 191–3). Work on the gravel terraces to the west of London has also revealed an organised landscape of settlements, fields, enclosures and lanes of the mid 1st to mid 2nd centuries (MoLAS 1993), including the use of corn-drying ovens at Wall Garden Farm (Gz HL11).

The city would have been a major market for cereals for breadmaking and perhaps malting. The grain requirement could have been met from agricultural surpluses produced in the region

surrounding London, with most of the supply perhaps transported by river from north-west Kent, south-west Essex and Hertfordshire, although an early preponderance of spelt wheat at 168 Fenchurch Street suggests that initially at least some grain was imported (Philp 1977a, 7–9; Marsden 1987, 19–22; Dunwoodie & Bringham *in prep*). Granaries along the Darent constructed in the 4th century may have been collection points for grain bound for London (Perring 1991, 119).

The fields and enclosures identified in areas bordering London's suburbs and cemeteries indicate that people living in the city carried out some cultivation (perhaps in the form of market gardens), probably extending from the semi-rural fringe of the settlement. Areas of pasture and woodland would also have been required within easy access of the city. Such activities may in part account for the near absence of rural settlements close to London in many areas, including the lower valleys of the Colne and Wey and the area south of the Staines and Brentford road (Bird 1996, 220). This may in part be due to a lack of investigation, however: work by archaeologists of the Newham Museum Service has produced evidence of late Roman activity in Church Road, Leyton and elsewhere, suggesting that the Lea Valley was occupied (P Greenwood, *pers comm*), perhaps by farmsteads and small settlements. The areas nearest to the town probably specialised in the production of dairy produce, fruit, vegetables, honey and economically important herbs for medicines, dyeing and flavouring.

Grape seeds have been found on many sites in London, and while these may have been imported in dried form as raisins or sultanas they may equally have been cultivated in southern England (Wilson 1991, 325). The discovery of vinerods at Boxmoor villa, Hertfordshire (Renfrew 1985, 24), and an extensive vineyard at Wollaston, Northamptonshire, support the hypothesis that a widespread British wine industry existed.

The analysis of animal bones from domestic refuse in the city indicates that beef was preferred to lamb, a diet typical of more 'Romanised' settlements, although in some early deposits in Southwark sheep and goat are more frequent than cattle (Sheldon 1978, 33; Armitage *et al* 1983, 30; Locker 1988a). Pig meat, on the other hand, may have been more of a luxury item. The evidence of butchery waste and cattle hoofprints at sites in London and its suburbs suggests that cattle were driven to town for slaughter (Tyers 1984, 367–74; Beard & Cowan 1988) or penned outside for the purpose. There is evidence for cattle slaughtering at Old Ford, Staines and Enfield, all suitable collection points for the supply of meat to London. The discovery of both 'aged' cows and very young cattle in some assemblages, such as that from Regis House (Rielly *in prep*), suggests that dairying was carried on locally, perhaps in the town itself. A ditch in Southwark contained skulls of lambs that had probably been slaughtered nearby (Ferretti & Graham 1978, 63). Sheep were probably pastured on down and heathland, as well as on salt marshes where these were available; small fields or enclosures on the former foreshore at Thamesmead are one possible location. Such a large market may have led to the specialist production of certain products. Over the four centuries of Roman occupation this may have led to improvement of animal breeds, with large estates where the creation of stable herds was possible, and taking the leading role in much the same way as their 18th- and 19th-century successors. Cattle were relatively small, however, around the size of present-day Jerseys, with sheep probably resembling the Soay.

Although the popularity of hunting motifs in Roman art makes it clear that hunting was practised both for food supply and as a leisure pursuit, deer, hare and wild fowl including woodcock, duck and pigeon are found only in relatively small numbers, possibly because of the relative fragility of the bones of most of these species. As would be expected, the river was exploited, and estuarine fish and eel are found in London (Locker 1988a). Other species, such as cod and whiting, were caught outside the area. Proportionately, whole fish do not appear to have formed as important a part of the diet as was the case in Saxon and later medieval times; there is some evidence that they were more commonly consumed in the processed form of sauces such as garum and liquamen. Oyster consumption was significant, at least in the early 2nd century judging from the extensive deposits found near London Bridge (Milne 1985, 91–5; Bringham & Watson *in prep*), and these may have been farmed on the Kent and Essex shores of the Thames estuary. The homogeneity of these deposits, which lacked fish or animal bone, suggests that they were local processing waste rather than simply a by-product of consumption. The export of pearls, already mentioned, was perhaps a spin-off.

The development of tile and pottery industries and associated clay extraction and processing facilities, the quarrying of aggregates for roadbuilding and other construction work, and of chalk for lime burning, are all likely to have affected the rural landscape around London in the Roman period. Large quantities of chalk in particular would have been needed to supply limekilns and for use as a building material in its own right. Flint was also used for building construction, particularly in the 1st century. In the 1st and 2nd centuries small pottery kilns found in Highgate Wood (Gz HG1–2, HG5) and the Brockley Hill area (Gz BA1, HW1–7), perhaps operated by itinerant potters, produced the coarse kitchenwares used in London (Brown & Sheldon 1974, 230). These types of ware were subsequently produced further afield in Oxfordshire and the Farnham area (Grew *et al* 1985, 114–15). At Keston, pottery-making and decorating equipment and ceramic debris indicate that a kiln producing local imitations of Gallo-Belgic fine wares was in operation in the period c AD 60–85. Other finds include modest quantities of blacksmithing and bronzeworking debris.

Large-scale tile-production industries have been recorded at Ashstead and Brockley Hill (Merrifield 1983, 138); among their products, the former produced small tiles of the type used in *opus spicatum* (herringbone pattern) floors, such as an example in the London basilica (Bird 1996, 226, 229 n 25). Tiles stamped PPBR.LON may also have been produced at Brockley Hill (Marsden 1975, 70–1; Bird 1985).

Salt production in the lower Thames would have had an important impact on the regional economy and diet, allowing large-scale processing of surplus meat and fish products. Evidence for this industry is concentrated in Essex and Kent, although briquetage has been found near the Canterbury road at Charlton (Gz GR6–7) and at sites on the London waterfront. Large north Kentish shelly ware storage jars may have been used to transport salt, since these are found not just in London but along the eastern and north-eastern coastline. Production seems to have declined during the 3rd century (Rodwell 1979, 160–6; Detsicas 1983, 170–1; Merrifield 1983, 138).

The importance of the Thames to the London region in the Roman period is undeniable, and further study of river use and management should have a high priority. Such studies should be taken forward within a broadly based programme of research which could include study of the outer estuary, involving the Kent and Essex coasts with their own patterns of settlement, industry and exploitation of the river as a resource. Changes in tidal regimes in the later Roman period are still uncertain, although diatom analysis (which should allow for studies of changing water-salinity

levels) and well-dated foreshore deposits may cast light on tidal levels (Wilkinson 1998). Wetland landscapes of the Thames estuary also merit special attention, particularly for the identification of land reclamation and water-management schemes, although the present nature of archaeological work in London limits the extent to which such studies can be undertaken.

The Roman watercourses that now lie buried beneath river alluvium, including the south bank of the Thames and the courses of tributaries such as the Lea, Roding and Wandle, all require more precise plotting. In some areas further waterfront structures may be encountered, and ship hulks may survive in waterlogged alluvial silts. Mills should also be present, as suggested by the widespread distribution of millstones from Yorkshire and Germany, although structural evidence has not been found as yet. The distribution of settlements along the River Lea, which may have been an important routeway, and the possible existence of docks and waterfront installations at Putney and Brentford, and of sites adjacent to the hillforts at Uphall Camp and Woolwich, need to be investigated. In many areas relevant deposits will have been destroyed, and future management of this resource requires a far more detailed assessment of what

may survive than is available at present. The precise dendrochronological-dating of waterlogged timber structures is particularly important for understanding the development of quays, waterfront buildings, reclamations and ship design. Dates for bridges across London's rivers, and causeways or rafts across marsh areas, may also help to date the road layout, and by implication many settlement sites; such evidence from the approaches to the Southwark river crossing, for example, might clarify London's foundation date.

Present programmes of archaeological evaluation work in London offer considerable potential for developing landscape studies within the region. However, a more coordinated approach to the study of land use and settlement pattern around London is still needed. This will require designated sampling strategies for different types of landscape, and greater use should be made of animal bone assemblages (including remains of fish and game), pollen analysis and environmental studies of waterlogged sites and features (including the fills of wells, ponds and ditches) in order to determine the general character of the landscape.

Farmsteads and villas

Intensive fieldwork on the gravel terraces bordering Essex has revealed numerous small settlements with evidence of both Late Pre-Roman Iron Age (LPRIA) and Roman occupation. Where this can be demonstrated, it is possible that it represents continuity of settlement, even though the nature of occupation and alignments may alter. Examples include the LPRIA defended sites at Moor Hall Farm, Rainham (Gz HV11–13), where Roman field ditches overlay an earlier enclosure, and Manor Farm, Upminster (Gz HV2). These sites, with Hunts Hill Farm, Upminster (also an MPRIA site), were all probably occupied until at least the 4th century (Greenwood 1982; Goodburn 1978, 451; Grew 1980, 378; Rankov 1982, 374–5). Moor Hall and Hunts Hill Farms both appear to have been of relatively high status, with late samian present at the latter (P Greenwood, pers comm). All three cases may therefore represent cases of settlement shift within a small area, perhaps every few generations, with continuity in that area over many centuries. This may also be so at other sites in the east where the evidence otherwise seems to indicate a less localised shift in settlement in the late 2nd century, such as Stratford Market depot (Gz NH8; David Wilkinson, pers comm). On the gravel terraces in west London (MoLAS 1993), however, ditches associated with field systems established in the 1st century at Holloway Lane (Gz HL14), Wall Garden Farm (Gz HL11) and Cranford Lane (Gz HL8), had silted up by the mid 2nd century, and pottery sequences at these sites do indicate a gap in occupation before it resumed in the mid 4th century. Continuity from Iron Age settlement is less easy to demonstrate on the west London gravels, which had been extensively occupied in the Bronze Age, although an early Roman field ditch system at the Imperial College Sports Ground site, Harlington, did make use of an existing M/LPRIA driveway (Wessex Archaeology 1998, 16–18). Regardless of the differences apparent in the mid Roman period between east and west, in general later Roman rural settlement to the north of the Thames contrasts with the development of villas on the North Downs at the sites of earlier farmsteads (see below).

Roman occupation of uncertain character also continued within the MPRIA defended sites at Uphall Camp (Gz NH7) and Woolwich Power Station (Gz GR9), although continuity is not suggested. At Uphall Camp near the River Roding in north-east London a large quantity of 1st- and 2nd-century pottery from the silted-up Iron Age defensive ditch indicated occupation from not long after the Conquest. A large rectangular enclosure, ditches and a well seem to have been in use between the 2nd and 4th centuries, reflecting continued occupation of the area to the end of the period. The lack of building materials and domestic finds assemblages, and a preponderance of particular types of pottery, such as flagons and beakers, suggest specialised, perhaps ritual activity (P Greenwood, pers comm).

The widely scattered finds on the east side of the River Pinn north-west of London suggest a dispersed settlement pattern, and although the gravels in west London were extensively farmed the rare occurrence of chance finds suggests a less densely settled landscape than might be expected. Finds concentrations along the Thames upstream from the City, at Lambeth (Gz LA4), Battersea (Gz WW13), Ham (Gz RT1–3), Twickenham (Gz RT4) and Kingston (Gz KT10–12), probably

Two 4th-century hearths on the Roman foreshore of the Thames at Thamesmead, Bexley



represent riverside settlements, some at fording points and others perhaps associated with river traffic or local farming and fishing. A fish trap near the Putney settlement may be of late Roman date. Evidence from the site at Twickenham suggests that there may also have been a shift in settlement here in the late 2nd century (Grainger 1992). Downstream, finds beneath later marsh at Woolwich, Erith and Rainham suggest that the post-Roman rise in river level may have buried other Thames-side settlements. Occupation and two phases of ditch system at Thamesmead show the proximity of one such settlement. Another lay on the lowest terrace at Shadwell near the cemetery and ditch system.

The comprehensive study of non-villa farms, both settlement sites and associated field systems, should be a high priority, particularly in relation to changes in settlement patterns in the later Roman period. Information already obtained from the sites on the eastern gravel terraces should be fully assessed before a research strategy is devised. Bank and ditch boundaries around London, although clearly incorporating pre- and post-Roman elements, also deserve closer scrutiny to determine their relevance to Roman organisation of the landscape.

The principal symbol of Romanisation in the countryside was the villa. Villas were usually farming establishments where surplus wealth was diverted into the construction of Romanised buildings, and there was an emphasis on the display of status, represented, for example, by the use of masonry walls and mosaic floors. As well as several villas that lie just outside Greater London, there are 37 sites in the London region where structures or the presence of building materials indicate possible villa-style buildings. Rural bath-houses serving local communities or industries also share some of these characteristics, however, and may not be easily identifiable where investigation is superficial. The majority of these sites are more than 15km from London and locations to the south of the river were strongly preferred, especially in the chalk downlands areas of the Cray and Darent valleys. The comparative scarcity of evidence for villa sites and other settlements immediately around London contrasts with the normal pattern elsewhere in the province. The absence of villas to the north of London could be explained by the extent of the heavier clay soils, which are likely to have been extensively wooded, but this does not account for their absence on the farmed gravel terraces to east and west. It could be related to the peculiarities of London's status (Hodder & Millett 1980).

Only three villas have been investigated in detail in the London area, at Beddington Sewage Works (Gz ST6), Orpington Station (Gz BY17) and Lower Warbank, Keston (Gz BY33). None of these has been comprehensively excavated; it is apparent that they were established on sites occupied previously by LPRIA farmsteads, although continuity cannot be convincingly demonstrated. This concurs with evidence from villas just outside the study area (Black 1987, 22; Haselgrove 1988, 116). The earliest Romanised buildings appear at present to date to the period c AD 80–90, the most substantial of which (eg at Lullingstone) had stone foundations and are comparable with contemporary town houses in London, though there are no villa mosaics of this period (Meates 1979).

At Keston, an enclosed LPRIA farmstead (probably a high-status site given the presence of potin coinage) continued to be occupied in the early Roman period (Philp *et al* 1991). As has already been mentioned, pottery-making, blacksmithing and bronzeworking also seem to have taken place there. Reorganisation of the site in the mid to late 2nd century included the construction of a new timber house with painted walls. This was replaced by a small winged-corridor masonry villa building c AD 200, to which a bath suite was later added. Barn-like timber buildings flanked the yard, one of which was later rebuilt in stone with elaborate corn-drying or malting ovens. A small early Roman cremation cemetery was found within the main farm enclosure. The later cemetery, a short distance away, included a substantial circular mausoleum, a group of sarcophagi and a ritual shaft. Lamb and goat remains were more frequent than those of cattle in the Late Iron age and early Roman pits, but cattle bones predominated in deposits associated with the later villa buildings.

At Beddington a small winged-corridor masonry villa with heated rooms was built in the later 2nd century on the site of an Iron Age ditched enclosure (Howell *in prep*). An adjacent bath-house and three barns (one built of stone) were set around the forecourt. A small cluster of stone-lined and lead coffins found in the churchyard of St Mary, Beddington appears to have been the villa cemetery.

In Wanstead Park (Gz RB4) a number of Roman structures, at least one of which had a mosaic pavement, were set in an area of 20ha overlooking the Roding Valley near a road junction; this was either a widely dispersed villa complex or two or three such establishments located close to each other. At Foots Cray/St Pauls Cray (Gz BY3) a settlement of timber buildings arranged in regular enclosures with an associated stone bath-house was situated within 2km of a substantial masonry building. This arrangement might indicate a settlement hierarchy in which a low-status site served an adjacent villa, but it is perhaps more likely that these were two separate farmstead-villas. Other bath-houses at Fordcroft in Orpington (Gz BY9), Baston Manor (Gz BY26) and Mottingham (Gz BY40) may also have been attached to timber-framed farmsteads or villas. The five-roomed bath-house at Baston Manor, used between c AD 70 and AD 140, with its simple progression of rooms from cold to hot, is probably typical.

The 4th century was the main period of villa-building in Britain but there is little evidence for this around London. Several bath-houses were built in the region in the early 4th century (Black 1987, sites 27, 85, 89), and most of the earlier sites probably remained in use, but the absence of new villa construction or enlargement to create courtyard villas is notable. Lullingstone is likely to have survived into the early 5th century, and Early Saxon cemeteries were closely associated with the late Roman villa sites at Orpington, Beddington, Keston and possibly Deptford.

Other rural sites

Shrines and temples in Roman Britain were often established at springs and wells, on important boundaries and on significant hilltops. Few such sites have been identified in the London region, although the late 1st-/early 2nd-century masonry building with tessellated floors situated on a prominent hill in Greenwich Park (Gz GR1), close to Watling Street, was probably a temple. Several sculptures have been found in the area (Sheldon & Yule 1979). At Coombe Hill near Kingston mosaics and walls suggest another possible temple site (Gz KT1), though these remains could alternatively represent a villa.

The spring at Holywell at the head of the Walbrook, where some Roman building material has been identified, is a potential shrine site (Gz HK8). The line of the road along Bishopsgate appears to be diverted around the site. The source of the Fleet River may also have been a focus for ritual activity, and some Roman finds are known from the high ground in Hampstead (Gz CA3). More substantial temple sites exist close to the London area, including Springhead (*Vagnacis*) in Kent, between Crayford and Rochester, and Harlow in Essex.

Isolated graves and small cemeteries have been found throughout the London region, and finds of whole pots and jewellery may also mark the sites of burials. Cremation cemeteries are commonest, although there is an interesting concentration of sites with isolated inhumations some 5–6km to the north of the city between Stamford Hill and Hackney in an area with little evidence for settlement. High-status coffined burials have been found in East Ham, Bow, Barking and other areas of east London, all presumably near roadside settlements that have not been identified. Roman barrows have been found in Essex, at South Ockendon, for example, but only one certainly as yet in Greater London, an antiquarian find on Wimbledon Common (P Greenwood, *pers comm*).

Conclusions

London is unusual among Romano-British towns in being an entirely Roman creation. This could be seen as a deliberate attempt not to alter the local pre-existing pattern of *civitates*, by the selection of a site that was politically neutral. Alternatively, the bridge certainly occupied the first suitable topographical position for a crossing-point – and the establishment of the town, although logical from a logistical viewpoint, may have been purely fortuitous. Whatever the purpose, more than any other Romano-British site, it was a city of empire, and it has a unique contribution to make

to Romano-British studies. As an important frontier metropolis at the periphery of the Roman world, where the material expressions of imperial conquest, advance, consolidation and contraction seem to have been most compressed and extreme (and most visible), London offers an opportunity to investigate the vital processes of urban formation and social and economic change in relation to wider transformations within the Empire. There is one major caveat: its uniqueness means that London is not necessarily representative of the pattern of urban development seen elsewhere in Britain. For the same reason, the nature of its hinterland is also necessarily different in many respects, particularly when compared with those towns that were developed as *civitas* capitals from existing tribal nuclei.

The first town existed by AD 52, and a foundation date of c AD 50 is widely favoured, broadly contemporary with the urban foundation at Colchester (AD 49). London was established in conjunction with the Roman road network in Britain that linked the Channel ports with military installations and new towns to the north and west via the Thames crossing. The Thames itself offered a direct route to the Continent, particularly the supply route along the Rhine. London was thus located at a vital point for the organisation of the newly conquered province, and epigraphic sources suggest that it had an important administrative function by c AD 60. There is still disagreement, however, as to whether London's origins should be seen as essentially military, influenced by fort dispositions, or commercial; there may have been an early role as a military supply base, although the archaeological evidence from pre-Boudican levels is insufficient to support this.

The small size of the initial planned area and its inner ring of cemeteries does suggest that the settlement was not expected to expand as rapidly as it did, and this may be one reason for the explosion of activity in the Flavian period, with the provision of public buildings and facilities apparently outstripping considerations of the new town's official status. Historical sources fail to demonstrate that Claudio-Neronian London had the independent self-governing status accorded to other leading towns of Britain. It was, however, closely linked with provincial administration: the procurator, responsible for imperial property and most fiscal matters, was almost certainly based in London by AD 60. It has also been suggested that the provincial governor had a base in the city, and that London was chosen as a centre for imperial administration from the start. The 'suburbs' of London grew rapidly beyond the original core along the main routes into the settlement, probably in a planned manner, and the settlement that developed in Southwark had a distinct character and may have played a significant administrative role. The inner cemeteries, now in danger of being enclosed by urban development, were abandoned in favour of sites further out.

There is little evidence to suggest that the foundation of London had an immediate impact on the rural landscape. The creation of such an urban centre might be expected to have had major social and economic consequences for native settlements nearby, but no such sites are known and few are likely to have existed. The important settlement at Keston may have produced pottery in imitation of pre-Flavian imported types, but it is not clear if this was aimed at a 'Roman' urban or military market or if it was an early example of emulation of Roman fashions by local elites.

The origins of the roadside settlements established in London's hinterland require much more fieldwork. It has been suggested already that most of these sites grew up around imperial posting stations. The early pottery and tileworks at the Brockley Hill settlement also may be linked to official provincial needs.

London evidently benefited from military advances and wider urban development in Britain in the Flavian period. The public building programme in London at this time provided the city with most of the amenities expected of a Roman town, although apparently without ever developing a unified drainage, water supply, or sewerage system. Priority seems to have been given to the waterfront and administrative buildings such as the forum. The presence of these structures suggests the development of Roman civic institutions. It has been suggested that this programme was a state initiative supported by imperial patronage (Salway 1981, 57; Merrifield 1983, 87–8). The public building programme continued in the 2nd century, although most later works were concerned with enlarging or replacing earlier structures, sometimes without evident need. Opinion remains divided about the legal status of the Flavian city. It has been suggested that it was invested with the rights of a *municipium* or *colonia* (Frere 1987a, 76; Wilkes 1981, 415),

although it may simply have remained an informal settlement of Roman citizens (*conventus civium Romanorum*) with no status, at least in the 1st century (Wilkes 1996, 28–9). If so, the rarity of rural settlements and villas close to the city may be related to the absence of territory under the control of the town. The construction of a forum may mark the change to municipal status, although the first forum seems to have been hastily conceived, requiring realignment of its south wing and extension of the east and west wings within decades of its erection. The second forum was a much more considered piece of planning, despite some oversights by its builders, and it may be this which reflects a change in status to *municipium* (Wilkes 1996, 30); the same period saw the construction of a masonry fort, and the rebuilding of the timber amphitheatre in stone. Alternatively, the scale of the second forum in particular could suggest a response to special factors arising from the presence of the procurator, or the town's association with the governor.

The late 1st- to early 2nd-century town houses of London were among the finest in Britain; the only mosaics of this date of comparable quality are found at Fishbourne and at palatial villas on the Sussex coast, and there is a notable absence of similar villa mosaics near London. The character of most of the surrounding rural settlements appears to have changed little since the pre-Roman Iron Age, though growing economic links between the city and its hinterland can be suggested.

Contraction of the built-up area in London and at some roadside settlements is evident in the late 2nd century. The scale and date of contraction is disputed, but recent studies favour a significant population reduction in the period c AD 160–200, perhaps most marked in the 'suburbs' (Perring 1991; Marsden & West 1992). This period saw changes in the scale and direction of trade as supply routes were reorganised to reach new production centres and serve new markets. Some abandonment of agricultural land might be expected, given the apparent contraction of urban centres in Britain (Perring 1991), although this only seems to be marked on some of the sites on the west London gravels; even here it appears to have been temporary, and was reversed in the late 3rd or 4th century. In this later period, migration from the towns to the countryside may have added to rural population density. This may also have been the main period of villa development on the North Downs, which suggests considerable intraregional variation in the economic and social changes of this period.

The city remained a key administrative and industrial centre in the 3rd century, when several well-appointed town houses were built, and continued to be an important port, with some trade continuing even after the dismantling of the waterfront mid century. The early 3rd century also saw some public building works, most notably the construction of the city defences. The scale and character of the wall suggest that it was as much a demonstration of status as a defensive structure (Esmonde Cleary 1987, 166). Other towns in Britain were also allowed to build defences at this time (Frere 1984; Jones 1987, 87–9). The predominance of unofficial coins in London in the late 3rd century remains to be explained,

A 4th-century coin group from a ditch at 15–17 Brighton Road, Croydon (MoLAS)



though it may relate to the increased military and administrative activity suggested by the building of the riverside wall, the establishment of the Carausian mint and a possible attempt by Allectus to build an imperial palace in the south-western corner of the town.

Comparatively little is known about London in the 4th century. In the latter half of the century, it was almost certainly the headquarters of both the *vicarius*, an official in charge of the four or five provinces of what had become the diocese of Britannia, and the *consularis*, in charge of the province of which London was capital, *Maxima Caesariensis*. It was during this period, according to Ammianus Marcellinus (27.8.7; 28.3.1) that the town was renamed with the honorific *Augusta*, although this may only have been used for official purposes (Merrifield 1983, 214–15).

Elsewhere in Britain this period appears to have been one of prosperity, most strikingly represented, perhaps, by villa-building. In this context, the limited villa development around London is notable and, as has been suggested, was possibly due to the lack of a *territorium*.

Whatever economic, social, or political factors were at work in the late town, one clear result was that most public buildings, including the forum, were apparently redundant by the early 4th century, although late use of the Cripplegate fort remains a possibility. Some of the former sites of public buildings were subsequently used for the construction of timber houses and workshops, a phenomenon that has been noted elsewhere in Britain (Mackreth 1987, 139). There is also clear evidence that many minor streets had gone out of use by this time. The town's defences, however, were maintained and in some areas improved, perhaps partly as a measure to restore confidence after military setbacks such as those of the 360s (Merrifield 1983, 235). The area around Tower Hill in the south-east angle of the walled city appears to have been a focus of late 4th-century activity. The evidence of 4th-century burials also points to a degree of continued urban prosperity, although it is not clear if a reliable demographic picture is provided by the evidence from the late Roman cemeteries: later burials seem to outnumber earlier ones, and they must have been serving a substantial rural population.

Little is known about the 4th-century town houses in London. Some establishments were maintained to the end of the century, especially along the waterfront, but by then large parts of the walled area had been cleared of buildings and were left open, as gardens, fields or wasteland. The analysis of two 3rd- to 4th-century heated masonry buildings and their environs at Lloyd's Register, Fenchurch Street in 1996–7 suggests that such apparently isolated structures may in fact have been the nuclei of small clusters of timber-framed ancillary or lower-status buildings. The presence of butchery and crop-cleaning waste suggests that these may have been at least partly self-sufficient, and resembled small villas of the period, albeit in a semi-urban setting. If this proves to be the case and can be demonstrated on other sites, it would obviously have considerable ramifications for the interpretation of the late town as being largely empty, with a relatively small population (Bluer *et al* in prep).

There is some dispute concerning whether the latest houses were still occupied in the early 5th century, as at Verulamium (Vince 1990; Perring 1991), but there is certainly little evidence to support such continuity. Although it is not possible at present to determine how long occupation in the walled area persisted, the protection afforded by the walls suggests that it may have remained a place of refuge (as a reference to London in the Anglo-Saxon chronicle for AD 457 suggests), although not necessarily an urban centre in any form which the Romans would have recognised. The evidence from villa sites, and from pagan Saxon cemeteries associated with villas, indicates that there was more continuity in rural settlement in the 5th century than in the towns.

Comparative study of the latest phases of suburban and rural settlements in the area may help to understand the relationship between late Roman London and its hinterland, and the effect that the apparent demise of London had on the settlements which had once supplied or existed in symbiosis with it.

It has already been stated ('The nature of the evidence') that the extent of modern urban development has obscured the true pattern of Roman settlement and land use, particularly outside the City and central London, and many findspots in the past have therefore been concentrated in areas where rebuilding work has taken place regularly, notably in historic town centres. The advent of PPG16 has, however, meant that areas developed for housing and out-of-town commercial use are likely to provide a significant return in uncovering smaller settlements, farmsteads and field

systems. Currently, the pattern of settlement indicated by the distribution map of the Greater London area (Map 7) still reflects the incidence of more easily visible remains, such as masonry buildings and cemetery sites, although it is likely that these do indeed reflect the main settlement nuclei. The areas of sparser observations are apparent immediately, represented by areas of high ground in Harlow and Hillingdon in west London, Barnet and Enfield in north London, Lewisham, Croydon, Bromley and adjacent boroughs in south-east London, and low ground in Hounslow, Ealing and Richmond in the south-west. The lack of apparent settlement sites in these areas may well be real reflections of the situation in the Roman period, limited by the presence of woodland and other natural factors relating to drainage and soil type, as already discussed ('The Roman landscape and rural economy'). There remains the possibility that they were occupied, but with no nucleated settlements. In the future, work aimed at identifying LPRIA, Roman and Early Saxon sites in Greater London, whether by evaluation or other means, such as aerial and geophysical survey, should be prioritised: this has the potential to increase greatly our understanding of continuity, patterns of changing land use and settlement shift. Comparison of the pattern of rural settlement with that of the Early Saxon period at sites where evidence from both periods survives, such as Hunts Hill Farm, Upminster and LESSA sports ground, Rainham, would be of considerable interest, and there are grounds for optimism that more such examples will emerge.

In the City of London and the central area in general, the pattern of archaeological observation has been largely opportunistic, tied to the development process as indeed it has been in the rest of the Greater London area, and is liable to remain so, although the production of project designs means that work undertaken is better targeted, and the results of fieldwork better understood in their proper context. Until the advent of modern archaeological recording in the 1970s, observations were largely confined to the more visible elements: masonry walls, streets, large-scale timber structures, cemeteries, mosaic pavements, but the work carried out since then has been of such a volume that there is a more balanced picture than that available for the hinterland of Roman London. Further, it could be said that earlier work, particularly in the 19th century and the first half of the 20th, concentrated largely on structures of the late Roman period encountered during the construction of the first generation of deep basements. Work since the 1970s has concentrated on the less durable remains of clay-and-timber structures and strata which were relatively undisturbed, and there has been comparatively little of the later period remaining. In the City of London, therefore, recording has tended to be complementary, and the pattern of occupation produced is likely to be largely a true one. The one caveat is that there is some evidence now that late Roman non-masonry structures may well have gone unrecognised, and the 4th-century town could have been more densely occupied than was previously accepted.

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
TH63	TOWER HAMLETS	BOWL	080878	533740	181270		Tower of London. Land wall.
TH64	TOWER HAMLETS	BASTION	080887	533642	180530		Tower of London. Land wall.
TH65	TOWER HAMLETS	BASTION	081819	533635	180470		Tower of London. Bastions on city wall.
TH66	TOWER HAMLETS	BASTION	081821	533510	180515		Tower of London. Bastions on city wall.
TH67	TOWER HAMLETS	BURIAL GROUND	080809	533700	181900		Spitalfields. Inhumation and cremation burials.
TH68	TOWER HAMLETS	INHUMATION	080838	533450	181940		Spital Square. Cremation and inhumation burials.
TH69	TOWER HAMLETS	BURIAL GROUND	082223	533460	181880	SPT85	Spital Square. Cemetery.
TH70	TOWER HAMLETS	CREMATION JAR	080791	533390	181980		Norton Folgate. Cremation burial.
TH71	TOWER HAMLETS	GRAVEL PIT	081095	533400	181920	NRT85	Norton Folgate. Occupation debris.
TH72	TOWER HAMLETS	INHUMATION	080767	534820	182680		Corfield Street. Inhumation burial.
WF1	WALTHAM FOREST	CEMETERY	060250	538780	185980		Ruckholt Leyton. Inhumation and cremation cemetery.
WF2	WALTHAM FOREST	DITCH SYSTEM	060715	537580	186830	L-CR78	Church Road Leyton. Enclosure ditches.
WF3	WALTHAM FOREST	BUILDING (UNCLASSIFIED)	060724	537655	187130		Grange Park Road. Building structure (?Roman or medieval).
WF4	WALTHAM FOREST	BUILDING (UNCLASSIFIED)	061650	537700	186980		Leyton Grange. Building structure (?Roman or medieval).
WF5	WALTHAM FOREST	COIN	061116	537690	186880		Church Road Leyton. Coins.
WF6	WALTHAM FOREST	BUILDING MATERIAL (UNCLASSIFIED)	061117	538120	188180		Leyton Green Road. Building structure.
WF7	WALTHAM FOREST	COOKING POT	060856	537740	188360		Clarendon Road. Pottery (?grave goods).
WF8	WALTHAM FOREST	TILE	060864	539020	190000		Forest Road Walthamstow. Building.
WF9	WALTHAM FOREST	BOWL	060722	538740	188860		Whipps Cross. Pottery (?grave goods).
WF10	WALTHAM FOREST	PILING	060840	535140	189600		Low Maynard Reservoir. Timber structure and pottery.
WW1	WANDSWORTH	POTSHERD	020794	523200	175100		Howards Lane. Pottery.
WW2	WANDSWORTH	TESSERAE	020795	523200	175100		Howards Lane. Mosaic fragment.
WW3	WANDSWORTH	BUILDING MATERIAL (UNCLASSIFIED)	020753	523920	175660	GAY13/73	The Platt. Building debris.
WW4	WANDSWORTH	OCCUPATION SITE	031289	523850	175620	BEM2/65	Felsham Road. Settlement and structures.
WW5	WANDSWORTH	CREMATION JAR	031296	523850	175720		Bemish Road. Cremation burials.
WW6	WANDSWORTH	POTSHERD	031336	523940	175640	GAY3/62	The Platt. Occupation debris.
WW7	WANDSWORTH	CREMATION CEMETERY	031300	523910	175680	GAY10/66	The Platt. Cremation burials.
WW8	WANDSWORTH	DITCH	031307	523860	175550	FEL2/76	Felsham Road. Metalling.
WW9	WANDSWORTH	OCCUPATION SITE	031337	523800	175600	BEM3/72	Bemish Road. Structures.
WW10	WANDSWORTH	COIN	020761	525600	174750		Wandsworth. Occupation debris.
WW11	WANDSWORTH	SPOON	031292	525400	174700		High Street. Metal object.
WW12	WANDSWORTH	BOTTLE	031293	525800	174800		Fairfield Street. Pottery (?grave good).
WW13	WANDSWORTH	COFFIN	031282	529000	177000		Battersea Fields. Inhumation burials.
WW14	WANDSWORTH	CREMATION CEMETERY	031305	522800	173000		Kingston Road. Cremation burials.
WW15	WANDSWORTH	COIN HOARD	020773	522800	173150		Kingston Road. Coin hoard.
WW16	WANDSWORTH	COIN HOARD	031310	522000	172000		Putney Vale. Coin hoard.
WW17	WANDSWORTH	COIN HOARD	020774	524310	172890		Oaklands House. Coin hoard.
WW18	WANDSWORTH	HOARD	031291	524300	172900		Albert Drive. Coin hoard.
WW19	WANDSWORTH	VILLA	031317	527670	171990		Park Hill Estate. Building and brick pavement.
WM1	WESTMINSTER	WELL	081201	528530	181440		Welbeck Street. Well.
WM2	WESTMINSTER	TILE	081187	528400	181300		Wigmore Street. Building debris.
WM3	WESTMINSTER	COIN	081198	528300	181700		Marylebone. Metal object and coins.
WM4	WESTMINSTER	DITCH	082182	528700	181000	TEN89	Tenterden Street. Boundary ditches.
WM5	WESTMINSTER	COIN HOARD	081169	528340	181110		Cockspur Street. Cremation burial.
WM6	WESTMINSTER	BOWL	081168	530080	180750		St Martin's Lane. Pottery (?grave good).
WM7	WESTMINSTER	FINDS	081454	530210	180720	MAI86	Maiden Lane. Building debris and coins.
WM8	WESTMINSTER	OCCUPATION SITE	081241	530070	179940	TRG60	Whitehall. Pit, building debris and pottery.
WM9	WESTMINSTER	BOAT	081195	529930	179650		Storey's Gate. Boat structure.
WM10	WESTMINSTER	RING	081196	529900	179550		Tothill Street. Jewellery.
WM11	WESTMINSTER	BOWL	081261	529910	179660		Old Queen Street. Ditch and bronze vessel.
WM12	WESTMINSTER	STRUCTURE (UNCLASSIFIED)	081158	530100	179300		Great College Street. Building.
WM13	WESTMINSTER	BUILDING (UNCLASSIFIED)	081184	530060	179410		Westminster Abbey. Building.
WM14	WESTMINSTER	HYPOCAUST	081185	530050	179490		Westminster Abbey. Building structure.
WM15	WESTMINSTER	BUILDING MATERIAL (UNCLASSIFIED)	081236	530050	179470		Westminster Abbey. Building structure.
WM16	WESTMINSTER	SARCOPHAGUS	081157	530050	179520		Westminster Abbey. Coffin (reused for medieval burial).
WM17	WESTMINSTER	STATUE	081237	530040	179350		Great College Street. Sculpture.
WM18	WESTMINSTER	FINDS	081451	530075	179420	WST86	Westminster Abbey. Pottery.
WM19	WESTMINSTER	COIN	081171	529470	179370		Buckingham Gate. Coin hoard.

8

SAXON SETTLEMENT AND ECONOMY FROM THE DARK AGES TO DOMESDAY

Robert Cowie with Charlotte Harding

Introduction and background

The Anglo-Saxon period is conventionally divided into three phases, Early, Middle and Late (see Vince 1990, 3). In the case of the London region they can be defined as follows: the Early or pagan Saxon era spans the period from the end of Roman imperial rule in 410 to the return of Christianity in the 7th century. It includes the so-called 'migration period' when Germanic peoples moved from their homelands on the Continent to England. According to Bede the settlers comprised Saxons, who occupied much of southern England (including the London region), Angles, who settled in the Midlands, East Anglia and the north, and Jutes, who held Kent and the Isle of Wight (Bede, *Historia Ecclesiastica* 1.15, in Colgrave & Mynors 1969, 50–1). The Middle Saxon period is characterised by the development of a trading centre along the Strand, which marks the re-emergence of London as a town. The Late Saxon period starts in the mid 9th century with the onset of Viking attacks on London and the shift of settlement from the Strand to the walled city, ending with the Norman conquest in 1066. Opinions differ concerning the exact points of division between these periods and their relevance for archaeological interpretation.

The history of the Early Saxon period is often uncertain. The 5th- and 6th-century Anglo-Saxons were non-literate, and their history was probably maintained as oral tradition before being recorded by chroniclers in the Middle and Late Saxon periods. The accuracy of literary references to events in this period cannot therefore be relied upon. Moreover, the evidence for Saxon London before the 7th century is limited to a single reference in the much later *Anglo-Saxon Chronicle*, which records that Saxon mercenaries under the leadership of Hengist and Horsa mutinied in 455, and two years later Hengist and his son Oisc routed the Britons at a place called *Cregcanford* (traditionally identified as Crayford), forcing the Britons to flee to London. Following this possible event, London disappears from the historical record for 150 years.

It has long been held that the first Saxons to arrive in the Thames Valley in the late 4th or early 5th century may have been *foederati* (settlers who held land within the Roman Empire by a *foedus*, or treaty, in return for military service) recruited to supplement regular forces in Britannia in response to repeated raids by the Picts, the Irish and the Saxons. It was also thought that newly independent British authorities may have continued this policy after 410. The role of the *foederati* in the Anglo-Saxon settlement is now accorded less prominence and treated with more caution. Similarly, the traditional 'ethnocentric' approach of linking material culture to the geographical origins of peoples is now questioned (see Halsall 1999).

Although the scale of the Anglo-Saxon migrations has not been established, the archaeological evidence suggests that by the end of the 5th century most of eastern England was under the control of Anglo-Saxon rulers. The importance of the Thames Valley as a Saxon migration route during the 5th and 6th centuries is testified by a string of settlements of this period extending from the estuary to Oxfordshire (see Myres 1969, map 1; Vince 1984b, fig 1).

Small rural settlements of Early Saxon date in the London area are found along the Thames and its tributaries, and there is nothing to suggest that the Roman walled city was occupied in this period. Early Saxon populations probably lived in small, autonomous territorial units, though it is possible that the people who occupied the area between the Rivers Colne and Lea (Middlesex) may have formed a larger group of closely related communities, referred to as 'Middle Saxons' in later documents (the earliest a charter of 704; Stenton 1971, 54). There is no direct evidence, however, for a local dynasty in this area before it became a province of the East Saxons in the late 6th century (Bailey 1989). The expansion of the East Saxon kingdom, which included the later counties of Essex, Middlesex and Hertfordshire, may have been connected with

the threat of Kentish expansion into areas bordering the Thames, as London periodically fell within the Kentish sphere of influence during the 7th century. The line of East Saxon kings is traced to Sledd, who was married to the sister of Aethelbert of Kent (Bailey 1989, 113; Yorke 1990, 46), and succeeded by his son Saeberht, who accepted Aethelbert as overlord, and was persuaded by him to convert to Christianity.

In 601 Pope Gregory appointed Augustine as archbishop to the southern English, and chose London as the primary see of England. In 604 Augustine ordained Mellitus as bishop to the East Saxons, and at Aethelbert's instigation the church of St Paul the Apostle was built in London (Bede, *Historia Ecclesiastica* 2.3, in Colgrave & Mynors 1969, 142–3; Stenton 1971, 109). The reversion of the East Saxons to paganism c 616 (Bede, *Historia Ecclesiastica* 2.5, in Colgrave & Mynors 1969, 150–3) may be related to the rejection of Kentish domination after the deaths of Aethelbert and Saeberht (Yorke 1990, 48); it was partly as a result of this setback that the archbishopric remained at Canterbury. The episcopal succession was re-established in London c 653, when Sigebert 'Sanctus', king of Essex, was persuaded to adopt Christianity by his Northumbrian overlord Oswiu. A mission was duly sent from Northumbria, led by Cedd, who became bishop of the East Saxons.

By 665 Wulfhere, king of Mercia (658–75), was recognised as overlord of Essex, and in the 670s he sold the bishopric of London to Wine. Mercian influence also extended south of the Thames, for Frithuwold of Surrey described himself as sub-king of Wulfhere in a charter of 672–4 (Whitelock 1955, 440). This charter includes the earliest reference to the Saxon 'port of London'. Archaeological evidence suggests that the re-emergence of London as a major trading centre took place in the mid to late 7th century, with the development of a large settlement to the west of the old Roman city along the Strand. The development of this port was probably undertaken by Mercia which, unlike other Anglo-Saxon kingdoms, did not have ready access to the south or east coasts. Bede described London c 730 as 'an emporium for many nations who come to it by land and sea' (*Historia Ecclesiastica* 2.3, in Colgrave & Mynors 1969, 142–3), and in several Middle Saxon documents London is referred to as *Lundenwic*, the *-wic* ending denoting a trading port. International trade in northern Europe at this time depended on a network of such ports, and was subject to royal control and taxation.

Although the Kentish kings apparently briefly re-established their influence in London c 673–85 (Biddle *et al* 1973, 20; Whitelock 1955, 360–1), charters clearly indicate that London was mostly under Mercian control from the reign of Aethelbald (716–57) until the Viking occupation in 871. Vikings began to raid the towns and monasteries of northern Europe at the end of the 8th century; raids on London are recorded in 842 and 851, and in 871–2 the Vikings made it their winter headquarters. It seems that *Lundenwic* was unable to withstand these attacks and the disruption in trade they caused, and was abandoned by the mid 9th century. There is a tradition that Barking Abbey was sacked by the Vikings in 870 (Knowles & Hadcock 1971, 256), and this fits well with the archaeological evidence, which suggests that Barking Abbey was abandoned at about this time (Redknap 1991, 359).

The traditional view holds that London was under Viking control from sometime in the 870s (possibly 871–2) until 886 when King Alfred of Wessex formally re-established London as a fortified town on the site of the Roman city. However, numismatists now argue that coins of Alfred and Ceolwulf II were issued in London between c 875 and 880, suggesting that London was in English hands for at least some of this period (Blackburn 1998, 122; Keynes 1998, 35). According to the terms of a treaty between Alfred and Guthrum made between 880 and 890, the north and east of England were ceded to the Danes, including land on the north side of the Thames from the River Lea eastwards (Stenton 1971, 260; Whitelock 1955, 380–1). During the late 9th or early 10th century a *burh* was probably established in Southwark.

After a period of comparative peace, Viking attacks resumed in the late 10th century, when London became a centre of English resistance, finally submitting to Swein, the Danish king, in 1013. In 1016 London again became the focus of hostilities when it was captured by a Danish army led by Swein's son Cnut, who was accepted as king of England, and the entire London area came under Danish control. Despite Viking attacks, the period from Alfred's resettlement to the Norman conquest saw major developments in London. By the mid 11th century there was a large and thriving town inside the intramural area, and a small settlement in north Southwark.

A rare example of an Early Saxon sunken-featured building with an oven, found on the site of a Thames-side settlement in Mortlake (MoLAS)



Past work and nature of the evidence

There are five principal sources of evidence for studies of Saxon London: documents, place-names, archaeological sites, artefacts and environmental evidence (Vince 1990, v–xii).

Documents

An introduction to the documentary evidence relating to the Saxon period in the London region is provided by Brooke and Keir (1975, 15–29), and several authors, including Biddle (1989), Clark (1989) and Vince (1990), relate the documentary material to the archaeological evidence (other useful publications are listed in Creaton 1994, 49–50).

The London region in the Saxon period is relatively well documented in written sources in comparison with other parts of England. References to London and places in its hinterland are found in documents dating from the 7th century onwards. These include charters recording grants of land or privilege, histories, law codes and (in the Late Saxon period) wills. Old English charters provide the basis for the study of pre-Conquest place-names, and are particularly useful in the study of settlement patterns. Among the most important sources for the period are Bede's *Historia Ecclesiastica*, completed in about 730, and the so-called *Anglo-Saxon Chronicle*, which survives as a number of related but independent annals all drawn from an original version compiled in the early 890s.

Most documents survive as later copies. Those which were frequently used, such as the *Historia Ecclesiastica* and *Anglo-Saxon Chronicle*, have come down in several manuscripts, while others are represented by a solitary copy. Some are clearly authentic, but others may be inaccurate or even complete fabrications. These records are available in modern translations and are extensively reviewed by Whitelock (1955). Charters are listed by Sawyer (1968), who provides a bibliography and a concordance with Birch's work (1885–93), and Gelling lists the early charters of the Thames Valley (1979), providing useful commentaries which assess the authenticity of each document. A number of charters concerned with London are reviewed by Kelly (1992) in her paper on trading privileges in 8th-century England.

References to events and social or economic circumstances in the region during the Saxon period also appear in (or may be inferred from) later sources. Of particular importance for the Late Saxon period is Domesday Book, which was compiled from a survey of 1086. Although London itself was omitted from the survey, returns for the counties of Middlesex, Essex, Surrey and Kent provide geographical and economic data about land which now falls within the boundaries of Greater London. Darby and Campbell (1962) have produced a synthesis of the data for Middlesex, Surrey and Kent, and translations of the entries in Domesday Book for each county have been published in a series edited by John Morris (Morris 1975a; 1975b; Morgan 1983; Rumble 1983).

Place-names

Place-name evidence is valuable as a supplement to historical and archaeological data concerning Saxon settlement (see Stenton 1925; Myres 1986, 28–45). There are a number of places in Greater London that are mentioned in Anglo-Saxon charters and/or Domesday Book. There are also places with Old English names which may have originated in the Saxon period, though when a place acquired its 'Saxon' name is often a matter of conjecture. It is probably unwise to rely exclusively on place-name evidence as an indicator of Early Saxon settlement. Documented places and localities with an Old English name are shown on Maps 9 and 10. Much of this information is reproduced from *Time on our side?* (Grimes 1976, map 7). The publications of the English Place-Name Society also deserve mention as an invaluable source of information; these include volumes on the place-names of Essex (Reaney 1935), Middlesex (Gover et al 1942) and Surrey (Gover et al 1934).

Archaeological sites

Before 1950 Anglo-Saxon archaeology concentrated almost entirely on the study of 'pagan' Saxon cemeteries, which unlike settlement sites are relatively easy to recognise. It is therefore unsurprising that the first Anglo-Saxon sites to be excavated in the London region (in the 18th century) were the barrow cemeteries still visible at Farthing Down (Gz CR18) and Greenwich Park (Gz GR4). Most 18th- and 19th-century antiquarians, however, contented themselves with collecting and recording Anglo-Saxon artefacts recovered from the River Thames or from cemeteries that had been accidentally disturbed. Their interest lay primarily in acquiring items for display and study, rather than the investigation of archaeological sites. It was not until the late 19th century that the first controlled archaeological excavations of Anglo-Saxon sites were undertaken in the London area, notably by the Bidder family at the Mitcham cemetery site (Gz MT6).

From the mid 20th century a gradual change has taken place in Anglo-Saxon archaeology, as increasing numbers of settlement sites have been excavated. In the City of London, several excavations undertaken on bomb-damaged sites by Grimes from the late 1940s to 1963 revealed evidence for Late Saxon occupation (Grimes 1968; Gz CT7, CT26, CT29, CT37, CT54). However, it was not until 1977 that Saxon features were first positively identified in Southwark. A small number of Saxon sites were also excavated during the 1950s and 1960s outside the City and Southwark: most notably at Ham (Gz RT5), the first Early Saxon settlement to be excavated in Greater London; at Northolt Manor (Gz EL2), the pottery sequence from which was used as the basis for a fabric type series of Middle to Late Saxon wares; and at the Treasury (Gz WM58), where particularly well-preserved remains of 9th-century timber buildings were uncovered. Unfortunately, due to the scarcity of resources available for fieldwork, most areas of Greater London were neglected, and when surveys of London's archaeology were undertaken in the 1970s the Saxon period was still under-represented in the archaeological record (Biddle et al 1973; Grimes 1976; Hurst 1976).

The investigation of Saxon London since the mid 1970s has been greatly facilitated by large-scale programmes of fieldwork, increased funding and the formation of local field units. About 90% of all excavations of Saxon settlement sites in the London region have been undertaken in the last 25 years. Some of this work has already been published, and archive reports for most of the sites excavated by the Museum of London are available for study. However, publication has not kept pace with excavation, and the results of work undertaken on several outstanding sites have still to appear in print. A large number of important Late Saxon sites have now been excavated in the City, providing evidence for buildings, roads, waterfront structures and economic activities (Horsman et al 1988; Steedman et al 1992; Vince 1991a). One of the most significant discoveries in recent years was made when fieldwork in the Strand/Covent Garden area (Cowie 1987; 1988; Whytehead 1985; Whytehead & Cowie 1989) confirmed theories by Biddle (1984) and Vince (1984a) that this was the site of the Middle Saxon town and port of *Lundenwic*. Over 40 excavations in *Lundenwic* have produced evidence of Middle Saxon activity; by far the largest and most important of these was undertaken at the Royal Opera House (Gz WM8; Blackmore et al 1998; Bowsher & Malcolm in prep).

Several rural settlement sites have also been excavated in Greater London, notably Early Saxon sites at Enfield (Gz EN1), Hammersmith (Gz HF3), Harmondsworth (Gz HL6–8, HL10–12), Mortlake (Gz RT13), Kingston (Gz KT18), Rectory Grove (Gz LA12) and Tulse Hill (Gz LA14), and Middle Saxon sites at Barking (Gz BD1), Battersea (Gz WW6) and Chelsea (Gz KC1).

Artefacts

Artefactual evidence of the Saxon period is generally less common and distinctive than that from Roman and medieval sites, and the corpus of Saxon material from London is relatively small. Although many stray finds are imprecisely provenanced they do provide important information concerning the location, nature and extent of settlement during the Saxon period.

The first comprehensive surveys of Viking and Saxon finds in the London area were undertaken by Wheeler (1927; 1935), since supplemented by important studies of material from *Lundenwic* by Blackmore and others (in Cowie & Whytehead 1988; Whytehead & Cowie 1989), and of Late Saxon and Saxo-Norman finds and environmental evidence from the City (Vince 1991a). Pottery constitutes a substantial part of the artefactual evidence, and since the pioneering work of Hurst (1961, 254–67) considerable progress has been made in classifying and dating Saxon ceramics, notably the development of a fabric type series for Middle Saxon (Blackmore 1988b; 1989; in prep) and Late Saxon pottery (Vince & Jenner 1991). Until recently Early Saxon pottery had received little attention since the work of Hurst (1961) and Myres (1969; 1977). However, over the past few years significant progress has been made as Early Saxon pottery from several sites has undergone detailed examination. Some of this work is already in print (see Laidlaw & Mephram 1996; Blackmore with Williams 1997), and further publications are pending. Although coins are rarely found, they are a particularly valuable source of information, since they can often be closely dated, and may provide evidence for trade, economy and even the changing political fortunes of Anglo-Saxon kingdoms. The numismatic evidence from London has been reviewed by Stott (1991), who includes a catalogue of single finds, and Late Saxon coin hoards from the London area have been listed by Dolley (1960). Alfredian coinage from the London mint has recently been reassessed by Blackburn (1998), who concludes from the numismatic evidence that the Vikings were not in control of London during the late 870s and early 880s, overturning this traditionally held view. Other items bearing inscriptions are even rarer, and include monumental stones, swords and bone objects (see Holder 1998). Recently published reports on specific artefact types include typological studies of Saxon and medieval lead weights from the Vintry site (Gz CT43; Drinkall & Stevenson 1996) and Late Saxon lava quernstones from Thames Exchange (Gz CT64; Freshwater 1996).

Environmental evidence

Before the mid 1980s there were few studies of biological material from Saxon sites in the London area; Armitage *et al* (1987) summarise environmental reports written before September 1983. Most of the environmental evidence for this period derives from excavations undertaken since 1985 in the area around the Strand (Middle Saxon London) and in the intramural area of the City (Late Saxon London), together with a few rural settlements and monastic sites, notably the Early Saxon settlement at Harmondsworth (Gz HL6–8, HL10) and the Middle Saxon settlement at Barking Abbey (Gz BD1). Studies of plant remains and animal bones have already provided valuable information about the agricultural economy and local environments (Jones *et al* 1991; Davis in prep; West & Rackham in prep), but much of the excavated material awaits detailed examination.

Little is known about the vegetational history of London in the Saxon period, and only one ¹⁴C-dated pollen diagram is available for this period (from Lodge Road, Epping Forest; Baker *et al* 1978; Rackham 1994, 126). Micromorphological analysis of soil samples taken from dark earth loam deposits overlying Middle Saxon occupation levels at Jubilee Hall (Gz WM48) has provided information about the formation of this type of deposit in the Saxon period (MacPhail 1988). Well-preserved Saxon timbers have been found at a number of sites, mostly along the Thames waterfront where timber revetments have yielded valuable evidence about waterfront and building construction, and timberworking techniques (Milne 1992b). Tree-ring evidence has also provided some information about woodlands and their exploitation, as well as dating evidence (Tyers *et al* 1994; Tyers in prep).

Demographic and osteological evidence relating to the Saxon population of the London region is extremely limited, mainly because so few cemeteries have been excavated. The studies of human remains that have been published comprise a small skeletal assemblage from the Early Saxon cemetery at Mitcham (Gz MT6; Duckworth 1908), isolated Middle Saxon burials from Jubilee Hall (Gz WM48; Henderson 1988), Bedfordbury (Gz WM38; Keilly 1988) and Chiswick (Gz HO11; Conheaney 1996), and 234 skeletons from the 11th- and 12th-century cemetery of St Nicholas Shambles in the City (Gz CT17; White 1988). Publication of the analysis of a group

of late 11th- and 12th-century burials from Mitre Street is pending (Gz CT108; Conheaney in prep). Studies of parasite remains from occupation deposits and mineralised faecal material in London have provided information on standards of health and hygiene in the Middle and Late Saxon periods, indicating that infestations of parasitic worms were endemic among the inhabitants (de Rouffignac 1985; 1988; 1990; 1991).

The archaeological evidence

Early Saxon

The Roman–Saxon transition

Archaeological evidence from Roman London indicates a marked decline in population and commercial activity in the late Roman period (Marsden & West 1992; Perring 1991). By the 4th century large parts of the walled area had been cleared of buildings and covered by a gradual accumulation of dark earth. With the end of Roman provincial rule in 410 London would have become redundant as an imperial administrative and military centre, and appears to have declined rapidly. Although it is not possible at present to determine exactly how long occupation in the intramural area persisted, it is probable that the town was abandoned in the early 5th century (Milne 1995, 89; Perring 1991, 128). Evidence from the dark earth, and from the area around the Tower where late Roman activity seems to have been particularly concentrated, may prove to be especially important for understanding the fate of the urban settlement during this period. Even after the town had been abandoned it is possible that its defensive walls continued to offer shelter in times of trouble.

The fate of the British population in the London area remains uncertain, though place-names which include possible Celtic or Latin elements may indicate a continued British presence; the River Brent, for example, seems to have been derived from the Celtic word probably meaning either 'high' or 'holy' river, *Brigantia* (Gover *et al* 1942, 1), and Bedfont may include the Latin word *fons* for spring (Vince 1990, 148). Similarly, the place-names Waleport (later Wallpits) and Walehulle in the Kingston area (Wakeford 1984, 251–6), and Walworth (Gover *et al* 1934, 27), apparently include the Old English element *Wealh*, meaning foreigner, Welshman or slave, which came to be applied by the English to the Britons, and they might therefore be English allusions to surviving British communities, or possibly to the visible ruins of Romano-British settlements.

It is possible that some of the earliest Anglo-Saxon sites in the region, such as those at Mitcham and Croydon in south London and Mucking in Essex, represent settlements of *foederati* guarding the approaches to the city, though the evidence for this is tenuous. A handful of finds from central London may also indicate a 'Germanic' presence closer to the late Roman town. This material includes Germanic-type pottery, dated to the 5th century, from pits at Clerkenwell (Gz IS3) and a deposit above a Roman floor at St Bride's Church (Gz CT7; Blackmore with Williams 1997, 54–6). The pottery from St Bride could be slightly earlier, perhaps dating to the last decades of the 4th century, since it was found with 58 sherds of Roman pottery dated to 350–400. Similarly, two *tutulus* brooches and a triangular antler/bone comb from a grave in the Roman cemetery at Mansell Street are of Germanic type and are dated to the late 4th or early 5th century (Barber *et al* 1990, 11; Barber & Bowsher 2000, 183–4). Chip-carved belt buckles, such as those found at Mansell Street and West Smithfield (Gz CT5), have sometimes been associated with irregular Germanic troops, but they were also worn by regular Roman soldiers and government officials (Bishop & Coulston 1993, 178; Merrifield 1983, 244–5). Indeed, the West Smithfield buckle is now associated with the Roman cemetery to the north-west of Roman London (Bentley & Pritchard 1982, 163). Nevertheless, it is conceivable that the early 5th-century belt fittings from a grave at Mucking were issued by a British authority and worn by a German mercenary officer.

If there was a period when distinct British and Saxon communities coexisted in the region then it was probably short-lived, since the evidence for post-Roman British settlement in the area is tenuous (see above). The apparent absence of British sites suggests that the indigenous population either rapidly abandoned the area or adopted the material culture of the incoming Saxon groups. The latter would agree with Halsall's (1999, 144) contention that the collapse of Roman society and its infrastructure allowed the Anglo-Saxon ethnic identity to utterly submerge the Romano-British.

By contrast there is now considerable archaeological evidence for 5th-century Saxon settlement in the region, including a number of sites close to the site of the Roman town, for example Clerkenwell (see above), Rectory Grove (Gz LA12) and Tulse Hill (Gz LA14). This seriously undermines the theory, first proposed by Wheeler (1935), that there was a 'sub-Roman triangle' formed by the territories of major Roman towns in south-east England, from which Saxons were either excluded by a Romano-British population, or in which they were assimilated by the indigenous group. The limits of this British enclave, it was argued, were marked in north-west London by Grim's Dyke (Gz HW1-4), but it is now suggested that the ditch and bank at Pear Wood, and the earlier earthworks of the Grim's Dyke system, may have been used as a boundary for a British kingdom in the Chilterns.

Settlement

There is no evidence in England for towns or large nucleated settlements dating to this period. Current evidence suggests that Early Saxon settlements consisted of dispersed villages and farmsteads, each probably comprising no more than a few households. For example, it has been estimated that the cemetery at Mitcham served a community of about 50–100 persons (Bidder & Morris 1959, 128). At Mucking in Essex, where both buildings and burials were found, more precise estimates suggest that the settlement had an average population of 94 persons \pm 10%, although this ignores fluctuations over the three centuries of the settlement's existence (Hamerow 1993, 90–1). Elsewhere small, shifting, bipolar farmsteads are found, probably representing only one or two family units (eg West Stow, Suffolk; West 1985; and Barton Court Farm/Barrow Hills, Radley, Oxfordshire).

The nature of settlement in the City of London in the two centuries following the collapse of the Romano-British administration in the early 5th century is still unclear. The bridges across the Thames and the Fleet (Steedman et al 1992), if they survived, and the city defences may well have been useful for Saxon communities who settled in the area. There is, however, virtually no evidence for activity within the walled city at this time. The few finds include a mid 5th-century brooch (Cook 1969), three unprovenanced late 6th- to early 7th-century pots, and a few fragments of metalwork and pottery of similar date (Vince 1990, 7, 11–12), and suggest little more than sporadic and temporary occupation.

The Early Saxon settlement pattern in the region was perhaps influenced as much by local topography as political factors. The early settlers evidently preferred, or were restricted to, the easily cultivated fertile soils on the brickearths and gravels of the river valleys, rather than the possibly more heavily wooded claylands. Settlement areas, indicated by cemeteries and occupation sites, are concentrated along the River Thames and its tributaries, particularly the Cray, the Colne and the upper reaches of the Wandle. Some of the Thames-side settlements were located on the outside of meanders, possibly where the land was drier and where there was a good field of vision along the river. Moreover, the current would be slacker on the outside of a bend in the river, which would allow boats to be beached more easily (Lyn Blackmore, pers comm). It is also clear that Early Saxon settlements were often established on land that had been farmed in the Roman period, since a number of 5th-century cemeteries and settlements have also been found close to late Roman villa sites. These include Keston (Gz BY4), Orpington (Gz BY9), Beddington (Gz ST15) and, just outside Greater London, Darenth in west Kent (Philp 1973b) and Rivenhall in Essex (Rodwell & Rodwell 1973). Other settlements, such as those at Mortlake (RT13), Rainham (LSA98) and Mucking in Essex, were established within Roman field systems. This may indicate a degree of settlement continuity in some parts of the region.

One of the earliest Saxon settlements to be identified in the lower Thames Valley is the village at Mucking, first occupied during the first half of the 5th century (Hamerow 1993, 94). The earliest objects found in the extensive Saxon cemetery at Mitcham (Gz MT6) suggest that a settlement existed there soon after 400. Settlements close to the River Thames at Hammersmith (Gz HF3), Eden Walk, Kingston (Gz KT9), Ham (Gz RT5) and Mortlake (Gz RT13) have all produced Germanic-style pottery similar to finds from Mucking and Mitcham, and were probably established in the 5th century by settlers newly arrived from the Continent. A settlement near the Thames at Brentford (Gz HO4) may also date to the late 5th or 6th century. The large numbers of Early Saxon spearheads from the river at Brentford/Kew (Gz HO6) and Mortlake (Gz RT14) might be associated with nearby settlements.

Settlements of the 5th or early 6th century have also been found along the Thames tributaries at several locations, including Keston (Gz BY4) near the source of the Ravensbourne, St Mary Cray (Gz BY10) next to the Cray, Clerkenwell (Gz IS2) close to the course of the Fleet, and at Tulse Hill (Gz LA14) close to the course of the Effra. The most extensive settlement area, probably occupied during the late 5th and 6th centuries, is indicated by a cluster of sites at Harmondsworth near the River Colne (Gz HL6–8, HL10–11). Sites at Tottenham Court (Gz CA2), Enfield (Gz EN1), Clapham (Gz LA11–13) and Mitcham (Gz MT7) appear to be slightly later, and probably date to the late 6th or early 7th century.

The sites at Harmondsworth are widely scattered along the edge of the river terrace and might represent a large dispersed settlement. Alternatively, they could represent a relatively small settlement which gradually shifted over time (Andrews 1996b, 109; Farwell et al 1999). This phenomenon, known on the Continent as *Wandersiedlung* (wandering settlement), has been recognised at a number of Early and Middle Saxon sites, notably Mucking in Essex, where the distribution of datable artefacts indicates a shifting hamlet rather than a single sprawling village (Hamerow 1991; 1993, 86–7). Other examples of shifting settlements dated to this period have been identified at sites in Oxfordshire, Buckinghamshire and Suffolk.

Saxon settlement may also be indicated by place-names; those ending in *-ingas*, for example, probably date to the Early Saxon period (Dodgson 1966). The wider territories of Saxon communities may be indicated by place-names such as Barking, Ealing, Havering, Mimms and Yeading, which are derived from the tribal names of the *Berecingas*, *Gillingas*, *Haeferingas*, *Mimmas* and *Geddingas*. The name used for Harrow in a charter of 767, *Hergae Gumeningas* (the sanctuary of Gumen's people), suggests that it may have been the site of a heathen shrine.

Defences and earthworks

Most Early Saxon settlements appear to have been undefended, although there is slight evidence that an Iron Age fortified enclosure in Beddington Park (Gz ST10) may have been reoccupied during this period, and an earthwork at Fulham (Gz HF4–5) may be Early Saxon in date. It has been suggested that Grim's Dyke, a shallow ditch and low bank which can be traced intermittently between Cuckoo Hill and Harrow Weald Common in north-west London (Gz HW1–4), dates to the 5th or 6th century (Wheeler 1934, 258–60; 1935, 72). The evidence for this is tenuous and excavations have shown that the stretch at Pinner and Harrow Weald Common may be Late Iron Age or early Roman in date (Ellis 1982, 176). However, a similar bank and ditch at Pear Wood, Brockley, which may be a continuation of Grim's Dyke, is probably no earlier than the 4th century (Castle 1975, 274). The location and modest size of these earthworks suggest that they were not defensive but boundary markers, perhaps defining the frontier of a British kingdom in the Chilterns (Vince 1990, 51–2).

A 6th-century gilded brooch from the grave of a woman in the Early Saxon cemetery at Mitcham (MoL)



Domestic buildings

Two principal building types have been recorded at Early Saxon settlement sites in England. The larger and more complex of the two types was the ground-level timber building or hall. Halls would have served as the general living quarters. They were usually rectangular in plan with doors in the long sides, and sometimes in the end walls as well (James *et al* 1984). Some had internal partitions forming small rooms at one or both ends, and a few had small annexes. Unlike their continental counterparts they were not aisled, but their roofs were supported by the outer walls, and sometimes gable posts. The remains of halls are generally more prone to erosion than sunken-featured buildings (see below), and are harder to date. Nevertheless, halls have recently been identified at two or three sites in west London. Evidence for at least one substantial post-built hall was recorded at South Lane, Kingston (Gz KT18), and at Prospect Park, Harmondsworth (Gz HL7) the partial ground plans of two halls were indicated by rows of postholes. In addition, traces of an undated post-built structure found near Early Saxon pits at Bath Road, Harmondsworth (NHS97) could represent another hall.

The other type of building was the *Grubenhaus* (a German word meaning 'pit house') or sunken hut, now termed sunken-featured building (SFB). Buildings of the type are thought to have been ancillary to the halls, and were probably used for craftwork and storage. The archaeological evidence for these structures has been interpreted in various ways, but it is most commonly held that this type of building consisted of a pit (probably floored with planks and revetted) covered by a sloping (tent-like) roof supported by earthfast posts. Classifications of sunken-featured buildings are based on the number of postholes and their arrangement (Guyan 1952, 180; Ahrens 1966, 207–29; West 1985, 113–14). Remains of Early Saxon sunken-featured buildings have been found at a number of sites in Greater London, and the evidence for some of these structures has been reviewed by Blackmore (1986). Isolated examples have been recorded at Keston (Gz BY4), St Mary Cray (Gz BY10), Brentford (Gz HO4), Mitcham (Gz MT7) and Ham (Gz RT5), and near Harmondsworth at Holloway Close (Gz HL6), Manor Farm (Gz HL8), Holloway Lane (Gz HL10) and Bath Road (NHS97). Two each were found at Enfield (Gz EN1) and Mortlake (Gz RT13). The best evidence for the arrangement and use of these buildings, however, was found at Prospect Park, near Harmondsworth (Gz HL7), Hammersmith (Gz HF3) and Tulse Hill (Gz LA14). At Prospect Park 11 were revealed during large-scale excavations. Up to six sunken-featured buildings were excavated at Hammersmith, together with postholes, ditches and pits, while at Tulse Hill up to nine features may have been sunken-featured buildings, although some were badly truncated and could have been pits. The buildings were usually represented by oval or sub-rectangular 'playing-card-shaped' flat-bottomed pits, on average 3.5m x 2.7m in size, with associated postholes indicating supports for a superstructure. Most structures were of the two-post type, with posts at the mid point of the short sides. Two sunken-featured buildings, at Bath Road and Hammersmith respectively, had unusually elongated ground plans, and one at Mortlake had an oven projecting out from its side.

At other settlement sites, such as Rectory Grove (Gz LA11–13), buildings have not been found but occupation is indicated by various features, including pits, ditches and gullies. Pits are generally rare on Early Saxon sites, but abandoned sunken-featured buildings were used for the disposal of domestic rubbish (and in many cases appear to have been deliberately backfilled), occasionally including dead animals. For example, the hut at Brentford contained part of the skeleton of a cat (Canham 1978b, 30), and one of the huts at Hammersmith held the remains of a horse.

Agriculture

Although the basis of the early Anglo-Saxon economy was farming, material evidence for agricultural activity is sparse (Fowler 1976). Early Saxon field systems have not been found in the London area apart from a few ditches at Manor Farm (Gz HL8), which may represent enclosures and land boundaries. It is therefore impossible to determine the organisation of agricultural land during the 5th and 6th centuries.

Small assemblages of plant remains from Early Saxon sites at Holloway Lane (Gz HL10), Holloway Close (Gz HL6), Manor Farm, Prospect Park (Gz HL7), Tulse Hill (Gz LA14) and Mortlake (Gz RT13) included charred grains of wheat and barley (Davis 1986; 1989; 1996; *in prep*; Rackham 1994, 127; Hinton 1996; Giorgi *in prep* b). The wheat from these sites mostly resembled bread/club wheat, though glume bases of spelt wheat were also recovered at Holloway Lane and Holloway Close, a combination which may mark the transition from Roman spelt wheat cultivation to the later Saxon emphasis on bread/club wheat, the only variety to be found in Middle and Late Saxon London. Small quantities of oats recovered from sites near Harmondsworth may represent wild contaminants. Charred grains of six-row hulled barley and oats, and grain impressions of these in pottery, were also found at Rectory Grove, Clapham (Gz LA12; Densem & Seeley 1982, 179). Grain impressions in Early Saxon pottery from sites elsewhere in England are also mainly of barley, even where it is not the most abundant cereal in charred plant assemblages, which suggests that such impressions do not reflect the relative importance of different crops (van der Veen 1993, 81). The wheat was probably used for making bread (and possibly brewing), the barley for brewing, and possibly as an ingredient in soups and stews (Hagen 1995, 18–23). Rye has been identified only at Tulse Hill. Little evidence for other food plants has been found, apart from fragments of hazelnut shell from Prospect Park and Tulse Hill, and legume seeds from the latter. The significance of fig, grape, pear/apple, blackberry/raspberry, strawberry and elder remains in waterlogged deposits at Manor Farm is uncertain due to possible contamination from medieval deposits.

The faunal assemblages from Early Saxon sites in London are disappointingly small. The paucity of animal remains might be due to the way in which domestic and butchery waste was disposed of, but could also be because Early Saxon settlements in the region were often established in areas with acidic subsoils, where bone preservation is generally poor. Nevertheless, animal bone from settlements at Keston (Gz BY4; Harman 1973), Manor Farm (Rackham 1994, 127), Prospect Park (Hamilton-Dyer 1996) and Hammersmith (Ainsley *in prep*) have provided useful information about animal husbandry. At the first two sites pigs were predominant, with cattle and sheep/goat both present, while at Prospect Park and Hammersmith cattle were predominant. The remains from Keston, however, were probably contaminated with Romano-British material. There is little evidence for hunting apart from a few bones of red deer from Hammersmith and Keston, and of roe deer from the latter. Fish bones have only been found at Hammersmith, where a small assemblage comprised the bones of plaice/flounder, smelt and herring indicating sea fishing, quite possibly in the estuary. Eel was also represented, and may indicate freshwater fishing. Indeed, evidence for fishing in the Thames may have been found on the foreshore at Barn Elms (Gz RT17) and Putney (Gz WW3), where single rows of vertical posts dated to the Early Saxon period are thought to be the remains of fish traps.

Trade

There is almost no evidence for commerce or trade in the Early Saxon period, which may suggest that settlements were largely self-sufficient (although the evidence for marine fish at Hammersmith might indicate outside contacts). It seems likely, however, that the development of Anglo-Saxon kingdoms during the 6th century would have encouraged the exchange of prestige items. The presence of a Byzantine lead seal on the Thames foreshore at Putney (Gz WW2) implies that trade goods, probably textiles, were brought up the river in the latter half of the 6th century (Biddle 1989, 20–1; Frere *et al* 1990, 124, no. 2411.311). Three complete Frankish pots, supposedly found in the City, may indicate contact between London and the Continent during the late 6th or early 7th century, though there is some doubt about the provenance of these vessels (Vince 1988, 90–1; 1990, 11–12).

Industry

Apart from finished products little evidence for Early Saxon craftwork and industrial activities has been found in Greater London. Weaving is indicated at a number of sites by the presence of loomweights. Limited evidence for antlerworking has been found at Kingston (Gz KT18) and Hammersmith (Gz HF3). A small amount of slag and hammerscale from Hammersmith also indicates ironworking, albeit on a limited scale.

Burials

Burials provide the single largest body of evidence relating to Saxon communities in the London area in the 5th and 6th centuries. Inhumation burials predominate, occurring both singly and in cemeteries. The largest and most important cemetery is the site at Mitcham, where some 230 graves were recorded, many with grave goods (Gz MT6). Mixed cemeteries of inhumations and cremations, such as those at Orpington (Gz BY9) and Beddington Park (Gz ST15), are less common. A large mixed cemetery may also have been discovered in the 19th century at Edridge Road, Croydon (Gz CR8), where bones were found with 5th- and 6th-century objects, including urns. The typology and significance of funerary urns from London are discussed by Myres (1969; 1977) in his studies of Anglo-Saxon pottery.

Significant advances made in recent years in excavation techniques and the anthropological and palaeopathological analysis of cemetery evidence increase the importance of these sites as a resource for studying this period. It has also been suggested that the study of human skulls from inhumations could be used to distinguish Germanic settlers from the indigenous British population, perhaps indicating the extent of intermarriage between these two groups (Armitage et al 1987, 290). This approach might be superseded by the analysis of genetic material (DNA) recovered from bone samples. For example, comparison of DNA from late Roman and Early Saxon burial populations might well indicate the extent to which the indigenous population was absorbed by incoming settlers (or vice versa). Such research, however, might be considered simplistic, especially considering that 'change, or plurality, of ethnicities was common' in 5th- and 6th-century western Europe (Halsall 1999, 139).

Despite their archaeological potential, remarkably few Early Saxon burial grounds have been investigated by modern excavation, and consequently there is little demographic and osteological information about the Saxon population of the region. However, following a controversial planning inquiry (see Welch 1997), a limited excavation of an early mixed inhumation and cremation cemetery was undertaken at 82–90 Park Lane, Croydon (PLO99). Unfortunately, although a number of graves were found, the human remains on the site were very poorly preserved (John Dillon, Wessex Archaeology, pers comm).

Middle Saxon

Settlement

It is currently thought that during the Middle Saxon period London comprised two distinct elements: (1) an extramural mercantile settlement centred on the Strand, about 1 km west of the site of Londinium, and (2) the intramural area of the former Roman town, occupied by a small number of buildings, including churches and possibly a royal hall.

A small number of late 6th- to early 7th-century finds from the area around the Strand suggest that the extramural settlement had been established by c 600. Initially this settlement was fairly small, but during the late 7th and early 8th centuries it grew into a major trading port – a development which marked the rebirth of London as a town. The name *Lundenwic*, which is used in Middle Saxon documents, is thought to refer specifically to this settlement; it disappears from use in the mid 9th century, when the focus of settlement shifted back to the City (Cowie & Whytehead 1989, 707–8; Vince 1990, fig 43). The settlement formed part of a network of trading ports in north-west Europe (Hodges 1982; Clarke & Ambrosiani 1991; Hill & Cowie in prep). These settlements are often referred to by archaeologists as 'wics' because their names frequently have the 'wic' suffix, which in this context means trading settlement or harbour. Other Anglo-Saxon wics have been identified archaeologically at Ipswich (*Gipeswic*), Southampton (*Hamwic*) and York (*Eoforwic*), and their continental counterparts include *Dorestad* in the Netherlands and *Quentovic* in France.

The site of *Lundenwic* was recognised in the mid 1980s after research carried out independently by Martin Biddle (1984) and Alan Vince (1984a) suggested that it was located in the area around Aldwych (or 'old wic') and the Strand. Archaeological evidence gathered since then indicates that *Lundenwic* occupied an area of c 60ha, extending from the Middle Saxon waterfront just to the

north of Victoria Embankment Gardens northwards to Shorts Gardens, and from Trafalgar Square eastwards to Aldwych (Cowie 1988; Cowie & Whytehead 1989; Mills 1991, 170–3). The survival of Middle Saxon strata in *Lundenwic* is variable, but deep features such as rubbish pits and wells and small areas of Saxon ground-surface deposits are often encountered during fieldwork in the area.

Initially the stratigraphic distribution of Middle Saxon pottery at several sites in *Lundenwic* suggested that the ceramic assemblages could be divided into two main phases (Blackmore 1988b, 106). In the earliest phase, c 650–750, chaff-tempered ware was predominant, but by the mid 8th century its use was declining. In the second phase, 750–850, Ipswich-type wares dominated the market. Subsequent work has refined the ceramic chronology allowing the subdivision of these phases (Blackmore 1997, 126; in prep). It is suggested that Walberberg buff wares, north French whitewares and oolitic and chalky wares were imported from c 670 onwards, and that Badorf and Tating wares had started to appear by c 750. The last quarter of the 8th century saw the introduction of shelly wares, and by c 810 red-painted wares had begun to be imported.

The earliest evidence for Saxon activity in the Roman walled city concerns the foundation of the cathedral church of St Paul (Gz CT21) in 604. The later name *Paulesbyri* indicates that the church lay within an enclosure (Biddle 1989, 23). With the possible exception of the church of All Hallows Barking (Gz CT114), structures attributable to the Middle Saxon period have not yet been located within the city walls, but other documents, together with evidence provided by coins and other finds and church dedications, indicate that parts of the area were occupied.

