# Contents


List of presidents and officers ..... v

167th Annual Report of LAMAS Council for the year ending 30th September 2022 ..... vi

LAMAS Statement of Financial Activities for the year ended 30th September 2022 and Balance Sheet as at 30th September 2022 ..... x

**Early Neolithic pits at Principal Place, Shoreditch, London Borough of Hackney**
*Jonathan Cotton et al* ..... **1**

**Roman domestic development to the north of the Forum: excavations at Crosby Square, City of London EC2**
*Ken Pitt* ..... **39**

**Roman wall plaster from Crosby Square, City of London EC2**
*Ian M Betts with Ken Pitt* ..... **79**

**A Roman watercourse, medieval and Tudor development and Bell Yard after the Great Fire: excavations at Faraday Buildings North, City of London EC4**
*Guy Hunt and Peter Rowsome* ..... **107**

**On the origin and dedication of the Church of St Magnus the Martyr, London**
*Matthew Payne and Michael Cooper* ..... **147**

**Crosby Place, a 15th-century mansion: excavations at Crosby Square, City of London EC2**
*Ken Pitt* ..... **157**

**Excavations at 1–5 Benjamin Street, Farringdon, EC1: activity within the outer precinct of the Hospitaller Priory of St John of Jerusalem and evidence for 'Westminster' tile production**
*Ian Hogg and Isa Benedetti-Whitton* ..... **183**

**Some examples of iconoclasm and the concealment of religious goods in London during the Reformation reconsidered**
*Bruce Watson* ..... **223**

**Headstone Manor, Pinner, Harrow: archaeological investigations 2016–17**
*Tim Allen with Gary Evans* ..... **247**

**Reviews** ..... **295**

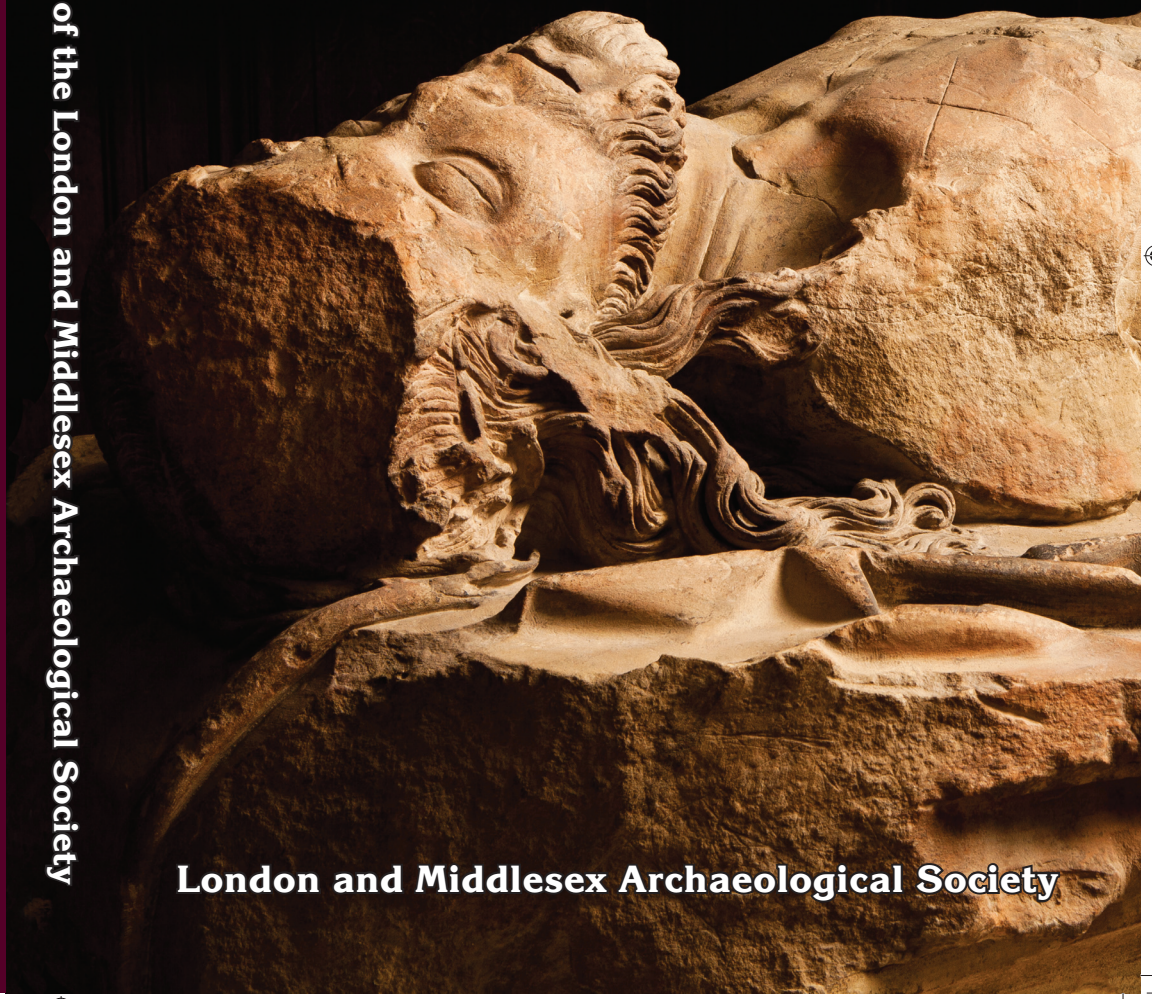
**Index to volume 73** ..... **319**



73 2022 Transactions of the London and Middlesex Archaeological Society


# Transactions Volume 73 2022

LAMAS



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**Editors' note**: the Editors are happy to consider articles relating to the archaeology, history or historic buildings of the Greater London area for publication in *Transactions*. New contributors are advised to consult the website (www.lamas.org.uk) or to request a copy of *LAMAS Notes for Contributors* from the Production Editor before submitting papers.
Any communication regarding the content of an article should be addressed to the author direct.

LAMAS also welcomes the submission of books for review in *Transactions*.
Opinions expressed in the reviews are those of the reviewers: any communication regarding them should be addressed to the reviewer direct.

**Front cover:** The Mercers' Hall sculpture of the dead Christ (*c.*1500–20); notice how the iconoclasts have selectively damaged this image. The top of Christ's head and his right arm are both missing, also there is an X scratched in his chest (see pp 228–30 for further details). This photograph is reproduced courtesy of the Mercers' Company *(Photo: Louis Sinclair)*

## NOTES FOR CONTRIBUTORS

Contributions should be sent to the Archaeology/Local History Editors (see inside front cover). Reports or research papers from commercial archaeology units or similar are normally required to come with funding at the rate of £50.00 a page. All papers will be read by a referee. All authors will be required to sign a Licence to Publish form and are advised that it is their responsibility to obtain written permission from copyright holders of any text, line art or photographs they wish to use in their article. Contributors will receive a pdf offprint of their article by email.

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LAMAS

Transactions of the

# London and Middlesex Archaeological Society

Volume 73
2022

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# Contents

List of presidents and officers ..... v

167th Annual Report of LAMAS Council for the year ending 30th September 2022 ..... vi

LAMAS Statement of Financial Activities for the year ended 30th September 2022 and Balance Sheet as at 30th September 2022 ..... x

**Early Neolithic pits at Principal Place, Shoreditch, London Borough of Hackney**
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*Ian Hogg and Isa Benedetti-Whitton* ..... **183**

**Some examples of iconoclasm and the concealment of religious goods in London during the Reformation reconsidered**
*Bruce Watson* ..... **223**

**Headstone Manor, Pinner, Harrow: archaeological investigations 2016–17**
*Tim Allen with Gary Evans* ..... **247**

**Reviews**

D Perring *London in the Roman World* (reviewed by David Bird) ..... **295**
L Jefferson (ed & trans) *The Register of the Goldsmiths' Company: Deeds and Documents* c. *1190 to* c. *1666* (reviewed by Caroline Barron) ..... **299**
H Kleineke *The Worshipful Company of Fletchers of London: The Early Centuries,* c. *1371*–c.*1571* (reviewed by Peter Guy Brown) ..... **301**
E A New (ed) *Records of the Jesus Guild in St Paul's Cathedral* c. *1450–1550. An Edition of Oxford Bodleian MS Tanner 221, and Associated Material* (reviewed by J T Rosenthal) ..... **302**
C Berry *The Margins of Late Medieval London, 1430–1540* (reviewed by Gary G Gibbs) ..... **304**
M Willes *In the Shadow of St Paul's Cathedral: The Churchyard that Shaped London* (reviewed by Hannes Kleineke) ..... **305**
P Hopkins *Medieval Morden: Landscape and Landholding* (reviewed by Peter Balmer) ..... **307**
C J Schuler *The Wood that Built London: A Human History of the Great North Wood* (reviewed by Damian M Goodburn) ..... **308**
N Higham *The Mercenary River. Private Greed, Public Good: A History of London's Water* (reviewed by Bruce Watson) ..... **309**
M Guerci *London's 'Golden Mile': The Great Houses of the Strand 1550–1650* (reviewed by John Schofield) ..... **311**
P Guillery (ed) *Survey of London 54 and 55: Whitechapel* (reviewed by Dorian Gerhold) ..... **312**
A Haslam *Tales from the Vaults, and Other Newington Horror Stories: An Archaeological and Historical Study of Elephant and Castle's Underworld* (reviewed by Jane Sidell) ..... **315**
D Frith *The Hornsey Enclosure Act 1813* (reviewed by Lorraine Woodleigh) ... **317**

**Index to volume 73** ..... **319**

# London & Middlesex Archaeological Society

*Charity Registration No. 267552*

ESTABLISHED IN 1855

**Patrons**: The Most Rev The Lord Archbishop of Canterbury; The Right Rev The Lord Bishop of London; The Right Hon The Lord Mayor of London; HM Lieutenant for Greater London and Custos Rotulorum; The Very Rev The Dean of St Paul's