Topographical features which would have influenced occupation of the intramural area include the Roman city and its associated riverside walls, gates and terraces, and natural features such as the River Thames, the Walbrook and its tributaries and attendant marshes. As clearance of Roman buildings and the accumulation of dark earth had begun in the late Roman period, it is unlikely that the underlying Roman urban topography exercised much influence over Saxon development, though the Roman amphitheatre probably remained a major feature throughout the Saxon period. Excavation has also shown that few Roman streets remained as thoroughfares by the Late Saxon period, although it is possible that the location of St Paul's was chosen because it was adjacent to two Roman roads in an area less encumbered by building debris. To the west of the walled area the Fleet effectively separated the city from *Lundenwic*.

Rural settlements of Middle Saxon date are scarce in Greater London, although sites have been excavated at Battersea (Gz WW6), Chelsea (Gz KC1), Northolt (Gz EL2–3), Hendon (Gz BA4), Bermondsey (Gz SW17) and Barking (Gz BD1; Blackmore & Redknap 1988, fig 4). Further evidence for settlement in the region is provided by charters dating from the late 7th century onwards (see Gelling 1979; Whitelock 1955), many of which refer to estates, and some give sufficient information for land boundaries to be traced. It is possible that some estates survived from the Roman period, since a few are known to have used Watling Street as a boundary, but Vince (1988, 90; 1990, 134) argues that these were in fact established during the Middle Saxon period.

Defences

It is fairly certain that for most of its history *Lundenwic* was not defended. Nevertheless, ditches at Great Queen Street (Gz CA4) and the National Portrait Gallery (Gz WM25) (sites respectively located on or near to the eastern and western edges of *Lundenwic*) may have been boundary markers for either the settlement or individual properties. Among the latest features in the settlement were 2m deep ditches at Maiden Lane (Gz WM41) and the Royal Opera House (Gz WM8), which were dated to the 9th century. Both appear to have been defensive, and there is evidence that the ditch at the Royal Opera House once had stakes projecting from its south side. Interestingly, the ditch at the Royal Opera House did not respect the property layout, suggesting that at least this part of the settlement was already abandoned when it was dug. Moreover, because both ditches were located well inside the site of *Lundenwic* it seems likely that the settlement had either contracted or been completely abandoned by the time they were dug. The ditches might therefore represent either a final attempt to defend a small part of the original settlement, or the fortifications of an encampment constructed after the settlement had ceased to exist.



Interpretative plan of the Royal Opera House site in Lundenwic, showing the layout of Middle Saxon streets and properties (MoLAS)

Infrastructure

The routes taken by several major Roman roads radiating from London survived through the medieval period, which implies that at least part of the Roman communication system remained in use during the Saxon period. This network would have been important for communications between Lundenwic and its hinterland, especially along Watling Street which served as the main route between Mercia and its major seaport. Other roads are sometimes mentioned in Saxon charters as important landmarks defining the position of estate boundaries (Vince 1990, 120–3), including the *via publica* (probably the Uxbridge Road) mentioned in an 8th-century charter for Yeading (Gelling 1979, no. 198; Sawyer 1968, no. 100), and *wic straet* (Honeypot Lane) referred to in a 10th-century charter for Kingsbury. Further work, however, is needed to relate later road systems to archaeological finds, place-name evidence, topographical evidence and the study of medieval tenurial and parish boundaries, as a means of identifying other roads of Middle Saxon date.

The Strand was probably an important thoroughfare in the Middle Saxon period and a focus of the Lundenwic

settlement. First mentioned in a charter of 1002 as *Akemanstraete* (Gelling 1953, 102; Sawyer 1968, no. 903), the Strand lies on the projected line of a Roman road from Ludgate Hill in the City, where it was recorded during excavations (PWB88; McCann & Orton 1989, 105), to Fleet Street (Margary 1955, 51). The presence of a Saxo-Norman abutment for a bridge across the River Fleet at Ludgate Circus (Gz CT8) strongly suggests continuity of use of a route on this alignment. To the west of Ludgate Circus the evidence for a road becomes tenuous; in 1595 an earlier, but undatable, street surface was found 4ft below Fleet Street near St Dunstan's Church (Kingsford 1908, 43), and a series of gravel layers beneath St Mary-le-Strand may represent road surfaces (SMA93; John Maloney, pers comm).

Evidence for other roads in Lundenwic comes mainly from the Royal Opera House (Gz WM8), where a number of well-maintained gravel streets were recorded (Blackmore *et al* 1998; Bowsher *et al* in prep). Patches of gravel metalling at sites elsewhere in Lundenwic, such as Maiden Lane (Gz WM41), Shorts Gardens (Gz CA3), Floral Street (Gz WM35), Old Brewer's Yard (OBY95) and King Street (KIS98), might also represent road surfaces. It has been suggested that Lundenwic had a gridded street pattern (Vince 1990, 124) similar to those of contemporary towns at Southampton (Brisbane 1988, 104; Morton 1992, 32–40) and Ipswich (Wade 1993, 148), though the evidence is extremely limited. Substantial quarries of Middle Saxon date discovered at the National Gallery extension (Gz WM23) indicate large-scale excavation of gravel, possibly for surfacing roads and yards.

Remains of the Middle Saxon waterfront at Lundenwic were found at York Buildings (Gz WM43), where a brushwood and rubble embankment incorporated a row of stakes, and a revetment of stakes with wattle and vertically set planks (Cowie 1992). Dendrochronological-dating suggests that the revetment was built in 679 or soon after (Tyers *et al* 1994, 16–17). Middle Saxon waterfront deposits may also have existed at Buckingham Street (Gz WM44), where pieces of oak and possibly wattle fencing were recovered from pile holes; a timber from the site was dated by dendrochronology to the 7th century, though the absence of sapwood prevents identification of the felling date. A number of other settlements along the Thames such as Barking (Gz BD1), where a quantity of continental imports have been found, may also have possessed 'beach-markets' for riverborne trade.

Water transport would have been used for freshwater and marine fishing, communications within the region, and trade with other parts of England and the Continent. The only known vessel of Middle Saxon date from Greater London is a dugout canoe which was found next to the Lea at Walthamstow, and gave a ^{14}C date of 1255 ± 40 (Q-3041) calibrated to 655–885 (Marsden 1996, 222). No evidence for vessels has been found in Lundenwic, apart from a possible boat rivet

from Maiden Lane (Blackmore 1988a, 128; Marsden 1994, 133, fig 119). Nevertheless, documentary sources and epigraphic evidence on Carolingian coinage suggest that the hulk or proto-hulk may have been the main type of vessel used for trade with northern France and the Low Countries. This round-bottomed ship was an extended or heightened logboat propelled by oarsmen or sail (Ellmers 1990, 92; Lebeq 1990, 88; cf Hodges 1982, 94–103).

Palaces

It is known from historical sources that Anglo-Saxon kingdoms were administered from royal centres or 'vills' (*villae regalis*). Foodrents collected from the surrounding region would be stored at these royal centres, and consumed by kings and their households, who undertook regular circuits of their lands, visiting each centre in turn. Outside London royal centres have been excavated at Yeavinger (Hope-Taylor 1977), Cheddar (Rahtz 1979) and Northampton (Williams *et al* 1985). Although no archaeological evidence for such palaces has been found in the London area, documentary evidence points to the existence of royal villas at several places in the region. For example, the traditional siting of a palace of the 7th-century king Aethelbert within the walls of the city at Aldermanbury (Gz CT129) to the north of St Paul's, is supported by a late 11th-century source, quoted by the 13th-century chronicler Matthew Paris, which states that the liberties of a former palace were located in the same area, near St Alban Wood Street (Gz CT29). These historical references suggest that a palace stood within or close to the site of the Roman fort at Cripplegate in the north-west corner of the Roman city (Dyson & Schofield 1984, 307–8; Schofield & Dyson 1980, 42). The location of the royal hall mentioned in the laws of Hlothhere and Eadric, kings of Kent (?673–85) (Whitelock 1955, 360–1), is unknown, though it is likely to have been located in the *wic* since the laws refer to the *wic-gerefa* (the port or town-reeve). Besides the palace(s) in London, there may have been royal residences at Brentford and Chelsea, where a number of documented synods and royal councils were held during the 8th century. In this context the recently discovered evidence for Middle Saxon occupation at Chelsea (Gz KC1) may be highly significant. The acquisition in 704 of an estate at Fulham by Wealdhere, bishop of London (Gelling 1979, 96; Sawyer 1968, no. 1785), suggests that Fulham Palace may have been established in the Middle Saxon period, though the earliest reference to a bishop's residence there dates to 1141.

Domestic buildings

The remains of timber buildings have been found at several Middle Saxon sites in the London region, notably the Royal Opera House in Lundenwic, where traces of more than 60 structures were discovered (Blackmore 1997; Blackmore *et al* 1998; Bowsher *et al* in prep). The evidence for buildings mainly comprises features such as beam slots and rows of postholes and stakeholes marking the position of walls and partitions, and internal beaten-earth floors and hearths. In addition, the stubs of fire-damaged wattle and daub walls occasionally survive, along with fragments of burnt daub (some with timber and wattle impressions). In some cases almost the entire ground plan of a building can be reconstructed. The evidence suggests that buildings were generally rectangular in plan with doors located in their long sides. A hall at the Treasury and some buildings at the Royal Opera House had porches. Buildings at the Royal Opera House were on average nearly 12m long and a little over 5.5m wide (Blackmore *et al* 1998), and were similar in size and shape to many of those found at the trading settlements of Hamwic (Morton 1992, 40–2; Andrews 1997, 49–53), Eorforwic (Kemp 1996) and other Anglo-Saxon settlements (James *et al* 1984). Their walls were usually made of wattle and daub supported by a framework incorporating earthfast posts or posts supported on sill beams. A few, however, were made of vertical staves set in the ground. Elsewhere in Lundenwic sill-beam structures have been found at Shorts Gardens (Gz CA3), Kemble Street (Gz WM16), Bedfordbury (Gz WM38) and Jubilee Hall (Gz WM48). Excavations at Drury Lane (Gz WM13) revealed the end of a rectangular post and post-in-trench building, and rows of stakeholes and postholes at Long Acre (Gz WM9) and Southampton Street (Gz WM46) are thought to represent either fences or house walls. Most buildings had surface-laid foundations, but a burnt-out building with a sunken clay floor, covered by successive layers of charcoal and burnt daub, was discovered at Floral Street (Gz WM34).

Evidence for buildings has also been found at up to four rural settlements in the London area. The well-preserved waterlogged remains of two successive timber buildings dated to the 9th century at the Treasury, Whitehall (Gz WM58) are particularly important. The earlier of the two was a sub-rectangular building, c 7.30m x 6.10m, which had a sunken floor bordered by sleeper beams for walls of vertical planking. It was replaced by a rectangular timber-framed hall (5.64m wide) of post and sill-beam construction. Other sill-beam structures have been identified at Northolt Manor (Gz EL3), where beam slots marked the west end of a large building, and Barking Abbey (Gz BD1), where traces of three halls were found together with timber-lined wells and a leat, which may have served a mill. More recently, the corner of a post-built structure dated to 650–750 was recorded at Chelsea (Gz KC1; Farid 1997). A recent assessment of the evidence from Althorpe Grove, Battersea (Gz WW6) has shown that features originally thought to represent the remains of at least one Middle Saxon building probably date to periods ranging from prehistoric to medieval.

Agriculture

Most evidence for the Middle Saxon agricultural economy comes from sites in *Lundenwic*, where substantial assemblages of plant remains and animal bones have been recovered. Plant remains suggest that 'cleaned or semi-cleaned' grain, mainly wheat and barley, was imported from the surrounding countryside (Davis & de Moulins 1988; de Moulins & Davis 1989; Davis in prep). Rye may also have been cultivated, but like oats it was present only in small quantities, and both were possibly weeds of wheat and barley crops. Several samples appear to contain burnt animal fodder, suggesting the presence of animals inside the settlement. Cereals were supplemented by other edible plants including apple/pear, raspberry/blackberry, strawberry, sloe/plum, hazelnut, fig, grape and possibly lentil.

The faunal assemblages from *Lundenwic*, like those from wics at York and Southampton, are characterised by relatively little diversity of taxa compared with those from monastic sites such as Jarrow and Barking Abbey (O'Connor 1991, 276–82; Rackham 1994, 131), which may indicate some kind of specialised market or a command economy which supplied the town from royal foodrents. At sites near the centre of *Lundenwic*, such as Bedfordbury (Gz WM38), Maiden Lane (Gz WM41) and Jubilee Hall (Gz WM48), cattle was the dominant domesticate, followed by pig and then sheep/goat (West & Rackham 1988; West 1989; West & Rackham in prep). Apart from oysters and fish (Locker 1988b; 1989; Locker & Winder in prep), wild fauna seem to have been rarely consumed within the settlement. At the National Gallery site (Gz WM26), on the fringe of *Lundenwic*, the high proportion of newborn and young calves suggests that the site may have been a farm. The high proportion of waste bones from cattle at the Treasury site (Gz WM58), c 0.5km from *Lundenwic*, were also interpreted as 'commercial debris' (Chaplin 1971, 136; Rackham 1994, 130–1). Similarly, a distinctive bone assemblage from Exeter Street (Gz WM50) suggests the existence of a butchery site within the settlement (Farid & Brown 1997).

Little evidence for the production and consumption of foodstuffs has been recovered from Middle Saxon sites elsewhere in the region. Limited botanical evidence from the monastic site at Barking Abbey (Gz BD1) suggests that bread/club wheat, barley, rye and oats were cultivated. The latter two cereals were commoner than at *Lundenwic*, possibly reflecting the rural nature of the monastic settlement, where cereal crops may have been grown for animal fodder as well as human consumption (Davis 1988; in prep). Cattle was the dominant domesticate by weight, though there were fewer fragments of cattle bone than those of pig and sheep. Wild fauna such as deer and wildfowl occurred with greater frequency at Barking than in *Lundenwic* (Rackham 1994, 131). The wildfowl present were dominated by species associated with freshwater habitats, suggesting hunting on the river margins (Alan Pipe, pers comm). Small faunal assemblages were also recovered from rural sites at Althorpe Grove, Battersea (Gz WW6), where cattle were the most numerous species, followed by sheep, domestic fowl and pig (Locker 1983), and at Hendon (Gz BA4), where animal bones from an early Middle Saxon ditch were chiefly of pig. Considerable quantities of fish, eels and oysters appear to have been eaten in *Lundenwic*, and the remains of Middle Saxon fish traps have recently been found on the Thames foreshore at Isleworth (Gz HO2), Barn Elms (Gz RT18) and Chelsea (Gz KC2). Each comprised posts arranged in V-shaped configurations.

Commerce and trade

Anglo-Saxon coin production began c 630 with the appearance of gold coins known as *thrysmas* (derived from the Latin *tremissis*). Ten coins with the legend LONDINIV and one bearing the name LONDENVVS were included in the coin hoard found at Crondall, Hampshire, while single coins bearing 'a very blundered form of *Lundinium*' have been found at Dover and Warminster (Biddle et al 1973, 20; Grierson & Blackburn 1986, 161–2). These coins were presumably minted in London, and indicate the early importance of the settlement. Interestingly the LONDENVVS specimen was a coin of Aethelbert's son Eadbald (616–40), suggesting that at the time of issue London was under Kentish control. Single finds of gold pieces are rare, but four are known from central London: one from Blackfriars (Gz CT12; Vince 1990, 109–10), one from the south bank foreshore between Southwark Bridge and Blackfriars Bridge (Gz SW2; Metcalf 1986, 2–3), and two others are recorded as having been 'found in London'. The scarcity and high value of these coins suggest that they were not used for everyday transactions.

After a period of debasement the *thrysmas* was superseded in the late 7th century by silver pennies, which were apparently intended for general commercial use. These coins are usually referred to by the modern misnomer of *sceattas* (singular *sceat*), which has become the accepted term in archaeological literature (see Grierson & Blackburn 1986, 157). Late 7th-century (primary phase) *sceattas* were minted in London, where just over a third of the total dated to this period may have been issued (Vince 1990, 112). It was not until c 730, however, during the second phase of *sceatta* production, that coins bearing the legend D[E] LVNDONIA (Series L *sceattas*) first appear. *Sceattas* have been found at a number of sites in the region, most frequently at sites along the Strand, in the City and at Barking (Rigold & Metcalf 1984, 254–5; Stott 1988; 1989; 1991). Judging from the number of these finds, London was clearly an important centre in the money market in southern England, although perhaps not as active as *Hamwic* or the east Kent ports of Canterbury, Reculver and Richborough, where more secondary phase *sceattas* have been found (Stott 1991, 282). However, the disparity in the numbers of coins from various sites may be more to do with the extent to which a site has been investigated (and other factors such as recovery methods) than with economic differences between settlements (Cowie in prep).

In the late 8th century the silver penny became the basic unit of coinage. Although few of these coins have a mint signature, it has been possible to establish a pattern of mint production in south-east England from the epigraphic evidence (eg moneyers' names) and stylistic features (Blunt et al 1963). This suggests that London was the site of an important mint for Offa of Mercia (757–96) (Stewart 1986; Vince 1990, 113), and that coins continued to be issued at London during the reigns of the Mercian kings Coenwulf (796–821), Ceolwulf (821–3) and Wiglaf (827–9), though relatively few moneyers are attributed to London in the period c 805–30. Egbert of Wessex (829–30) celebrated his brief occupation of London by issuing coins with the legend LVNDONIA CIVIT[AS]. Coin issues resumed at London c 843 under Beorhtwulf (c 840–52), and continued until the Viking raid of 851, when production temporarily faltered (Pagan 1986, 47). Output again increased from the mid 860s when London once more became the site of an important mint (Pagan 1986, 61; Vince 1990, 113). The location of the mint during the Middle Saxon period is not known. It may have been situated close to the royal palace, possibly in the Cripplegate fort, but it is also possible that coin production was undertaken concurrently at various places in the intramural area and/or in the trading port to the west (see Vince 1990, 116).

The commercial importance of London in the Middle Saxon period is clearly demonstrated by the archaeological and documentary evidence, which support the view that the town's principal function was as a trading port (Blackmore & Redknapp 1988; Cowie & Whytehead 1988, 80–1; 1989, 714–15; Vince 1988; 1990, 93–108). Several 8th- and 9th-century documents imply that maritime trade in London was under royal control and subject to taxation. These include grants issued by King Aethelbald of Mercia to Abbess Mildthryth of Minster in Thanet (747, or ?733), Bishop Ealdwulf of Rochester (734), Bishop Milred of Worcester (743–5) and Bishop Ingwald of London, which exempted them from paying tolls on ships using the port of London.

Archaeological evidence suggests that *Lundenwic* relied on local and regional trade to obtain pottery, foodstuffs, hones and querns of hard fine-grained rock, and raw materials necessary for local crafts and industries, such as wool, antlers and metals. Among the finds from *Lundenwic* which

might indicate regional contacts are limestone quern fragments, probably from the Hythe Beds, and hones of Kentish ragstone (though these may have involved the reuse of material brought in during the Roman period). The presence of considerable quantities of Ipswich-type ware suggests coastal trade with East Anglia, and the petrological provenancing of non-local English wares found in *Lundenwic* suggests imports from the Lower Greensand areas on the border of Surrey, from the Charnwood Forest area in the east Midlands, and chalk-tempered wares from the North Downs or Chilterns (Blackmore 1988b, 87–9; 1989, 80–5; Vince 1990, 100–1).

Finds indicative of long-distance trade include fragments of lava quernstone from the Mayen-Niedermendig area in Germany, a fragment of a schist honestone, possibly from Eidsborg in Norway, and pottery from northern France, the Low Countries and the Rhineland (Blackmore 1988b, 89–92; 1989, 85–94). Continental tablewares found in the Strand area may have been associated with the trading of wine (Blackmore & Redknap 1988, 225). Documentary sources also suggest a trade in slaves, and possibly clothing, exported from London to the Continent. Outside *Lundenwic*, Barking Abbey is the only Middle Saxon site in the region to have produced significant evidence of trade. The range of continental finds found at Barking is similar to that at *Lundenwic*, suggesting that this monastic settlement was also engaged in long-distance trade (see Blackmore & Redknap 1988, 231–6; Redknap 1992). Continental wares are represented at Althorpe Grove, Battersea (Gz WW6), with four sherds. These might indicate direct links with the Continent, but are more likely to have arrived via either Barking Abbey (which had been granted land at Battersea in 693) or *Lundenwic* (Blackmore & Cowie in prep).

Industry

The widespread distribution in *Lundenwic* of small quantities of waste from bone- and antlerworking (particularly of red deer) and iron and non-ferrous metalworking, suggests small-scale production in households and/or workshops. Cloth production is indicated at nearly every Middle Saxon site by the presence of loomweights, spindlewhorls and bone thread-pickers. Specialist industrial/craft production areas, such as the pottery-making area at *Gipeswic* (Ipswich), and the possible boneworking zones at *Hamwic* (Southampton), have not yet been identified within the *Lundenwic* settlement. However, the sites of two possible smithies have been identified from concentrations of slag at the Royal Opera House (Gz WM8). Rows of rectangular pits also found on this site may have been used for tanning (Bowsher et al in prep).

Religion

Several churches of known or possible Middle Saxon date were situated within the walled area of the City, notably St Paul's, founded in 604, the site of which is presumed to lie either on that of the present Wren church or on its churchyard. The earliest phase of the church of St Alban Wood Street (Gz CT29) is dated by Grimes (1968, 206) to the 8th or 9th century, although Vince (1990, 71) questions the validity of this claim and favours an 11th-century origin. A surviving Saxon arch in the church of All Hallows Barking (Gz CT114) may also be of 8th- or 9th-century date. The churches of St Augustine (Gz CT33) and St Gregory (Gz CT22), located on a line to the east and west of St Paul's Cathedral, have dedications which may suggest an early foundation. This group of churches has been compared with a similar 'aligned' 7th-century church group at Canterbury.

The extramural settlement of *Lundenwic* was probably served by a number of churches. The original timber church of St Andrew Holborn (Gz CT4), described in King Edgar's charter of 959 as an 'old wooden church' (Gelling 1953, 102–3), was possibly contemporaneous with the settlement. The five medieval churches along the Strand and Fleet Street may also have been founded in the Saxon period: the discovery of possible early Christian burials at St Martin-in-the-Fields (Gz WM29) and an early rubble foundation at St Bride (Gz CT7; Milne 1997, 100) may indicate Middle Saxon origins, but the claims for the other three, St Mary-le-Strand, St Clement Danes and St Dunstan in the West, have no archaeological basis and are inconclusive (see Biddle 1984; Vince 1990, 62–3).

There is documentary evidence for a monastic site at Barking, where a double house was founded in the 7th century (probably in 666) by Bishop Eorcenwold, who also founded a sister house at Chertsey at about the same time (Blair 1991, 94). Buildings excavated at Barking Abbey (Gz BD1) are thought to be part of the monastic complex, but the Saxon abbey church has yet to be located (MacGowan 1987). Deposits at Barking Abbey are particularly well preserved and offer a rare opportunity to study an early monastic double house, so far paralleled only by excavation at Whitby (see Cramp 1976, 205, 223–9).

Other Middle Saxon monastic sites possibly existed at Bermondsey and Westminster. Indeed, Bermondsey Abbey may have been in existence by the early 8th century since the *liber nigra* of Peterborough (Soc Antiquaries MS IX) contains a 12th-century copy of a privilege in which Pope Constantine (708–15) addresses *Haedda* as abbot of *Vermundesei* (Bermondsey) and *Wocchingas* (Woking) (Blair 1991, 95, 102). This fits well with the presence of residual Middle Saxon artefacts at Bermondsey, which indicates activity on the site at this time. Similarly, Middle Saxon activity is also indicated at Westminster by finds of residual artefacts. Documentary references concerning the origins of Westminster Abbey are unreliable but, considering the evidence, Rosser (1989, 12) suggests that the 10th-century monastery at Westminster may have been preceded by a minster church, and was possibly founded as early as the reign of Offa, king of the East Saxons (not Offa of Mercia) in the 8th century, or even by Aethelbert of Kent (though this is much less plausible).

Documentary sources, and place-names ending in *-minster* (eg *Upminster*), suggest that there were a number of minster churches in the region which would have housed communities of priests who served *parochiae* (areas much larger than modern parishes), but the evidence is largely inconclusive (Vince 1990, 67–8).

Burials

Two cemetery sites apparently dating to the late 6th and 7th centuries have been identified in the *Lundenwic* area. Both were apparently on the outskirts of the early nucleus of Middle Saxon London from which the much larger trading town subsequently developed. One is located at St Martin-in-the-Fields (Gz WM29), where a spearhead and two glass bowls of late 6th- or early 7th-century date were found in sarcophagi when the portico of the present church was built in the 1720s (Biddle 1984, 25; Vince 1990, 14–15, 61). The other was located in the Covent Garden area, where seven inhumation burials have been found; two each at sites in Long Acre (Gz WM6, WM9) and the Royal Opera House (Gz WM8), and one at Jubilee Hall (Gz WM48). In addition, the size and shape of two other features in Long Acre (Gz WM6) suggest that they may have been the graves of children. Curving gullies at the Royal Opera House may have been the remnants of penannular ditches surrounding burial mounds, and are similar to ditches found at cemeteries in *Hamwic* (Southampton) (Garner 1993) and Ipswich (Scull in prep). The graves in this group appear to be earlier than occupation levels associated with the Middle Saxon town, and two of the burials have been dated to the 7th century. One at 67–68 Long Acre (Gz WM9) was accompanied by a belt buckle probably dating to the second half of the 7th century. The other, at Jubilee Hall, was ¹⁴C-dated to 630–75 (HAR-8936). It is also likely that a complete 7th-century pot found nearby in Drury Lane (Gz WM11) was deliberately buried, possibly with an interment (Myres 1937, 433). Interestingly, at the Royal Opera House a sherd from a similar vessel had a carbon-rich deposit on its interior surface. Residual human bones at these and other sites indicate the presence of more burials in the locality, and undated burials recorded in the 18th century in King Street and on the north side of Covent Garden (Maitland 1760, 1347) might also be associated with the cemetery.

Only one burial in *Lundenwic* can be associated with the main phase of the settlement. This was an inhumation at Bedfordbury (Gz WM38), apparently of 8th-century date, in a shallow grave within a sequence of occupation levels. The lack of burials is surprising, since a settlement of



A Late Saxon sundial from All Saints Orpington Church, Kent (LAMAS)

Lundenwic's size must have had at least one cemetery. The organisation of cemeteries (as yet undiscovered) within or near the town may prove to be comparable to the situation at Hamwic (Southampton), where no more than 200 Middle Saxon burials have been found in eight or nine small graveyards in the central area, implying the existence of at least one other major burial ground, possibly in St Mary's churchyard, which was an important cemetery in the medieval and post-medieval periods (Morton 1992, 50–1). Indeed, it is possible that by the 8th century most inhabitants of Lundenwic were buried in churchyards, many of which will have remained in use in the Late Saxon and medieval periods, making it very difficult to distinguish Middle Saxon from later burials.

Few Middle Saxon burials have been identified elsewhere in the London area. Four inhumations are known in the City. Two were interred in a single grave in dark earth deposits at Rangoon Street (Gz CT125) and ¹⁴C-dated to 660–870 and 680–945 (Bowman et al 1990b, 70). The others were found about 5m apart on the Saxon foreshore at Bull Wharf (Gz CT130). One body was in a grave, but the other had apparently been laid on the foreshore on a bed of bark and reeds, and covered with moss and bark (Ayre & Wroe-Brown 1996, 20; Wroe-Brown 1998, 75). Why bodies should be disposed of in this fashion is not known, but they would appear to represent a symbolic funerary practice. Another foreshore burial at Corney Reach, Chiswick (Gz HO11) gave a ¹⁴C date of 530–880 (1380±80 BP) (Lakin 1996, 64). However, this burial may have been of a body washed up on the foreshore (Conheeny 1996, 72). Indeed, accidental drowning or acts of violence (rather than ritual) could account for isolated finds of human remains along the Thames and its foreshore, such as the skull from the Thames at Battersea, which produced a ¹⁴C date of 610–880 (OxA-1191, 1320±60 BP) (Bradley & Gordon 1988, 507–8).

Three inhumation burials accompanied by grave goods found at Northolt Manor (Gz EL2) have been dated to the late 7th to early 8th centuries. At least two Saxon barrow cemeteries with primary burials have also been identified: one at Farthing Down, Coulsdon (Gz CR18), where inhumations lay beneath and between low mounds, and another at Greenwich Park (Gz GR4). Secondary Saxon burials of mid 6th-century date have been found in Neolithic and Bronze Age barrows elsewhere in England, but primary burials do not appear until the 7th century (Meaney 1964, 19). It is likely, therefore, that the barrows at Farthing Down and Greenwich Park were constructed after 600, possibly after the advent of Christianity in the region. This may indicate the maintenance of pagan practices by high-status individuals in the face of widespread conversion (Poulton 1987, 201).

The Vikings

The Viking attacks on London in the mid 9th century probably prompted the abandonment of the Strand and other riverside settlements in the region such as at Battersea, the Treasury and Barking, and certainly led to the establishment of a burh in the City and probably another in Southwark. Viking influence is also apparent in church dedications. Brooke and Keir (1975, 141–3) comment on the popularity of Olaf (a Norwegian king killed in 1030) and note that at least two of these churches are probably pre-1100 in date. They also suggest that the dedications to St Clement and St Bride are indicative of Norse settlement, possibly concentrated in the western suburb along Fleet Street, and around the bridgehead north and south of the river, though there is no supporting archaeological evidence for this.

Archaeological evidence for the Vikings mainly consists of chance finds, principally weapons from the River Thames, most of which were catalogued by Wheeler (1927). Finds from the river may have been lost in battle, which might explain the concentrations at Brentford and along the City reach, or they may have been deposited as votive offerings (see Poulton 1987, 201). Several hoards of Saxon coins, which appear to be contemporary with specific Viking raids, may be connected with these events (Dolley 1960). For example, a hoard of Northumbrian coins at the Royal Opera House was probably concealed at the time of the Viking attack of 851. Interestingly, it was found in dark earth above the Saxon occupation levels, suggesting that Lundenwic had either shrunk or had been completely abandoned by this date. Most hoards were probably buried by

Saxons, although one near Croydon (Gz CR1) appears to have been Viking booty (Brooks & Graham-Campbell 1986). Another notable find was made in St Paul's Churchyard, in the mid 19th century, when a burial was found with a Nordic gravestone bearing a stylised animal carved in Ringerike style and a runic script (Gz CT23), probably dating to the late 10th to early 11th centuries.

No remains have been found of the Viking encampments and siegeworks mentioned by historical sources, and attempts to connect watercourses and revetments in Southwark with the channel dug for Cnut's fleet (mentioned in the *Anglo-Saxon Chronicle*) are unconvincing. Likewise, no Viking vessels have been found in London, although an anchor of Viking type from the foreshore near the Mermaid Theatre could have come from a Viking or Saxon ship (see Marsden 1994, 160–2). The remains of a 'Viking ship' found in 1900 at Lockwood Reservoir, Walthamstow (Wheeler 1935, 183–4) are now attributed to the 16th or 17th century on the basis of ¹⁴C-dating (Fenwick 1978b, 192).

Late Saxon

Settlement

The resettlement of the walled city may have begun as early as the mid 9th century. During the Late Saxon period London was part of a nationwide system of fortified places, known as burhs, developed in response to the growing Viking threat. The term burh, from which the modern word 'borough' is derived, was originally used to denote any defensive enclosure, but by the Late Saxon period it had become synonymous with strongpoints large enough to provide places of refuge for the population of the surrounding countryside. In documents dating from the mid 9th century onwards the name of London often includes the suffix burh/burg/byrig, probably in recognition of the importance of the walled area as a strongpoint (John Clark, pers comm).

The nature and extent of late 9th- and early 10th-century occupation in the City is difficult to establish, mainly because pottery finds of this period cannot be dated with sufficient accuracy, and 10th-century coins are extremely rare (Vince 1990, 27–30; 1991b, 420). The scarcity of archaeological evidence suggests that the settlement was initially fairly small. An assessment of the sequence of occupation, road layout and available documentary evidence has identified an area between the Thames and the Cheapside/Eastcheap road axis as a possible site for the Alfredian burh (Milne & Goodburn 1990, 631). This would have left considerable space within the walls for horticulture, stock-rearing and industry, though virtually no archaeological evidence exists for these activities. However, the settlement's subsequent development must have been rapid, as the walled area had become the site of a major town by the late 10th century. Little is known of the civic or administrative institutions of the Late Saxon capital other than the city's Court of Husting, which is first mentioned c 1000 (Derek Keene, pers comm), and the later *folk moot*, an assembly of the freemen of the city held in St Paul's Churchyard until the 13th or early 14th century (Brooke & Keir 1975).

A burh was probably also established in Southwark by the late 9th or early 10th century; it is assumed to be the site of *Suthringa geweorche* ('the southern work' or 'the work of the southern people'), listed in the Burghal Hidage (Sheldon 1978, 48; Vince 1990, 86–7). If so, it is the earliest known reference to Southwark, for the Burghal Hidage was probably compiled no later than 911–19. The precise position of the burh is unknown, but on topographical grounds it is likely that it was located beside the river on the site of the former Roman suburb in north Southwark, bounded to the east and west by tidal mudflats. Although it may be purely coincidental, Sheldon (1978, 48) points out that the estimated length of the burh's defences would have enclosed an area closely corresponding to that of the Roman settlement. The small cluster of Late Saxon occupation sites in north Southwark (Gz SW7, SW9–11) suggests a fairly small settlement, and the site may have been used primarily as a fortified place. It is thought that London Bridge may have been built during the late 9th or early 10th century to connect the burhs on the north and south banks, and to create a barrier to prevent Viking raiders from sailing upstream (see below).

An alternative identification of the site of the *Suthringa geweorche* is Kingston, where limited evidence for Late Saxon occupation has been found (Gz KT5, KT13). Poulton (1987, 211) suggests that a burh at Kingston would have filled a weak spot in the Saxon defensive system.

Most evidence for Late Saxon settlement in Greater London comes from documentary sources. The most important of these is Domesday Book, which refers to estates concentrated in the river valleys of the Thames and its tributaries, particularly the Crane, the Colne, the Wandle, the Lea and the Cray. There was also a line of villages or estates in south London at the foot of the chalk dip slope, including Cheam, Carshalton, Beddington and Croydon. In contrast, few settlements are indicated in north-east London and the claylands of north London, particularly the boroughs of Harrow, Barnet and Enfield, where large tracts of forest existed at this time. Considering the number of places in Greater London that are mentioned in documentary sources, there is surprisingly little archaeological evidence for Late Saxon and Saxo-Norman rural settlements and associated agricultural activities. The few settlement sites that have been identified by archaeological work include Barking Abbey (Gz BD1), Northolt Manor (Gz EL3), Harmondsworth (Gz HL8), Upminster (Gz HV2), Lambeth (Gz LA4), Bermondsey (Gz SW17) and Westminster Abbey (Gz WM64–66).

Defences

Late Saxon London was enclosed by landward and riverside walls first built by the Romans. Historical sources imply that these walls were repaired c 886 by Alfred the Great, but no work of this period has so far been identified. A short stretch of the city wall beneath the north wall of the church of St Alphege (Gz CT27) may be Late Saxon in date. Water erosion, and possibly episodes of deliberate demolition after the Norman conquest, caused the toppling of some sections of the riverside wall prior to the laying out of Thames Street, which dates from the late 11th century onwards (Vince 1990, 40–1). Throughout this period the city wall was almost certainly fronted by a ditch, probably on the line of the late Roman circuit. Sections of a Saxon or early medieval ditch have been recorded during excavations in Aldersgate, Old Bailey, Ludgate Hill and Ludgate Broadway. The city wall was certainly formidable enough in 1066 to deter William I from a siege.

Fortified enclosures may also be indicated within the City by place-names such as Aldermanbury and Bucklersbury. Aldermanbury, which is mentioned in 12th-century documents, is of particular interest for two reasons. Firstly, because of its location on the site of the east gate of Cripplegate fort, adjacent to the possible site of Offa's palace. Secondly, because of its name, which means a fortified enclosure belonging to an alderman or City dignitary (Dyson & Schofield 1984). Lothbury may refer to the burh or fortified enclosure of Lotha's folk, and Basinghall Street and Bassishaw Ward recall the *haga* of the men of Basingstoke (Brooke & Keir 1975, 154).

The defences of Southwark have not been found, though the area is usually identified as the site of a burh. According to the Burghal Hidage, the garrison was drawn from a district of 1800 hides, each hide sending one man. As four men were required for each perch (5.5yd: 5.03m) of rampart, the perimeter may have been 2475yd (2263m) in length (Bailey 1988, 176; Vince 1990, 153).

Infrastructure

All the principal Roman gates in the city wall were apparently still in use in the Late Saxon period. The west gates, *Uestgetum*, mentioned in a charter of 857 (Sawyer 1968, no. 208), are probably either the double gateway of Newgate, or both Newgate and Ludgate. The other city gates of Aldersgate, Aldgate, Bishopsgate and Cripplegate are documented in the 11th century (Ekwall 1954, 36). The names of both Cripplegate and Ludgate may originate in words implying low or cramped gates, as if the height of Roman arches had been effectively lowered due to the build-up of deposits around them.

Archaeological and documentary evidence suggests that a series of streets running north–south were laid out inside the city in the late 9th and 10th centuries, between the River Thames and what later became the market street of Cheapside (Westcheap) (Horsman et al 1988; Vince 1990,

123–9; Tatton-Brown 1986). Fish Street Hill, Bow Lane and Botolph Lane can all be dated to this period on archaeological grounds (Horsman et al 1988, 112–13), and an assessment of Saxon charters has shown that Little Trinity Lane and probably Bread Street are of late 9th-century date, as was an east–west lane on the line of Great Trinity Lane (Dyson 1978). Recent excavations at the south end of Bishopsgate suggest that development also took place in the late 10th or 11th century to the north of Eastcheap, on a street on the line of Fish Street Hill. Surfaces dating from the 9th century at the west end of Lombard Street suggest an early origin for this east–west route. The market street of Cheapside is certainly earlier than documentary references of c 1100, and probably dates to the first phase of the street grid and was contemporary with the first north–south streets running down to the Thames. Excavations at Peninsular House (Gz CT101) and Billingsgate Lorry Park (Gz CT103) suggest that the first phase of the street plan predates the construction of the embankments on the river to the south (Horsman et al 1988).

By the early 11th century at least one street was laid out to the north of Cheapside (Milk Street), possibly in stages (Gz CT 31–32; Schofield et al 1990, 152–7). At the same time, secondary properties in the Billingsgate area were established well back from Fish Street Hill and Botolph Lane, as shown by Buildings PND1–4 at Pudding Lane (Gz CT99). Access to these properties was by way of a back lane which ran between the rear boundaries of the primary properties. By the mid 12th century this lane had been realigned and upgraded with the construction of buildings along its frontage. A Late Saxon intramural street just within the city wall has been traced at Warwick Square (Vince 1990, 38–9), and other lengths are likely to have existed, predecessors of those which gave access to the medieval defences. Derek Renn (pers comm) has suggested that the wall at the western limit of St Paul's precinct in Amen Court, to the south of Warwick Square, may be earlier and mark a further length of this street.

The earliest known reference to London Bridge is in King Aethelred's fourth law code of c 1000. However, an earlier date for the first post-Roman bridge is suggested by a reference to Southwark in the Burghal Hidage, c 916, which strongly implies that a bridge had been repaired or rebuilt as part of the programme by Alfred or Edward (Biddle et al 1973, 23; Dyson & Schofield 1984). Possible evidence for the bridge was discovered at Fennings Wharf in Southwark (Gz SW19), where two *ex situ* timbers dated to c 987–1032 are thought to have come from the southern abutment of a Late Saxon bridge that had been swept away by floods or tidal scouring (Watson with Dyson 1997, 314). An abutment incorporating a baseplate dated after 1056 was also found on the site, and presumably formed part of a Saxo-Norman bridge. Excavations on the north-east side of Ludgate Circus (Gz CT8) have also revealed the eastern abutment for a timber bridge across the Fleet, which dendrochronological dates suggest was probably built in the early to mid 11th century. This bridge would have provided access to Westminster via the former settlement of *Lundenwic*.

The earliest waterfront development seems to have taken place in areas unencumbered by the remains of late Roman revetments, such as Queenhithe (originally Aethelred's hythe), probably from the late 9th century, and at Billingsgate where the late Roman quay was deliberately removed (Brigham 1990a, 142). Two possibly spurious charters of 889 and 898–9 record grants of land in the area around Queenhithe (Sawyer 1968, nos 346 and 1628; Dyson 1978). The first refers to the 'trading shore' (*ripa emptoralis*), a term that accords with archaeological evidence which suggests that initially parts of the foreshore may have been used as an open marketplace, with transactions being carried out from beached boats. This manner of trading would have required few permanent facilities, as a high proportion of goods would have been loaded directly into smaller vessels for local distribution (Milne & Goodburn 1990, 631–3), and would leave few traces. At Bull Wharf (Gz CT130), for example, the earliest evidence for Saxon activity consisted of a few mooring posts and timber structures thought to be trestles for gangplanks (Ayre & Wroe-Brown 1996, 19–20). Low embankments were also built at foreshore market sites. For example, at Billingsgate Lorry Park (Gz CT103), Swan Lane (Gz CT87) and New Fresh Wharf (Gz CT102) late 10th- to early 11th-century embankments with stepped profiles were found; the lower step may have been used for berthing boats and the upper for unloading cargoes (Steedman et al 1992, 134). Warehouses associated with the harbours have not yet been found, though goods may have been stored in the lower storeys of large cellared buildings found in the Billingsgate area and to the

south of Cheapside. In the 11th century a succession of more substantial embankments with timber revetments was built on the north bank of the Thames. These have been recorded at Billingsgate Lorry Park, New Fresh Wharf/St Magnus House, Swan Lane, Dowgate (Gz CT65), Bull Wharf (Gz CT130), Malvern House (Gz CT64) and Vintry (Gz CT43). Evidence of riverside revetments, cobbled and planked paths and property divisions have been found at Bull Wharf, Malvern House and Vintry.

Remains of Late Saxon boats have been recorded in the City at New Fresh Wharf close to Billingsgate (Gz CT102) and Malvern House (Gz CT64), and part of a Scandinavian-type vessel was found at Vintry (Gz CT43). These remains came from various types of craft, illustrating the wide range of vessels using the port at this time (see Marsden 1994, 141–54; Vince 1990, 33–4). Late Saxon boat timbers have also been recovered from Fennings Wharf in Southwark (Gz SW19), and the blade of part of an oar or paddle was found in a ditch at Hibernia Wharf (Marsden 1994, 154–60). The most complete Late Saxon vessel to be found in London was a late 10th-century logboat, which was discovered on the banks of the River Lea at Clapton (Gz HK2). It provided direct evidence for the use of lesser rivers in the London area.

Palaces

The royal palace at Westminster built by Edward the Confessor, and replaced in the 1090s by Westminster Hall (Gz WM68), has not been found and its precise location is unknown. It is also likely that there was a royal palace and/or a minster at Kingston, as historical sources mention a council at Kingston presided over by Egbert of Wessex in 838 and the coronation of a number of West Saxon kings there in the 10th century. The kings are reputed to have been crowned on the ‘coronation stone’, which now stands outside the Guildhall in Kingston High Street. However, it is suggested that the stone, originally from the churchyard of All Saints Church, may have been masonry from the demolished chapel of St Mary (Hawkins 1998, 275). Bishops’ residences of the Late Saxon period also existed at Kingston (Gz KT4) and possibly Fulham (Gz HF5).

Domestic buildings

By the late 1980s the remains of more than 60 Late Saxon or ‘Saxo-Norman’ buildings had been recorded in the City, the majority of which form two groups of associated sites in the area of Billingsgate and around Cheapside.

Since then many more buildings have been revealed by excavations, notably those undertaken at Guildhall (Gz CT47), 1 Poultry (ONE94) and Bull Wharf (Gz CT130). The evidence for buildings includes well-preserved timbers from waterlogged sites. This material has provided a considerable amount of information about woodworking and construction techniques, and suggests that clapboarded and bulwark buildings were fairly common in Late Saxon London (see Goodburn 1997). The latter had walls made of horizontal boards set on edge and slotted into grooves in earthfast posts. Of particular interest is a small group of timbers that had been reused in waterfront revetments at Bull Wharf (Gz CT130) and Vintry (Gz CT43), but originally appear to have come from a large aisled building of 10th-century date (Goodburn 1993; 1997, 252–4).

Horsman et al (1988) identified two main building types: surface-laid and sunken-floored structures. Surface-laid buildings, which generally occupied street frontages and appear to have been domestic habitations, were 3.2–5m wide, and up to 10.1m in length. A 10th-century surface-laid structure has recently been located in Lothbury, constructed within the standing remains of a late Roman town house. Sunken-floored structures, which vary in width from 3m to 5m, and from 4.2m to 13.4m in length, were generally situated on backlands. They can be subdivided into three types: cellared buildings, sunken-floored outhouses and sunken-floored buildings (Horsman et al 1988). The cellared buildings had a sunken storage area beneath an upper storey probably used for

domestic accommodation. The sunken-floored buildings were almost certainly domestic habitations and the outhouses may have been used for workshops, temporary accommodation or storage.

These buildings, because of their size and location, are assumed to be the houses and outbuildings of artisans, shopkeepers and merchants. Little is known of the residences or private holdings of wealthy citizens. The distribution of coin hoards of this period, given that these may reflect the presence of wealthy individuals or families, is therefore of great interest. Hoards have been found in the centre of the City at Bucklersbury (Gz CT75), Threadneedle Street (Gz CT74), Walbrook (Gz CT76), Cornhill (Gz CT79) and Gracechurch Street, suggesting that the houses of the elite may have been situated in areas some distance from the market streets and harbours. Although the majority of the hoards were found in the 19th century and may therefore reflect the pattern of redevelopment at that time, the presence of large hoards of Late Saxon coins is notable. Other hoards are known from Lovat Lane (behind the harbour at Billingsgate), Honey Lane and St Martin’s-le-Grand (Gz CT16).

Agriculture

Most archaeological evidence for Late Saxon agriculture in the London area comes from the City, where botanical remains have been recovered from pits, occupation layers and hearths at Milk Street (Gz CT32), Well Court (Gz CT36), Watling Court (Gz CT39), Ironmonger Lane (Gz CT50) and Peninsular House (Gz CT101) (Jones et al 1991). Charred remains from hearths at Well Court and Peninsular House contained cleaned bread wheat and a mixture of cereals and weed seeds, probably representing a fodder crop. Orchard crops, such as plum, cherry, sour plum, apple and pear, are common in many deposits, as are grape and fig. Among the vegetables which may have been cultivated were celery, carrot and brassicas. These were supplemented by edible wild foods such as sloe, elder, blackberry/raspberry and strawberry.

Plant remains have also been recovered from Late Saxon deposits at Hibernia Wharf in Southwark (Gz SW9) and the undercroft at Westminster Abbey (Gz WM66), where all four types of cereal were found, with rye dominant (Davis 1995; in prep). Animal bones were found in Late Saxon strata at Westminster Abbey beneath the misericord (Gz WM65; Locker 1976) and the undercroft (Rackham 1994, 133; Pipe 1995). At the undercroft, cattle remains predominate, followed by pig and sheep/goat in roughly equal proportions. Low proportions of very young and very old animals suggest that it was a consumer site with a supply of good-quality meat. The site also produced remains of wild species, particularly red and roe deer, and various ducks, geese and waders. For most of Greater London, however, our knowledge of the Late Saxon agricultural economy is based on Domesday Book. This makes it clear that agricultural land, measured in terms of plough teams, was concentrated in the river valleys, and that the forests of north London supported large numbers of pigs. Several vineyards are mentioned, suggesting that the grapes found in Middle and Late Saxon assemblages may have been grown locally. Mills and fisheries are also mentioned at various places along London’s rivers.

Commerce and trade

Coins were minted in London throughout the Late Saxon period, though the establishment of a permanent mint occurred much later. Trial pieces and lead weights with official dies struck in London are also known (Stott 1991, 286–300; Vince 1990, 115–17). In the City, the harbour and market at Queenhithe are recorded in charters of 889 and 899 (see above), and harbours were established at Billingsgate and Dowgate by the late 10th and 11th centuries. Aethelred’s law code shows that merchants from Rouen, Ponthieu, Huy, Liège and Nivelles and the German Empire were trading at Billingsgate by 1000. Documentary references to port dues illustrate the range of goods and traders coming into London, although there is little archaeological evidence for imported or exported goods, even from well-preserved riverside embankments. The evidence for fur-trading, imports of part-worked quernstones from the Rhineland, deep-sea fish and other foodstuffs, and luxury goods such as silk, does not encompass the range suggested from documentary sources, and very little is known about exports (though wool and cloth are likely).



An 11th-century waterfront revetment at the Vintry site in the City, incorporating timbers from vessels and the aisle post from a 10th-century building (MoLAS)

All the pottery used in London in this period appears to have been imported, some vessels originally arriving as containers for other foodstuffs. From the late 9th century most pottery in London originated in the Chiltern area, with very few other sources represented. In the mid 11th century this changed quite suddenly when pottery from more local sources in north Surrey, north Kent, Middlesex and Essex became dominant (Vince 1990, 102–3; Vince & Jenner 1991, 42–4).

Industry

There is very little evidence for manufacturing industries in Late Saxon London: smithing, weaving, wool preparation and wood-turning (using a pole-lathe) were probably all carried out on a local community or household scale. Likewise other industries, such as boneworking, dyeing, glassmaking, leatherworking and metal processing, were probably only small-scale enterprises. There is no evidence for industrial zoning similar to that found in the medieval City. The range of discarded items of clothing and footwear recovered from excavated sites (Vince 1990, 114–15) indicates that the manufacture and/or import of goods for the clothing trade may have been particularly important. A study of Late Saxon textiles from Milk Street (Gz CT31) and Watling Court (Gz CT39) suggests that there were changes in the types of cloth used in the 11th century, which might indicate the introduction of new technology and less use of the warp-weighted loom (Pritchard 1984, 68). Evidence for industry elsewhere in the region is sparse. At West Drayton wattle-lined pits may have been used for retting flax and hemp in order to obtain fibre for textile production (CMR96; Knight 1998). There is some evidence from Barking for early 10th-century glassmaking kilns, which may have been associated with the refounded abbey (Gz BD3; MacGowan 1996, 178).

Religion

The evolution of Late Saxon parishes in the City has been discussed by Brooke and Keir (1975, 129–48). Saxon churches in the City are mostly dated to the period after 1000, and were generally proprietary, that is, built by wealthy landholders or groups of citizens (Brooke & Keir 1975, 142–3). Up to 27 are known to have been established by 1100 (listed in Schofield 1994a, 41). The large number of churches built in the 11th century is probably a reflection of the economic prosperity of the period. Observations made by Roach Smith during building work in 1838 suggest that All Hallows Honey Lane was a Saxo-Norman foundation and a similar date can be suggested for an apsidal structure recorded in 1834 on the site of St Gabriel Fen. A number of other churches can be firmly dated to the 11th century, including All Hallows Lombard Street, St Mary-le-Bow (Gz CT35), St Martin Ludgate (Gz CT9), St Martin Vintry (Gz CT63), St Nicholas Acon, St Nicholas Shambles (Gz CT17) and St Pancras (Gz CT55). Excavations suggest that St Benet Sherehog (Gz CT56) may also be of Saxo-Norman date, as may churches dedicated to particular saints, such as St Alphege, St Clement, St Dunstan, St Edmund, St Magnus, St Mildred and St Olaf (Brooke & Keir 1975, 137–43). Archaeological investigations at St Alphege (Gz CT27), St Martin Orgar (Gz CT118) and St Olave Old Jewry (Gz CT51) have confirmed the existence of Late Saxon foundations.

Several parish churches in other parts of Greater London have Late Saxon or Saxo-Norman origins and are mentioned in Domesday Book and/or other documents, though few have been the subject of archaeological investigation. Excavations next to All Saints Kingston (Gz KT11), revealed the pre-Conquest footings of the Chapel of St Mary, which may have been the church used for the coronation of Saxon kings in the 10th century. Stone footings excavated at Keston Church (Gz BY5) and Ruxley Church (Gz BY8), both in the Borough of Bromley, are thought to be of Saxo-Norman date. Several large fragments of a Late Saxon cross have also been recovered from the church of All Hallows Barking (Gz CT114).

Some early churches were built of timber, like the documented wooden church of St Andrew Holborn (Gz CT4), and a timber building at St Mary the Virgin Little Ilford (Gz NH1), the remains of which were interpreted as a Late Saxon or Saxo-Norman church. Tester (1968b) suggests that burials predating the earliest stone building at Ruxley may have been associated with a Late Saxon timber church, although structural evidence is absent.

Late Saxon features excavated at the abbeys at Barking and Westminster may be associated with the documented monasteries. At Westminster Abbey, founded or refounded by Dunstan between 959 and 975 (Sullivan 1994, 57), excavations have revealed structural features in the misericord (Gz WM66) probably dating to the 10th or 11th century, and a gravel pit containing 10th-century material at the undercroft (Gz WM67) was cut by a ditch which possibly marked the southern boundary of the abbey precinct. A mid 11th-century timber building constructed above the ditch was probably short-lived, as the present undercroft was built c 1060. The monastery at Westminster was greatly enlarged in the mid 11th century when the abbey was rebuilt by Edward the Confessor. By the Norman conquest it was the richest monastery in the London area, and in England it was only rivalled in size and wealth by the Benedictine houses of Christchurch, Canterbury and Glastonbury.

Burials

Late Saxon burials are extremely rare in the City, although Christopher Wren reported the discovery of numerous burials of Roman, Saxon and medieval date during the rebuilding of St Paul's in the late 17th century. Several burials were also uncovered in St Paul's Churchyard in the mid 19th century, one of which had a gravestone bearing a stylised animal carved in Ringerike style with a runic script (Gz CT23), and another contained a trial die of the moneyer Eadwulf for a silver penny of Alfred (Gz CT20). Both skeletons were aligned north–south. A large group of burials dating from the 11th/12th century have been recorded at the church of St Nicholas Shambles (Gz CT17). It is clear that other medieval cemeteries also have Saxon origins. For example, the first phase of the graveyard next to St Lawrence Jewry, opposite the Guildhall (Gz CT47), comprised 18 burials, at least one of which is pre-Conquest in date. Seventeen of the burials were in crude wooden coffins, two of which produced respective tree-ring dates of 1046 and 1066 (Bateman 1997a). Hazel or willow rods found next to some of the bodies may have been intended as symbols of the Resurrection (a practice which may have originated in Danish areas). At St Botolph Aldgate (Gz CT111) several burials found in graves lined with chalk, tiles, mortar and stones are thought to be contemporary with the first phase of the church, dated on structural grounds to the Saxo-Norman period. An 11th-century cemetery nearby was probably associated with a church (not located) which became the site of Holy Trinity Priory Aldgate (Gz CT108; Schofield & Lea in prep). A particularly unusual group of burials was revealed by excavations to the west of Blackfriars (Gz CT11; McCann & Orton 1989, 105). They comprised 11 bodies, but only three associated skulls, which appear to have been buried in the Fleet foreshore during the second half of the 11th century. They may have been the victims of a feud, executions or a military action, and it has been suggested that they were casualties from the battle of London fought in 1066 (Mills 1996, 62).

Conclusions

Writing in the early 1970s, Martin Biddle observed that the Saxon period was 'undoubtedly the least known and least understood of London's past' (Biddle et al 1973, 24). Since then the body of excavated evidence has increased enormously, and with it our knowledge of Saxon settlement and economy in the region. However, there still remain major gaps in our knowledge.

Extensive excavation in the City has failed to find evidence for sub-Roman occupation, and it now seems likely that Londinium was abandoned shortly after Roman withdrawal from the province and remained largely unoccupied until about the beginning of the 7th century. Similarly, apart from a few place-names, there is no evidence for a continued British presence in the surrounding countryside. The argument that a British enclave survived in the region has been further weakened by the discovery of Early Saxon settlements close to the Roman town. The fate of the indigenous population remains a mystery, although it would seem likely that the British either largely abandoned the region, or adopted the customs and material culture of the Germanic immigrants.

The first Germanic settlers probably arrived in the London area in the late 4th or early 5th century, and may have been mercenaries recruited by Romano-British authorities to defend the region against seaborne raiders. It has been suggested that early settlements at Mitcham and Mucking, which occupied strategic positions on the approaches to London, may have been occupied by German mercenaries. While plausible, these hypotheses are far from proven.

Early Saxon settlement was apparently concentrated in the river valleys of the Thames and its tributaries, often in areas farmed during the Roman period, which might indicate a degree of continuity, although equally the settlers may have been taking advantage of the most suitable locations for farming and building. A number of 5th- and 6th-century settlements have been found by excavation, and the approximate locations of others may be inferred from presence of cemeteries or indicated by place-name evidence.

During the 6th century large Anglo-Saxon kingdoms emerged in England, and by the 7th century London was nominally East Saxon. However, for most of the Middle Saxon period London was actually controlled by the more powerful neighbouring kingdoms of Kent and Mercia. The 7th century witnessed the re-emergence of London as a town with the establishment of a mercantile port, *Lundenwic*, about 1km to the west of the former Roman town. The settlement was engaged in trade with similar ports on the Continent and with other parts of Anglo-Saxon England. The nature of *Lundenwic*'s economy is still a matter of contention. It has been suggested that Anglo-Saxon trading centres such as *Lundenwic* operated within a tribute-based economy and that they were heavily dependent on royal foodrents for their very existence (see Saunders in prep), which could explain the lack of diversity in the faunal assemblages at such sites. However, Derek Keene has suggested that the settlement's economy was market-orientated (Keene 1995a, 9–10). Certainly, growth in the volume of trade and of the monetary economy in the 7th and 8th centuries, and the tax exemptions granted to some traders, may have encouraged the development of a market economy.

The 7th century also saw the faltering reintroduction of Christianity in the region, and with it the foundation of churches and monastic houses. With the coming of Christianity funerary rites changed, and graves were no longer richly furnished with goods; this has made Middle and Late Saxon burials extremely hard to identify. The reintroduction of literacy at this time is of particular importance, and contemporary documents (often preserved in later copies) not only provide a historical framework for the Saxon period, but are also a source of useful information about the settlement and economy of the region. Indeed, our knowledge of Saxon London's hinterland still depends heavily upon documentary sources.

Viking raids in the mid 9th century appear to have had a major impact on the settlement and economy of the region. *Lundenwic* was abandoned and international trade was severely disrupted. Other settlements, such as Barking Abbey and Battersea, may also have been abandoned at this time. In response to the Viking threat a *burh* was established in the intramural area of the City during the late 9th century. This developed into a major settlement by the late 10th century. Another *burh* was probably established on the opposite bank in Southwark, although no archaeological evidence for its defences has been found.

While a great deal is now known about the physical form and topographical development of the urban settlements of Middle and Late Saxon London, much less is known about the rural settlements of the region. Indeed our knowledge of Late Saxon settlement is largely based on documentary evidence. Only small areas of the few known rural settlements have been excavated, and consequently little is known about their size, layout and development. Likewise, only limited evidence for craft activities and farming has been found at these sites. Paradoxically, most of the archaeological evidence for the agriculture and industry in the region derives from Middle and Late Saxon urban sites.

The archaeology of Saxon London should be viewed in both its regional and international contexts. For example, comparisons should be made between the material culture of Germanic communities on the Continent and that of Early Saxon settlers in the London region. Similarly, the economic relationship of Middle and Late Saxon London to other towns in north-west Europe deserves the fullest attention.

G A Z E T T E E R

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
BD1	BARKING AND DAGENHAM	OCCUPATION SITE	060936	543920	183910	BA-185	Barking Abbey Industrial Estate Abbey Road. Middle Saxon occupation associated with Barking Abbey indicated by buildings, wells and other features.
BD2	BARKING AND DAGENHAM	LEAT	060935	543895	183920	BA-185	Barking Abbey Industrial Estate Abbey Road. Middle Saxon leat associated with Barking Abbey.
BD3	BARKING AND DAGENHAM	PIT	062067	543900	183800	BA-IE90	Amberley House/Barking Abbey Industrial Estate Abbey Road. Possible Late Saxon glass furnace and pits.
BD4	BARKING AND DAGENHAM	BUILDING (UNCLASSIFIED)	061929	543950	184070	BA-AR88	Abbey Road. Saxon ditch and ?building.
BD5	BARKING AND DAGENHAM	MONASTERY	060491	543990	183987	BA71	Barking Abbey Abbey Road. Barking Abbey founded by Eorcenwold c 666.
BD6	BARKING AND DAGENHAM	CROSS	060775	544060	183870		Church of St Margaret Barking. Fragment of decorated cross.
BD7	BARKING AND DAGENHAM	COIN	060191	544500	183500		Barking. Coins of Burgred.
BA1	BARNET	AXE	081866	523470	192410		Fir Island roundabout. Saxon axe.
BA2	BARNET	CHURCH	081878	522900	190500		St Mary's Church (site of) Finchley. Saxon foundations? Seen during work on the present church in 1872.
BA3	BARNET	CHURCH	081930	522870	189560		St Mary's Church (site of) Hendon. Possibly the site of a Saxon church. A 12th-century chancel was found in 1929–31.
BA4	BARNET	DITCH	081852	522890	189530		Church Terrace Hendon. A double spiral-headed pin and an Early/Middle Saxon ditch containing chaff-tempered pottery.
BA5	BARNET	DITCH	081983	522800	189400		Church End Farm. Saxon ditch.
BA6	BARNET	CHURCH	081890	527230	192950		St James the Great (site of) Friem Barnet. Possible Saxon church may be indicated by foundations below present church.
BX1	BEXLEY	FINDS	070444	551510	174710		Crayford Road. Human and horse bones with five metal bosses.
BX2	BEXLEY	BATTLE SITE	070469	551000	175000		Crayford. Reputed site of battle of Crecganford (457).
BX3	BEXLEY	ORNAMENT	070437	551650	174460		Crayford Station. 'Teutonic ornaments'.
BY1	BROMLEY	RING	070618	540410	167700		Hayes Lane. Early Saxon ring possibly part of a sword pommel (British Museum acc. no. 1935 1007.1).
BY2	BROMLEY	BOWL	070714	539000	165800		Hawes Lane. Escutcheon from a 6th-/7th-century hanging bowl.
BY3	BROMLEY	CHURCH	070884	538860	164850		St John's Parish Church Layhams Road. Church mentioned in Domesday Book.
BY4	BROMLEY	OCCUPATION SITE	070660	541420	163220		Lower Warbank Field Keston. Early Saxon sunken-featured building.
BY5	BROMLEY	BURIAL GROUND	070637	541850	163000		Keston Church. Five graves possibly Saxon under east wall of church.
BY6	BROMLEY	COIN	070957	544140	164110		?Tye Lane. Coin of Offa (Bromley Museum acc. no. 81.56).
BY7	BROMLEY	CHURCH	070916	544410	169910		Church Row. Church first recorded in 1089; a Saxon window was revealed during restoration work in 1957.
BY8	BROMLEY	FOUNDATIONS	070822	548530	170250		Ruxley Church. Flint and chalk foundations of an 11th-century church overlay graves suggesting there may have been an earlier timber church on the site.
BY9	BROMLEY	BURIAL GROUND	070662	546780	167580		Poverest Road Orpington. 5th-/6th-century mixed inhumation and cremation cemetery.
BY10	BROMLEY	SUNKEN BUILDING	070839	547070	167390		Kent Road St Mary Cray. 5th-century sunken-featured building.
BY11	BROMLEY	KNIFE	070798	545400	165830		Civic Halls grounds near station. Late Saxon knife (Bromley Museum acc. no. 67.48).
BY12	BROMLEY	CHURCH	070265	546660	166410		All Saints Church Church Hill. Possible Saxon church on site. Church mentioned in Domesday Book. Saxon elements possibly found during 19th-century restoration.
BY13	BROMLEY	BROOCH	070999	548100	167000		Cockmannings Road (area of) Orpington. 8th- to 9th-century brooch of Merovingian type.
CA1	CAMDEN	POTTERY	081794	525660	186760		West Heath Hampstead Heath. Saxon pottery.
CA2	CAMDEN	POTSHERD	081795	529300	182400	EUR79	Tottenham Court 250 Euston Road. Saxon pottery.
CA3	CAMDEN	BUILDINGS	082184	530130	181120	SGA89	2–26 Shorts Gardens 19–41 Earlham Street. Middle Saxon occupation site with buildings (see also SHG89).
CA4	CAMDEN	PIT	083636	530550	181330	KWH96	Kingsway Hall 66–68 Great Queen Street. Middle Saxon pits, wells and possible boundary ditches.
CA5	CAMDEN	POTSHERD	082188	530600	181900		Kingsway/Gate Street. Sherd of Ipswich-type ware.
CT1	CITY OF LONDON	COIN HOARD	041184	531168	181067		2–3 Hare Court Middle Temple. Mid 9th-century coin hoard.
CT2	CITY OF LONDON	LOOMWEIGHT	0	531250	181240	FET76	133–137 Fetter Lane site of St Dunstan's House. Residual loomweight fragment.
CT3	CITY OF LONDON	SWORD	044840	531310	181390		43 Fetter Lane. Silver sword pommel (c 800) (British Museum acc. no. 93 7–15 1).
CT4	CITY OF LONDON	CHURCH	041888	531470	181515		St Andrew's Church Holborn Viaduct. Late Saxon church referred to in charter of 959.
CT5	CITY OF LONDON	BUCKLE	0	531850	181650		West Smithfield. 5th-century chip-carved buckle.
CT6	CITY OF LONDON	COIN	0	531380	181160		Fleet Street. Coin of Coenwulf of Mercia.
CT7	CITY OF LONDON	CHURCH	041211	531550	181130		St Bride's Church Fleet Street. Late Saxon church. An apse, nave and presbytery with transept preserved beneath Wren church. Two 5th-century potsherds and a number of late Roman or Saxon burials were found during excavations.
CT8	CITY OF LONDON	DITCH	041660	532960	181640	VAL88	Ludgate Circus (north-east side). Saxo-Norman timber abutment of bridge over the Fleet.
CT9	CITY OF LONDON	CHURCH	0	531800	181160		St Martin's Church Ludgate Hill. Site of possible pre-800 church.
CT10	CITY OF LONDON	PIT	042669	531830	181130	PIC87	25–27 Ludgate Hill. Saxon pit.
CT11	CITY OF LONDON	BURIAL GROUND	041664	531701	180966	VAL88	Queen Victoria Street (north of). Late Saxon inhumations. Some showed evidence of quartering and decapitation.
CT12	CITY OF LONDON	COIN	0	531750	180830		Blackfriars. Mid 7th-century gold tremissis.
CT13	CITY OF LONDON	KNIFE	0	531700	180770		Thames at Blackfriars. Saxon knife and scramasax (MoL acc. nos A19213 A19313).
CT14	CITY OF LONDON	POTTERY	042619	532100	181600	LBT86	Little Britain. Late Saxon pot and possible building (D Lakin, pers comm).
CT15	CITY OF LONDON	DITCH	040468	532180	181500	ALG84	7–12 Aldersgate Street. Mid 11th-century pits.

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
WM20	WESTMINSTER	EARRING	081225	530700	181000		Aldwych. Gold ear-wires.
WM21	WESTMINSTER	POTSHERD	082172	529850	180680	LES89	Leicester Square south side. Residual Middle Saxon potsherds, glass fragments and a coin (styca?).
WM22	WESTMINSTER	QUARRY	0	529810	180570	EXT98	5 Excel Court Whitcomb Street. Brickearth quarries probably Middle Saxon.
WM23	WESTMINSTER	QUARRY	081812	529900	180500	NAG87	The Sainsbury Wing National Gallery. Gravel quarry pits probably Middle Saxon.
WM24	WESTMINSTER	PIT	081507	529960	180540	NGA87	Orange Street behind National Gallery. Two pits probably Middle Saxon.
WM25	WESTMINSTER	DITCH	0	530000	180590	NPQ97	National Portrait Gallery St Martin's Place. Middle Saxon quarry, ditch, pit and structural features.
WM26	WESTMINSTER	PIT	081507	529960	180540	NGA87	The National Gallery (basement). Three Middle Saxon pits.
WM27	WESTMINSTER	PIT	0	529900	180700	CXR84	8-18 Charing Cross Road. Middle Saxon pits.
WM28	WESTMINSTER	PIT	082173	530030	180640	CAV86	Cavell House Charing Cross Road/St Martin's Lane. Pit(s) possibly Middle Saxon.
WM29	WESTMINSTER	SARCOPHAGUS	08115902	530100	180540		St Martin-in-the-Fields (portico). Several stone coffins discovered in the 1720s; one contained two Middle Saxon glass vessels and another a spearhead (British Museum acc. no. OA.00240).
WM30	WESTMINSTER	WELL	082111	530050	180450	TSQ88	Trafalgar Square. Several Middle Saxon pits.
WM31	WESTMINSTER	IMPLEMENT	081224	530200	180400		Strand/Graven Street. Two Early/Middle Saxon bone thread-pickers (MoL acc. nos A13363 A13659).
WM32	WESTMINSTER	COIN	081234	530200	180340		Northumberland Avenue. Coin of Burgred of Mercia.
WM33	WESTMINSTER	REFUSE PIT	082177	530200	180790	BDF89	21-26 Bedford Street. Middle Saxon occupation site.
WM34	WESTMINSTER	SUNKEN BUILDING	082109	530220	180900	KIN88	35 King Street/17-18 Floral Street. Middle Saxon occupation site with evidence for timber structures.
WM35	WESTMINSTER	POTTERY	0	530150	180860	FLO97	27 Floral Street. Middle Saxon occupation site.
WM36	WESTMINSTER	PIT	0	530240	180730	LHB94	10-14 Bedford Street Lading House. Middle Saxon pits.
WM37	WESTMINSTER	PIT	082144	530230	180760		17-19 Bedford Street. Pits possibly Saxon.
WM38	WESTMINSTER	BURIAL	081813	530170	180700	PEA87	Bedfordbury/Chandos Place. Middle Saxon occupation site with evidence for timber buildings and an inhumation burial.
WM39	WESTMINSTER	OCCUPATION LAYER	082176	530280	180720	BD589	Bedford Street (road outside nos 39-40). Middle Saxon occupation site.
WM40	WESTMINSTER	PIN	081163	530300	180600		Civil Service Stores Bedford Street/Chandos Place. Bone pin (MoL acc. no. 31.97/20).
WM41	WESTMINSTER	DITCH	081455	530310	180720	MAI86	21-22 Maiden Lane. Middle Saxon occupation site.
WM42	WESTMINSTER	LOOMWEIGHT	081233	530350	180700		York Buildings Adelphi. Early to Middle Saxon loomweights (British Museum acc. no. 1930 7-15 1).
WM43	WESTMINSTER	WATERFRONT	082115	530360	180540	YKB88	18-20 York Buildings. Middle Saxon waterfront embankment.
WM44	WESTMINSTER	WATERFRONT	082174	530330	180480	BHM88	12 Buckingham Street. Wooden remains possibly from Middle Saxon waterfront structures.
WM45	WESTMINSTER	BUILDING	0	530310	180840	CGD95	St Paul's Churchyard. Middle Saxon occupation site.
WM46	WESTMINSTER	OCCUPATION SITE	082169	530370	180800	SOT89	26-27 Southampton Street. Middle Saxon occupation site with evidence for a timber structure.
WM47	WESTMINSTER	PIT	082454	530370	180790	SAM92	28-29 Southampton Street/42 Maiden Lane. Two Middle Saxon pits.
WM48	WESTMINSTER	BURIAL	081235	530400	180850	JUB85	Jubilee Hall Covent Garden. Middle Saxon occupation site with evidence for timber structures and an inhumation burial.
WM49	WESTMINSTER	REFUSE PIT	082181	530530	180790	STN89	Strand outside no. 366. Pit probably Middle Saxon.
WM50	WESTMINSTER	BUTCHERY	0	530550	180840	ERT95	33-37 Exeter Street. Middle Saxon pits, possible butchery site.
WM51	WESTMINSTER	FINDS	081223	530540	180760		Savoy Steps/105-109 Strand. Four Early/Middle Saxon loomweights, a complete pot and a sherd of Ipswich-type ware (MoL acc. nos A27090-3 A27191 A27145).
WM52	WESTMINSTER	PIT	082141	530660	180840	STN87	138 Strand. Two features probably Middle Saxon.
WM53	WESTMINSTER	REFUSE PIT	082324	530850	180860	KIL90	King's College 152-158 Strand. Pit probably Middle Saxon.
WM54	WESTMINSTER	PIT	082110	530770	180830	SOM88	Somerset House. Middle Saxon occupation site.
WM55	WESTMINSTER	SWORD	112023	530700	180600		River Thames near Waterloo Bridge. Sword (MoL acc. no. A3670).
WM56	WESTMINSTER	AXE	112026	530800	180700		River Thames near Somerset House. Viking axe (British Museum acc. no. 1856 0701.1424).
WM57	WESTMINSTER	FINDS	081227	530940	180930	AH72	Arundel House Arundel Street. Residual Middle Saxon pottery and a loomweight.
WM58	WESTMINSTER	FARMSTEAD	081242	530100	179940		The Treasury Whitehall. 8th-/9th-century occupation site/farm with well-preserved remains of timber buildings.
WM59	WESTMINSTER	AXE	112024	530400	180000		River Thames at Whitehall. 9th-century axe.
WM60	WESTMINSTER	KNIFE	0	530400	180000		River Thames at Whitehall. A Saxon knife.
WM61	WESTMINSTER	IMPLEMENT	081266	529750	179600		Dartmouth Street. ?Saxon artefact.
WM62	WESTMINSTER	GAMING PIECE	081226	529910	179660		Old Queen Street. Bone gaming piece; described as Saxon but probably medieval (MoL acc. no. A17734).
WM63	WESTMINSTER	BUILDING	081220	530000	179505		Broad Sanctuary. ?Saxon wall.
WM64	WESTMINSTER	MONASTERY	081244	530050	179470		Westminster Abbey. Possible site of a Middle Saxon minster church. Monastery founded by St Dunstan c 940. Refounded by Edward the Confessor as the Collegiate Church of St Peter.
WM65	WESTMINSTER	BUILDING (UNCLASSIFIED)	082163	530020	179425	WAM75	Sub-vault of the Misericord Westminster Abbey behind no. 20 Dean's Yard. Late Saxon structural features possibly associated with St Dunstan's monastery and a ditch containing 10th-/11th-century pottery and a coin of Heinrich III (Holy Roman Emperor).
WM66	WESTMINSTER	OCCUPATION SITE	082164	530075	179420	WST86	Undercroft Museum Westminster Abbey. Residual finds including a coin of Egbert of Wessex and Middle Saxon pottery. Also a Late Saxon quarry ditch and evidence for a mid 11th-century timber building.
WM67	WESTMINSTER	CHURCH	081222	530130	179540		St Margaret's Church. According to the GLSMR the church was founded by Edward the Confessor.
WM68	WESTMINSTER	PALACE	081245	530200	179500	NPY73	Palace of Westminster (site of) St Margaret Street. Late Saxon palace built by Edward the Confessor. Archaeological investigations at the present Palace of Westminster failed to find evidence for its Saxon precursor.
WM69	WESTMINSTER	COIN HOARD	112021	530900	180600		River Thames at Westminster Bridge. A possible 9th-century coin hoard possibly confused with the find at Waterloo Bridge.
WM70	WESTMINSTER	SWORD	0	530250	179340		Victoria Tower Gardens Westminster. 8th-century sword.
WM71	WESTMINSTER	COIN	0	530300	179050		Thames foreshore Lambeth Bridge. Series T sceat.
WM72	WESTMINSTER	COIN	112074	530300	179000		Thames foreshore Lambeth Bridge. Coin of Baldred of Kent.
WM73	WESTMINSTER	RING	081229	530130	180830		Garrick Street. 8th-century gold finger-ring.



FROM THE NORMAN CONQUEST TO THE REFORMATION

Barney Sloane and Charlotte Harding with John Schofield and Julian Hill

Introduction and background

Reviewing the developments in the study of medieval London over the 20 years up to 1995, Derek Keene (1995a, 9) put it like this:

1975 saw the publication of Brooke and Keir's survey ... learned, wide-ranging, and with many flashes of insight, it is still a valuable resource, especially concerning the mayoralty and the commune. Yet in not providing an effective context – spatial, chronological, or theoretical – in which to interpret the development of the metropolis, it laid down few guidelines for future study. In part that was because the book appeared on the eve of the massive expansion of empirical knowledge of early London which has characterised the last twenty years. Thus it marked the end rather than the beginning of an historiographical era. Much of that new knowledge has arisen on the one hand from the archaeological exploration in the city and its suburbs, and on the other from an awareness that systematic approaches to the exceptionally rich documentary sources could place the history of London on a new footing. Both sets of findings, often piecemeal and opportunistic, have taken a long time to absorb, and the process of interpretation is fraught with trial, misapprehension and (occasionally) error. Conventional history continues to ignore many of their implications. Nevertheless, they have generated a new understanding of medieval London ... and have enabled its history for the first time to be viewed effectively as a continuum with that of later periods. Focusing on the physical and spatial characteristics of the metropolis, they also throw new light on its social development. It would simply not have been possible to tell the story twenty years ago.

This chapter will try to outline the main archaeological contribution to this recent revolution in the study not only of the City of London and its environs, but increasingly of the region. For the purposes of this review, the medieval period is taken to extend from 1100 to about 1500 for secular matters and about 1540 for ecclesiastical matters.

Accounts of the period and of London's history within it are being substantially modified. What can be agreed is that there are three chronological phases to the period, for London as for most of Britain: (1) a period of sustained demographic and economic growth from about 1100 to 1300; (2) demographic and economic crises in the middle of the 14th century (the first more agreed than the second among historians now); and (3) a period of readjustment 1350–1500. Historians differ, however, on much else. The proportion of the population in towns (including small towns) at this period is 5% for some and more than 15% for others. Notions in scholarship 20 years ago that the crises of the 14th century (famine in 1315–17, plagues in 1348–62) were due largely to exceeding ecological limits and consequent environmental degradation are now being questioned. In these circumstances it is important that archaeology does not take any historical model for granted, or as a starting-point for its own research.

Archaeological study does however share and work within a common academic framework. Archaeology can cooperate with documentary history and with related disciplines such as historical geography, economic history and the history of art to describe and explain the development and character of the metropolis and its region. This can be at all levels from that of local history (the manor in a village, a medieval farm) to the wider topic of London's place in Europe.

Past work and nature of the evidence

The principal sources for the study of medieval London and its hinterland can be listed under four headings: archaeological sites (including salvage work and survey), standing remains, artefact studies and environmental archaeology, and documentary records, which include maps, engravings and photographs.