**Past Presidents**: Rt Hon the Lord Londesborough, KCH, FRS, FSA (1855–1860); Rt Hon the Lord Talbot de Malahide, FRS, FSA (1860–1883); General A.L.F. Pitt-Rivers, FRS, VPSA (1883–1885); Edwin Freshfield, LLD, FSA (1885–1910); Sir Edward W. Brabrook, CB, Dir.S.A. (1910–1930); Sir Montagu Sharpe, KC, DL (1930–1942); Rt Hon the Earl of Strafford, JP (1943–1946); Col the Rt Hon Lord Nathan of Churt, FSA (1947–1949); William F. Grimes, CBE, MA, FSA (1950–1958); D.B. Harden, FBA, CBE, MA (1959–1964); R. Michael Robbins, CBE, MA, FSA (1965–1970); Arnold J. Taylor, CBE, MA, D.Litt, FBA, Hon VPSA, FR Hist S (1971–1973); Ralph Merrifield, BA, FSA, FMA (1974–1976); M.G. Hebditch, MA, FSA, FMA (1977–1979); Dr Valerie Pearl, MA, D.phil, FSA, FR Hist S (1980–1981); Professor John Wilkes, BA, PhD, FBA, FSA (1982–1985); John Kent, BA, PhD, FBA, FSA (1985–1988); Derek Renn, PhD, FIA, FSA, FSS (1988–1991); Hugh Chapman, BA, PhD, FSA, AMA (1991–1992†); Derek Renn, PhD, FIA, FSA, FSS (1992–1993); Harvey Sheldon, BSc, FSA (1993–1996); Mark Hassall, MA, FSA (1996–1999); Derek Keene, MA, D.phil (1999–2002); Professor Clive Orton, MA, CStat, MIFA, FSA (2002–2005); Dr Simon Thurley (2005–2008); Professor Caroline Barron, MA, PhD, FSA (2008–2011); Professor Martin Biddle, OBE, FBA, FSA (2011–2014); John Clark, MA, FSA, AMA (2014–2017); Taryn Nixon, BA, MCIfA, FRSA, FSA (2017–2020)

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**Council** (*as from AGM February 2022*)

Harvey Sheldon, BSc, FSA (Chairman); Barney Sloane, BA (Hons), FSA, AIFA; Dr Jane Sidell, BA, MSc, PhD, MIFA; Dr John Price, BA, PhD; Richard Gilpin, BA (Hons), MA; Stephen Gill, BSc, DMS; Leanne O'Boyle, BA, MA; Stuart Forbes, FCA; Niamh Carty, MA; Roy Stephenson, MCIfA, FSA; Jelena Bekvalac, BA (Hons), MSc, FSA

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**Archaeological Research Committee**: Chairman, Harvey Sheldon, BSc, FSA

**Historic Building and Conservation Committee**: Chairman, TBD

**Local History Committee**: Chairman, John Price, BA, PhD

**Honorary Auditor**: Hazel Thomas

**Bankers**: CAF Bank Ltd (Charities Aid Foundation) and Barclays Bank Ltd (211 Regent Street Branch)

# London and Middlesex Archaeological Society

## 167th ANNUAL REPORT OF COUNCIL FOR THE SUBSCRIPTION YEAR ENDING 30th SEPTEMBER 2022

All five Council meetings held during this year were online via the Zoom platform. Both Council and the Society's Committees have largely continued to function either online via Zoom or are gradually returning to in-person meetings.

The Society continues to be represented at meetings of the Southwark and Lambeth Archaeological Excavation Committee and the Council for British Archaeology London.

**Lecture meetings** (report by Kathryn Stubbs)

The lecture series programme ran from October 2021 to May 2022 and included a joint lecture with the Prehistoric Society. The lectures are announced in the Newsletter, on the website, social media and the diary page of *London Archaeologist*. The COVID 19 pandemic and ongoing restrictions meant that all lectures were held via Zoom, booked through Eventbrite, as we were unable to hold the lectures at the Clore Centre, Museum of London. Lectures are recorded and available on YouTube after the event.

The lectures were well attended and continued to attract a wide audience, including attendees from outside London, Europe and the US, which has helped to raise the profile of LAMAS and London's archaeology and history. Council would like to thank lecturers and members for their understanding at this time and it is hoped that physical meetings can be held again soon.

The October lecture was given by John Schofield on 'London's Waterfront 1666 to 1800: an introduction to a large project'. This was a comprehensive account of the post-Great Fire archaeology recorded at Billingsgate in 1982, with links to slavery. A wealth of structures and finds from the site, including the 14th-century Billingsgate Trumpet, were described as well as a wider view of the archaeology of both banks of the Thames, as far as Deptford. In November, Dr Martin Dearne, Fieldwork/Research Director, Enfield Archaeology Society, gave a lecture on 'The EAS and Elsyng Tudor Royal Palace'. The activities of the Society were summarised, particularly the long term excavations at, and research into the 15th- to 17th-century courtiers' and later royal palace of Elsyng, now in the grounds of Forty Hall in Enfield. Recent work has been carried out on one of the service wings, uncovering the history of this large but little known house. The December lecture was given by Helen Chittock and Les Capon, AOC Archaeology, entitled 'Where practice trenches meet Roman ditches: Roman and wartime archaeology at Royal Liberty School, Havering'. The excavations revealed evidence of the parklands and gardens of Hare Hall, built 1769–70, now occupied by the school, remains of the zig-zag shaped practice trench from its World War I use as a training camp for the Artists Rifles Regiment, World War II civilian shelters, and Roman linear features, adding to understanding of Roman occupation in this area. In January, Emma Tetlow, Skanska-Costain, gave a lecture on 'Hillingdon's Hidden History' describing excavations along the line of HS2, where a large Late Iron Age potin (tin-rich bronze) coin hoard was found. The hoard comprised about 300 coins dating from the 1st century BC and appeared to have been buried in an organic container such as a bag. They were apparently not buried near a settlement and may have been deposited in a sacred place, along a tribal boundary or concealed secretly. The March lecture was given by Peter Mills and Michael Hutchinson, Mills Whipp Projects, on 'The Civil War Defences of London: Rewriting History (and Archaeology)'. Their recent work on the archaeological and documentary evidence has led to a revision of defensive lines and forts, which were previously based on an 18th-century map. The form and function of the defences was also reassessed. In April, the lecture by Danny Harrison, MOLA, on 'The Icehouse at Park Crescent West' was unfortunately cancelled due to illness. The Joint Prehistoric and LAMAS lecture 'Hidden depths — revealing new insights into the archaeological remains from the London reaches of the River Thames' took place in May, given by Nichola Arthur. Recent research has been carried out on a large number of human skeletal remains, many of Late Bronze Age or Iron Age date, recovered from the river over the last two centuries. Previous

debates have focussed on whether their presence is due to ritual deposition practices or fluvial processes. New work, including radiocarbon dating, osteological analysis and stable isotope analysis, has revealed new insights into the assemblage and its deposition.

At the AGM in February, in a departure from our usual Presidential Address, Council was pleased to introduce Alex Werner, Museum of London, who gave a talk on the proposals for the Museum of London's move to the new site at West Smithfield, including a history of the buildings and plans for the new galleries.

**LAMAS Lates** (report by Jane Sidell)

The warmer summer months gave us the opportunity to start the Lates again with a walk in May led by Jane Sidell around the north-west elements of the London Wall. Jane took a small group around the surviving above ground sections of wall (and one section skulking in an underground car park!) pointing out interesting features and recounting the intricacies of their conservation.

In June Chris Constable led a walk through Roman Southwark giving members the opportunity to see Landmark Court, the site of the recent important mosaic finds (although these had already been lifted) and putting these new findings in the context of what we already know about this part of Roman Southwark. The highlight was a privileged trip up close to the statue of King Alfred, revealed by Chris at last year's Archaeology Conference, as containing a large chunk of a Roman statue!

If anyone has any good ideas about places to visit on future Late outings please do let Jane know.

**Newsletter, Website and Publicity** (report by Jane Wheeler and Karen Thomas)

Three issues of the Newsletter were published (in PDF and print formats) during 2022. Karen Thomas supporting Richard Gilpin in his last edition (no. 164), and continuing to support the new Honorary Newsletter Editor (Jane Wheeler) who took over in time for the May edition (no. 165), and for the September issue (no. 166). The majority of digital copies are slowly increasing as the PDF format becomes requested by members. Printed versions are still being published for postal distribution to members without an email (or known email) address.

The Society's continuing presence on social media has helped to attract new members and attendees to our lectures and conferences, including several from overseas.

We continue to upload lectures and talks from the online conferences (where it has been agreed with the speaker) onto our YouTube channel where they are proving quite popular.

**Membership** (report by Karen Thomas)

Membership numbers stayed fairly constant during the year but were markedly down on pre-pandemic levels so it was decided by Council to set up a Membership Working Party looking at recruitment of new and retention of existing members, including the range of benefits available. In September, Fiona Haughey expressed her wish to stand down from the role as continuing ill health was making it difficult for her to carry on. Council would like to thank Fiona for her work during a very difficult time and has began the search for a new Membership Secretary.

**Working Party on the Future of LAMAS** (report by John Schofield, Chair)

This Working Party was set up to look at what the Society should be doing differently going forward to reflect the current heritage situation. They have started work on an Equality, Diversity and Inclusion Policy and will be looking at the circumstances under which LAMAS might seek to express views in public on heritage issues in London.

**Research Fund** (report by Karen Thomas)

As we still had 2 ongoing projects which had suffered delays due to the covid restrictions, it was decided not to offer a new grant for 2021/22. It is hoped that a new grant for 2022/23 will be made available.

**Publications Committee** (report by John Schofield, Chair)

The Committee met three times during the year. Volume 71 of *Transactions* was published in November 2021. It has ix + 392 pages, so significantly larger than previous volumes, and contained ten articles and a reviews section; including the important excavation report on Syon Abbey by Robert Cowie. The project to make security copies of Peter Marsden's 35mm slide collection, funded by CoLAT, was completed.

We welcomed Jane Wheeler as the new editor of the society's newsletter. John Schofield is helping to organise the disposal of the former members' library, by a combination of offering antiquarian titles to a dealer for sale, donations of books and journals to other London-based libraries, and offering British archaeological journals to archaeological units for their own libraries. Work continues by the editorial team.

**Archaeology Committee** (report by Jon Cotton, Secretary)

The Committee met remotely via Zoom three times during the year, in January, May, and September, welcoming Sian Anthony of AOC Archaeology Group onto the Committee in May. Regular reports on fieldwork and other matters were received from MOLA, Pre-Construct Archaeology, AOC Archaeology Group, and from GLAAS.

The Committee responded to a request from the London Borough of Tower Hamlets for comment on the proposed new Chinese Embassy at Royal Mint Court, along with other bodies such as GLAAS and Historic Royal Palaces. Projects such as this underlined the importance of maintaining an independent archaeological voice within the capital.

Other issues that continue to concern the Committee include the mooted Government Levelling Up Bill; the abolition by the Corporation of London of its Assistant Director: Historic Environment post; and the future of the London Archaeological Archive.

A sub-group of the Committee has met regularly to plan for a major conference on Roman London, in conjunction with King's College London, and the *London Archaeologist* magazine.

The Committee organised the 58th Annual Archaeology Conference, which was held via Zoom in March 2022. Once again this was professionally facilitated by SyncSkills and featured a series of 'live' and recorded presentations.

The 2021 Ralph Merrifield Award was given jointly to the Museum of London and to Archaeological Solutions Ltd for delivering the *Secrets of the Havering Hoard* exhibition under lockdown conditions at the Museum in Docklands, following which the morning session contained presentations on the Alfred Statue in Trinity Square; the excavations at St Lawrence's Church, Brentford; the Roman cemetery at Great Suffolk Street; excavations at Park Street, Southwark; and the site at Landmark Court in Southwark Street.

The afternoon session was devoted to the archaeology of High Speed 2 and was addressed by John Halsted and Emma Hopla (HS2 Historic Environment overview); Iain Williamson (the Dews Farm area); Emma Tetlow (Iron Age potin hoard from west Ruislip); Guy Hunt (St Mary's, Stoke Mandeville) and Louise Fowler (St James's Gardens, Euston).

**Local History Committee** (report by John Price, Chair)

The Committee met on three occasions, October, February, and May. The members of the Committee were John Price (Chair), Richard Gilpin, Pat Gough, Oliver Harris, Mike Marriott, Alex Werner and Lorraine Woodleigh. Richard Gilpin resigned from the Committee in June 2022 due to ill health.

The Annual Local History Conference took place online via Zoom in November 2021 on the theme of 'London Overcomes: Resilience and Recovery in the History of the Capital'.

Papers presented were as follows: 'Lost angels of a ruin'd paradise' (Dr Peter Coles); 'Casualty Services and Civil Defence within London' (Nathan Hazlehurst); 'Shamefaced No More: Pauper Letter Writers, Resilience and the Workhouse Experience in Poplar and Bethnal Green, ca.1860–1890' (Dr Peter Jones & Professor Steven King); 'The Brentford Flood of 1841' (Val Bott); 'Who hid the Cheapside Hoard?' (Dr Rosemary Weinstein).

The keynote address was: 'Modernist Visions vs. Reality in Postwar Rebuilding' (Dr Catherine Flinn).

The winners of the Local History Publication awards, presented during the annual conference, were as follows:

LAMAS Publication Awards for 2020: newsletter winner, Chadwell Heath Historical Society; journal winner, Camden History Society; book winner, *How Hampstead Heath was Saved: a story of 'people power'* by Helen Lawrence, published by the Camden History Society.

LAMAS Publication Awards for 2021: newsletter winner, Pinner Local History Society; journal winner, Richmond Local History Society; book winner, *Medieval Morden: The Manorial Economy 1280–1500* by Peter Hopkins, published by the Merton Historical Society.

**Historic Buildings and Conservation Committee** (report by Robert Briggs, HBCC representative to LAMAS Council )

The most significant and positive development over the 12 months was the return to monthly in-person meetings at 75 Cowcross Street, recommencing in March 2022. Not only did this give meetings a more convivial atmosphere but also an environment that permitted greater engagement with and discussion of the cases that give cause for concern.

In recognition of the resumption of in-person meetings, Dr William Filmer-Sankey, Director of Alan Baxter Associates (operator of the Cowcross Street venue), joined us prior to our April 2022 meeting to discuss the work of the HBCC and how this could be brought to the attention of those who work and use the building. This led to the submission of a piece about HBCC for the in-house e-newsletter.

In July 2022, we welcomed Neil Redfern, Executive Director of the Council for British Archaeology, to speak to the HBCC about his vision for the roles that organisations like LAMAS can play in securing the best outcomes through the planning system for heritage assets at risk from inappropriate development.

A total of 44 responses were written and sent by HBCC in the 12 months, all logged in a spreadsheet implemented to improve tracking of our responses and their outcomes. As in every year, the proposals in question ranged from very small to very large. One case that stood out was the proposed conversion of the Grade I-listed Custom House in the City of London to a hotel, which was refused consent in October 2021, leading to a high-profile planning inquiry in January–February 2022 and eventually a decision at the end of July 2022 that dismissed the appeal and upheld the original decision (this was documented in greater detail in a LAMAS Newsletter piece).

The year brought some disappointments but also a considerable number of successes for the HBCC in the cases it took an interest in across Greater London. LAMAS HBCC again perceived its impact often to be greatest in places which lack Conservation Area Advisory Committees or local amenity societies active in reviewing planning applications. It remains on the look-out for new members, especially in the boroughs which currently lack a person or people who review applications every month as part of 'their beat', using knowledge of and/or interest in the historic buildings and archaeology of the locality.

BY DIRECTION OF COUNCIL

Harvey Sheldon
*Chairman of Council*

Karen Thomas
*Honorary Secretary*

## LONDON AND MIDDLESEX ARCHAEOLOGICAL SOCIETY
## STATEMENT OF FINANCIAL ACTIVITIES FOR THE YEAR ENDED 30TH SEPTEMBER 2022

| *2021* | **Incoming Resources** | **2022** |
|---|---|---|
| **£** | | **£** |
| *7,505* | Subscriptions | 7,734 |
| - | Gift Aid | 766 |
| *60* | Sale of Publications | 59 |
| *185* | Royalties and Licensing | 26 |
| *14,065* | Grants for LAMAS *Transactions* | 18,500 |
| *(1,898)* | Grant for *Transactions* received twice | - |
| *2,730* | Archaeology Conference | 1,395 |
| - | Local History Conference | 560 |
| *688* | Lecture Series Income | 560 |
| *8* | Interest | 154 |
| *160* | Donations | 5,005 |
| - | Sale of LAMAS library books | 1,260 |
| ***23,503*** | **Total Incoming Resources** | **36,019** |
| ***3,185*** | **Net (Incoming)/Outgoing Resources** | **(5,483)** |
| ***£26,688*** | | **£30,536** |

| *2021* | **Resources Expended** | **2022** |
|---|---|---|
| **£** | | **£** |
| | Publications | |
| *17,598* | LAMAS *Transactions* | 24,714 |
| *3,939* | Digitising *Transactions* | - |
| *1,570* | Newsletter | 1,026 |
| *1,136* | Archaeology Conference | 1,424 |
| - | Local History Conference | 1,337 |
| - | Publication Awards | 550 |
| *364* | Lecture Series Expense | 288 |
| *301* | Postage, Printing and Stationery | 247 |
| *158* | Bank Charges | 167 |
| *100* | Ralph Merrifield Award | - |
| *754* | Computing | 773 |
| *294* | Miscellaneous Costs | 10 |
| *474* | Gift Aid Debtor write off | - |
| ***£26,688*** | **Total Resources Expended** | **£30,536** |

## BALANCE SHEET AS AT 30 SEPTEMBER 2022

| *2021* | **ASSETS** | **2022** | *2021* | **FUNDS OF THE SOCIETY** | **2022** |
|---|---|---|---|---|---|
| **£** | | **£** | **£** | | **£** |
| *5,365* | Bank and Cash Balances | 13,147 | | **Restricted Funds** | |
| *85,117* | Savings Accounts | 88,215 | ***7,105*** | Publications Fund | **7,105** |
| *4,930* | Payments in Advance | - | | | |
| *4,397* | Debtors | - | | **Unrestricted Funds** | |
| ***99,809*** | **Total Assets** | **101,362** | *63,799* | Funds brought forward | 60,614 |
| | | | *(3,185)* | Net Incoming/(Outgoing) Resources for the Year | 5,483 |
| | **Less: LIABILITIES** | | ***60,614*** | **Total Unrestricted Funds** | **66,097** |
| *7,400* | Creditors | 3,470 | | | |
| *3,964* | Future Publications | 3,964 | | | |
| *20,726* | Research Grants | 20,726 | | | |
| ***32,090*** | **Total Liabilities** | **28,160** | | | |
| ***£67,719*** | **Total Net Assets** | **£73,202** | ***£67,719*** | **Total Funds** | **£73,202** |

**Notes to the Accounts**

1 The *Statement of Financial Activities* and *Balance Sheet* have been prepared using the 'natural classification' as permitted by the Charities Act 2011.

2 The treatment of the costs of publishing *Transactions* has changed. Costs of £4,929 incurred and paid in the year but which relate to the publication of next year's edition have been charged in this year's accounts instead of being carried forward to next year.