Archaeological sites: excavation and survey

Though antiquaries were recording prestigious medieval buildings, nearly all of stone and brick, from the early 18th century, excavations of medieval sites in the modern sense in central London began with salvage work of the Guildhall Museum from 1907, and the work of Grimes and Noël Hume after the Second World War (Grimes 1968; Schofield with Maloney 1998; Shepherd 1998a). The first area excavations of medieval sites in the City, however, were undertaken by Grimes in the 1950s and as late as 1966 by the Guildhall Museum at the Old Bailey (Marsden 1969a; Schofield with Maloney 1998, 75). In 1973 the Guildhall Museum (absorbed into the Museum of London in 1975) set up the Department of Urban Archaeology (DUA) to excavate in the City, its structure and academic agenda influenced by the contemporary survey *The future of London's past* (Biddle et al 1973). Outside the medieval core of the City, the establishment of the other archaeological departments of the Museum of London in the early 1970s (brought together as the Department of Greater London Archaeology (DGLA) in 1986) finally began to produce results on a large scale: the elucidation of the waterfront on both sides of the Thames, and of several monastic houses inside and outside the City, are the chief results of the large number of excavations of medieval sites in the period 1974–90 (Thompson et al 1998). Beyond the inner conurbation, work on medieval sites up to about 1970 was patchy and largely confined to manorial and high-status sites. It is really only as a consequence of PPG16 (1990) that reasonable archaeological coverage is extending to medieval sites on the periphery of the Greater London Area.

The state of preservation of medieval deposits in the London area as a whole is not well known. The deposit survey for the City of London (Biddle et al 1973) was among the first for an individual urban settlement in the country, but no similar work has been undertaken elsewhere in the Greater London area. Medieval deposits in the City are especially deep along the waterfront and in the Fleet and Walbrook valleys, with up to 4m thickness of intact deposits of the period surviving on some waterfront sites (up to 6m below modern street level). Several corridors across the medieval city formed by the construction of post-medieval streets at angles to the previous arrangement of roads and buildings have sometimes protected earlier deposits and structural remains to a higher level than neighbouring sites with modern basements: the immediately post-Fire King Street and Queen Street, running south from Guildhall to the river, and the later Princes Street. The strata beneath the 19th-century Queen Victoria Street have been damaged by the construction of the Underground. It is often the case that earlier medieval deposits are relatively better preserved than later. At 1 Poultry, for example, floor surfaces dating up to the 12th century survived, but later buildings were represented principally by truncated foundations (Treveil & Rowsome 1998).

The survival of deposits in the medieval suburbs is often excellent. Excavations at the priories of St Mary Clerkenwell (Gz IS22) and St John Clerkenwell (Gz IS49) have revealed surviving tenement walls, floors, kilns, hearths, cellars, rubbish pits and cesspits. Medieval deposits are also well preserved in the core area of Southwark along Borough High Street, and at sites of waterfront mansions. Westminster is by contrast not well represented in the archaeological record; there have been few excavations with medieval results until recently, and layers of post-medieval rebuilding, many on a monumental scale, have removed much (though not all) of the strata. The condition of medieval deposits within settlements further out in the London region is harder to judge. Excavations of town centres have uncovered features at Croydon, Kingston, Ruislip, Sutton and Uxbridge, including roads and street frontages, domestic buildings, industrial and commercial areas, waterfronts and backlands. Modern parks preserve old features: for instance, traces of medieval agriculture in Hyde Park, and in several smaller parks in Middlesex. Later truncation of deposits is widespread, but is patchy and often unpredictable. Recent redevelopment will have inflicted damage on the medieval deposits beneath these centres, but it is certain that medieval deposits will survive in some parts of each settlement.

Computer reconstruction of the late 12th-century nunnery church of St Mary Clerkenwell, Islington (MoLAS)



Standing remains

The principal medieval standing remains in the City of London are the Tower of London (Gz TH5), Guildhall (Gz CT92) and parts of the city wall. Fragments of secular buildings within the City are mainly chance survivals of the Great Fire in 1666, three centuries of urban redevelopment and the Second World War (RCHM 1929; Schofield 1995; Bradley & Pevsner 1997). The survival of monastic buildings in the City is limited because of the Dissolution and subsequent development. Parish churches, because of their status in the community, have survived better, but the rate of transformation or loss of churches has been high in comparison with other towns (Schofield 1994a). Not all standing remains are necessarily known until revealed by redevelopment. Portions of the market and storage complex built by the City at Leadenhall (Gz CT147) between 1440 and 1455 survived, quite unexpectedly, to nearly full height encased in later party walls, invisible until revealed during demolition in 1986 (Samuel 1989). Large fragments of a number of medieval churches still survive within their Wren-period rebuildings.

The survival of medieval buildings elsewhere in the London area is also limited in comparison with other parts of the country. The chief examples, all fragmentary, are of several monastic houses (Westminster Abbey, St Mary Overy Southwark; ruins at Barking and elsewhere), parish churches (many in west Middlesex and east Essex), royal and religious palaces (Westminster, which includes what has been claimed as 'probably the finest timber-roofed building in Europe': RCHM 1925, 121; Eltham, Lambeth, Croydon) and a very small number of rural houses (RCHM 1925; 1928; Pevsner 1957; 1965; Cherry & Pevsner 1983; 1991; 1998). The survival of medieval buildings, in both countryside and towns, is far better in the outer parts of all the surrounding counties. In this outer zone, for instance, many secular buildings of 13th-century and later date have been surveyed and studied (see notes on rural buildings below; and generally, national bibliographies of work in vernacular architecture, Pattison *et al* 1992; 1999).

Artefact studies and environmental archaeology

Before the present level of archaeological provision began in the 1970s, medieval artefact studies mainly took the form of museum catalogues, of which the *London Museum medieval catalogue* (Ward-Perkins 1940, reprinted several times) remains a standard authority on certain classes of medieval artefact: weapons, horse furniture, domestic items and agricultural objects.

This changed dramatically during the campaign of waterfront excavations largely, but not exclusively, along the City waterfront (especially of 1972–90, though they also continue). The dumps behind these revetments are tightly dated by dendrochronology and coins, and provide a long series of accurately dated artefacts of every kind. The waterfront sites have therefore formed the basis of ceramic typology for the City (Jenner & Vince 1983; Pearce *et al* 1985; Vince 1985; Pearce & Vince 1988; Blackmore 1994; 1999; for Rhenish stoneware, Gaimster 1987) so that strata could be dated to within 30 years in many cases. The ceramic phases (ie bands of time characterised by a specific mix of wares) thus created have been employed as the chronological basis of artefact catalogues based on the waterfront excavations (the Medieval finds from excavations in London series) which in effect is extending the *London Museum medieval catalogue*. So far volumes have appeared on knives and scabbards (Cowgill *et al* 1987), shoes and pattens (Grew & de Neergaard 1988), dress accessories (Egan & Pritchard 1991), textiles and clothing (Crowfoot *et al* 1992), the medieval horse and its equipment (Clark 1995), objects illustrative of many aspects of home life and weighing equipment (Egan 1998), and pilgrim souvenirs and secular badges (Spencer 1998). It is intended that future volumes will appear on coins and jettons, and on objects illustrative of manufacturing, beginning with the cloth-finishing trades. The waterfront deposits have a special value for understanding development of material culture, in that they are closely dated and to some extent contextualised.

The study of the environment of medieval towns and of the countryside was established as part of the brief of archaeological units (or more often, related groups of specialists) in Britain in the 1970s (for review, Schofield & Vince 1994, 178–203), and some progress has been made in

the London area. The technique of dendrochronology was first applied to medieval excavated timbers in London in 1973 at Custom House, and, as elsewhere in Britain, has radically improved the dating of standing buildings. Another area of increased endeavour since the 1970s has been the study of human bones.

Documentary records, maps and drawings

The documentary record for the urban core of medieval (and post-medieval) London is vast. Few European cities, if any, are as rich in such documentary sources (for recent reviews of historical work on London at this period, Keene 1995a; Barron 1995). Most usefully for archaeological work on sites, records of property holding in the City from the 12th century to 1666 (Keene & Harding 1985) can be used to trace the histories of properties and their owners and occupiers, to map property boundaries, to study patterns of land use and the social geography of the City, to reconstruct the designs of houses and other buildings, to follow programmes of building and repair, and to chart the operation of the property market. This material is drawn upon as medieval sites are excavated or notable buildings recorded (Barron 1974; Dyson in Milne & Milne 1982; Schofield 1981b; 1993a; Dyson 1989; Taylor & Keene in Schofield *et al* 1990). Larger area studies have been undertaken, such as the *Historical gazetteer of London before the Great Fire: 1, Cheapside* (Keene & Harding 1987), a project of the Centre for Metropolitan History at the University of London, which focuses on all properties in five central parishes until 1666 (further volumes on the Walbrook and Aldgate areas are published in manuscript).

There is also valuable work on documentary evidence from sites in the Greater London area (eg Carlin 1996 for Southwark; Rosser 1989 and Harvey 1993 for Westminster), especially for religious houses, parish churches, manors and smaller agricultural settlements. Testamentary records and visitations shed light on church layout and sometimes tomb types. Patent rolls, close rolls, ministers' accounts, court rolls, Augmentations Office records and occasional pre-Dissolution maps such as that of the Charterhouse water supply (1430) can also be compared with the archaeological evidence.

Most of the 390 known sites of manors and moats now masked by urban development are known through documentary evidence, which is often of a high quality. Account rolls for individual estates (usually those in religious hands) give economic information, and manorial court rolls often give details of land transfers or boundary disputes, which indirectly furnish information on field layout and land use (eg Moss & Murray 1974; 1976). 'Rural' documentary sources throw light on the way in which agrarian production, fuel supply and industry were to some degree shaped by London's demands (Galloway & Murphy 1991; Campbell *et al* 1993; Galloway *et al* 1996).

Most pictorial representations of London are post-medieval in date but contain a considerable body of evidence for medieval structures which survived extant, though often much modified, up to the Great Fire. The first detailed representation is the panorama by Wyngaerde of c 1540 (Colvin & Foister 1996). The copperplate map of c 1559 and the derivative woodcut 'Agas' map of c 1570 are also useful for showing the relative density of the built-up areas both within and outside the city walls by the mid 16th century (Prockter & Taylor 1979 for reproductions of both maps). The engravings of Hollar are also valuable; his panorama of 1647 features the city waterfront and Southwark (especially the medieval palace of the bishops of Winchester in the foreground) and other drawings by him include plans of the Steelyard and of Bath Inn (Arundel House), and a series on the pre-Fire St Paul's Cathedral, shortly before its destruction in 1666.

Old buildings of all kinds were often subjects of engravings, sketches and watercolours in the 18th and 19th centuries. Engravings of notable London buildings were appearing by 1720. Even more valuable, because they were drawn on the spot, are the original antiquaries' sketches, only some of which were later engraved; for example, work by John Carter and Jacob Schnebbelie from the 1770s. Their successors in the 19th century responded to disasters such as the fire of 1834 which damaged much of the medieval Palace of Westminster (Colvin 1966), or recorded the demolition of the medieval London Bridge. From the mid 19th century photographs provide further information, though archaeologists still preferred the watercolour and the pencil, as shown in the work of Thomas Shepherd, Henry Hodge, Philip Norman and others. Graphic records naturally concentrate on the more prestigious, readily identifiable or well-built structures.

The archaeological and historical evidence

Surveys of medieval archaeology in Britain by Platt (1978), Clarke (1984) and Hinton (1990) provide a framework for general questions, but none evaluates the importance and potential of the London evidence in any detail. This is redressed to some extent by a study of the archaeology of medieval towns by Schofield & Vince (1994), which has a significant London content, and by a general introduction to the buildings of the medieval city by Schofield (1993a). There is no extended survey of the archaeology of medieval London and its region (see Keene 1995 for a short review of the period to 1300). The themes discussed here focus on social structures and processes which are less effectively studied using documentary sources alone.

In this survey there will generally be a distinction between the inner medieval conurbation comprising the City, Southwark and Westminster, and the more rural landscape extending for about 50–65km around. For some purposes the 'region' of London extends further, and its networks (though perhaps not its region) extended over much of northern Europe.

London and its region in the medieval period: an introduction

At the start of the period London was already the largest and wealthiest town in England. Political and economic developments up to 1500 reinforced this pre-eminence and by 1500 the population and wealth of London dwarfed other English towns and dominated the economy of the south-east.

By 1300 London's population may have been as high as 80,000 (Keene 1985; 1989), though the argument for this number has been challenged and a lower figure of 60,000 proposed (Nightingale 1996). The undoubted physical expansion of the urban settlement during the 12th and 13th centuries is most evident in the development of the waterfront and of suburbs. The intramural city increased in area by as much as one-sixth from the 12th century to the end of the 15th century, due to reclamations and quay enlargements on the waterfront (Dyson 1989; Dyson in Steedman et al 1992). Lanes leading down to the Fleet also prompted development of areas along the east bank, and private wharves used by ecclesiastical institutions are recorded here in the 11th and early 13th centuries. The chief topographical result of the riverside land reclamations was that by 1500 parts of the waterfront were located up to 80m south of Thames Street (eg Gz CT190), which marks the line of the late Roman riverbank.

Urban growth also took the form of suburban development along major roads beyond each of the six main gates, which is visible from the 11th century. The eastern suburbs grew from dealings with the country; the north-western suburbs were associated with monastic developments; the ribbon development along the Strand became the main land route to Westminster (Rosser 1989). Southwark, across London Bridge to the south, had several important houses in the 12th century; it also grew because of the quantity of road traffic from the south and south-east of England, and later certain industries to serve the capital such as brewing (Carlin 1996). As Westminster became established as the permanent seat of the king and government, the density of aristocratic and ecclesiastical palaces, mansions and town houses in the environs of the City and Westminster increased, largely as a result of the desire to be within easy reach of the centres of political and commercial influence (Schofield 1995, 34–41).

The particular attractions and special status of London are shown by concentrations of medieval religious houses and royal palaces, the relatively frequent occurrence of stone houses and prominent civic buildings, and by trade patterns. London became the capital of England in the 12th and 13th centuries, and features of its character and development were a consequence. But in European terms, it was not yet in the first rank of cities, by comparison to Paris or the collection of Flemish cities (Keene 1995a, 14).

Between the late 14th century and the early 16th century, London's population was probably about 50,000. Within England, however, the concentration of wealth and people in London was even more considerable than it had been in 1100. It dominated the economy of the south-east of England. Though the City of London played an important part in the internal crises of the

Peasants' Revolt of 1381 and to a lesser extent in the Wars of the Roses in the mid 15th century, it was in 1500 less prosperous overall than some of the war-torn cities of Flanders, Germany and Italy.

From the 13th century, the market towns and villages of the region (Map 11) and of the upper Thames Valley supplied London with corn, fuel and other basics (Galloway & Murphy 1991; Campbell et al 1993; Galloway et al 1996). London's river trade influenced the growth of towns along the Thames such as Henley (the trans-shipment point for grain for London, first mentioned as a place 1179) and Maidenhead (1202). Through Ware on the River Lea, London drew supplies from the east Midlands (McDonnell 1978, 73; Britnell 1996, 88). Though there has been much archaeological work in the small towns around London, such as Uxbridge, Croydon, Barking, and further out in Guildford (Alexander 1997) and Reigate (Poulton 1986; for towns in Surrey, O'Connell 1977) and towns in Essex (Eddy & Petchey 1983; reports on work in Colchester in *Essex Archaeology and History*), the role of smaller towns in London's orbit, or their contrasting development of local interests, has yet to be synthesised archaeologically. If done, this would match a growing number of synthetic papers from historians offering models for the medieval development of the region (Keene 1989; 1995b; Campbell et al 1993).

Smaller nucleated settlements in the region are poorly understood. It is clear that some were clusters of a few dwellings with no sign of centralisation (eg Goslings End; Gz EL18), others were polyfocal (eg Pinner; Gz HW11–13) and some took the form of open 'strands' (eg Sherrick Green; Gz BT21). Looped settlements might also be expected in areas of cleared woodland. A large number of these settlements probably developed around manors and their subdivisions, or coalesced near monasteries. Some developed around a single industry, such as the potteries at Cheam (Gz ST7) and limekilns at Limehouse (Gz TH71); others upon major trade routes. The known distribution of medieval rural settlements (see Map 11), based on documentary evidence and some archaeological confirmation, suggests a preference for river-terrace areas with rich agricultural lands and long settlement history. There appears to be little visible grouping of settlement sites in these areas except for isolated clusters in locations with obvious geographical advantages (eg Orpington to Crayford along the River Cray), and blank areas due to negative influences like the Thames marshlands.

One large and complex topic yet to be studied is the effect of the Thames and its tributaries on the settlement pattern (Maps 11–13), and the contrasting fortunes of communities near the river and away from it.

The region can also be studied over the entire period, and compared with other regions both in Britain and abroad. The early expansion of settlement and economy in the 12th and 13th centuries was a national phenomenon, and there does not seem to be anything special or different about the development of the London area (Schofield & Vince 1994, 23–62). The increases in urban area in waterfront zones and by suburban expansion are found in many other British (and continental) towns (Milne & Hobley 1981; Keene 1974). The formation of new boroughs, the creation of manors, the rebuilding of churches, the reorganisation of the parish system (following the arrival of the friars) and the development of standards of urban housing, fire-protection and hygiene can be paralleled in many parts of England (Grenville 1997). The misfortunes of the 14th century can also be traced in the spread of moated sites (a reflection of deteriorating public order) and evidence of the plague in special cemeteries. Archaeological evidence may throw light on what happened to towns in London's region in the 15th century, a period marked by urban replacement as some

14th-century Kingston ware pottery from a kiln site at Eden Street, Kingston (MoLAS)



towns declined while neighbouring towns developed. Wallingford, for example, declined as Reading expanded (Phythian-Adams 1978, 164–5). Ports which had growing industrial hinterlands, such as Ipswich, continued to develop, while Harwich came to depend on the provisioning of the fleet and shipbuilding (Eddy & Petchey 1983, 57). Evidence for change in this period can be found in the new buildings of the wealthy, improved rural housing (some of the very few surviving farmhouses in Middlesex date from the late 15th century; there are far more in Essex, Kent and Surrey), and additions to parish churches, colleges and hospitals, which are explained as ‘stability at a reduced level’ (Platt 1978). The greatest civic buildings in the City, such as Guildhall and Leadenhall, were constructed in this period; clear expressions of the political and commercial ambitions of the City merchants and civic leaders. London, because of its size, may have recovered quicker than smaller towns from the catastrophes of the first half of the 14th century. The idea that there was widespread urban decline in England has been debated by historians over three recent decades (Bridbury 1962; Dobson 1977; Bolton 1980, 246–86; Palliser 1988), but that discussion seems to have fizzled out without result. What seems to be agreed is that there were many problems principally because of a fall in population. Archaeologists can study their own evidence and produce new models of the period.

At this general level, the role of archaeology is therefore to make suggestions about (1) the hierarchy of settlement; (2) the influence of one settlement upon its neighbours, and (3) the rise and fall of populations, including movements between town and countryside.

Monastic and ecclesiastical sites

Major religious buildings and monastic houses

Apart from the waterfront areas, the religious houses of the London area have arguably produced the widest range of archaeological evidence of any site type of the medieval period. The rich survival of several types of evidence – documentary and cartographic records, later plans, and physical traces such as standing fragments of ancient architecture and moulded stones from the former precinct buildings reused as rubble – makes possible the reconstruction of several religious houses to a level of detail not available before. A research project is under way to publish the eight major monasteries which were comprehensively investigated in the last two decades: St Mary Spital (Gz TH73; Thomas *et al* 1997), St Mary Clerkenwell (Gz IS22; Sloane *in prep*), St John Clerkenwell (Gz IS49; Sloane & Malcolm *in prep*), Holy Trinity Priory Aldgate (Gz CT55; Schofield & Lea *in prep*), Bermondsey Abbey (Gz SW92; Steele *in prep*) and St Mary Graces (Gz TH22; Mills 1982; 1985; Grainger *in prep*). Two houses a little further out will be added: priory of St Mary Merton (Gz MT9; Bruce & Mason 1993; Miller *et al* *in prep*) and St Mary Stratford Langthorne (Gz NH19; Barber *et al* *in prep*). This series of monographs on religious houses in and around London will have common themes, such as the impact of each house on its local topography, the history of the individual precincts, the relationship of each house with its surrounding area and contrasting fates of the houses at the Dissolution. There has additionally been work on several friaries, but little has so far been published (Armitage & West 1985). The Augustinian (Austin) friars, Blackfriars and Greyfriars (Gz CT17, CT34, CT50) are all ready for new syntheses, in that like the houses already mentioned, several excavations have taken place within each precinct. These studies would examine the distinctive nature of friary architecture, with the emphasis on preaching naves and special provisions for chantry altars.

The excavations so far analysed have produced much evidence of building plans and development (both of overtly religious buildings and of other more secular structures); construction techniques and architectural style; industry and economy; diet and use of animals and plants. Detailed studies of the liturgical layout and of claustral complexes have been made at Cistercian sites such as St Mary Graces and Stratford Langthorne. Carthusian cell development and layout have been explored at Charterhouse (Gz IS24) and Sheen. The origins and development of a major urban hospital have been investigated at St Mary Spital and further work on this site is in progress, with the excavation of Europe’s largest group of some 8500 medieval skeletons just completed.

The stone buildings (and some timber buildings) excavated on the sites of religious houses were mainly large, prestigious structures, often employing new methods of construction in advance of similar work on secular buildings. Lead water conduits have been recorded at Charterhouse and St Mary Clerkenwell. At the same time, the monasteries contained everyday features and some industrial workplaces. Three roof-tile kilns of the mid 14th century (Gz IS5) and small-scale metalworking were recorded in the precinct at St Mary Clerkenwell, and a limekiln has been excavated at Stratford Langthorne. Evidence of milling and baking was found at St John Clerkenwell. Environmental samples from kitchens, drains and cesspits have been recovered from several religious house sites, providing important information regarding diet, parasites and local environments. The development of the outer court was recorded at St Mary Clerkenwell, including evidence of kitchen gardening.

By comparison, London’s two most important medieval churches have not produced much in recent decades. At St Paul’s Cathedral (Gz CT60), recent small excavations, together with a study of moulded stones, comparable buildings and engravings, have made a little progress in proposing the precise plan and architectural character of the Romanesque and later Gothic cathedral (Gem 1990; Morris 1990; Schofield *in prep*). The appearance of Westminster Abbey and ancillary buildings in the Norman period has been reconstructed (Gem 1980); there may be more Norman fabric surviving above ground than once supposed, especially in one or both of the western towers (Tatton-Brown 1995). Archaeological work in the precinct has also recorded parts of the 11th-century dorter undercroft which overlies timber buildings (Mills 1995), the monastic misericord (Black 1976) and the monastic garden. The restoration work of the post-war years was not monitored archaeologically, and at least one major medieval roof structure in the church was destroyed in the 1960s (Hewett 1980, 112).

Parish churches and chapels

In the City, there were about 108 parish churches existing in 1300, and the total in 1500 was 107 (Keene & Harding 1985, xvii–xix and map). The survival of medieval fabric is variable, for a number of reasons. Five churches went out of use before 1666 and their sites were built over, including the excavated example of St Nicholas Shambles (Schofield 1997a). Fifty-two churches were rebuilt by Wren and others after the Fire (Cobb 1977; Bradley & Pevsner 1997; Jeffrey 1996). Many of these have been recorded in some way since the middle of the 19th century (Schofield 1994a; Cohen 1995; Treveil & Rowsome 1998; Schofield & Dyson *in prep*), and virtually all the Wren churches, when investigated, reveal portions of medieval or Tudor fabric (Grimes 1968; Marsden *et al* 1975; Lea 1985; Milne 1997). Archaeological work has established an outline chronology of church provision, defined the structural development of individual sites and recognised broad trends in church building (Schofield 1994a, details in his gazetteer).

In the wider London region, parish churches which are first mentioned in the 12th century, combined with the few known pre-existing churches, account for over half the medieval foundations, and this figure is likely to increase with further research and excavation. A further 25 churches are first mentioned in the 13th century, suggesting greater parish density in the more favoured fertile lowlands and expansion into more marginal lands such as the east London marshes, where several chapels-of-ease became parish churches. In contrast, only 17 churches are first mentioned in the 14th and 15th centuries. Outside central London there have been 16 excavations at parish church sites, but only the excavations at St Mary Barnes (Gz RT41), St Mary Putney (Gz WW1), All Saints West Ham (Gz NH21), St Mary the Virgin Little Ilford (Gz NH18) and St Nicholas Deptford (Gz GR4) were on any scale. The size and style of these churches may also reflect the relative wealth of local communities, or perhaps initiatives of rich individuals: prosperous times in Uxbridge may be indicated by the addition of the large south aisle to the parish church in the 15th century. On church evidence alone, it also appears that the 15th and 16th centuries were a period of expansion in the small towns and villages to the north of London, such as Edmonton, where the church was largely rebuilt in the 15th century.

Religious arrangements included chapels at locations other than the parish church. Most were built by lords at their manor houses (though not all manors possessed one), often as first-floor structures of which very little usually survives. Others were chapels-of-ease, which provided a place of worship where access to the parish church was impractical (eg at New Brentford), some being accorded burial rights (eg St Edward the Confessor Romford; Gz HV14). Chapels were also built on bridges (eg St Thomas the Martyr on London Bridge, and St Katherine on Bow Bridge; Gz TH1). At least three chapels were founded at burial grounds established at the time of the Black Death (1349): the Pardon Chapel (Gz IS20) to the north of the later Charterhouse and the Chapel of New Church Hawe to the south; and the Chapel of the Holy Trinity on the site of the later abbey of St Mary Graces (possibly located by excavation on the Royal Mint site in 1986). Few chapels have been examined archaeologically; examples include the recording of medieval floor tiles at Lambeth Palace (Gz LA29), and excavations of Eltham Manor chapel crypt, St Mary's Chapel at Kingston, and part of a possible chapel at Kennington Palace (Gz LA32).

There has been some progress with study of artefacts which symbolise belief. A catalogue of pilgrim badges which ended up in London, from local shrines (the Black Madonna of Willesden) and more exotic foreign locations, has recently been published (Spencer 1998). But otherwise the material culture of popular religious beliefs has not yet been comprehensively addressed.

Cemeteries and skeletal studies

Cemetery excavations provide information concerning funerary rituals, monuments, cemetery organisation, individual health and demographic structure. Three kinds of medieval cemeteries can be considered: those at monasteries (including hospitals), parish churches and the special cases of plague and leper cemeteries.

Excavations of burials both within and outside churches, cloisters and chapter houses have produced evidence for a wide variety of burial customs, together with grave goods and items of coffin furniture. Monastic cemeteries were commonly closed at the time of the suppression of the house, and since disturbance or contamination by later burials is rare these provide discrete burial populations for analysis. Groups of human burials have been recovered from Holy Trinity Priory Aldgate, Stratford Langthorne Abbey, Bermondsey Abbey and Merton Priory, and all are currently being studied. A closely dated hospital cemetery was found at St Mary Spital (Conheeny in Thomas et al 1997), and much more of this has since been excavated.

The majority of parish churches in London had cemeteries attached, though a few had separate churchyards. Burials have been excavated on the sites of several City churches, but only in one case (at St Benet Sherehog) has a viable group of burials (for the purposes of analysis) come from the whole period of 1050–1500. Only one group of burials from a churchyard in the City has been published: 234 individuals of the 11th and 12th centuries from St Nicholas Shambles (Gz CT59), a church closed in 1547–62, where six grave types were identified (White 1988). Measures of stature were consistent with comparable medieval urban and rural groups, and general health seems to have been good for the period, though nutritional deficiencies and osteoarthritis were widespread. The high incidence of certain traits in some skeletons suggests that they were related individuals. No parish churchyard excavation outside the City has yet provided a viable demographic sample of medieval human remains. Sites which may provide such evidence in the future include cemeteries of deserted villages and cemeteries where post-medieval alterations sealed earlier graves (eg All Saints Kingston (Gz KT31), where 16th-century encroachment protected the north end of the graveyard).

A thousand burials from the cemetery of 1348 at St Mary Graces were recorded on the Royal Mint site (Hawkins 1990), and this snapshot sample of London's people will be of great importance to both archaeological and medical studies. Six hundred were found in several special trenches dug for victims of the Black Death (Gz TH69). The analysis of this subgroup will be an important step forward, since it provides a cross-section of people cut down in a relative instant by the plague. Only a small trial excavation has so far been undertaken in the plague burial ground at Charterhouse: a single child's skeleton was found (Chris Thomas, pers comm). Lesser plagues occurred in London on eight occasions between 1390 and 1485, but their victims have not yet been located. No leper cemeteries have been excavated.

Ecclesiastical sites and cemeteries: conclusions

The religious history of medieval and post-medieval London and its region is particularly well served by historians (bibliography in Creaton 1994, 365–433; for religious buildings, Creaton 1994, 545–54), but archaeology has much to contribute.

Two recent national surveys of monastic archaeology (Coppack 1990; Greene 1992) identify key areas of interest, though neither considers more than part of the considerable London evidence. The concentration of religious houses in London and its environs (a total of 23 hospitals, for example; Maps 12 and 13) is a topic of national significance. In London, many of the questions posed nationally of religious houses (Butler 1987) could be asked: on the variety of conventual forms, their regional (metropolitan) economic significance and their patronage of the arts (especially architecture). It is especially apparent that the political overtones of architectural patronage in London and the degree to which London buildings influenced other similar buildings throughout the country might be further considered. The most significant example is Henry III's rebuilding of Westminster Abbey in the 1240s, which was influenced by his wish to dominate the clergy with his own view of the superiority of kingship, and which was invested with the most innovative French design features as an expression of the king's prestige and confidence on the international political stage (Wilson et al 1986, 25–6). A later example is the arrival of the Perpendicular style in London from the 1290s and especially at St Paul's chapter house in the 1330s. These relationships and networks of influence should be studied by archaeological means through analysis of building construction and the recovery of items such as moulded or carved stones from arches, windows and monuments, and stained glass. It should be possible to investigate London's role as a centre for architectural art and design: the main production centres for church brasses and Purbeck marble monuments, for example, were in London, with clients throughout southern England and East Anglia (Blair 1991). The collections of carved masonry from medieval St Paul's, currently in the triforium of Wren's cathedral, and at St Bartholomew Smithfield, should be recorded and analysed to explore these questions.

The series of monographs on eight monastic houses excavated in London, the first of which has been published (Thomas et al 1997), will constitute a firm basis for future research. Other kinds of monastic and hospital sites, however, deserve more attention: particularly hospitals (which apart from St Mary Spital have not been investigated recently), leper hospitals (about which little is known in general), and religious houses beyond the City and suburbs, where there is a need to establish the basic development of building complexes. Wider research priorities in monastic archaeology also suggest some new avenues for research: in contrast to the previous emphasis on church and cloister buildings only a handful of ancillary buildings have been excavated (Clarke 1984, 83–4), and little is known about temporary pre-masonry structures (like those at Norton, Cheshire; Greene 1989).

Studies of friaries, the most urban form of religious community in Britain, have much to contribute to an understanding of medieval religious life and other aspects of life in towns. Here two possibilities from many can be mentioned. Royal and noble tombs and decorative embellishments were especially numerous in the London Blackfriars and Greyfriars, and the context and purpose of this patronage is being studied by historians (Röhrkasten 1998). Secondly, since friaries, unlike the houses of monastic orders, did not rely on a system of food provision based on rural manors and granges in the possession of the house itself, but had to get their food from the town, friaries must have shared the town's sources of food supply. The evaluation of comparatively isolated animal bone assemblages from friary sites may therefore aid interpretation of less well-preserved evidence from urban domestic sites (Gilchrist 1988).

There is clearly much still to learn from a detailed examination of the few surviving medieval parish churches in London, as work at St Helen Bishopsgate (Gz CT32) and St Mary Barnes has shown, and there is a wide range of specific research objectives in British church archaeology (Blair & Pyrah 1996) which could be pursued in the region. These include the development of architectural symbolism in parish churches, the elucidation of timber churches when they can be found, the general development of the church building and any particularly 'London' tendencies (Schofield 1994a). The interior designs of surviving churches, especially the larger ones for which documentary records are available, are especially important for studies of changing

liturgical requirements and the conduct of religious services (Draper 1987). Religious equipment and objects indicative of religious beliefs or religious life have received some recent attention (eg Egan in Thomas *et al* 1997), tentatively indicating that different institutions may have differing artefactual 'profiles'. Further researches could also consider whether the religious buildings and objects encouraged the spread of literacy, especially in relatively crowded towns.

In the field of skeletal studies, the study of monastic cemetery groups is to be recommended, because they seem to provide information about social groups. Distinctions in terms of burial location (inside or outside the church, in the chapter house or cloister; cf Lambrick 1985 on Oxford, Daniels 1990 on Hartlepool), grave preparation and grave paraphernalia and monuments will provide information concerning social categories and the expression of social and religious ideals in funerary contexts. There has been no major excavation of a medieval parish cemetery in the region except at St Nicholas Shambles and large samples of burial populations are required for demographic studies. Plague cemeteries are potentially more significant than parish graveyards for demographic studies, as they are likely to contain more representative cross-sections of the medieval population (Schofield & Vince 1994, 196–202).

Domestic buildings

At a risk of over-compartmentalising the material, the subject of domestic buildings and land use has been divided into three rough and no doubt overlapping topics, concerned with palaces and mansions, urban housing and other buildings, and manors, moats and the agricultural landscape. Over 300 sites in the London area are indexed in this volume as palaces, manors or mansions, consisting of royal or ecclesiastical palaces, hunting lodges, manors, sub-manors, mansions and town houses (some moated), and other moated residences. Many of these have been investigated in recent decades, and some overall patterns are beginning to emerge.

Palaces and mansions

At the highest level, investigations of royal residences in the 1980s are now being prepared for publication: at The Rosary (Southwark) and at Rotherhithe, then a rural retreat south-east of London (Bluer 1993; Blatherwick & Bluer in prep). It is hoped to resume publication work on Baynard's Castle (excavated 1971–2), a large 15th-century noble (and later royal) residence in the City itself. Almost in the same league, both English archbishops and at least 30 bishops, abbots and priors established a town house or Inn in the City or its suburbs during the medieval period (Schofield 1995, 34–42; for excavated examples, Hammerson 1975; Gadd 1983; for the exceptionally large residence of the bishop of Winchester in Southwark, Seeley in prep). The Palace of Westminster is partially known through the survival of a few buildings (notably the great hall) and documentary evidence (*King's works*), but there is no overall archaeological synthesis. Work in and around the palace is being brought together (eg Thomas 1995; in prep). The site of nearby York Place (Gz WM51) was excavated in 1939 and now seems to be one of the most important brick and stone houses of the 15th century (Thurley 1999). The sites of several secular town houses or Inns in the City have been excavated, but the results have generally been fragmentary and partial. So far, apart from Crosby Place, Bishopsgate (Gz CT63) (hall of 1466 removed to Chelsea 1907), the houses of civic leaders have not figured in the physical record, though several complexes are known from antiquarian studies (eg Gerard's Hall and Pountney's Inn; the latter now partly examined by excavation, Brigham & Watson 1995). The sites of several 'wardrobes', or urban bases with a substantial storage element, for individual members of the royal clan and other prominent secular figures can be identified (Keene 1999 points out that one of them was briefly on a site excavated in 1976 at Milk Street). There has been much recent work on the south bank of the Thames, especially downstream of the bridge, and more may be forthcoming about such residences as that of Sir John Fastolf (Gz SW90) in the 15th century (Blatherwick & Bluer in prep). Further out in the region, Eltham Palace (Gz GR21) has produced evidence of both medieval buildings and Henry VIII's chapel, now permanently displayed (Woods 1976). There were also many country houses belonging to bishops and other religious leaders, such as

Fulham Palace or the house of the prior of St John of Jerusalem which later became Hampton Court. On the edge of the London area, the recent fire at Windsor Castle has prompted a reassessment of the whole complex and its culture.

The concentration of such sites, the greatest in the country, in and around London (Maps 12, 13), reflected two developments at the national level: London's changing role in these centuries from a large city to a capital and its evolving trading networks throughout Europe and beyond, since at these consumer sites we can expect the richest imports in textiles, pottery, glass and other items. The royal and noble mansions are important as centres of aristocratic consumption (Barron 1995). The pattern of noble and ecclesiastical lords having an urban base in a large town can be seen in or around other similar centres such as York and Edinburgh, and abroad in Paris. At the same time these Inns or urban depots by their exceptional size and grandeur influenced the topography of certain areas of the city itself, notably along the Strand and in parts of Southwark. Similar developments would occur in the 18th and 19th centuries in the West End.

Urban and rural housing

The bulk of the archaeological evidence for secular buildings is derived from the City of London, though undercrofts and traces of other buildings have been excavated in several small towns, notably Kingston (Gz KT16), Uxbridge (Gz HL49), Reigate, Staines and Croydon (Gz CR24).

Excavations of domestic sites in the City have occurred in two zones with very different qualities of preservation: the waterfront area where the deposits are deep and often waterlogged, and the rest of the City where medieval remains have been widely destroyed by later building. In the waterfront zone, timber buildings, which comprised the vast majority of secular structures, have been recorded in contexts dating from the 12th century to the Great Fire, both in situ and as reused timbers in revetment structures, which have yielded important evidence of carpentry techniques (Milne 1992b). By 1200, several parts of the City also had stone buildings, especially along or near Cheapside and the waterfront (Schofield *et al* 1990; Steedman *et al* 1992). Brick buildings appeared in small numbers during the 15th century but were never widespread.

Several building types can be distinguished. The courtyard house was a form shared by church leaders, the nobility and some civic dignitaries; it was to be seen in some London streets by the middle of the 13th century (Schofield *et al* 1990). Foundations of Sir John de Pountney's 14th-century town house, possibly an influential example, were recorded in 1994 near Suffolk Lane (Brigham & Watson 1995). The most numerous properties, however, were narrow tenements, with gable ends on the street frontage and often an alley on one side (most clearly recorded on waterfront sites; Schofield 1977; 1981a). From the early 14th century, the commonest form of house in documentary references had two rooms on each of two or three floors; these have been found in excavations. So far, no examples of the smallest houses of one-room plan, commonly noted in surveys of c 1600 (Schofield 1987c, 15–16), have been excavated. There is as yet no body of archaeological evidence from which to consider medieval gardens, though assemblages of seeds are now being published (eg Davis in Thomas *et al* 1997).

Rural medieval houses built before the middle of the 14th century are almost completely unknown in the London area, from either archaeological or antiquarian studies. Rural houses elsewhere had a central hall and chambers at both ends. The aisled hall is rare in the immediate London region, though an example of 1399 existed at the Chaplaincy, Hornchurch. The more common unaisled form of the 14th and 15th centuries can be found throughout the region (Airs 1983, 107). The Wealden hall type, with a distinctive recessed centre and chambers at both ends roofed in line with the hall, became more frequent during the 15th century. This type, numerous in Kent and Surrey, has also been recorded in the London region at Bexley, Cowley (Hillingdon) and Peckham. Work on surviving rural buildings (mostly houses) particularly in Kent (Pearson 1994), Surrey (Harding 1976; 1993) and in Essex (Hewett 1969 and many studies in Essex journals) provides a fuller picture and patterns for development. Most of the work has been on timber-framed buildings (eg Bond 1998), and this should be matched with study of early brick buildings, though at present the widespread use of brick in the region seems to be after 1500. This assumption should be tested.

Certain constructional features were probably developed in London before anywhere else in Britain: jetties (first mentioned in documents in 1246) and the placing of the hall on the first floor, often overlooking the street (c 1310). The later flooring-over of halls and insertion of chimney stacks may well have started in earnest in the capital, but evidence is so far lacking. As with rural buildings, the deficiencies of the record for urban buildings in the immediate London area can be remedied by study of those in towns towards the outer parts of the region where more has survived (though even here much was lost in post-war regeneration schemes, for instance at Watford).

Future directions of research into buildings (Munby 1987) include more work on regional variation in vernacular architecture (see now Stenning & Andrews 1998); the succession from post-built to framed construction (as begun by Milne 1992b); and new house plans and their relation to population pressure and social and economic changes (eg the metropolitan origins of jettied buildings and utilised roof spaces due to pressures on space in urban areas). The investigation of domestic sites in medieval towns will also allow for reconstructions of the character of separate quarters. Some distinctive areas should certainly be expected, such as areas given over to Jewish communities or specialist trades. An important theme concerns the changing densities of housing, in that significance for the overall fortunes of each settlement can be drawn from it. The rich quality of the evidence will also allow for studies of cultural life and practices, such as access patterns, the development of notions of privacy and the structuring of activity-specific spaces (eg trade/domestic, public/private; Schofield 1994b). At the same time, there should be greater emphasis on the investigation of rural houses to compare with the existing body of evidence from urban contexts. Rural examples, particularly from the outer parts of the region, will be standing buildings, and there will then be fruitful dialogue between archaeologists and students of vernacular architecture.

Manors, moated sites, granges and the agricultural landscape

The state of survival of larger residential complexes such as manor houses, granges and sub-manors (especially moated sites) is not accurately known, but parts of these complexes are often found. Most manor houses were free-standing timber or stone structures of two or more storeys. The buildings of Carew Manor probably covered over 2000 sq m, and others were larger. Approximately 30% of these sites have deep moats and/or riverfront locations, where waterlogging and the preservation of organic remains are likely: wooden revetting, causeways, piling, drains and bridges are common features, all of which can be dendrochronologically-dated. The spoil from moat construction was often spread within the enclosure, and sometimes over surrounding areas, covering and protecting the remains of earlier structures. Continuous occupation and frequent rebuildings at manor houses and similar sites have also sometimes resulted in the incorporation of medieval remains in later buildings.

The distribution of known manors in the London region (see Map 12) suggests a relatively dense population north of the Thames; the number of manorial sites to the south of the Thames will certainly increase with further documentary research. The moated sites on the map are those known to have existed before or by 1500, but there are dozens of earthworks of unknown date in the region, many of which probably have medieval origins. The distribution of nucleated settlements and of manorial buildings suggests close links between these settlement categories. The locations of some manors, however, appear to be unrelated to farming settlements: those in the Lea Valley at Low Hall (Gz WF10; Blair in prep b), Godsvalves, Mark House, Leyton Grange and Ruckholt, for example, may have been associated with the milling industries along the river. One site published recently, that of the manor of Little Pickle, Bletchingley, Surrey originated in the late 13th century as the residence of the keeper of the north and south deer parks of Bletchingley (Poulton 1998).

The variation evident in the internal layout of manorial complexes appears to be broadly related to their different functions, though the hall was central to most designs, with farm buildings, kitchens, stores and often a private chapel. The alien priories at Ruislip, Tooting Bec and Harmondsworth, and the *cameræ* of the Templars and Hospitallers (eg at Hampton Court and Moor Hall), were effectively manor estate management centres.

Many manors possessed moats of various sizes. A moat at Finsbury Manor (Gz IS47) was only 2m deep, while that at Isleworth (Gz HO47), dated to the 13th century, appears to have been 10m wide and up to 6m deep. Double enclosures are also known (eg Mapesbury Manor). Moat-construction techniques varied widely: revetments were absent at Northolt, but were built of timber at the Clink and of stone at Carew, and access to the moat interior could be by causeway (eg Chingford St Pauls) or bridge (eg Isleworth). Important textile, leather and environmental evidence has been recovered from moat contexts at several sites, such as Fastolf Place.

No complete farmsteads have been examined within the London region. Surviving barns have been surveyed at Headstone Manor and Manor Farm Ruislip, and excavations were undertaken within the barn at Manor Court, Harmondsworth; the sequence of assembly of aisled barns has been discussed with reference to the 14th-century Great Tonkyns Barn, Upminster (Bond 1993).

Strip-field systems survive on small green-field sites all around London, and cropmark surveys are being undertaken by the RCHM (now English Heritage), though excavations of the fields themselves are rare (eg Pinner Village). Examples of possible field-boundary ditches, drainage gullies and other isolated features are far more common (eg at Stanwell, Elstree and Kingston). Land reclamation on a large scale has been recorded at Narrow Street, Tower Hamlets, where a large timber-revetted embankment beside the Thames separated the river from marshlands to the north, which were then drained for agricultural use. Small-scale agricultural features are also sometimes recognised, such as bedding trenches from a possible kitchen garden at St Mary Clerkenwell, and market-garden trenches near Enfield Palace. A probable deer park at Pinner Farm Park was enclosed within a substantial 13th-century double bank and ditch. Fish weirs, fish ponds and occasional fish traps have been recorded; there is material for a study of the provision and management of fish in the economy of the capital.

Domestic sites: conclusions

Gaps in our knowledge, and therefore research directions for the future, have been outlined in the sections on royal and noble palatial construction, and for urban domestic buildings of all kinds. London and its region still has much to contribute, though the evidence above ground is weak by comparison with other regions of the country. The major contribution will come from the strata in the ground.

This conclusion wishes rather to highlight possible future progress with rural buildings. The substantial structural features and waterlogged contexts at moated sites have in many cases ensured that constructional and depositional sequences are well preserved. The documentary evidence for these sites is also generally of a high quality as a result of the high social status, literacy and economic and legal activities of their residents. A full survey of moat plans in the London region has yet to be undertaken, and there is no regional survey of rural houses, either from standing remains or subsurface evidence of structural features. Manorial sites should also provide important evidence of the living standards of the wealthier social classes and the household communities who served them, though the economic, social and environmental evidence available has never been synthesised for the London region. This manorial culture would probably be different in character and quality from that of manorial sites outside the region, because of the proximity to London and Westminster. It is also probable that moats were widely regarded as status symbols (as may be the case in other parts of Europe, including Denmark, Germany and the Netherlands), and that the size of buildings, methods of construction and artefactual assemblages may reflect differences in status

The bridge abutment, revetment and drain at the moated manor at Low Hall, Walthamstow (MoLAS)



(Clarke 1984, 57–8). Moated sites within the region should also be studied in relation to the settlements nearby, to assess the relative impact of economic and environmental changes on both kinds of community and social group. One national overview suggests a classification of moats based on the nature of their water supply (Aberg 1978); a more recent survey has yet to be digested for the London area (Roberts & Wrathmell 1998).

Despite the poor preservation of most of the evidence from agricultural sites, their potential value is considerable. Wetter climatic conditions in the 13th century may have prompted the need for larger and more numerous ditches and the construction of buildings with stone foundations on raised earth platforms. The finds from rural settlements of the 13th century also suggest greater wealth. It is useful to consider as models previous investigations of medieval farms – despite their location beyond the Greater London boundary – such as that at Stebbingford Farm, Felsted, excavated in 1993, claimed to be ‘apart from Writtle ... the largest and most complete excavation undertaken to date on a medieval rural settlement in Essex’ (Medlycott 1996, 173). This comprised a farm developing between the mid 12th century and the mid 14th, with four buildings, yard and field system; the range of evidence is impressive. Evidence from rural sites of the 15th century is limited, and it is uncertain whether villages were becoming more self-reliant. Changes in the rural economy, with an increased emphasis on livestock farming and the construction of a larger number of substantial houses, appear to have been advantageous to many agricultural producers.

One avenue also yet to explore, in both town and countryside, is the combined study of buildings and artefacts to elucidate ‘standards of living’ (Dyer 1989) on the one hand, and distinctive local communities or immigrant cultures on the other hand. The largest immigrant community in central London, particularly in Southwark, were the Dutch, from the 14th century; and from this time a significant portion of central London’s material culture came from the Low Countries (Barron & Saul 1995; Blackmore 1999).

Defensive sites

The City of London is the only urban settlement in the region which definitely had defences. The city wall, apart from the Blackfriars extension built in the late 13th century, was based upon the Roman wall of c 200. The wall is visible above ground at Tower Hill, at Coopers’ Row, where probable 12th-century round-headed embrasures and traces of a stair to the walkway survive, and at St Alphege churchyard (Westman 1987). Outside the wall ran the ditch, recut on a substantial scale in 1212–13 and 1477, and averaging 18–23m in width, though considerably wider along the north side of the City where there were no extramural streets.

A documented refurbishment of the defences from Aldgate to Aldersgate in 1477 has been identified in a number of places. The parapet of the wall shown in engravings (Schofield 1993a, fig 105), and visible in the surviving section in St Alphege Garden, incorporated bricks in diaper work (there are earlier instances of brick in large projects such as at the Tower in 1278, but this work of 1477 may be one of the earliest examples of the use of ‘Tudor’ brick on a large scale in London). Brick arches built against the back of the wall have been noted in several locations and may well have been continuous (Grimes 1968, 78–91). This strengthening of the wall may have been an added defence against cannon.

The City had six principal medieval gates (seven if London Bridge is included). It is not known whether the fabric of the Roman gates survived into the early medieval period, though the fact that all the major medieval gates were built on the sites of their Roman predecessors suggests some continuity of fabric and use. Part of Aldgate (rebuilt in the early 12th century) has been located by excavation. Substantial Roman and medieval structures at Newgate have been recorded on several occasions, but no detailed structural history has yet been attempted. Parts of the south tower of Ludgate (rebuilt in 1215) survive to first-floor level in a modern building. The postern gate at Tower Hill (built before 1190, collapsed 1440) has been excavated (Whipp in prep) and is now displayed.

No other medieval towns in the Greater London area were defended (Bond 1987). The nearest towns to London with defences, as listed by Bond, were Henley-on-Thames, St Albans, Chipping Ongar, Tilbury, Rochester and Tonbridge. There are no defended towns at all in Surrey.

The structural history of the Tower of London is well documented and has been elaborated through excavation (Parnell 1980; 1983; 1985; 1993; Hiller & Keevill 1994). The line of the city wall, formerly the eastern limit of the bailey, was breached by Henry III, and the medieval fortifications reached their greatest extent with the works of Edward III. The original arrangement of the White Tower has been reconstructed (Brown 1979) and the design of the west curtain wall, including early large-scale use of brickwork, has been discussed (Allen-Brown & Curnow 1984). As an urban castle (*ie* one imposed on an existing settlement), the Tower of London can be compared with other major castles at Hertford (Zeepvat & Cooper-Read 1994–6), Colchester, Rochester (Flight & Harrison 1986), Canterbury, Guildford, Wallingford, Oxford and Buckingham (Drage 1987; for national study, Kenyon 1990). In addition to its military, residential and administrative uses the Tower had a special character because of its royal functions.

The City had two additional, smaller Norman fortifications on the western side by 1136, the sites of which are only approximately known: Baynard’s Castle and Montfichet’s Tower. These lay to the south of Ludgate within the pre-1278 city wall (Schofield 1993a, 39–40). Recent excavations may have located the ditch and a wall of one or the other (Watson 1992). Both sites were incorporated in the Blackfriars precinct in the late 13th century.

Excluding moated manor sites, there are only four highly fortified medieval structures in the London region outside the City: Ruislip motte-and-bailey castle; Ickenham motte (which was probably a strongly defended house on a manmade mound); and Sayes and Mirefleur towers (the last, below the Observatory at Greenwich, was perhaps as much romantic as military in purpose). A fifth site, which may have existed at Castle Hill, Chessington (London Borough of Kingston), is likely to have been a fortified manor, similar to Ickenham though built on a natural mound. Of these, only Ruislip can be classed as a castle. Limited investigations have been carried out here and at Ickenham. Further afield, the classic Norman motte at Abinger (Surrey) was excavated in 1949 (Hope-Taylor 1956); Norman mottes were also imposed on small Saxon settlements in Essex, such as Chipping Ongar (Eddy & Petchey 1983).

Defensive sites: conclusions

In the City, archaeological investigations have added considerably to an understanding of the Roman and medieval defences (usually on the same sites), but there is no overall synthesis for any period. Several substantive issues are as yet only partly researched. These include the provision of defences in London in relation to national and international crises and the spatial influence of the city walls on life in the town, especially its trading functions (constraints on access through specified gates, for instance, meant that streets which led only to the wall were commercial backwaters). In addition, the forms and histories of the various gates are sometimes uncertain and the refurbishment of 1477 is not yet studied. An assessment of the results from over 60 excavations undertaken on the defences since 1900 is now being prepared by MoLAS and the City of London Archaeological Trust, subject to funds being obtained.

Future directions in the study of urban castles (Drage 1987, 130–1; Kenyon 1990) include more emphasis on timber buildings of all periods, the pre-Conquest uses of castle sites (virtually nothing is known of this at the Tower), detailed building survey, and studies of the relationships between castles and towns. In this context, the archaeology of the Tower should be integrated with that of the surrounding urban area. Other fortified structures in the London region should be studied to see if their character and period of use were influenced by proximity to the capital.

Infrastructure

Streets, waterways, quays and bridges

The regional communication system was based on the Roman road network, with radial routes from London to major towns and ports throughout the country. Secondary connections grew as small towns developed along major routes and gained their own markets. The importance of roads for settlement development can be seen in the number of inns which made villages and towns

important stopping places along routes. Uxbridge, for example, is marked as the first stage of the journey from London to Oxford on the Gough map (c 1360). Hounslow developed at the junction of the Bath road and the old Roman west road, attracting several inns by the late 15th century. From the end of the 14th century there were regular carriers between London and major towns such as Oxford and Winchester (Salzman 1964, 205). The physical form and upkeep of medieval streets and lanes, both within urban areas and outside, are not well understood, though successive (and often rutted) surfaces have been identified in a number of locations.

Navigation of the river and its tributaries was important for the economic development of the region (for instance, the transport of corn from Henley which influenced that town's growth). River revetments and walls improved the Thames as a transport system, and were built to reclaim land in the City, Westminster and Southwark. The 11th-century riverside revetments in Southwark were superseded by more ambitious timber river walls, which were overwhelmed by floods in the late 13th century, rebuilt in a more robust fashion, and finally replaced in stone in the 15th century. On the north bank, revetments of some kind probably extended from Westminster to Blackwall by the 15th century. The importance of secondary waterways as communication routes is difficult to assess as almost all have been culverted, canalised or turned into sewers, though it is known that ferrymen formed a vital link across the Lea. Quays and revetments have also been found along creeks at Barking (Barking Creek), Kingston (Hogsmill Creek), Brentford (River Brent) and Merton (River Wandle).

Excavated examples of bridges are rare. The bridgeheads at Kingston and London both underwent many phases of rebuilding. Recent work on London Bridge (Watson with Dyson 1997; Watson in prep) has identified the archaeological evidence for a series of 12th-century repairs or rebuilds to the bridge abutments to counter structural problems caused by scouring and erosion of the foreshore.

The necessity of these frequent repairs led to the decision to reconstruct the bridge in stone (1176–1207) in order to make it more resilient. Once complete, the stone bridge survived for the remainder of the medieval period, though with many later additions. Bridges across the Fleet existed at the foot of Ludgate and Holborn hills: an abutment at Ludgate dated to the 11th–12th centuries was located within the Fleet Valley Project, a series of excavations along the western side of the walled City undertaken in 1989–91 (Schofield with Maloney 1998, 283–7). The bridge at Kingston (c 1180), which has been excavated in some detail, is especially important for understanding the development of the town (Potter 1992).

Water supply

The great monasteries were able to invest in conduits from springs and wells to pipe water to their precincts. Sections of conduits have been recorded at St Mary Clerkenwell and Charterhouse. Some of these may be of 12th-century date, predating civic water supply in the City. The distribution of conduits was largely determined by the locations of monastic centres to the north of the City and the spring lines on the higher ground around Canonbury and Barnsbury.

From 1237 the City also built water conduits in stages from Tyburn, with distribution points at system intersections and on major streets (Salzman 1952, 273–6). Lead pipes dated to the mid 13th century have been recorded in the Fleet Valley. The main cistern chamber of the Great Conduit House in Cheapside (constructed c 1245) was recorded in 1994 (Treveil & Rowsome 1998). The public well at St Mary

Clerkenwell has been excavated and preserved *in situ*. These are unconnected observations, and the time is now ripe for an overall study of the hydrology of the central London area and the archaeological evidence for this public amenity. Much of the water for the City and region, however, was drawn directly from the Thames and its creeks. There is a body of work to do here, on pollution (Boyd 1981) and on the effect on people's health of the water after known periodic floods and sea surges.

Civic buildings

The development of public services is one sign of a maturing civic consciousness. The City of London was well provided with civic buildings, including Guildhall, several markets and prisons. These building types were also represented in smaller towns in the region.

The archaeological and architectural history of Guildhall in the City (Barron 1974) will be evaluated during post-excavation work on the recent Guildhall Yard excavation. On the other side of the City, excavation of part of the medieval Leadenhall market and public granary, has shown that the impressive stone-built quadrangle and chapel were built in one operation c 1440–50. The complex has been reconstructed from excavated masonry fragments, antiquarian drawings and documentary evidence (Samuel 1989).

Parts of both Newgate and Ludgate were used as prisons, but the principal City prison was the Fleet, a royal foundation dating from at least the mid 12th century. It was situated on the east bank of the Fleet and surrounded by a moat; an archaeological outline of the development of the prison forms part of the research arising from the Fleet Valley Project. Outside the City, prison houses are known in Southwark (the Clink) and Romford, and other settlements possessed a cage or pound, usually a small stout wooden affair. None of these has been investigated archaeologically.

Company halls, almshouses and Inns of Court

Four or five companies are known to have possessed halls before 1400: the Goldsmiths (1339), Merchant Tailors (1347; still surviving), possibly the Skinners (?1380, certainly by 1408), Cordwainers (1393) and Saddlers (shortly before 1400). The greatest proliferation of the company hall as a building form was in the period 1400–1530 (Schofield 1993a, 115–19): there are references to 27 halls belonging to 25 companies by 1475 (the Fishmongers having three separate halls). There has been little archaeological work on the sites of the medieval livery or company halls of the City, with the exception of investigations of subsidiary buildings at Vintners' Hall and small-scale work at the site of Embroiderers' Hall (Gutter Lane).

Some of the companies built almshouses beside their hall, or nearby, the earliest being the Merchant Taylors in 1414, the Brewers in 1423 (Grimes 1968, 170–2) and the Carpenters in 1448. Little is known about the design of these buildings. On present evidence it appears that there were no pre-1500 foundations of almshouses elsewhere in the immediate London region, though there are examples further out (eg at Ewelme, Oxfordshire, c 1440). There has been very little archaeological investigation of the medieval legal establishments west of the walled City. Some medieval building fragments survive at the Middle Temple and Lincoln's Inn.

Infrastructure: conclusions

Some aspects of the City's infrastructure (Guildhall; Leadenhall; and as reported elsewhere in this volume, the defences) have been or are now being studied archaeologically. Other questions remain. By 1200 London had fire regulations which governed aspects of construction and standards for the upkeep of streets and watercourses. It would be helpful to ascertain how far these standards were met in practice by excavating sections of streets and watercourses. A survey is also required of all the monastic water systems to investigate how they worked hydrologically and their influence on secular water provision. Some priority in future work should be given to the sites of company halls, almshouses and the Inns of Court. In the last case, in particular, this concern should include an increased emphasis on conservation rather than excavation; the Inns of Court need a survey of subsurface deposits and an evaluation of the significance of standing medieval remains.

Venetian glass from
1–4 Great Tower
Street, c 1500



The infrastructure of smaller towns and settlements in the region is studied piecemeal by local historians, and might be assisted by an archaeological overview. The effects of bridge-building on regional communications and the development of adjacent settlements should be addressed at Kingston, Bow, Southwark, Uxbridge and Staines.

Industrial sites

In the City, industries which produced smoke, stench, noise or waste were generally located towards the periphery of the intramural area or beyond the walls. The most likely industrial structures to be encountered close to the City include tile- and pottery-kilns, bell pits, smithies, dyehouses, tanning pits and mills. Bell-founders were located around Billiter Lane and Aldgate. Tanneries were located on the banks of the Fleet (from the 13th century), the river being obstructed with weirs, and the moat of the Fleet Prison filled with waste material. At least one tilekiln is known to have been nearby. The suburbs of Holborn, Smithfield and Fleet Street were used by butchers for the dumping of offal in the 14th and 15th centuries.

Domesday Book makes it clear that within England much industry was located away from towns at the beginning of this period (Miller & Hatcher 1995, 2–6), and this probably continued to be the case until after 1500. In the Greater London area, crafts and industries appear to have been generally household-based. There were few industrial complexes and most of those that did exist were concentrations of interdependent craftspeople rather than planned production centres. The limited nature but great diversity of the evidence is apparent in the fact that while only 78 sites are known, these relate to 23 categories of industrial activity. The distribution of industrial/craft sites outside the City falls into two categories: those which have not yet been recorded archaeologically but are known from documentary evidence or finds of end products (these industries are often only approximately located, *eg* the slaughterhouses of Knightsbridge and Stratford); and those where archaeological excavations around nucleated settlements have revealed industrial zones and production centres, as at Southwark, Islington, Kingston and Cheam. Perhaps the largest industrial complexes were the naval dockyards at Ratcliff (14th century) and Deptford (15th century). No significant remains of these have yet been uncovered, but the logistics of building large vessels, maintaining them and outfitting voyages from victualling yards would have required considerable space, the modification of river frontages and specialised structures.

The following paragraphs briefly survey work in some of the most archaeologically visible industrial processes: the extraction of raw materials, woodland management and timberworking, ceramic production, metalworking and glassmaking, the processing of animal products, industries based on grain products, and wool and textiles.

Extractive industries and processing of raw materials; stone and brick

No stone was quarried in the London region (except for chalk at several locations in the outer area). Excavations have shown that the construction of monasteries, hospitals and important residences in the 12th and 13th centuries prompted considerable robbing of Roman structures and the opening or reopening of stone quarries. The main stones quarried in the area (though on the edge of the London basin) in the medieval period were Kentish ragstone and Reigate stone, flint (from the chalk deposits), and some stone from further afield such as Taynton stone from near Burford, recently identified at Romanesque St Paul's (Salzman 1952, 128–35; Schofield in prep). Though the stones used in medieval buildings are routinely mentioned in excavation reports, there is room for wider study of the quarrying industries which served the capital. The gravel-extraction industry was clearly of some importance; gravel pits have been investigated at a large number of sites, including St Mary Graces, where pits occurred in plots with clear boundaries, suggesting careful industrial organisation. To the east at Limehouse, limekilns were part of an extensive industrial complex, associated with docks and wharves for unloading chalk supplies, and large-scale land reclamation in the 14th century using the waste from the lime production process. The larger monasteries would probably have built their own limekilns during construction, as found at Stratford Langthorne.

Brick- and tilemaking are known in parishes and smaller towns to the east of London in the mid 15th century, and buildings using brick are known in the City from c 1420 (though examples with brick as the main element probably date from the 1490s). A study of prominent brick buildings of 1400–50 to the north of London (Smith 1985) has identified a related group of buildings which may be the work of a single workshop.

Woodland management and timberworking industries

Woodland management in the 10th to 14th centuries can be deduced from the detailed study of timbers used in building and revetment structures, and hurdles brought to London from coppiced woodlands (Milne 1992b, 106–30; Goodburn 1997). Other evidence of management, such as the controlled logging of woodlands to produce timbers of consistent sizes, is also provided by the timbers from riverside revetments. There is documentary evidence for charcoal burning, for instance in Hainault Forest, though archaeological remains would probably be ephemeral. New thoughts on the extent of woodland coverage, and of its management, have come out of the study by historians on the provision of fuel to London (Galloway *et al* 1996).

Ceramic production

There is no evidence for medieval pottery production within the City, though distributions of London-type ware indicate a production centre nearby, and there is a single documentary reference to a potter working at Whitefriars in 1278. Kilns and other remains have been excavated elsewhere in the London area at Kingston (traces of at least 16 Surrey Whiteware kilns of the 12th to 14th centuries – four excavated in 1995: Miller & Stephenson 1999; and a redware kiln of the 15th century), Elstree (kiln debris in a road suggesting the presence nearby of kilns producing South Hertfordshire ware in the 12th/13th century), Arkeley (two 13th-century South Hertfordshire kilns), Cheam (four kilns dating to the 13th century) and Woolwich (quantities of wasters and a kiln site).

A roof-tile kiln has been excavated at Keston, and a tile industry is believed to have existed at Woolwich. Other tilekilns have been identified within the precinct at St Mary Clerkenwell, and at the Middle Temple in the City. The source of the 'Westminster' style of decorated floor tile used in the early 13th century (*eg* at Lambeth Palace chapel) is unknown. A large floor-tile kiln found at Farringdon in the 19th century may have supplied the monastic houses of St Bartholomew, Charterhouse, St Mary Clerkenwell and St John Clerkenwell. The Kingston kilns also produced roof furniture such as louvres.

Metalworking and glassmaking

Recent excavations in the City at St Mary Axe, Cripplegate and Leadenhall Street have produced evidence of metalworking hearths and bell-mould waste, supporting the documentary evidence for bell production in the eastern and northern parts of the City. The site at St Mary Axe also produced evidence of bronzeworking and scrap from the production of decorated knife handles. Metalworking sites at Croydon and Whetstone (ironworks) and at Orpington (leadworking) have been located on the basis of slag deposits. These industries were probably all small-scale concerns.

There is also a growing amount of archaeological evidence for pewter-, copper- and brassworking, including a gang-mould for casting buckles at Guildhall Yard in the City. The pewter industries of London were important (Homer 1985), but the evidence is usually lacking due to the melting down of the majority of pieces rather than their being thrown away. The hornworking evidence can be compared with documentary accounts of the industry in London and elsewhere.

Several aspects of the production of jewellery, buckles and knives are dealt with in two of the recent artefact studies based on waterfront excavations, dealing with knives and scabbards (Cowgill *et al* 1987) and dress accessories (Egan & Pritchard 1991). By 1500, the goldsmiths of London were widely known for the quality of their work (Campbell 1991), though no direct

archaeological evidence has come to light. Fragments of Venetian glass which may have been undergoing repair, found in a 14th-century cesspit in Foster Lane near Goldsmiths' Hall, suggest the presence of a glassworking industry (perhaps associated with the production of precious metalwork). Throughout the period London was a centre for industries producing luxury items in gold, silver and jewels, and other luxury trades such as glasspainting flourished in the capital under royal patrons and other rich customers.

Processing of animal products (tanning; hornworking; butchery)

There is a little evidence for hornworking in the City (eg at Angel Court; Blurton & Rhodes 1977, 88–97), and for boneworking at Southwark, suggested by finds of offcuts and wasters. Excavations at Cowcross Street, near the site of St Bartholomew's meat fair, revealed pits containing numerous skull fragments from cattle, almost certainly associated with hornworking (Sidell in Sloane & Malcolm in prep). Tanning has been suggested as the function of sites in Southwark, Kingston, Clerkenwell, Barking, Romford and Hornchurch. Most available information concerning butchery derives from bone assemblages that were buried or dumped once the meat had been consumed (mainly at domestic and monastic sites).

Milling and other food or drink industries based on grain products

Grain was milled by waterpower from pre-Conquest times, and by windpower from the 12th century. The documented sites of 54 watermills and 23 windmills undoubtedly represent a fraction of the total number. In the 12th century there were several mills in the immediate periphery of the City, mostly watermills using the streams which flowed into the Thames. The Templars' mill (1159) on the east bank of the Fleet was removed in 1307 having caused serious floods and silting at the Fleet mouth; its site may have been located in the Fleet Valley excavations of 1989–91. A picture in *The Builder* (1855, 546) shows a massive stone weir for a watermill at St Mary Clerkenwell. Windmills, known in Europe from the early 13th century, were common in southern England by 1300, and many of the post mills shown around the northern fringes of the City on the copperplate and 'Agas' maps of c 1558 were probably of medieval origin. The mound of an early medieval post mill has been excavated at Warren Farm near Romford. Millstones found on several sites (eg at Cowcross Street) have been regarded as circumstantial evidence of milling nearby.

London had a prominent brewing industry, especially from the 15th century. Relevant archaeological material in the form of large dumps of hop seeds is being brought to light, but there is no synthesis yet in view.

Wool, textiles and shoes

The most important industry in London in the medieval period, according to documentary evidence, was the making of cloth. Finds of implements used in the various stages of wool- and cloth-preparation, such as carding combs, spindlewhorls, loomweights and cloth seals are often found, but their significance needs to be evaluated (cf Pritchard 1984; Crowfoot *et al* 1992). Dyeing and fulling works are known in the Lea Valley, and fulling pits have been found in Southwark and Croydon. Long, parallel lines of stakeholes recorded in Southwark possibly represent tenter-frames. A series of hearths excavated at Swan Lane in the City may have been part of a 13th-century dyeworks (Egan 1991). Archaeologists could make a major contribution to the study of this industry by clarifying the processes involved in cloth production and longer-term changes in the scale, organisation and spatial distribution of clothmaking workshops.

The making of shoes and leather garments was also a major industry in the City, as suggested by leatherworking waste material from many sites (eg dumps of 15th-century leather scraps at Moorfields).

Industrial sites: conclusions

Clarke (1984, 129) argues that the industries of medieval England have attracted surprisingly little archaeological attention given that archaeology can contribute much to an understanding of this subject because of the large gaps in documentary records. Recent studies of medieval artefacts recovered from excavations in London (the Medieval finds from excavations in London series, of which seven volumes have appeared) have sought to assist by considering both typology and evidence of manufacture. The research potential of the great number of finds from waterfront excavations is far from exhausted, and each major new excavation provides new groups of material not found before. In general terms, our understanding of industrial processes and technological innovation in the medieval period is deficient, and there are questions concerning the role of towns as centres of innovation or as places where innovations were most readily adapted for industrial use (Schofield & Vince 1994, 99–127). In addition, it is likely that in London, the largest urban community in England, demarcation between industrial processes and division of labour occurred at an early date, in the 13th century (Miller & Hatcher 1995, 55). Study of artefacts might illuminate this development.

Aspects of the clothmaking and cloth-finishing industries (London was a centre of production from at least the 12th century) will be studied in various publication projects now in progress. Further, archaeological evidence for leatherworking from waterlogged sites in London, in the form of leather objects and waste material, is often considerable. A study should be undertaken to investigate the various stages in the manufacture of leather objects, from tanning pits to the finishing of shoes and other articles. Industries based on horn- and boneworking also require more detailed archaeological studies in the London region. Traces of food-supply industries might well be sought in the smaller towns, including evidence of meat processing (associated with leather-, horn- and boneworking industries), granaries and large bakehouses (bread from Stratford was sold in London in 1309, and from Tottenham in 1332), and establishments for the roasting of malt.

A recent study has considered the principal industries of medieval London in a national context, underlying the concentration of production of luxury items of all kinds in the capital (Blair & Ramsay 1991). Archaeological studies of specialist industries producing luxury items are extremely rare and deserve far more attention: the assemblage of 14th-century Venetian glass found in the City in 1982 (Clark 1983) was an unusual discovery of some importance for studies of long-distance trade and the circulation of prestige goods, as well as stylistic and technological aspects of glass manufacture.

The relationship between production and mass consumption in the capital in the medieval period, on the other hand, is generally not well understood. Aspects of metalworking industries, for example, have been considered recently by Egan and Pritchard (1991), who observe that the sources of the cheaply made mass-produced items often found in City deposits are unknown and need to be determined.

There are some important industries of medieval London, such as that of pewtermaking or embroidery, which are largely invisible to archaeological investigation (due to the reuse of the metal in the former case). There are other areas, for instance the food and drink industries, where evidence has to be brought together from both town and countryside to make a sensible contribution. Technology should be studied by a combination of excavation, analysis in the laboratory, insight from experimentation and even perhaps ethnographic parallels.

Trade

Trading installations and markets

The majority of the evidence for medieval trade at present comes from the City and Southwark (for recent overview, Blackmore 1999). Westminster played a part (Keene 1995a, 15), but the artefactual evidence from there is largely lacking.

In the City, the pre-Conquest landing places at Queenhithe and Billingsgate became inlets or docks during the medieval period as reclamation on adjacent properties extended into the river on either side of them. Although there was some blurring of distinctions, Queenhithe generally

handled upriver traffic, connecting with the market street of Cheapside, and Billingsgate generally handled the downriver trade. Panoramas of the 16th century show both as inlets surrounded by wharves on three sides, each with an arcaded building (probably of c 1450 at Billingsgate) on the upstream side (Schofield 1981a; 1995, 20–1). The house of the Cologne merchants was established upstream of the bridge near Dowgate by 1170; other Germans joined them in the 13th century, and the property was enlarged to become the privileged precinct known as the Steelyard. Fragments of these buildings have been revealed by excavation (Schofield with Maloney 1998, 259–60). In the later medieval period most mercantile activity moved downstream of the bridge, reflecting larger ship sizes and increased customs administration. The first Custom House, built in 1382–3 on the waterfront at the east end of Thames Street, originally comprised a range parallel to the river (Tatton-Brown 1975). A west wing with an open ground-floor arcade in two bays was added to the south end by c 1540. Some of the buildings excavated on private properties south of Thames Street may have been warehouses (eg Rutledge 1994). At Westminster, a guildhall was built in close proximity to the palace and the 14th-century Woolstaple. Little is known of the appearance of these buildings, though the Woolstaple at Westminster is shown in a plan of 1610 (Schofield 1987c). Another medieval guildhall may have existed at Kingston.

The City had several specialised food markets from at least 1300. The meat market at the Shambles and the western fish market (by St Nicholas Cole Abbey) are mentioned in the 12th century, the Smithfield live animal market in the late 12th century (Archer et al 1988, 1–11), a second meat market existed in Eastcheap, and there were general markets in Cornhill and Gracechurch Street by the mid 13th century. By the mid 15th century there were several large market buildings in the City at Queenhithe, Billingsgate, Leadenhall, the Custom House and the Stocks in Poultry (1282, rebuilt 1406–11; an open space nearby from the 11th century, excavated on the Poultry site, may suggest an antecedent; Treveil & Rowsome 1998).

Sites of marketplaces and fairs in the London region have not been excavated, though ephemeral timber structures at Hoxton may have been associated with the market.

Boats and ships

Reused timbers of boats and ships of each century in the period 1100–1500 have been recovered from timber-built wharves and waterfront revetments found in the City, Kingston and Southwark. These all derive from clinker-built vessels (ie constructed with overlapping planks), mostly built with local timber, though there are examples of timbers from Scandinavia. The reused boat timbers provide a useful picture of the means of coastal and maritime trade (Marsden 1981a; 1996).

The majority of finds of ships have been of smaller river craft. The wrecks of two 15th-century vessels have been found in the Thames off Blackfriars. One was an almost complete sailing barge c 14.6m in length, with a mast c 7.7m high designed for a square sail. The other wreck was carrying a cargo of Kentish ragstone from the Maidstone area. The ship remains found beneath Woolwich Power Station in 1912 are believed to

be part of Henry VII's warship *Sovereign*, a carrack constructed in 1488 (see chapter 10 below). Twenty-four logboats, some of which are probably medieval, have also been found in and beside the river.

Shops and trading equipment

The sites of medieval shops along medieval streets and lanes rarely survive because of later street widening or the frequent rebuilding of frontages, but trading equipment (such as weights, coins and balances) has been found on several urban sites.

Documentary studies suggest that there were scores of tiny shops or booths on principal London streets in the 13th century. Running back from major streets such as Cheapside

were *selds*, bazaar-like enclosures often built of stone with stalls within them (Keene 1990), which sometimes specialised in particular commodities (eg Tanners' Seld). Purpose-built blocks of shops or rows are known from documentary evidence from the mid 14th century. In Cheapside the density of shops was much reduced in the later medieval period (Keene 1990). Tools of trade such as coins, weights and measures are occasionally found. The role of London in the medieval money market is outlined in documentary studies (Brooke & Keir 1975, 185–233), and London weights and measures were national standards (Salzman 1964, 43–65).

Trade within the region

So far, there has only been substantial archaeological research on trading patterns in pottery. In the 12th century, most of London's pottery was supplied from areas to the north of the Thames (Middlesex and Hertfordshire) and from a source close to the city (London-type ware). Small amounts of pottery also came from Denham, Ipswich, Stamford (Vince 1985, 37–44) and Surrey. Much of this pottery was carried long distances to London, unlike the pottery found in rural settlements in the hinterland, which was being supplied by local potters; this may indicate that the long-distance pottery trade was a side effect of other kinds of trade between distant areas. Kingston wares and Coarse Border wares from Surrey and Hampshire made their appearance in London in the mid 13th century; the dominance of these wares in the 14th and early 15th centuries (and the appearance of Cheam products in the mid 14th century) suggests increasing dependence on Surrey potteries. Foreign imports from a wide range of European sources also became more common after the mid 14th century. The concentration of the pottery industry in a few mass production centres, noted elsewhere in England in this period, probably resulted from a tendency for marketing networks to be run by middlemen who favoured kilns based near larger towns (Astill 1985).

Interregional and international trade

Some basic commodities were not available in the immediate London area, particularly building stone. As noted above, quarries at Reigate and Maidstone provided two types of ragstone. Chalk and flint were imported from southern England and East Anglia, though chalk was also dug from outcrops on the Thames estuary, and some of the 'dene holes' in Bromley may be medieval. Purbeck marble

was imported from Dorset for decorative stonework in halls and churches from the second half of the 12th century, and its widespread use in London buildings (and for burial slabs) probably boosted its use as a symbol of dignity (marble had overtones of nobility and authority throughout Europe). Slate for roofing came from Wales, Devon, Cornwall and the Lake District.

Some imported commodities which were not distributed throughout England, but which stayed in London and its region, are readily identified. Caen limestone from Normandy was imported for prestigious religious and royal buildings, and the homes of the secular elite, and hones and quernstones came from Norway and the Rhineland. Throughout the period, various kinds of pottery came from France (Normandy, Saintonge), Germany (mostly after c 1350, stonewares) and more rarely from Italy and Spain. A small number of fragments of exotic textiles have been recovered, which originated in Islamic Spain and even China (a piece of damask in a context of the 14th century). To study trade from artefacts alone, however, will give a distorted picture and will overemphasise the importance of pottery (Blackmore 1999, 48–54).



The Blackfriars Ship 3 (City of London) under excavation. It was probably constructed c 1400 (English Heritage)



Terracotta window from Layer Marney. The mullions are from an identical mould to those used at St John Clerkenwell

As the London pottery and artefact typologies become better known and used elsewhere in Britain, it will be easier to begin study of London's role in redistribution of imports throughout much of England. The parallel study of the distribution of London-area products to sites abroad has already begun: London specialists have been of service dating English pottery in Bergen, Norway, which has the largest known collection of London-area Shelly Sandy ware (of 1150–1220) outside south-east England (Blackmore & Vince 1994).

Trade: conclusions

The existence of many towns in England in the 12th and 13th centuries, along with markets and fairs and the increased use of money as a medium of exchange, suggests that the national economy had moved beyond the purely subsistence stage (Bolton 1980, 43–4). Market halls and waterfront installations are important sites, both for the variety of possible artefactual evidence, and because of their significance as civic enterprises. The form and functions of market areas and buildings in the City before those known in the 15th century need to be established, and a great deal more needs to be known about public trade buildings in towns elsewhere in the region.

Studies of traded commodities should include more thin-section analysis to refine pottery typologies, dating frameworks and the identification of imported wares, more work on cloth seals to extend knowledge of traded cloths (both from Europe and from centres in England), the identification of foreign metalwork by trace-element analysis to establish trade networks in metals, and further study of the equipment of trading, particularly measures (especially as London weights were national medieval standards). The recent reviews of dated finds from London stand almost alone in British archaeology, but it is hoped that catalogues like the London medieval finds series will be produced for other urban centres, at least the larger ones, to enable more effective studies of trade between towns in Britain.

Urban demand certainly influenced the character of meat provision, with specialities such as veal which may be detected in urban bone assemblages. While such refinements might be seen first in the metropolis, other towns in contact with the capital might also have taken part in London's food network. The known post-medieval specialisation of market gardening in the environs of London may have had a late medieval origin.

The documentary evidence for overseas trade only begins to appear in force during the 13th century (Miller & Hatcher 1995, 182–225), and future archaeological work may clarify the picture particularly before 1200. A number of European zones had strong links with London, suggesting the need also for bilateral research projects to explore these links from an archaeological perspective. The most important areas in this context are northern Spain, Bordeaux and Gascony in the 13th and 14th centuries, the Low Countries in the 14th and 15th centuries, the Baltic and the Hanseatic League in the 12th to 15th centuries, and Scandinavia (Blackmore 1999). Exploration of these links, as illustrated largely by artefacts at either end of a trade route, may produce a picture complementary or contrasting to that provided by documentary history.

Conclusions

This chapter has attempted a brief survey of existing knowledge and of the gaps in that knowledge concerning medieval London and its surrounding region. For this period, as for others, archaeologists should strive to add significant new ideas or theories, and test or challenge existing views, in collaboration with historians (social, economic and architectural).

Some of the merits of archaeological discoveries are now, after nearly three decades of intensive work, plain to see. The huge artefactual assemblages in the waterfront dumps have been selectively catalogued, and are of importance in many ways: as indicators of many new aspects

of material culture which can now be studied, as standard works for the further study of material culture in other towns in Britain and abroad, and as an index of the variety of industrial and cultural practices in the central urban area. Waterfront archaeology, developed in London to an extent only paralleled in a few cities of continental Europe, has also greatly enriched our views about the development and appearance of towns. The body of work behind the series of eight monographs on London's religious houses, now in production or already published, will throw new light on many aspects of the capital's religious and urban life, its architecture, and its demography through study of the cemeteries.

A further notable advance is the bringing together of archive information of interventions going back to 1900 by the Museum of London (of which the establishment of LAARC, the archive of material and records, is the most significant). This is no doubt true of all the archaeological periods, but the sheer amount of material culture in the archive for the medieval period is probably at present greater than for any other comparable 400-year period in London's history. For the whole range of building complexes, from palaces to monasteries, and parish churches to domestic accommodation, the scattered product of archaeologists over the last century can be fused together to make meaningful contributions. These are further illuminated by the increased intensity of documentary studies in recent years. This will lead to the filling of many gaps by study of the material in the archive.

Suggestions about the distribution of certain monument types which can be seen in the maps for this chapter have already been made, for instance in the cases of smaller rural settlements and monastic houses. The medieval maps are well populated with symbols, since many sites are known through documentary references and occasionally because of standing buildings (especially parish churches), while only a proportion (though a significant one) are known through archaeological survey or excavation. But there are many more sites to identify and explore. Some monument types, such as churches, defences and settlements, are relatively well known: all the medieval villages around London, apart from the few deserted settlements, were mapped showing their location and extent by Roque and others in the mid 18th century. Other medieval monument types are less known: the true extent of industrial sites, for instance, most medieval farms, and many sites of the elite in the countryside, despite the number mapped here.

Large areas of ignorance still abound. The relationship between London and its region is still poorly understood. The physical manifestations of agriculture are hardly studied. Archaeologists have produced catalogues of artefacts but have not yet gone much further to consider innovation or the role of London in the extended networks of production which included other towns and rural districts. There has been much work on sites of high prestige, but virtually nothing on the urban or rural poor. It may be that archaeology cannot make a realistic contribution in some of these areas, and when there is doubt, there should be studies of feasibility to see what the archaeological agenda might comprise.

This chapter, like the body of recent work it attempts to summarise, has moreover said more about the archaeology of the urban centres (particularly the City of London) than that of the large surrounding rural area. This should now be remedied. It is not only a matter of the London-based archaeologists looking outward and working more in the suburbs; we would also encourage colleagues working in the surrounding counties to look at the relationships between their areas and the capital.

London was a centre of wealth from the early 11th century, and many archaeological and historical studies have and will contribute to study of London's increasingly dominant role in England, as a place of growing interest to the monarchy, and therefore as a magnet for the introduction of luxuries from all over Europe and occasionally beyond. This also meant that the central area and Southwark were homes to several immigrant communities from continental Europe, of whom the Dutch were the most numerous.

There has been comparatively little work by historians, in recent years, on the economy of medieval London, and the archaeological contribution should be carefully assessed. Similarly, in 1995 it could be written that 'there has been comparatively little recent work on the religious houses of medieval London' (Barron 1995, 26), and this will be remedied over the next few years by the eight monographs on the archaeology of monasteries. This will hopefully be of significance to historians.

It is clear, finally, that the period divisions which sandwich this period, and which are no doubt necessary for ordering the mass of data (both archaeological and documentary), are in danger of being misleading. Although there were some fundamental changes to London and its region at the Norman conquest, many of the economic and social trends had started well before, in the late 9th century. The other end of the period is even more arbitrary, though the Reformation and Dissolution were events with clear archaeological repercussions. There was change throughout, though more in towns than in the countryside. Thus many of the features of social organisation outlined in this chapter should ideally be studied in their longer and richer context.

G A Z E T T E E R

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
BD1	BARKING AND DAGENHAM	INN	060662	544142	183991		Barking, Medieval public house. North Street.
BD2	BARKING AND DAGENHAM	KILN LIME	060931	543960	183730		Town quay. Limekiln.
BD3	BARKING AND DAGENHAM	WATERMILL	060487	543900	183750		Town quay. Watermill.
BD4	BARKING AND DAGENHAM	RABBIT WARREN	060499	546360	184320		Bevan Avenue. Rabbit warren.
BD5	BARKING AND DAGENHAM	WINDMILL	060497	545800	184020		Windmill.
BD6	BARKING AND DAGENHAM	MANOR HOUSE	061213	547690	187600	DA-WH88	Wangey Hall Station Road.
BD7	BARKING AND DAGENHAM	MANOR HOUSE	061099	548050	186356		Valence WWay.
BD8	BARKING AND DAGENHAM	MANOR HOUSE	060630	544140	184420		Malmaynes. Linton Road.
BD9	BARKING AND DAGENHAM	MOATED MANOR HOUSE	060494	546250	184920		Dagenhams, 1214. Mayesbrook Park
BD10	BARKING AND DAGENHAM	MANOR HOUSE	060942	544120	183780		Berengels. Heath Street.
BD11	BARKING AND DAGENHAM	MANOR HOUSE	061251	544620	183840		Westbury. Ripple Road.
BD12	BARKING AND DAGENHAM	MANOR HOUSE	061234	545710	183810		Eastbury. Eastbury Square.
BD13	BARKING AND DAGENHAM	MOATED MANOR HOUSE	060179	548920	183530		Cockermouth. Ripple Road.
BD14	BARKING AND DAGENHAM	MANOR HOUSE	060548	549730	183910		East Hall. Dagenham Old Park.
BD15	BARKING AND DAGENHAM	MANOR HOUSE	060162	547820	184980		Parsloes. Gale Street.
BD16	BARKING AND DAGENHAM	PARISH CHURCH	215002	544060	183890	BA-SM86	St Margaret Barking, 12th century.
BD17	BARKING AND DAGENHAM	HOSPITAL LEPER	060202	544159	183970		St Lawrence, 12th century. East Street Barking.
BD18	BARKING AND DAGENHAM	CHAPEL	060550	543990	183880		Chantry St Margaret's churchyard.
BD19	BARKING AND DAGENHAM	MOATED SITE	061103	549490	185980		Fristling, 1287.
BD20	BARKING AND DAGENHAM	TANNERY	061301	549800	186220		Tannery at Ashbrooks.
BD21	BARKING AND DAGENHAM	WAYSIDE CROSS	060626	548950	188220		Wayside Cross.
BD22	BARKING AND DAGENHAM	MANOR HOUSE	060169	549500	184300		Broad Street (east side). Gallance Manor.
BD23	BARKING AND DAGENHAM	CHAPEL CHANTRY	062388	543850	184500		Chapel field.
BD24	BARKING AND DAGENHAM	DOCK	061084	545350	182530		Dampers dock.
BD25	BARKING AND DAGENHAM	RIVER EMBANKMENT	060534	548790	183530		Highams wall.
BD26	BARKING AND DAGENHAM	TENTERGROUND	060649	544190	184460		Tenter field.
BD27	BARKING AND DAGENHAM	PARISH CHURCH	215006	550040	184530		SS Peter and Paul Dagenham Crown Street.
BD28	BARKING AND DAGENHAM	STOREHOUSE	061124	544132	183892		Storehouse.
BD29	BARKING AND DAGENHAM	SETTLE 12	0	550300	184600		Dagenham.
BD30	BARKING AND DAGENHAM	CONDUIT	061209	543750	184580		Conduit.
BD31	BARKING AND DAGENHAM	SETTLE 32	0	544100	184200		Barking.
BD32	BARKING AND DAGENHAM	MANOR HOUSE	060656	544365	184104		Fulks.
BD33	BARKING AND DAGENHAM	SETTLE 4	061075	545700	184450		Upney.
BD34	BARKING AND DAGENHAM	LEAT	060938	543847	183842		Leat.
BD35	BARKING AND DAGENHAM	LEAT	061120	543898	183810		London Road.
BD36	BARKING AND DAGENHAM	TANNERY	062599	544160	184760		Tanner Street.
BD37	BARKING AND DAGENHAM	WATERFRONT	062577	543750	183900	BA-FH95	West Bank.
BD38	BARKING AND DAGENHAM	RELIGIOUS HOUSE	0	544000	183900		Barking religious complex Benedictine nuns (SAM 107).
BA1	BARNET	KILN POT	081832	523300	196400		Kings Road. Arkley pottery kilns, 13th century (South Herts Grey ware).
BA2	BARNET	WINDMILL	081870	524000	194000		Windmill near Totteridge.
BA3	BARNET	IRONWORKINGS	082229	526440	193960		1264. High Road Whetstone.
BA4	BARNET	MOATED MANOR HOUSE	081837	524440	197650		Old Fold, 12th century? Old Fold Lane.
BA5	BARNET	BATTLE SITE	081838	524600	197700		Battle of Barnet, 1471. Hadley Green.
BA6	BARNET	BURIAL GROUND	081881	523400	194550		Battle of Barnet funerary mound, 1471. Totteridge Park.
BA7	BARNET	MANOR HOUSE	081869	524550	191400		Totteridge.
BA8	BARNET	HOUSE/HALL	081883	526200	192400		Bishop of London's lodge. Lodge Lane.
BA9	BARNET	MANOR HOUSE	081887	527330	193750		Friem Barnet camera (Hospitalers). Friary Park.
BA10	BARNET	MANOR HOUSE	081926	522890	189530		Hendon. Church End.
BA11	BARNET	MOATED MANOR HOUSE	081886	525520	190030	MHB91	Finchley (SAM 150).
BA12	BARNET	MANOR HOUSE	082236	528000	192000		Halliwick or hollick. Coiney Hatch Lane.
BA13	BARNET	MOATED MANOR HOUSE	081929	523500	187000		Cliterowes (St Bartholomew's priory). Clitterhouse Farm.
BA14	BARNET	MANOR HOUSE	081925	524900	187200		Hadford, 13th century. Hadford Road.
BA15	BARNET	MOATED MANOR HOUSE	081940	524640	185920		Farm Avenue.
BA16	BARNET	PARISH CHURCH	221684	522870	189560		St Mary, 12th century. Church End.
BA17	BARNET	PARISH CHURCH	221686	527710	194555		St Mary the Virgin Barnet, 11th century. Church Hill Road.
BA18	BARNET	PARISH CHURCH	221726	527215	192945		St James Friem Barnet, 12th century. Friem Barnet Lane.
BA19	BARNET	PARISH CHURCH	081846	525020	197410		St Mary the Virgin Hadley, 12th century. Hadley Green Road.
BA20	BARNET	TITHE BARN	221870	527320	196260		Christ the King abbey church.
BA21	BARNET	PARISH CHURCH	221925	519280	191690		St Margaret, Edgware. ?12th century.
BA22	BARNET	SETTLE 14	0	527400	193000		Friem Barnet.
BA23	BARNET	SETTLE 12	0	525300	197800		Monken Hadley.
BA24	BARNET	SETTLE 4	081884	525300	190300		Temple Croft.
BA25	BARNET	PARISH CHURCH	222005	524560	196460		St John the Baptist. High Barnet 13th century.
BA26	BARNET	SETTLE 12	0	528200	194800		East Barnet.
BA27	BARNET	SETTLE 29	0	524800	196800		High Barnet.
BA28	BARNET	PARISH CHURCH	221808	524925	190525		St Mary Finchley, probably 12th century (Norman aumbry and font bowl discovered in the 19th century). Hendon Lane.
BA29	BARNET	PARISH CHURCH	081879	524650	194150		St Andrew, 13th century. Totteridge.
BA30	BARNET	SETTLE 12	0	524900	194400		Totteridge.
BA31	BARNET	SETTLE 4	084306	522000	192000		Mill Hill.
BA32	BARNET	SETTLE 12	0	525300	190700		Finchley.
BA33	BARNET	SETTLE 12	084238	524500	196400		Barnet.
BA34	BARNET	SETTLE 12	0	522800	189700		Hendon.
BA35	BARNET	SETTLE 4	0	522500	195400		Arley.
BA36	BARNET	COIN HOARD	082341	528500	191000		Finchley Common.
BA37	BARNET	QUARRY	083643	524610	196540	TAP95	Tapster Street.
BA38	BARNET	WINDMILL	083305	524700	197650		Mill Corner.
BA39	BARNET	WINDMILL	084305	522000	192000		Mill Hill.
BX1	BEXLEY	MOATED MANOR HOUSE	0	552700	176700		Howbury House, 12th century (SAM 106).
BX2	BEXLEY	MANOR HOUSE	0	550100	174300		Hall Place, 1241 (SAM 105).

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
BX3	BEXLEY	RELIGIOUS HOUSE	212000	547900	178800		Abbey of St Thomas the Martyr Lesnes, Augustinian canons, 1178–1525 (SAM 103). Abbey Road. A group of English and imported medieval pottery from the trade in early Hispano-Moresque pottery. St Mary the Virgin Old Bexley, 12th century. Manor Road.	BY14	BROMLEY	COCKPIT	070629	544300	169900		Chislehurst common cockpit.
BX4	BEXLEY	PARISH CHURCH	212042	549785	173443		St John the Baptist Erith, 12th century. West Street.	BY15	BROMLEY	PALACE	223163	540608	169028		Ruins of the Old Palace.
BX5	BEXLEY	PARISH CHURCH	212069	550763	178724		St Paulinus Crayford, 1100.	BY16	BROMLEY	MANOR HOUSE	070885	537500	169550		Manor house Beckenham.
BX6	BEXLEY	PARISH CHURCH	212057	551198	175123		All Saints Sidcup, 11th century. Rectory Lane.	BY17	BROMLEY	MANOR HOUSE	070891	538500	167000		Langley manor house.
BX7	BEXLEY	PARISH CHURCH	212059	547580	171290		Flemingges wall.	BY18	BROMLEY	SETTLE 12	0	543900	163000		Holwood/Keston.
BX8	BEXLEY	EMBANKMENT	070507	549500	179200		Bexley manor.	BY19	BROMLEY	MANOR HOUSE	070790	546660	166420		Bark Hart house.
BX9	BEXLEY	MANOR HOUSE	071619	548000	175000		?Danson, 13th century.	BY20	BROMLEY	MANOR HOUSE	223133	544600	169770		Manor house.
BX10	BEXLEY	MANOR HOUSE	070807	547400	175100		Hall Place.	BY21	BROMLEY	MANOR HOUSE	070823	537920	169950		Foxgrove manor.
BX11	BEXLEY	MANOR HOUSE	070440	550140	174310		Blendon Place, 1301.	BY22	BROMLEY	MANOR HOUSE	070906	546300	161350		Norsted manor.
BX12	BEXLEY	MANOR HOUSE	070524	547720	174140		Lessness Heath.	BY23	BROMLEY	SETTLE 12	0	547400	169100		St Pauls Cray.
BX13	BEXLEY	SETTLE 10	0	549100	178200		East Wickham.	BY24	BROMLEY	SETTLE 12	071562	547200	167900		St Mary Cray.
BX14	BEXLEY	SETTLE 12	0	546700	177000		Bexley mill.	BY25	BROMLEY	SETTLE 14	0	538900	164800		West Wickham.
BX15	BEXLEY	MILL	071099	549630	173480		Manor farm.	BY26	BROMLEY	SETTLE 12	0	544500	169800		Chislehurst.
BX16	BEXLEY	SETTLE 7	0	548500	171800		Old Bexley.	BY27	BROMLEY	SETTLE 12	0	544500	164300		Famborough.
BX17	BEXLEY	SETTLE 12	0	549700	173400		Ruxley.	BY28	BROMLEY	SETTLE 12	0	548000	163900		Chelsfield.
BX18	BEXLEY	SETTLE 2	070917	548600	170500		St Nicholas Wickham, Wickham Lane.	BY29	BROMLEY	SETTLE 12	0	537400	169700		Beckenham.
BX19	BEXLEY	PARISH CHURCH	212071	546775	176948		Crayford.	BY30	BROMLEY	SETTLE 23	0	546800	166500		Orpington.
BX20	BEXLEY	SETTLE 12	0	551200	175200		Sidcup.	BY31	BROMLEY	SETTLE 20	0	540200	169400		Bromley.
BX21	BEXLEY	SETTLE 12	0	547700	171300		Erith.	BY32	BROMLEY	SETTLE 1	070918	544500	166500		Crofton.
BX22	BEXLEY	SETTLE 12	0	550800	178800		Lesnes Abbey Woods.	BY33	BROMLEY	SETTLE 12	0	544500	159800		Cudhan.
BX23	BEXLEY	WHARF	070995	548000	178500			BY34	BROMLEY	SETTLE 12	0	543200	161600		Downe.
BT1	BRENT	WATERMILL	051067	520580	186400		Blackbird Hill. Watermill near Neasden.	BY35	BROMLEY	KILN TILE	070659	542000	163380		Holwood Park.
BT2	BRENT	WATERMILL	051066	518400	183200		Riverside gardens. Vicar's bridge watermill, 1236.	BY36	BROMLEY	PARISH CHURCH	222995	540130	169250		SS Peter and Paul Bromley. 15th century. Church Road.
BT3	BRENT	KILN TILE	050681	521500	183500		Tilekiln near Harlesden, 1438.	BY37	BROMLEY	PARISH CHURCH	223011	541840	163000		Keston, 12th century. Church Road.
BT4	BRENT	WINDMILL	051087	520900	188400		Kingsbury Road. Windmill.	BY38	BROMLEY	PARISH CHURCH	223013	544420	169920		St Nicholas Chislehurst. 15th century. Church Row.
BT5	BRENT	SETTLE 4	051051	518300	187500		Preston.	BY39	BROMLEY	PARISH CHURCH	070914	544380	164110		St Giles Famborough.
BT6	BRENT	SETTLE 4	051052	518800	185200		Wembley Green. High Road.	CA1	CAMDEN	RELIGIOUS HOUSE	082088	531500	181700		Convent of Ely.
BT7	BRENT	MANOR HOUSE	050841	518600	187500		Uxendon, 14th century. Bakerloo railway line.	CA2	CAMDEN	WATERMILL	080454	530250	182950		Watermill on the Fleet at Pentonville.
BT8	BRENT	PARISH CHURCH	051042	519090	185390		St Michael Tokyngton.	CA3	CAMDEN	HOSPITAL	081523	531170	181260		Later government office and chapel: <i>domus conversorum</i> 1232; The Rolls. Chancery Lane.
BT9	BRENT	ENCLOSURE	050350	520640	186870		St Andrew's old church, Neasden.	CA4	CAMDEN	RELIGIOUS HOUSE	082007	531060	181540	SNB00	Knights Templar (I) 1135–45 later Lincoln's Inn (II). Chancery Lane.
BT10	BRENT	MANOR HOUSE	051056	519600	185300		Tokyngton, 14th century. Oakington Manor Drive.	CA5	CAMDEN	HOSPITAL LEPER	080389	528350	186850		Highgate Hill. Leper hospital: St Anthony, 1473.
BT11	BRENT	MOATED MANOR HOUSE	050843	523800	184600		Multiple moated Mapesbury. Willesden Lane.	CA6	CAMDEN	HOSPITAL LEPER	081798	529930	181240		St Giles (Burton Lazars), 1101. St Giles High Street.
BT12	BRENT	HOUSE/HALL	050359	520740	183290		East Twyford. Waxlow Road Stonebridge.	CA7	CAMDEN	MANOR HOUSE	082072	529300	182400	EUR79	Tottenham Court, 13th century. 250 Euston Road.
BT13	BRENT	PARISH CHURCH	052806	521450	184760		St Mary Willesden, 1150 (probably Norman), with shrine of Our Lady of Willesden by 14th century. Neasden Lane.	CA8	CAMDEN	MANOR HOUSE	082086	529000	185360		Cantelow manor house.
BT14	BRENT	PARISH CHURCH	221188	520635	186862		St Andrew Kingsbury, 12th century. Old Church Lane.	CA9	CAMDEN	MANOR HOUSE	082000	527100	185100		Belsize manor house.
BT15	BRENT	HERMITAGE	050845	517000	185000		Sudbury Common.	CA10	CAMDEN	MOATED MANOR HOUSE	082011	529010	184900		Kentish Town. Near Kentish Town Road.
BT16	BRENT	MANOR HOUSE	052839	520480	187470		Fryent manor house.	CA11	CAMDEN	PARISH CHURCH	082026	526300	185600		St Luke Hampstead.
BT17	BRENT	MANOR HOUSE	053070	520500	186700		Brancastors manor.	CA12	CAMDEN	MANOR HOUSE	082009	527900	184150		Rugmere. Erskine Road.
BT18	BRENT	MANOR HOUSE	052825	521190	188600		Kingsbury manor.	CA13	CAMDEN	MANOR HOUSE	082081	530000	181800		13th century. Great Russell Street.
BT19	BRENT	SETTLE 4	0	520500	188600		Kingsbury Green.	CA14	CAMDEN	MANSION	082065	530400	182200		Earl of Bath's Inn (Hankford's house before 1418). Grenville Street.
BT20	BRENT	SETTLE 4	0	522500	184600		Wilkesden Green.	CA15	CAMDEN	MANSION	082058	531100	181900		Furnival Inn.
BT21	BRENT	SETTLE 4	052804	522700	185200		Sherrick Green.	CA16	CAMDEN	PALACE	081799	531430	181650		Ely Place.
BT22	BRENT	SETTLE 4	053077	523820	182550		Kensal Green.	CA17	CAMDEN	MANSION	081520	531090	181360		Staple Inn. Chancery Lane.
BT23	BRENT	SETTLE 4	0	520500	182900		East Twyford.	CA18	CAMDEN	MANSION	0	530900	181500		Lincoln's Inn (II) bishop of Chichester.
BT24	BRENT	SETTLE 6	0	518900	182900		West Twyford.	CA19	CAMDEN	CONDUIT	202619	530672	182010		White Conduit.
BT25	BRENT	MANOR HOUSE	053073	523830	184280		Brondesbury.	CA20	CAMDEN	SETTLE 4	082063	530400	182900		Battle Bridge.
BT26	BRENT	SETTLE 6	0	523800	184200		Brondesbury.	CA21	CAMDEN	INNS OF COURT	202308	530900	181500		Lincolns Inn.
BT27	BRENT	SETTLE 4	0	522500	185800		Dollis Hill.	CA22	CAMDEN	SETTLE 4	082052	529000	184000		Camden Town.
BT28	BRENT	SETTLE 4	0	521200	183800		Fortune Gate.	CA23	CAMDEN	INNS OF CHANCERY	202768	531148	181566		Staple Inn.
BT29	BRENT	SETTLE 4	051055	519000	186600		Forty Green.	CA24	CAMDEN	INNS OF COURT	201944	530905	181705		Grays Inn.
BT30	BRENT	MANOR HOUSE	052835	521440	183630		?Harlesden.	CA25	CAMDEN	SETTLE 4	082047	525500	185200		West End.
BT31	BRENT	CHAPEL	052814	519090	185340		Tokington chapel.	CA26	CAMDEN	SETTLE 7	0	525800	183600		Kilburn.
BT32	BRENT	SETTLE 4	053076	521700	183700		Harlesden.	CA27	CAMDEN	SETTLE 1	0	528400	183400		Rugmere.
BT33	BRENT	SETTLE 12	0	520600	186800		Kingsbury.	CA28	CAMDEN	BREWHOUSE	082020	529870	181410		Tottenham Court Road.
BT34	BRENT	SETTLE 4	0	520300	189000		Roe Green.	CA29	CAMDEN	PIPE	082347	530870	181925		Theobald's Road.
BT35	BRENT	SETTLE 8	0	519500	184800		Tokyngton.	CA30	CAMDEN	SETTLE 12	082044	528950	185780		Kentish Town.
BT36	BRENT	SETTLE 14	0	521500	184900		Wilkesden.	CA31	CAMDEN	SETTLE 2	082053	529820	183480		St Pancras.
BT37	BRENT	SETTLE 6	0	518600	187100		Oxtenton.	CA32	CAMDEN	CONDUIT	082018	530320	182000		Conduits. Greyfriars conduit: built 1255–8 extended 1305. 20 Queen Square.
BT38	BRENT	SETTLE 4	082080	524400	184000		Shoot Up.	CA33	CAMDEN	CONDUIT	082016	530610	182060		Lambs conduit–Holborn conduit, 1361. Lamb's Conduit Street.
BT39	BRENT	SETTLE 4	0	520200	189500		Turnworth.	CA34	CAMDEN	PARISH CHURCH	081796	529800	183450		St Pancras, 11th century. Pancras Road.
BT40	BRENT	SETTLE 4	053080	521500	185850		Neasden.	CA35	CAMDEN	PARISH CHURCH	201785	531415	181670		St Etheldreda.
BT41	BRENT	SETTLE 6	053081	522550	186770		Oxgate.	CA36	CAMDEN	RELIGIOUS HOUSE	081797	525670	183780		Formerly hermitage: SS Mary and John the Baptist, Augustinian canonesses 1130–1536, Knights Hospitaller 1536–40. Belsize Road.
BT42	BRENT	CROSS	050689	516500	185600		Near Swan Public House.	CT1	CITY OF LONDON	PARISH CHURCH	041336	532150	181110		St Augustine Watling Street, c 1148.
BT43	BRENT	KILN	053089	519400	187400		Uxendon Hill.	CT2	CITY OF LONDON	PARISH CHURCH	041285	532173	181226		St Michael le Querne, by 1138.
BT44	BRENT	KILN TILE	053075	525400	183660		Kilburn High Road.	CT3	CITY OF LONDON	PARISH CHURCH	041300	532173	181290		St Leonard Foster Lane. Foster Lane west side.
BT45	BRENT	MANOR HOUSE	052811	516500	185500		Sudbury (archbishop of Canterbury). ?12th–14th century.	CT4	CITY OF LONDON	METALWORKING	041690	532480	181250	GUY88	Guildhall Yard. Kilns: 13th-century bronze-smelting.
BT46	BRENT	WINDMILL	053083	522000	185700		Gladstone Park.	CT5	CITY OF LONDON	STEELYARD	041619	532580	180750	UTA87	Cannon Street Wharf/trading enclave: Cologne guildhall/hall of Teutons/Steelyard.
BY1	BROMLEY	PARISH CHURCH	070501	548520	170242		St Botolph Old Church.	CT6	CITY OF LONDON	MANSION	041843	533073	181114		1–6 Leadenhall Street. Leadenhall market chapel and school.
BY2	BROMLEY	PARISH CHURCH	222997	547960	164000		St Martin of Tours Chelsfield, 11th century. Church Road.	CT7	CITY OF LONDON	BELL FOUNDRY	041585	533270	181100	LDL88	Bell-founding, 14th–15th centuries.
BY3	BROMLEY	PARISH CHURCH	222992	546660	166410		All Saints Orpington, 12th century. Church Hill.	CT8	CITY OF LONDON	CLAY PITS	0	531330	180855		King's Bench Walk. Clay pits, 12th century on the Thames foreshore.
BY4	BROMLEY	PARISH CHURCH	0	548500	170300		Ruxley, 11th century (SAM 104).	CT9	CITY OF LONDON	JEWELLERY MANUFACTURE 0	0	531750	180880		Baynard's Castle. Jewellery manufacture, 14th–15th centuries.
BY5	BROMLEY	PARISH CHURCH	223129	547390	169085		St Paulinus St Paul's Cray, 12th century. Main Road.	CT10	CITY OF LONDON	BELL FOUNDRY	041453	533580	1812		

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
CT19	CITY OF LONDON	BRIDGE	090688	532880	180640		London Bridge.	CT97	CITY OF LONDON	PARISH CHURCH	041373	532500	180865		St Michael Paternoster Royal.
CT20	CITY OF LONDON	GATE	041954	533556	181160	GM7	Aldgate.	CT98	CITY OF LONDON	PARISH CHURCH	041452	533580	181215	SAB87	St Botolph Aldgate, 1125.
CT21	CITY OF LONDON	GATE	040465	532150	181463	GM6	Aldersgate, 1–6 Aldersgate Street.	CT99	CITY OF LONDON	PARISH CHURCH	041852	533175	180925		St Gabriel Fenchurch, 1108.
CT22	CITY OF LONDON	GATE	041929	533212	181447	BTB89	Bishopsgate, 105–106 Bishopsgate.	CT100	CITY OF LONDON	PARISH CHURCH	041500	532500	181480	GM13	St Michael Bassishaw, 1158–80.
CT23	CITY OF LONDON	GATE	040430	531790	181155	VAL88	Ludgate, 37–39 Ludgate Hill.	CT101	CITY OF LONDON	COMPANY HALL	0	532800	180625		Upper Thames Street. Fishmongers' Hall, 13th century.
CT24	CITY OF LONDON	GATE	040498	532710	181555	MOO80	Moorgate.	CT102	CITY OF LONDON	RELIGIOUS HOUSE	0	531300	181400		Dominican Friary first site, 1221–74. Holborn.
CT25	CITY OF LONDON	GATE	040447	531827	181397	NWG85	Newgate, Central Criminal Court.	CT103	CITY OF LONDON	PARISH CHURCH	041504	532553	181227		St Olave Jewry, c 1127.
CT26	CITY OF LONDON	CEMETERY	041264	532245	181712	WFG59	Jewish cemetery. Thomas More House, Barbican.	CT104	CITY OF LONDON	CHAPEL	041498	532504	181360		St Mary Magdalen Milk Street, c 1111–35.
CT27	CITY OF LONDON	MANSION	0	532155	181750		Abbot of Walden's Inn, Aldersgate Street.	CT105	CITY OF LONDON	PARISH CHURCH	041851	533048	180817		St Andrew Hubbard, 1108.
CT28	CITY OF LONDON	CASTLE	041200	531820	180850		Baynard's Castle (I) late 11th century, demolished 1283. 135 Queen Victoria Street.	CT106	CITY OF LONDON	PARISH CHURCH	041811	533045	181226		St Martin Outwich, 1217.
CT29	CITY OF LONDON	CASTLE	041205	531770	180990	PIC87	Montfichet's tower, late 11th century, demolished 1283. Ludgate Hill.	CT107	CITY OF LONDON	PARISH CHURCH	041507	532536	181232		St Martin Pomary Church, c 1176.
CT30	CITY OF LONDON	METALWORKING	0	533310	181250	BAX95	Baltic Exchange. 12th–13th centuries. Including nitric acid distilling.	CT108	CITY OF LONDON	PARISH CHURCH	041508	532988	181331		St Peter le Poor Church, 1181.
CT31	CITY OF LONDON	BELLMaking	0	532610	181230		Friars of the Sack, after 1257 before 1270. Junction of Princes Street and Lothbury or Coleman Street.	CT109	CITY OF LONDON	PARISH CHURCH	041494	532826	181198		St Bartholomew Exchange, c 1108–58.
CT32	CITY OF LONDON	RELIGIOUS HOUSE	041884	533200	181305	HEL86	St Helen Bishopsgate, Benedictine, 13th century, before 1216. 3–5 St Helen's Place.	CT110	CITY OF LONDON	PARISH CHURCH	041810	533080	180760	SMY88	St Mary at Hill Church, 1170–97.
CT33	CITY OF LONDON	MANSION	0	533060	180720	LOV81	Abbot of Waltham's Inn, 21–24 Lovat Lane.	CT111	CITY OF LONDON	REVTMENT	042168	532030	180830	TL74	Several stages of reclamation and river wall, 13th century to 1440s.
CT34	CITY OF LONDON	RELIGIOUS HOUSE	041489	532970	181373	AST87	Austin Friars, 1253–1538, Austin Friars Square.	CT112	CITY OF LONDON	PARISH CHURCH	041419	532975	180904		St Benet Gracechurch Street, c 1181.
CT35	CITY OF LONDON	HOSPITAL	221008	531880	181600		St Bartholomew, Augustinian, 1123. Church dates back to 1184 and was formerly the hospital chapel. West Smithfield.	CT113	CITY OF LONDON	PARISH CHURCH	041407	532675	180929		St Swithun London Stone, late 12th century. Deleted no.
CT36	CITY OF LONDON	MANSION	0	531750	181670		Prior of Sempringham's Inn, before 1391. Long Lane/Charterhouse Street.	CT114	CITY OF LONDON	PARISH CHURCH	200814	533302	180932		All Hallows Staining, 1170–97.
CT37	CITY OF LONDON	MANSION	0	533140	181110		Zouche's Inn, 1382.	CT115	CITY OF LONDON	PARISH CHURCH	041496	532900	181186		St Benet Fink Church, 1197–1212.
CT38	CITY OF LONDON	MANSION	041223	531862	181305		Lovell's Inn, 1328, Warwick Square.	CT116	CITY OF LONDON	COLLEGE	0	533085	181060	WIV88	Leadenhall.
CT39	CITY OF LONDON	MANSION	041252	532285	181598		Neville's Inn, 1357, Barber-Surgeons' Hall garden.	CT117	CITY OF LONDON	PARISH CHURCH	041384	532072	180887	PET81	St Peter Paul's Wharf, c 1170.
CT40	CITY OF LONDON	SYNAGOGUE	0	532500	181320	GDH85	12th-century feature interpreted as a mikveh. 81–85 Gresham Street (rear of).	CT118	CITY OF LONDON	PARISH CHURCH	200720	531780	181460		St Sepulchre without Newgate (also Holy Sepulchre), 1137.
CT41	CITY OF LONDON	SYNAGOGUE	041520	532610	181340		Before 1272; a new one built nearby, thus two sites. 35–40 Coleman Street.	CT119	CITY OF LONDON	PARISH CHURCH	041828	533268	181320	GM115	St Mary Axe Church, late 12th century.
CT42	CITY OF LONDON	RELIGIOUS HOUSE	041250	532468	181587		13th century, later hospital (Augustinian) Elysnye Spital, 1331. London Wall.	CT120	CITY OF LONDON	PARISH CHURCH	041405	532572	180915		St John the Baptist (Walbrook), 1127–53.
CT43	CITY OF LONDON	MANSION	042123	533330	181100		Abbot of Evesham, 1426. 42–49 Leadenhall Street.	CT121	CITY OF LONDON	MANSION	081055	533640	181080		Old Fountain Inn.
CT44	CITY OF LONDON	HOSPITAL	0	532510	181170		St Mary and St Thomas of Canterbury, Order of St Thomas of Acon, 12th century.	CT122	CITY OF LONDON	PARISH CHURCH	041382	532119	180908		St Mary Somerset, 1153–75.
CT45	CITY OF LONDON	RELIGIOUS HOUSE	041240	531961	181713	SBG87	Priory of St Bartholomew, Augustinian, 1123, Smithfield.	CT123	CITY OF LONDON	MANSION	041253	532103	181561		Holy Trinity Hall, 1356.
CT46	CITY OF LONDON	RELIGIOUS HOUSE	041889	531247	181038		Priory of the Knights Templar, 1161. Middle Temple Lane.	CT124	CITY OF LONDON	MANSION	041396	532702	180825		Manor of the Rose (Pountney's or Pulteney's Inn), 1336.
CT47	CITY OF LONDON	MANSION	0	531175	181155		Clifford's Inn, 1310, Fleet Street.	CT125	CITY OF LONDON	PARISH CHURCH	0	533185	181490		St Botolph Bishopsgate, perhaps before 1185.
CT48	CITY OF LONDON	MANSION	0	531920	181180		Bishop of London (second site in medieval period), before 1260.	CT126	CITY OF LONDON	PARISH CHURCH	041306	532080	181160		St Faith under St Paul's, early–mid 12th century. Probably a chapel or altar in the crypt of the Romanesque cathedral later incorporated into the Gothic east end.
CT49	CITY OF LONDON	METALWORKING	043396	532750	181480	OPT81	2–3 Cross Keys Court, Copthall Avenue.	CT127	CITY OF LONDON	PARISH CHURCH	041385	532454	180841		St Martin Vintry, 1100–7.
CT50	CITY OF LONDON	RELIGIOUS HOUSE	041214	531980	181370	GCC98	Franciscan, 106–113 Newgate Street.	CT128	CITY OF LONDON	PARISH CHURCH	041381	532130	180900		St Mary Mounthaw, 1275.
CT51	CITY OF LONDON	MANSION	0	532580	181090	ONE94	Servat's Tower, 1305, Queen Victoria Street/Bucklersbury.	CT129	CITY OF LONDON	PARISH CHURCH	041213	531550	181130		St Bride Fleet Street. 210th-century dedication.
CT52	CITY OF LONDON	CUSTOM HOUSE	041834	533295	180578	CUS73	Sugar Quay, Lower Thames Street. Custom House.	CT130	CITY OF LONDON	PARISH CHURCH	0	531220	181140		St Dunstan in the West, 1163–81.
CT53	CITY OF LONDON	WATERFRONT	041862	533175	180622	CUS73	Sugar Quay, Lower Thames Street. Custom House.	CT131	CITY OF LONDON	PARISH CHURCH	041307	532020	181110		St Gregory by St Paul, 1010.
CT54	CITY OF LONDON	PRISON MOATED	041669	531664	181274	VAL88	Fleet Prison, early 12th century. Farringdon Street.	CT132	CITY OF LONDON	PARISH CHURCH	0	532110	181475		St Botolph Aldersgate, 1108–22.
CT55	CITY OF LONDON	RELIGIOUS HOUSE	041692	533443	181200		Priory of Holy Trinity Aldgate, Augustinian, 1108, Mitre Street.	CT133	CITY OF LONDON	PARISH CHURCH	041406	532870	180899		St Clement Eastcheap, 1106.
CT56	CITY OF LONDON	HOSPITAL	0	532900	181205		St Anthony, Order of St Anthony of Vienne, 1254. Royal free chapel after 1414.	CT134	CITY OF LONDON	PARISH CHURCH	041280	532410	181170		Standard in Cheapside.
CT57	CITY OF LONDON	SETTLE 35	0	532700	181100		City of London.	CT135	CITY OF LONDON	CONDUIT	043837	532030	180910	PET81	St Benet Paul's Wharf, 1111.
CT58	CITY OF LONDON	PARISH CHURCH	041303	532390	181140		St Mary-le-Bow Cheapside.	CT136	CITY OF LONDON	PARISH CHURCH	042834	533460	180850	PEP89	Crutched Friars, 1269.
CT59	CITY OF LONDON	PARISH CHURCH	043347	532050	181350	GPO75	St Nicholas Shambles.	CT137	CITY OF LONDON	RELIGIOUS HOUSE	0	532730	180820	LAU85	St Lawrence Pountney Church, mid 12th century. College mid 14th century.
CT60	CITY OF LONDON	CATHEDRAL	0	532030	181125		St Paul's, rebuilt in 12th century, mostly after 1136.	CT138	CITY OF LONDON	COLLEGE	044829	533430	180990	FCC95	St Katherine Coleman, possibly 1135.
CT61	CITY OF LONDON	RELIGIOUS HOUSE	044169	531380	181050		Carmelites.	CT139	CITY OF LONDON	PARISH CHURCH	041314	532415	181455	WFG22A	St Mary Aldermanbury, 1098–1108.
CT62	CITY OF LONDON	MANSION	0	533380	181260		Abbot of Bury St Edmunds, 12th century.	CT140	CITY OF LONDON	PARISH CHURCH	200700	533390	180680		All Hallows Barking, 1086 but possibly earlier.
CT63	CITY OF LONDON	MANSION	0	533110	181255		Crosby Place, 1466, Bishopsgate.	CT141	CITY OF LONDON	PARISH CHURCH	041305	532385	181217		All Hallows Honey Lane, 1191–1212.
CT64	CITY OF LONDON	COLLEGE	0	532135	181320		St Martin-le-Grand earlier than 1068, Martin-le-Grand.	CT142	CITY OF LONDON	PARISH CHURCH	041367	532445	180935		St Thomas the Apostle, c 1138.
CT65	CITY OF LONDON	COLLEGE	0	532495	181355		Guildhall College, 1299.	CT143	CITY OF LONDON	PARISH CHURCH	041339	532259	181157		St Matthew Friday Street, 1141–c 1150.
CT66	CITY OF LONDON	METALWORKING	0	532280	181530		Cripplegate fort area, 12th–13th centuries.	CT144	CITY OF LONDON	PARISH CHURCH	041399	532845	180795		St Michael Crooked Lane, c 1200–11.
CT67	CITY OF LONDON	BELLMaking BUTCHERY	0	531430	181190		Abbot of Cirencester, before 1253, Fleet Street.	CT145	CITY OF LONDON	CONDUIT	044227	532580	181100	ONE94	Great Conduit Cheapside.
CT68	CITY OF LONDON	MANSION	0	532115	181425		Northumberland Inn, before 1352, Near Aldersgate.	CT146	CITY OF LONDON	MARKET HALL	043072	533040	181100	LCT84	Leadenhall market, 15th century.
CT69	CITY OF LONDON	HOSPITAL	0	533200	181550	LSS85	St Mary Bethlehem, Augustinian, 1247, Broad Street/Bishopsgate.	CT147	CITY OF LONDON	PARISH CHURCH	043412	533050	181180	GST77	St Peter Cornhill, c 1040.
CT70	CITY OF LONDON	MANSION	0	531480	181080		Bishop of Salisbury, about 1194, Fleet Street.	CT148	CITY OF LONDON	PARISH CHURCH	044064	532200	181270	SVC92	St Vedast Foster Lane, 1139–61.
CT71	CITY OF LONDON	MANSION	0	532570	180740		Northampton Inn, 13th century, Thames Street.	CT149	CITY OF LONDON	PARISH CHURCH	043922	532750	180900		St Mary Abchurch, 1182–92.
CT72	CITY OF LONDON	HOSPITAL	0	533340	181310		St Augustine Papey, incorporating former parish church, 1442.	CT150	CITY OF LONDON	PARISH CHURCH	200714	533370	180860		St Olave Hart Street, 1170–97.
CT73	CITY OF LONDON	MANSION	0	531200	181550		Abbot of Malmesbury's Inn, 1369, Holborn.	CT151	CITY OF LONDON	SETTLE 4	080922	533750	180750		East Smithfield.
CT74	CITY OF LONDON	MANSION	0	532920	181230		Abbot of St Albans, 1214–35, Broad Street.	CT152	CITY OF LONDON	COLLEGE	0	533390	180710		Priests college.
CT75	CITY OF LONDON	MANSION	0	531600	181145		Abbot of Winchcombe, 1282–1314, Fleet Street.	CT153	CITY OF LONDON	MARKET HALL	044209	532510	181360	GYE92	Blackwell Hall, c 1280.
CT76	CITY OF LONDON	MANSION	0	533430	181000		Northumberland Inn (I) 1360, Fenchurch Street.	CT154	CITY OF LONDON	INNS OF COURT	200733	531140	181020		Middle Temple.
CT77	CITY OF LONDON	MANSION	0	531780	180930		Prior of Okebourne's Inn, 1352, Castle Lane, Blackfriars.	CT155	CITY OF LONDON	INNS OF COURT	200732	531250	181040		Inner Temple.
CT78	CITY OF LONDON	MANSION	0	531770	181530		Abbot of Glastonbury's Inn, 1246, Hosier Lane.	CT156	CITY OF LONDON	SYNAGOGUE	0	532580	181300		Coleman Street.
CT79	CITY OF LONDON	MANSION	0	532640	180655		Coldharbour (II), 1370, Thames Street.	CT157	CITY OF LONDON	REVETMENT	044328	532320	180790	BUF90	Sequence of medieval river walls and revetments. Queenhithe.
CT80	CITY OF LONDON	MANSION	0	532590	180670		Coldharbour (I), 1334, Thames Street.	CT158	CITY OF LONDON	PARISH CHURCH	041422	532825	180985		St Nicholas Acon, 1084.
CT81	CITY OF LONDON	MANSION	0	531600	181065		Abbot of Tewkesbury's Inn, 1314, Bride Lane.	CT159	CITY OF LONDON	BELL FOUNDRY	041821	533267	181094	LDL88	34–35 Leadenhall Street, 14th- and 15th-century bell-moulding pits and waste.
CT82	CITY OF LONDON	MANSION	0	531805	181170		Pembroke Inn, 1317, Ave Maria Lane.	CT160	CITY OF LONDON	BELL FOUNDRY	043077	533630	181160	MRS86	2–5 Minories. 14th-century bell-moulding pit.
CT83	CITY OF LONDON	MANSION	0	532000	180930		Derby House, 1497, St Benet's Hill (now College of Arms).	CT161	CITY OF LONDON	BELL FOUNDRY	044307	533210	181250	BAX95	13th-century kilns

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
CT177	CITY OF LONDON	REVTMENT	043036	531650	181320	FRD86	Possible medieval revetment to Fleet. 17–21 Farringdon Street.	CR7	CROYDON	MANOR HOUSE	020694	532040	165000		Crowham. Old Town.
CT178	CITY OF LONDON	REVTMENT	043811	532730	180700	SWA81	95–103 Upper Thames Street.	CR8	CROYDON	CH-APEL	020657	535000	163970		Manor Way, South Croydon.
CT179	CITY OF LONDON	REVTMENT	043848	532130	180820	SUN86	12th–15th-century revetments. Sunlight Wharf.	CR9	CROYDON	MANOR HOUSE	023223	532100	164000		Haling Manor house.
CT180	CITY OF LONDON	REVTMENT	044270	533350	180550	LTS95	Medieval revetments. Three Quays House, Lower Thames Street.	CR10	CROYDON	MANOR HOUSE	020651	531240	169550		Norbury, pre-1351. Norbury Avenue.
CT181	CITY OF LONDON	REVTMENT	044681	532220	180800	BHD90	Medieval revetments. Brooks Wharf, 48 Upper Thames Street.	CR11	CROYDON	MANOR HOUSE	020654	532230	165790		Rectory manor. North End Road.
CT182	CITY OF LONDON	REVTMENT	044903	532180	180810	HTS97	Medieval revetments. Broken Wharf.	CR12	CROYDON	PARISH CHURCH	222825	534150	161482		All Saints Church.
CT183	CITY OF LONDON	RIVER WALL	043991	531540	180920	BOY86	14th-century chalk river wall. 60 Victoria Embankment.	CR13	CROYDON	PALACE	222903	531970	165390		14th century. The Old Palace School, Old Palace Road. 14th-century chapel extant; 15th-century Great Hall extant.
CT184	CITY OF LONDON	DYEWORKS	0	532730	180700	SWA81	Swan Lane.	CR14	CROYDON	MANOR HOUSE	020343	537200	163900		Addington, 1401. Addington Village Road.
CT185	CITY OF LONDON	BREWERY	0	532650	180700		Upper Thames Street. Coldharbour (first site), brewery by 1431.	CR15	CROYDON	MOATED MANOR HOUSE	020556	538150	164050		Addington Temple.
CT186	CITY OF LONDON	STONE REVETMENT	041393	532535	180865		Stone revetment. 8–9 Dowgate Hill.	CR16	CROYDON	MANOR HOUSE	020645	532910	158930		Kenley. Kenley Lane.
CT187	CITY OF LONDON	TANNING	042760	532340	180830	UPT90	Stone-lined tanning pit. Bull Wharf Lane, 66–67 Upper Thames Street.	CR17	CROYDON	MANOR HOUSE	020619	538600	163500		Castle Hill.
CT188	CITY OF LONDON	WATER PIPE	041358	532337	181195		Water pipe in Cheapside, opposite Milk Street.	CR18	CROYDON	MANOR HOUSE	020648	533050	165400		Fairfield Road.
CT189	CITY OF LONDON	WATERFRONT	042859	532360	180760	VRY89	12th- to 16th-century revetments. Vintry House, 68–69 Upper Thames Street.	CR19	CROYDON	INN	020425	532300	165500		Chequers Inn.
CT190	CITY OF LONDON	WATERFRONT	043780	531900	180800	BYD81	Masonry revetment associated with Baynard's Castle. City of London Boys School.	CR20	CROYDON	MANOR HOUSE	020649	531200	165100		Waddon Court Road.
CT191	CITY OF LONDON	MANSION	044506	532300	181240	WOW79	Stone footings possibly of Cross Keys Inn.	CR21	CROYDON	SETTLE 12	0	534100	161400		Sanderstead.
CT192	CITY OF LONDON	PARISH CHURCH	0	530982	181047		St Clement Danes, 1135.	CR22	CROYDON	SETTLE 6	0	531300	170800		Tooting Bec.
CT193	CITY OF LONDON	PARISH CHURCH	0	531796	181149		St Martin Ludgate, 1138.	CR23	CROYDON	SETTLE 12	0	531300	158200		Coulsdon.
CT194	CITY OF LONDON	PARISH CHURCH	0	531859	180955		St Andrew Baynard Castle, 1163.	CR24	CROYDON	SETTLE 31	025301	532000	165500		Croydon.
CT195	CITY OF LONDON	PARISH CHURCH	0	531897	181344		St Audoen (Ewen), 1138–62.	CR25	CROYDON	SETTLE 1	0	537200	162500		Deserted medieval settlement?
CT196	CITY OF LONDON	PARISH CHURCH	0	532114	180979		St Mary Magdalen, c 1111–35.	CR26	CROYDON	COIN HOARD	020351	532280	170240		14th-century coin hoard. 86 Beulah Hill.
CT197	CITY OF LONDON	PARISH CHURCH	0	532156	181293		St Leonard Foster Lane, c 1236.	CR27	CROYDON	DEER PARK	020300	533070	165040		Stanhope Road.
CT198	CITY OF LONDON	PARISH CHURCH	0	532166	180945		St Nicholas Cole Abbey, 1128–34.	CR28	CROYDON	QUARRY	021690	532276	165250	WHG94	2–12 Whitgift Street, Croydon.
CT199	CITY OF LONDON	PARISH CHURCH	0	532178	181426		St Anne and St Agnes, early 12th century.	CR29	CROYDON	QUARRY	022300	532540	165150	PLN95	68–74 Park Lane, Croydon.
CT200	CITY OF LONDON	PARISH CHURCH	0	532219	181395		St John Zachary, perhaps 1114.	CR30	CROYDON	SETTLE 4	020446	529500	162000		Woodcote, deserted village. Woodcote Lane.
CT201	CITY OF LONDON	PARISH CHURCH	0	532231	180911		St Nicholas Olave, 1157–80.	CR31	CROYDON	WINDMILL	020659	532050	157180		Stiles Hill Road.
CT202	CITY OF LONDON	PARISH CHURCH	0	532238	181021		St Margaret Moses, c 1127.	CR32	CROYDON	SETTLE 14	020401	537200	162400		Addington Village Road.
CT203	CITY OF LONDON	COMPANY HALL	0	532370	180810	VRY89	Upper Thames Street. Vintners' Hall, 14th century.	CR33	CROYDON	SETTLE 2	020444	532100	159400		Watendone. Hayes Lane. Croydon.
CT204	CITY OF LONDON	PARISH CHURCH	0	532255	181523		St Olave Silver Street (Monkwell Street), late 12th century.	EL1	EALING	PARISH CHURCH	211143	516430	182780		St Mary the Virgin Greenford Parva, 12th century. Perivale Lane.
CT205	CITY OF LONDON	PARISH CHURCH	0	532275	181462		St Mary Staining, late 12th century.	EL2	EALING	PARISH CHURCH	211065	513200	184035		St Mary Northolt, 14th century (probably earlier). Ealing Road.
CT206	CITY OF LONDON	PARISH CHURCH	0	532292	181204		St Peter Westcheap, c 1102–15.	EL3	EALING	PARISH CHURCH	050005	520029	180176		St Mary Acton, 12th century. King Street.
CT207	CITY OF LONDON	PARISH CHURCH	0	532294	180847		St Michael Queenhithe, 1115–38.	EL4	EALING	PARISH CHURCH	051185	514768	180726		St Mary Hanwell Church Road, Hanwell.
CT208	CITY OF LONDON	PARISH CHURCH	0	532294	181340		St Michael Wood Street (Huggin Lane), c 1158–80.	EL5	EALING	PARISH CHURCH	050548	517700	179750		St Mary, 14th century. St Mary's Road.
CT209	CITY OF LONDON	PARISH CHURCH	0	532305	181057		All Hallows Bread Street, 1179.	EL6	EALING	PARISH CHURCH	211127	514520	183154		Oldfield Lane.
CT210	CITY OF LONDON	PARISH CHURCH	0	532328	180929		Holy Trinity the Less, 1182.	EL7	EALING	SETTLE 4	050542	515910	184420		Brabsden Green hamlet.
CT211	CITY OF LONDON	PARISH CHURCH	0	532345	181445		St Alban Wood Street, 1077–93.	EL8	EALING	MANOR HOUSE	052849	517140	182290		Pitshanger manor.
CT212	CITY OF LONDON	COMPANY HALL	0	533010	181130	ETA95	Bishopsgate/Threadneedle Street. Late 14th-century undercroft and walls of Merchant Taylors' Hall.	EL9	EALING	SETTLE 4	0	514900	184500		Bradstone Green.
CT213	CITY OF LONDON	PARISH CHURCH	0	532377	181209		All Hallows Honey Lane, 1191–1212.	EL10	EALING	SETTLE 4	0	515200	184800		Greenford Green.
CT214	CITY OF LONDON	PARISH CHURCH	0	532391	180844		St James Garlickhithe, 1163–c 1181.	EL11	EALING	SETTLE 4	050541	516300	183900		Horsenden Green.
CT215	CITY OF LONDON	PARISH CHURCH	0	532408	181026		St Mary Aldermary, perhaps 1020.	EL12	EALING	SETTLE 1	0	516200	184000		
CT216	CITY OF LONDON	PARISH CHURCH	0	532453	181315		St Lawrence Jewry, 1183–1203.	EL13	EALING	SETTLE 4	0	516400	181000		
CT217	CITY OF LONDON	PARISH CHURCH	0	532486	181082		St Pancras, 1098–1108.	EL14	EALING	SETTLE 4	0	513400	180700		Dormer's Wells.
CT218	CITY OF LONDON	PARISH CHURCH	0	532494	181006		St Antholin or Anthonin, c 1138.	EL15	EALING	SETTLE 4	0	517100	178900		Little Ealing.
CT219	CITY OF LONDON	PARISH CHURCH	0	532526	181083		St Benet Sherehog, 1111–31.	EL16	EALING	SETTLE 4	0	518200	183000		Vicars Bridge.
CT220	CITY OF LONDON	PARISH CHURCH	0	532555	181150		St Mary Colechurch, 1176.	EL17	EALING	SETTLE 4	0	517600	180300		Ealing Green.
CT221	CITY OF LONDON	PARISH CHURCH	0	532599	181017		St Stephen Walbrook (second site), 1429.	EL18	EALING	SETTLE 4	0	513000	183100		Goslings End.
CT222	CITY OF LONDON	PARISH CHURCH	0	532600	181332		St Steven Coleman Street, 1181–1204.	EL19	EALING	SETTLE 4	0	515400	185400		Sudbury Hill.
CT223	CITY OF LONDON	PARISH CHURCH	0	532615	180874		St Mary Bothaw, 1145–50.	EL20	EALING	HOUSE/HALL MOATED	050862	510960	183760		Down Barns, 12th century (SAM 78). Sharvel Lane.
CT224	CITY OF LONDON	PARISH CHURCH	0	532630	181117		St Mildred Poultry, 1107–47.	EL21	EALING	MOATED MANOR HOUSE	050339	513280	184080		Northolt, 1300 (SAM 154). Northolt manor.
CT225	CITY OF LONDON	PARISH CHURCH	0	532632	180742		All Hallows the Great, 1100–7.	EL22	EALING	SETTLE 4	0	520500	179000		Acton Green.
CT226	CITY OF LONDON	PARISH CHURCH	0	532657	180733		All Hallows the Less, 1214.	EL23	EALING	MANOR HOUSE	050505	516820	184180		Cornhill, 1342 (SAM 142). Grand Union Canal.
CT227	CITY OF LONDON	PARISH CHURCH	0	532670	181086		St Mary Woolchurch, c 1104.	EL24	EALING	SETTLE 4	0	517800	181000		Haven Green.
CT228	CITY OF LONDON	PARISH CHURCH	0	532702	181272		St Margaret Lothbury, c 1197.	EL25	EALING	MANOR HOUSE	050524	514500	183200		Oldfield Lane.
CT229	CITY OF LONDON	PARISH CHURCH	0	532745	180802		St Lawrence Pountney, mid 12th century.	EL26	EALING	SETTLE 4	0	517700	179000		Popes Cross.
CT230	CITY OF LONDON	PARISH CHURCH	0	532761	181046		St Mary Woolnoth, 1191.	EL27	EALING	MOATED MANOR HOUSE	050506	516350	182820		Little Greenford. Ealing golf course.
CT231	CITY OF LONDON	PARISH CHURCH	0	532812	180833		St Martin Orgar, 1183–4.	EL28	EALING	MOATED MANOR HOUSE	050511	519875	181500		Acton, 14th century (St Pauls). Westfields Road.
CT232	CITY OF LONDON	PARISH CHURCH	0	532887	181008		St Edmund the King, 1157–80.	EL29	EALING	SETTLE 6	0	521200	180600		East Acton.
CT233	CITY OF LONDON	PARISH CHURCH	0	532906	180666		St Magnus the Martyr, 1128–33.	EL30	EALING	MOATED MANOR HOUSE	050510	520470	181675		St Bartholomews. Horn Lane, Acton.
CT234	CITY OF LONDON	PARISH CHURCH	0	532929	180747		St Margaret Fish Street Hill, ?1108–16.	EL31	EALING	HOUSE/HALL MOATED	050527	516220	181070		Drayton manor. Drayton Bridge Road.
CT235	CITY OF LONDON	PARISH CHURCH	0	532942	181096		St Michael Cornhill, 1130–49.	EL32	EALING	HOUSE/HALL MOATED	050551	517800	179800		Ranelagh Road.
CT236	CITY OF LONDON	PARISH CHURCH	0	532945	180812		St Leonard Eastcheap, c 1177–80.	EL33	EALING	SETTLE 12	0	514500	183000		Greenford.
CT237	CITY OF LONDON	PARISH CHURCH	0	532955	180990		All Hallows Gracechurch Street (Lombard Street), 1052–70.	EL34	EALING	MANOR HOUSE	050730	520400	180000		Berrymeads, 1231. Salisbury Street.
CT238	CITY OF LONDON	PARISH CHURCH	0	532985	180654		St Botolph Billingsgate, 1181.	EL35	EALING	MANOR HOUSE	050535	517050	178850		Coldhall. Windmill Road.
CT239	CITY OF LONDON	PARISH CHURCH	0	533002	180768		St George Botolph Lane, before 1193.	EL36	EALING	MOATED MANOR HOUSE	050858	519180	179480		Ealingbury, 1422. Lillian Avenue near South Acton.
CT240	CITY OF LONDON	PARISH CHURCH	0	533131	180834		St Margaret Pattens, c 1128–50.	EL37	EALING	SETTLE 4	0	512900	180300		Northall.
CT241	CITY OF LONDON	PARISH CHURCH	0	533168	180714		St Dunstan in the East, 1098–1108.	EL38	EALING	MOATED MANOR HOUSE	050537	519020	183130		West Twyford, 1290. Twyford Abbey Road.
CT242	CITY OF LONDON	PARISH CHURCH	0	533243	181166		St Andrew Undershaft, 1108–47.	EL39	EALING	SETTLE 12	0	513200	184000		Northolt.
CT243	CITY OF LONDON	PARISH CHURCH	0	533341	181112		St Michael Aldgate, 12th century.	EL40	EALING	SETTLE 12	0	515800	182100		Perivale.
CT244	CITY OF LONDON	PARISH CHURCH	0	533350	181375		St Augustine Papey, 1108.	EL41	EALING	MOATED SITE	050482	513660	180760		Dormer's wells, Dormer's Wells Lane.
CT245	CITY OF LONDON	PARISH CHURCH	0	533393	181129		St Katharine Cree, 1201.	EL42	EALING	SETTLE 4	0	511800	183200		West End.
CT246	CITY OF LONDON	PARISH CHURCH	0	533554	180597		St Peter ad Vincula, 1128–34,								

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
EN3	ENFIELD	SETTLE 4	0	534350	193650		Lower Edmonton.	HK34	HACKNEY	MANOR HOUSE	080127	533800	183600		Haggerston, 11th century. Haggerston Road.
EN4	ENFIELD	HOSPITAL	080697	532000	196000		St Leonards, 1270. Enfield.	HK35	HACKNEY	MANSION	080169	535100	184200		The prior's house (Knights Hospitaller). Well Street (north side).
EN5	ENFIELD	MOATED RECTORY	0	534000	193600		Rectory adjacent to church.	HK36	HACKNEY	MANSION	080179	535100	184000	SHR78	Shoreditch Place, 1349 (Knights Hospitaller). 18 Shore Road.
EN6	ENFIELD	MOATED MANOR HOUSE	080675	528770	198190		Camlet, 14th century, moated with chapel (SAM 74).	HK37	HACKNEY	CROSS	080164	533430	182640		Shoreditch High Street.
EN7	ENFIELD	HUNTING LODGE	080676	527500	198400		West lodge of Enfield Chase.	HF1	HAMMERSMITH AND FULHAM	WINDMILL	050633	524000	176800		Fulham Palace Road. Windmill.
EN8	ENFIELD	MOATED SITE	080691	536610	198870		Plantation Farm moated site.	HF2	HAMMERSMITH AND FULHAM	SAND PIT	050852	524400	176600		Fulham Palace Road. Sand pit.
EN9	ENFIELD	PALACE	080679	533800	198910		Elsynge Hall, 15th century (SAM 59).	HF3	HAMMERSMITH AND FULHAM	WATERMILL	050630	524250	175850	SWW78	Fulham Palace Road. Watermill.
EN10	ENFIELD	MANOR HOUSE	080671	535200	199500		Goldbeaters manor.	HF4	HAMMERSMITH AND FULHAM	WHARF	050631	524250	175850	SWW78	Fulham Palace. Wharf.
EN11	ENFIELD	MOATED SITE	080688	534890	192060		Willoughby moat.	HF5	HAMMERSMITH AND FULHAM	RABBIT WARREN	050625	525500	176000		Town meadows. Rabbit warren.
EN12	ENFIELD	MILL	080698	537000	197200		Barflete mill.	HF6	HAMMERSMITH AND FULHAM	SETTLE 4	050658	524600	178300		North End, probably a second nucleus of the Waltham Green settlement.
EN13	ENFIELD	CROSS	080682	534300	199500		Bedell Cross.	HF7	HAMMERSMITH AND FULHAM	SETTLE 4	050632	523500	177300		North End Road.
EN14	ENFIELD	MILL	080699	533400	192500		Screwes mill.	HF8	HAMMERSMITH AND FULHAM	SETTLE 4	050629	525400	175700		Crabtree: Crabtree Lane.
EN15	ENFIELD	MANOR HOUSE	080703	535850	193500		Dephams, 14th century.	HF9	HAMMERSMITH AND FULHAM	HOSPITAL LEPER	050533	522500	178600		Broom house. Broomhouse Lane.
EN16	ENFIELD	MANOR HOUSE	080683	535570	196430		Durants, 13th century.	HF10	HAMMERSMITH AND FULHAM	PARISH CHURCH	211904	524305	175920		15th century. Ravenscourt Park/King Street.
EN17	ENFIELD	MANOR HOUSE	080705	530950	191900		Bowes, 14th century.	HF11	HAMMERSMITH AND FULHAM	CHAPEL AND RECTORY	050590	525040	176500		All Saints Fulham, 11th century. Putney Bridge Approach.
EN18	ENFIELD	MOATED SITE	080695	531400	196350		Old Park (SAM 143).	HF12	HAMMERSMITH AND FULHAM	HOSPITAL	050606	524400	176100		12th century. St Dionis Road.
EN19	ENFIELD	MOATED SITE	080685	535260	193580		Moat house farm.	HF13	HAMMERSMITH AND FULHAM	RELIGIOUS HOUSE	050578	523600	178700		Almshouses. High Street.
EN20	ENFIELD	MOATED SITE	080678	533390	196360		Oldbury moated.	HF14	HAMMERSMITH AND FULHAM	SETTLE 4	050850	526000	176500		Hammersmith Road. (West London Archaeological Field Group SMR m619).
EN21	ENFIELD	MOATED SITE	080677	535000	196200		Kings Rings.	HF15	HAMMERSMITH AND FULHAM	SETTLE 4	053010	525400	177200		Includes Belle's, Purdey's, Vyson's and three other tenements.
EN22	ENFIELD	MANOR HOUSE	080707	535500	197500		Suffolks.	HF16	HAMMERSMITH AND FULHAM	WATERMILL	050586	524400	175800		Walham Green.
EN23	ENFIELD	SETTLE 12	0	534000	193400		Edmonton.	HF17	HAMMERSMITH AND FULHAM	MANOR HOUSE	053002	523600	178600		Fulham watermill.
EN24	ENFIELD	MOATED PALACE	080696	532700	196500		Enfield Church Street/Palace Gardens, formerly manor.	HF18	HAMMERSMITH AND FULHAM	MANOR HOUSE	053008	523370	178500		Pallingswick manor house.
EN25	ENFIELD	COIN HOARD	080694	530600	193600		12th-century coin hoard. Amberley Road, Palmers Green.	HF19	HAMMERSMITH AND FULHAM	MANOR HOUSE	053004	523100	178550		Butterwick manor.
EN26	ENFIELD	COIN HOARD	082357	532800	196500		13th-century coin hoard, Enfield.	HF20	HAMMERSMITH AND FULHAM	INN	053004	523100	178550		No. deleted.
EN27	ENFIELD	COIN HOARD	082358	531000	193000		14th-century coin hoard, Palmers Green.	HF21	HAMMERSMITH AND FULHAM	INN	053004	523100	178550		Angel Terrace.
EN28	ENFIELD	MOATED SITE	080690	532200	194400		Winchmore Hill.	HF22	HAMMERSMITH AND FULHAM	SETTLE 7	053009	525120	176470		No. deleted.
EN29	ENFIELD	PARISH CHURCH	081538	532780	196660		St Andrew Enfield, 12th century. Church Walk.	HF23	HAMMERSMITH AND FULHAM	SETTLE 4	053003	523300	178300		Parsons Green.
GR1	GREENWICH	PARISH CHURCH	223570	545930	178550		St Nicholas Plumstead, 12th century. St Nichols Road.	HF24	HAMMERSMITH AND FULHAM	SETTLE 4	0	522600	181500		Hammersmith.
GR2	GREENWICH						Deleted no.	HF25	HAMMERSMITH AND FULHAM	SETTLE 14	053000	526300	176300		Wormholt.
GR3	GREENWICH	RELIGIOUS HOUSE	0	537400	177800		All Saints, Friars Observant, 1485–1534.	HF26	HAMMERSMITH AND FULHAM	SETTLE 4	0	525800	176800		Fulham.
GR4	GREENWICH	PARISH CHURCH	0	537300	177700		St Nicholas Deptford, before 1500 (SAM 46).	HF27	HAMMERSMITH AND FULHAM	SETTLE 4	0	525800	176800		No. deleted.
GR5	GREENWICH	MANOR HOUSE	070376	538580	177980		Greenwich Palace – former Bella Court.	HF28	HAMMERSMITH AND FULHAM	MANOR HOUSE	050634	522800	180300		Wormholt, 1290. Wormholt Farm.
GR6	GREENWICH	PARISH CHURCH	070379	543060	179170		St Lawrence (original name).	HF29	HAMMERSMITH AND FULHAM	MOATED PALACE	050473	524150	175950		Fulham, pre-11th century (bishops of London) (SAM 134). Fulham Palace.
GR7	GREENWICH	PARISH CHURCH	070255	540820	176350		St Nicholas Kidbrooke, 13th century probably incorporating 12th-century chapel, derelict by 1494.	HF30	HAMMERSMITH AND FULHAM	MANOR HOUSE	051012	526030	177080		Sandford, 14th century. Rewell Street.
GR8	GREENWICH	WATERMILL	070076	537330	178110	FGN02	Deptford pier mill.	HF31	HAMMERSMITH AND FULHAM	MANSION	051175	524990	176910		Arundel House, 15th century. Fulham Road.
GR9	GREENWICH	CASTLE	070392	536970	178038		Sayes Tower, 11th century.	HF32	HAMMERSMITH AND FULHAM	MOATED SITE	052258	521900	182800		Willesden Junction.
GR10	GREENWICH	MANOR HOUSE	070391	539580	177590		Westcombe manor.	HG1	HARINGEY	KILN BRICK	0	533500	191000		Tottenham. Brick kilns.
GR11	GREENWICH	RELIGIOUS HOUSE	071385	538510	177910		House of Observant Friars.	HG2	HARINGEY	WATERMILL	080305	534700	189400		Tottenham Hale, Ferry Lane. Watermill.
GR12	GREENWICH	MOATED MANOR HOUSE	070360	542470	175080		Well Hall, 13th century.	HG3	HARINGEY	QUAY	080319	534900	189300		Tottenham Hale. Quay.
GR13	GREENWICH	CASTLE	070248	538840	177330		Greenwich Castle.	HG4	HARINGEY	SETTLE 7	081537	528800	189700		Muswell Hill.
GR14	GREENWICH	FERRY	071467	543200	179300		Woolwich ferry.	HG5	HARINGEY	SETTLE 4	081532	530700	190300		Wood Green. Wood Green Common.
GR15	GREENWICH	SETTLE 2	070277	540820	176350		Kidbrooke.	HG6	HARINGEY	SETTLE 4	081533	532500	189200		West Green. West Green Road.
GR16	GREENWICH	SETTLE 12	0	538300	177600		Greenwich.	HG7	HARINGEY	HOSPITAL	080283	532200	191700		St Lawrence, 1229, granted to Augustinian friars after 1257. Devonshire Hill Lane.
GR17	GREENWICH	SETTLE 22	0	545900	178700		Plumstead.	HG8	HARINGEY	MANOR HOUSE	080331	534800	191400		Willoughby, 12th century. Willoughby Lane.
GR18	GREENWICH	SETTLE 12	071466	543250	179250		Woolwich.	HG9	HARINGEY	CHAPEL	080293	533750	190480		St Loy offertory, 15th century.
GR19	GREENWICH	KILN POT	070306	543360	179250		15th-century pottery kiln. Ferry Approach, Greenwich.	HG10	HARINGEY	CHAPEL AND HERMITAGE	080310	528350	187500		Highgate, 14th century. Highgate High Street.
GR20	GREENWICH	RIVER WALL	071463	545000	180600		12th-century river wall. Gallion's Reach.	HG11	HARINGEY	CHAPEL	080294	533760	189250		St Anne (Holy Trinity Aldgate) High Road.
GR21	GREENWICH	MOATED PALACE	223303	542410	173990		Eltham Palace, 1311.	HG12	HARINGEY	PARISH CHURCH	080314	530632	189290		St Mary Hornsey, 12th century. High Street.
HK1	HACKNEY	WATERMILL	080161	537500	185500		Temple mills. Watermills.	HG13	HARINGEY	MOATED MANOR HOUSE	080291	532900	191300		Pembroke. White Hart Lane.
HK2	HACKNEY	MILL	080211	533400	183650		Mill Row. Mill. Hackney.	HG14	HARINGEY	MANOR HOUSE	080327	533950	190500		Stoneleys manor.
HK3	HACKNEY	RELIGIOUS HOUSE	080141	533370	182370	HLP89	St John the Baptist, Augustinian nuns, c 1150–1538. Shoreditch High Street/Holywell Lane.	HG15	HARINGEY	BREWHOUSE	080322	533950	191700		Ale brewhouse.
HK4	HACKNEY	PARISH CHURCH	220387	535004	185010		St Augustine Hackney, late 13th century. Mare Street.	HG16	HARINGEY	SETTLE 7	0	533800	189500		High Cross Green.
HK5	HACKNEY	HOSPITAL LEPER	080160	533450	184750		St Katherine's, Augustinian, from 1280. Kingsland Road.	HG17	HARINGEY	INN	080321	533850	191450		Horns.
HK6	HACKNEY	PARISH CHURCH	080144	533480	182630		St Leonard Shoreditch, 11th century. Shoreditch High Street.	HG18	HARINGEY	INN	080320	533900	191450		Lamb.
HK7	HACKNEY	PARISH CHURCH	080151	532860	186460		St Mary Stoke Newington, 10th century. Church Street.	HG19	HARINGEY	SETTLE 6	080247	530100	188400		Crouch End.
HK8	HACKNEY	HOSPITAL	080146	533340	182700		St James, 1500. Old Street.	HG20	HARINGEY	SETTLE 15	0	533300	190700		Tottenham.
HK9	HACKNEY	PALACE	080205	533100	183050		Sir Thomas Tresham's house.	HG21	HARINGEY	SETTLE 4	0	532300	189300		Westbury.
HK10	HACKNEY	MANOR HOUSE	080147	534990	185180		Wick, 1231 (Knights Templar).	HG22	HARINGEY	SETTLE 16	080248	530500	189300		Hornsey.
HK11	HACKNEY	MANOR HOUSE	080192	534250	185100		Manor house.	HG23	HARINGEY	SETTLE 7	080288	528300	187400		Highgate. Pond Square.
HK12	HACKNEY	MANOR HOUSE	080484	532400	183100		Wenlocks barn.	HG24	HARINGEY	MOAT	080252	532540	190080		Lordship Recreation Ground.
HK13	HACKNEY	SETTLE 14	0	532900	186400		Stoke Newington.	HG25	HARINGEY	CHAPEL	080330	528800	189900		Our Lady, 12th century (St Mary Clerkenwell). Muswell Road.
HK14	HACKNEY	SETTLE 4	080181	534200	185050		Hackney downs.	HG26	HARINGEY	PARISH CHURCH	221248	533320	190950		All Hallows Tottenham, 11th century. Church Lane.
HK15	HACKNEY	INN	080232	533500	182250		Bell.	HG27	HARINGEY	MOATED MANOR HOUSE	080315	534200	191050		Mockings, 1335. Sutherland Road.
HK16	HACKNEY	SETTLE 4	080182	535200	185400		Lower Clapton.	HG28	HARINGEY	MOATED MANOR HOUSE	080282	533400	190650		Tottenham, 1245. Lordship Lane.
HK17	HACKNEY	SETTLE 4	080217	533700	187800		Stamford Hill.	HG29	HARINGEY	MOATED MANOR HOUSE	080292	531350	189970		Ducketts. Westbeech Road.
HK18	HACKNEY	SETTLE 6	080140	533750	185400		Shacklewell.	HG30	HARINGEY	CROSS	080296	533780	189560		1290. High Road.
HK19	HACKNEY	SETTLE 4	080198	535400	184400		Well Street.	HG31	HARINGEY	HUNTING LODGE MOATED	080313	527140	188340		Bishop's lodge, pre-1293. Highgate golf course.
HK20	HACKNEY	SETTLE 11	0	533800	183400		Haggerston.	HG32	HARINGEY	MANOR HOUSE	080316	530100	188500		Topsfield Hall, 12th century. Tottenham Lane.
HK21	HACKNEY	SETTLE 25	0	533500	182600		Shoreditch.	HG33	HARINGEY	MANOR HOUSE	080328	531800	187200		Brownwood, 12th century. Finsbury Park.
HK22	HACKNEY	SETTLE 6	080221	533600	186500		Newington.	HG34	HARINGEY	FULLING MILL	0	534000	192000		Tottenham. Fulling mill.
HK23	HACKNEY	SETTLE 4	080194	535600	185100										