3 Research Grants represent amounts set aside to promote non-corporate members' research interests, and at 30th September 2022 grants of £8,970 had been allocated but not yet paid pending completion of outstanding projects.

4 Use of the Publications Fund requires the sanction of the donor, Historic England.

(Signed) H L Sheldon Chairman
R G Densem Hon. Treasurer

19th January 2023

**Independent Examiner's Report to the Trustees of the London and Middlesex Archaeological Society (Registered Charity No. 267552)**

I report to the Trustees on my examination of the accounts of the London and Middlesex Archaeological Society ("the Trust") for the year ended 30 September 2022 set out on pages x and xi.

As the charity's Trustees, you are responsible for the preparation of the accounts in accordance with the requirements of the Charities Act 2011 ("the Act").

I report in respect of my examination of the Trust's accounts carried out under section 145 of the Act and in carrying out my examination, I have followed all the applicable Directions given by the Charity Commission under section 145(5)(b) of the Act.

I have completed my examination. I confirm that no material matters have come to my attention in connection with the examination which gives me cause to believe that in, any material respect:

- the accounting records were not kept in accordance with section 130 of the Charities Act; or
- the accounts did not accord with the accounting records; or
- the accounts did not comply with the applicable requirements concerning the form and content of accounts set out in the Charities (Accounts and Reports) Regulations 2008 other than any requirement that the accounts give a 'true and fair' view which is not a matter considered as part of an independent examination.

I have no concerns and have come across no other matters in connection with the examination to which attention should be drawn in this report in order to enable a proper understanding of the accounts to be reached.



Signed:
Edward Lee-Smith

Date:
10th February 2023

Edward Lee-Smith
19 Lawrie Park Crescent
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# EARLY NEOLITHIC PITS AT PRINCIPAL PLACE, SHOREDITCH, LONDON BOROUGH OF HACKNEY

*Jonathan Cotton, Andy Daykin, Julie Dunne and Patrick Quinn*

*With contributions by Alex Bayliss, Emmanuelle Casanova, Richard P Evershed, Tim Knowles, Alan Pipe and Karen Stewart*

## SUMMARY

*A group of four pits excavated in the upper Walbrook valley at Principal Place, Shoreditch, by MOLA in 2015 produced the largest assemblage of Early Neolithic Bowl pottery recovered to date from the City of London and its immediate surrounds. The Neolithic pits had been preserved within part of the northern extramural Roman cemetery of Londinium and conjoining sherds of Bowl pottery were also recovered from the fill of an isolated late Roman cremation. A range of analyses showed that the vessels – comprising essentially Plain Bowl with some Decorated Bowl, the latter incorporating Peterborough Ware traits – were probably locally made and had been used to process dairy products and to stew beef and mutton (though not pork). Radiocarbon dating of the lipids absorbed within the vessel walls – employing a novel technique developed at the University of Bristol – suggest that the pottery was being used in the mid-4th millennium cal BC. The pits also contained small assemblages of struck flint, fauna (some burnt) and archaeobotanical remains (some intrusive) and may have been filled using material drawn from a long-vanished 'pre-pit' source, possibly a midden; they presumably represent episodic activity on the part of semi-sedentary Neolithic communities.*

## INTRODUCTION

An assemblage of Early Neolithic pottery and struck flints was recovered from four small pits excavated by MOLA within a mixed residential/commercial redevelopment at Principal Place, Shoreditch, London Borough of Hackney (Grid Reference (NGR) centred 533377 182130) (Fig 1). The site lies in the

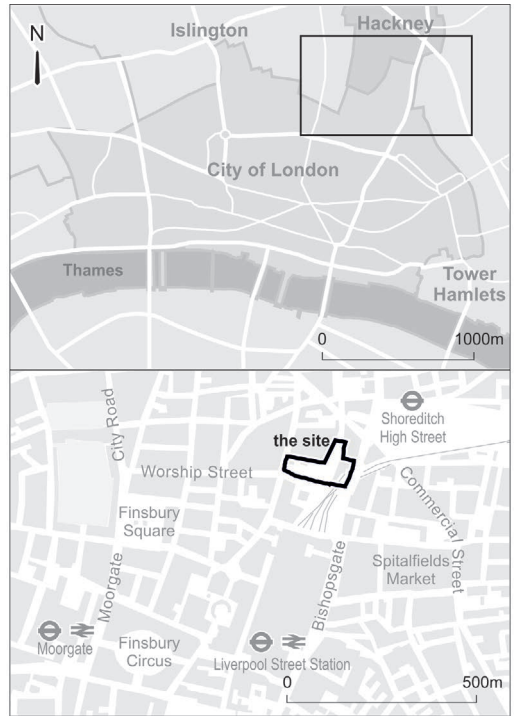


*Fig 1. Map showing the location of the Principal Place site at the north-east edge of the modern City of London (scale upper 1:50,000, lower 1:20,000)*

upper valley of the Walbrook stream and within an area of the northern extramural cemetery of Roman London. Modern ground level adjacent to the site is at *c.*14–14.5m OD (above Ordnance Datum).

Other elements of the site sequence (to be published separately), comprise mixed-rite Roman burials, a late Roman coin hoard (Bowsher 2021), exceptionally well-preserved late 17th-century buildings and yards, and part of the early 19th-century Curtain Road gasworks (Daykin & Hill 2017). The full archive is currently stored with MOLA at Eagle Wharf Road under the site code PPL11.

Within the text context numbers are denoted by square brackets (*eg* [1]) and environmental bulk sample numbers by curly ones (*eg* {2}). The illustrated sherds of pottery, flints and accessioned finds are denoted by angled brackets (*eg* <F3>, <P4>, <1807>). Samples for scientific analysis are denoted by the prefix PPL0. This article is supplemented by additional data available from the LAMAS website as a PDF containing Tables 9–12 (Appendix 3).

Four Neolithic pits were located *c.*15m to the east of the projected course of one arm of the Walbrook stream at the north-eastern end of the site. The pits were initially assumed to be Roman cremation burials and, in line with current MOLA practice, were fully sampled for the recovery of calcined bone and accompanying artefactual and environmental data. Their true significance only became apparent during the post-excavation programme when they were found to contain exclusively sherds of Early Neolithic pottery and pieces of struck flint. In addition, the fill of an isolated Roman cremation burial 12m to the west, which was accompanied by Roman funerary vessels and a 3rd-century AD coin, produced more sherds of Early Neolithic pottery, some of which conjoined with those recovered from one of the four pits to the east.

The unusual nature of the discovery, which comprises the largest assemblage of Neolithic pottery recovered from the City of London and its environs to date, led to a request from Historic England for MOLA to provide independent scientific dates to confirm the pottery attribution, and to undertake petrographic, geochemical, and absorbed residue analyses. The petrographic and geochemical analyses were carried out at University College London by Patrick Quinn and the absorbed residue analyses were conducted at the University of Bristol by a team comprising Julie Dunne, Emmanuelle Casanova, Tim Knowles and Richard P Evershed. The lipids recovered during the latter analyses also furnished a series of absolute dates using compound-specific radiocarbon dating techniques developed at Bristol; these are modelled here by Alex Bayliss.

This article describes the pits and their contents: pottery, struck flint and environmental material – the latter comprising burnt and unburnt bone, mollusca and charred archaeobotanical remains. The ceramic assemblage forms the focus of interest and separate sections examine fabric, form, and cultural affinity; the organic residues absorbed within and burnt onto the vessel walls; and the compound specific radiocarbon dating of these residues. A final section places the pits within their local and regional lower Thames ('Thames Gateway') context.

## THE EARLY NEOLITHIC PITS

*Andy Daykin (MOLA)*

Four circular or sub-circular features, [5371], [5375], [5377] and [5422] of indeterminate function formed a compact group cut into one of four surviving 'islands' of a truncated, natural brickearth subsoil horizon on the eastern side of a channel forming part of the Walbrook stream (Fig 2). The Walbrook was a relatively short stream with a small catchment (*eg* Ranieri & Telfer 2017, 44; Taylor 2020), which flowed from north to south. Southwards it ran between Cornhill and Ludgate Hill to join the present course of the Thames at Dowgate some 1600m from the site.

All four pits had vertical sides and flat bases; three of them were between 0.60m and 0.90m in diameter (Table 1). The fourth pit [5375] was slightly larger and more irregular in shape but it may have been over-dug during excavation. The bases of the four pits lay at 10.75–10.89m OD, whilst the highest level to which the sides of any