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
HW11	HARROW	SETTLE 4	052168	511830	189550		West End (hamlet of Pinner), West End Lane.	HV44	HAVINGING	DEER PARK	060124	551240	190400		Gidea park.
HW12	HARROW	SETTLE 18	052121	512100	189600		Pinner.	HV45	HAVINGING	SETTLE 13	0	554400	186900		Hornchurch.
HW13	HARROW	SETTLE 4	052167	512600	189900		East End (hamlet of Pinner).	HV46	HAVINGING	SETTLE 14	0	554100	181000		Wennington.
HW14	HARROW	SETTLE 4	052117	513700	188900		Headstone, Hooking Green.	HV47	HAVINGING	INN	060301	551790	187460		Crown.
HW15	HARROW	SETTLE 6	052193	515600	188400		Green Hill.	HV48	HAVINGING	SETTLE 12	0	556100	186800		Upminster.
HW16	HARROW	SETTLE 4	052119	517400	188880		Kenton.	HV49	HAVINGING	SETTLE 12	0	558900	184900		Ockendon.
HW17	HARROW	ARCHERY BUTTS	052227	515200	186800		Archery butts, Roxeth Hill.	HV50	HAVINGING	MOAT	060965	554380	193640		Noak Hill Road.
HW18	HARROW	SETTLE 18	052106	515160	187035		Harrow on the Hill.	HV51	HAVINGING	MOAT	061128	551900	185050		Rainham Road, Hornchurch.
HW19	HARROW	INN	052078	515200	187050		Medieval inn, Byron Hill Road.	HV52	HAVINGING	SETTLE 12	0	557300	186200		Cranham.
HW20	HARROW	PARISH CHURCH	220682	515320	187450		St Mary Harrow on the Hill, 12th century, Church Hill.	HV53	HAVINGING	SETTLE 31	061043	552080	182210		Rainham.
HW21	HARROW	PARISH CHURCH	220686	512390	189660		St John the Baptist Pinner, 1234, Church Lane.	HV54	HAVINGING	SETTLE 9	060961	551420	188140		Romford.
HW22	HARROW	RELIGIOUS HOUSE	052051	517260	192550		St Mary Magdalen, Augustinian canons, 1171–1532, Bentley Priory.	HV55	HAVINGING	SETTLE 4	061023	554920	185690		Hacton.
HW23	HARROW	PARISH CHURCH	052054	516987	191556		St Mary Great Stanmore, 1200, Old Church Lane.	HV56	HAVINGING	MOAT	060713	551580	189290		Main Road, Romford.
HW24	HARROW	HERMITAGE	052188	515450	186700		St Edmund and St Catherine Sudbury Hill.	HV57	HAVINGING	ARCHERY BUTTS	060945	554400	188440		Butts Green, Hornchurch.
HW25	HARROW	SETTLE 1	0	513900	189900		Hooking Green/Headstone.	HV58	HAVINGING	PARISH CHURCH	211347	554410	186970		High Street, St Andrew's Hornchurch, 12th century.
HW26	HARROW	PARISH CHURCH	052094	518560	191330		St Lawrence.	HV59	HAVINGING	COIN HOARD	060011	554380	187100		13th century, Site of Hornchurch Hall.
HW27	HARROW	MANOR HOUSE	052233	518500	190500		Wimborough manor.	HV60	HAVINGING	KILN POT	062524	553400	194050		13th century, Patemoster Row.
HW28	HARROW	SETTLE 12	0	518500	191200		Little Stanmore.	HV61	HAVINGING	MANOR HOUSE	060148	552600	193600		13th century, Reys or Newbury
HW29	HARROW	SETTLE 4	0	516500	192900		Stanmore Hall.	HV62	HAVINGING	MOAT	062180	558700	184800	NO-HF92	Hall Farm, North Ockendon.
HW30	HARROW	SETTLE 4	052887	511300	190000		Pinner Green.	HV63	HAVINGING	PLAGUE PIT	060016	552070	182250		The Broadway, Rainham.
HW31	HARROW	DEER PARK	052064	513100	190300		Pinner park.	HV64	HAVINGING	CHAPEL	060134	551470	188070		South Street/Old Church Road, St Andrew's, 1177.
HW32	HARROW	SETTLE 12	0	519200	191100		Edgware.	HV65	HAVINGING	PARISH CHURCH	060994	552084	182208		Broadway, SS Helen and Giles Rainham, 11th century.
HW33	HARROW	SETTLE 4	0	515400	186300		Sudbury.	HV66	HAVINGING	MANOR HOUSE	060144	552130	193930	PYRPK74	Pyrgo Home Farm.
HW34	HARROW	CHAPEL	052113	513600	190900		Harrow.	HV67	HAVINGING	HUNTING LODGE	061282	550000	193000		1440, Havering Park.
HW35	HARROW	SETTLE 4	0	514300	187400		Roxeth.	HV68	HAVINGING	MOATED PALACE	060141	551170	193030		Havering-atte-Bower, 1208, Wellington Avenue.
HW36	HARROW	MANOR HOUSE	052883	515400	187800		Lowlands Road.	HV69	HAVINGING	MANSION	060372	553150	193700		Cumyn Hall, 1274, Noak Hill.
HW37	HARROW	PARISH CHURCH	052096	515800	191300		St Lawrence Little Stanmore, 1130, Whitchurch Lane.	HV70	HAVINGING	MOATED MANOR HOUSE	0	555000	192600		Cockrells, 1378 (SAM 110).
HW38	HARROW	CHAPEL CHANTRY	052063	513770	190760		Chantry house, 1324, Chantry Road.	HV71	HAVINGING	MANOR HOUSE	060346	551800	191170		Risebridge, 1284, Risebridge Close.
HW39	HARROW	MANOR HOUSE	052089	511900	190800		Woodhall, 1286, Woodhall Gate.	HV72	HAVINGING	MANOR HOUSE	060145	552100	191740		Bedfords, 15th century, Lower Bedfords Road.
HW40	HARROW	MOATED MANOR HOUSE	052055	517060	191500		Formerly farm, 1235, Old Church Lane.	HV73	HAVINGING	MANOR HOUSE	060140	554300	192100		Gooshayes, Goosehayes Drive.
HW41	HARROW	MANOR HOUSE	052067	518200	191800		Cannons.	HV74	HAVINGING	MANOR HOUSE	060138	549150	190900		Gobions, Collier Row Road.
HW42	HARROW	MANOR HOUSE	052232	519000	191000		Stanmore Chenduit, 1260, Little Stanmore.	HV75	HAVINGING	MANOR HOUSE	060116	552240	190230		Gidea Hall, 1250, Heath Drive.
HW43	HARROW	MOATED MANOR HOUSE	052066	514050	189670		Headstone, 13th century (archbishops of Canterbury) (SAM 161).	HV76	HAVINGING	MANSION	060122	550550	189720		East House, Rosedale Road.
HW44	HARROW	MANOR HOUSE	052207	511850	189050		Feamals, 1486, West End Lane.	HV77	HAVINGING	MOATED MANOR HOUSE	060137	548500	189380		Marks, 15th century, Whalebone Lane.
HW45	HARROW	MANOR HOUSE	052101	515700	188400		Greenhill, Sheepcote Road.	HV78	HAVINGING	MOATED MANOR HOUSE	060120	550930	188870		Mawneys, Mawney Road.
HW46	HARROW	MANOR HOUSE	052076	515250	187150		Flambards, 1300, Harrow on the Hill.	HV79	HAVINGING	MOATED MANOR HOUSE	061006	554590	188680		Nelmes/Rednall, 1333/1413, The Witherings.
HW47	HARROW	HOUSE/HALL MOATED	052065	514440	186860		Roxeth, also known as a grange, Osmond Close.	HV80	HAVINGING	MANOR HOUSE	060462	557700	189790	BER76	Beredens Lane, Beredens, 14th century.
HW48	HARROW	MANOR HOUSE	052107	515600	186300		Calvary Nursing Home.	HV81	HAVINGING	MANOR HOUSE	060284	555250	187750		Wingletye Lane, Baldwins.
HW49	HARROW	MOATED SITE	052086	513000	191200		Hatch End near Dove Park.	HV82	HAVINGING	TITHE BARN	0	556500	190000		Hall Lane (SAM 113).
HW50	HARROW	MANOR HOUSE	052208	512270	189050		Marsh Lane.	HV83	HAVINGING	MANOR HOUSE	060428	555310	186660		St Mary's Lane, Bridge House property before 1375.
HV1	HAVINGING	CHARCOAL BURNING SITE	060955	548820	190600		Collier Row, Charcoal burners.	HV84	HAVINGING	MANOR HOUSE	060415	555690	185600		Gaynes Court, Gaynes/Upminster, 11th century.
HV2	HAVINGING	FULLING MILL	060959	550160	191100	RO-WF88	Brockley Crescent, Fulling mill.	HV85	HAVINGING	MOATED MANOR HOUSE	060131	551700	184850		Rainham Road, Bretons.
HV3	HAVINGING	WINDMILL	060705	548920	189300		Eastern Avenue Chadwell Heath, Windmill.	HV86	HAVINGING	MANOR HOUSE	060291	553600	185070		Suttons Lane, Suttons, 1397.
HV4	HAVINGING	WINDMILL	060709	549010	189280		Eastern Avenue Chadwell Heath, Windmills.	HV87	HAVINGING	MANOR HOUSE	060121	554920	193280		Dagnam Park, Dagnams.
HV5	HAVINGING	WINDMILL	060714	548790	189420		Chadwell Heath, Windmills, Warren Farm.	HV88	HAVINGING	MANOR HOUSE	060380	554350	183540		Berwick Pond Road, Manor and chapel, Berwick (Knights Templar).
HV6	HAVINGING	WINDMILL	060459	557880	189880		Cranham, Windmill, 14th century.	HV89	HAVINGING	MANOR HOUSE	060381	552100	182200		Rainham, 11th century.
HV7	HAVINGING	TANNERY	060989	553790	187210		Tanning, 13th century.	HV90	HAVINGING	MANOR HOUSE	060469	553940	180950		Wennington Road, Youngs.
HV8	HAVINGING	WINDMILL	060275	554380	186740		Hornchurch, Windmill, 13th century.	HV91	HAVINGING	MANOR HOUSE	060468	554430	181030		Wennington Road, Wennington, 1198.
HV9	HAVINGING	WINDMILL	060287	550850	183990		Dagenham, Windmill, 13th century.	HV92	HAVINGING	MOATED MANOR HOUSE	060383	555620	181350		Sandy Lane, Moor Hall, 1198.
HV10	HAVINGING	WATERMILL	060990	552350	182650		Rainham Road, Watermill on Ingrebourne, 1235.	HV93	HAVINGING	MOATED MANOR HOUSE	060003	552180	182680		Dovers Corner, Dovers, 12th century.
HV11	HAVINGING	PARISH CHURCH	211428	553988	180946		Wennington Road, SS Mary and Peter Wennington, 11th century.	HV94	HAVINGING	MANOR HOUSE	060165	556410	186550		St Mary's Lane.
HV12	HAVINGING	SETTLE 3	060136	551200	187900		Deserted settlement, Old Church Road Romford.	HL1	HILLINGDON	KILN TILE	0	509200	191600		Northwood tile kilns, three from 15th century onwards.
HV13	HAVINGING	INN	060997	553980	187150		Hornchurch, Medieval inn, High Street.	HL2	HILLINGDON	MARLPIT	0	510000	187000		Ruislip manor marlpit, possibly 13th century, certainly by 1436.
HV14	HAVINGING	CHAPEL	060305	551190	188960		St Edward the Confessor, 1410, with burial rights, Market Place Romford.	HL3	HILLINGDON	SETTLE 4	052958	507300	177800		Sipson, 14 houses in 1337.
HV15	HAVINGING	PARISH CHURCH	061045	557210	186150		All Saints Cranham, 13th century.	HL4	HILLINGDON	KILN TILE	0	507000	188000		Near Breakspear Road, Tilekiln: inferred from medieval place-name.
HV16	HAVINGING	CHAPEL	060993	552100	182180		Broadway Rainham, Chapel: All Saints Rainham, 1203.	HL5	HILLINGDON	WATERMILL	050495	508800	187800		Ruislip, Watermill.
HV17	HAVINGING	PARISH CHURCH	211321	558738	184866		Church Lane, St Mary Magdalen North Ockendon, 12th century.	HL6	HILLINGDON	SETTLE 12	052912	510200	178200		Cranford, by 1066, with manor house and church.
HV18	HAVINGING	PARISH CHURCH	211406	555940	186491		St Mary's Lane, St Lawrence Upminster, 1100.	HL7	HILLINGDON	SETTLE 4	0	504950	176850		Longford, before 1337: 30 dwellings at that date.
HV19	HAVINGING	HOSPITAL	060388	552100	182200		Rainham, Hospital, 1240.	HL8	HILLINGDON	SETTLE 4	052951	507500	175600		Heathrow, by 1453: 14 cottages in 1593, Vicinity of Heathrow Terminal 1.
HV20	HAVINGING	HOSPITAL	060313	551030	189030		Reedes Almshouses, 1482, North Street Romford.	HL9	HILLINGDON	SETTLE 4	0	506000	175350		Southcote, by 1265, 17 houses in 1337, Near Perry Oaks sewage works.
HV21	HAVINGING	MANOR HOUSE	060392	554310	182100		Launders Lane, Launder's manor.	HL10	HILLINGDON	CHAPEL	050501	505170	188910		Harefield recreation ground, Moor Hall, camera of Knights Hospitaller.
HV22	HAVINGING	INN	060354	551249	189915		Swan alias the White Swan.	HL11	HILLINGDON	PARISH CHURCH	210304	510160	178179		Roseville Road, St Dunstan Cranford, 15th century.
HV23	HAVINGING	MANSION	061050	558810	188860		Codham Hall, 1276.	HL12	HILLINGDON	PARISH CHURCH	210321	508800	178216		St Peter's Way, SS Peter and Paul, 12th century.
HV24	HAVINGING	INN	061069	551155	188885		Golden Lion.	HL13	HILLINGDON	RELIGIOUS HOUSE	050488	509070	187830		Manor Farm Ruislip, Priory alien Benedictine, 1159–1414.
HV25	HAVINGING	MANOR HOUSE	060289	554700	189870		Readnalls manor.	HL14	HILLINGDON	PARISH CHURCH	210193	505690	177810		High Street, St Mary Hammondsworth, 12th century.
HV26	HAVINGING	MANOR HOUSE	060294	551670	183430		Whybridge manor.	HL15	HILLINGDON	PARISH CHURCH	210214	505526	184100		High Street, St Margaret's Uxbridge, 12th century.
HV27	HAVINGING	MANSION	060331	551260	188890		Court Hall.	HL16	HILLINGDON	PARISH CHURCH	210057	505995	182045		Church Road, St Lawrence Cowley, 12th century.
HV28	HAVINGING	MOAT	060790	552890	188450		Gardens alias Lily Farm.	HL17	HILLINGDON	PARISH CHURCH	210165	509180	187630		St Giles Ickenham, 14th century.
HV29	HAVINGING	PRISON	060330	551210	188890		Romford gaol.	HL18	HILLINGDON	MOATED MANOR HOUSE	050487	508360	188110		Southcote manor house.
HV30	HAVINGING	MANOR HOUSE	061039	557240	186100		Cranham manor, 1344.	HL19	HILLINGDON	MOATED MANOR HOUSE	050502	505170	188910		Moorhall manor house.
HV31	HAVINGING	SETTLE 4	060792</												

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
HL34	HILLINGDON	WATERMILL	050846	505100	177100		Longford mills.	HO27	HOUNSLOW	SETTLE 4	053091	517350	177300		Brentford.
HL35	HILLINGDON	FULLING MILL	052928	504380	193130		Ravenyng mill.	HO28	HOUNSLOW	SETTLE 18	0	516700	176100		Isleworth.
HL36	HILLINGDON	MILL	052975	504860	181570		Yiewesley mill.	HO29	HOUNSLOW	SETTLE 4	053060	514200	177300		Scrattage.
HL37	HILLINGDON	SETTLE 14	052960	506300	179400		West Drayton.	HO30	HOUNSLOW	SETTLE 12	0	521500	177900		Chiswick.
HL38	HILLINGDON	MANOR HOUSE	052971	505200	182000		Cowley Hall.	HO31	HOUNSLOW	SETTLE 12	0	511200	171900		Hanworth.
HL39	HILLINGDON	MILL	052974	505320	183180		Rabbs mill.	HO32	HOUNSLOW	SETTLE 31	0	513700	175500		Hounslow.
HL40	HILLINGDON	MOATED SITE	052921	508200	185820		Glebe Farm.	HO33	HOUNSLOW	SETTLE 4	0	514400	177300		Osterley.
HL41	HILLINGDON	SETTLE 4	052945	504300	193100		Gulch well.	HO34	HOUNSLOW	SETTLE 12	0	508800	172300		Feltham.
HL42	HILLINGDON	SETTLE 12	050570	508750	177750		Harlington.	HO35	HOUNSLOW	SETTLE 4	0	512500	176500		Lampton.
HL43	HILLINGDON	SETTLE 12	0	507000	182900		Hillingdon.	HO36	HOUNSLOW	SETTLE 12	054626	513000	177500		Heston.
HL44	HILLINGDON	MILL	052973	505280	184490		Town mill.	HO37	HOUNSLOW	SETTLE 4	0	513200	176800		Sutton.
HL45	HILLINGDON	SETTLE 12	052947	505200	190600		Harefield.	HO38	HOUNSLOW	COIN HOARD	050561	513910	175730		High Street, Hounslow, 15th century.
HL46	HILLINGDON	SETTLE 4	0	509100	191600		Northwood.	HO39	HOUNSLOW	CONDUIT	053066	516150	177370		Great West Road, Isleworth.
HL47	HILLINGDON	SETTLE 6	052944	510600	188600		Eastcote.	HO40	HOUNSLOW	CHAPEL	053062	517400	177300		St Lawrence chapel and hospital.
HL48	HILLINGDON	SETTLE 12	052953	507950	186200		Ickenham.	HO41	HOUNSLOW	WHARF	054161	517590	176490		Thames foreshore at Syon Reach.
HL49	HILLINGDON	SETTLE 33	052959	505500	184400		Uxbridge.	HO42	HOUNSLOW	MOATED MANOR HOUSE	050353	510090	177040		Park Lane, Cranford.
HL50	HILLINGDON	SETTLE 24	052956	509100	187700		Ruislip.	HO43	HOUNSLOW	MOATED MANOR HOUSE	050512	515400	177800		Pyrene Sports Club ground, Wyke.
HL51	HILLINGDON	SETTLE 4	052940	506100	180200		Colham.	HO44	HOUNSLOW	MANOR HOUSE	050544	521750	177980		Chiswick Mall, Chiswick (prebend of St Paul's), 1097.
HL52	HILLINGDON	SETTLE 12	052942	505540	181320		Cowley.	HO45	HOUNSLOW	MANSION	210758	517200	176698		Syon Park, 14th-century barn of ?mansion (predates abbey). (West Archaeological Field Group SMR m584.)
HL53	HILLINGDON	SETTLE 4	052943	509100	179400		Dawley.	HO46	HOUNSLOW	MOATED MANSION	050509	515300	175600		Vicinity of West Isleworth, Warton.
HL54	HILLINGDON	SETTLE 7	0	508800	174800		Hatton.	HO47	HOUNSLOW	MOATED MANOR HOUSE	050530	516500	175900		Church Street/North Street, Manor, moated and chapel: Isleworth, 1227.
HL55	HILLINGDON	SETTLE 12	052950	509770	181000		Hayes.	HO48	HOUNSLOW	MOATED SITE	050434	510000	171750		(200yd west of) Seymour Gardens Hanworth, ?Hanworth park.
HL56	HILLINGDON	SETTLE 4	052955	506200	175600		Perry.	HO49	HOUNSLOW	MANOR HOUSE	050879	513070	177370		Heston Road, Heston.
HL57	HILLINGDON	ANIMAL BURIAL	052610	505940	177810	HLL89	13th century, rear of 15 Holloway Lane.	HO50	HOUNSLOW	MANOR HOUSE	210547	508476	173423		Bedfont Road, Fawns, before 1338.
HL58	HILLINGDON	ENCLOSURE	052986	509430	188330		Broadwood Avenue.	HO51	HOUNSLOW	RELIGIOUS HOUSE	0	516500	175000		Monastery: Celestine, 1414 built/aborted.
HL59	HILLINGDON	SETTLE 12	082043	508578	182635		Hampstead.	HO52	HOUNSLOW	PARISH CHURCH	210715	513140	177500		Heston Road, St Lawrence Heston, 13th century.
HL60	HILLINGDON	PARISH CHURCH	210202	509150	187600		High Street, St Martin Ruislip, 12th century.	IS1	ISLINGTON	WINDMILL	080461	531650	182650		St John Street. Windmills near St John and Charterhouse.
HL61	HILLINGDON	KILN	052930	508500	191300		Rickmansworth Road.	IS2	ISLINGTON	WINDMILL	080462	531450	183050		St John Street. Windmills near St John and Charterhouse.
HL62	HILLINGDON	LEAT	050494	508700	187800		Bury Street.	IS3	ISLINGTON	WINDMILL	080546	531940	182470		St John Street. Windmills near St John and Charterhouse.
HL63	HILLINGDON	PARISH CHURCH	210052	505335	189585	JHL95.	Church Hill, St Mary Harefield, 12th century.	IS4	ISLINGTON	POST MILL	081695	532850	182100		Bunhill Street City Road Worship Street. Four windmills.
HL64	HILLINGDON	MOAT	052461	508940	181050			IS5	ISLINGTON	KILN TILE	080491	531500	182150	ENG84	St Mary Clerkenwell. Three 15th-century roof-tile kilns.
HL65	HILLINGDON	MOAT	050976	509050	187920		Manor Farm.	IS6	ISLINGTON	BUTCHERY	080436	531630	181840	COW89	St John's Lane. St John's Square precinct of St John Clerkenwell.
HL66	HILLINGDON	MOATED SITE	052917	509270	181250		Wood End Green Road.	IS7	ISLINGTON	WATERMILL	080408	531500	181950		Tummill Street, lower Fleet Valley, Watermill.
HL67	HILLINGDON	QUARRY	052923	505000	189000		High Street, Harefield.	IS8	ISLINGTON	KILN TILE	080390	531500	181900		Farringdon Station. Floor-tile kiln.
HL68	HILLINGDON	WINDMILL	052988	509100	187550		Windmill Hill.	IS9	ISLINGTON	WATERMILL + WEIR	080458	531300	182150		Ray Street. Weir. For watermill?
HL69	HILLINGDON	MOATED MANOR HOUSE	050500	505400	189510		South of St Mary's Church, Harefield manor.	IS10	ISLINGTON	SETTLE 6	080444	530300	186200		Lower Holloway, Holloway Road.
HL70	HILLINGDON	MOATED MANSION	050508	510620	188970		Southill Lane. House/hall moated: Eastcote.	IS11	ISLINGTON	SETTLE 4	080446	530800	186400		Tollentone, Hornsey Road.
HL71	HILLINGDON	MOATED SITE	050358	506100	188000		South of Highway Farm. House/hall moated.	IS12	ISLINGTON	SETTLE 12	0	531600	182100		Clerkenwell: parish by late 12th century. Tummill Street/St John Street/Old Street.
HL72	HILLINGDON	CASTLE	050489	509050	187800		Manor Farm Ruislip, Ruislip Castle, 12th-century motte and bailey (SAM 64).	IS13	ISLINGTON	CONDUIT	080405	531090	183400		Charterhouse conduit, 1430-1.
HL73	HILLINGDON	MOATED MANOR HOUSE	050498	507000	187100		Breakspare Road, 14th century.	IS14	ISLINGTON	CONDUIT	080416	531650	184950		St Bartholomew's hospital conduit, 14 Canonbury.
HL74	HILLINGDON	MOATED MANOR HOUSE	050497	507240	186780		Copthall Road, Pynchester, 13th century (SAM 127).	IS15	ISLINGTON	CONDUIT	080418	531900	184500		Canonbury Square.
HL75	HILLINGDON	MANOR HOUSE	050560	507450	185650		The Avenue Ickenham, Swakeleys, pre-1464.	IS16	ISLINGTON	CONDUIT	0	532125	184450		Cripplegate conduit, 1438.
HL76	HILLINGDON	MOATED MANOR HOUSE	050499	508200	185400		Ickenham manor.	IS17	ISLINGTON	CONDUIT	080404	531400	183100		St Mary de fonte conduit, 12th/13th century.
HL77	HILLINGDON	MOATED MANOR HOUSE	050504	509030	181020		Lilac Gardens, Hayes.	IS18	ISLINGTON	CHAPEL AND BURIAL GROUND	080395	531850	181900		Charterhouse. Burial ground: Black Death cemetery at Spital Croft, 1348.
HL78	HILLINGDON	MOATED MANOR HOUSE	050503	509860	181100		Church Road, Hayes manor, 14th century.	IS19	ISLINGTON	PARISH CHURCH	080441	531740	183875		Upper Street, St Mary Islington, 12th century.
HL79	HILLINGDON	MANOR HOUSE	050712	506060	179830		Swan Road near Yiewesley, Colham, 1245.	IS20	ISLINGTON	BURIAL GROUND	080520	532000	182500		St John Street. Burial ground: Black Death cemetery at Pardon churchyard, 1348.
HL80	HILLINGDON	MANOR HOUSE	050182	506140	179480	GNWD79	Beaudesert Mews, West Drayton.	IS21	ISLINGTON	CHAPEL	080547	531940	182470		Seward Street, Chapel: Mount of Calvary, temp Henry VII-VIII.
HL81	HILLINGDON	MOATED MANSION	050483	508780	178390		St Paul's Close, Harlington.	IS22	ISLINGTON	RELIGIOUS HOUSE	080436	531500	182250	SCT87	Nunnery of St Mary de fonte.
HL82	HILLINGDON	MOATED SITE	050394	510450	178390		The Parkway Cranford, Enclosure: Stanford-le-mote.	IS23	ISLINGTON	BURIAL GROUND	084012	531990	181900		
HL83	HILLINGDON	MOATED SITE	050486	505540	177780		Manor Farm, Enclosure, possibly part of priory complex.	IS24	ISLINGTON	RELIGIOUS HOUSE	212458	531880	182048		Charterhouse Square. Salutation of the Mother of God. Carthusian, 1371-1537.
HL84	HILLINGDON	TITHÉ BARN	210194	505630	177850		High Street, 1426-7 (SAM 65).	IS25	ISLINGTON	WAYSIDE CROSS	080409	529230	186950		Whittington Stone.
HL85	HILLINGDON	MANOR HOUSE	0	505500	177700		Manor Farm, 12th-century timber building.	IS26	ISLINGTON	MANOR HOUSE	080386	531900	183700		Queen's Head Street Islington, 11th century (St Paul's).
HL86	HILLINGDON	MOATED MANOR HOUSE	0	508800	185100		Ickenham Manor Farm, Hallhouse of at least 14th century (SAM 75).	IS27	ISLINGTON	INN	080507	531680	183860		Kings Head.
HL87	HILLINGDON	PARISH CHURCH	210313	506925	182920		Royal Lane, St John the Baptist Hillingdon, 14th century.	IS28	ISLINGTON	INN	080522	531900	183800		Crown Inn.
HL88	HILLINGDON	RELIGIOUS HOUSE	050484	505540	177780		Manor Farm, Priory Benedictine alien (St Catherine Rouen), 1090-1392.	IS29	ISLINGTON	SETTLE 4	080392	532850	185350		Newington Green.
HL89	HILLINGDON	SETTLE 28	0	505760	177750		Hammondsworth, Saxon origin: 48 houses in 1337.	IS30	ISLINGTON	SETTLE 5	080393	529400	186800		Upper Holloway.
HO1	HOUNSLOW	GRAVEL PIT	050952	513850	175650	DRH85	1-3 Douglas Road. Gravel extraction.	IS31	ISLINGTON	SETTLE 4	0	530500	187500		Stanestaple.
HO2	HOUNSLOW	WATERMILL	050531	516500	176000		Isleworth North Street, 13th century near Isleworth manor.	IS32	ISLINGTON	CROSS	080403	531000	185450		Ring Cross.
HO3	HOUNSLOW	HOSPITAL	0	517500	177350		SS Mary, Anne and Louis, pre-1372.	IS33	ISLINGTON	SETTLE 4	082238	531000	184540		Ring Cross.
HO4	HOUNSLOW	SETTLE 30	050314	517350	177250	BRE67(A)	New Brentford, 13th-century occupation and two 14th-century buildings. 141-147 High Street.	IS34	ISLINGTON	SETTLE 4	083791	531620	184740		Canonbury.
HO5	HOUNSLOW	SETTLE 4	051097	517170	177280	BRF89	Area of Brentford End, west of mouth of River Brent: postholes found at 2-6 London Road.	IS35	ISLINGTON	SETTLE 12	0	531300	183800		Islington.
HO6	HOUNSLOW	PARISH CHURCH	053058	509860	172260		St Dunstan Feltham.	IS36	ISLINGTON	SETTLE 4	080212	533500	184800		Kingsland.
HO7	HOUNSLOW	RELIGIOUS HOUSE	050882	517300	176650		SS Saviour and Bridget of Syon (second foundation).	IS37	ISLINGTON	CLAY PITS	082070	532870	181800	LIG88	Ling House, Dominion Street.
HO8	HOUNSLOW	HOSPITAL	210719	517435	177285		(New) Brentford High Street. Hospital: St Lawrence, 1175.	IS38	ISLINGTON	COIN HOARD	082359	531900	185700		Highbury, 15th century.
HO9	HOUNSLOW	PARISH CHURCH	210820	508480	173685		Staines Road, Holy Trinity Hounslow, 1200.	IS39	ISLINGTON	PLAQUE PIT	080519	532350	182800		City Road, 14th century.
HO10	HOUNSLOW	PARISH CHURCH	210657	516800	176084		Church Street, All Saints Isleworth, 15th century.	IS40	ISLINGTON	MOATED MANOR HOUSE	080475	530400	186150		Hercules Street, Du Vois (St Paul's, Knights Hospitaller).
HO11	HOUNSLOW	HOSPITAL	0	517150	177300		SS Eligius and Anthony, 1441.	IS41	ISLINGTON	MOATED MANOR HOUSE	080402	530900	186200		Kinloch Street/Highbury manor, Tollandune, 11th century, first site.
HO12	HOUNSLOW	PARISH CHURCH	210655	521570	177780		Church Street, St Nicholas Chiswick, 15th century.	IS42	ISLINGTON	MOATED MANOR HOUSE	080401	531825	185570		Leigh Road, Highbury (Knights Hospitaller, second site), 1271.
HO13	HOUNSLOW	HOSPITAL	050873	517200	177200		Hospital, formerly a chapel.	IS43	ISLINGTON	MOATED MANOR HOUSE	080378	531050	184250		Barnsbury Square, Barnsbury (St Paul's).
HO14	HOUNSLOW	SETTLE 4	050572	516860	178360		Boston manor house.	IS44	ISLINGTON</						

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
KC6	KENSINGTON AND CHELSEA	HOSPITAL	081275	527940	179780		Knightsbridge. Leper hospital. St Leonard and Holy Trinity, 13th century.	LA32	LAMBETH	MANOR HOUSE	090015	531140	178330		Kennington Road. Palace with chapel incorporating manor: Kennington, 13th century.
KC7	KENSINGTON AND CHELSEA	MANOR HOUSE	213725	526985	177570		Crosby Hall (moved to Chelsea from City, 1907).	LA33	LAMBETH	MOATED MANOR HOUSE	090023	530760	176140		Stockwell Road. Stockwell, 13th century.
KC8	KENSINGTON AND CHELSEA	MANOR HOUSE	081659	525800	180000		Neyt manor house.	LA34	LAMBETH	MANOR HOUSE	090021	531500	176400		Loughborough Road. Le wyk, 1330.
KC9	KENSINGTON AND CHELSEA	SETTLE 4	0	525500	180500		Knotynghill.	LA35	LAMBETH	MANOR HOUSE	090134	531300	173350		Upper Tulse Hill. Bodleys, 1202.
KC10	KENSINGTON AND CHELSEA	MOATED MANOR HOUSE	081648	524800	179600		Holland Park.	LA36	LAMBETH	MANOR HOUSE	090035	531880	172070		Manor with chapel: Lefhurst, 1326. Norwood Road.
KC11	KENSINGTON AND CHELSEA	MANOR HOUSE	081646	525570	179770		Kensington Church Street. Kensington, 11th century.	LA37	LAMBETH	MANOR HOUSE	090065	530200	171170		Albert Carr Gardens. Colbrands, 1394.
KC12	KENSINGTON AND CHELSEA	MANOR HOUSE	081647	525500	178500		Earl's Court. Earl's Court.	LA38	LAMBETH	MANSION	090016	530700	178980	NOR90	113–125 Lambeth Road. Norfolk House, 14th century.
KC13	KENSINGTON AND CHELSEA	MANOR HOUSE	081651	527150	177650		Lawrence Street. Long House, 14th century.	LW1	LEWISHAM	MANOR HOUSE	070079	535915	177185		Hatcham, 11th century.
KC14	KENSINGTON AND CHELSEA	CROSS	081653	528100	178100		Royal Hospital Road.	LW2	LEWISHAM	MANOR HOUSE	070009	537800	170700		Beckenham Place park.
KT1	KINGSTON UPON THAMES	WATERMILL	030693	521630	170820		Mill Corner Beverley Brook. Watermill.	LW3	LEWISHAM	WATERMILL	070067	537765	172280		Bellingham mill.
KT2	KINGSTON UPON THAMES	WATERMILL	030111	519000	163580		Vicinity of Castle Hill. Watermill.	LW4	LEWISHAM	INN	070126	536390	174545		Brockley. Jack.
KT3	KINGSTON UPON THAMES	INN	030579	517871	169120		2–6 High Street. Finds accessioned at Kingston Museum.	LW5	LEWISHAM	DOCK	070038	536750	178420		Pepys estate.
KT4	KINGSTON UPON THAMES	INN	031826	517870	169178		The Castle Inn, 14th century.	LW6	LEWISHAM	WATERMILL	070071	538020	176140		Armoury mill.
KT5	KINGSTON UPON THAMES	BRIDGE	030035	517720	169418	HOR86	Kingston Old Bridge. Old Bridge Street.	LW7	LEWISHAM	FLOUR MILL	070073	537470	176650		Brook mill.
KT6	KINGSTON UPON THAMES	TANNERY	031851	518000	169100		Medieval tenement. Eden Walk.	LW8	LEWISHAM	FLOUR MILL	070066	538230	171785		Lower mill.
KT7	KINGSTON UPON THAMES	KILN POT	0	517800	169100		High Street/Market Place Kingston. Kilns (unclassified) and associated buildings.	LW9	LEWISHAM	FLOUR MILL	070074	537430	177075		Tide mill.
KT8	KINGSTON UPON THAMES	WHARVES	0	517800	169100		High Street/Market Place Kingston. Wharves and revetments on the Thames.	LW10	LEWISHAM	SETTLE 12	0	539400	175600		Blackheath.
KT9	KINGSTON UPON THAMES	KILN POT	0	518170	169200		Four Kingston ware kilns.	LW11	LEWISHAM	WATERMILL	070065	538620	171480		Upper mill.
KT10	KINGSTON UPON THAMES	HOSPITAL	031880	517800	169400		Old Bridge Street. Hospital: St Edward.	LW12	LEWISHAM	SETTLE 12	071582	537000	177000		Deptford.
KT11	KINGSTON UPON THAMES	CHAPEL CHANTRY	200366	518575	169355		Chapel: merchant chantry St Mary Magdalen, 1309 (SAM 91).	LW13	LEWISHAM	SETTLE 12	0	537900	175000		Lewisham.
KT12	KINGSTON UPON THAMES	PARISH CHURCH	200309	518460	163485		St Mary the Virgin Chessington, 13th century.	LW14	LEWISHAM	MOATED SITE	070049	539410	175230		Church Street.
KT13	KINGSTON UPON THAMES	TITHE BARN	023233	518200	169600		Canbury tithe barn.	LW15	LEWISHAM	RELIGIOUS HOUSE	070003	536950	175880		Wickham Road. Blessed Virgin Mary. Premonstratensian, 1180–1208.
KT14	KINGSTON UPON THAMES	PALACE	030011	517833	169067		King John's Palace.	LW16	LEWISHAM	HERMITAGE	071595	537200	176900		Deptford Bridge.
KT15	KINGSTON UPON THAMES	ENCLOSURE	030110	519050	163440		Castle Hill earthwork.	LW17	LEWISHAM	PARISH CHURCH	070020	539027	175723		St Margaret, 11th century.
KT16	KINGSTON UPON THAMES	SETTLE 34	0	517800	169500		Kingston upon Thames.	LW18	LEWISHAM	PARISH CHURCH	070022	539540	175480		Christchurch.
KT17	KINGSTON UPON THAMES	WOODEN REVETMENT	022030	517800	169500	TJR95	Turk's Boatyard.	LW19	LEWISHAM	RELIGIOUS HOUSE	070064	537930	173780		Ringstead Road. Priory of St Peter at Ghent. Benedictine (alien), 918–1415.
KT18	KINGSTON UPON THAMES	REVTMENT	021791	517800	169100	CQD88	Charter Quay.	MT1	MERTON	MOATED MANOR HOUSE	021318	527400	168300		Manor and chapel, pre-1348.
KT19	KINGSTON UPON THAMES	SETTLE 12	0	518500	163500		Chessington.	MT2	MERTON	CORN MILL	021456	526580	170540		Wandle Bank mill.
KT20	KINGSTON UPON THAMES	SETTLE 12	0	521400	166300		Old Malden.	MT3	MERTON	SETTLE 12	0	524500	171500		Wimbledon.
KT21	KINGSTON UPON THAMES	BRIDGE ABUTMENT	031909	517775	169490	KK72	Kingston Old Bridge, 12th century.	MT4	MERTON	SETTLE 16	0	527600	168700		Mitcham.
KT22	KINGSTON UPON THAMES						Deleted no.	MT5	MERTON	SETTLE 24	0	525400	169700		Merton.
KT23	KINGSTON UPON THAMES	KILN POT	021812	517800	169400	KND82	Union Street, Kingston.	MT6	MERTON	SETTLE 12	0	525200	167700		Morden.
KT24	KINGSTON UPON THAMES	KILN POT	022109	518100	169200		Eden Walk, Kingston.	MT7	MERTON	MOATED SITE	030715	526090	170010		Merton High Street.
KT25	KINGSTON UPON THAMES	KILN POT	030513	518140	169170	KD68	Eden Street, Kingston.	MT8	MERTON	PARISH CHURCH	030685	527050	168690		Church Road Mitcham. SS Peter and Paul Mitcham.
KT26	KINGSTON UPON THAMES	MOAT	030098	521220	169740		The Moat, Kingston.	MT9	MERTON	RELIGIOUS HOUSE	030376	526500	169900	MPY88	Station Road. Priory of St Mary. Augustinian canons, 1114–1538 (SAM 151).
KT27	KINGSTON UPON THAMES	REVTMENT	023109	517641	169372	KIB97	Including three tenements.	MT10	MERTON	MOATED SITE	030690	525580	168580		West Barnes Farm. Grange of Merton Priory.
KT28	KINGSTON UPON THAMES	REVTMENT	022335	517890	169580	SAD96	Near Kingston Bridge.	MT11	MERTON	MOATED SITE	030778	527860	168350		Cricknet Green. Moated farm. St Mary Overy.
KT29	KINGSTON UPON THAMES	WATERMILL	030518	518153	168876		Denmark Road.	MT12	MERTON	MOATED MANOR HOUSE	030723	526660	168060		Ravensbury Park. Ravensbury.
KT30	KINGSTON UPON THAMES	WATERFRONT	022115	517800	169400	HOR86	Kingston Horsefair.	MT13	MERTON	PARISH CHURCH	215127	525112	169436		Church Path. St Mary Merton, 12th century.
KT31	KINGSTON UPON THAMES	PARISH CHURCH	200319	517900	169300		All Saints, 11th century.	MT14	MERTON	PARISH CHURCH	215222	524500	171460		St Mary's Road. St Mary Wimbledon.
KT32	KINGSTON UPON THAMES	CHAPEL	031698	517908	169280		Market Place. St Mary.	MT15	MERTON	PARISH CHURCH	030709	525040	167445		Epsom Road. St Lawrence Morden.
KT33	KINGSTON UPON THAMES	HOSPITAL LEPER	030113	518600	169300		London Road. St Leonard, 1227–1323.	NH1	NEWHAM	WATERMILL	060766	537610	185440		Temple Mills Lane. Temple mills east of River Lea. Watermills.
KT34	KINGSTON UPON THAMES	PALACE	030010	517900	169128		Bishop of Winchester, ?12th century–1392.	NH2	NEWHAM	MANOR HOUSE	061809	542900	183100		Hawebones.
KT35	KINGSTON UPON THAMES	PALACE	030514	518150	169250		Eden Street and High Street. Fortified? royal residence.	NH3	NEWHAM	MANOR HOUSE	061790	541450	180850		Sudbury manor alias Abbey Place.
KT36	KINGSTON UPON THAMES	MANOR HOUSE	031856	519010	169520		London Road. Hartington.	NH4	NEWHAM	MANOR HOUSE	061799	540260	184140		Grove House alias Rookes Hall or Ham House.
KT37	KINGSTON UPON THAMES	MANOR HOUSE	030097	520900	169900		FitzGeorge Avenue. Coombe, 1361.	NH5	NEWHAM	MANOR HOUSE	061642	542230	186530	ALD73	Aldersbrook manor.
KT38	KINGSTON UPON THAMES	MOATED MANOR HOUSE	030096	520310	165160		Old Kingston Road. Tolworth. Manor with chapel. Tolworth, pre-1327.	NH6	NEWHAM	MANOR HOUSE	061781	540000	183000		Manor of east West Ham.
KT39	KINGSTON UPON THAMES	GUILDHALL	030001	517900	169220		Market Place. Guildhall, c 1500.	NH7	NEWHAM	MANOR HOUSE	061796	542960	182490		East Ham Hall manor.
LA1	LAMBETH	MOATED MANOR HOUSE	090034	532750	172460		South Croxted Road (Lambeth). Knolles, 1433.	NH8	NEWHAM	MANOR HOUSE	061804	541000	183000		East West Ham manor.
LA2	LAMBETH	WHARF	090652	530300	178140		South Lambeth Road/Wandsworth Road. 14th-century timber wharf, 15th-century Cox's bridge (Westminster Abbey).	NH9	NEWHAM	MANOR HOUSE	061798	540560	185350		Woodgrange manor.
LA3	LAMBETH	KILN TILE	0	530050	171800		Streatham High Road. Roof-tile kiln in Streatham, in use 1504.	NH10	NEWHAM	MANOR HOUSE	061805	540530	183340		Bretts manor.
LA4	LAMBETH	SETTLE 29	0	529970	171480		Streatham. Tenements in existence by 1498 called the Leonards.	NH11	NEWHAM	MANOR HOUSE	061811	538910	185320		Chobhams manor.
LA5	LAMBETH	SETTLE 27	090957	530620	178850		Water Lambeth. Lambeth High Street.	NH12	NEWHAM	MANOR HOUSE	061808	539600	180700		Coveeles manor.
LA6	LAMBETH	EMBANKMENT	092727	531300	180400		Broadwall embankment.	NH13	NEWHAM	SETTLE 4	061818	543250	179800		North Woolwich.
LA7	LAMBETH	DYKE	090107	530700	179680		Narrow wall (alignment of).	NH14	NEWHAM	MANOR HOUSE	061810	540500	183100		Plaistow.
LA8	LAMBETH	RIVER STAIRS	090027	530620	179570		Stangate Stairs.	NH15	NEWHAM	SETTLE 12	0	543000	182500		East Ham.
LA9	LAMBETH	MANOR HOUSE	090025	529250	175980		Clapham manor.	NH16	NEWHAM	SETTLE 20	0	539400	183900		West Ham.
LA10	LAMBETH	SETTLE 4	090958	531000	179600		Lambeth marsh.	NH17	NEWHAM	SETTLE 4	061821	540470	184440		Upton.
LA11	LAMBETH	SETTLE 4	090959	530410	177350		South Lambeth.	NH18	NEWHAM	PARISH CHURCH	221593	542895	185290		Church Road. St Mary the Virgin Little Ifford, 1150.
LA12	LAMBETH	SETTLE 4	090963	531800	175880		Coldharbour.	NH19	NEWHAM	RELIGIOUS HOUSE	061139	538800	183490	HW-SL83	St Mary Stratford Langthorne. Cistercian, 1134–1539 (SAM 148).
LA13	LAMBETH	SETTLE 4	090966	532050	174000		Herne Hill.	NH20	NEWHAM	PARISH CHURCH	221601	542930	182380		High Street. St Mary Magdalen East Ham, 1130.
LA14	LAMBETH	SETTLE 4	0	532000	172600		Dean Green.	NH21	NEWHAM	PARISH CHURCH	061938	538900	183500	HW-OP-91	Little Parish Church, document, in precincts of St Mary Stratford (Gz NH19).
LA15	LAMBETH	SETTLE 12	090960	531800	178650		Newington.	RB1	REDBRIDGE	WATERMILL	060895	541220	190270		Southend Road. Watermill.
LA16	LAMBETH	SETTLE 6	090961	530720	176050		Stockwell.	RB2	REDBRIDGE	GRAVEL PIT	0	543750	185000		Uphall Road. Medieval gravel pits?
LA17	LAMBETH	SETTLE 6	090965	530330	177980		Vauxhall.	RB3	REDBRIDGE	MANOR HOUSE	060892	542550	191770		Manor Road. Woodford, 1235.
LA18	LAMBETH	SETTLE 4	090964	530400	173800		Brixton.	RB4	REDBRIDGE	MOATED SITE	060157	547620	189200		Possible moat at Padnall Grove.
LA19	LAMBETH	SETTLE 12	0	529400	175600		Clapham.	RB5	REDBRIDGE	MOATED SITE	060223	543670	188030		Castle Rising Farm.
LA20	LAMBETH	SETTLE 28	0	530500	177300		Lambeth.	RB6	REDBRIDGE	MANOR HOUSE	061372	545530	188450		Newbury manor.
LA21	LAMBETH	TITHE BARN	090451	529920	171780		Tooting Bec Gardens.	RB7	REDBRIDGE	INN	062692	541800	188500		Red House.
LA22	LAMBETH	MANOR HOUSE	090070	529250	175820		Rectory Grove. Clapham, 1326.	RB8	REDBRIDGE	SETTLE 4	061305	547610	187890		Chadwell Street.
LA23	LAMBETH	CHAPEL	090												

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
RB19	REDBRIDGE	MANOR HOUSE	060151	545430	189180		St Peters Close. Aldborough.	SW30	SOUTHWARK	KILN TILE	091100	534100	176700		Tilekiln. 14th century.
RB20	REDBRIDGE	MANOR HOUSE	061252	542500	187600		Chichester Gardens. Wyfield, 1219. Barking Abbey.	SW31	SOUTHWARK	SETTLE 34	0	532900	180200		Southwark.
RB21	REDBRIDGE	MOATED MANOR HOUSE	060227	542970	187220		12-16 De Vere Gardens. Cranbrook, 1347. Barking Abbey.	SW32	SOUTHWARK						No. deleted.
RB22	REDBRIDGE	MOATED MANOR HOUSE	060238	544550	185150		Loxford Lane. Loxford, 1319. Barking Abbey.	SW33	SOUTHWARK	MANSION	090265	532400	179800		Suffolk Place.
RB23	REDBRIDGE	MOATED SITE	060153	546150	186850		Aldbrough Hatch Farm.	SW34	SOUTHWARK	WINDMILL	090728	533680	179170		Spa Road. Windmill.
RB24	REDBRIDGE	PARISH CHURCH	061711	540420	192550		St Mary Woodford.	SW35	SOUTHWARK	BURIAL GROUND	091210	532870	180070		St Thomas' Hospital burial ground.
RB25	REDBRIDGE	CHAPEL	060243	546960	191220		Hainault Road. Chapel and hermitage, 15th century.	SW36	SOUTHWARK	CROSS	090761	533450	180200		Post in forecourt of filling station.
RT1	RICHMOND	PARISH CHURCH	021112	516490	173330		Church Street Richmond. Chapel: St Mary Magdalene Shene, 1117.	SW37	SOUTHWARK	INN	090437	533000	180300		Bricklayers Arms Inn.
RT2	RICHMOND	MILL	021080	518600	173250		Petersham Park. Mill mound.	SW38	SOUTHWARK	MANOR HOUSE	090176	532660	176650		Milkwell manor house.
RT3	RICHMOND	WINDMILL	021118	513700	173000		Whitton. Windmill.	SW39	SOUTHWARK	BOATHOUSE	090076	531320	180520		Kings bargehouse.
RT4	RICHMOND	MOATED PALACE	021125	517580	174920		Palace, formerly manor with chapel: Shene, 1125-1394.	SW40	SOUTHWARK	CROSS	090441	533070	180180		Bermondsey Cross.
RT5	RICHMOND	MANOR HOUSE	023258	516000	171000		Teddington manor house.	SW41	SOUTHWARK	INN	090431	532980	180340		Fleur de Lys Inn.
RT6	RICHMOND	MANOR HOUSE	021141	518000	175000		Byfleet manor house.	SW42	SOUTHWARK	DYKE	090108	531550	179850		Broadwall (alignment of).
RT7	RICHMOND	DEER PARK	021121	517180	174540		Twickenham park.	SW43	SOUTHWARK	QUAY	090445	532820	180350		Goodchepes key.
RT8	RICHMOND	SETTLE 4	0	516400	169500		Hampton Wick.	SW44	SOUTHWARK	INN	091058	533040	180220		Rams Head.
RT9	RICHMOND	SETTLE 4	0	520400	174900		East Shene?	SW45	SOUTHWARK	PRISON	090440	532870	180240		Gatehouse.
RT10	RICHMOND	SETTLE 4	0	517400	175000		West Shene.	SW46	SOUTHWARK	WATERGATE	090595	532860	180350	TW70	Watergate.
RT11	RICHMOND	SETTLE 12	0	516400	173300		Twickenham.	SW47	SOUTHWARK	WINDMILL	090735	531600	180500		Widfleete mill.
RT12	RICHMOND	SETTLE 12	0	518000	173200		Petersham.	SW48	SOUTHWARK	MANOR HOUSE	092135	533430	179820	LWK92	Weldon manor.
RT13	RICHMOND	SETTLE 12	023252	520000	175000		Mortlake.	SW49	SOUTHWARK	INN	090751	532760	180340		Dolphin.
RT14	RICHMOND	SETTLE 12	0	513500	169400		Hampton.	SW50	SOUTHWARK	INN	090762	532800	180300		White Horse.
RT15	RICHMOND	SETTLE 4	025355	514500	174200		Whitton.	SW51	SOUTHWARK	WATERMILL	090700	533150	180310	HDA85	Battle mill.
RT16	RICHMOND	SETTLE 12	0	522300	176600		Barnes.	SW52	SOUTHWARK	INN	090742	532820	180380		Bear.
RT17	RICHMOND	SETTLE 28	0	517900	174700		Shene.	SW53	SOUTHWARK	PRISON	090439	532870	180310		The Cage.
RT18	RICHMOND						No. deleted.	SW54	SOUTHWARK	SETTLE 12	092738	535300	179700		Rotherhithe.
RT19	RICHMOND	FISH TRAP	022596	523460	176380	FRM20	Thames foreshore.	SW55	SOUTHWARK	SETTLE 24	0	533300	179400		Bermondsey.
RT20	RICHMOND	FISH TRAP	022597	523320	176620	FRM20	Thames foreshore.	SW56	SOUTHWARK	SETTLE 19	0	532700	176500		Camberwell.
RT21	RICHMOND	FISH TRAP	022604	523240	177330	FRM21	Thames foreshore.	SW57	SOUTHWARK	SETTLE 4	0	533200	174100		Dulwich.
RT22	RICHMOND	JETTY	022588	522720	178150	FRM20	Thames foreshore.	SW58	SOUTHWARK	SETTLE 6	0	534300	176800		Peckham.
RT23	RICHMOND	MANOR HOUSE	021142	517650	174840		Friar's Lane, 15th century.	SW59	SOUTHWARK	BURIAL GROUND	090284	532590	180090		52, Borough High Street.
RT24	RICHMOND	MANOR HOUSE	021123	517180	174580		Twickenham Park.	SW60	SOUTHWARK	COIN HOARD	090768	532350	180360		Park Street.
RT25	RICHMOND	MOATED SITE	021106	522600	176500		Barn Elms.	SW61	SOUTHWARK	WHARF	091183	533250	180250	MOR87	Morgan's Lane. Waterfront structures associated with Rosary mansion.
RT26	RICHMOND	MOATED SITE	021107	514900	174400		Whitton.	SW62	SOUTHWARK	INN	091937	532860	180370	FW83	Fennings Wharf. Foundations and cesspits from medieval buildings, including The Dolphin.
RT27	RICHMOND	WATERMILL	021135	512400	173100		The Avenue/St Georges Road. SS Saviour and Bridget of Syon. Bridgettine double house, 1415-31, first foundation.	SW63	SOUTHWARK	WATER CHANNEL	090818	533960	179080	CRODA87	Croda Gelatine Works, Grange Road. Two north-south channels.
RT28	RICHMOND	WHARF	023254	520400	176100		Hampton Court Palace. Manor with chapel incorporating house of nuns: Hampton camera, 1200 (Knights Hospitaller) (SAM 83).	SW64	SOUTHWARK	BUILDING	091320	534040	176740	PEC90	1-83 Peckham High Street. 12th-century ditch and pit, 14th-century postholes.
RT29	RICHMOND	RELIGIOUS HOUSE	021122	517180	174580		Ferry Road. Chapel: Teddington chapel-of-ease, 1217.	SW65	SOUTHWARK	MOAT	092101	533320	180240	ABO92	Moat of Fastolf Place. 15th-century moated mansion.
RT30	RICHMOND	RELIGIOUS HOUSE	021117	522200	168500		Sheen manor/palace religious houses: Friar's Lane. Monastery formerly Byfleet at Shene manor: friars observant 1501-34.	SW66	SOUTHWARK	CHURCH	090571	533320	179470		St Mary Magdalen Bermondsey Street.
RT31	RICHMOND	CHAPEL	021120	516500	171300		Royal Mid-Surrey Golf Course. Monastery: Jesus of Bethlehem of Shene. Carthusian, 1414-1538. Refounded 1556-8.	SW67	SOUTHWARK	DOCK	091182	533260	180290	GAS88	Moat and dock associated with The Rosary, c 1325, Gun and Shot Wharf.
RT32	RICHMOND	RELIGIOUS HOUSE	021127	517580	174920		Petersham Road. St Peter Petersham, 13th century.	SW68	SOUTHWARK	PIT	091023	532860	180090	GHR82	Guy's Hospital, medieval rubbish pits.
RT33	RICHMOND	RELIGIOUS HOUSE	021131	517050	175700		St Mary Mortlake, 1349.	SW69	SOUTHWARK	RIVER WALL	092113	533320	180240	ABO92	Abbots Lane, masonry river wall.
RT34	RICHMOND	PARISH CHURCH	201243	518145	173340		Williams Lane. Cromwell House.	SW70	SOUTHWARK	RIVER WALL	090683	532610	180370	WPA84	15th-century masonry river wall near Winchester Palace.
RT35	RICHMOND	PARISH CHURCH	021115	520840	175990		Mortlake brewery. Palace with chapel: archbishop of Canterbury, 1099.	SW71	SOUTHWARK	RIVER WALL	091355	532570	180410	HSW90	12th-14th-century timber waterfront.
RT36	RICHMOND	MANOR HOUSE	021147	520200	176050		Thames Street Hampton. St Mary the Virgin Hampton, 11th century.	SW72	SOUTHWARK	BRIDGE	091074	533650	178320		Old Kent Road.
RT37	RICHMOND	PALACE	021129	520460	176060		Mansion house and bakehouse near Old Park gate, 1437.	SW73	SOUTHWARK	WATER CHANNEL	091959	533200	180200	UPP88	Pond and channel linked to Fastolf Place (15th century).
RT38	RICHMOND	PARISH CHURCH	021124	514050	169450		Isleworth manor/Twickenham Park. Ravensbourne Road. Military encampment, 1263.	SW74	SOUTHWARK	WATERFRONT	092103	533320	180240	ABO92	Abbots Lane.
RT39	RICHMOND	MANSION	0	517400	175000		St Mary Barnes, 1100-1835.	SW75	SOUTHWARK	BRIDGE	090443	533240	179690		Site of 'The Stone Bridge' Bermondsey Street.
RT40	RICHMOND	ENCAMPMENT	021130	517150	174440		Ravensbourne Road. 13th-century encampment site.	SW76	SOUTHWARK	WOODEN REVETMENT	091335	532530	180420	NBW90	12th-century timber waterfront.
RT41	RICHMOND	PARISH CHURCH	200955	522200	176582	SMB78	St Mary Barnes, 13th century.	SW77	SOUTHWARK	WOODEN REVETMENT	091181	533320	180290	SYM88	13th-14th-century docks and waterfront, moat of 14th-century Rosary mansion.
SW1	SOUTHWARK	PRISON	090277	532580	180090		Borough High Street. Prison with attendant burial ground: King's Bench, 14th century.	SW78	SOUTHWARK	BOAT	0	533110	180210	TYT98	Reused medieval rowing galley, c 1265, in 16th-century pond lining.
SW2	SOUTHWARK	PARISH CHURCH	212907	533310	179466		St Mary Magdalen Bermondsey, 13th century. Bermondsey Street.	SW79	SOUTHWARK	MANSION	090447	532640	180070	85BH590	Talbot Yard. Inn of abbot of Hyde then Tabard Inn.
SW3	SOUTHWARK	MANOR HOUSE	090756	533650	180060		Horsleydown Lane. Horsleydown (Knights Hospitaller).	SW80	SOUTHWARK	RELIGIOUS HOUSE	090584	532680	180330		London Bridge/Montague Close. Priory of St Mary Overy. Augustinian canons, 1106-1540.
SW4	SOUTHWARK	MOATED SITE	090755	534000	179800		Mill Street. Basing.	SW81	SOUTHWARK	PALACE	091099	532600	180390	WP83	Clink Street Palace with chapel: bishop of Winchester, 1144-9 (SAM 28).
SW5	SOUTHWARK	MANOR HOUSE	090752	533850	179850		Shad Thames.	SW82	SOUTHWARK	MOAT	091188	533300	180180	BFN88	Part of moat of Fastolf Place, or related water channel.
SW6	SOUTHWARK	MOATED PALACE	090592	534800	179700	PW84	Rotherhithe, 1350 (SAM 164).	SW83	SOUTHWARK	BURIAL GROUND	090444	532820	180260		Railway approach. Flemish burial ground.
SW7	SOUTHWARK	HOSPITAL LEPER CHURCH	090446	532870	179150		Tabard Street. St Mary and St Leonard (The Lock), before 1315.	SW84	SOUTHWARK	INN	090262	532610	180300		Winchester Walk. Mansion of prior of St Swithuns/bishop of Rochester, 1294.
SW8	SOUTHWARK	CHURCH	090066	531910	178840		Newington Butts. St Mary Newington, 1212.	SW85	SOUTHWARK	MANSION	0	532880	180250		Railway approach. Earl de Warenne of Surrey.
SW9	SOUTHWARK	MANOR HOUSE	090286	533230	177480		Newent Close. Doveholes.	SW86	SOUTHWARK	MANSION	090430	532940	180340		Tooley Street. Abbot of St Augustine, 13th century.
SW10	SOUTHWARK	MANOR HOUSE	090287	534710	177730		Ruby Street. Hatcham Coldharbour.	SW87	SOUTHWARK	MANSION	090434	532870	180250		Railway Approach. Prior of Lewes.
SW11	SOUTHWARK	MANOR HOUSE	090285	532820	176620		Camberwell Grove. Camberwell Buckingham.	SW88	SOUTHWARK	MANSION	090433	533090	180270		Tooley Street. Abbot of Battle.
SW12	SOUTHWARK	PARISH CHURCH	090760	535170	179850		St Mary Church Street. St Mary Rotherhithe, 1310.	SW89	SOUTHWARK	MOATED MANOR HOUSE	0	533200	180200		Morgan's Lane. The Rosary, 1325.
SW13	SOUTHWARK	MANOR HOUSE	090288	534120	176960		Peckham Hill Street. Breytinghurst.	SW90	SOUTHWARK	MANSION	090507	533240	180200	MOR87	Abbots Lane. Fastolf Place, 1446.
SW14	SOUTHWARK	MANOR HOUSE	090289	534230	174200		Goodrich Road. Camberwell Friem.	SW91	SOUTHWARK	PARISH CHURCH	090951	532960	176630		Camberwell Church Street. St Giles Camberwell, 13th century.
SW15	SOUTHWARK	REVTMENT	092297	532860	180140	LBC95	Joiner Street.	SW92	SOUTHWARK	RELIGIOUS HOUSE	090572	533400	179350	BA84	Tower Bridge Road. St Saviour. Cluniac priory, ?1082-1398. Benedictine abbey, 1399-1538 (SAM 165).
SW16	SOUTHWARK	PARISH CHURCH	090697	532880	180330	SOH84	St Olaf.	SW93	SOUTHWARK	PARISH CHURCH	090283	532610	180120		Borough High Street. St Margaret Southwark, 1100.
SW17	SOUTHWARK	WHARF	0	532000	180500	B578	Bankside Power Station. Wharf/dock? Late 15th or 16th century.	SW94	SOUTHWARK	MANOR HOUSE	090432	532950	180130		Tooley Street. The Maze, 14th century.
SW18	SOUTHWARK	REVTMENT	090678	532180	180510	37B587	37-46 Bankside. Revetment late medieval or 16th century.	SW95	SOUTHWARK	HOSPITAL	090604	532780	180200	I1ST577	Hospital: St Thomas'. Augustinian canons, 1212-1539.
SW19	SOUTHWARK	REVTMENT	0	532400	180400	B581	5-15 Bankside. Revetment, later river wall, 14th century.	SW96	SOUTHWARK	PARISH CHURCH	090574	532480	179760		Borough High Street. St George the Martyr Southwark, 1122.
SW20	SOUTHWARK	KILN POT	090858	532360	180450	B581	5-15 Bankside. Whiteware pottery kiln waste.	SW97	SOUTHWARK	PRISON	090603	532490	180420		Clink Street. Clink Prison.
SW21	SOUTHWARK	WATERMILL	0	532450	180420		Bank End Winchester Palace. Watermills.	SW98	SOUTHWARK	PARISH CHURCH	09042				

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes	Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
ST12	SUTTON	SETTLE 1	0	529700	164000			TH74	TOWER HAMLETS	GRAVEL PIT	080927	533900	180650	MIN86	East Smithfield/Royal Mint Street. On site of St Mary Graces, 13th/14th century.
ST13	SUTTON	PARISH CHURCH	200028	529550	165250		St Mary the Virgin Beddington, 11th century.	TH75	TOWER HAMLETS	HOSPITAL LEPER	080919	536200	182450		St Mary Mile End, 1274–1598.
ST14	SUTTON	SETTLE 14	0	529800	165300		Beddington.	WF1	WALTHAM FOREST	HERMITAGE	061169	537450	190070		Hermitage.
ST15	SUTTON	SETTLE 1	022082	528700	165840	ELM95	Hackbridge.	WF2	WALTHAM FOREST	MOATED MANOR HOUSE	061134	538820	193780		Kings Road. Manor possibly moated: Pimphall, 1260.
ST16	SUTTON	SETTLE 20	021198	526000	164800	SHH89	Sutton.	WF3	WALTHAM FOREST	MOATED MANOR HOUSE	061114	536410	192530	CF-CH88	Lower Hall Lane. Manor moated with chapel: Chingford St Pauls, 998.
ST17	SUTTON	SETTLE 19	0	524300	163800		Cheam.	WF4	WALTHAM FOREST	MANOR HOUSE	061113	536330	192400		Lower Hall Lane. Chingford Earls.
ST18	SUTTON	PARISH CHURCH	200073	527990	164470		All Saints Carshalton.	WF5	WALTHAM FOREST	MANOR HOUSE	060811	537380	191120		Chingford Road. Salisbury Hall, 1302.
ST19	SUTTON	COIN HOARD	030386	528640	164860		Quinton Close.	WF6	WALTHAM FOREST	MOATED MANOR HOUSE	060809	537620	189400		Rectory Road. Rectory House (Holy Trinity Aldgate).
ST20	SUTTON	PARISH CHURCH	200044	524300	163900		St Dunstan Cheam, 12th century.	WF7	WALTHAM FOREST	MANOR HOUSE	060685	537610	186850		Church Road. Layton Grange.
TH1	TOWER HAMLETS	CHAPEL	222222	537675	182965		Bow Road. Chapel: St Katherine at Bow, 1311.	WF8	WALTHAM FOREST	MOATED MANOR HOUSE	060688	538080	186100		Ruckholt Road. Ruckholt, 1257.
TH2	TOWER HAMLETS	HOSPITAL	080215	533450	182050		Norton Folgate. Crown rent almshouses, 15th century.	WF9	WALTHAM FOREST	MOATED MANOR HOUSE	060770	539410	185930		Cann Hall Road. Canons Hall, before 1086 (Holy Trinity Aldgate).
TH3	TOWER HAMLETS	MANOR HOUSE	081006	535100	181800		Sidney Street Mile End, 15th century.	WF10	WALTHAM FOREST	MOATED MANOR HOUSE	062352	536350	188060	WS-LH94	Low Hall Lane. Low Hall, 1397.
TH4	TOWER HAMLETS	PARISH CHURCH	222665	535975	181585		Parish church: St Dunstan and All Saints Stepney, 11th century.	WF11	WALTHAM FOREST	MANOR HOUSE	061192	536780	187790		Mark House, 1248 (St Helen Bishopsgate).
TH5	TOWER HAMLETS	CASTLE	081053	533600	180550	TOL12	Tower of London complex (SAM 10): fortified palace, moated with chapel.	WF12	WALTHAM FOREST	MOATED SITE	061784	537650	194450		Site at Mountecho Farm.
TH6	TOWER HAMLETS	TENTERGROUND	081058	533650	181010		Bell Lane.	WF13	WALTHAM FOREST	MOATED SITE	061785	537730	193850		Site east of Oldmans Farm.
TH7	TOWER HAMLETS	HOSPITAL	080932	533880	180430		St Katharine. Augustinian, founded 1148.	WF14	WALTHAM FOREST	MANOR HOUSE	061170	536170	192360		Chingford Earls manor house.
TH8	TOWER HAMLETS	GRAVEL PIT	080984	533460	181720	ART76	27–33 Artillery Lane. Gravel pits, 14th–15th centuries.	WF15	WALTHAM FOREST	MOAT	060829	537915	189715		Moat near Brookscroft.
TH9	TOWER HAMLETS	FULLING MILL	081570	538000	183000		North of Stratford-at-Bow. Fulling mill, 14th century.	WF16	WALTHAM FOREST	SETTLE 4	061197	539230	186270		Leyton-le-Stone.
TH10	TOWER HAMLETS	WATERMILL	081569	538000	183000		Stratford-at-Bow. Four watermills.	WF17	WALTHAM FOREST	BREWHOUSE	060756	538190	187380		Brewhouse.
TH11	TOWER HAMLETS	GRAVEL PIT	080894	533800	181250	GDC80	Gardiner's Corner. Gravel extraction, 13th/14th century.	WF18	WALTHAM FOREST	RABBIT WARREN	061194	538790	193650		Coneyborough.
TH12	TOWER HAMLETS	GRAVEL PIT	080986	533800	180900	GYD75	Goodman's Yard. 13th/14th century.	WF19	WALTHAM FOREST	SETTLE 14	0	537800	189300		Walthamstowe.
TH13	TOWER HAMLETS	WATERMILL	081565	534250	180250		Tower of London. Wapping waterfront.	WF20	WALTHAM FOREST	SETTLE 12	0	537400	193500		Chingford.
TH14	TOWER HAMLETS	DOCK	080974	533970	180320	FTH02	St Katharine's Way. Watermill, 1190.	WF21	WALTHAM FOREST	SETTLE 12	0	539900	187900		Wanstead.
TH15	TOWER HAMLETS	WATERMILL	081567	534250	180400		Two watermills 'Cressemlles'.	WF22	WALTHAM FOREST	SETTLE 4	061210	539820	191770		Higham.
TH16	TOWER HAMLETS	INN	080996	534030	180330		Red Lion Inn.	WF23	WALTHAM FOREST	KILN	061676	538000	186000		Leyton.
TH17	TOWER HAMLETS	WATERMILL	081563	535300	180500		Shadwell. Shadwell watermill.	WF24	WALTHAM FOREST	CHAPEL	060800	537410	189780		Forest Road. St Edward, 1441.
TH18	TOWER HAMLETS	SHIPYARD	081560	536000	180800		Ratcliff. Radcliffe dockyards and earlier wharf from 1348.	WF25	WALTHAM FOREST	PARISH CHURCH	224908	537680	186860		Church Road Leyton.
TH19	TOWER HAMLETS	WHARF	081558	536800	180800	LLK26	Limehouse dock. Shipyard/wharf and associated revetments.	WF26	WALTHAM FOREST	PARISH CHURCH	224944	537370	193380		Old Church Road. All Saints Chingford, 1181.
TH20	TOWER HAMLETS	SETTLE 12	080857	536000	181600	SHS79	Stepney. Two tenements in existence by 1299. Stepney High Street.	WW1	WANDSWORTH	PARISH CHURCH	212227	524180	175595		Putney High Street. St Mary Putney, before 1302.
TH21	TOWER HAMLETS	SETTLE 3	084275	537800	178800		Pomfret. By 1322, associated with St Mary-in-the-Marsh chapel from 1380. Chapel gone by 1450.	WW2	WANDSWORTH	MANOR HOUSE	031567	526850	176900	FWW11	Battersea Church Road. Battersea.
TH22	TOWER HAMLETS	RELIGIOUS HOUSE	081502	533900	180650	MIN86	Abbey of St Mary Graces. Cistercian. 1350–1539.	WW3	WANDSWORTH	MANOR HOUSE	031568	527270	176930		Westbridge Road. Battersea. Boingbroke House, 15th century.
TH23	TOWER HAMLETS	MANSION	080913	537100	181400		Gissing Place, 15th century.	WW4	WANDSWORTH	MANOR HOUSE	020779	529490	177570		Nine Elms Lane. Nine Elms.
TH24	TOWER HAMLETS	BAKEHOUSE	080964	538000	180800		Stratford-at-Bow. Bakehouse.	WW5	WANDSWORTH	MOATED MANSION	0	526550	175900		York Place Battersea. Pentecost of Wandsworth, 1218. York House, 1461.
TH25	TOWER HAMLETS	RELIGIOUS HOUSE	080915	533700	181050	SCS83	Nunnery of St. Clare Minorities. Franciscan, 1293–1539.	WW6	WANDSWORTH	MOATED SITE	031367	527850	171170		Franciscan Road. Tooting Gravenny.
TH26	TOWER HAMLETS	CROSS	080918	533740	180910		Minorities Cross.	WW7	WANDSWORTH	HOUSE/HALL MOATED	0	528150	172370		House/hall moated: Broadwaters, 1448.
TH27	TOWER HAMLETS	CROSS	080936	535890	181550		Ratcliff Cross.	WW8	WANDSWORTH	WHARF	0	526550	175900		York Place Battersea. Wharf: for Reigate (etc) stone 1218–1352+.
TH28	TOWER HAMLETS	BURIAL GROUND	0	533480	181855	SRP98	Mass burial pits in precinct of St Mary Spital, 13th–14th centuries.	WW9	WANDSWORTH	PARISH CHURCH	0	528200	171300		St Nicholas Tooting Gravenny.
TH29	TOWER HAMLETS	COIN HOARD	081023	533600	180700		Tower Hill, 13th century.	WW10	WANDSWORTH	KILN DRYING	0	530050	171800		
TH30	TOWER HAMLETS	WATERMILL	080971	537500	183500		Fulling mill. Old Ford.	WW11	WANDSWORTH	KILN TILE	0	525900	174600		Wandsworth High Street. 14th-century roof-tile kiln.
TH31	TOWER HAMLETS						No. deleted.	WW12	WANDSWORTH	MILL	025278	526000	172000		Sumerton mill.
TH32	TOWER HAMLETS	SETTLE 4	081573	534800	180100		Wapping.	WW13	WANDSWORTH	SETTLE 12	0	528200	171300		Tooting Gravenny.
TH33	TOWER HAMLETS	WATERMILL	080969	537500	183500		Algodesmelle, Old Ford.	WW14	WANDSWORTH	SETTLE 14	025277	527200	176900		Battersea.
TH34	TOWER HAMLETS	FERRY	081555	538600	180500		Blackwall. Potter's Ferry, 14th century.	WW15	WANDSWORTH	SETTLE 12	0	525500	174600		Wandsworth.
TH35	TOWER HAMLETS	SETTLE 4	0	534700	182800		Bethnal Green.	WW16	WANDSWORTH	SETTLE 12	0	524200	175400		Putney.
TH36	TOWER HAMLETS	SETTLE 12	0	534200	181600		Whitechapel.	WW17	WANDSWORTH	COIN HOARD	031364	526980	176460		The Castle public house.
TH37	TOWER HAMLETS	SETTLE 7	0	537800	182700		Bramblege.	WW18	WANDSWORTH	FERRY	031566	527000	177380	FWW12	Battersea Bridge.
TH38	TOWER HAMLETS	SETTLE 4	080962	536800	180800		Limehouse.	WW19	WANDSWORTH	FERRY	031581	524250	175750	FHM08	Putney Bridge.
TH39	TOWER HAMLETS	SETTLE 6	080925	537200	183700		Old Ford.	WM1	WESTMINSTER	CHAPEL	08124528	530200	179500		St Margaret Street. St John's chapel.
TH40	TOWER HAMLETS	SETTLE 4	080905	536100	180900		Radcliffe.	WM2	WESTMINSTER	CHAPEL	081280	531020	180970		Chapel of the Holy Spirit.
TH41	TOWER HAMLETS	SETTLE 5	080963	535700	182100		Mile End.	WM3	WESTMINSTER	RELIGIOUS HOUSE	081338	530450	180790		Friars Pyes.
TH42	TOWER HAMLETS	SETTLE 6	080988	535400	180600		Shadwell.	WM4	WESTMINSTER	RELIGIOUS HOUSE	0	530200	179500		Westminster area. Friary: St Mary de Areno, 1267–1317.
TH43	TOWER HAMLETS	SETTLE 4	081007	537930	180772		Poplar.	WM5	WESTMINSTER	PARISH CHURCH	081215	528570	181150		Marylebone Lane/Oxford Street. St John the Evangelist, 1200, precursor to St Mary le Bourne.
TH44	TOWER HAMLETS	WATERMILL	081569	538000	183000		Old Ford.	WM6	WESTMINSTER	CHAPEL	081211	526700	181750		Paddington Green. St Mary Paddington, 1222.
TH45	TOWER HAMLETS	SCAFFOLD	081067	533480	180730		Tower Hill execution site.	WM7	WESTMINSTER	PARISH CHURCH	081216	528325	181955		Marylebone Road. St Mary le Bourne, 1400.
TH46	TOWER HAMLETS	DOCK	081566	534000	180400		St Katharine's Dock.	WM8	WESTMINSTER	MANOR HOUSE	081213	527400	181700		Old Marylebone Road. Lisson possibly 11th century, Knights Templar 12th century to 1312, Knights Hospitaller to 1540.
TH47	TOWER HAMLETS	BREWHOUSE	081578	534000	180700		Wapping.	WM9	WESTMINSTER	MANOR HOUSE	081218	528400	182000		Marylebone High Street. Marylebone, 1270.
TH48	TOWER HAMLETS	CONDUIT	082843	533550	181950	SQU94	Water reservoir supplying St Mary Spital.	WM10	WESTMINSTER	MOATED MANOR HOUSE	081206	528750	178400	ELV94	Ebury Bridge. Neate, 1386.
TH49	TOWER HAMLETS	WELL	081054	534310	180790		Well Close.	WM11	WESTMINSTER	HORSE BURIAL	0	529710	178980	WHL75	1 Elverton Street. Burial ground: horse burial pits possibly 14th–15th centuries.
TH50	TOWER HAMLETS	WELL	080847	534100	181500		Whitechapel.	WM12	WESTMINSTER	PALACE	081245	530180	179500		St Margaret's Street. Westminster Palace (SAM 55), 11th century.
TH51	TOWER HAMLETS	BRIDGE	080970	537500	179500		Pontefract or Pomfret Bridge, Isle of Dogs, 13th century.	WM13	WESTMINSTER	MANSION	081445	529910	179600		Storey's Gate. Mansion: no name given in GLSMR.
TH52	TOWER HAMLETS	SHIPYARD	081582	536800	180800		Limehouse.	WM14	WESTMINSTER	HOSPITAL	081427	529910	179490		Victoria Street. Hospital: almshouses, 15th-century.
TH53	TOWER HAMLETS	FULLING MILL	080903	537500	183500		Old Ford.	WM15	WESTMINSTER	HOSPITAL	081428	529925	179470		Broad Sanctuary. Hospital: almshouses, 1500–4.
TH54	TOWER HAMLETS	SHIPYARD	081584	535400	180600		Shadwell.	WM16	WESTMINSTER	HOSPITAL	081424	529850	179490		Victoria Street. Hospital: the almshouse.
TH55	TOWER HAMLETS	GRAVEL PIT	0	533800	181800	STE95	Very large (15m). 13th-century quarry pits reused as rubbish dumps. 250 Bishopsgate.	WM17	WESTMINSTER	KILN DRYING	0	529890	180510	NAG87	National Gallery extension. Drying kiln, 12th century.
TH56	TOWER HAMLETS	BUILDING	082334	536210	182410	QMC90	Large, timber, possible agricultural building. 343–345 Mile End Road.	WM18	WESTMINSTER	BREWHOUSE	081354	530110	180400		Strand. Brewhouse, 15th century (Knights Hospitaller).
TH57	TOWER HAMLETS	MANOR HOUSE	081562	535300	180800		Shadwell manor house.	WM19	WESTMINSTER	MILL	081374	530100	179260		Vicinity of Great College Street. Watermill.
TH58	TOWER HAMLETS	DOCK	081577	534500	180100		Wapping.	WM20	WESTMINSTER	GUILDHALL	081410	530080	179640		Parliament Square. Guildhall.
TH59	TOWER HAMLETS	GATE	081079	533615	180720	TOL79	Tower Postern gate, 13th century.	WM21	WESTMINSTER	WOOLSTAPLE	081245	530120	179650		Bridge Street. Woolstaple, 1353.
TH60	TOWER HAMLETS	WATERMILL	080972	538200	182500		Blackwall Tunnel, northern approach.	WM22	WESTMINSTER						

Gz no.	Borough	Type	GLSMR	E	N	Site code	Notes
WM32	WESTMINSTER	MANSION	081303	530250	180120	YKB88	Bishop of Durham, before 1222. Strand/York Buildings.
WM33	WESTMINSTER	MANSION	081281	530510	180690		Bishop of Bath and Wells, 1231. Strand.
WM34	WESTMINSTER	HOSPITAL	081346	530060	180380		Strand south side. Priory hospital and hermitage: St Mary Rauceval (alien – Roncevalles Navarre), 1232–1544; Charing Cross.
WM35	WESTMINSTER	MANSION	081287	530060	180380		Strand south side. Canons of the Holy Sepulchre Warwick, bishop of Llandaff after 1280. Strand.
WM36	WESTMINSTER	MOATED MANSION	081384	530110	179920		Charing Cross. The Mote, 1305 (abbot of Abingdon 1478); Whitehall/Downing Street.
WM37	WESTMINSTER	MANSION	081320	530030	180370		Strand north side Inn: Clement's Inn before 1442, Hospital of Burton Lazars 1463. Strand.
WM38	WESTMINSTER	PARISH CHURCH	081284	530700	180860		Strand south side. Church of the Nativity of our Lady and the Innocents, 12th century, demolished 1549.
WM39	WESTMINSTER	MANSION	081294	530200	179800		Strand south side. Savoy mansion 1246, became hospital 1517. Strand.
WM40	WESTMINSTER	MANSION	081320	530110	179920		Strand south side. Bishop of Norwich, 12th century. Strand.
WM41	WESTMINSTER	MANSION	081297	530200	179900		Strand south side. Bishop of Carlisle, before 1238. Strand.
WM42	WESTMINSTER	MANSION	0	530240	180500		Strand south side. Hungerford house, before 1449.
WM43	WESTMINSTER	MANSION	0	530600	180750		Strand south side. Bishop of Exeter, 1320. Essex Street.
WM44	WESTMINSTER	CONDUIT	081270	528550	181100		Conduit: Paddington fields to Cheapside, 1236–85. South Molton Street Piccadilly.
WM45	WESTMINSTER	MANSION	081288	530230	179750		Strand south side. Bishop of Worcester, 1266. Strand.
WM46	WESTMINSTER	CHAPEL	081159	530730	180810		Charing Cross. Chapel-of-ease St Martin-in-the-fields, 1222 (not a parish church until reign of Henry VIII), St Martin's Place.
WM47	WESTMINSTER	MANSION	081286	530670	180820		Strand south side. Bishop of Chester, 1294. Strand.
WM48	WESTMINSTER	MANSION	081322	531020	180970		Strand north side. New Inn, 15th century. Strand.
WM49	WESTMINSTER	MANSION	081321	530100	180540		Strand north side. Bosham's Inn, before 1405. Aldwych.
WM50	WESTMINSTER	MANSION	081379	530200	179900		Charing Cross. Abbot of Bury, early 13th century. Vicinity of Whitehall/Richmond Terrace.
WM51	WESTMINSTER	MANSION	081356	530250	180120		Charing Cross. York Place, 1190. Whitehall.
WM52	WESTMINSTER	HOSPITAL	081373	530770	180840		Charing Cross. Hospital: St Martin-in-the-fields. Trafalgar Square.
WM53	WESTMINSTER	MANSION	081323	530800	180990		Strand north side. Lyons Inn, 1420. Strand.
WM54	WESTMINSTER	MANSION	081285	530920	181100		Strand south side. Strand Inn. Strand.
WM55	WESTMINSTER	PARISH CHURCH	081221	530060	180460		Strand north side. Parish church: St Clement Danes, 10th century. Strand.
WM56	WESTMINSTER	HOSPITAL LEPER	081278	529250	180080	MRB90	Leper hospital. St James the less, 12th century. St James Street.
WM57	WESTMINSTER	CROSS	081352	530730	180810		Charing Cross, 1290.
WM58	WESTMINSTER	MANSION	0	530810	180840		Drury House, 15th century.
WM59	WESTMINSTER	CHAPEL	081280	530690	180790		Strand south side. Chapel: Holy Spirit, pre-1320. Milford Lane.
WM60	WESTMINSTER	MANSION	081378	530200	179800		Charing Cross. Mansion: Almayne. Parliament Street.
WM61	WESTMINSTER	CROSS	081290	530950	180900		Strand north side. Cross, 11th century. Strand.
WM62	WESTMINSTER	RELIGIOUS HOUSE	081338	530635	180915		Strand north side. Friary: Pied Friars, 1267–1316.
WM63	WESTMINSTER	MANSION	081446	530230	179750		Charing Cross. Earl of Kent, 13th century.
WM64	WESTMINSTER	GRAVEL PIT	082114	530050	180450	TSQ88	Trafalgar Square.
WM65	WESTMINSTER	CHAPEL	081431	529600	179450		St Mary Magdalene chapel.
WM66	WESTMINSTER	BREWHOUSE	081385	530110	179920		The Axe.
WM67	WESTMINSTER	MANSION	0	530400	180570		Strand south side. Mansion?.
WM68	WESTMINSTER	TAVERN	0	530125	179875		King Street. The Sun tavern, from 1388.
WM69	WESTMINSTER	HOUSE/HALL	0	530200	179750		Houses of Canons of St Stephen's Chapel, mid 15th century.
WM70	WESTMINSTER	CONDUIT	0	530050	180300		Whitehall. Public well or conduit (appears on Ralph Agas map of c 1570).
WM71	WESTMINSTER	SCHOOL	0	529950	179375		Dean's Yard. Original site of Westminster School, reformed 1560.
WM72	WESTMINSTER	RIVER STAIRS	081318	530380	180510		Exchange Stairs.
WM73	WESTMINSTER	CROSS	081352	530030	180370		Eleanor Cross.
WM74	WESTMINSTER	INN	081522	531110	181240		Hereflete Inn.
WM75	WESTMINSTER	CONDUIT	0	530225	179625		Polygonal stone public fountain in New Palace Yard.
WM76	WESTMINSTER	PALACE	081350	530150	180230		Scotland Yard.
WM77	WESTMINSTER	CROSS	081423	529920	179550		Broken Cross.
WM78	WESTMINSTER	CROSS	081290	530760	180920		Strand Cross.
WM79	WESTMINSTER	INN	081325	530860	181050		Our Lady Inn.
WM80	WESTMINSTER	INNS OF CHANCERY	081320	530920	181100		Clements Inn.
WM81	WESTMINSTER	HOUSE/HALL	0	530125	179625	PSW93	Merchants' houses and site of Great October Fair in abbey precinct, 13th century.
WM82	WESTMINSTER	BUILDING	081244	529980	179620		Westminster Abbey Belfry, 13th-century massive masonry structure on piled raft.
WM83	WESTMINSTER	TAVERN	0	530250	179680	PLS94	Tavern cesspit with barrel staves, drinking vessels and wooden plates, 13th century.
WM84	WESTMINSTER	EXCHEQUER	081245	530250	179570		Government exchequer office, 13th century, attached to Westminster Hall.
WM85	WESTMINSTER	MANSION	081286	530730	180810		Chester Inn.
WM86	WESTMINSTER	INNS OF CHANCERY	081285	530810	180840		Strand Inn.
WM87	WESTMINSTER	INN	081326	530930	181040		Angel Inn.
WM88	WESTMINSTER	INNS OF CHANCERY	081323	530810	181000		Lyons Inn.
WM89	WESTMINSTER	INN	081336	530250	180480		Bell Inn.
WM90	WESTMINSTER	INN	081407	529770	179530		Cock Inn.
WM91	WESTMINSTER	INN	081337	530250	180470		Lion Inn.
WM92	WESTMINSTER	INN	081353	530110	180400		Rose Inn.
WM93	WESTMINSTER	INN	081345	530060	180440		Rose Inn.
WM94	WESTMINSTER	INN	081342	530080	180500		Swan Inn.
WM95	WESTMINSTER	INNS OF CHANCERY	081322	530830	181060		New Inn.
WM96	WESTMINSTER	SETTLE 4	081377	529500	179500		Petty France.
WM97	WESTMINSTER	SETTLE 14	0	528800	181100		Tyburn.
WM98	WESTMINSTER	SETTLE 6	0	528600	178500		Abury.
WM99	WESTMINSTER	COIN HOARD	112051	530350	179450		14th century, found on Thames foreshore off Houses of Parliament.
WM100	WESTMINSTER	CONDUIT	081277	529250	180550		Conduit head, Piccadilly.
WM101	WESTMINSTER	QUAY	083344	530230	179730	WSS94	Westminster Underground Station. Timber quay and stone riverside wall.
WM102	WESTMINSTER	WATERFRONT	082325	530850	180860	KIL90	King's College, Strand. Waterlogged medieval waterfront.
WM103	WESTMINSTER	RELIGIOUS HOUSE	081244	530050	179470	WST86	Westminster Abbey. Monastery: St Peter Westminster. Benedictine abbey, church rebuilt 1065 (SAM 11).
WM104	WESTMINSTER	CHAPEL	081245	530240	179500	PCW92	Houses of Parliament. College: St Stephen Westminster, 1348–1547.
WM105	WESTMINSTER	CHAPEL	081408	529790	179440		St Anne in the almony.
WM106	WESTMINSTER	CHAPEL	081344	530010	180490		St Eustace.
WM107	WESTMINSTER	HERMITAGE	081348	530011	180300		St Katherine's hermitage.
WM108	WESTMINSTER	PARISH CHURCH	081222	530130	179540	SMW88	Parliament Square. St Margaret Westminster, 11th century.



POST-MEDIEVAL LONDON: THE EXPANDING METROPOLIS

John Schofield

Introduction and background

Post-medieval archaeology is a relatively new period specialism within the discipline of archaeology, and one national review of its products stresses the value of artefact sequences (pottery, clay tobacco pipes and glass), vernacular buildings, relict landscapes and in particular industries such as ferrous and non-ferrous metals, mining and quarrying (Crossley 1990). Archaeology is seen to provide material evidence for economic developments: demographic recovery after the late medieval epidemics, with accompanying changes in agriculture, industry and trade as well as in individual wealth and status (Crossley 1990, 3). The development of pottery studies in post-medieval archaeology is particularly highlighted by a second review (Gaimster 1994), and the 'kaleidoscopic variety of new evidence' has recently been outlined (Egan 1999). But much remains to be formulated in the way of an archaeological approach to the study of material culture in the period 1500 to 1800. Against this national background, several themes specific to London and its area can be identified and pursued: the expansion of London and its effects, the way that the metropolis handled growth and at the same time renewed itself as a capital city, the economy, changes in domestic arrangements and in religion, the role of recreation and culture, the development of Westminster and the court, the post-medieval River Thames and the docks, and London's place in Europe, the widening British Empire and beyond.

The beginning of this post-medieval period, by arrangement with the other authors of this volume, is c 1500 for secular buildings or material and c 1540 for ecclesiastical matters. The end of the period under review is taken here to be c 1800, largely on grounds of space. There are many themes and monuments of the 19th and 20th centuries which are capable of archaeological recording and analysis, but only a small number of exceptional examples are mentioned here. A recent compilation of stimulating new approaches and ideas investigates post-medieval material culture up to the present day (Tarlow & West 1999).

Unlike the previous chapters of this assessment, this one does not have an attached gazetteer. The sites of post-medieval excavations in the London area are thin on the ground, as yet, and a map would be meaningless; if we were to include all the listed buildings of these centuries, the map would be swamped. Further, the extent and character of each settlement, from hamlet to metropolis, was mapped for us at intervals during the period, at least from the middle of the 17th century. This chapter therefore has a larger number of bibliographical references in the text, though not every statement or discovery is documented.

Past work and nature of the evidence

The archaeological evidence for post-medieval London and its region is drawn from (1) excavation and survey, including standing buildings; (2) artefact studies; and (3) environmental archaeology. When it survives, the resource base of post-medieval archaeology – in the form of both primary evidence (i.e. strata, finds and structures) and secondary sources (documentary records, maps and engravings) – is generally richer, more varied and more complete than that for earlier periods. This is mainly because the archaeological evidence has been decaying for a relatively shorter period, and because the documentary evidence is far more detailed and varied than before.

Up to about 1980, there was very little excavation in the London area of post-medieval sites. Buildings under threat were recorded by RCHM and amateur groups or individuals, though in the 1960s, in the eyes of the growing conservation lobby, there were many losses of buildings which would be recorded today (Hobhouse 1971). The Society for Post-Medieval Archaeology was formed in 1967, largely directed to begin with by enthusiasts in artefact studies. There was, and continues to be, a strong tradition of local history studies which produced work on individual sites.

The nature of the archaeological evidence

Post-medieval deposits, like those of previous periods, survive best in the waterfront and riverine zones, and in former marshes. Even some of these deep reservoirs of strata may be in danger of decay below ground: it has recently been noticed that many finds, particularly metals, from deposits in Moorfields north of the City showed evidence of recent deterioration, possibly due to changing water levels in the soil (Swain 1995, 410). The Great Fire of 1666 is recognised on many sites in the City. Since Thames Street was raised by several feet after the disaster, fire deposits are found along the waterfront; there are similar deposits in the Fleet Valley. Below ground throughout most of Greater London redevelopment has ensured that the levels of this date have mostly been removed by the basements of later office blocks and other redevelopments, but there are frequent exceptions. Dug features such as wells and cesspits are, however, a frequent find, and they often contain good artefactual and environmental groups. Outside the central area, the relative lack of development, or a former rural or village setting, sometimes means that strata survive in good condition. Churches and graveyards are a further rich source of evidence.

Standing buildings and dendrochronology

Above ground in the central conurbation (the City, Southwark and Westminster), the great majority of the buildings of this period have now disappeared, but outside the centre, historic buildings of all kinds survive. Archaeological methods have proved to be extremely effective for a wide variety of recording tasks on standing post-medieval buildings, both secular and religious, from roof timbers to drains and foundations, and from chandeliers to wall plaster. An opportunity for such work is often provided by the restoration of buildings as well as their redevelopment or demolition. An archive of records of standing buildings (including Threatened Buildings Surveys) in the London area, largely compiled by the former Historic Buildings Division of the Greater London Council, is held by English Heritage and this might be made more accessible, to the profit of all students. This archive is of both medieval and post-medieval buildings.

There are three published sets of overall surveys of standing buildings in the London area. They overlap, but roughly in chronological order they are:

- 1 The studies of the Survey of London teams (subsequently RCHM, now EH) of areas (Chelsea, Kensington, Poplar) and of some individual buildings (Crosby Hall, Swakeleys), published from 1894 to the present: for an outline history, Hobhouse 1994, and a review of the whole series of products, Cherry 1995.
- 2 The volumes of the Royal Commission on Historical Monuments (England), for buildings up to 1714, in Essex in 1916–23, in the central London area in 1924–30 and in Middlesex in 1937.
- 3 The Buildings of England series of Nikolaus Pevsner, Bridget Cherry and their colleagues, in stages from 1951. This has been the most comprehensive of all, and deals with all notable buildings to the present. For Greater London and the former Middlesex, the Pevsner volumes of 1951–83 have now been thoroughly revised as *London 1: The City of London* (Bradley & Pevsner 1997); *London 2: South* (Cherry & Pevsner 1983); *London 3: North West* (Cherry & Pevsner 1991); and *London 4: North* (Cherry & Pevsner 1998), with other volumes in prospect. Further volumes of relevance deal with Essex (Pevsner 1965), Surrey (Nairn & Pevsner 1971) and west Kent (Newman 1980).

The standard work on polite architecture in London and Britain for the period 1530–1830 is by Sir John Summerson (1953, 9th ed, 1993). For the period 1700–1939, the London bibliography of Heather Creaton (1994) has references to 1095 studies of all kinds of domestic and religious buildings, arranged by borough.

Dendrochronology, in this period, is making important advances on two fronts. Firstly, a range of post-medieval buildings have had their dates refined or confirmed: roofs at Charterhouse and Middle Temple Lane in the City, Eastbury Manor, Broomfield House and Forty Hall in Enfield; and

at Gentleman's Row, Enfield, part of a suspected late 15th-century hall house within a standing 17th-century range was confirmed (lists published in *Vernacular Architecture* 28 (1997), 135–58). Secondly, the study of tree species is being extended beyond the usual oak to other species such as spruce. Not only can some buildings be dated from their softwood components (eg House Mill, Bromley-by-Bow), but the geographical sources of imported spruce timbers (Scandinavia; the Baltic; as far as Belorussia, via Latvia) can be demonstrated by study of the tree rings (work by C Groves, University of Sheffield).

Artefact studies and environmental archaeology

Artefactual research has concentrated on the pottery types present in the capital and its environs, largely to establish ceramic-dating frameworks and regional typologies. The post-medieval pottery of London, moreover, has an importance far beyond the capital and its hinterland, for by 1800 London was the commercial centre of a worldwide empire. Thus the specification of date ranges for the wealth of pottery types in use in London in this period is of importance both nationally and for colleagues studying this period in all Britain's former colonies. The first volume in this series is on Border wares from the Hampshire–Surrey border (Pearce 1992); other studies will follow on redwares from Woolwich and Essex (Pearce in prep b), and a series on tin-glazed wares. In this third case the first volume (Edwards in prep) will present a number of ceramic groups from the City itself as a place of consumption. Further studies in preparation will be of some of the many production sites of tin-glazed (delftware) fabrics in Southwark, Lambeth and other suburbs. Study of pottery extends to the major wares imported from abroad, such as Chinese porcelain (Barry 1996), the English porcelain experiments from Limehouse (Drakard 1993; Tyler in prep) and assemblages found in 18th- and 19th-century cesspits (eg Vince & Egan 1981; Webber 1991). Research is also under way on building materials (brick, roofing and floor tiles, stove tiles) and on clay tobacco pipes, which become a useful dating mechanism for strata after c 1580.

There now exist such extensive collections of artefacts of the period 1500–1800 that a typological review of post-medieval artefacts should be attempted (Egan & Moir in prep is a first survey). This may seem a rather conventional approach, but because of the wealth of datable material available in London which is not available elsewhere (some categories of artefact, such as toys, are virtually unrecognised outside London), this could provide a unique opportunity to investigate the nature and transformation of popular material culture over three centuries. The impact of exotica (eg ivory, tobacco) could also be studied. In general, the London waterfront finds (both north and south of the river) are probably the largest and most varied 16th- and 17th-century assemblages in the country. One area of future development is the chronology of vessels in glass, which has the potential for being a dating mechanism to stand with pottery. For the post-medieval period, more than for previous periods, a wide range of artefacts of luxurious or artistic character are studied by art and architectural historians as well as by archaeologists, and archaeological studies fit into or fill out a wider picture.

The environmental study of post-medieval London and its region has great potential, but for this period there are problems of various kinds to be overcome. The degree of residuality in samples is probably high, and certainly unknown. There is also a voluminous amount of documentary evidence for disease, pollution, use of animals and plants, and climatic change to consider.

The botanical study of London is beginning, with a review of the evidence by Giorgi (1997a). The introduction of exotic plants, some from America, can be traced in the archaeological record. Giorgi concludes that it is difficult either to quantify or establish the relative importance of different categories of plant foods in the diet of Londoners and how this may have changed over time; the sampled evidence gives a limited and therefore conservative picture of diet (Giorgi 1997a, 209). But his paper is a first step in considering both the problems and the future role of botanical studies.

Some studies of animal bones in particular contexts, often cesspits, have appeared (Armitage in Thompson et al 1984; Vince & Egan 1981), but the

potential of animal bone studies in the period has perhaps yet to be fully realised. This will change when the large number of reports now awaiting publication appear in the near future.

The study of large groups of human skeletons from London and to a lesser extent from other places in the region is in progress. It seems likely that much progress can be made in the archaeological study of disease and deficiencies among the urban and rural populations in and around London, on groups dating well into the 19th century (though see the cautionary remarks in the section on human skeletal studies, below).

Documentary records, maps and drawings

A survey of recent work on the history of London (the central conurbation and some of the outlying boroughs) in the period 1500–1700 has been made by Harding (1995). Documentary material relating to the post-medieval period resides in many libraries throughout Britain and occasionally abroad, but most of it is in London at the Public Record Office, Guildhall Library (GL) and London Metropolitan Archives (LMA; formerly the Greater London Record Office). This chapter cannot summarise, even in outline, the wealth of published scholarship this documentary evidence has generated on the topics to be outlined here for their archaeology: military matters, public buildings and infrastructure, education, religion, industries and manufacturing, trade and agriculture. The bibliography on London history to 1939 by Heather Creton of the Centre for Metropolitan History (1994) provides a comprehensive review of the literature. Some of the categories of documentary records which are most useful to archaeologists for this period are outlined here: records of landholding, civic and parish records, records of individual houses and people, pictorial evidence and maps. Only examples in each category are cited here.

Records relating to landholding are the most significant for archaeology (eg Keene & Harding 1985 for the City up to 1666). These records are numerous from 1500, consisting of deeds and wills, rentals and accounts, court minute books, plans and views. A total of 54 livery companies still have records of property-ownership in the City. Many properties of the religious houses were transferred into secular ownership during the Dissolution, often into the guardianship of secular institutions, particularly the livery companies and Christ's Hospital. Surveyed plans of individual buildings or properties survive from c 1600 (Schofield 1987b; Carlin 1990), and are plentiful, especially for the central urban area but also for the surrounding counties, from the middle of the 18th century.

Records of the city and town corporations, and to a lesser extent of parishes, are detailed from the 16th century onwards (from the early 15th century in the case of the City). These deal with all aspects of civic life and provide considerable topographical information. Parish records (churchwardens' accounts from the 1530s, vestry minutes, cartularies, views, assessments and other records in GL and LMA) are useful for details of churches and repairs of parish properties and the pressures exerted on certain churchyards by secular building and by the parishes themselves in building on strips adjacent to the church, especially for shops. Parish registers of births, marriages and deaths are the single most important source for estimating population figures for London and its region. The earliest records date from c 1540 and are thereafter usually continuous. Creton lists studies of these by borough (1994, 3–13).

Hearth taxes, especially those of 1664, 1666 and 1679 (in GL and LMA), provide reliable information concerning the number of households and density of population. The trades of many Londoners can also be identified from parish registers (eg Beier 1986), and in the Greater London area from Rate Books which are common from the mid 18th century. Historical work on wage rates, wheat prices, per capita consumption of beer and spirits, and consumed tonnages of corn, butter, cheese and meat provide much complementary information for the study of the food trades and consumption. The place of origin of migrants who became apprentices in London is also frequently ascertainable after 1551 (Kitch 1986). From the late 17th century there are lists of inhabitants ('directories'). The first, by Samuel Lee in 1677, listed the names and addresses of 1900 wholesale traders in the City, but without indication of each merchant's trade specialism. Lowndes's *London directory* (annual, 1768–92) listed 6500 names in 1775. Rival directories proliferated; by 1800 one listed 37,800 names. Potential uses of directories include the history of trades and professions, spatial information on social organisation and economic activity, such as

Debris of the Great Fire of London in a cellar south of Thames Street, City of London, excavated on the New Fresh Wharf site in 1974



high-class residential districts or patterns of journey-to-work (linking residence with place of work), and the history of localities and individual streets. Directories are, however, incomplete in that they mainly record upper- and middle-class homes and businesses, main streets rather than alleys, and do not usually take account of multiple occupancy (Atkins 1990).

The most important general maps are those of the City north of the river by Ogilby and Morgan in 1676 (actually published 1677, but traditionally in the literature quoted as '1676'), and of the conurbation by Rocque in 1744–7 and Horwood in 1792–9. The Ogilby and Morgan map delineates the post-Fire City, almost totally rebuilt, together with the pre-Fire (ie largely medieval) parts to the north-east and west. Rocque's map is the first to show details of the outlying suburbs and villages in the area bounded by Marylebone, Bethnal Green, Deptford and Chelsea, and shows the locations of over 5000 named places in the conurbation and its immediate surroundings (streets, lanes, churches, prominent buildings and monuments). The map is particularly useful for the details of industrial and commercial works such as docks (at Deptford), glasshouses, market gardens, tentergrounds, tilekilns, timber yards, warehouses, water reservoirs, wharves and windmills. The Horwood map provides individual street numbers for the first time.

Thousands of paintings, engravings and drawings of buildings of the period survive in national and local archives: the coverage must be the densest in the country, at least for the area of the conurbation in the 18th and 19th centuries. The GL Print Room, for instance, has over 30,000 engravings and drawings of buildings in the Greater London area and the counties around, dating from the medieval to the modern period, about half of which are of buildings in the City (now made available on the Internet: collage.nhil.com). These visual records tend to be of the more prestigious or remarkable structures and there are few images of humbler dwellings, rural buildings and industrial buildings (printed (engraved) pictures are catalogued by Adams 1983). But whole classes of lost buildings, such as the houses of the richer post-Reformation London bourgeoisie to compare with surviving buildings in other towns, are to be found largely in these records.

The period is rich in contemporary descriptions of London buildings and social life. John Stow's *Survey of London* (1603; ed Kingsford 1908, reprint 1971) is an essential guide to the Elizabethan city, before the expansions of the 17th century. The *Survey* was revised and brought up to date through several editions in the 17th and 18th centuries, with much new topographical information; the most important of these new editions are by John Strype in 1720 and 1750. There are personal diaries such as those of Samuel Pepys and John Evelyn, covering the middle and second half of the 17th century respectively, and literary works such as Defoe's *Journal of the plague year* of 1722, which vividly describes the plague of 1665. Conditions in London in the 19th century are described by many writers, including Mayhew, Dickens and Booth. Creton (1994, 347–63) lists many London-based family histories, biographies and visitors' descriptions of London from the late 16th to the 20th centuries.

There are recent overall histories of London for the later parts of this period (Rude 1971; Sheppard 1971), but not the 16th and 17th centuries. Dorothy George's social history of the 18th-century capital, first published in 1925 (reprint 1951), is still the best overall study for that century. There is also a flourishing interest in local history for all boroughs of London and the area around (for London, Creton 1994, 56–99).

The archaeological and historical evidence

The growth of London and its effects

The single theme which at present dominates the history and archaeology of London in the post-medieval period is the growth of London and its consequences for the immediate environs, the country at large and the world outside.

A simple measure of the importance of London in 1650–1750 is provided by Wrigley (1978) who observes that one adult in six in England in this period had direct experience of London life. The needs of the London food market directly influenced the agriculture of Kent and East Anglia,

access to the London market was vital for craftspeople and entrepreneurs, and the need for coal in London doubled the output from Tyneside. Wrigley provides a checklist of economic, demographic and social changes which London may have influenced or brought about (Wrigley 1978, 237–43). The archaeological contribution, representing both past work and future possibilities, can be summarised in three themes: charting the growth of London, the character and effects of urban living, and the effects of the growth of London on surrounding towns and on the rural landscape, including the related question of how the metropolis was provisioned.

Charting the growth

London's growth in the 16th to 18th centuries occurred mainly because of the centralisation in London of the nation's political and economic life and because of upheavals in provincial economies. The extraordinary expansion of London made England in the 17th century one of the most urbanised countries in Europe, and by 1750 London was the largest city in western Europe, overtaking Paris. The growth of London can be measured most directly in terms of population figures: the estimated total population of the London conurbation (after Finlay & Shearer 1986, 49) was 120,000 in 1550, rising to 200,000 in 1600, 375,000 in 1650 and nearly half a million in 1700. By 1801 the population of Greater London was just over one million, representing an eightfold increase since 1550 (Beier & Finlay 1986). By this date London (the City and Westminster) was truly a world city, with architecture and material culture to match (Fox 1992).

At the centre of the conurbation, the archaeology of the City of London in this period can be divided chronologically into two phases by the Great Fire of 1666. In the pre-Fire phase (1500–1666), the medieval city may have recovered its pre-Black Death population level by c 1550, with continuing growth fuelled by massive British and foreign immigration. The Dissolution of 1532 (in London) to 1540 also threw open many monastic precincts to redevelopment for housing and industry. The Fire laid waste 436 acres, about five-sixths of the intramural City and part of the extramural area to the west as far as Fetter Lane. According to the inscription on the Monument, 13,200 houses were destroyed in the Fire, but considerably fewer were built in their place (c 8000 by 1673). The population of the City area declined after the Fire from perhaps 200,000 to at least 190,000 by 1690, when it probably amounted to only 25% of the total metropolitan population (Harding 1990).

The division into West and East Ends, separated by the City, was evident before the Fire (though the actual terms were not used until later). By 1650, and certainly by 1700, Westminster and its adjacent neighbourhoods was a political and cultural centre (especially of the royal court); commercial, financial and legal services were concentrated in the City and Fleet Street; and an area of industrial activity, docks and maritime activities developed to the east of the City.

The growth of the conurbation can be charted by comparing the archaeological traces of settlement with maps; though for this to be effective, many sites in any locality are required. The growth of south London, for instance, is vividly shown by overlaying maps of c 1680, c 1750 and c 1800.

The character of neighbourhoods

Several scholars have sought to outline London's social geography (Pearl 1979; Spence in prep). Working from Hearth taxes of 1662–6, Power (1986) attempted to establish where rich and poor, and particular occupation groups, lived in London in the 1660s. This work, which may be taken as an example of how these tax records are used by historians, reveals the relative wealth of the West End and the poverty of the East End, but the mapping of dwellings by size produced no particular concentrations of wealth or poverty. Power instead suggests that siting on major routes



The Blue Boar or Blue Pig at the junction of Bevis Marks and St Mary Axe, City of London, drawn by Thomas Dibdin in 1854. This is a block of houses of about 1600, the lost counterpart to the walls and cesspits found on archaeological sites

was more significant, and notes that retail traders were mostly to be found on streets, whereas craftspeople clustered along lanes, and semi-skilled groups such as builders were found in yards and alleys.

Regional and ethnic origins may also have affected residence patterns: communities of Huguenots, Irish and Jews existed in 17th-century London (Beier & Finlay 1986, 21) and it is likely that there were neighbourhoods which visibly reflected these groupings. The archaeology of neighbourhoods or of immigrant groups along these lines has yet to be investigated (though see 'Ethnic and religious minorities' below).

A further topic to explore, given the increasing amount of archaeological evidence now available for study, is any change in character of the neighbourhoods affected by the Great Fire, by comparing before and after what must have been a significant change in the built and perhaps social environment in 1666. It is, however, important to keep the Great Fire in perspective; it destroyed only part of the conurbation then standing, and the districts around the devastated area, comprising a larger zone, continued to be as they were for generations afterwards.

The effects of growth on the region and Britain

The growth of London in this period clearly took place at a spectacular rate, but questions remain concerning changes in other towns in England and Wales and whether the growth of London influenced their rise or decline. This issue has been addressed by Corfield (1976): although large provincial towns relied (like London) on immigration for maintaining their populations, none expanded at the same rate. Some were sent into decline by changing patterns of commercial and industrial life or by more visible factors such as silting rivers. Contemporaries blamed London for the decline of the ports of Southampton in the 16th century and Ipswich in the 17th century, but an additional reason in both cases may have been the decline of textile industries in their hinterlands. Other towns such as Newcastle upon Tyne were stimulated by London's requirements. In general, there was an increasing desire to live in towns, despite the high levels of urban mortality. Economically, a move to town-dwelling throughout England caused change in several ways. The expansion of urban populations stimulated the commercialisation and development of the agrarian economy, and towns were nodal points in the network of exchange and distribution (urban growth often being a stimulus to road and river improvements). Towns played important roles in industry as production, finishing and marketing centres, and were the locations of services such as banking, law, medicine and local or regional government.

Between 1520 and 1660, changes in the region's countryside reflected the needs of the capital. Farming patterns incorporated new crops and a more specialised, market-orientated economic outlook. The commercialisation of agriculture intensified after the Restoration and specialisms proliferated, such as hops and fruit, nursery and vegetable production, fattening of imported cattle, and rearing and fattening of sheep. Marginal environments were brought into production, such as the Isle of Sheppey and other coastal margins (Brandon & Short 1990, 157–8, 179). Fisher (1935; reprint Corfield & Harte 1990, 61–79) showed that the area from which London drew its food grew ever wider: in the middle of the 17th century 'the city's tentacles ... reached to Berwick, Cornwall and Wales'. In the corn trade, the city was already drawing on the south Midlands by c. 1570. City retailers took control of the trade in agricultural produce, suburban farming was revolutionised, and this accelerated the commercialisation of agriculture in England generally. Towns on certain routes also specialised and prospered: to the north, towns such as Hatfield, Luton and Dunstable were maintained by the trade in malt, and Kingston, Croydon and Reigate had a key role as collecting and carriage points in Surrey. These trends have already been noted in the medieval chapter, and here is one clearly defined theme to be studied across the two periods. Though the provisioning of London with food is a theme most susceptible to archaeological study, there were other staples which had to be supplied in large quantities: building materials, fuel and clothing. The role of archaeology here should be to compare the fortunes of several small towns in London's immediate region, testing the current historical interpretations against the material evidence.

Monastic and ecclesiastical sites

St Paul's and Westminster Abbey

St Paul's Cathedral lost its spire in 1561 (it was struck by lightning and subsequently dismantled), and in 1633–40 a portico was added to the west end by Inigo Jones; fragments of its columns were found for the first time in 1996, reused in Wren's foundations (Schofield in prep). The cathedral was irretrievably damaged in the Great Fire and the present cathedral by Sir Christopher Wren was built on a slightly different alignment in 1675–1714. It is one of very few Anglican cathedrals of post-Reformation date in Britain. Studies of the Wren fabric are in progress, often arising out of maintenance work on the building, for instance on the iron chain around the dome.

The structural history of Westminster Abbey in the period 1500–1800 is largely one of restoration: renewal of the exterior has been in progress almost continuously since 1660, and parts of the building have now been refaced three times (Wilson et al 1986, 35). The most prominent new work was the completion of the west towers by Hawksmoor in 1745 (Tatton-Brown 1995).

The dissolution of monasteries and hospitals

Although the churches of St Bartholomew Smithfield, St Helen Bishopsgate, the Greyfriars and Elyng Spital re-emerged as parish churches (and two other religious buildings were used by immigrant communities; see below), most religious precincts were sold or given away to royal favourites, initially to become the sites of urban mansions (Brett-James 1935, 31–6; Schofield 1993b). The destruction of individual religious houses is being investigated in the MoLAS Medieval monasteries series, initially focusing on St Mary Spital (Thomas et al 1997), St Mary Clerkenwell (Sloane in prep), St John Clerkenwell (Sloane & Malcolm in prep), Holy Trinity Priory Aldgate (Schofield & Lea in prep), St Mary Graces (Grainger et al in prep), Bermondsey Abbey (Steele in prep) and the priory of St Mary Merton (which supplied stone for Nonsuch Palace; the moulded stones from the palace are to be published in the report on Merton; Miller in prep). Monastic stonework was reused in later structures at all these locations and at Barking Abbey (Barking Waterfront) and Stratford Abbey (West Ham).

The post-Dissolution histories of the monastic precincts are given in various sections below, according to their reuse as sites for elite housing, or for industrial purposes; or, as in the case of some of the hospitals, survival and now being run by the City.

Parish churches

The changes of the Reformation may be seen in alterations to parish churches, particularly in their internal arrangement and decoration (eg pews, wall decoration, window glass), but little has so far been published. These matters will be addressed in work on the post-medieval levels of part of St Botolph Billingsgate in the City, excavated in 1982 (Schofield & Dyson in prep). This will also present a careful excavation of the impact of the Great Fire at a church site, since much of the destruction debris remained.

After the Fire, Wren and his associates designed 51 parish churches in the City, of which 23 remain; in addition, six of 'his' towers stand as separate monuments. Archaeological investigation has made a significant contribution to the understanding of Wren's pragmatism and variety of design by establishing the extent to which his building plans were based upon the forms of the previous structures (Jeffery et al 1992; Schofield 1994a; Milne 1997).

In the suburban parishes, the pattern of church provision reflected population pressures. In the case of Stepney, for example, the medieval parish church was given a gallery in 1580 (as early as any City church), and chapels-of-ease were built in Wapping in 1617 (a new parish in 1694), at Poplar by the East India Company in 1654 (parish 1817) and at Shadwell in 1656 (parish 1669). With the Act of Queen Anne for the creation of 50 new churches (1711; only 12 were new built and 7 others subsidised or adapted), the division of Stepney parish accelerated. Of the eight new

churches built by 1730, three were in Stepney: St Anne Limehouse (1712), St George-in-the-East (begun 1715) and Christ Church Spitalfields (begun 1723) (Brett-James 1935, 187–212). London was the only place in Britain at this period to see a systematic attempt to increase religious provision on a large scale (Morris 1989, 414). Post-medieval developments at churches in the region have been recorded in small-scale investigations at St Margaret Barking, St Olaf Southwark, St Nicholas Deptford, St Margaret Uxbridge, St Lawrence Morden, St Mary Barnes and St Mary Putney (details in Thompson et al 1998).

Ethnic and religious minorities

London attracted refugees and other minority communities who wished to have their own places of worship (Creaton 1994, 410–30, listing studies by borough). In the City, the Dutch congregation was recognised in 1550 and was granted the nave of the former Austin friars in Broad Street. French Protestants occupied the chapel of St Anthony's Hospital in Threadneedle Street, sharing the Austin friars' burial ground. By the mid 17th century London was a major centre of nonconformist activity. Nonconformist meeting places could be small, but occasionally they were large structures: in 1655 the Quakers took over a meeting-place house in Aldersgate

with standing room for a thousand. Rocque's map of the wider conurbation in 1744 shows meeting houses of Anabaptists (20), the Dutch Church (3), the French Church (13), German Church (2), 'Independents' (20), Jews (3), Methodists (7), Presbyterians (30) and Quakers (9). The material culture of the Huguenots was summarised for an exhibition at the Museum of London in 1985 (Murdoch 1985). Apart from the Jewish community established around Aldgate after 1657 (Pearce 1998; Schofield & Lea in prep), there has been little archaeological investigation of these places in and around the capital, or of these ethnic or religious groups. Investigation of a Quaker burial ground at Kingston is noted under 'Human skeletal studies', below.



Part of the bird's-eye view of west central London by Hollar in 1656, showing Covent Garden, a development of the earl of Bedford, whose mansion can be seen on the south side of the square (Bedford House). Fragments of 17th-century and later buildings in this area are occasionally found in archaeological investigations (eg the south-east corner of Covent Garden on the Royal Opera House site, 1997)

The religious sphere: conclusions

In 1990 Crossley wrote that 'a full assemblage of information about the post-medieval changes to London's stock of churches has yet to be published' (1990, 100). This is slowly being remedied. The break-up of the religious houses in and around London in the mid 16th century will form part of the research now in progress on monasteries excavated in 1974–90. A great deal more work is required on the chief religious developments of the period in London, especially the Reformation, Wren's churches (including St Paul's Cathedral), the provision of churches in the new suburbs and the religious meeting places of Dissenters.

Further, it should be possible in London to outline the material culture of immigrant groups by archaeological means (study of buildings, artefacts and environmental data), and part of this will be the archaeology of their beliefs. As Beaudry (1999, 122) argues, 'it is critical to examine closely the ways in which the beliefs and principles espoused by religious and civic groups affect selection and use of material culture, residential accommodations, use of space and household economics'.

Human skeletal studies

Demographic studies of the capital have made progress using documentary sources such as parish registers (Finlay & Shearer 1986). In London and the south-eastern counties in the 18th century there was a considerable excess of deaths over births, and population growth (not as marked in London as elsewhere in England) was therefore sustained only by considerable immigration. The study of large groups of human skeletons from London and to a lesser extent from other places in the region is in progress on several fronts. The only large group which has been published in detail, but a most important one, is that from Christ Church Spitalfields of the 18th and 19th centuries (Molleson & Cox 1993; Reeve & Adams 1993; Reeve 1998). Post-medieval burial grounds and the skeletons in them have been reported from St Nicholas Sevenoaks, Kent (Boyle & Keevill 1998), a Quaker burial ground in Kingston (Bashford & Pollard 1998; Start & Kirk 1998), Farringdon Street in the City of London (Conheeny & Miles in prep) and on a number of church sites, where samples have been smaller, or the work is not yet advanced (eg St Bride Fleet Street (Milne 1997) and St Botolph Billingsgate (Schofield & Dyson in prep), both City of London).

The assessment of 535 skeletons dating to 1770–1849 from St Bride's second cemetery in Farringdon Street in the City (work by J Conheeny) illustrates the contribution that archaeological excavation of cemeteries can make to studies of post-medieval populations. This work included analyses of general demographic structure; burial patterns and family groups (here, stacked burials and a vault); taphonomical processes in different depositional contexts and among different age groups; comparative documentary evidence for a more general discussion of the socio-economic status of the population, immigration, effects of urban life on the health of the individual (eg prevalence of tuberculosis, leprosy and vitamin deficiency) and possible effects of industrial pollution (eg lead poisoning); cases of dissection; and survival of hair (allowing blood grouping to be studied). Further possibilities include studies of diseases especially rife in towns, such as rickets, which first became a problem for British populations in post-medieval times, and especially in towns (Mays 1999); perhaps this was related to the increasing levels of atmospheric pollution.

Plague visited London regularly between 1348 and 1665. No recently excavated post-medieval skeletal group has been recovered from a plague pit, though it is possible that plague caused the deaths of individuals buried in several of the cemeteries or churches which have been excavated. Epidemics in London, particularly that of 1665, and the possible contribution of archaeological studies, have been discussed in a collection of papers edited by Champion (1993). Cox (1993, 79) outlines the limitations and problems in the study specifically of epidemics from skeletal populations: infectious diseases cannot usually be detected in bones and cemetery populations need not represent discrete spatial or temporal populations (at Spitalfields 968 bodies were excavated out of a known burial total for the years 1729–1859 of 68,000, ie 1.42%; only 387 (0.57%) could be identified by name and only 38% of this 0.57% resided in the parish at death).

Research proposals arising out of this mass of work have been made by Reeve and by Harding, in a volume which considers many relevant issues on a national basis (Cox 1998). It seems likely that much progress can be made in the archaeological study of disease and deficiencies among the urban and rural populations in and around London, on groups dating well into the 19th century. The Spitalfields crypt group remains a crucial turning-point in recent studies: as just mentioned, nearly 400 of the skeletons were named individuals and their age at death was usually engraved upon the coffin. This resulted in a radical revision of methods used by osteologists in ageing skeletons, in that some methods were shown to be patently wrong, and were then abandoned (B White, pers comm).

London as a capital city

Royal palaces and the court; government buildings

Down to the late 17th century the term 'palace' was applied only to the complex of royal buildings in Westminster which made up the Crown's principal seat. Yet the Tower of London (see below, 'Military and defensive sites') also had an official role. Apart from these two examples, the 16th century is characterised by a large number of buildings which were either built as royal

residences or adapted to form them (their histories are given in the volumes of the *King's works*). In the City, the second Baynard's Castle (on the waterfront near Blackfriars) and Bridewell Palace have been located and excavated, but only the latter published (Gadd & Dyson 1981). The palace at Greenwich has been partly excavated (Dixon 1972), that at Richmond investigated (Cowie & Cloake in prep), and there has been work at Hampton Court (eg Thurley 1988; 1990; 1995a; in prep) and at Nonsuch Palace in Surrey. The most important of these, according to its excavators, is Whitehall Palace, investigated between 1938 and 1964 (Green & Thurley 1987; Thurley 1999). There have also been excavations at lesser royal places in the region such as Eltham, Dartford and the Manor of the More, Rickmansworth (a royal residence in the 1550s).

In the last 10 years in particular, there has been a resurgence of 'court studies' among cultural historians of all kinds: studying how royal palaces impacted on politics and culture, and how these large establishments were run. The degree to which each British monarch was the centre of a court style is, however, variable. The brick palaces of Henry VII and Henry VIII had little effect, overall, on houses of their followers or generally in London. They were not particularly innovative in planning arrangements (though for some changes, see Thurley 1988). Elizabeth hardly built anything at all. There is more coherence with the 'William and Mary style' (ie of 1689–1702), which derived from Versailles and which encompasses polite houses, furniture and tableware, as well as being a style in gardens, in Holland, England and America (Baarsen et al 1988).

Two significant themes begin with Henry VIII. Medieval kings such as Edward I built many castles in several parts of the country; but Henry began a royal trend of concentrating royal building projects, and all they entailed, in the London area. The royal attitude to London was changing. Secondly, the creation of Whitehall Palace in the early 16th century by the same monarch began the fixed association, more than before, of the monarchy and the court with Westminster. This created a focus of national government. From Henry VIII to William III, Whitehall was the principal seat of the monarch (Thurley 1999). This made it the epicentre of the West End and helped to transform the topography, physical and social, of Westminster.

A related topic in the history of London is the development, from the 16th century, of special government buildings, both as evolutions of their medieval predecessors and especially as new building forms. By the 19th century, 'Whitehall' could mean a complex of government offices of imposing architecture, rather than, or as well as, a royal palace. The archaeology of these buildings was tested in 1960–2 at the Old Treasury Building, Whitehall (Green & Thurley 1987) and a complex story was elucidated; but otherwise this topic has yet to be addressed.

Conspicuous consumption

Towns were centres for the accumulation and circulation of investment capital and increasingly generated a customer-oriented ethos of fashion and consumerism. The special place of London in this process (which has already been hinted at from recent work in the medieval period) has been attributed, for the post-medieval period, to the city's role as the seat of government, the main location of law courts and the place of residence of many nobles (Fisher 1948, reprint Corfield & Harte 1990, 105–18). The first of these factors has been questioned because the size of the government establishment did not itself change markedly over the period (Beier & Finlay 1986, 11). Nevertheless, a feature of the 16th and early 17th centuries was the increasing extent to which the revenues of the provincial gentry were spent in the capital, especially on legal expenses, political careers and the social season. By 1700 the economy of London had to adapt itself to a substantial seasonal immigration of rural landowners, and gardens and parks soon appeared in fashionable areas of town. Archaeological study could make an important contribution here by extending this analysis to the houses and material lifestyles of the gentry and the provision of seasonal services in the capital. The archaeology of leisure activities is considered below (see 'The archaeology of leisure and the theatres').

From 1600, at least, London was the cosmopolitan arbiter of upper-class taste, filtering imported fashions in dress and manners, many from or via France; from the capital fashions spread quickly to provincial society. From the 1650s there were new tavern-like houses selling cocoa, tea and above all coffee; there were over 500 coffee-houses in London by 1750. The latter,

in conjunction with the spread of newspapers from the 1690s, not only stood for refined taste, but helped develop the City as a business and financial centre. The history of taste and the related subject of consumerism (which is particularly claimed for the 18th century, citing pioneers in the delivery of mass culture such as Josiah Wedgwood) is currently a subject of vigorous debate among historians (Brewer & Porter 1993; Weatherill 1996).

The domestic sphere: buildings and general standards of living

Country houses and mansions

The Tudor and Jacobean periods are not well represented by surviving houses of the mansion class in the London area, and archaeological work has focused on early post-Dissolution mansions at monastic sites. By the end of the reign of Henry VIII, most monastic precincts had been transferred to courtiers or officials of the Court of Augmentations. The growth of the city and consequent crowding, as well as the probability that the old monastic buildings did not adapt well to domestic use, made their new owners often move elsewhere within the space of a generation, when the buildings were subdivided for other uses. Only one of the urban palaces can be seen today: Charterhouse, rebuilt by Sir Edward North (1545–65) and by Thomas Howard, duke of Norfolk (1565–71) (RCHM 1925, 21–30; Knowles & Grimes 1954; timbers dated by dendrochronology to 1544 have recently been recorded in the hall roof, despite extensive war damage). The precinct of Holy Trinity Priory Aldgate in the north-east part of the City can be reconstructed on the basis of a plan of c 1585, engravings and excavations (Schofield 1993a, 145–8; Schofield & Lea in prep). The precinct of St John Clerkenwell became the site of several residences. The houses built in former monastic precincts in the countryside are less well known and in Hertfordshire are almost totally unrecorded (Smith 1992, 66).

The sites of several manors and notable houses in the London region have been excavated in recent years: Tottenham Manor House (Tottenham Court, Euston Road); the Tudor manor at West Drayton; parts of Enfield Palace; the Jacobean manor which preceded Chiswick House; parts of Worcester House, Stepney Green; and the gatehouse of a Tudor mansion in Uxbridge. Post-medieval developments at the bishop of Winchester's house in Southwark will form part of a study based on excavations of the 1980s (Seeley in prep). Grander houses after the Restoration were less ostentatious than those earlier in the century, adopting the sober classical style of Holland (eg Eltham Lodge, Ham House). The emphasis was on comfort and convenience, with suites of rooms on the first floor increasing the social distance between the owner and servants and giving views over adjacent gardens (Smith 1992, 67–94). The great majority of the mansions of the West End, such as the brief but influential Clarendon House (1664–7), have been swept away or are rebuilt out of recognition (Burlington House); among the few exceptions is Marlborough House, Pall Mall, which has recently been partly investigated (Schofield & Malt 1997, 39). There has been very little archaeological work on country houses or urban mansions in the 18th century, though virtually all the surviving examples have been well photographed and surveyed since the beginning of the 20th century.

Houses

Though buildings often had several functions, this section concentrates on domestic buildings, both urban and rural, below the level of the mansion.

In the City and its immediate suburbs, three topics have been the subject of archaeological and documentary work in particular: the range of house types around 1600, from the drawn surveys by Treswell, 1607–12 (Schofield 1987b; 1995); the development of the suburbs, especially to the east, 1500–1700 (Power 1978; 1986; Thompson et al 1984); and the range of house types present in the City rebuilt after the Great Fire in 1666. Many sites in the region, including the City of London, have produced evidence of 17th- and 18th-century buildings, mostly of basements, but sometimes including whole buildings to the roof. Georgian houses, their materials, fittings and decoration, can be and have been studied in an archaeological manner by architectural historians (Cruikshank & Wyld 1975; Cruikshank & Burton 1990).

A recent discussion of the main developments in both urban and rural housing in the 17th to 19th centuries is provided by Cherry (in the introduction to *London 4: North in the Buildings of England* series, 1998); there were, in all, more developments north of the Thames than south of it. The Great Fire of 1666 prompted accelerated change in house design and construction, though the 1667 Act for rebuilding in the City did not represent the sudden introduction of new ideas so much as the implementation by statute of previously unlegislated planning aims. The requirement for specific storey heights, a ban on jettied fronts (already going out of fashion from 1550) and an insistence on brick structures, brought about a uniformity of street frontage which could already be seen in Bloomsbury. The Act classified buildings into four types, with standards for each, based on location rather than size. The largest houses were to be set back from the street in their own courtyards (one notable survivor is St Paul's Deanery). The middle two classes of house, of four storeys on principal streets and lanes, are to be found in a few City streets, much altered and refronted; they have a central staircase plan which is demonstrably pre-Fire in origin (Kelsall 1974, 80–91; Schofield 1987b). It is these middle-sized houses which have survived in greatest numbers. The smallest houses in this scheme, of three storeys, were often of one room on each floor. They also had pre-Fire origins (Schofield 1987b; Leech 1996).

In general, the narrow-fronted brick terrace house became the norm in the 17th century, stimulated by 'top-of-the-range' developments such as Covent Garden (1630) and by speculators such as Nicholas Barbon (Red Lion Square, Great Ormond Street). Formal squares were built mainly in the City and the West End, with a few further out such as Kensington Square (c 1681) and Hoxton Square, Hackney (1683). Both the innovative brick houses of the 1630s, fragments of which remain, and Barbon's work in the 1670s (McKellar 1999) would profit from further archaeological analysis. Outside the City, the terrace house can be found in scattered locations, such as Essex Road, Islington, Church Row, Hampstead, or in pairs at Southgate Green and Tottenham. The apparent spread of the urban terrace house form into rural surroundings (for example at Richmond and Highgate) should be explained.

An account of timber-framed post-medieval domestic building in Middlesex is provided by Airs (1983). Generally, medieval hallhouses were floored over and had chimneys inserted in the 16th and 17th centuries. Lobby-entrance houses (a common form throughout south-east England) are documented from 1599 and there are other simple plans. Little is known about the small cottage found in other parts of the country; instead, the region has a number of lightly framed and weatherboarded buildings from the late 17th century onwards. These are found in several of the outer London boroughs, for instance at Upminster and St Mary Cray. Some of these may have been farm buildings.

There is no synthetic account of the development of secular brick building in the London area.

Garden archaeology

Within the City, a start has been made with garden archaeology of the 16th and 17th centuries by bringing together the scattered plan and archaeological evidence (Schofield 1999; for seeds, Giorgi 1997a). There is better survival on the periphery of London as at two sites at Wimbledon, where substantial details of 17th-century gardens have been recorded (Potter 1993). At the grander level, the Privy Garden of Hampton Court Palace, at least from the period of William and Mary, has also been studied and reconstructed (Thurley 1995a). 'Designed landscapes' of formal gardens, parks and ornamental farms, were common throughout the London region and the south-east (Brandon & Short 1990, 238–47). During the 18th century the houses of the landed classes increased in size as renovations extended older properties, but from the middle of the century the villa form became fashionable and compactness was regarded as a virtue (Brandon & Short 1990, 112–34). Archaeological sites of this period include wells and icehouses. An 18th-century grotto at Marble Hill House, Richmond, a garden folly of 1824 in Rectory Lane, Sidcup, and the formal garden and lake at Carshalton House, Beddington, have also been investigated (Weston et al 1982). Garden archaeology is a topic worth more exploration, perhaps especially in the outer areas where damage should be lighter; great progress has been made elsewhere in Britain (eg Dix 1999).



The domestic sphere: conclusions

Apart from royal palaces, of which there are still several in the area, grander houses have suffered extensive demolition and alteration. Very few of the original mansions around which the squares of west London developed have survived. In London there is considerable potential for the reconstruction of buildings using a combination of archaeological, documentary and pictorial evidence and some progress has already been made in reconstructing houses of Elizabethan courtiers in and around the City. Smith's study of Hertfordshire houses (1992) provides a useful model of building-design changes based on structural evidence. One theme to pursue would be whether the residences of the elite in the area around London were more sophisticated than their counterparts in other parts of the country, simply because they were nearer the capital itself.

There has been much work in the last 40 years towards a national framework of information about the chronology, styles and techniques of building vernacular architecture: since it is based on surviving buildings, this is largely of rural types, such as farmhouses and their ancillary structures and buildings in villages or small towns (Mercer 1975).

How people furnished their houses and what possessions they owned are questions of interest to some economic historians, who wish to analyse material culture in terms of patterns of consumption (Brewer & Porter 1993). An unprecedented range of goods and services were on offer; according to Brewer and Porter, the Age of Enlightenment is being redefined as an Age of Consumption. Scholars seek to investigate the meaning or significance of possessions and material goods, arguing that this social meaning is connected with the social structures of London, or Britain, or Europe, by wealth, status and locality (Weatherill 1996). Thus the disposition of material culture through society can tell us about social boundaries, emulation between groups, the influence of trade on domestic consumption (for instance, the introduction of pottery from the Far East in quantity) and the degree to which economic growth was directed by that consumption. There is now a large body of scholarship on changes in patterns of consumption in England and America from 1550 to 1800 (Shammas 1993) and the meaning of consumer behaviour (Weatherill 1996). These patterns involve other categories of material culture, such as

Rocque's map of the
Greater London area,
1746

food or clothing, but the house and its contents are usually the basis of analysis, particularly when inventories are used. Archaeology, and particularly artefact studies, has a clear potential to contribute to research on the development of a capitalist economy and consumer society.

One clear objective for post-medieval research in the London region is the excavation of further domestic sites with good assemblages of structural, artefactual and environmental material. One site excavated at Aldgate (Thompson *et al* 1984), for example, provided evidence relating to the development of the eastern suburb in the 17th century, the form and character of comparatively humble dwellings, the mix of residential and industrial functions, and differential consumption of meat and social class (as reflected in the deposition of ceramics). The potential of environmental material, particularly animal bones, for analysing social and ethnic differences is marked. Work in Europe and America suggests that bone data could reveal differences in the purchase and consumption of meat according to household economic status, relative wealth and ethnic affiliation. American archaeologists are developing two further areas of interest: firstly, how the built environment was used to support an ideology of class relations (Leone 1984; for England, as an example, Johnson 1996); and secondly, how lower-class, marginal or ethnic groups created an 'archaeology of resistance' to the conventional authorities and their masters (McGuire & Paynter 1991). These two approaches are indicative of the American methodology, which stems from the anthropological basis of much historical archaeology in the United States (*eg* Beaudry 1999 for a recent survey). There is much for British archaeologists to learn from this alternative approach to the data.

The existing scholarship on the development of timber-framing in the area should be matched with a synthesis on the development of brick in its structural uses and as architecture. There is also a need to match the practice of building, as demonstrated on archaeological sites, with what is known of the growing body of architectural knowledge, as witnessed by drawings and builders' handbooks, and by the processes of design in buildings (McKellar 1999 for the immediately post-Fire period; many books on Georgian street and house design).

Military and defensive sites

The City defences

The City ditch was filled in over much of its length from c 1500 due to encroachment by adjacent properties along extramural streets and other activities (*eg* tentergrounds). After 1477, no large-scale refurbishment of the defences took place until the Civil War when sheds and other structures were removed (1642–3) and bulwarks constructed in front of the gates. In 1643–7 the central urban area (the City, Westminster and Southwark) was encircled to the north and south of the Thames by 30km of ditch and bank, with forts and batteries at intervals. Traces of some of the southern forts could still be seen in the late 18th century and are shown on Rocque's map of 1744 (Brett-James 1935, 268–95; Weinstein 1978). The Civil War defences have been noted on a number of sites (*eg* a practice fort of the 1640s in Spitalfields), but there is no comprehensive synthesis which presents all the evidence (for short reviews, Sturdy 1975; Smith & Kelsey 1996; Flintham 1998).

The Tower of London and other military sites

The principal uses of the Tower at this period were as a royal residence, armoury, arsenal, prison, mint and manufacturing centre for artillery. Henry VIII had a gunpowder mill installed to complement the gun foundries. The Office of Ordnance moved to the Minories during Elizabeth I's reign and the role of the Tower as a storehouse expanded. The Tower's role as a museum started with the display of historic armour in the reign of Charles II, when the White Tower was already used as a record office. Use as a prison, storehouse, museum and mint continued in the 18th century. The Inmost Ward in the reign of Charles II, after the building of the New Armouries, has been reconstructed (Parnell 1980).

Several other military establishments of this period have been sampled by excavation. On the eastern edge of the City, investigation of the Navy Victualling Yard on the site of St Mary Graces Abbey in East Smithfield uncovered much of the plans of the various buildings and artefactual and

environmental evidence which is currently under study (Grainger *et al* in prep). This includes bowling balls from South American hardwood, turtle shells and bones of monkeys: a reminder of the new transatlantic dimension to London's contacts. In the outer region, the naval bases at Woolwich, Chatham (founded 1547; Newman 1980, 203–7) and Sheerness (17th century) were part of the same system of naval victualling and support establishments which underpinned Britain's growing commercial and strategic interests in the Mediterranean and across the Atlantic (Coad 1983). The first excavation of a naval dockyard in Britain took place at the Royal Dockyard, Woolwich, in 1972–3. Two major aspects of shipbuilding were investigated: the shipbuilding slips themselves and the structures associated with some of the processing industries serving the shipwrights (Courtney 1974; 1975). At Chatham, repair work to the scheduled late 18th-century timber-framed Wheelwright's Shop in 1995–6 revealed that beneath multiple layers of boarding the floor was supported on massive reused timbers from the hull of a vessel that must have been broken up in the yard (work by Oxford Archaeological Unit).

The military sphere: conclusions

Though there were military crises involving London from time to time throughout the period, the area was never the subject of prolonged attack. Thus London does not have the elaborate Renaissance fortifications of many continental cities, or the sites of great battles after the Civil War. But an important theme concerns the involvement of London in preparing the weapons of domination, first of the seas and subsequently of Britain's colonial empire, not only through trade but also through shipping and 'political power or violence' (Braudel 1984, 35). The Empire was secured and maintained by military force, and London's place in the preparation, equipping and supply of this force merits study. London was always full of soldiers and to a lesser extent sailors, and the facilities created for them in and around the capital, from parade grounds to temporary camps, all merit attention.

Infrastructure

There is substantial historical scholarship on the history, buildings and functions of the livery companies, hospitals, inns, legal institutions and schools at this period (Creton 1994, 189–201, 575–83, 323–6 (inns with subjects listed by borough), 124–9, 291–316). Only a small number of institutions, such as the 18th-century Fleet Prison (McCann in prep), have been excavated in any more than keyhole fashion

Streets, quays and bridges, canals and railways

The street system in the City changed in two ways during the post-medieval period. Firstly, the religious precincts were opened up to secular traffic along lanes and courtyards based on the existing monastic building layout, and public and private alleyways proliferated throughout the City as settlement density increased, giving access to courts in multiple occupation. Secondly, there was large-scale road widening after the Fire, when obstructions such as middle rows, markets and churches in the streets were removed. The effects of road widening on individual properties were recorded in the surveys of Oliver and Mills (London Topographical Society 1962–7), and the creation of the quaysides is shown on the Ogilby and Morgan map of 1676, though it is not yet clear to what extent these quays were new reclamation or merely created by cutting back the building line from the pre-Fire riverfront; no sites have been excavated which enable us to investigate this aspect. The only new streets were King Street and its continuation, Queen Street, which led from the Guildhall to the river. This must be counted as the only outcome of a short-lived plan for the rebuilding of the City to match other European cities such as the Paris of Louis XIV. The road system outside the City and the effects of the turnpike trusts have not been studied archaeologically, though post-medieval road sections and fords have been recorded (*eg* at Footscray).

The quays of the City in the post-medieval period have not been studied in detail archaeologically, with the exception of the post-Fire quaysides forming embankments along the Fleet. More examples have been excavated east of the City, in Ratcliff and Limehouse, and a revetment of 1610–40 and subsequent flooding have been recorded at Mark Brown's Wharf, Southwark (SLAEC 1988, 133–41).

Canals, bridges and railways are part of 'industrial' archaeology. Brief reviews of the surviving industrial monuments of the area are given by Tucker in the introductions to the revised Buildings of England volumes by Cherry and Pevsner (1983–98). Tucker's text of 1983 (*London 2: South*) covers both south and north London; there are extra notes on north-west London in *London 3* and on north London in *London 4*. The chief developments and monuments are seen to be the 'flourishing of bridges' on the Thames in the 18th century, the comparatively late arrival of canals (Grand Junction, 1796), railways (in Croydon and Merstham, 1803; generally from the 1830s), gasworks (1810), water supply, mains drainage and sewerage (1860s; the Embankment), electricity (1878), windmills, watermills (especially on the Cray, Wandle and Colne rivers) and some early 19th-century factories. In this volume, the docks and warehouses are covered below, under 'Trade'. Further themes susceptible to archaeological study could be added, for instance the major improvements to circulation effected from the mid 18th century in the City and its immediate environs by a cumulative combination, over the decades, of new roads and bridges.

Water supply

In the City, the sites of many new pumps and conduits can be identified from documents and the panoramas from 1535 (Brett-James 1935, 53–6). Further conduits and pumps were installed as part of a water-supply system starting at an engine house built beside London Bridge in the 1580s. The New River was constructed by Middleton in 1609–13 (augmented by water from the Lea in 1618), from which water entered the City in wooden pipes and was distributed to houses. For lesser towns and villages, the Thames and its creeks supplied water for power, industrial use and human consumption. Pumped Thames water was a feature of the market gardens in the London basin and was essential for many industrial processes such as brewing and tanning. Waterworks engine houses (survivors date from 1767 to 1910) are among the capital's most notable industrial buildings (Tucker 1983, 119). The archaeology of the water supply of London in this period has not begun to be studied comprehensively.

Civic buildings and livery company halls

The 16th and 17th centuries were a period of change for the livery companies. As their political and economic power declined, their roles as landlords and charitable trustees increased. Several company halls were rebuilt or augmented. Companies also took advantage of the Dissolution and Reformation: the Leathersellers acquired the dormitory and chapter house of the nunnery of St Helen Bishopsgate in 1542, the Butchers the parsonage of the suppressed parish of St Nicholas Shambles in 1549 (details excavated at Newgate Street) and the Apothecaries the guest block of the Blackfriars in 1623. Smaller companies (such as the Embroiderers, Fletchers and Innholders) now also acquired halls. Many preserved the plan form of the medieval courtyard house and were rebuilt in substantially the same form after the Fire. Several post-Fire company halls survive, including those of the Apothecaries, Innholders, Vintners, Tallow Chandlers and Skinners, all of c 1670, though rebuilt to varying degrees. As with the Wren churches, pre-Fire fabric is sometimes incorporated within later structures (at Innholders' Hall it is possible that this includes roof timbers).

Almshouses and hospitals

The dissolution of the monasteries and the end of their charitable activities led to a wider need for almshouses as a corollary of the 16th-century Poor Law. New almshouses were established by prominent citizens through their livery companies; not as adjuncts to the company halls but at separate sites away from the city centre (Brett-James 1935, 45–7). Two sets of post-medieval almshouses in the City were surveyed by Treswell in 1612 (Schofield 1987b, 109, 130). The earliest known examples outside the central conurbation are those established by William Lambarde at Greenwich in 1576. Almshouses in London villages were generally financed by City merchants and display the influence of London architecture (eg Cleaves Almshouses, Kingston (1668) and Morden College, Blackheath). By 1600 similar establishments called

hospitals were also being established, such as Abbot's Hospital, Guildford (Clapham & Godfrey 1913, 217–37). There were also local initiatives, often attached to the parish as an organisation. At Ruislip, the Eastcote Road almshouses of 1617, converted from a building of c 1570, have been recorded during modern conversion.

Most of the medieval hospitals were also dissolved in 1538–47. Other hospitals, however, survived: St Bartholomew's Hospital was refounded in 1544 (its surviving historic buildings, apart from the church of St Bartholomew the Less, are of 18th-century date) and the hospital of St Mary of Bethlehem was granted to the City and rebuilt in 1674 as a lunatic asylum on the plan of the Tuileries in Paris. St Thomas' Hospital in Southwark was given new buildings from the early 18th century (Milne & Hurman 1995). Completely new hospitals began with that of Thomas Guy (1721), St Luke's (1751), the Foundling Hospital (1742) and the London Hospital in the East End (1746). Excavations in the areas of these hospitals have yet to be brought together.

Law courts and schools

The chief educational establishments of the City were the Inns of Court and Chancery, mostly located to the west of the City. Although founded in the late 14th and 15th centuries, their surviving buildings date from 1500, including the Middle Temple Hall (1571), the Gateway (1684, recently studied during refurbishment), New Court (1676) and the Inner Temple Gateway (1611). To the north, Lincoln's Inn, Staple Inn and Gray's Inn have halls of 1492, 1581 and 1560 respectively (the latter two badly damaged in the Second World War and rebuilt; carpentry studied by Hewett 1980). Despite some war damage, the Inns of Court contain a significant amount of London's surviving building fabric of the 16th to 18th centuries (eg Gray's Inn and Lincoln's Inn; Cherry & Pevsner 1998, 281–8).

Several notable schools were founded in the City in the first half of the 16th century (St Paul's, 1512; Merchant Taylors', 1541; Christ's Hospital, 1553). They have not yet been studied archaeologically. The establishment of charity schools expanded in the late 17th century (Macfarlane 1986) in addition to the existing parish schools (as at St Bartholomew the Great; Webb 1921, vol 2, 35–7), and occasionally these neighbourhood buildings were of architectural note (as that of the Sir John Cass Foundation, 1748: the primary school still functions today). Schools in the Greater London area with surviving buildings include the Old School at Harrow (1611, rebuilt 1820) and a few modest village schools.

Inns

London was the centre of the coaching and goods transport system of England. Most of the inns were situated outside the gates or in Southwark where there was ample space for stabling. South of the Thames, part of The George in Southwark is 17th century in date (Hewett 1980, 244) and there are surviving inns at Carshalton and Roehampton. In the wider region, a number of 16th-century and later inns survive, though greatly altered (eg White Hart, Edgware; Kings Arms Hotel, Uxbridge). Investigations of the sites of post-medieval inns have also taken place at Footscray, Bexley and Shooter's Hill, Greenwich. A small number of similar buildings can also be found in market towns on the fringe of the region (eg in St Albans, Harpenden, Hertford, Stevenage and Berkhamsted; Smith 1992, 170–4).

Infrastructure: conclusions

The provisions central London made for local government, hospitals, water supply and transport were the most intensive in the country and at times the most advanced (eg in the provision of post-Reformation hospitals before 1600, which was partly a consequence of the large number of hospitals in the medieval city). The archaeology of London's infrastructure has not begun and yet all the topics in this group are illustrations of how London was different, at least in degree, from other places. The development of some services, such as a comprehensive sewerage system in the 19th century, was partly in reaction to the intensity of occupation and sheer size of the place. The metropolis itself demanded novel solutions.

The archaeology of leisure and the theatres

In 1606–16 the moor on the north side of the City was finally drained and laid out as public gardens, a feature of other major European cities later in the century (Girouard 1985, 189–90). This landfilling has been recorded at several sites (eg at Finsbury Pavement and Worship Street). To the north-east, the Artillery Ground, previously a teasel plantation for the cloth trade, was also laid out for recreational use for archery practice and until 1677 was used for weekly artillery practice by the Tower gunners.

Theatres, cockpits and animal-baiting arenas were mostly built in the suburbs beyond the City. Documents refer to several animal-baiting arenas on Bankside in Southwark from at least the mid 16th century, but until the recent excavations at Benbow House, between New Globe Walk and Bear Gardens, none was located exactly (Mackinder & Blatherwick 2000). Archaeological work there revealed part of a structure based on timber piles that has been interpreted as an animal-baiting arena. This could be William Payne's bearbaiting arena known to have been rebuilt in 1583 with galleries, in a similar style to the playhouses in the suburbs north of the City.

The discovery and partial excavation of the Rose Theatre in 1989, and location and evaluation of part of the Globe Theatre (built 1599; Blatherwick & Gurr 1992), are of significance. The Rose Theatre (1587–c 1606) was the first purpose-built playhouse on Bankside (Blatherwick 1998; Bowsher 1998). Approximately two-thirds of the ground plan were uncovered during excavation and showed two phases of development, which are preserved *in situ*. The Rose was shown as circular on Norden's 1593 map, but excavation revealed that phase one was a polygon with possibly 14 sides (the eastern part of the site has not been excavated), a diameter of c 22m and a yard area of c 117.3 sq m which sloped downwards to the front of the stage. The second phase (perhaps dating to 1592) showed that the structure had been enlarged, and the stage (previously an elongated hexagon) moved 2m north and was a more rectangular shape, covered with a roof. Further excavation, in combination with the abundance of documentation on the Rose, would provide an unparalleled opportunity to answer questions about the structure and development of the playhouses.

Other purpose-built playhouses of the 16th and 17th centuries are still to be exactly located, such as the Red Lion near Whitechapel High Street (built c 1567) and the Theatre (1576–98) in Shoreditch, Shakespeare's first venue, which might survive as an archaeological site (Blatherwick 1998). But there is probably little remaining evidence of the indoor 'hall' playhouses, such as Blackfriars (used by Shakespeare's company from 1608 as an alternative to the Globe). Although inside the City, this theatre was outside the City's jurisdiction, as were the indoor theatres south of Fleet Street: the Whitefriars (possibly no longer in use after 1621), Salisbury Court (1629–66) and the post-Restoration Duke's Theatre in Dorset Garden (opened 1671). The 16th- and 17th-century theatres partly explored in London in recent years have opened the eyes of theatre historians to the possibilities provided by archaeological investigation and clarified some areas of doubt, but many questions remain which further work might answer.

The idea of respectable recreation in designated parts of the townscape, in places provided with buildings and organised landscapes, developed from the middle of the 16th century (Schofield 1999) and continued throughout the period. In the 17th to 19th centuries, London provided a model for provincial developments in architectural provision for cultural activities (Fisher 1948, reprint in Corfield & Harte 1990; Borsay 1989). The archaeology of leisure in London and the associated leisure industries might be further investigated along these lines.

Industrial sites

A large bibliography has grown up concerning the manufacturing industries in London, and this has been listed by Creaton (1994, 221–49). When deposits associated with manufacturing are found, archaeological analysis can make a contribution: in London there was production of clay pipes, glass, ceramics, chemicals, dyestuffs, explosives and matches, soap, metals, weapons and armour, bell-founding, gold and silver, vehicles, clocks and watches, scientific instruments, textiles, silk, furniture, paper, musical instruments and buildings of all kinds. There was also large-scale production of food and drink, especially flour, sugar and beer. This very

brief review considers industry in three zones: the City and its immediate environs, the rest of the built-up area of London and the more rural districts further out.

Throughout the post-medieval period those concerned with industrial and craft production lived largely outside the walls, while those concerned with exchange lived within. Though some production still took place in the City, most industries were located on its northern, eastern and southern fringes. By the 1570s some of the former monastic precincts were used as workplaces for immigrant industries (Sutton & Sewell 1980; Britton 1987; Edwards 1999), though this was a passing phase which did not last in those areas.

Some sites are especially rich in evidence relating to industrial activities. Excavations at the PLA Warehouses, for example, found evidence of later 17th-century clay pipemaking, bell-founding, glassmaking and ivory- and hornworking (Schofield with Maloney 1998, 152–3). One or more industries or activities as yet unidentified both in the eastern suburbs and in Southwark involved the use of pits lined with cattle horncores, sometimes containing slag (possibly for brass-founding). South of Aldgate High Street, a short terrace of brick houses of c 1660 included a clay tobacco-pipe kiln (Thompson *et al* 1984).

Sites in Southwark in particular have been very productive of relevant structures and finds, such as that at Abbots Lane, on the waterfront, with substantial traces of a post-medieval brewery, a 16th-century tidal mill and a prodigious range of 16th-century finds (Bluer 1993); and in both Bermondsey and Southwark there is evidence of the tanning industries (Drummond-Murray *et al* 1994; Killock *in prep*). A recent assessment by MoLAS of sites with evidence for post-medieval industries excavated in Southwark and Lambeth between 1974 and 1989 identifies evidence, structural or artefactual, for brushmaking, tenter-frames, pipekilns, delftkilns, stoneware-kilns, metalworking, glassmaking and tanning. Of these industries, the making of pottery is the most significant for archaeological studies. The introduction of tin-glazed wares to London seems to represent a technological advance in the combined use of a new glazing technique, the blending of raw clay sources, new kiln design and possible increases in the size of units of production and complexity of organisation (Orton 1988, though the innovatory aspects are played down). The tin-glazed (delftware) industry was in the forefront of London's pottery production in the first half of the 17th century. The location of industries south of the river was certainly influenced by available space, and the industrial character of Southwark and Lambeth during the 17th and 18th centuries must largely reflect the easy expansion of the settled area into the surrounding marshes and fields. Britton's (1987) study of London delftware describes 16 major potteries south of the river, all but two of them in Southwark or Lambeth; only two sites lay north of the river.

In the 16th century the extramural areas immediately to the north and west of the City still provided space for grazing and cultivation, but these activities were gradually forced beyond the City to Islington and surrounding villages. Heavy industries such as shipbuilding were established downstream of the City. Growth in extramural industries can also be attributed to the lower cost of rents, greater space, the exclusion of noisome trades from within the walls and failing craft control over the extramural areas (Beier 1986).

Pottery kilns for other wares have been excavated elsewhere in the London region. At Kingston there is evidence of 16th-century production (Guildhall extension site). Two 17th-century kilns were excavated at Old Ferry Approach, Woolwich, and further kilns were found on the Woolwich Power Station site (Pryor & Blockley 1978). The 17th-century and later Fulham pottery works were excavated during redevelopment and partly displayed; results of the excavations are now published (Green 1999). Investigations have also found evidence of known kilns near Sandford Manor, Chelsea, and 19th-century kilns have been excavated at Pottery Road, Hounslow, the Albert Embankment (where there were experiments with porcelain manufacture c 1750) and Vauxhall potteries, Lambeth. To the east, the porcelain factory at Limehouse has been excavated and one publication of its products has appeared (Drakard 1993).

A particular area of interest is the industries which flourished in the Docklands area. Riverside industries of the 17th to 19th centuries, such as calico-printing, dyeing and the making of paper and gunpowder, have all left their traces. In terms of museum collections, major gaps exist for gunmaking, foundries, leather trades and malt distilleries, to name only a few industries.



A Montelupo Cavalier dish from 85 London Wall, City of London (1575–1620)

Evidence for other industries in the immediate region includes clay tobacco-pipe kilns (on many sites, notably Brentford High Street, Arcadia Buildings and Southwark Street, Southwark); a 17th-century glasshouse at Vauxhall Bridgefoot; gravel extraction (eg of 17th-century date at Maze Hill, Greenwich and of the 19th century at Enfield); a small 19th-century chalk mine at Pinner Hall Farm, Harrow; traces of an 18th-century watermill at Pymmes Brook, Enfield; a 17th-century paper mill, later used for manufacturing gunpowder at East Bedfont; a 16th-century tannery at Romford Market; traces of 18th- and 19th-century tanneries at Bargehouse Street, Park Street and Tanner Street, Southwark; and a post-medieval coach-building factory at Orange Street, Westminster (site summaries in Thompson *et al* 1998). Brick- and tilekilns are shown on the map by Rocque of 1746 and 18th-century brick clamps have been excavated at New Cross, Lewisham (Proctor *et al* in prep). In the 16th century most of England's iron was made in the Weald on the southern border of the study area, but the connections of this industry with London, both in terms of injection of capital and consumption of its products, remain unexplored.

Small towns in the hinterland also had staple industries, and most successful towns, even those now called market towns, had manufacturing specialisations in this period (Goose 1982), at least from the 17th century. Kingston upon Thames, for example, was a centre for tanning, brewing and malting and there is archaeological evidence for pottery and clay-pipe kilns.

The industrial sphere: conclusions

The fact that the Industrial Revolution came late to London should not obscure the fact that the metropolis was the country's leading manufacturing centre well into Victorian times; in 1861 more than one in six of all workers in manufacturing industry were employed in London. One role of archaeology is to locate the new trades of the period, particularly in the suburbs, and to explore the craft technologies of the time. An important question is the degree to which the metropolis, because of its size and cosmopolitan composition, was the testing ground for technological innovations. The number and variety of immigrant communities, especially from abroad, may also have been significant in the development of new industries. There may have been 'innovative episodes' or cycles when the metropolis was particularly creative, due to a timely juxtaposition of fashionable needs (particularly of the aristocracy), a metropolitan market and desires for new products which would encourage innovation, and governmental economic policies to satisfy those needs (D Keene, pers comm). It should also be remembered that industrialisation was a long-drawn-out process, and not a cataclysmic transformation; there were many changes to traditional practices, and the idea of an industrial revolution only became a commonplace in the 1830s. Even so, London innovated: though most of its industries relied on hand- and foot-powered machinery, in the 18th century there were more steam engines in the London area than anywhere in southern England, the nearest similar concentrations being Cornwall and the Midlands.

As the production of ceramics was one of London's main industries, it is important that the results of recent excavations at several potteries are now published. A survey of the smaller industries of this period is also needed. The range of excavated material from such industries is very wide (eg woodworking, copper-alloy products, brass-founding, glassmaking, sugar refining, fanmaking, bell-casting, cloth finishing) and the evidence needs to be assessed in conjunction with historical evidence to establish the economic context of individual sites. New industries which might be looked for include silk-weaving and papermaking. Other industries which profited from economies of scale and the mass market available in the metropolis, such as brewing, have not yet attracted archaeological attention. A handful of major breweries (eg Whitbread, Meux, Truman, Perkins, Thrale's) sprang up in 18th-century London and increasingly dominated the regional market.

In addition, before the 17th century, small towns in England usually had unspecialised

economies (Glennie 1990, 214) but from the 17th century, around London, many began to specialise and profited from it. So perhaps the demands of London were moulding the fortunes, the topography and the social geography of the small towns in its region.

Trade

Local and regional trade

Some of the relations between London and the towns around it have been outlined above under the general theme of the effects of growth on the region. The network of local trade between the City, its environs and provincial towns has not yet been studied archaeologically. London must have been the main provider of luxuries of all kinds: 'metropolitan professional services and an increase in social appetites, which only the capital could satisfy, emptied provincial pockets at a remarkable rate' (Dietz 1986, 134). Several areas around the metropolis provided pottery, at least during the earlier part of the period: especially Kingston, the Surrey/Hampshire borders (Pearce 1992), Farnham, Farnborough and Harlow (Essex), and Woolwich, in several phases from the early 16th to the late 17th century.

A project currently in progress by the Centre for Metropolitan History is studying 'Metropolitan Market Networks, 1300–1600' (J A Galloway and M Murphy). This will use computer analysis and data mapping to provide snapshots of London's financial and trading markets around 1300, 1424 and 1600. This should throw light on changes and continuities between the medieval and early modern periods, on the role of London as a catalyst to economic development and on the operation of markets as institutions within a changing urban system.

A current model put forward by economic and social historians proposes that during the 17th century London merchants, following the efforts of the Tudor monarchy to standardise the government across England and Wales, provided a further powerful source of national unification by creating a 'national economic space' which centred on London (Hill 1969, 27; Dodgshon 1990, 262–3). They did this by exploiting new opportunities created by rural and regional people themselves. At the same time, the sheer scale of London's requirements, both for itself and for redistribution throughout the land, brought about changes in marketing which had consequences for London's infrastructure and buildings. Several commodities were sold not in face-to-face markets where the produce was displayed but in exchanges, special buildings where deals were made (eg the Corn Exchange, 1750).