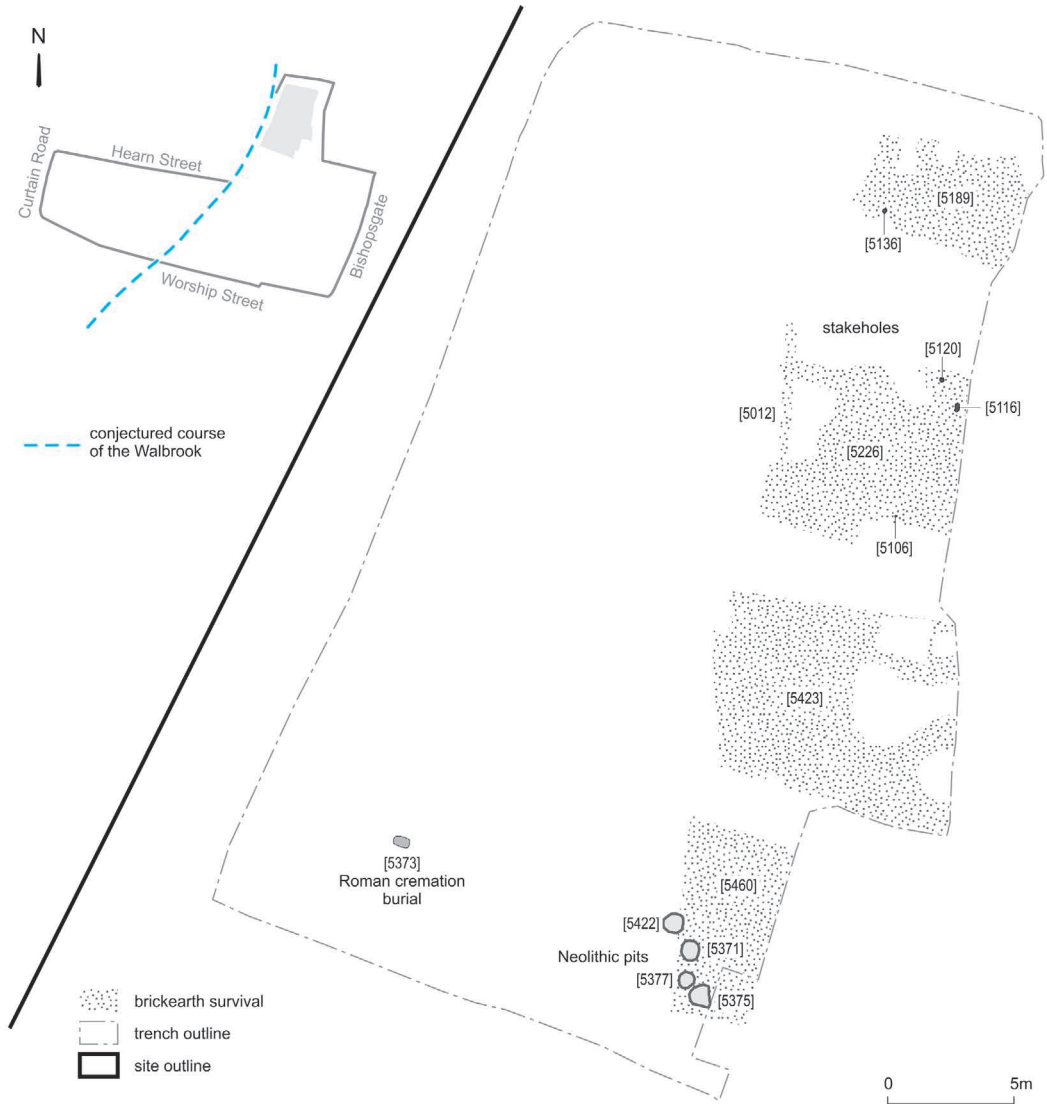


*Fig 2. (left) Plan of the site shown in relation to the Walbrook stream (conjectured); (right) Early Neolithic features in the north-east of the site (scale 1:300)*

of the four survived was 11.15m OD (in the case of [5375]). Their extreme shallowness (50–380mm) suggests that they had been truncated in antiquity, probably during the use of the Roman cemetery (see below), which could account for the presence of the displaced Early Neolithic pottery within the fill of a 3rd-century AD cremation burial ([5373]) 12m to the west (Fig 2). All four pits had undifferentiated fills (respectively [5370], [5374], [5376], [5421]). Fills [5370] and [5376] were grey, slightly sticky clayey silts, whilst [5374] and [5421] were also clayey silt but looser and browner. All incorporated pottery, struck flints, small scraps of unidentifiable burnt bone, pebbles, charred plant remains and wood charcoal. Grains of barley (*Hordeum* sp) and free-threshing wheat (*Triticum aestivum*) from fill [5421] of pit [5422] all returned dates that fall within the late 13th century AD (Reimer *et al* 2020; Stuiver & Reimer 1986; see Table

8). This date has obvious implications for the integrity of the associated charcoal and burnt bone assemblages. Therefore, the environmental data is only briefly considered here (full details are held in the site archive).

The natural brickearth ([5460]) into which the Neolithic pits were dug elsewhere survived to a maximum of 11.32m OD but further north brickearth [5423] was extant to 11.70m OD (which was the highest point of natural brickearth survival on the site). The presence of the adjacent Walbrook channel, and the likelihood of a natural slope towards it, means that precisely determining the degree to which the brickearth land surface has been truncated since the Neolithic is difficult to ascertain. However, it is likely that up to 550mm depth could have been removed, implying that these features could originally have been as much as 0.90m–1.0m in depth.

In addition to the lithic material recovered from the four pits, a handful of other pieces were recovered from a series of otherwise undated stakeholes ([5106], [5116], [5120] and [5136]) and brickearth subsoil deposit [5226] located a few metres to the north (Fig 2). No struck flints were present within the Roman cremation [5373].

## THE PIT CONTENTS

### *Early Neolithic Pottery*

*Jonathan Cotton (MOLA) and Patrick Quinn (Principal Research Fellow, Institute of Archaeology, University College, London)*

A total of 298 sherds of Early Neolithic pottery weighing just over 6.1kg were recovered from the four Neolithic pits (Table 1). A further 50 sherds weighing 325g were recovered from late Roman cremation burial [5373]. The combined total assemblage of 348 sherds represents an estimated minimum number of 28 vessels. The majority comprise medium to large round-based bowls with rim diameters *c.*180–280mm, along with single sherds from three smaller open bowls/cups with rim diameters below *c.*120–130mm.

Much of the assemblage comprises featureless body sherds, which often give little clue as to their position or orientation within any given vessel profile. However, a refitting exercise identified direct same-vessel cross-joins between two of the Neolithic pits, and between one of the Neolithic pits and the Roman cremation burial. Typologically the assemblage comprises Plain Bowl and Decorated Bowl pottery, some of which incorporates early Peterborough Ware traits.

*Table 1. Early Neolithic pottery from all features, by sherd count (SC), estimated number of vessels (ENV) and weight (Wt g)*

| Pit/cut no. | Fill no. | Feature type | Size and depth (D) m) | Shape | SC | ENV | Wt (g) | Average Wt (g) | Cross joins with cut/fill no. | Illustrated <P> no. |
|---|---|---|---|---|---|---|---|---|---|---|
| 5371 | 5370 | Early Neolithic pit | 0.70 x 0.70 x 0.05 D | circular | 45 | 4 | 1613 | 35.8 | 5377/5376 | <P1>–<P4> |
| 5375 | 5374 | Early Neolithic pit | 1.04 x 0.86 x 0.38 D | irregular | 76 | 6 | 1081 | 14.2 | 5373/5372 | <P5>–<P8> |
| 5377 | 5376 | Early Neolithic pit | 0.60 x 0.60 x 0.22 D | circular | 31 | 5 | 880 | 28.4 | 5371/5370 | <P1>, <P9>–<P11> |
| 5422 | 5421 | Early Neolithic pit | 0.90 x 0.90 x 0.15 D | circular | 146 | 10 | 2567 | 17.6 | | <P12>–<P17> |
| 5373 | 5372 | Roman cremation | 0.66 x 0.40 x 0.10 D | rectangular | 50 | 3 | 325 | 6.5 | 5375/5374 | <P5> |
| **Total** | | | | | **348** | **28** | **6466** | | | |

*Fabric*

A restricted range of four fabric types (A–D) was identifiable in hand specimens, based principally on the size and distribution of angular crushed burnt flint inclusions added to the clay matrices. The individual clasts were generally poorly sorted and up to 8mm in size, though the latter were broadly proportionate to wall thickness. The four macroscopic fabrics were characterised as follows:

FLIN A: Common/abundant poorly-sorted crushed burnt flint >8mm in size, walls 10mm thick, rough surfaces.

FLIN B: Sparse/common crushed burnt flint, some >8mm in size, walls 8–10mm thick.

FLIN C: Sparse crushed burnt flint >6/7mm in size, walls 5–6mm thick.

FLIN D: Sparse, poorly-sorted crushed burnt flint >7mm in size, walls 5–6mm thick, brittle fabric.

Thin sectioning and geochemical analysis of 32 sherds also isolated four sub-fabric types (1–4), although there was little correspondence with the fabrics identified macroscopically beyond the presence of the crushed burnt flint (Table 2).

The 32 thin-sectioned sherds were classified under a polarising light microscope according to the nature of their inclusions, clay matrix and voids (Quinn 2013, 73–102). The resulting fabric classes were characterised petrographically in terms of their constituent raw materials and the technology of their manufacture. They were also analysed geochemically via inductively coupled plasma atomic emission spectroscopy (ICP-AES) and inductively coupled plasma mass spectroscopy (ICP-MS), recording a total of 32 major and minor elements and monitoring accuracy with international certified reference materials (see PDF Supplement: Table 9). The multivariate geochemical data were analysed by principal components analysis (PCA) and displayed as scatterplots to examine the geochemical relationships between the various samples analysed. Comparisons were made between the independent macroscopic, petrographic, and geochemical classifications of the pottery sherds.

Under microscopic examination all the sherds are strongly related to one another in thin section due to the presence of angular flint temper added to a non-calcareous, quartz-rich silty or sandy base clay. Despite this homogeneity, the assemblage contained several distinct sub-fabrics, which can be defined by the grain-size characteristics of the quartzose inclusions in the base clay to which flint temper was added (Fig 3). The conspicuous flint inclusions are present within all prepared thin sections although are more abundant in some than others. Most have a fine cryptocrystalline microstructure, but are less commonly characterised by thin, sinuous ribbon-like features and possible relic microfossils, with both types occurring in single samples. Some flint inclusions contain iron staining within them or around their margins. Chalcedonic quartz occurs, but also infrequently, as does banding. It is likely that the flint material is temper given the large size of many of the inclusions relative to the other grains. The angularity and poor sorting of the material suggests that it was crushed before its addition.