Foreign trade

The conduct of London's foreign trade in the period 1480 to 1700 has been divided into three phases or stages of growth (Dietz 1986). In the first, from a revival of international commerce from c 1480 to a recession c 1550, the distinctive feature was concentration on the sale of woollen cloths by one company, the Merchant Adventurers, in a single market at Antwerp. This would help to account for a Low Countries flavour to many aspects of material culture in the London area during the first half of the 16th century. The second stage, from c 1550 until another depression c 1650, saw a search for other markets in Europe and beyond, marked in London by the building of the Royal Exchange and by the foundation of the East India Company (1600). The third stage, from 1650 to 1700, saw an emphasis on re-export and new markets outside Europe. Overseas trade declined in relative significance as the metropolitan economy became more complex: domestically produced food, fuel and clothing became as important as foreign goods. There has been little work on the trade in foreign goods re-exported through London (for the coastal trade in stoneware re-exports from London in the late 16th century see Allan 1983).

A wide range of exotic imports from the southern continents and Far East are well attested in the archaeological as well as the documentary records of the 17th and 18th centuries (for the historical background see Wills 1993). By the late 18th century the importance of overseas trade declined as trade grew within the metropolitan economy, and London's dominant position in the country at large remained unchallenged until the mid 19th century, when the Industrial

Revolution saw the growth of manufacturing cities in the Midlands and the north and the transatlantic trade promoted the growth of the western ports. Though the London area still contained a concentration of industries, banking and financial services were by this time significant in the City (Cain & Hopkins 1993).

London should be a central point of interest for all archaeologists working on colonial sites of the 16th to 19th centuries in all parts of the world, especially those in America. Many of the artefacts found on American colonial sites are of English origin and came from or through London: one author, for example, mentions in this context glass bottles (especially 1650–1739), Lambeth stoneware (1840–90), Southwark tin-glazed ware, 18th-century English stonewares, cutlery, drinking glasses, tin-glazed tiles and clay tobacco pipes (Noël Hume 1969). Precise dating of these ceramics and artefacts in London would be significant for American archaeology and for the archaeology of the British colonial empire. Conversely, certain kinds of artefacts from London are better preserved on New World sites (eg pewter and glass of 1665–90 at Port Royal, Jamaica, where streets included Lime Street and Queen Street, and a tavern outside the town was called Islington; Pawson & Buisseret 1975). Excavations in colonial cities on the eastern seaboard of the United States, such as Boston (Cheek 1998) and Annapolis in Maryland, are particularly relevant. The transatlantic flow of information should be a two-way dialogue.

London's contacts with new worlds, whether across the Atlantic or in Asia, have so far been the subject of very few studies (eg in terms of the introduction and use of exotic fauna and flora; see Giorgi 1997a). London alnage seals from the late 16th century have been found in wrecks off Norway and Brazil (Egan 1995). A potential area of study is the connection between London and the sugar and slave trades (Williams 1964; Dunn 1973). From the 1650s, England imported increasingly cheap sugar in great quantities from the West Indies and much of the profit went to English merchants, most of whom were based in London. In 1755 there were 147 registered slave traders in London alone. While it might be difficult to outline London's contribution to the archaeology of slavery, its sugar industry is evident from the later 16th century in the form of the distinctive pottery moulds (Brooks 1983) and map and documentary (eg hearth tax) evidence of many small-scale sugarworks both in and around the City.

Trading installations and waterfront constructions; the docks

The Royal Exchange (1567–9), built in Cornhill by Sir Thomas Gresham and the City, was modelled on the bourse in Antwerp (Saunders 1997). It was destroyed in the Great Fire and its successor, built 1667–71 in similar form, was destroyed by fire in 1838. The Custom House, rebuilt in 1559, is shown as a turreted building on Hollar's views of 1647 and 1666. It was rebuilt by Wren partly on the same site after the Fire, but little evidence of either structure was recorded during excavation on the site in 1973.

There was little waterfront reclamation in the City in the post-medieval period, as trade was increasingly concentrated in regulated markets and landing places. Congestion may have resulted, encouraging development of wharves and docks along the waterfront to the east of the City, especially at Limehouse and Blackwall (McDonnell 1978, 96–8). The chief quays, however, were still those at Billingsgate and Queenhithe (particularly for grain). The differences of function above and below London Bridge which resulted from statutes of 1559 (which designated official quays) may be a factor in the relative success of the post-Fire quays below the bridge and the failure above it. By 1600 the departure points for international voyages (and associated victualling and repairing) were the new suburbs downstream of the City at Deptford, Wapping and Ratcliff.

The scale of the docks in London in the 18th and early 19th centuries was unmatched in Europe. The Howland Great Wet Dock at Rotherhithe, in use by 1703 (shown on Rocque's map), provided moorings and dry docks for ship repair. The London docks proper began with the West India Docks (1800–2). A new museum in Docklands will open in 2001. The collections relate almost exclusively to the 19th and 20th centuries. Areas of special interest in the port zone include shipbuilding, block- and mastmaking, ropemaking and oar- and sailmaking. The methods and materials used in building river walls, dry docks and shipbuilding slips in the 17th and 18th centuries are largely unknown, though they are now being recorded on several sites.

Ships and boats

From the 16th century there are contemporary views of London which include illustrations of many ships and boats on the Thames and it should be possible to compare these with the parts of post-medieval vessels found in the river and in reclamation zones. Most of the finds represent local river transport, barges and boats that serviced the port and riverside communities, and much has been discovered about shipbuilding practices. The lower part of a large ship, probably Henry VII's warship *Sovereign*, was discovered on the site of Woolwich Power Station in 1912. This carrack, possibly 45m in length, was constructed in 1488 with clinker planking but rebuilt under Henry VIII in 1509–10 with carvel planks (edge to edge) to incorporate cannon-ports. The *Mary Rose* was also built at this time, also with carvel planking. The *Sovereign* was abandoned at Woolwich by 1521. Small fragments of boats reused in 16th-century waterfronts show that clinker-built boats with iron rivets were normal, continuing medieval traditions. Choice and use of timber changed, however, with split oak being supplemented by sawn elm and oak. Two excavated barges illustrate the kind of river transport in use long before other records of such craft were made: one of the early 17th century was found in the River Lea in 1900, the other was sunk in the Thames at Blackfriars c 1670 (Marsden 1996). Small parts of larger ships, including 17th-century painted decorated mouldings, were reused in building foundations to the south of Fleet Street (City of London Boys School site). In Southwark and Rotherhithe fragments of large boats have been found reused in waterfront constructions; some are possibly from identifiable vessels (Goodburn 1999 and work in progress). These are important since they preserve parts of vessels that rarely survive at shipwreck sites; and the pieces reused in land reclamation are less decayed than their counterparts on the seabed.

Trade and commerce: conclusions

There is a large amount of documentary evidence concerning London's local and foreign trade and there is much room for development of the subject. This should include careful comparison of the archaeological with the documentary evidence, for instance on volumes of goods: are the actual quantities of pottery or other items found on sites any reflection of what the documents imply? Archaeological work can contribute by charting the first appearance of goods on consumption sites and exploring the relationship between commerce and consumer needs or fashions. It is possible that, especially after about 1700, a rising consumerism dictated or at least influenced the direction of trade.

The role of London as an 'engine of economic growth' was lucidly explored by F J Fisher in a paper of 1971 (reprint in Corfield & Harte 1990) and London's impact as a metropolis has been further explored since by other historians. London was not the sole cause of growth, but it provided motor power for change in other parts of the country via its own role in production, distribution and consumption (Corfield 1990, 15–16, who notes 'the 17th century in Europe as a whole was a period when urban growth was predominantly metropolitan').

London was unique in Europe in being at the same time a capital city and a great port. In 1500, western Europe was on the edge of a world economy centred on the Mediterranean and Venice. By 1775, the 'octopus grip of European trade had extended to cover the whole world' and London had become the centre of that world (Braudel 1984, 28–9). The extent of its trading links is evident from the great range of artefactual material which survives in archaeological deposits (especially those along the riverfront), the quality and quantity of which merits special attention. The archaeology of the docks, a major change in land use east of the conurbation from the early 18th century, has hardly started. Research is also needed to clarify the size, shape and use of ships and boats and to chart the development of shipbuilding technology. Ships built in the Thames Valley explored the world and yet little is known about how the earlier ships were built, nor of the change from clinker to carvel planking

Survey and excavation at the Grotto at Wanstead Park



which was so important for the construction of large, armed ocean-going vessels. There is certainly still a need to record reused ship and boat timbers in revetments, given the significance of these questions.

Farms and the agricultural landscape

A notable feature of the area immediately around the central urban core, just before 1600 but certainly during the first half of the 17th century, was the advent of large areas of market gardening, as the greatly increased population of that central area demanded feeding. The significance of this for the food market was outlined by Fisher in 1935, but questions such as where and when it happened, with what new plants and new technologies, have not yet been addressed by archaeologists (for one site on a 17th-century market garden at Lambeth, SLAEC 1988, 159–67). The benefits of the London market diffused a prosperity throughout Middlesex and, as far as we can tell, in the other counties nearest to London; but outside this circle, London's demands were more selective than indiscriminate, drawing from each district some particular speciality. This specialisation was one cause of agricultural progress as agriculture commercialised (Fisher 1935, reprint in Corfield & Harte 1990, 70–1).

Outside the urban core, London was predominantly rural until the 19th century. In the 1740s, as shown on Rocque's map of London, there were fields on the border of the conurbation, at places we now know as Russell Square (Holborn), Bethnal Green Station, Victoria Station and the Elephant and Castle. Not much evidence of rural life has survived. The farm buildings of the region have been depleted by demolition and alteration. Some fragmentary and much altered 16th- and 17th-century farmhouses and farm buildings in west Middlesex and south-west Essex may provide evidence of changes in agricultural practice. This material has not yet been evaluated, but is far short of helping to define or even illustrate the main trends in farm development in the London region.

With such a dearth of archaeological material, it is not at present thought worthwhile to summarise here the complicated topic of agricultural change from 1500 to 1800 in the region. Besides national surveys, there are regional or county histories which do this well (the Victoria County History and at least two other series: a regional history of England which includes a volume on the south-eastern counties by Brandon & Short 1990, and the Making of the English Landscape series which includes a volume on Hertfordshire: Munby 1977).

Conclusions

It is clear that the archaeological account of post-medieval London has yet to be written. In part, the research priorities for such an account have yet to be formulated, but the subject as a whole contains great potential for increasing our understanding of London at a critical time and of London's place within Britain, within Europe and within the world at large.

Post-medieval archaeology is a young discipline and subject and is not yet developed; it is also not widely recognised among historians. A newly published history of London, from the dawn of prehistory to the present and by a senior London historian who has also produced the official history of the Museum of London itself, draws liberally on archaeological data for the story up until about 1500, but not at all thereafter (Sheppard 1998). The main themes in London's history in 1500 to 1800, for Sheppard, are the rise of the metropolis (architecture and town-planning aspects), religious and educational revolutions such as the Reformation, political revolutions, the administration of the metropolis, consequences of urban growth on daily life and aspects of London's involvement in industrialisation. These are all subjects which have an archaeological component. One important task in the future of post-medieval archaeology of London and its region must be to engage historians in dialogue, explain the archaeological findings and rectify this situation.

This chapter, unlike the others, has not been accompanied by a gazetteer or maps derived from one. Until there has been more work on post-medieval sites and artefacts, it is premature to ask if the knowledge at present available to archaeologists is truly representative of human activity in the region at this period. The short answer is no. There is a wealth of documentary, graphic and cartographic evidence which has yet to be properly assessed for archaeological purposes, and for joint projects. At the same time, documentary evidence gives only one side of the picture on any archaeological site. We need more qualitative research in post-medieval archaeology, to explore the archaeological data and develop the subject.

In attempting to present a sketch or outline of the extent of archaeological endeavour in this period so far, this chapter has also inevitably perhaps said much about the City and not enough about the potential of the districts around, such as Southwark, Westminster and the West End. This in part reflects the emphasis of work to date. One correcting tendency of any future research agenda should be to emphasise potential and begin new projects away from the central urban core.

Nevertheless, the forces of centralisation in all walks of life (political, economic, cultural, religious) which made London the centre of things for much of England, and far more than ever before, is an ever-present theme. Four overall archaeological subjects (or grouping of subjects) have been identified:

- 1) the growth of London, its internal character (including that of the population) and the effect of that growth on the region (variously defined, according to the question)
- 2) features of London as a capital city (buildings; conspicuous consumption)
- 3) the place of London in the history of industries
- 4) London in the world system; London as the centre of a mercantile and colonial empire.

No doubt other themes or subjects could be nominated. It is suggested here that with so much available information, both from archaeological and documentary sources, the archaeological contribution has to be carefully considered and some debate is necessary for advancement. There will always be two sets of academic objectives to consider, both of which lie behind the framework in the four parts just outlined (and this is true of all periods of London's archaeology from the Roman period onwards). Archaeologists should record the history of the place; and in so doing, identify what was special or remarkable about it for the history of London and its region.



**SUMMARY: THE PAST,
PRESENT AND FUTURE
OF GREATER LONDON**

As the previous chapters have shown, the archaeology of London is an immensely complex and wide-ranging subject. One purpose of this final chapter is therefore to summarise some of the key points and arguments that have been presented earlier in the book. These include important discoveries made in the past, information about the present state of knowledge and suggestions for future research.

This book complements and in many areas supersedes the three surveys of London's archaeology made a generation ago: *The future of London's past* (Biddle *et al* 1973), which dealt only with the City; *Time on our side?* (Grimes 1976), a more superficial but wide-ranging study of Greater London; and *The archaeology of the London area: current knowledge and problems* (Kent 1976), which unlike the others had a purely academic content, rather than any form of management remit.

In terms of new information, whether resulting from fieldwork or from analysis of artefacts and environmental material, progress over the last 25 years has been rapid. Work in west London, for instance, has now revealed an extensive Neolithic landscape comprising a cursus, ring-ditches and hengiform monuments. Whereas in 1976 an impression of the period had to be pieced together from a scatter of isolated small-scale excavations, though that in itself was a considerable advance on what had previously been possible, a still earlier generation of archaeologists had to hand only the evidence of chance finds, especially from the river (Macdonald 1976). In central London substantial tracts of Roman Southwark have been recorded; on the north bank of the Thames in particular the Roman and medieval port has been revealed on a series of sites that together comprise a discovery without parallel in the UK in terms of depth of stratification and quality of preservation.

Dendrochronologically-dated dumps of household refuse have made it possible to construct for the medieval period both an entirely new ceramic sequence and a vastly refined impression of everyday dress and lifestyle: shoes, belts, clothing, spurs, knives, jewellery and badges. Up to 1973 the waterfront had been the scene of just one controlled excavation, and the importance of conducting fieldwork here was one of the overriding messages of *The future of London's past* (Biddle *et al* 1973, 12–14, 26). Arguably among the most exciting discoveries, however, has been evidence for the location of Middle Saxon London, *Lundenwic*, outside the walled area to the west, along the Strand, and the discovery of the Rose Theatre in Southwark.

These discoveries (and it must be admitted that the choice is entirely subjective) may serve as examples of recent work that have permitted a reinterpretation of entire themes or periods of settlement in the London region. Besides these there have been many major excavations or research projects that may foreshadow significant reinterpretations but require corroboration or further discoveries before they can be placed in context. The *in situ* lithic and associated faunal assemblages at Three Ways Wharf, Uxbridge, have provided a nationally significant, though so far isolated, insight into the Early Mesolithic, and the deeply stratified 'midden' deposits from Area 16 East at Runnymede Bridge have provided new insights into the Late Bronze Age, although they are as yet without parallel in the region (Needham & Spence 1996). Similarly, recent finds at Rainham and Beckton of brushwood trackways extending over considerable distances provide vital evidence for Middle Bronze Age activity on the Thames floodplain, but comparatively little is known about the contemporary settlements.

In contrast, there are some other fields in which very little new information seems to have come to light during the past 25 years. Whereas Londinium has been a focus of attention, the hinterland of the Roman city remains poorly researched or understood, to such an extent that our interpretation of the metropolis itself risks compromise. Although scatters of Roman material have been recorded over much of Greater London, those towns, farm centres and religious sites that have been identified so far mostly lie on the periphery of the region. Few revisions have been made to the plans of the road network that were drawn up by Margary in the 1950s (Margary 1955), and apart from some innovative research into forestry practice based on the study of building timbers used in the Roman city, it has been left mainly to students of the local pottery industries to add to our knowledge of the rural economy. So too for much of the medieval period. Except in Kingston, excavation or post-excavation analysis has so far had a negligible impact on our understanding of market towns, still less of hamlets or farmsteads. This has been despite the fact that recent surveys of standing buildings have (often unexpectedly) revealed medieval or early post-medieval cores, and architectural historians have made progress in characterising the vernacular architecture of the region.

Of all the uncertainties about London's past, the problems of the Iron Age are among the most intractable. In 1978, John Kent's suggestion, based on study of the coinage, that an early 1st-century BC centre was to be found to the west of the City of London raised hopes that an *oppidum*-type pattern of settlement, familiar in Essex and elsewhere, might one day be recognised in the lower Thames Valley (Kent 1978). Twenty years on, though far from being disproved, this hypothesis has not received significant corroboration. On the contrary, students of the Roman period have used the apparent absence of Late Iron Age occupation to account for the selection of the site by the Romans for the city of Londinium.

Notwithstanding the problems of the data set, when it comes to devising a research and management agenda for the 21st century, we have far more, and far better, sources of information than were available to those attempting a similar task in the 1970s. This book itself forms part of the resource assessment stage (see above), and it is underpinned by a comprehensive Sites and Monuments Record for Greater London. Many reports have been published on sites, artefacts and environmental material, and there is a three-volume survey of the archaeological archives held by the Museum of London (Shepherd 1998a; Schofield with Maloney 1998; Thompson *et al* 1998). On the other hand, all these sources are subject to much more rapid change than would have been the case in the past, simply because of the quantity of fieldwork that now takes place in Greater London as a consequence of PPGs 15 and 16. Many of the interventions are small-scale recording projects or evaluations, but since they are scattered widely throughout the region – especially in some of the outer boroughs, where there has been so little previous work (Schofield 1998, 55–7) – they have enormous potential for informing many of the debates introduced earlier in this chapter.

Future research and management frameworks must therefore plan for regular rather than irregular additions to the resource base; reassessment, rather than occasional assessment, of resources; and flexibility in both agenda and strategy. Computers and the Internet undoubtedly offer many of the tools for achieving this. Large quantities of data can be manipulated in ways that were not previously possible, just as documents can be prepared and distributed more cheaply than conventional printing would allow.

In some of these areas a start has already been made. The Greater London Sites and Monuments Record, the National Monuments Record and the Museum of London have published their basic site catalogues on the Internet, via the Archaeology Data Service (ADS: <http://ads.ahds.ac.uk/>). The Museum has, in addition, published fuller descriptions of 4000 sites on its own website, and has also created an electronic register of archaeological research to complement the register of historical research that is maintained by the Centre for Metropolitan History. Finally, the publication of a Research Agenda for London, and the completion of preparations at the London Archaeological Archive and Research Centre will, it is hoped, promote and galvanise a more research-based approach to the archaeology of Greater London by a larger number of people and organisations than ever before.

**Part two:
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ARCHAEOLOGICAL RESOURCES FOR LONDON: A SUMMARY

This section presents a summary of regular publications and the regional and local archaeological resources that are available to the public. It does not include universities or national museums. The bibliography in this volume further demonstrates the range of written sources available. Details are believed to be correct at time of writing, but readers are advised to confirm in advance of visits, particularly as some archives are open by appointment only.

Museum of London

London Wall, London EC2Y 5HN: 020 7600 3699;
www.museumoflondon.org.uk

The Museum of London is the prime centre for the study and enjoyment of the history, culture and archaeology of London and its surroundings. It holds superb permanent galleries covering all periods of human activity in the London region, combined with an exciting and challenging open-ended programme of subject-based temporary exhibitions. These are complemented by tours, study days and lectures on aspects of London's past. The Museum has a strong educational section, and also boasts nationally acknowledged experts in a wide variety of historical and archaeological fields of study. It is very active in publication, both of popular exhibition catalogues and guides and of academic works.

Museum of London Archaeology Service

Walker House, 87 Queen Victoria Street, London EC4V 4AB: 020 7410 2229; www.molas.org.uk

The active field archaeological wing of the Museum of London, MoLAS undertakes archaeological survey, fieldwork, risk assessment, analysis, research, publication and heritage management of all kinds of sites and all periods of London's past. It works closely with universities, government agencies, such as English Heritage, the Environment Agency, local government and private clients to record, analyse, interpret,

illustrate and present London's archaeology to a very high academic standard while maintaining accessibility. Its archaeologists have knowledge of Roman, Saxon, medieval and post-medieval London that is second to none. Publication of the results of excavations is a priority, through high-quality monographs, articles, popular books and lectures.

Museum of London Specialist Services

46 Eagle Wharf Road, London N1 7ED: 020 7490 8447;
www.molss.org.uk

The Museum of London Specialist Services (MoLSS) forms the third part of the Museum's resource base. Situated immediately adjacent to the Archaeological Archive (see below), it employs internationally renowned experts on artefacts and environmental evidence of almost every kind from London and its region throughout human history. It undertakes processing, conservation, analysis, research and interpretation for many archaeological units and organisations in the London region and beyond, and makes very significant contributions to the development of our understanding of London's material culture, ecology and environment.

The London Archaeological Archive and Research Centre

46 Eagle Wharf Road, London N1 7ED: 020 7566 9317;
www.museumoflondon.org.uk

The LAARC is the Museum of London's repository and resource centre for almost all the archaeological archives generated from fieldwork in the Greater London region. The archives contain over 120,000 boxes of material including pottery, building materials, accessioned finds, human and animal bone, and written and drawn records from over 3000 archaeological sites spanning some 70 years of fieldwork in the region. The LAARC therefore represents an extraordinary resource for the researcher into London's past.

Archives may be viewed by prior arrangement with the Archive team, and plans are in hand to extend access to the written and drawn records and forge links with other resources such as the GLSMR via the Internet.

English Heritage

English Heritage London Region: 23 Savile Row, London W1X 1AB: 020 7973 3000; www.english-heritage.org.uk
Greater London Archaeology Advisory Service: 020 7973 3735
Greater London Sites and Monuments Record: 020 7973 3731

English Heritage, the government's statutory adviser on the protection of England's historic environment, plays a special and important role in the capital. For the researcher, perhaps the most immediately accessible aspect of its role is the maintenance of two huge databases. One, the Greater London Sites and Monuments Record (GLSMR), is a database of finds and monuments which includes some 70,000 entries upon which much of the foregoing assessment is based. The other is the public archive of English Heritage, the National Monuments Record (NMR), which includes over 350,000 images, drawings and surveys of London's buildings and archaeology. This is managed through the Greater London Archaeology Advisory Service, staffed by archaeological specialists, who can be contacted for advice on planning matters and other archaeological information free of charge. In addition to the research side, and among many other duties, EH is responsible for the management of Greater London's 150 Scheduled Ancient Monuments, and provides advice on the region's 37,000 Listed Buildings.

Local museums and study libraries (by borough)

There are a number of local museums, study libraries and archives, of which the following is a selection. Readers are advised to phone libraries and archives in advance as some are by appointment only. Further information on libraries, including opening times, can be obtained via www.viscount.org.uk/metrolib/contacts.htm and for museums: www.museums.co.uk/

Barking & Dagenham

Valence House Museum (and Local Studies Library), Becontree Avenue, Dagenham, Essex RM8 3HS. Tel 020 8595 8404; Fax 020 8227 5293

Barnet

Barnet Museum, 31 Wood Street, Barnet, Herts. Tel 020 8440 8066

Church Farmhouse Museum, Greyhound Hill, Hendon, London NW4 4JR. Tel 020 8203 0130; Fax 020 8359 3157

The Jewish Museum, The Sternberg Centre, 80 East End Road, London N3 2SY. Tel 020 8349 1143; Fax 020 8343 2162

Local Studies and Archives Centre (Postal address:) c/o Hendon Library, The Burroughs, Hendon, London NW4 4BQ; (Location:) Chapel Walk, Egerton Gardens, Hendon, London NW4. Tel 020 8359 2876

Bexley

Bexley Museum and Local Studies and Archives Centre, Hall Place, Bourne Road, Bexley, Kent DA5 1PQ. Tel 01322 526574

Erith Library and Museum, Walnut Tree Road, Erith, Kent DA8 1RS. Tel 01322 336582

Brent

Cricklewood Library & Archive, 152 Olive Road, London NW2 6UY. Tel 020 8937 3540

Grange Museum of Community History, Neasden Roundabout, Neasden Lane, London NW10 1QB. Tel 020 8452 8311

Bromley

Local Studies Department, Central Library, High Street, Bromley BR1 1EX. Tel 020 8460 9955; Fax 020 8313 0475

Bromley Museum, The Priory, Church Hill, Orpington BR6 OHH. Tel 01689 873 826

Camden

Camden Local Studies and Archives Centre, Holborn Library, 32–38 Theobalds Road, London WC1X 8PA. Tel 020 7413 6342; Fax 020 7413 6284

City of London

Guildhall Library, Aldermanbury, London EC2P 2EJ. Tel (general) 020 7606 3030; Tel (reference library) 020 7332 1868/1870; Tel (manuscripts) 020 7332 1862/1863; Tel (prints & maps) 020 7332 1839; Fax 020 7600 3384

Museum of London, London Wall, London EC2Y 5HN. Tel 020 7600 3699; Fax 020 7600 1058; www.museumoflondon.org.uk

Museum of London, London Wall, London EC2Y 5HN. Tel 020 7600 3699; Fax 020 7600 1058; www.museumoflondon.org.uk

Croydon

Central Library (and Local Studies Library), Katharine Street, Croydon CR9 1ET. Tel 020 8760 5400; Fax 020 8253 1004

Croydon Museum and Heritage Service, Croydon Clocktower, Katharine Street, Croydon CR9 1ET. Tel 020 8253 1026; Fax 020 8253 1003

Croydon Natural History and Scientific Society Limited (library and museum), c/o 96a Brighton Road, South Croydon CR2 6AD

Croydon Museum and Heritage Service, Croydon Clocktower, Katharine Street, Croydon CR9 1ET. Tel 020 8253 1026; Fax 020 8253 1003

Croydon Natural History and Scientific Society Limited (library and museum), c/o 96a Brighton Road, South Croydon CR2 6AD

Croydon Natural History and Scientific Society Limited (library and museum), c/o 96a Brighton Road, South Croydon CR2 6AD

Gunnersbury Park Museum, Gunnersbury Park, Popes Lane, London W3 8LQ. Tel 020 8992 1612; Fax 020 8752 0686 (local history for Ealing and Hounslow)

Pitshanger Manor Museum, Mattock Lane, Ealing, London W5. Tel 020 8579 2424

Pitshanger Manor Museum, Mattock Lane, Ealing, London W5. Tel 020 8579 2424

Forty Hall Museum, Forty Hill, Enfield, Middlesex EN2 9HA. Tel 020 8363 4046

Palmers Green Library (local history), Broomfield Lane, London N13 4EY. Tel 020 8379 2711; Fax 020 8379 2712

Palmers Green Library (local history), Broomfield Lane, London N13 4EY. Tel 020 8379 2711; Fax 020 8379 2712

Borough Museum, 232 Plumstead High Street, Plumstead, London SE18 1JT. Tel 020 8855 3240

Local History Library, Woodlands, Mycenae Road, Blackheath, London SE3 7SE. Tel 020 8858 4631; Fax 020 8293 4721

Plumstead Library, Plumstead High Street, Plumstead, London SE18 1JL. Tel 020 8854 1728; Fax 020 8317 4868

Plumstead Library, Plumstead High Street, Plumstead, London SE18 1JL. Tel 020 8854 1728; Fax 020 8317 4868

Plumstead Library, Plumstead High Street, Plumstead, London SE18 1JL. Tel 020 8854 1728; Fax 020 8317 4868

Plumstead Library, Plumstead High Street, Plumstead, London SE18 1JL. Tel 020 8854 1728; Fax 020 8317 4868

Archives Department (and Reference Library), 43 De Beauvoir Road, London N1 5SQ. Tel 020 7241 2886

Geffrye Museum, Kingsland Road, London E2 8EA. Tel 020 7739 9893; (recorded information:) 020 7739 8543

London Metropolitan Archive, 40 Northampton Road, London EC1R OHB. Tel 020 7332 3822

Hammersmith & Fulham

Archives and Local History Centre, The Lilla Huset, 191 Talgarth Road, London W6 8BJ. Tel 020 8741 5159; Fax 020 8741 4882

Museum of Fulham Palace, Bishops Park, Bishops Avenue, Fulham, SW6 6EA. Tel 020 7736 3233; Fax 020 7736 3233

Museum of Fulham Palace, Bishops Park, Bishops Avenue, Fulham, SW6 6EA. Tel 020 7736 3233; Fax 020 7736 3233

Haringey

Bruce Castle (local history museum and archive collection), Lordship Lane, Tottenham, London N17 8NU. Tel 020 8808 8772; Fax 020 8808 4118

Bruce Castle (local history museum and archive collection), Lordship Lane, Tottenham, London N17 8NU. Tel 020 8808 8772; Fax 020 8808 4118

Central Reference Library, Station Road, Harrow HA1 2UU. Tel 020 8424 1055/1056; Fax 020 8424 1971

Harrow Museum Heritage Centre, Headstone Manor, Pinner View, Harrow, Middlesex. Tel 020 8861 2626; Fax 020 8863 6407; http://www.harrowarts.org.uk

Harrow Museum Heritage Centre, Headstone Manor, Pinner View, Harrow, Middlesex. Tel 020 8861 2626; Fax 020 8863 6407; http://www.harrowarts.org.uk

Harrow

Central Library, St Edward's Way, Romford, Essex RM1 3AR. Tel 01708 772374; Fax 01708 772391

Central Library, St Edward's Way, Romford, Essex RM1 3AR. Tel 01708 772374; Fax 01708 772391

Hillingdon

Central Library, 14–15 High Street, Uxbridge, Middlesex UB8 1HD. Tel 01895 250700; Fax 01895 239794

Central Library, 14–15 High Street, Uxbridge, Middlesex UB8 1HD. Tel 01895 250700; Fax 01895 239794

Gunnersbury Park Museum, Gunnersbury Park, Popes Lane, London W3 8LQ. Tel 020 8992 1612; Fax 020 8752 0686 (local history for Ealing and Hounslow)

Local Studies Collection, Chiswick Library, Duke's Avenue, London W4 2AB. Tel 020 8994 1008

Local Studies Collection, Feltham Library, 210 The Centre, High Street, Feltham, Middlesex TW13 4BX. Tel 020 8890 3506

Local Studies Collection, Hounslow Library, 24 Treaty Centre, High Street, Hounslow TW3 1ES. Tel 020 8862 5833

Museum of the Order of Saint John, St John's Gate, St John's Lane, London EC1M 4DA. Tel 020 7253 6644; Fax 020 7336 0587

Islington

Finsbury Library, 245 St John Street, London EC1V 4NB. Tel 020 7527 7960; Fax 020 7527 7998

Islington Museum, Foyer Gallery, Town Hall, Upper Street, London N1 2UD. Tel 020 7477 3235; Fax 020 7477 3049

Museum of the Order of Saint John, St John's Gate, St John's Lane, London EC1M 4DA. Tel 020 7253 6644; Fax 020 7336 0587

Museum of the Order of Saint John, St John's Gate, St John's Lane, London EC1M 4DA. Tel 020 7253 6644; Fax 020 7336 0587

Central Library, Phillimore Walk, London W8 7RX. Tel (Local Studies) 020 7361 3038

Chelsea Library, Old Town Hall, Kings Road, London SW3 5EZ. Tel 020 7352 6056; Fax 020 7351 1294

Chelsea Library, Old Town Hall, Kings Road, London SW3 5EZ. Tel 020 7352 6056; Fax 020 7351 1294

Kingston Local History Room & Archives Service, Room 46, North Kingston Centre, Richmond Road, Kingston, Surrey KT2 5PL. Tel 020 8547 6738

Kingston Museum, Wheatfield Way, Kingston, Surrey KT1 2PS. Tel 020 8546 5386

Kingston Museum, Wheatfield Way, Kingston, Surrey KT1 2PS. Tel 020 8546 5386

Archives & Local History, 52 Knatchbull Road, London SE5 9QY. Tel 020 7926 6076; Fax 020 7926 8336

The Museum of Garden History, St Mary-at-Lambeth, Lambeth Palace Road, London SE1 7LB. Tel 020 7401 8865; Fax 020 7401 8869

The Museum of Garden History, St Mary-at-Lambeth, Lambeth Palace Road, London SE1 7LB. Tel 020 7401 8865; Fax 020 7401 8869

The Horniman Museum & Gardens, 100 London Road, London SE23 3PQ. Tel 020 8699 1872; Fax 020 8291 5506

Lewisham Library, 199–201 Lewisham High Street, London SE13 6LG. Tel (Archives/Local History Centre) 020 8297 0682; Fax 020 8297 1169

Lewisham Library, 199–201 Lewisham High Street, London SE13 6LG. Tel (Archives/Local History Centre) 020 8297 0682; Fax 020 8297 1169

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Lewisham Library, 199–201 Lewisham High Street, London SE13 6LG. Tel (Archives/Local History Centre) 020 8297 0682; Fax 020 8297 1169

Merton Heritage Centre, The Canons, Madeira Road, Mitcham CR4 4HD. Tel/Fax 020 8640 9387

Merton Heritage Centre, The Canons, Madeira Road, Mitcham CR4 4HD. Tel/Fax 020 8640 9387

Wandle Industrial Museum, Vestry Hall Annexe, London Road, Mitcham, Surrey CR4 3UD. Tel 020 8648 0127; Fax 020 8685 0249

Wimbledon Society Museum of Local History, 22 Ridgeway, London SW19 4NQ. Tel 020 8395 7147; Fax 020 8944 6497

Wimbledon Society Museum of Local History, 22 Ridgeway, London SW19 4NQ. Tel 020 8395 7147; Fax 020 8944 6497

Local Studies Library, Water Lane, Stratford, London E15 4NJ. Tel 020 8557 8968; Fax 020 8503 1525; www.newham.gov.uk/leisure/libraries/local.htm

Manor Park Museum, Romford Road, London E12 5SY. Tel 020 8514 0274; www.newham.gov.uk/leisure/museums/mmp.htm

Manor Park Museum, Romford Road, London E12 5SY. Tel 020 8514 0274; www.newham.gov.uk/leisure/museums/mmp.htm

Central Library (and Museum), Clements Road, Ilford IG1 1EA. Tel 020 8478 7145

South Woodford Library, 116 High Road, London E18 2QS. Tel 020 8504 1407

South Woodford Library, 116 High Road, London E18 2QS. Tel 020 8504 1407

Central Library (and Museum), Clements Road, Ilford IG1 1EA. Tel 020 8478 7145

South Woodford Library, 116 High Road, London E18 2QS. Tel 020 8504 1407

Museum of Richmond, Old Town Hall, Whittaker Avenue, Richmond upon Thames, Surrey KT9 1TP. Tel 020 8332 1141; Fax 020 8948 7570

Twickenham Local Collection, Twickenham Library, Garfield Road, Twickenham TW1 3JS. Tel 020 8891 7271

Twickenham Local Collection, Twickenham Library, Garfield Road, Twickenham TW1 3JS. Tel 020 8891 7271

Cuming Museum, 155–157 Walworth Road, London SE17 1RS. Tel 020 7701 1342

Local Studies Library, 211 Borough High Street, London SE1 1JA. Tel 020 7403 3507; Fax 020 7403 8633

Shakespeare's Globe Exhibition, New Globe Walk, Bankside, London SE1 9DJ. Tel 020 7902 1500; Fax 020 7902 1515; www.shakespeares-globe.org

Sutton

Sutton

Archive and Local Studies Searchroom, Level 5 West, Sutton Central Library, St Nicholas Way, Sutton, Surrey SM1 1EA. Tel 020 8770 4747; Fax 020 8770 4777

Heritage Centre, Honeywood Walk, Carshalton, Surrey. Tel 020 8773 4555

Tower Hamlets

Local History and Archives, Bancroft Library, 277 Bancroft Road, London E1 4DQ. Tel 020 8980 4366; Fax 020 8981 9965

Museum of Docklands, c/o Unit C14, Poplar Business Park, 10 Prestons Road, London E14 9RL. Tel 020 7515 1162 (opening September 2001)

Ragged School Museum, 46–50 Copperfield Road, London E3 4RR. Tel 020 8980 6405; Fax 020 8983 3481; www.ics-london.co.uk/rsm/

Waltham Forest

Local Studies and Archives (and Museum), Vestry House Museum, Vestry Road, Walthamstow E17 9NH. Tel 020 8509 1917

Wandsworth

The Local History Library, Battersea Library, Lavender Hill, London SW11 1JB. Tel 020 8871 7753

Wandsworth Museum, The Courthouse, 11 Garratt Lane (opposite Arndale centre), Wandsworth, London SW18 4AQ. Tel 020 8871 7074

Westminster

City of Westminster Archives Centre, 10 St Ann's Street, London SW1P 2DE. Tel 020 7641 5180; Fax 020 7641 5179

Greater London

Regional societies covering parts of Greater London

There are several regional societies covering historic areas or themes, some of which extend beyond the limits of modern Greater London. They produce yearly journals containing archaeological and historical articles as well as holding events and lectures, and undertaking occasional fieldwork. Further

details and updates of many of these, and the local societies, can be obtained from www.archaeology.co.uk, the LAMAS (London and Middlesex Archaeological Society) Newsletter, published three times a year, and *Greater London history and heritage handbook*, compiled by Peter Marcan, Peter Marcan Publications, latest ed 1999: PO Box 3158, London SE1 4RA.

- Council for British Archaeology Mid Anglia Group** – 34 Kingfisher Close, Wheathampstead, St Albans, Hertfordshire AL4 8JJ (serves north of the Thames). http://www.britarch.ac.uk/
- Council for British Archaeology South-East Group** – 8 Woodview Crescent, Hildenborough, Tonbridge, Kent TN11 9HD (serves south of the Thames). http://www.britarch.ac.uk/
- Essex Society for Archaeology and History** – Michael Leach, the Hon Secretary, No. 2 Landview Gardens, Ongar, Essex CMS 9EQ
- Greater London Industrial Archaeology Society** – 49 Woodstock Avenue, London NW11 9RG
- Kent Archaeological Society** – Three Elms, Woodlands Lane, Shorne, Gravesend, Kent DA12 3HH. Tel 01474 822280; http://ourworld.compuserve.com/homepages/ai_moffat
- London and Middlesex Archaeological Society** – c/o Museum of London, London Wall, London EC2Y 5HN. Tel 020 7600 3699; http://www.lamas.org.uk/
- Standing Conference on London Archaeology (SCOLA)** – Patricia Wilkinson, The Hon Secretary, 1B Forest Drive East, Leytonstone, London E11 1JX
- Surrey Archaeological Society** – Castle Arch, Guildford, Surrey GU1 3SX. Tel 01483 532454; http://ourworld.compuserve.com/homepages/surreyarch/

Local societies

There are a large number of active local history and archaeology societies in the Greater London area. All run lecture programmes and some undertake fieldwork. Several also publish their own journals, so they make good places to initiate research into local archaeology and history. The contacts below are, of course, subject to change through elections and retirements. Further details and updates can be obtained as above, under 'Regional societies'.

- Acton** History Group – David Knights, Secretary, 30 Highlands Avenue, Acton, London W3 6EU
- Barnes and Mortlake** History Society – The Secretary, 43 Hertford Avenue, East Sheen, London SW14 8EH
- Barnet** and District Local History Society – c/o Barnet Museum, 31 Wood Street, Barnet, Hertfordshire EN5 4BW. Tel 020 8440 8066

- Bexley** Archaeological Group – 4 Mayfair Avenue, Bexleyheath, Sidcup, Kent DA7 4TW. http://www.bag.org.uk/
- Brentford and Chiswick** Local History Society – The Chairman, 25 Hartington Road, Chiswick, London W4 3TL. Tel 020 8994 4231
- Bromley and West Kent** Archaeological Group – Brian Philip, 5 Harvest Bank Road, West Wickham BR4 9DJ
- Camden** History Society – Jane Ramsay, Garden Flat, 62 Fellows Road, London NW3 3LJ
- City of London** Archaeological Society – The Secretary, 13 Princess Court, 115 Hartfield Road, London SW19 3TJ. http://www.nsadler.demon.co.uk/colas
- Croydon** Natural History and Scientific Society – The Secretary, 96A Brighton Road, South Croydon, Surrey CR2 6AD
- Ealing** Museum, Art and History Society – Jane Harding, Chairman, Melvin House, 13 Hartington Road, Ealing, London W13 8QL
- East London** History Society – The Secretary, 20 Puteaux House, Cranbrook Estate, London E2 ORF
- Edmonton** Hundred Historical Society – via the Local History Unit, Southwark Town Hall, Green Lanes, Palmers Green, London N13 4XD. Tel 020 8379 2724
- Enfield** Archaeological Society – The Secretary, 24 Padstow Road, Enfield, Middlesex EN2 8BU
- Fulham** Archaeological Rescue Group – Keith Whitehouse, 85 Rannoch Road, Hammersmith, London W6 9SX
- Fulham and Hammersmith** Historical Society – Rosamund Vercoe, Secretary, 37 Paddenswick Road, London W6 OUA. Tel 020 8748 9493
- Greenwich** Historical Society – Frances Ward, Greenwich Local History Library, 90 Mycenae Road, London SE3 7SE. Tel 020 8858 4631
- Greenwich** Industrial History Society – Mary Mills, 24 Humber Road, London SE3 7LT. Tel 020 8858 9482
- Harefield** History Society – The Secretary, 20 Hinckley Close, Harefield, Middlesex UB9 6AA
- Hayes and Harlington** Local History Society – The Secretary, 7 St Jerome's Grove, Hayes, Middlesex UB3 2PJ
- Hendon** and District Archaeological Society – The Secretary, 13 Reynolds Close, London NW11 7EA. http://www.hadas.org.uk
- Hornchurch** and District Historical Society (and museum) – Peter Butler, Secretary, 7 Mendoza Close, Hornchurch, Essex RM11 23P. Tel 01708 447535
- Hornsey** Historical Society – The Old Schoolhouse, 136 Tottenham Lane, London N8 7EL. Tel 020 8348 8429
- Hounslow** and District History Society – The Secretary, 'Albertine', Manor House Court, Shepperton, Middlesex TW17 9JS
- Islington** Archaeology and History Society – 8 Wynyatt Street, London EC1V 7HU. Tel 020 7833 1541
- The Friends of **Kensal Green** Cemetery – The Secretary, 17 Buchanan Gardens, London NW10 5AD

- Lewisham** Local History Society – The Chairman, 44 Le May Avenue, London SE12 9SU
- Merton** Historical Society – The Secretary, 100 Canon Hill Lane, London SW20 9ET
- Norwood** Society – The Secretary, 29 Woodsyre, Sydenham Hill, London SE26 6SS
- Orpington** and District Archaeological Society – Janet Clayton, 28 Church Avenue, Sidcup, Kent DA14 6BU
- Pinner** Local History Society – The Secretary, 2A Willows Close, Pinner HA5 3SY
- Potters Bar** and District Society – John Donovan, 19 Cringle Court, Thornton Road, Little Heath, Hertfordshire EN6 1JR
- Richmond** Archaeological Society – The Secretary, 28 Merton Avenue, Chiswick, London W4 1TA
- Romford** and District Historical Society – Mrs J Raggett, Secretary, 14 Thames Close, Rainham, Essex RM13 9HP. Tel 01708 520673. (Or for general enquiries about societies in the Borough of Havering: Brian Evans, 13 The Terlings, Brentwood, Essex CM14 4NG. Tel 01277 219892.)
- Ruislip**, Northwood and Eastcote Local History Society – The Secretary, 7 The Greenway, Ickenham, Uxbridge, Middlesex UB10 8LS
- Shooters Hill** Local History Group – Keith Littlewood, 30 Ightham Road, Erith, Kent DA8 1LX
- Southwark and Lambeth** Archaeological Society – Richard Buchanan, 79 Ashridge Crescent, Shooters Hill, London SE18 3EA
- Spelthorne** Archaeological Field Group – c/o Spelthorne Museum, Market Square, Staines, Middlesex TW18 4RH. Tel 01784 461804
- Stanmore and Harrow** Historical Society – Isobel Thompson, 7 Holme Way, Stanmore, Middlesex HA7 3RE
- Streatham** Society – Brian Bloice, 220 Woodmansterne Road, Streatham, London SW16 5UA. email brianbloice@compuserve.com
- Thorney Island** Society and Friends of **St James's Park** and **The Green Park** – The Chairman, 39 Westminster Mansions, Great Smith Street, London SW1P 3BP
- Borough of **Twickenham** Local History Society – The Secretary, 14A Enmore Gardens, East Sheen, London SW14 8FR
- Uxbridge** Local History and Archives Society – K R Pearce, Chairman, 29 Norton Road, Uxbridge, Middlesex UB8 2PT
- Wandsworth** Historical Society – 7 Coalecroft Road, London SW15 6LW
- Wanstead** Historical Society – Clifford Hume, 28 Howard Road, Ilford IG1 2EK
- Wembley** History Society – The Secretary, 4 Stewart Close, Kingsbury, London NW9 8AJ
- West Drayton** and District Local History Society – The Secretary, 86 Castle Avenue, Yiewsley, West Drayton, Middlesex UB7 8LQ

The Roman wall in London

Roman wall in London

- West Essex** Archaeological Group – The Secretary, 9 Ashvale Gardens, Collier Row, Romford, Essex RM5 3QA
- Willesden** Local History Society – Vera Thompson, Secretary, 12 Kynaston Close, Harrow Weald, Middlesex HA3 6TQ
- Wimbledon** Society – The Secretary, 38 Thornton Road, Wimbledon SW19 4NQ
- Woolwich** and District Antiquarian Society – The Secretary, 4 Hill End, Shooters Hill, London SE18 3NH

Roman wall in London

Publications

Annual summaries

Roman wall in London

Annual summaries of archaeological fieldwork within the Greater London area appear in the *London Archaeologist*, Fieldwork round-up, while period-based summaries appear in *Britannia* (Roman), *Medieval Archaeology* and *Post-Medieval Archaeology*.

County journals

Roman wall in London

The London and Middlesex Archaeological Society publish annual volumes (*Transactions of the London and Middlesex Archaeological Society*) and a series of special papers and monographs. Essex Archaeology and History cover the county of Essex (including its London boroughs): *Transactions of the Essex Society for Archaeology and History*. Kent Archaeological Society publishes an annual series of volumes known as *Archaeologia Cantiana*. Surrey Archaeological Society publishes annual volumes known as the *Surrey Archaeological Collections*, plus a series of research papers and monographs.

London journals

The only journal devoted solely to the archaeology of the capital is the *London Archaeologist*, which is published quarterly. There are several London-based academic societies which publish journals containing medieval and post-medieval cartographic and documentary evidence – the *London Topographical Record*, the *London Record Society* and the *London Journal* (a review of metropolitan society past and present). The East London History Society publishes a journal entitled *East London Record*, which contains some archaeological material.

Roman wall in London

Annual bibliographies

The *London Archaeologist* also includes a good annual bibliography of all publications (including conference papers and articles in foreign journals) relating to London's archaeology and heritage. A full list of all MoLAS publications is included in the MoLAS Annual Review, while the *British & Irish Archaeological Bibliography* (BIAB) includes London material. The pre-1992 British Archaeological Bibliography can be reached on http://www.britarch.ac.uk/biab or http://ads.ahds.ac.uk/catalogue/ which provides access to the library section; online publication of current data is imminent.

Local societies

Roman wall in London

Many local archaeological and historical societies within the Greater London area publish journals and newsletters, such as the *Greater London Industrial Archaeology Society Newsletter*, the *Journal of the Greenwich Historical Society*, the *Journal of the Lewisham Local History Society* and the *Wandsworth Historian* (see above for a list of London's local societies). The Council for Kentish Archaeology publishes the *Kent Archaeological Review*.

MoLAS Monograph series and Archaeology Studies series

MoLAS, in conjunction with MoLSS, private clients and English Heritage, is currently engaged on the most extensive publication programme ever of archaeological sites from the City and Greater London. A significant number of these will be published as MoLAS monographs. Three of these have already been published, dealing with a very large Roman cemetery in the eastern suburbs of London, a medieval hospital outside Bishopsgate and a post-medieval paupers' cemetery in Southwark. Future volumes currently in preparation cover subjects as diverse as the Colne Valley in the Mesolithic period, the heart of Roman London, Early Saxon Hammersmith, old London Bridge and the Limehouse porcelain manufactory. The Archaeology Studies series, which began in 1999, aims to present very accessible reports on small or medium-scale archaeological investigations in the London region, often in collaboration with local societies. The first in the series was on the important 14th-century pottery kiln site at Eden Street, Kingston upon Thames. To obtain further details of both series, researchers should visit the MoLAS website (see above) or contact MoLAS directly.

INDEX

Roman wall in London

Compiled by Susanne Atkin

Roman wall in London

Page numbers in **bold** refer to an illustration. The subject might be referred to more than once on a page. The locations in the gazetteers have not been included in the index.

Abbey Meads, Chertsey 111
Abbot's Hospital, Guildford 273
Abbots Lane 275
Abingdon, causewayed enclosure 68, 72
Abinger (Surrey) 223
Acheulian industry 15, 31, 32, 34, 35, 36
Acton 37, 55; **see also** Creffield Road
aerial photography 66
‘Agas’ map (c 1570) 211, 228
agriculture
 prehistoric x, 22, 24, 25, 46
 Mesolithic 54, 71
 Iron Age 102, 105–6, 112, 113
 Roman 124, 152–3, 159
 Anglo-Saxon 180–1, 186, 192, 195, 198
 medieval 209, 222, 233
 post-medieval 260–1, 262, 280
Albert Embankment 275
Alderbourne Valley 55
Aldermanbury 130, 185, 192
Aldersgate 130, 192, 264
7–12 Aldersgate Street 142, 145, 147
Aldgate 222, 226, 264, 270
 Roman 125, 126, 130, 147, 148, 149, 192
Aldgate High Street 275
Aldwych 183
All Hallows Barking 183, 188, 196
All Hallows Honey Lane 196
All Hallows Lombard Street 196
All Saints Kingston 196
All Saints Orpington **189**
almshouses 225, 272–3
altars, Roman 123, 135
Althorpe Grove, Battersea 186, 188
Ambresbury Banks (Essex) 105
Amen Court 193
America, colonial sites 278
12 America Square 129, 130
amphitheatre, Roman 7, 126, **132**, 137,159, 183
amphorae, Roman 109, 137, 140, 143–4
anchor, Viking type 191
Anglian (and pre-Anglian) formations 14
Anglo-Saxon/Saxon x–xi, 7, 19, 172–205
 gazetteer 199–205
 Saxon raids 121
 Early (pagan) Saxon 172–3, 174, 175, 176, 177–82, 197, 198
 Middle Saxon 172, 173, 175, 176, 177, 181, 182–90, 198
 Late Saxon xi, 7, 25, 172, 174, 175, 176, 177, 181, 191–7, 198
animal-baiting arenas 274
animal bone
 prehistoric ix, 15, 16, 19, 21, 24, 30, 33, 35, 37, 49, 52, 54, 56, 57
 Neolithic 67, 69, 70, 73
 Bronze Age 89, 91, 92
 Iron Age 106, 108
 Roman 153, 155, 156
 Anglo-Saxon 176, 180, 181, 186, 195, 198
 medieval 217, 232
 post-medieval 258–9, 270
animal footprints, Hoxnian15
anthropogenic modification, of the landscape 26, 27
antler 48, 49, 68, 69
antlerworking, Anglo-Saxon 181, 188
Arcadia Buildings 276

beater or club, Neolithic **66**, 68, 72, 75
Beckton 23
Beckton Nursery 23, 87, **91**
Beddington 89, 150, 156, 178, 192
Beddington Park 179, 182
Beddington Sewage Works 105, 106, 107, 108, 156
Bedfont 177
Bedford Hill, Tooting 66
Bedfordbury 176, 185, 186, 189
Beecham House 16
Beddings (West Sussex) 51
beetles 22, 24, 25, 54, 106, 124
Belgae 102, 112
Belhus Park 15
bell-founders 226
bell production 227
Belmont 13
belt fittings 127, 177, 189
Benbow House 274
Bermondsey 52, 183, 192, 275
 Bronze Age 86, 87, 92
 Bermondsey Abbey 189, 214, 216, 263
 Bermondsey island 107
 Berrymead Priory, Acton 37
 13–16 Bevis Marks 129
 Bexley **154**, 317
 Bigley Ditch 70
 Billingsgate 193, 194, 229, 230, 278
 bath-house 143
 Billingsgate Buildings 131
 Billingsgate Lorry Park 131, 133, 143, 145, 193, 194
 Billiter Lane 226
 birch bark containers 69
 bishops’ residences 218
 Bishopsgate 147, 148, 149, 157, 192, 193
 Roman tower 130
 7–11 Bishopsgate 138
 28–32 Bishopsgate 145
 bishops’ residences, Late Saxon 194
 Black Park gravels 14, 31, 34, 36
 Blackfriars 214, 217, 272, 279
 burials 197
 city wall extension 222
 gold coin 187
 playhouse 274
 precinct 223
 ships 124–5, 145, 230, **230**
 blacksmithing, Roman 154, 156
 Blackwall 278
 Bletchingley 220
 Blue Boar (Blue Pig) **261**
 boats and ships 230, **230**, 279, 280
 Roman 124–5, 133, 145, 154
 Anglo-Saxon 184–5, 194
 ‘Viking’ 191
 boneworking
 Roman 141
 Anglo-Saxon 188
 medieval 228, 229
 Boreal period 21–2, 50, 51
 borough boundaries 7
 Borough High Street 209
 106–114 and 201–211 Borough High Street 142
 Botolph Lane 193
 Bow Bridge 216
 Bow Lane 193
 Boxgrove (West Sussex) 30, 31, 36, 38
 Boyn Hill gravels 15, 17, 34
 Bramcote Green, Bermondsey 16, 19, 20, 22, 23–4, 50, 57, 66, 87
 bread ovens, Roman 140
 Bread Street 193
 Brent 125, 317
 Brentford 2, 16, 107, 150, 151, 154, 179, 180, 185, 190, 224
 High Street 276
 Brent river 177
 breweries 275, 276
 brewing 181, 212, 228, 272

brick, as building material, Roman 138, 144, 219, 222, 223, 227, 268, 270
 brickmaking 227
 Southwark 272
 Roman 125, 128, 133, 147, 155, 157
 Saxon and Saxo-Norman 178, 184, 193
 medieval 224, 226
 briquetage 110, 151, 154
 British Mousterian 32, 37, 38
 British Museum, Sturge Collection 35
 Broad Street 264
 Broadgate 25
 Brockhill (Surrey) 51, 54
 Brockley Hill 145, 150, 151, 154, 158
 Bromley 70, 161, 196, 231, 317
 Bronze Age x, 20, 23, **23**, 24, 74, 82–100
 gazetteer 94–100
 timber structures 23, 27
 Bronze Age Way, Erith 54, 68, 71
 bronzeworking
 Iron Age 109
 Roman 138, 141–2, 154, 156
 medieval 227

brooches
 Iron Age 102, 104, 108, 112
 Roman 149
 Anglo-Saxon 177, 178, **179**
Brooklands 105, 109
Brookway, Rainham 24, 53, 68, 71, 74
Broomfield House 257
Broxbourne 47, 48, 51, 55
brushwood platform, Bronze Age 89
Buckingham Street 184
Bucklersbury 132, 192, 195
Bucklersbury House 141
building industries, Roman 142–3
 building materials
 Roman 138–9, 140, 143, 144, 154
 medieval 231
 Bull Wharf 131, 132, 190, 193, 194
 burhs xi, 173, 190, 191–2, 198
 burials
 Neolithic 69, **69**
 Beaker 85, 86
 Bronze Age 85–6, 87, 88–9, 90, 91
 Iron Age 102, 110–11, 112, 114
 Roman 127, 128, 129, 140, 148–50, 151, **151**, 157, 160
 Anglo-Saxon 176–7, 178, 182, 188, 189–90, 196, 197, 198
 on the foreshore 190
 medieval 214, 216
 burnt mound, Bronze Age 86
 Bush Hill Park 104
 butchery (sites: waste)
 prehistoric sites 33, 35, 52, **53**, 55, 56
 Neolithic 69
 Roman 141, 153, 160
 Anglo-Saxon 181, 186
 medieval 226, 228
 Byzantine lead seal 181

Caesar’s Camp, Heathrow 2, 104, **104**, 106, 107, 111
Camden 317
canals 272
 Canewdon (Essex), wooden paddle, Bronze Age 86, 87
 Cannon Hill, Maidenhead 68
 Cannon Street Station 129, 130, 136, 138
 pool and building complex (governor’s palace) 122, 136–7
 Roman quay 131, 132
 Canonbury 224
 Carew Manor 220, 221
 carpentry techniques 123, 138, 219

Carshalton 53, 85, 89, 192
Carshalton Camp 92
Carshalton House, Beddington 268
Castle Hill, Chessington 223
castles, urban 223
Cauliflower Pit, Ilford 15
causewayed enclosures, Neolithic 64, 65, 66, 67, 68–9, 71, 72, 73
cemeteries
Bronze Age 82, 83, 87, 90, 91
Iron Age 112
Roman 127, 128, 148–50, 151, **151**, 156, 157, 158, 160, 161
Anglo-Saxon 157, 160, 176, 178, 179, 182, 189, 190, 197, 198
medieval 213, 216, 217, 218
post-medieval 265
Chalfont St Giles 14
Chalk (Kent) 72
chalk, as building material, Roman 138, 154
Channel Tunnel Rail Link 106
chapels **see** churches
Chaplaincy, Hornchurch 219
charcoal 22, 24, 50, 54, 56, 152
charcoal burning 227
Charlton 106, 151, 154
Charterhouse 214, 215, 216, 224, 227, 257, 267
charters, Saxon 173, 174, 179, 183, 184, 188, 192, 193, 195
Chase Side 13
Chatham 271
Cheam 192, 213, 227
Cheapside 140, 147, 191, 192, 193, 194, 219, 230–1
Great Conduit House 224
72–75 Cheapside 128
100–116 Cheapside 129, 139
Chelsea
Anglo-Saxon 175, 183, 185, 186
beater or club from World's End **66**, 68, 72, 75
Neolithic material 66
submerged forest 75
Chertsey (Surrey) 105, 111
Chigwell 13
Chiswick 66, 176
Chiswick House 267
Christ Church Spitalfields 264, 265
Christianity 135–6, 144, 172, 173, 188, 190, 198
Christ's Hospital 259
Church Lammas, Staines 49, 51, 52, 54
Church Street, Twickenham 68
churches
Roman period 135–6, 146
Anglo-Saxon 188, 189, 190, 196, 197, 198
medieval 136, 210, 213, 214, 215–16, 217, 233
post-Reformation 263–4
circus, Roman 135
circus token, Roman 124
city defences **see** defences
City of London Boys School 279
city wall 7, 122, 129, 130–1, 145, 192, 222, 223
civic buildings 225, 272
Civil War defences 270
Clactonian industry 15, 31, 34, 36
Clapham 67–8, 179, 181
Clapton 194
Clarendon House 267
Classicianus, Julius Alpinus 148
clay tobacco-pipe kilns 275, 276
clay tobacco pipes 258, 275, 278
Clerkenwell 129, 177, 178, 179
Clink, the 221, 225
clothing, Anglo-Saxon 188, 196
clothmaking 141, 188, 228, 229
cloth seals 232
cloth trade 188, 277
coach-building factory 276
coin-forging debris, Roman 142
coin hoards
Iron Age 108, 113
Saxon 176, 190, 195
coins
Iron Age 102, 104, 107, 108, 112, 113
Roman 123, 128, 130, 137, 146, 147, 151, 156, 159, **159**
Anglo-Saxon 173, 176, 183, 187, 191, 195
Carolingian 185
trial die 197
medieval 210, 230, 231
Colchester House, Pepys Street 123, 136, 146
Colham Mill Road, West Drayton 25
Colnbrook 51
Colne river 52, 55, 72, 178, 179
Colne Valley 16, 22, 51, 52, 54, 55, 56, 57, 69, 153
Cologne merchants' house 230
comb, antler/bone 177
company halls 225, 272
consumption (consumerism) 266–7, 269–70
cooking pits
Neolithic 69–70
Bronze Age 86
Coombe Hill 157
Coopers' Row 222
copper-alloy casting, Roman 142
copperplate map (c 1559) 211, 228
Cophthall Avenue 25
Corbets Tey, Upminster 110
Corbets Tey gravel 15, 31, 34, 35, 36
corn-drying ovens 151, 152, 156
Corney Reach, Chiswick 66, 190
Cornhill 121, 195, 230, 278
62–64 Cornhill 142
corn trade 262
Coulsdon 190
country houses 267
County Hall
Bronze Age halberd 85
Roman river barge 145
Courage's Brewery, Southwark 2, 68, **127**, 129, 133, 138, 142, 147
Covent Garden 2, 175, 189, **264**, 268
Cowcross Street 228
Cowley Mill Road, Uxbridge 52
Crane Valley 72
Cranford Lane 72, **87**, 88, 89, 155
Cray river 55, 124, 178, 179
Cray Valley 127, 156
Crayford 15, 33, 35, 37, 38, 150, 172
Crayford Silt Complex 27
Creffield Road, Acton 32, 33, 36, 37, 38, 50, 51, 52, 58
Creswellian lithic industry 47
Cripplegate 129, 192, 227
Cripplegate fort, Roman 7, 122, 126–7, 130, 160, 185, 187, 192
Croham Hurst, Croydon 50
Cromwell Road 25
cropmarks 69, 73, 74
surveys 221
Crosby Place, Bishopsgate 218
cross, Late Saxon 196
2–3 Cross Keys Court 141
Croydon 50, 209, 213, 219, 228, 262, 318
Bronze Age 86, 87, 88
Roman 150, 161
Anglo-Saxon 177, 182, 192
Viking hoard 191
medieval 227
crucibles 109, 142
61–65 Crutched Friars 145
cursus monuments x, 7, 65, 66, 70, **72**, 73
Custom House 211, 230, 278
Dagenham 19, 23
Dagenham Idol 68, **74**
daggers
Bronze Age 85
Iron Age **103**, 108
Darent 124, 152, 153, 156
Darenth Woods 14
dark earth
Roman 128, 129, 134, 140, 145–6, 183
Anglo-Saxon 176, 177, 190
Dartford 150
palace 266
Dartford Heath, handaxes 34
Dartford Heath gravels 14, 31, 34, 36
Debden Green 14
deer park 221
defences
Anglo-Saxon 179–80, 183, 192
medieval 222–3
post-medieval 270
defixio, lead, Roman 135
dendrochronology 23, 27
Roman 123, 128, 133, 140, 141, 155
Anglo-Saxon 184, 193
medieval 210, 210, 211, 220
post-medieval 257–8, 267
'dene holes' 231
Department of Urban Archaeology (DUA) 122
Deptford 226, 278
St Nicholas' Church 215
Devensian deposits 16
diatom analysis 154
DNA analysis 182
docks 226, 278, 279
documentary records
Anglo-Saxon 174, 198
medieval 211
post-medieval 256, 259–60
Domesday Book 174, 192, 195, 196, 226
domestic buildings
Neolithic 65
Bronze Age 88, 89
Roman 138–40, 159, 160
Anglo-Saxon **172**, 180, 185–6, 194–5
medieval 219–20
post-medieval 267–8
Dominant House 131
donkey mill, Roman 140
Dorney 66
Dorney Reach 72
Dover boat 86
Dowgate 194, 195, 230
14–16 Dowgate Hill (House) 129, 130, 132
Drury Lane 185, 189
Duke's Theatre, Dorset Garden 274
dyeing works 228
Ealing 161, 179, 318
Earl of Dysart's Pit, Ham 51
East Bedfont 276
Mayfield Farm 66, 69, 71, 73
Eastbury Manor 257
Eastcheap 191, 193, 230
27–29 Eastcheap 142
East Horsley (Surrey) 65
East Molesey 85
East Tilbury Marsh gravels 16
Eden Street **213**
Eden Walk, Kingston 68, 69, 179
Edmonton 16, 215
Edridge Road, Croydon 182
Egham 88
Elstree 227
Elsyng Spital 263
Eltham Manor chapel 216
Eltham Palace 218, 266
Embroiderers' Hall, Gutter Lane 225
Enfield 24, 55, 318, 276
Bronze Age 89
Roman period 125, 126, 150, 151, 153, 161
Anglo-Saxon 175, 179, 180
Gentleman's Row 258
Enfield Lock 21

Enfield Palace 221, 267
English Heritage 317
English Rivers Project 37
environmental archaeology 12–27, 50, 54, 56, 57
Neolithic 66, 67
Roman 123, 124
Anglo-Saxon 176–7
medieval 210–11
post-medieval 258–9
see also animal bone; beetles; fish bone; molluscs; plant remains; pollen
Eocene 13
Epping 25, 26
Erith 23, 68, 71, 152, 156
Erith Spine Road 22, 50
Ermine Street 125, 129, 148, 150
Esher Common 17
Eton Wick 66, 72
Ewell 110, 150, 151
Exeter Street 186

farms and farmhouses 214, 221, 222, 233, 269, 280
Iron Age 107
Roman 124, 127, 153, 155–6
Anglo-Saxon 178, 186
Farningham Hill 107, 111
Farringdon 227
Farringdon Street 265
Farthing Down, Coulsdon 175, 190
Fastolf Place 221
Fastolf's residence 218
Feltham Marshalling Yards 105, 109
Fenchurch Street 160
5–12 Fenchurch Street 137, 139, 141, 142
168 Fenchurch Street 134, 138, 140, 144, 153
Fenn Creek 89
Fennings Wharf 85, 90, 129, 193, 194
133 Fetter Lane 126
field-boundary ditches, medieval 221
field systems
Bronze Age 82, 89, 91, 92
Late Bronze Age/Iron Age 105, 106, 112
Roman 108, 145, 152, 155, 156, 178
Finchley 14, 17
Finchley Common 13
Finsbury Manor 221
fires, Roman 139
fish bone 153, 181, 186
fishing, fisheries 181, 195
fish-processing industry, Roman 140–1
Fish Street Hill 128, 133, 193
37–40 Fish Street Hill 132
fish traps 156, 181, 186, 221
Fleet Prison 225, 226, 271
Fleet river 123
Anglo-Saxon 179
bridges 178, 184, 193, 224
Roman period 125, 126, 128, 157
foreshore burials 197
medieval 212
Fleet Street 184, 188, 190, 261
Fleet Valley 132, 209, 224, 228, 257
Fleet Valley Project 224
flint mines 65
floor-tile kiln 227
Floral Street 184, 185
foederati 172, 177
food markets 230
Foots Cray/St Pauls Cray 157
Fordcroft, Orpington 157
foreshore, Bronze Age 93
forts, Roman 7, 121, 122, 125–7, 130, 159, 160, 185
Fort Street, Silvertown 24, 66, 75
Forty Hall, Enfield 257
forum, Roman 122, 129, 134, 159, 160
forum-basilica, Roman 121, 130, 134
Foster Lane 228
7–10 Foster Lane 126, 128
Foundling Hospital 273

fnaries 214, 217
Fulham
bishops' residence 194
earthwork, Early Saxon 179
pottery works 275
Roman road 125
Roman sword 125
Fulham Palace 127, 185, 219
fulling works 228
Hampton Court 219, 266
Privy Garden 268
handaxes, Lower Palaeolithic 30, 31, 32, 33, 34, 35, 36
bout coupé 36, 37, **38**
Harefield Road, Uxbridge 88, 106
Haringey 318
Harington 70, 87, 88, 107, 108, 124
Harlow (Essex) 157, 161
Harmondsworth 79, 74, 176
alien priory 220
animal bone 24
Iron Age 106
Anglo-Saxon 175, 179, 180, 181, 192
harpoon points 48
Harrow 179, 318
Gerrards Cross gravels 14
glass
Roman **151**
Venetian **224**, 228, 229
Anglo-Saxon 189
post-medieval 258
glasshouse 276
glassmaking 275
Roman 140, 141
Late Saxon kilns 196
medieval 228, 229
Globe Theatre 274
Godalming (Surrey) 51
Godsalves 220
goldsmiths 227
Goldsmiths' Hall 135
goldworking and -smithing, Roman 142
government buildings 265–6
governor's palace, Roman 122, 132, 136–7
GPO Yard, Giltspur Street 129, 146, 147
Gracechurch Street 134, 195, 230
17–19 Gracechurch Street, Roman temple 134
grain, Roman 134, 140, 144, 152–3
grain products 228
granaries
Iron Age 106
Roman 153
medieval 225, 229
grape seeds 153, 195
gravel extraction 104, 142, 184, 226, 276
gravestones, Ringenike style 191, 197
Grays 15
Great Conduit House, Cheapside 224
Greater London Sites and Monuments Record (GLSMR) 4, 6, 104, 124
Great Fire (1666) 210, 257, 261, 262, 263, 268
Great Queen Street 183
Great Tonkyns Barn, Upminster 221
1–4 Great Tower Street **224**
Great Trinity Lane 193
Greenwich 318
Greenwich palace 266
Greenwich Park 85, 157, 175, 190
Greyfriars 214, 217, 263
Grim's Dyke 7, 108, 114, 127, 178, 179
Guildford 213, 273
Guildhall 194, 210, 214, 225
Guildhall Library 317
Guildhall Museum 209
Guildhall Yard 126, **132**, 137, 141, 225, 227
Gun Hill, Tilbury 105, 107
Gunnersbury Park 16
gunpowder manufacture 276
Guy's Hospital 130, 133, 273

Hackney 318
Hadley Wood 104
Hainault Forest 227
halberds, Bronze Age 82, 85
Ham 51, 155, 175, 179, 180
Ham Common 85
Hammersmith 87, 175, 179, 180, 181
Hammersmith & Fulham 318
Hampstead 26, 157
Hampton Court 219, 266
Privy Garden 268
handaxes, Lower Palaeolithic 30, 31, 32, 33, 34, 35, 36
bout coupé 36, 37, **38**
Harefield Road, Uxbridge 88, 106
Haringey 318
Harington 70, 87, 88, 107, 108, 124
Harlow (Essex) 157, 161
Harmondsworth 79, 74, 176
alien priory 220
animal bone 24
Iron Age 106
Anglo-Saxon 175, 179, 180, 181, 192
harpoon points 48
Harrow 179, 318
Old School 273
Harrow Weald Common 179
Havering 6, 13, 179, 318
Hayes Common (Kent) 88
Headstone Manor, barn 221
Heathrow
Upper Palaeolithic flint **48**, 51, 57
Neolithic 69, 70
Iron Age 103, 106, 107
Norman Hay site 24
Runway 1 west extension 105, 109, 111
World Cargo site 54
see also Caesar's Camp
Hemp Knoll (Wiltshire) 86
Hendon 183, 186
henges (hengiform monuments),
Neolithic 65, 70, 71, 73
Henley 213, 224
Hertfordshire 93
Hibernia Wharf 194, 195
High Beach 14
Highgate Wood 107, 108, 110, 143, 154
hillforts, Iron Age 102, 103, 105, 106, 111, 112, 113, 154
Hillingdon 161, 318
Town Pits 34
hoards
Bronze Age metalwork 88
Roman smith's 111
Viking 190–1
see also coin hoards
Hogsmill Creek 224
Hogsmill Valley 50, 103, 104, 106
Holborn 149
Hollar, Wenceslaus 211, **264**, 278
Holloway Close 180, 181
Holloway Lane, Harmondsworth 106, 155
Anglo-Saxon 180, 181
aurochs burial 70, 74, **83**, 90
Grooved ware pit 70
Holocene 17, 18, 19, 20, 26
Holwood Hill, Keston 106
Holy Trinity Priory Aldgate 197, 214, 216, 263, 267
Holywell 157
Homo neanderthalensis 32, 37
Homo sapiens 46
hones 188, 231
Honey Lane 195, 196
Honeypot Lane 184
Hopton Street, Southwark 85, 88, 90
hornworking 227, 228, 229, 275
Horsham (Surrey), flint industry 48
Horsleydown island, Bermondsey **84**, 107
Horton, ring-ditch 69, 71, 73
Hospitaliers 220
hospitals 214, 216, 217, 226, 263, 272–3

Hounslow 161, 224, 318, 275
figurines 111, 113
houses **see** domestic buildings
Howland Great Wet Dock, Rotherhithe 278
Hoxnian interglacial deposits 15, 34
Hoxton 230
Hoxton Square, Hackney 268
Huggin Hill, Roman baths 122, 129, 131, 137, **139**, 140
human skeletal studies
Roman 149–50
Anglo-Saxon 176–7
medieval 216, 218
post-medieval 259
hunting 153, 181, 186
Hunts Hill Farm, Upminster 105, 106, 109, 111, 124, 155
Hurst Park, East Molesey 85, 90
Hyde Park 209
hydrology 7, 225
hypocausts, Roman 136, 139
Ickenham, motte 223
Ilford 15, 27, 37, 104; **see also** Uphall Camp
immigrants 222, 233, 261, 262, 263, 264, 275, 276
Imperial College Sports Ground,
Harington 70, 87, 107, 108, 155
industries
Roman 123, 140–3, 151
Anglo-Saxon 181, 188, 196
medieval 226–9
post-medieval sites 274–7
ingot mould, Iron Age 109
ingots
Bronze Age 88
Roman 135, 137, 144
Inholders' Hall 272
Inns of Court 218, 219, 225, 273
inns and taverns 137, 223–4, 273
inscriptions, Roman 123, 127, 135, 136
intaglios, Roman 142
Ipswichian interglacial deposits 15–16, 37, 38
Iron Age x, 20, 24–5, 102–17, 179
gazetteer 115–17
Early Pre-Roman Iron Age (EPRIA) 102, 105–6, 108, 109, 110, 111–12, 113
Middle Pre-Roman Iron Age (MPRIA) 102, 106, 108, 109, 110, 111, 112, 113, 155
Late Pre-Roman Iron Age (LPRIA) 102, 107, 109, 110, 111, 112–13, 114, 124, 155, 156, 161
iron-bearing deposits 106, 109
Ironmonger Lane 195
iron smithies, Roman 142
ironworking
Iron Age 102, 109, 112
Roman 139, 141–2, 145
Anglo-Saxon 181, 188
medieval 227
Irthlingborough (Northants) 86
Isle of Dogs 16, **23**, 125
Isle of Grain 107, 113
Isle of Sheppey 262
Isleworth 16, 186, 221
Islington <209>, 275, 319
jetty, Bronze Age 87, **88**
jetty construction (housing), medieval 220
journals, county and London 322
Jubilee Hall 176, 185, 186, 189
Kemble Street 185
Kempton Park gravels 16, 17, 36, 37, 54
Kennet Valley 56
Kennington Palace 216
Kensington & Chelsea 319
Kensington Square 268
Keston 106, 107, 150, 154, 156, 158, 227
Anglo-Saxon 178, 179, 180, 181, 196
kilns **see also** clay tobacco-pipe kilns; floor-

tile kiln; glassmaking; pottery kilns; roof-tile kilns; tilekilns
Kingsbury 184
King Street 184, 189, 209, 271
36–37 King Street 140, 146
King's College Sports Ground, Merton 70
Kingston 2, 55, 68, 155, 209, 224, 262, 277
All Saints 194, 196, 216
Anglo-Saxon 177, 180, 181, 192
bishops' residences, Late Saxon 194
boat timbers 230
bridge, medieval 224
Eden Walk 68, 69
guildhall 230
heath 17
kilns 227
medieval 219
Quaker burial ground 264, 265
royal palace or minster, Anglo-Saxon 194
St Mary's Chapel 216
Kingston Hill 85, 89
Kingston upon Thames 276, 319
King William Street 132; **see also** Regis House
Knight rider Street 135, 136
Lafone Street 88
Lambeth 155, 192, 275, 278, 280, 319
Bronze Age halberd 85
Lambeth Palace 216
Langley Silt Complex 13, 16, 19, 27, 35, 38, 51, 54, 55
Late Devensian 16, 19–21, 36
Late Glacial 14, 46, 48, 51, 55, 56, 57
Late Saxon **see** Anglo-Saxon/Saxon
latrines, Roman 139
Launders Lane, Rainham, ring-ditch 68, 69, 72, 73, 74
law courts 273
Layer Marney **231**
lead, Roman 144
Leadenhall 210, 214, 230
market 225
Leadenhall Court 128, 129, 145, 148
Roman basilica 128, 134, 142
Leadenhall Street 227
leadworking 227
Lea Marshes 87
Lea river 72, 110, 111, 213, 279
Roman period 124, 125, 150, 154
leatherworking
Roman 123, 141
medieval 228, 229
Lea Valley 13, 16, 21, 55, 56, 57, 152, 153
Bronze Age 84, 89
Iron Age 106
medieval 220, 228
Lee House, Wood Street 126
Levallois technique 31–2, 34, 35, 36–7
Lewisham 161, 319
Leyton, Church Road 153
Leyton Grange 220
Leytonstone 125
Limehouse 213, 226, 271, 275, 278
limekilns 154, 213, 215, 226
Lincoln's Inn 225
lithic assemblages, Neolithic 64, 66, 68, 69, 71, 72, 73, 75
Little Ilford, St Mary the Virgin 215
Little Pickle, Bletchingley (Surrey) 220
Little Thurrock 31
Little trinity Lane 193
livery companies 259, 272
Lloyd's Register 160
local societies 320–2
Lockwood Reservoir, Walthamstow 191
Lodge Road, Epping Forest 176
Lombard Street 193, 196
London Archaeological Archive and Research Centre (LAARC) 4, 6, 122, 316–17
London Assessment Document 3–4
London Bridge 19, 123, 130, 153, 191, 193, 211, 216, 222, 224

London Bridge Station 129, 139, 142
 London Hospital 273
 Long Acre 185, 189
 longhouse, Neolithic 68
 loomweights 228
 Bronze Age 88
 Iron Age 106, 110
 Anglo-Saxon 181, 188
 Lothbury 192, 194
 Loughton (Essex) 105
 Lovat Lane 195
 Low Countries 222, 277
 Lower Palaeolithic 27, 30–43
 gazetteer 39–43
 Lower Thames Street 133
 100 Lower Thames Street 143
 Lower Warbank, Keston 107, 108, 110, 156
 Low Hall, Walthamstow 220, **221**
 Ludgate 149, 192, 222, 224, 225
 Roman tower 130
 Ludgate Broadway 192
 Ludgate Circus 184, 193
 Ludgate Hill 184, 192
Lundenwic, Middle Saxon x–xi, 2, 103, 173, 175, 176, 182–3, 184, 185, 186, 187–8, 189–90, 193, 198
 Lynch Hill gravels 15, 17, 31, 34, 35, 36

Maidenhead 68, 213
 Maiden Lane 183, 184, 185, 186
 malt and malting 152, 262
 malting ovens 151, 156
 Malvern House 194
 mammoth skeleton 35, 38
 Manor Court, Hamondsworth 221
 Manor Farm, Upminster 155, 180, 181
 Manor of the More, Rickmansworth 266
 manors 211, 213, 220–1, 267
 Mansell Street 148, 177
mansio, Roman 137, 147
 mansions 267, 269
 maps 7, 211, 228, 260
 Marble Arch 125
 Marble Hill House, Richmond 268
 Mark Brown's Wharf, Southwark 271
 Mark House 220
 market gardening 153, 232, 272, 280
 market halls 137, 232
 markets
 on foreshore or beach 184, 193
 medieval 230