In 12 of the 32 samples flint temper was added to a non-calcareous, silty, micaceous base clay containing abundant angular to sub-rounded, well-sorted, silt-sized inclusions of quartz, subordinate but significant muscovite mica and rarer chert, opaques, biotite and feldspar (sub-fabric 1) (Fig 3a). Distinct heterogeneity is visible in several of the samples, which takes the form of streaking of darker, inclusion-poor, iron-rich red clay. Such patterning has been reported in clay pastes known to have been produced by the deliberate mixing of two or more compositionally different clay sources (*eg* Quinn 2013, 170).

Sixteen of the prepared thin sections are similar to those described above, but also contain rounded sand-sized quartzose inclusions in varying proportions and have a less abundant silt fraction than the other 16 samples. These have been subdivided into sub-fabrics 2 and 3 (Figs 3b, 3c) based on the abundance of the rounded sand inclusions, which are composed of quartz, polycrystalline quartz, quartzite and, less commonly, fine sandstone and rounded flint, which can reach over a millimetre in size. The sand is likely to have been naturally

*Table 2. Illustrated and/ or analysed ceramics from Principal Place*

| Illustrated <P> no. | Context no. - | Accession no. <-> | Vessel type | Macroscopic fabric | Microscopic sub-fabric | Condition (A–D) | Sample no. | Lipid attribution (PDF Supplement: Table 10) | $14^C$ dated |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 5370 | 1807 | decorated bowl | A | 3 | B | PPL001, PPL002 | ruminant adipose product; dairy product | |
| 1 | 5376 | 1807 | decorated bowl | A | 3 | B | PPL007 | dairy product | |
| 2 | 5370 | 1808 | plain bowl | B | 2 | C/D | PPL003 | dairy product | |
| 3 | 5370 | 1809 | plain bowl | B | 3 | B | PPL005 | ruminant adipose product | Y |
| 4 | 5370 | 1810 | decorated bowl | C | 2 | B | PPL006 | dairy product | |
| 5 | 5374 | 1817 | plain bowl | D | 1 | A/B | PPL014 | dairy product | |
| 5 | 5372 | 1817 | plain bowl | D | 1 | A/B | PPL032 | dairy product | |
| 6 | 5374 | 1814 | plain bowl | A | 3 | C | PPL012 | ruminant adipose product | Y |
| 7 | 5374 | 1815 | plain bowl/ cup | A | 1 | C | PPL013 | - | |
| 8 | 5374 | 1816 | plain bowl | C | 1 | B | - | - | |
| 9 | 5376 | 1811 | decorated bowl | A | 1 | B | PPL008 | ruminant adipose product | |
| 10 | 5376 | 1812 | plain bowl/ cup | B | 4 | B | PPL009 | dairy product | |
| 11 | 5376 | 1813 | plain bowl | B | 1 | B | PPL010 | non-ruminant/ruminant adipose product | Y |
| 12 | 5421 | 1818 | plain bowl | D | 2 | B | PPL019; PPL020 | dairy product; dairy product | Y PPL020 |
| 13 | 5421 | 1819 | plain cup | A/B | 1 | B | PPL021 | ruminant adipose product | Y |
| 14 | 5421 | 1820 | plain bowl | A | 2 | B/C | PPL022 | dairy product | |
| 15 | 5421 | 1821 | plain bowl | D | 4 | C | PPL023 | ruminant adipose product | |
| 16 | 5421 | 1822 | plain bowl | A | 2 | B | PPL024 | dairy product | |
| 17 | 5421 | 1823 | plain bowl | A | 3 | B | PPL025 | - | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| - | 5370 | 1837 | plain bowl | B | 3 | B | PPL004 | dairy product | |
| - | 5374 | 1845 | plain bowl | A | 3 | B | PPL015 | ruminant adipose product | Y |
| - | 5374 | 1846 | plain bowl | A | 2 | B | PPL016 | dairy product | |
| - | 5374 | 1847 | plain bowl | A | 3 | B | PPL017 | ruminant adipose product | |
| - | 5374 | 1848 | plain bowl | A | 2 | B/C | PPL018 | dairy product | |
| - | 5376 | 1842 | plain bowl | A | 4 | B | PPL011 | dairy product | |
| - | 5421 | 1852 | plain bowl | A | 1 | B | PPL026 | dairy product | |
| - | 5421 | 1853 | plain bowl | A/B | 1 | B | PPL027 | ruminant adipose product | |
| - | 5421 | 1854 | plain bowl | A | 1 | B | PPL028 | dairy product | |
| - | 5421 | 1855 | plain bowl | A | 1 | B | PPL029 | ruminant adipose product | |
| - | 5421 | 1856 | plain bowl | A | 1 | B | PPL030 | - | |
| - | 5421 | 1857 | plain bowl | A | 1 | C/D | PPL031 | dairy product | |

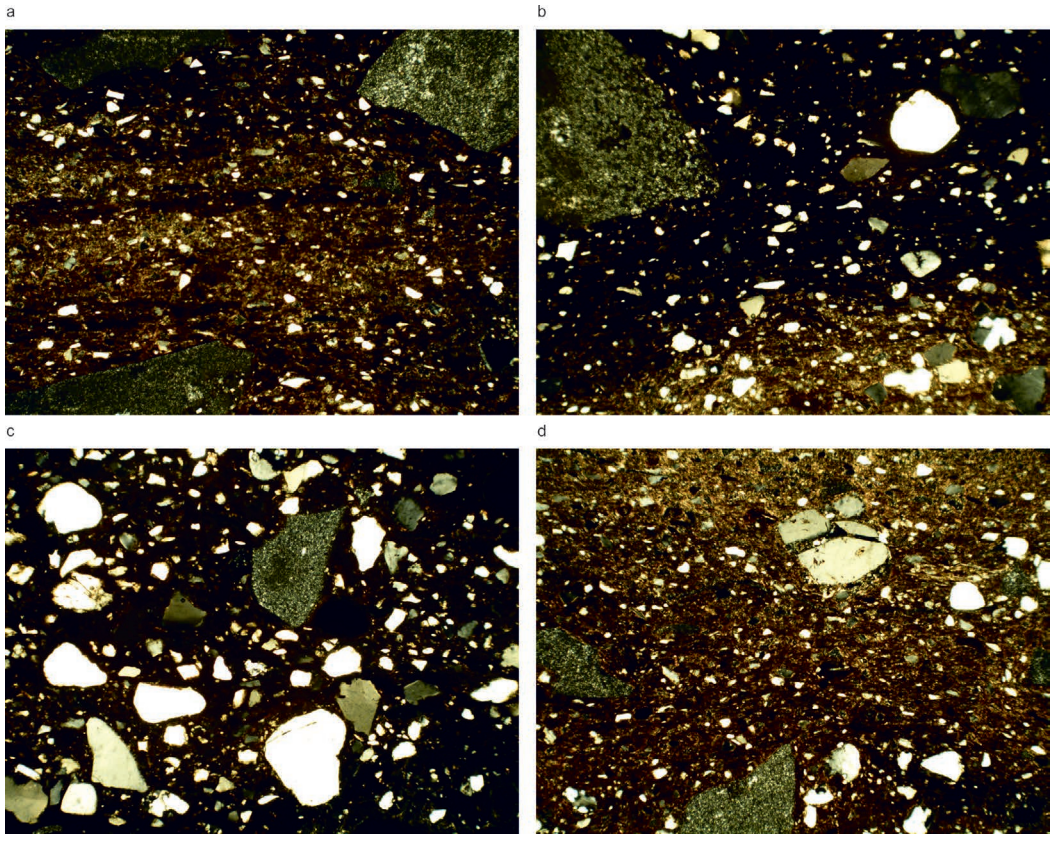


*Fig 3. Thin section photomicrographs representative of Early Neolithic ceramics from Principal Place illustrating the four petrographic fabrics detected in this study: a. sub-fabric 1, sample PPL027; b. sub-fabric 2, sample PPL002; c. sub-fabric 3, sample PPL012; d. sub-fabric 4, sample PPL009 (all images taken under crossed polars; image width = 2.9mm)*

occurring in a sandy clay source, although there is possible evidence for the addition of this material as temper in the form of some clay-rich areas without sand in one sample, plus the relationship with sub-fabric 1. Occasional voids with carbonised plant matter are also present but seem to be naturally occurring rather than a result of adding organic temper.

Three sherds could not be placed within sub-fabrics 1, 2 or 3 on account of having fewer silt-sized quartz and mica inclusions than sub-fabric 1 and less sand than sub-fabrics 2 and 3, but do contain small amounts of quartz sand (Fig 3d). This material seems to be less rounded overall than the examples in sub-fabrics 2 and 3 and is thus designated sub-fabric 4.

Several samples exhibit visible post-depositional alteration in thin section in the form of phosphate and calcareous material in voids. Firing was likely to be <850°C on account of the optical activity visible in the clay matrix in crossed polars under the microscope (Quinn 2013, 190–1). The firing atmosphere was generally oxidising, although variable and sometimes oxygen poor to reducing. There does not appear to be any correspondence between fabric and vessel form to suggest that specific raw materials or recipes were preferentially employed.