Marlborough House, Pall Mall 267
 Marloes Road, Kensington 107, **113**
 Maryon Park, Charlton 106, 107, **110**
 Masthouse Terrace, Isle of Dogs 16
 mattocks, antler, Mesolithic 48, 49
 mausolea, Roman 127, 148, 151, 156
 Mayfield Farm, East Bedfont 66, 69, 71, 73, 89, 92
 medieval xi, 7, 209–54
 cemeteries 216, 217–18
 defensive sites 222–3
 documentary records 211
 domestic sites and buildings 218–22
 environmental evidence 210–11
 gazetteer 235–54
 industrial sites 226–9
 infrastructure 223–6
 monastic and ecclesiastical sites 214–18
 standing remains 210
 trade 229–32

Merchant Adventurers 277
 Meridian Point, Enfield 20, 21, 22
 Mermaid Theatre 191
 Merton 56, 70, 224, 319
 Merton Priory **see** St Mary Merton priory
 Mesolithic ix, 16, 20, 21, 22, 46, 47–50, 51–3, 54–8
 Later Mesolithic 53–4, 55, 56–7, 71
 Mesolithic-Neolithic transition 53–4, 71, 75
 metalwork
 Bronze Age 82, 83, 84, 85, 86–7, 88, 91,

92, 93
 Iron Age 103, 104, 108, 110–11, 113
 Anglo-Saxon 178, 188
 medieval 232
 metalworking
 Bronze Age 88
 Iron Age 109
 Roman 129, 137, 138, 141–2, 147
 medieval 215, 227–8, 229
 Metropolitan Market Networks 277
 microliths 47, 48, 51, 53
 Middlesex 209, 268, 280
 Middle Temple 225, 227
 Middle Temple Hall 273
 Middle Temple Lane 257
 'migration period' 172
 Miles Lane 131
 military sites, post-medieval 270–1
 military sites and finds, Roman 125–7
 Milk Street 193, 195, 196, 218
 milling
 Roman 140
 medieval 215, 220, 228

mills
 Roman 154
 Anglo-Saxon 186, 195
 see also donkey mill; watermills; windmills
 millstones 140, 144, 228
 Mimms 179
 mints
 Roman 137, 158
 Anglo-Saxon 176, 187, 195
 Mirefleur tower 223
 Misbourne Valley 55
 Mitcham 150, 175, 176, 177, 179, **179**, 180, 182, 198
 Mitre Street 177
 Mixnam's Farm 105
 moats and moated sites 211, 213, 221–2
 molluscs 12, 16, 21, 50, 106
 monastic houses 176, 189, 198, 209, 210, 212, 214–15, 226, 233
 dissolution 263, 267
 water supply 224, 225
 Monument House, St Botolph Lane 130
 Moor Hall Farm, Rainham 155
 Moorfields 228, 257
 Moorgate 130
 20–28 Moorgate 141
 55–61 Moorgate 141
 Moor Hall Farm, Rainham 107, 108, 110, 111
 Mortlake
 Bronze Age knife 85
 Iron Age **103**, 110
 Anglo-Saxon **172**, 175, 178, 179, 180, 181

mortuary enclosures 65, 70, 73
 mosaics, Roman 139, 156, 157, 159
 mottes, Norman 223
 Mottingham 157
 moulds
 Bronze Age metalworking and sword 88
 Iron Age 109
 Roman, for lamps 141
 medieval gang-mould 227
 Moustesian 30, 32, 36, 37
 Muckhatch Farm (Surrey) 88, 90
 Mucking (Essex) 70, 91
 Beaker burials 85
 Iron Age 106, 109
 Early Saxon 177, 178, 179, 198
 Mucking gravels 15, 34, 36, 55
 Museum of London 316
 Museum of London Archaeology Service 122, 316
 Museum of London Specialist Services 316

Narrow Street, Tower Hamlets 221
 National Gallery 184, 186
 National Portrait Gallery 183
 naval bases 271
 naval dockyards 226

Navy Victualling Yard 270–1
 Neolithic x, 7, 20, 22, 23, 24, 64–80
 gazetteer 76–80
 Earlier Neolithic 53–4, 67–9, 72
 Later Neolithic 69–71, 73–4
 see also barrows; pottery
 New Cross, Lewisham 276
 New Fresh Wharf 131, 133, 140, 143, 193, 194
 Newgate 130, 149, 192, 222, 225
 Newgate Street 129, 138, 272
 76–81 Newgate Street 129, 138, 139, 142
 New Guy's House, Southwark 145
 Newham 6, 19, 319
 New Palace Yard 25
 New River 272
 Nine Elms, Vauxhall 87, **88**, 105
 3 Noble Street 126
 nonconformist meeting places 264
 Nonsuch Palace (Surrey) 266
 Nore Hill (Surrey) 89
 Norman Hay site, Heathrow 24
 North Downs dipslope 88, 93, 103, 107, 110
 Northfleet 15
 Northolt 183, 221
 Northolt Manor 175, 186, 190, 192
 North Shoebury (Essex) 90–1
 Northwold Road, Stoke Newington 55
 Norwood Lane, Southall 35

Offa's palace 192
 19–25 Old Bailey 135
 Old Brewer's Yard 184
 Old Custom House 131
 Old England, Syon 92, 93
 Old Ferry Approach, Woolwich 275
 Old Ford 124, 150, 151, 153
 Old Malden 105, 107
 Old Street 125
 Old Treasury Building, Whitehall 266
oppida 107, 108
opus signinum 138
 Orange Street, Westminster 276
 Orchard Hill, Carshalton 53, 55, 58
 Orpington 107, 152, 157, 178, 182, **189**, 227
 Orpington Station 156
 Orsett (Essex)
 Beaker burials 85
 causewayed enclosures 66, 68, 72
 Iron Age 106
 Orsett Heath gravels 15, 34
 Ossulstone 125
 oysters 141, 145, 153, 186

Packet Boat Lane, West Drayton 69
 paddle, wooden, Bronze Age 86, 87
 palaces 210, 212, 218–19, 265–6
 Roman (Allectan) 121, 135, 137, 160
 Anglo-Saxon 185, 194
 see also governor's palace
 Palaeocene deposits 13
 Palaeolithic ix, 7, 14, 15, 16, 20, 22; **see also**
 Lower Palaeolithic; Upper Palaeolithic
 palstaves, Bronze Age 82, 87
 paper mill 276
 parasites 177
 Pardon Chapel 216
 Park Road, Stanwell 105
 Park Street, Southwark 126, 276
 Park Wood, Ruislip 89
 Passmore Edwards Museum 6, 35, 66
 Pear Wood 108, 127, 178, 179
 pearls 145, 153
 peat 20, 23, 24, 50, 56, 57, 67, 88, 89, 92
 Peninsular House 131, 193, 195
 Percy Gardens, Old Malden 107
 Percy Gardens, Tolworth 50
 Perry Oaks, Heathrow 106
 cursus 70, **72**, 74
 Petters Sports Field, Egham 88
 Petters Sports Ground 105, 109, 111

pewter industries 227, 229
 Phoenix Wharf, Bermondsey 86, 90
 pilgrim badges 216
 Pinner Farm Park 221
 Pinner Hall Farm 276
 Pinn river 155
 Pitstone Hill 65
 place-names
 Roman 125
 Anglo-Saxon 174, 177, 179, 182, 184, 189, 192, 197, 198
 PLA Warehouses 275
 plagues 208, 213, 216, 218, 265
 plant remains 12
 prehistoric 16, 20–6, 37, 50
 Neolithic 67, 70, 73
 Iron Age 106, 108
 Roman 144
 Anglo-Saxon 176, 181, 186, 195
 plastering, Roman 142
 playhouses 274
 Pleistocene deposits 13, 14, 15, 20, 30, 31, 32, 34, **34**, 37, 104

pollen 12, 21–2, 23–4, 25–6, 50, 53, 54, 57, 64, 66
 Neolithic 66, 67, 71
 Bronze Age 91, 92
 Iron Age 108
 Roman 146, 155
 Anglo-Saxon 176
 cereal 22, 23, 24, 25, 54, 67
 Poplar 263
 population 212–13, 261
 port 279
 Roman 121, 124, 133, 143, 159
 Saxon 173, 182, 187, 195, 198

post-medieval 256–81
 artefacts 258
 conspicuous consumption 266–7
 documentary records 259–60
 domestic buildings 267–70
 environmental evidence 258–9
 farms and agriculture 280
 growth of London 260–2
 human skeletal studies 265
 industry 274–7
 infrastructure 271–4
 military and defensive 270–1
 monastic and ecclesiastical sites 263–4
 palaces and government buildings 265–6
 standards of living 267–70
 standing buildings 257–8
 trade 277–80

posterns, Roman 130
 posting stations 150, 158

pottery
 later prehistoric 53
 Mesolithic 53
 Neolithic 64, 66, 75
 Earlier Neolithic 53, 54, 67–8, 69, 71, 72
 Ebbsfleet ware 64, 69, 70, 71, 73
 Grooved ware 64, 70, 73, 74
 Later Neolithic 69, 73
 Peterborough wares 64, 69, 70, 71, 73, 75
 Bronze Age 82, 91
 Beaker 64, 69, 70, 73, 74, 75, 82, 85, 86, 90
 Collared Urns 82, 85, 86, 90
 Deverel-Rimbury 82, 87, **87**, 88, 91
 Iron Age 104, 105, 106, 109–10, 112
 Roman 123, 124, 125, 133, 143–4, 145, 146, 147, 149, 154, 155, 158
 samian 143, 144, 145, 149, 151, 155
 Anglo-Saxon 175, 176, 177, 178, 179, 181, 182, 183, 188, 189, 191, 196
 Frankish 181
 medieval 210, **213**, 231, 232
 post-medieval 258, 269, 277, 278, 279
 pottery kilns 110, 122, 141, 227, 275

Roman 150, 151, 154
 pottery production
 Roman 150, 154
 medieval 213, **213**, 227
 post-medieval 275
 Pottery Road, Hounslow 275
 pottery 230
 Poultry 108, 128, 129
 pollen 25
 Roman 147
 buildings 139
 stamped wine barrel 144
 timber drain 123
 water-tank and culvert 130, 140
 Late Saxon building 194
 medieval 209

Pountney, Sir John de, town house 219
 Pountney's Inn 218
 predictive modelling 27
 prehistoric 5, 12
 chronology 27
 Prince Regent Community School, Custom House 86, 90, 93
 Princes Street 209
 prisons 225
 Prospect Park, Hamondsworth 87, 180, 181
 publications 322
 Pudding Lane 128, 131, 132, 139, 140, 141, 143, 144, 193
 Pudding Pan Sand wreck 145
 Purfleet 15, 74
 Purley Way, Croydon 69, 86
 Putney 103, 151, 154, 181
 St Mary's Church 215
 Pymmes Brook, Enfield 276
 pyre debris, Bronze Age 87

Quaker burial ground 264, 265
 quarrying 142, 146, 154, 226
 Quaternary 17, 30, 32–3
 quays
 Roman 19, 123, 126, 130, 131–3, 136
 medieval and later 212, 224, 271, 278
 Queen Street 271
 Queenhithe 193, 195, 229–30, 278
 Queen Mary's Hospital, Carshalton 89, **92**
 Queen Street 209
 61 Queen Street 133
 Queen Victoria Street 209
 querns
 Bronze Age 88, 89
 Iron Age 106, 110
 Roman 140, 144
 Anglo-Saxon 176, 187, 188, 195
 medieval 231

radiocarbon dating (14C) 7–8
 prehistoric 46, 47, 48, 49, 50, 51, 52, 54, 56, 57, 64, 68, 72, 75
 Bronze Age 82, 86, 89
 Iron Age 102, 108
 Anglo-Saxon 176, 184, 189, 190, 191
 Rainham 23, 107, 111, 152, 155, 156, 178; **see also** Brookway; Launder's Lane
 Rainham Marshes 55, 68
 Rammey Marsh, Enfield 24, 89, 106
 Rangoon Street 145, 190
 Ratcliff 226, 271, 278
 razor and mould case, Bronze Age 88
 Reading 214
 reclamation
 Roman 123, 127, 131, 132, 133, 136
 medieval 212, 221, 226, 229
 Rectory Grove, Clapham 67–8, 175, 178, 180, 181
 Rectory Lane, Sidcup 268
 Rectory Road, Orsett 106
 Redbridge 6, 38, 319
 Red Lion playhouse 274
 regional societies 320
 Regis House (43–46 King William Street) 123, 140, 141

animal bones 153
 burial 148
 ditch 126
 glass workshop 141
 houses 138
 ingots 144
 pottery 143
 quay **13**, 19, 25, 131, 132, 148
 revetments 147
 tesserae 142
 warehousing 129
 Reigate 213, 219, 262
 revetments
 Bronze Age 89
 Roman 123, 126, 128, 133
 Anglo-Saxon 176, 184, **194**
 medieval 224, 227
 post-medieval 271

Richmond 55, 85, 161, 266
 Richmond Hill 17
 Richmond Park 34, 66
 Richmond Terrace, Westminster 105
 Richmond upon Thames 319
 Rikhoff's Pit (Herts) 51
 ring-ditches
 Neolithic 69, 71, 72, 73
 Bronze Age 85, 86, 87, 90, 91
 ring-forts, BA 89, 92, **92**, 105
 Ringerike style 191, 197
 Rivenhall (Essex) 178
 river navigation 224
 riverside wall, Roman 121, 130–1, 133, 134, 135, 160, 192
 river terraces 13–16, 17, 31, 38
 roads 225
 Roman 7, 125, 128–9, 147, 152, 155, 158, 160, 183, 184, 223
 Anglo-Saxon 184, **184**, 191, 192–3
 medieval 7, 212, 223–4
 post-medieval 271

Rocque's map 260, 264, **269**, 270, 276, 280
 Roding river 106, 125, 154, 155
 Roman x, 2, 3, 5, 7, 12, 19, 20, 25, 120–70, 183
 communications systems 124–5
 countryside and rural economy 152–7
 forts and military sites 125–7
 foundation date 158
 gazetteer 5, 162–70
 industry 140–3
 infrastructure 127–30
 houses, shops and workshops 138–40
 open spaces 145–6
 public buildings 136–7, 158, 159, 160
 roadside settlements 122, 150–2, 158, 159
 'suburbs' 147, 158, 159
 trade 143–5
 waterfront 131–3, 158
 Romford 105, 109, 225
 roofing materials, Roman 144
 roof-tile kilns, medieval 215
 The Rosary, Southwark 218
 Rose Theatre 2, 27, 274
 Rotherhithe 218, 278, 279
 roundhouses, Iron Age 106, **107**
 Royal Dockyard, Woolwich 271
 Royal Exchange 277, 278
 Royal Mint site 216
 Royal Opera House 175, 183, 184, **184**, 185, 188, 189, 190

Ruckholt 220
 Ruislip 209
 alien priory 220
 Bronze Age 89
 Eastcote Road 273
 Manor Farm barn 221
 motte-and-bailey castle 223
 Runnymede Bridge 23, 24, 27, 65, 66, 67, 68, 72, 73, 75, 89, 92
 razor and razor mould case 88
 skulls 89

St Alban's Church site 126
 St Alban Wood Street 185, 188
 St Alphege 196
 churchyard 222
 St Alphege Garden 222
 St Andrew Holborn 188, 196
 St Anne Limehouse 264
 St Ann's Hill, Chertsey 105
 St Anthony's Hospital 264
 St Augustine's church 188
 St Bartholomew 149, 227
 St Bartholomew the Great 273
 St Bartholomew the Less 273
 St Bartholomew's Hospital 273
 St Bartholomew Smithfield 217, 263
 St Benet Sherehog 196, 216
 St Botolph Aldgate 197
 St Botolph Billingsgate 263, 265
 St Botolph Lane, Monument House 130
 St Bride 126, 147, 149, 177, 188, 190, 265
 St Clement Danes 188, 190
 St Dunstan in the West 188
 St Dunstan's Church 184
 St Dunstan's Hill 135
 St Gabriel Fen 196
 St George-in-the-East 264
 St George's Hill, Weybridge 105, 106, 109
 St Gregory 188
 St Helen Bishopsgate 217, 263, 272
 St James, Westminster 15
 St John Clerkenwell priory 209, 214, 215, 227, 263, 267

St John of Jerusalem, house of the prior of 219
 St Lawrence Jewry 197
 St Luke's Hospital 273
 St Magnus House 194
 St Martin-in-the-Fields 188, 189
 St Martin Ludgate 196
 St Martin-le-Grand 195
 St Martin Orgar 196
 St Martin Vintry 196
 St Mary Abbots Hospital, Kensington **113**
 St Mary Axe 227
 St Mary of Bethlehem hospital 273
 St Mary Clerkenwell priory 209, 214, 215, 221, 224–5, 227, 263
 St Mary Cray 179, 180
 St Mary Graces 214, 216, 226, 263, 270
 St Mary-le-Bow 196
 St Mary-le-Strand 184, 188
 St Mary Merton priory 214, 216, 263
 St Mary Overy Southwark 210
 St Mary Spital 214, 216, 217, 263
 St Mary the Virgin Little Ilford 196
 St Nicholas Acon 196
 St Nicholas Shambles 176, 196, 197, 215, 216, 272

St Olave Old Jewry 196
 St Pancras 196
 St Paul's Cathedral 197, 211, 215, 217, 226, 263
 Churchyard 191
 Roman kilns 141
 Anglo-Saxon 183, 188
 St Paul's Deanery 268
 St Peter's Hill 135, 137
 St Thomas' Hospital 273
 St Thomas Street 137
 saltmaking
 Bronze Age 92
 Iron Age 110
 Roman 151, 154
 Sandford Manor, Chelsea 275
 Sandstone (Bucks) 52
 Sandy Lane, Teddington 85, 90
 Sawbridgeworth (Herts) 72
 Saxo-Norman, microfossils 25

rural houses 210, 219, 220
 Ruxley Church 196
 Saalian deposits 15, 31
 St Albans, Vale of 14, 30
 St Alban's Church site 126
 St Alban Wood Street 185, 188
 St Alphege 196
 churchyard 222
 St Alphege Garden 222
 St Andrew Holborn 188, 196
 St Anne Limehouse 264
 St Ann's Hill, Chertsey 105
 St Anthony's Hospital 264
 St Augustine's church 188
 St Bartholomew 149, 227
 St Bartholomew the Great 273
 St Bartholomew the Less 273
 St Bartholomew's Hospital 273
 St Bartholomew Smithfield 217, 263
 St Benet Sherehog 196, 216
 St Botolph Aldgate 197
 St Botolph Billingsgate 263, 265
 St Botolph Lane, Monument House 130
 St Bride 126, 147, 149, 177, 188, 190, 265
 St Clement Danes 188, 190
 St Dunstan in the West 188
 St Dunstan's Church 184
 St Dunstan's Hill 135
 St Gabriel Fen 196
 St George-in-the-East 264
 St George's Hill, Weybridge 105, 106, 109
 St Gregory 188
 St Helen Bishopsgate 217, 263, 272
 St James, Westminster 15
 St John Clerkenwell priory 209, 214, 215, 227, 263, 267

St John of Jerusalem, house of the prior of 219
 St Lawrence Jewry 197
 St Luke's Hospital 273
 St Magnus House 194
 St Martin-in-the-Fields 188, 189
 St Martin Ludgate 196
 St Martin-le-Grand 195
 St Martin Orgar 196
 St Martin Vintry 196
 St Mary Abbots Hospital, Kensington **113**
 St Mary Axe 227
 St Mary of Bethlehem hospital 273
 St Mary Clerkenwell priory 209, 214, 215, 221, 224–5, 227, 263
 St Mary Cray 179, 180
 St Mary Graces 214, 216, 226, 263, 270
 St Mary-le-Bow 196
 St Mary-le-Strand 184, 188
 St Mary Merton priory 214, 216, 263
 St Mary Overy Southwark 210
 St Mary Spital 214, 216, 217, 263
 St Mary the Virgin Little Ilford 196
 St Nicholas Acon 196
 St Nicholas Shambles 176, 196, 197, 215, 216, 272

St Olave Old Jewry 196
 St Pancras 196
 St Paul's Cathedral 197, 211, 215, 217, 226, 263
 Churchyard 191
 Roman kilns 141
 Anglo-Saxon 183, 188
 St Paul's Deanery 268
 St Peter's Hill 135, 137
 St Thomas' Hospital 273
 St Thomas Street 137
 saltmaking
 Bronze Age 92
 Iron Age 110
 Roman 151, 154
 Sandford Manor, Chelsea 275
 Sandstone (Bucks) 52
 Sandy Lane, Teddington 85, 90
 Sawbridgeworth (Herts) 72
 Saxo-Norman, microfossils 25

Saxon **see** Anglo-Saxon/Saxon
 Sayes tower 223
 schools 273
 seal, Byzantine 181
 sea-level rise 73
 Seal House 131, 133
 Sevenoaks (Kent), St Nicholas' burial ground 265
 Shadwell 151, 156, 263
 Roman building 127
 Shambles 230
 Sheen 214
 Sheerness 271
 Shelley House, 3 Noble Street 126
 Shepperton gravels 16, 54
 shields
 Bronze Age 86, 87
 Iron Age 108, 111
 shipbuilding 142, 271, 275, 279
 shoemaking
 Roman 141
 medieval 228, 229
 shoes, Roman 123
 Shooters Hill 14
 shops, medieval 230–1
 Shoreditch 274
 Shorts Gardens 183, 184, 185
 shrunts
 Iron Age 107, 111

Springfield Lyons (Essex) 88, 90
 Spring Garden gravels 15
 Springhead (Kent) 126, 150, 157
 springs 157
 Staines 219
 Roman (Pontes) 124, 150, 151, 153
 see also Church Lammas 49, 51
 Staines Road Farm, near Shepperton (Surrey)
 'cooking-pits', Neolithic 69
 crouched inhumation 69, **69**
 ring-ditch 69, 71, 72, 73
 standing buildings
 medieval 210
 post-medieval 257–8
 Stane Street 125, 150
 Stansted Airport 104
 Stanwell 105
 cropmark sites 69
 cursus 7, 66, 70, 73, 74, 90
 linear barrow cemetery 74
 Stebbingford Farm, Felsted 222
 Steelyard 211, 230
 Stepney 263–4
 Stifford Clays (Essex) 110
 Stockley Park, Dawley 106, **107**, 111
 Stocks, Poultry 230
 Stoke Newington 27, 33, 38
 Northwold Road 55
 'Palaeolithic floor' 35
 stone, as building material 138, 144, 145, 231
 stone quarries 226
 Stour Valley 73
 Stow, John 260
 Strand 172, 173, 175, 176, 182, 184, 187, 188
 medieval 212, 219
 Stratford Langthorne Abbey 214, 215, 216, 263
 Stratford Market 106, 155
 Strathville Road, Wandsworth 21
 Streattham House, Merton 56
 street systems **see** roads
 strip-field systems 221
 sub-Atlantic period 24–6
 sub-Boreal period 22–4
 suburbs
 Roman 147, 158, 159
 medieval 209
 Suffolk House 131, 132, 136, 142
 Suffolk Lane 142, 219
 Sugar Loaf Court, 14 Garlick Hill 141
 sugar trade 278
 sugarworks 278
 Summertown Way, Thamesmead 132
 sundial, Late Saxon **189**
 sunken-featured buildings **172**, 180, 194–5
 Sunnings Farm 110
 Sutton 209, 320
 Swan Lane 131, 133, 193, 194, 228
 Swanscombe (Kent) 14, 15, 27, 31, 34, **34**, 36
 skull 15, 30
 swords
 Bronze Age 82, 86, 87
 mould 88
 Iron Age 108
 Roman 125
 Syon (Middlesex) 51, 92, 93

tank furnace, Roman 141
 Tanner Street 276
 tanning 226, 228, 229, 272, 275, 276
 Roman 123, 141
 Anglo-Saxon 188
 Taplow gravels 15, 17, 34, 36, 67, 72, 90
 taverns **see** inns and taverns

Teddington, Sandy Lane 85
 Templars 220, 228
 Temple of Mithras 122, 135, **144**
 temples, Roman 134–5, 157
 Tenter Street, Roman cemetery 147, 148
 tenter-frames 228
 tent fragments, Roman 126
 tesserae, Roman 142
 textiles
 Iron Age 110
 Roman 144
 Anglo-Saxon 181, 196
 medieval 221, 231
 Thames
 river levels 17–19
 Holocene 18, 19, 26
 Iron Age metalwork 108, 110–11
 Roman period 154
 Viking finds 190
 Thames Court 19
 Thames Exchange 131, 176
 Thames Street 130, 131, 146, 192, 212, 257
 Thames Street Tunnel, Roman quay 131
 Thamesmead 19, 132, 151, 152, 153, **154**, 156
 Theatre, the 274
 theatres 274
 thermoluminescence-dating 35–6, 52, 53
 Thorney Island, Westminster 86
 Threadneedle Street 195, 264
 thread-pickers, Anglo-Saxon 188
 Three Oak Lane 88
 Three Quays House 130, 131, 143
 Three Ways Wharf, Uxbridge ix, 16, 19, 21–2, 48, 49, 50, 51, 52, **53**, 54, 55, 56, **57**
 19 Throgmorton Avenue 123, 145
 Tilbury 13, 107
 tile industry
 Roman 150, 154, 158
 medieval 227
 tilekilns 150, 226, 227, 276
 tiles, stamped, Roman 137, 151, 154
 timber-framed buildings 126, 138, 146, 219, 270
 tin industry, Roman 142
 Tolworth, Percy Gardens 50
 tombstones, Roman 127, 131, 148, 149
 Tooley Street 131, 142
 Tooting, Bedford Hill 66
 Tooting Bec, alien priory 220
 topographic modelling 27
 Toppings Wharf 129, 138
 Tottenham Manor House 267
 Tottenham 16, 229
 Tottenham Court 179
 Tower Hamlets 320
 Tower Hill 136, 160, 222
 postern 130, 222
 Tower of London 131, 136, 137, 148, 210, 223, 265, 270
 riverside wall 121
 trackways 24
 Neolithic 75
 Bronze Age 23, **23**, 84, 87, 89, 91, **91**, 92
 Iron Age 112
 trade
 Roman 143–5
 Anglo-Saxon 181, 187–8, 195–6
 medieval 213, 229–32
 post-medieval 277–80
 Trafalgar Square 15–16, 183
 Treasury 137, 175, 185, 186, 190
 Trinity Square 148
 Tulse Hill 25, 175, 178, 179, 180, 181
 Twickenham 68, 155, 156

Union Street, Southwark 23, 24
 Uphall Camp, Ilford 24, 104, 106, 107, **110**,

111, 113, 154, 155
 Uphall Pit 15
 Upminster 105, 110, 155, 192
 Great Tonkyns Barn 221
 see also Hunts Hill Farm
 Upper Palaeolithic 30, 46–7, 48–9, 50, 51, 54, 55, 56–8
 Upper Thames Street 131, 133
 Uxbridge 2, 52, 209, 213
 Iron Age 106
 medieval 215, 219, 224
 gatehouse 267
 see also Three Ways Wharf

Vauxhall Bridgefoot 276
 Vauxhall potteries, Lambeth 275
via publica 184
 Vikings 172, 173, 176, 187, 190–1, 198
 villas, Roman 107, 122, 147, 150, 155, 156–7, 159, 160, 178
 vinerods 153
 vineyards 153, 195
 Vintners' Hall 225
 Vintry 131, 176, 194, **194**
 votive deposits
 Roman 135
 Anglo-Saxon 190

Walbrook 25, 123, 127, 129, 130, 132, 141–2, 146, 148
 coin hoard, Late Saxon 195
 skulls 110, 148
 Walbrook Mithraeum 25
 Walbrook Valley 132, 139, 141, 209
 Waleport (Wallpits) 177
 Wall Garden Farm, Sipson **38**, 124, 152, 155
 Wallingford 92, 214
 Waltham Abbey 111
 Waltham Forest 6, 320
 Walthamstow 124, 184, 191
 Walworth 177
 Wandle gravels 74
 Wandle Park, Croydon 87
 Wandle river 55, 178, 224
 Roman period 125, 154
 Wandle Valley 16, 56
 Neolithic 70, 72
 Wandle Valley Hospital 22
 Wandsworth 21, 103, 110, 320
 Wanstead Park 157, **279**
 Wapping 263, 278
 'wardrobes' 218
 Ware 213
 warehouses
 Roman **127**, 129, 132–3, 138, 143, 147
 Anglo-Saxon 193–4
 medieval 230
 Warren Farm, Romford 105, 109, 228
 Warwick Square 145
 Warwick Street 148
 waterfront
 Roman 131–4
 Anglo-Saxon 184, 193–4, **194**
 medieval 209, 210, 212, 232, 233, 213, 219
 Waterloo Bridge helmet 111
 Waterloo 'C', Horsham points 53
 Waterloo Station 53
 watermills 140, 228, 272, 276
 water supply
 Roman 129–30
 medieval 224–5
 post-medieval 272
 water-tank, Roman 130
 Watford 220
 Watling Court 195
 Watling Street 125, 147, 150, 157, 183, 184, 196
 weaving, Anglo-Saxon 181

weights, lead 176, 195
 weir, medieval 228
 Well Court 195
 Welling 150
 wells
 public 224–5
 Roman 129, 130
 Wennington 23
 Westcroft Road, Carshalton 89
 West Drayton 16, 25, 32, 33, 34, 51, 69, 196, 267
 West Ham, All Saints Church 215
 West Heath, Hampstead 22, 24, 26, 50, 53, 54, 55, 57
 pollen 50, 67, 71
 West India Docks 278
 Westminster xi, 7, 320
 Hall 194
 Palace of 194, 211, 218, 265
 river levels **18**, 19
 Roman period 125
 medieval 209, 212, 224, 229, 230
 post-medieval 261
 Westminster Abbey 147, 189, 192, 195, 197, 210, 215, 217, 263
 West Silvertown, urban village 18, 19, 20, 21, 23
 West Smithfield 177
 West Thurrock 15, 37
 wetland landscapes 154
 Weybridge 105
 Wey river 110
 Wey Valley 103, 106, 108, 153
 Whetstone 227
 White Colne (Essex) 51
 Whitefriars 227
 Whitefriars theatre 274
 Whitehall 266
 Whitehall Palace 266
 Whitehall Wood, Upminster 105
 1–7 Whittington Avenue 145
 Wickham 150
wic straet 184
 Wilmington (Kent) 70
 Wilsons Wharf, Southwark 23
 Wimbledon 85
 Wimbledon Common 17, 66, 105, 157
 Winchester Palace, Southwark 2, **120**, 127, 137, 140, 142, 147, 211, 267
 windmills 228, 272
 Windsor Castle 219
 wine 143, 144, 188
 wine barrels, Roman 144
 Winter Hill gravels 14
 Wolseley Street 88
 Wolstonian deposits 15, 31, 32, 34, 35, 36, 37
 Woodford 35
 woodland clearances 54, 64, 152
 woodlands 25, 26, 56, 74, 152, 153, 161, 176
 management 227
 Wood Street 126, 185, 188
 woodworking waste, Roman 142
 Woolstaple 230
 Woolwich 154, 227, 271
 Royal Dockyard 271
 tile industry 227
 Woolwich Power Station 106, 107, 113, 155, 230, 275, 279
 Worcester House, Stepney Green 267
 workshops, Roman 138, 139, 141, 142, 160
 World Cargo site, Heathrow 54
 writing tablets, Roman 123, 142, 143, 144
 Yeading 179, 184
 Yeoveney Lodge, Staines, causewayed enclosure 66, 68, 71
 Yiewsley 33, 34, 36, 37
 York Buildings 184

Map I: Greater London in the Palaeolithic Period

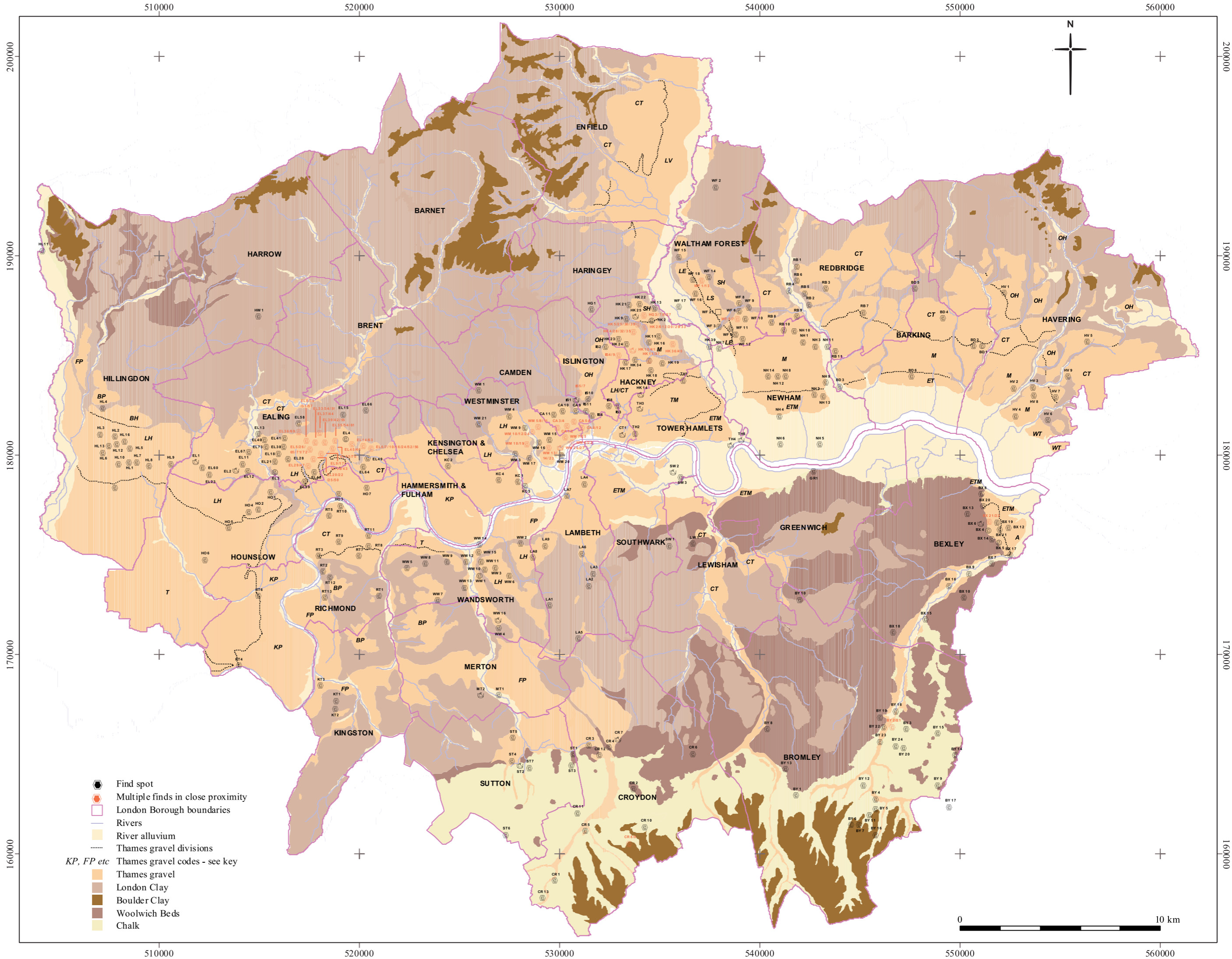
This map shows all finds of Lower and Upper Palaeolithic date for which a reasonable provenance exists. No finds from the River Thames itself have been included. The 'Brickearth' (Langley Silt Complex) deposits have been omitted for two reasons: much of these deposits post-date the Palaeolithic, and they obscure the distinctions between the different Thames Gravels.

- flint working site
- occupation site
- axe, blade, core, flake, flint
- artefact, flint assemblage, implement, scraper
- animal remains, kill site

Key for Pleistocene sand and gravel terraces; Middle, Lower Thames and Lea equivalents

Middle Thames		Lower Thames	
BP	Black Park	DH	Dartford Heath
BH	Boyn Hill	OH	Orsett Heath
LH	Lynch Hill	CT	Corbets Tey
T	Taplow	M	Mucking
		OC	Ockenden Channel
		A	Aveley silts and clays
RTG	Reading Town gravel	WT	West Thurrock
KP	Kempton Park	ET	East Tilbury
FP	Floodplain	FP	Floodplain
Thames		Lea	
LH/CT		SH	Stampford Hill
T/M		LS	Leytonstone
Lower Terraces		LE	Leyton
		LV	Lea Valley

- Find spot
- Multiple finds in close proximity
- London Borough boundaries
- Rivers
- River alluvium
- Thames gravel divisions
- KP, FP etc* Thames gravel codes - see key
- Thames gravel
- London Clay
- Boulder Clay
- Woolwich Beds
- Chalk



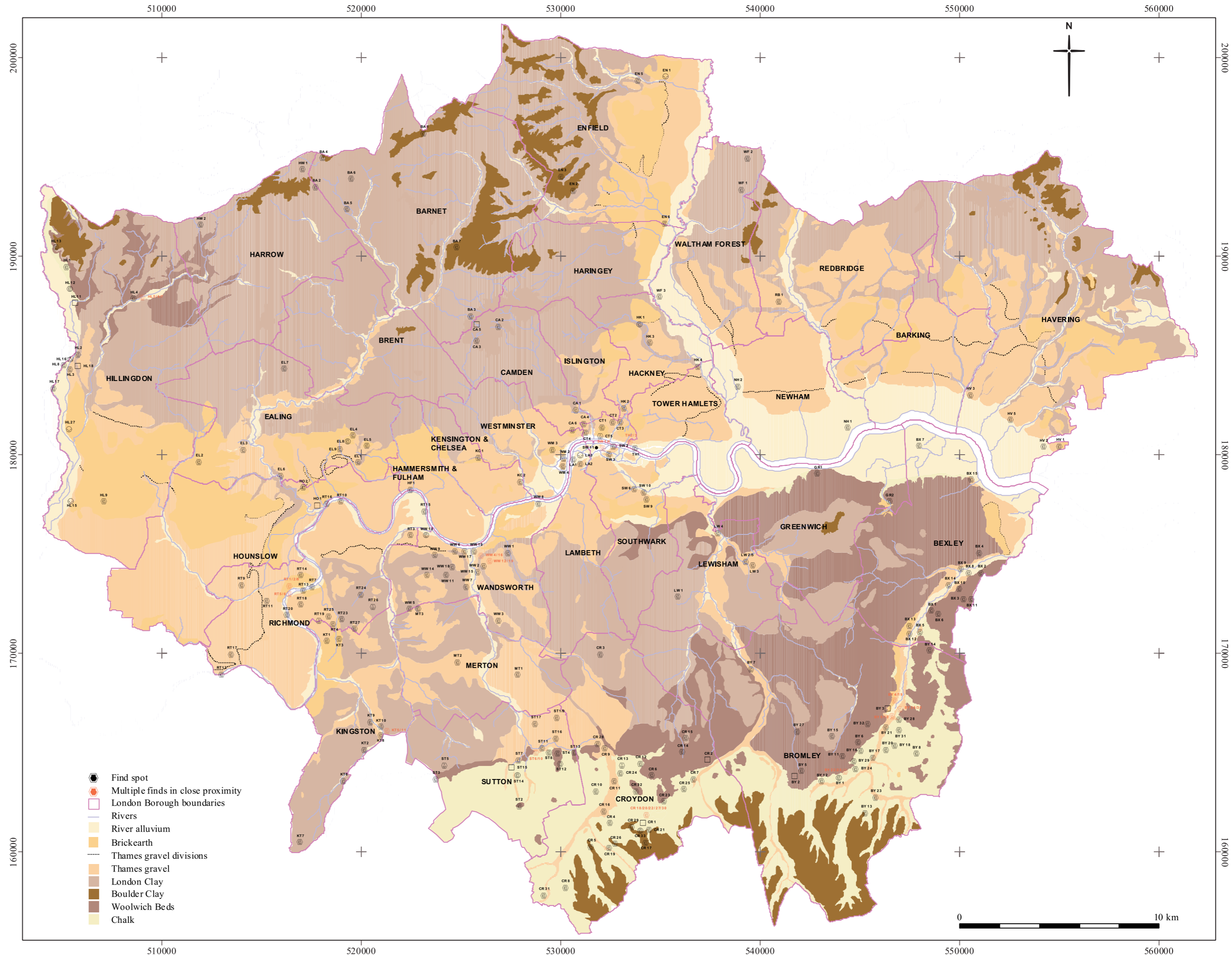
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Map 2: Greater London in the Mesolithic Period

This map shows all finds and sites of Mesolithic date for which a reasonable provenance exists. No finds from the River Thames itself have been included.

- ⊗ flint working site
- ⊖ ditch, pit
- occupation site
- ⚔ arrowhead, mace
- ⊗ axe (ph), blade, core, finds, flake, flint artefact, flint assemblage, implement, mattock, pick, scraper
- ⚔ kill site
- posthole



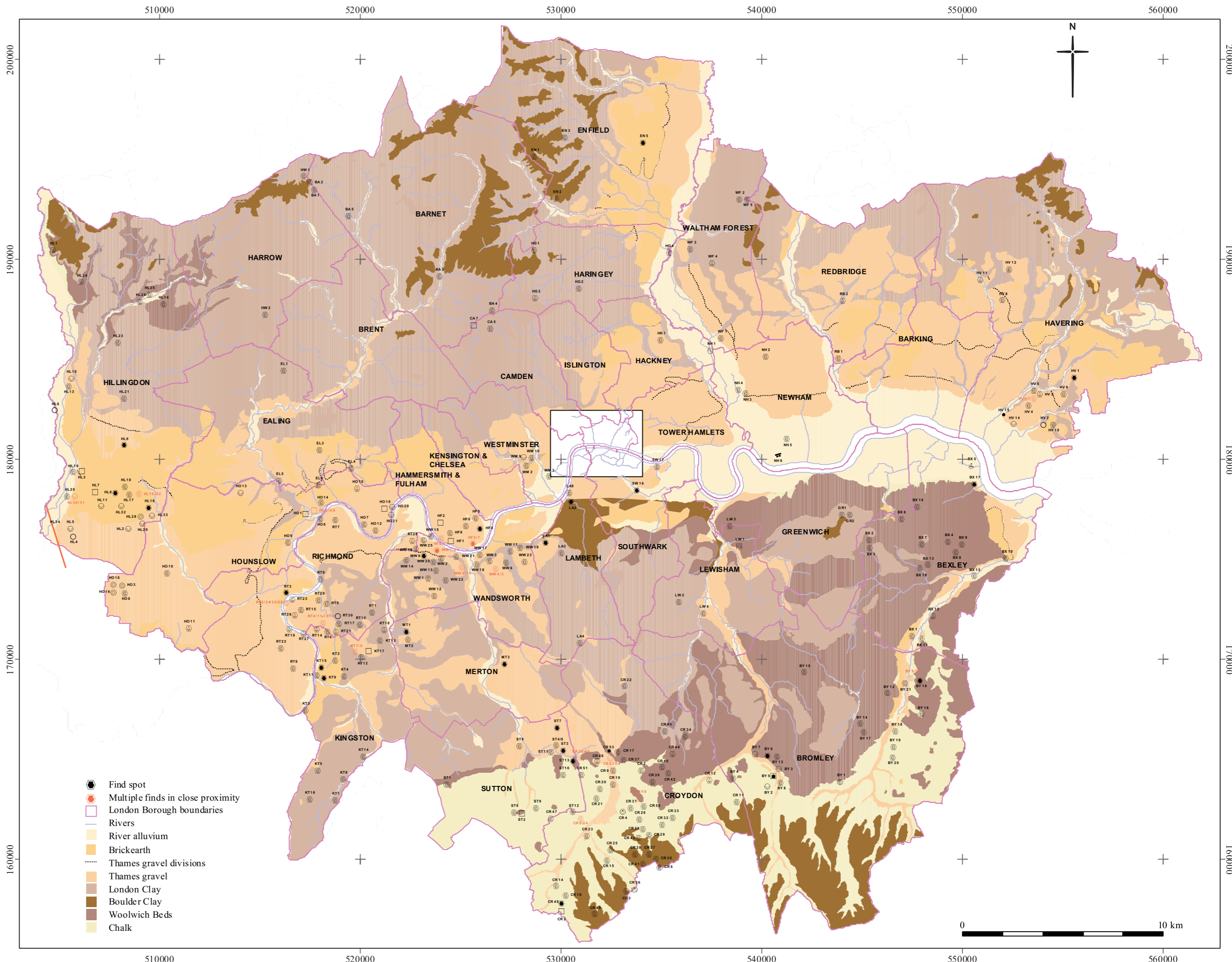
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Map 3: Greater London in the Neolithic Period

This map shows all provenanced finds and sites of Neolithic date. No finds from the River Thames itself have been included. A separate map, Map 4, shows the inset area around central London.

- ⊙ causewayed enclosure, enclosure, henge
- ⊕ flint working site
- ⊖ ditch, pit
- ⊙ mine
- ⊠ barrow
- ⊠ hut group, round house
- occupation site
- ⊠ arrowhead, dagger, spearhead
- ⊠ axe
- ⊠ beaker, bowl, finds, potsherd, pottery, pottery assemblage
- ⊠ axe, axe hoard, blade, core, flake, flint artefact, flint assemblage, knife, mattock, pick, scraper, sickle
- ⊠ animal remains
- posthole
- ▲ fire debris
- ⊠ boat
- ⊠ trackway
- earthwork, mound, ring ditch



- Find spot
- Multiple finds in close proximity
- ⊠ London Borough boundaries
- Rivers
- River alluvium
- Brickearth
- Thames gravel divisions
- Thames gravel
- London Clay
- Boulder Clay
- Woolwich Beds
- Chalk

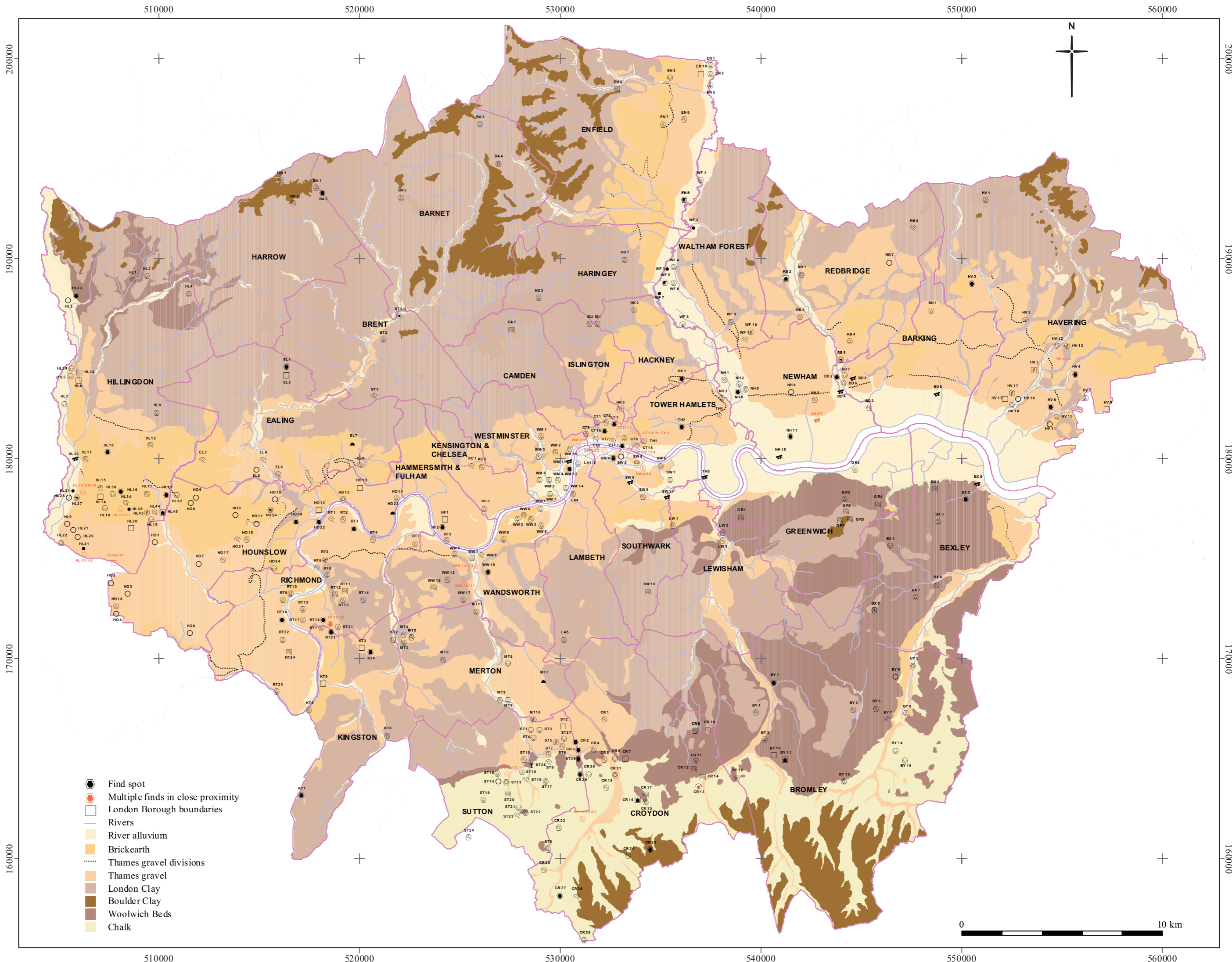
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Map 5: Greater London in the Bronze Age

This map shows all finds and sites of Bronze Age date for which a reasonable provenance exists. No finds from the River Thames itself have been included.

- | | | | |
|---|---|---|---|
| ⊙ | ditched enclosure, enclosure | 🛡 | shield |
| ⊕ | flint working site | 🍷 | beaker, bowl, finds, jar, plaque, potsherd, pottery, pottery assemblage, vessel |
| ⊖ | ditch, pit | 🏺 | cremation jar |
| ⊗ | field system | 🔪 | flake, flint artefact, flint assemblage, scraper |
| 🏠 | burnt mound | 👤 | placed deposits in pits |
| 🏠 | barrow, barrow group, round barrow | 👤 | animal burial |
| 🏠 | structure | 👤 | founders hoard, metalwork hoard |
| 🏠 | hut, hut group, pile dwelling, building, occupation, occupation site | 👤 | cremation, cremation cemetery, inhumation |
| 🏠 | farmstead | ● | piling, posthole |
| 🏠 | arrowhead, dagger, halberd, palstave, spear, spearhead, sword, weapon | 🔥 | fire debris |
| 🏠 | armlet, brooch, buckle, loom weight, mount, razor | 🔥 | refuse pit, scrap metal |
| 🏠 | axe, chisel, gouge, implement | 🛤 | revetment, trackway |
| 🏠 | ingot, knife | ○ | earthwork, hill fort, ring ditch |



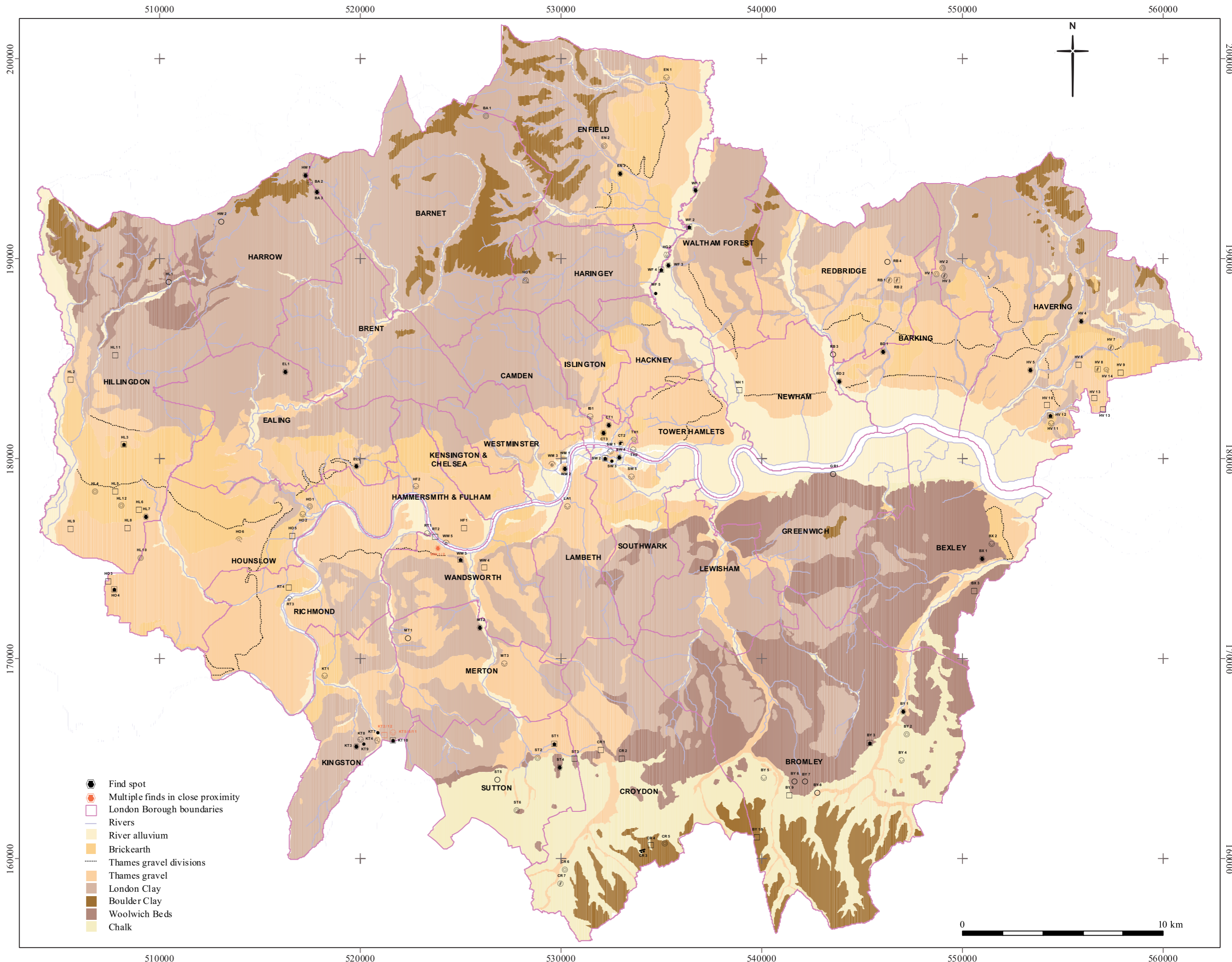
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Map 6: Greater London in the Iron Age

This map shows all finds and sites of Iron Age date for which a reasonable provenance exists. No finds from the River Thames itself have been included.

- | | | | |
|----|---------------------------------|----|---|
| ⊙ | ditched enclosure, enclosure | 🏠 | finds, jar, potsherd, pottery, pottery assemblage, vessel |
| ⊖ | ditch, pit | 🪙 | coin hoard |
| ⊕ | field system | 🔨 | metalwork hoard |
| □ | structure | 👤 | cremation cemetery, human remains |
| 🏠 | hut, pile dwelling, round house | ● | piling, posthole |
| □ | building, occupation site | 🛤️ | trackway |
| 🏠 | farmstead | ○ | dyke, earthwork, hill fort, ring ditch |
| ⚔️ | sword | 🔥 | pottery kiln |
| 🔪 | adze cache | | |
| 🛡️ | helmet | | |



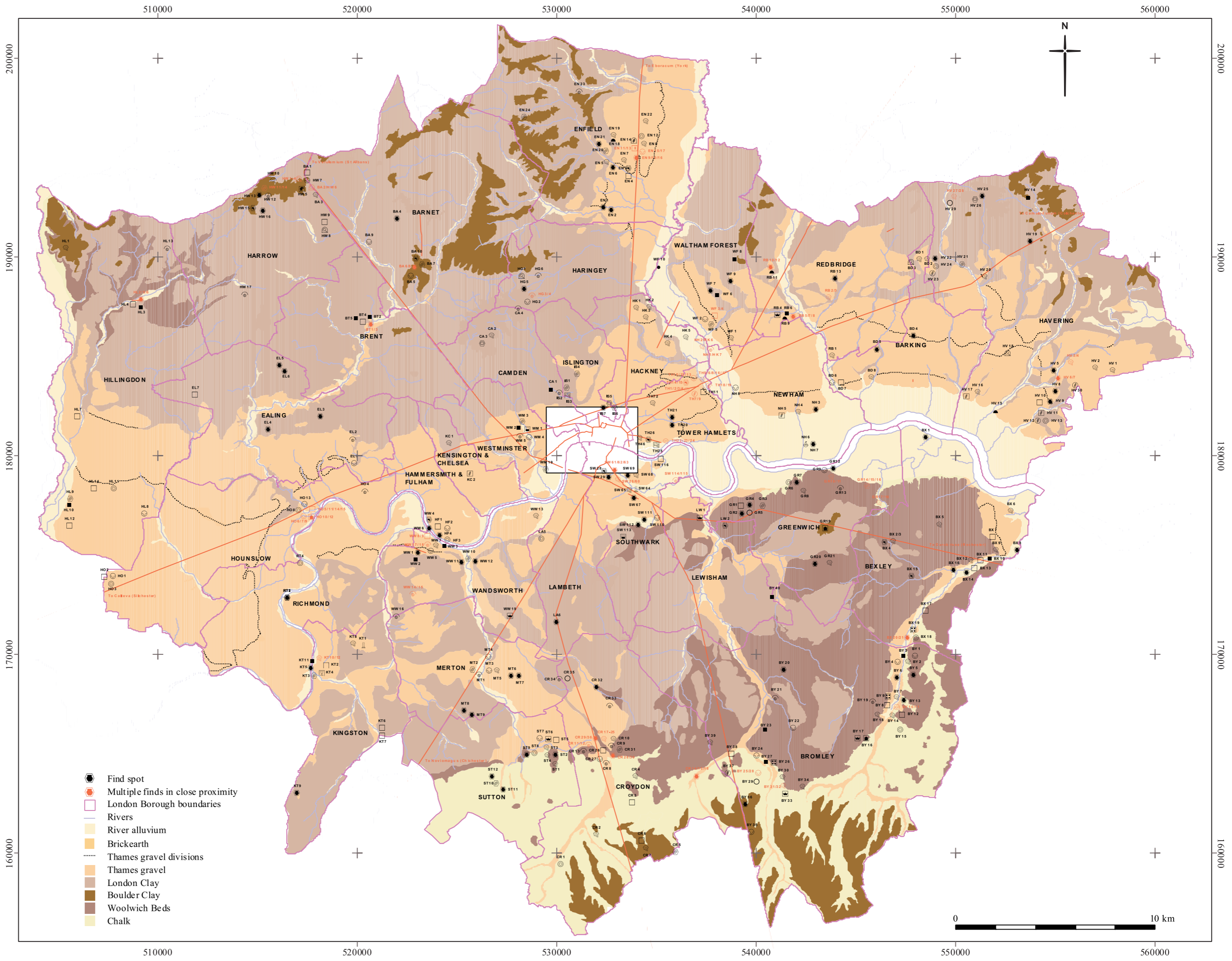
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Map 7: Greater London in the Roman Period

This map shows a selection of provenanced Roman sites and finds in Greater London. The selection has been designed to give a good overview of the density and types of Romano-British activity in the Greater London area, and to show the principal lines of communication. A large number of individual finds of, for example, pottery and tile have been omitted for the sake of clarity. A separate map, Map 8, shows the inset area around central London.

- | | |
|---|---|
| <ul style="list-style-type: none"> ☉ ditched enclosure, enclosure ⊖ ditch, ditch system, pit ⊕ brickearth quarry ⊗ gravel pit ⊘ field system ⊙ altar ⊚ drain, well ⊛ gate, gateway ⊜ tombstone ⊝ structure (unclassified) ⊞ workshop ⊟ mithraeum, temple ⊠ barrack block, bastion, watch tower ⊡ hut ⊢ mausoleum ⊣ beam slot, building, buildings, floor, occupation layer, occupation site, wall ⊤ farmstead ⊥ horse equipment ⊦ armlet, bead, mirror, ring ⊧ coin ⊨ inscription ⊩ amphora, beaker, bottle, bowl, cooking pot, cup, finds, flagon, jar, jug, lamp, potsherd, pottery, pottery assemblage, quern, spoon, vessel | <ul style="list-style-type: none"> ⊙ cremation jar, cremation vessel, grave goods ⊙ flake ⊙ placed deposits in pits ⊙ coin hoard, hoard ⊙ metalwork hoard ⊙ burial, burial ground, burials, cemetery, cist, coffin, cremation, cremation cemetery, human remains, inhumation, inhumation cemetery, sarcophagus, tomb ⊙ sculpture, statue ■ brick, building material, tesserae, tile ● piling ▲ fire debris, refuse layer ⊕ barge, boat ⊖ quay, revetment, river wall, waterfront ○ earthwork, mound, ring ditch ⊙ furnace, kiln, pottery kiln, tile kiln ⊙ kiln drying ⊙ hypocaust, mansio, mosaic, mosaic pavement, tessellated pavement, villa ⊙ amphitheatre, basilica, bath house, forum |
|---|---|

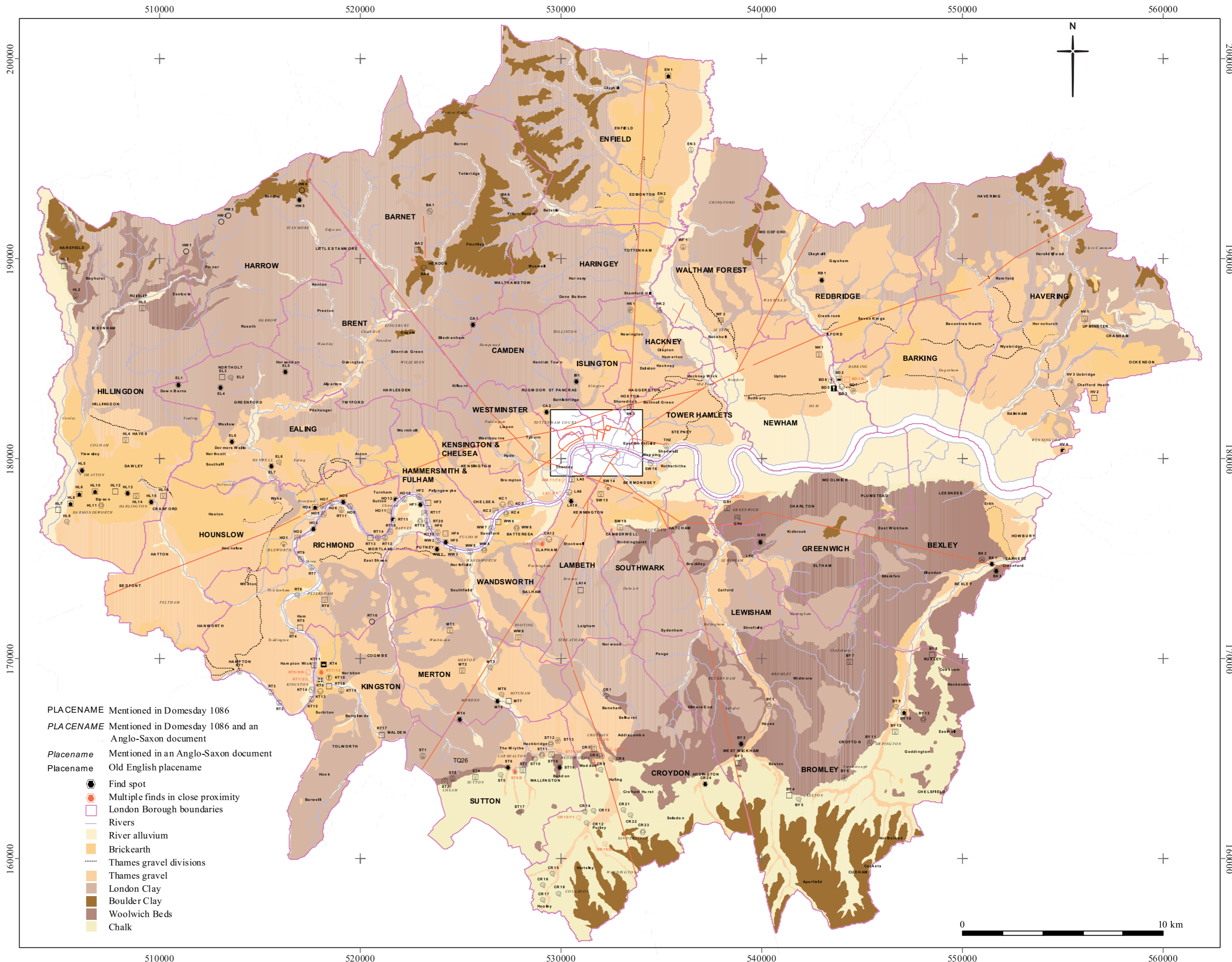


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Map 9: Greater London in the Saxon Period

This map shows all provenanced findspots of 5th- 11th-century date in Greater London. In addition it shows the majority of placenames that are believed to derive from this period, either because they are mentioned in Anglo-Saxon texts or Domesday Book, or because they have an Old English form. A separate map, Map 9, shows the inset area around central London. The principal road lines are based on the Roman pattern.

- | | | | |
|--|--|--|---|
| | enclosure | | weight, pin, ring |
| | cross | | coin |
| | battle site | | axe, implement, knife |
| | ditch, pit | | shield |
| | quarry | | bowl, finds, gaming |
| | iron workings | | piece, key, ornament |
| | fish trap | | pottery, vessel |
| | coronation stone | | coin hoard, hoard |
| | leat, well | | metalwork hoard |
| | cess pit | | burial, burial ground, cemetery, coffin |
| | barrow group, tombstone | | cremation, human remains, inhumation, sarcophagus |
| | structure(unclassified) | | bridge, bridge abutment |
| | chapel, church, minster | | butchery |
| | palace | | refuse pit |
| | hut, sunken building | | moat |
| | building, building | | boat |
| | (unclassified), buildings, foundations, occupation | | revetment, waterfront, wooden revetment |
| | deposits, occupation layer, occupation site | | dyke, earthwork |
| | farmstead | | (unclassified), embankment |
| | horse equipment, spur | | kiln lime |
| | spearhead, sword | | monastery, nunnery |
| | trial piece | | |
| | bead, belt, brooch, buckle, earring, loom | | |



- PLACENAME** Mentioned in Domesday 1086
- PLACENAME** Mentioned in Domesday 1086 and an Anglo-Saxon document
- Placename** Mentioned in an Anglo-Saxon document
- Placename** Old English placename
- Find spot
 - Multiple finds in close proximity
 - London Borough boundaries
 - Rivers
 - River alluvium
 - Brickearth
 - Thames gravel divisions
 - Thames gravel
 - London Clay
 - Boulder Clay
 - Woolwich Beds
 - Chalk

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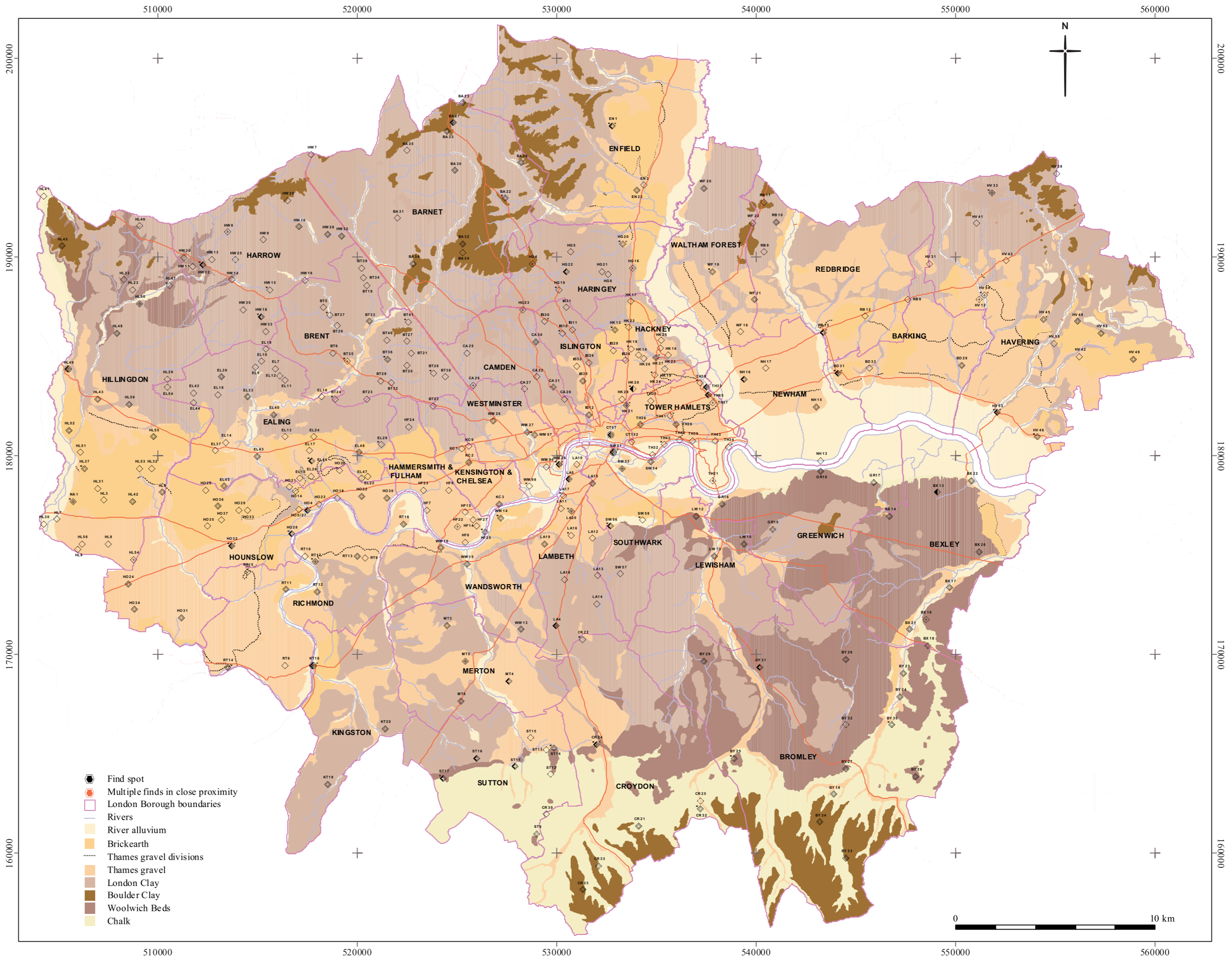
Map 11: Medieval settlement and infrastructure in Greater London

This map shows the more nucleated settlements known to have existed between 1100 and 1500. The selection of the settlements is somewhat arbitrary since no empirical measurements exist for the size of a 'hamlet' or 'village'. Nevertheless it gives a broad sense of the density of settlement. The symbols below combine crude representations of community, such the presence of places of worship, markets, hospitals, defences and the like. They give some sense of a hierarchy, but do not represent hard and fast divisions between settlement types, and would certainly not have been thought of in this way in the medieval period. Only major roads are shown. Other forms of sites and finds are shown on Map 12. The central London inset is shown on Map 13.

- | | | | |
|---|--------------------|---|--------------------|
| ◇ | settlement type 1 | ◆ | settlement type 18 |
| ◇ | settlement type 2 | ◆ | settlement type 19 |
| ◇ | settlement type 3 | ◆ | settlement type 20 |
| ◇ | settlement type 4 | ◆ | settlement type 21 |
| ◇ | settlement type 5 | ◆ | settlement type 22 |
| ◇ | settlement type 6 | ◆ | settlement type 23 |
| ◇ | settlement type 7 | ◆ | settlement type 24 |
| ◇ | settlement type 8 | ◆ | settlement type 25 |
| ◇ | settlement type 9 | ◆ | settlement type 27 |
| ◇ | settlement type 10 | ◆ | settlement type 28 |
| ◇ | settlement type 11 | ◆ | settlement type 29 |
| ◇ | settlement type 12 | ◆ | settlement type 30 |
| ◇ | settlement type 13 | ◆ | settlement type 31 |
| ◇ | settlement type 14 | ◆ | settlement type 32 |
| ◇ | settlement type 15 | ◆ | settlement type 33 |
| ◇ | settlement type 16 | ◆ | settlement type 34 |
| ◇ | settlement type 17 | ◆ | settlement type 35 |

- | Icon element | Description |
|--------------|---|
| ◇ | Settlement (dashed for deserted). |
| ◀ | Fair held at settlement |
| ▶ | Market held at settlement |
| M | Manor House within or very near settlement |
| H | Hospital within or very near settlement |
| ⊕ | Parish Church associated with settlement |
| + | Chapel or other religious site associated with settlement |
| ⊕ | Multiple places of worship |
| ○ | Borough status |
| ⊙ | Defended settlement |

- Find spot
- Multiple finds in close proximity
- London Borough boundaries
- Rivers
- River alluvium
- Brickearth
- Thames gravel divisions
- Thames gravel
- London Clay
- Boulder Clay
- Woolwich Beds
- Chalk



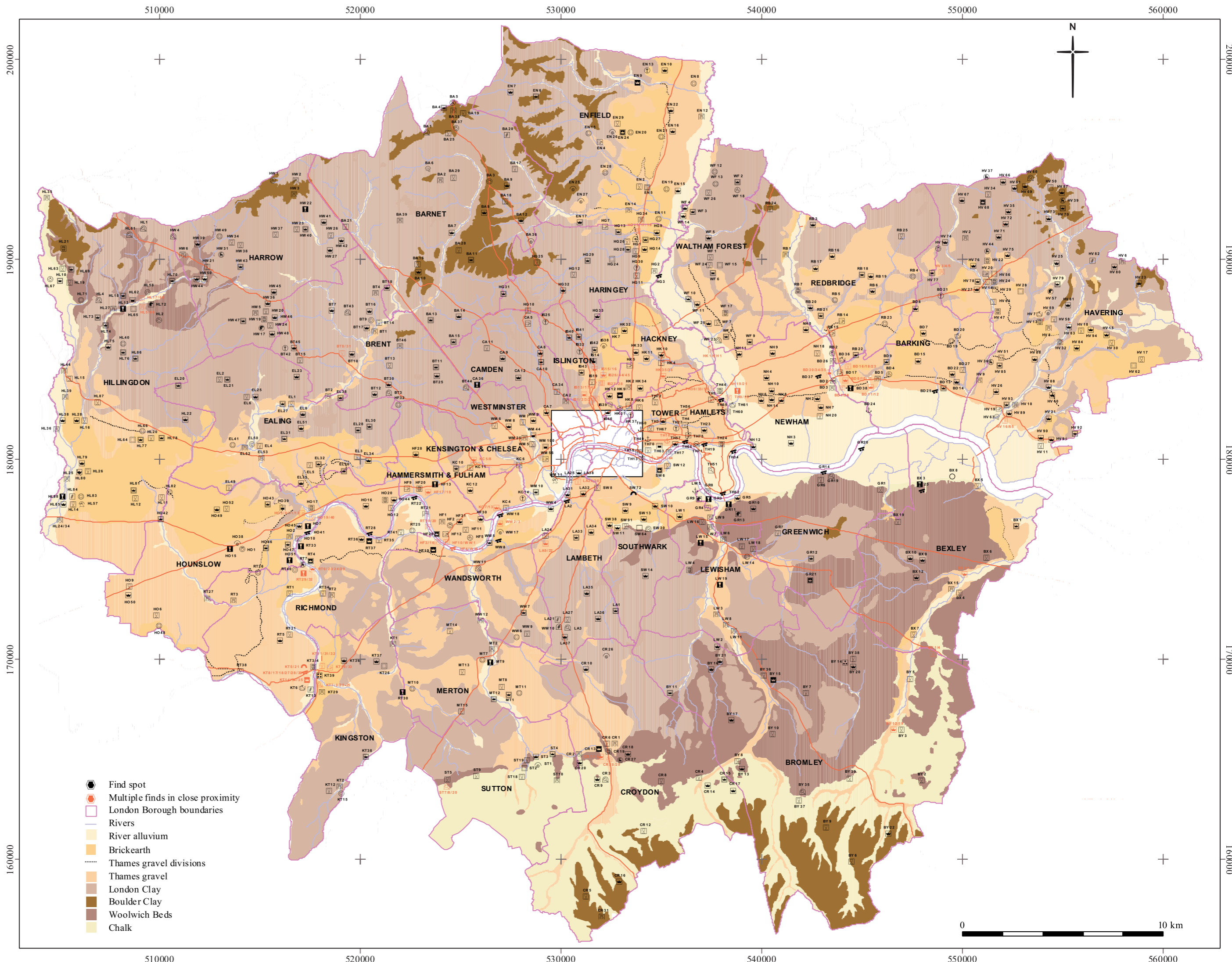
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Map 12: Medieval domestic, religious, agricultural and industrial sites in Greater London

This map shows a selection of recognisable monument types throughout Greater London. Emphasis has been placed on manorial sites and religious sites - small rural establishments are not shown. There are likely to have been many more industrial sites such as mills and kilns than are shown. Only major roads are shown. The overall settlement pattern in Greater London is shown on Map 11. The central London inset is shown on Map 13.

- | | | | |
|--|---|--|---|
| | encampment, enclosure | | dye works |
| | moated site | | hospital, leper hospital |
| | cross, wayside cross | | prison |
| | battle site | | castle |
| | deer park | | building |
| | scaffold | | synagogue |
| | archery butts | | cock pit |
| | rabbit warren | | tithe barn |
| | clay pits, marlpit, kiln lime | | coin hoard |
| | ditch | | animal burial, horse burial |
| | quarry | | metal working, metalwork |
| | charcoal burning site | | hoard |
| | iron workings | | burial ground, cemetery |
| | gravel pit | | plague pit |
| | sand pit | | boat house, dock, naval |
| | fish trap | | dockyard, shipyard |
| | storehouse | | bridge, bridge abutment, |
| | bell foundry, metal working | | bridge pier |
| | bell making | | butchery, tannery |
| | jewellery manufacture | | moat |
| | conduit, leat, water pipe, well | | barge |
| | gate | | ferry, jetty, quay, |
| | tenter frame, tenter ground | | revetment, river |
| | corn mill, flour mill, fulling mill, mill, post mill, water mill, windmill | | embankment, river |
| | bake house, brew house, custom house, inn, market hall, steelyard, woolstaple | | stairs, river wall, water gate, waterfront, wharf |
| | moated rectory | | dyke, embankment |
| | cathedral | | kiln brick |
| | chapel, chantry chapel, college, hermitage, parish church | | kiln, kiln pot, kiln tile, |
| | moated palace | | lead working |
| | palace | | kiln drying |
| | moated house/hall, moated hunting lodge, moated manor house, moated mansion | | house/hall, hunting lodge, manor house, mansion |
| | | | religious house |
| | | | guildhall, inns of chancery, inns of court |



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