The elements Ca, Co, Mg, Na and P were left out of the geochemical dataset due to poor accuracy and the alteration mentioned above. Statistical analysis of the multivariate dataset of 32 samples and 24 retained elements revealed that principal components 1 and 2 explained 80% of its

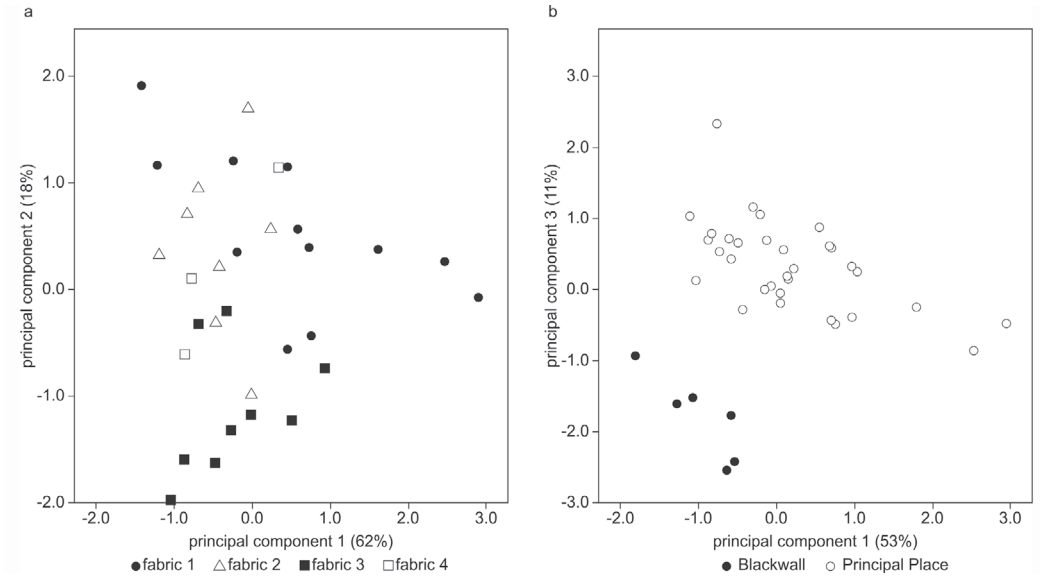


*Fig 4. Statistical classification of geochemical data collected on Early Neolithic ceramics from Principal Place in this study: a. principal component scatterplot of the 32 sampled Principal Place sherds differentiated according to their petrographic fabric assignment; b. principal component scatterplot of the 32 Principal Place sherds and six Early Neolithic flint-tempered sherds from Blackwall analysed by Vince (2004) indicating their compositional relationship*

total variance. This high percentage means that by plotting the two components against one another it is possible to visualise in two dimensions the geochemical patterning within the assemblage (Fig 4a). The samples group close to each other in a general cloud, indicating that they have a related elemental composition. Labelling the samples in the plot according to the context/pit from which they were recovered at the site does not indicate any correspondence, nor does their shape and decorative characteristics or their macroscopic fabric assignment. However, by highlighting the petrographic sub-fabrics to which the sherds were assigned some correspondence between the thin section petrography and geochemical analysis is revealed (Fig 4a). Although the element Si was not measured, it is likely that the proportion of silica-rich silt and sand inclusions and the amount of flint may have a strong effect on the relative abundance of several other elements and thus the classification via PCA. To counteract this dilution, the values for all samples were normalised to 100%, then subjected once more to PCA. However, a plot of the first two principal components did not reveal any notable groupings.

*Form*

The fragmented nature of much of the material means that rim orientation is often difficult to ascertain and for the most part overall vessel form cannot be reconstructed below the upper body/shoulder area with any degree of certainty either. As noted above, the assemblage comprises sherds belonging to a range of medium to large bowls and single sherds from three small open bowls/cups.

Rim morphology encompasses plain, rolled and heavy types, as follows (Figs 5–7): plain (<P 13>, <P 14>, <P 16>); plain, everted (<P 2>, <P 4>, <P 12>); plain, pointed (<P 7>, <P 10>); rolled (<P 11>, <P 15>); heavy, externally thickened (<P 3>, <P 6>); and heavy, T-shaped (<P 9>). Shoulders are generally slack or rounded, and several vessels (*eg* <P 1>, <P 14>) appear to be virtually straight-sided. Three vessels (<P 4>, <P 5>, <P 12>) have rather more pronounced

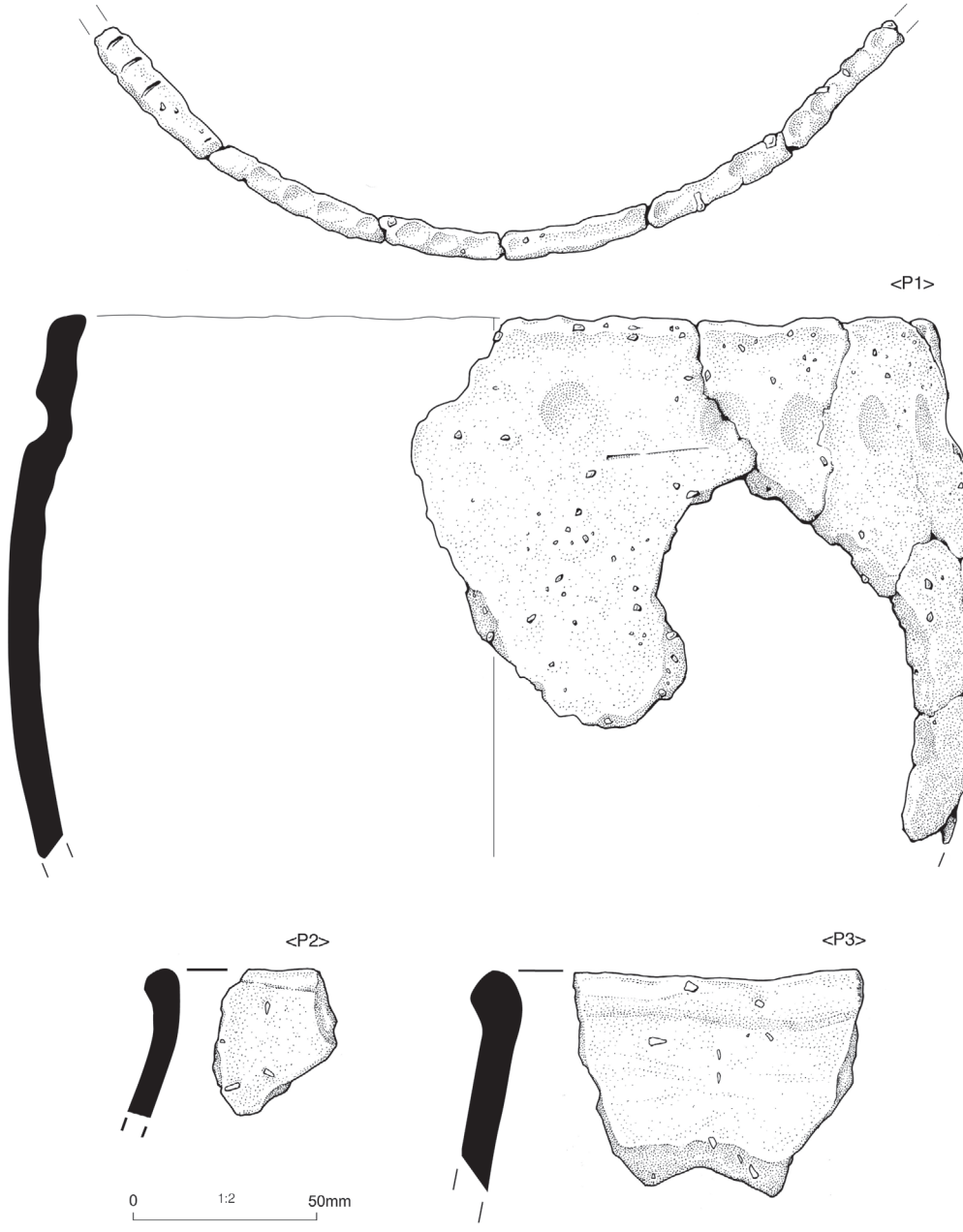


*Fig 5. Early Neolithic pottery <P1>–<P3> from Principal Place (catalogued in Appendix 1) (scale 1:2)*

high shoulders, two of which (<P 5>, <P 12>) are slightly accentuated. On one of these (<P 5>) the shoulder angle has been reinforced with a tapering unperforated horizontal lug. A further vessel (<P 17>) has an abrupt ledge shoulder immediately below the rim. In addition, some thicker-walled sherds are markedly curved and presumably represent elements of rounded bases. None of these could be convincingly linked with any of the upper body profiles, however.

No complete vessel profiles could be reconstructed, although three vessels, <P 1>, <P 5>, <P 12> (Figs 5–7) are represented by

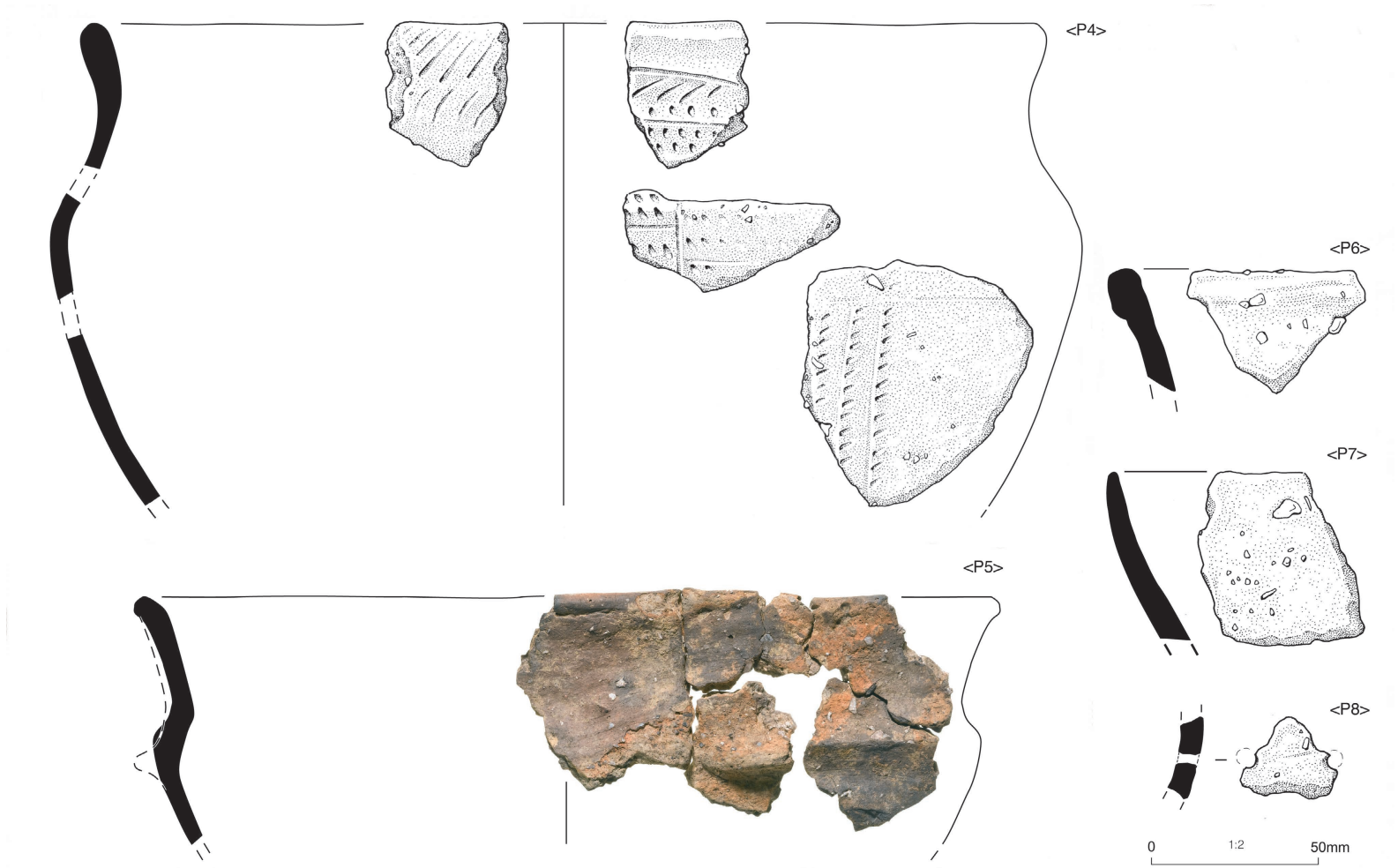


*Fig 6. Early Neolithic pottery <P4>–<P8> from Principal Place (catalogued in Appendix 1) (scale 1:2)*

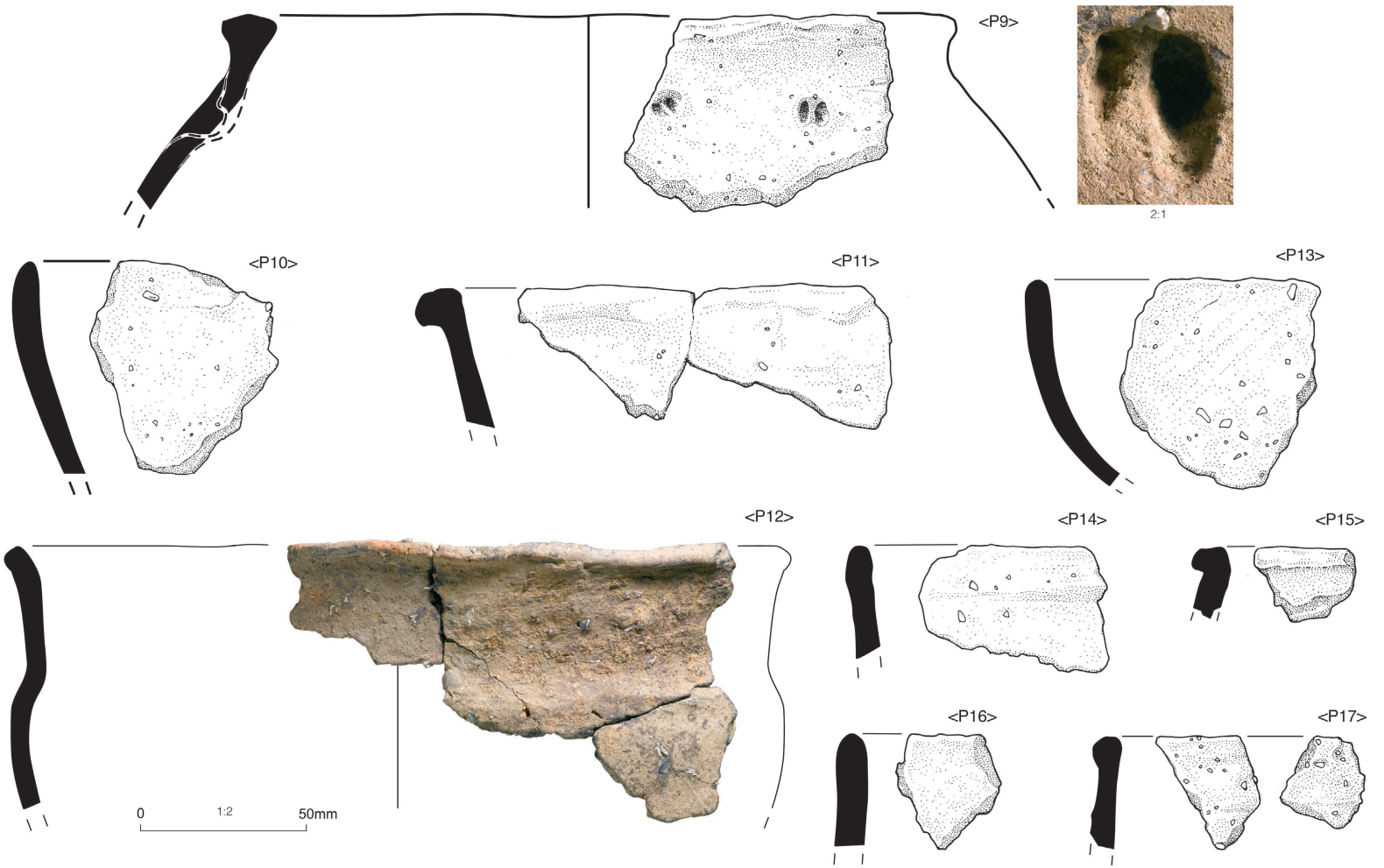


*Fig 7. Early Neolithic pottery <P9>–<P17> from Principal Place (catalogued in Appendix 1) (scale 1:2; detail <P9> 2:1)*

multiple conjoining sherds. Of these <P 1> comprises a deep bag-shaped vessel with an upright finger-pressed or 'dimpled' rim and a horizontal line of fingertip impressions just below. It is made up of 61 sherds from adjacent pits [5371] and [5377], many conjoining, and comprises 17.5% of the overall ceramic assemblage by sherd count and nearly one third by weight. Vessels <P 5> and <P 12> comprise open/neutral vessels with tall necks and light, slightly beaded rims. The shoulder of <P 5> is also accentuated by an elongated unperforated lug and conjoining sherds of this vessel were recovered from pit [5375] and Roman cremation [5373]. A further partial vessel profile could be plausibly reconstructed from five distinctive but non-conjoining sherds of a high-shouldered S-profile bowl <P 4> with an everted rim and tooled and incised stab-and-drag decoration (three sherds are illustrated in Fig 6).

Alongside the medium to large bowls, single sherds of three small bowls/cups <P 7> <P 10>, and <P 13> were recovered from separate pits (Figs 6, 7). All three are open and hemispherical in form with simple plain/pointed rims.

*Surface Treatment and Decoration*

Where it survives, surface treatment encompasses external smoothing and interior wiping. Most care seems to have been taken over the surface finishes of decorated bowl <P 4> and the otherwise plain lugged bowl <P 5> (Fig 6). There was no evidence for the employment of ripple or fluted surface burnishing.

Seventeen sherds (4.8% of the total assemblage) representing four vessels (14.3% of the ENV) bear traces of incised and impressed surface decoration. This comprises finger-pressing on top of the rim and equidistantly spaced fingertip impressions below the rim on <P 1> (Fig 5); linear tooling and incised stab-and-drag motifs on <P 4> (Fig 6) and on a small sherd from Roman cremation [5373] (not illustrated); and the deep, widely spaced bifurcated impressions on <P 9> (Fig 7). Further decorative features comprise a horizontal lug on <P 5> and perhaps the pre-firing perforations at the base of the neck on <P 8> (Fig 6).

*Condition*

Surface condition is variable: most sherds appear to have suffered some degree of wear and tear, including the loss of surfaces. A four-tier system of condition appraisal was applied, as at the Eton Rowing Course (Barclay *et al* 2013, 127, fig 5.24): good (unabraded), average (somewhat abraded), average to poor (abraded) and poor (very abraded). On this basis the bulk of the assemblage was found to be in average, that is somewhat abraded, condition with only one group of sherds belonging to lugged vessel <P 5> (Fig 6) scored as good unabraded.

Nearly a quarter of the sherds in pit [5422] (36 out of 146: 24.6%) were over-fired or re-fired and in an abraded to very abraded condition. Many of these are curved and thick-walled and presumably represent rounded basal fragments. Two other sherds in the Roman cremation burial [5373] were similarly heat-affected. This damage could have been caused by sitting the vessels in the hot embers of a cooking hearth, although the possibility cannot be ruled out that some sherds were re-fired following breakage. The absorbed residue analyses confirmed that a high proportion of the vessels had seen considerable use (see below).

*Distribution of Sherds between Pits*

A refitting exercise identified direct same-vessel sherd linkages between adjacent Neolithic pits [5371] and [5377], and between Neolithic pit [5375] and the Roman cremation burial [5373], some 12m distant (Fig 2; Table 1). The conjoining sherds from pits [5371] and [5377] comprise rim fragments of vessel <P 1> (Fig 5). Those from Neolithic pit [5375] and the Roman cremation burial [5373] comprise rim and body sherds belonging to lugged vessel <P 5> (Fig 6).

The average sherd weight of between 14g and nearly 36g (Table 1) for the Neolithic pits is in stark contrast to the average sherd weight of 6.5g for the Neolithic material from Roman cremation burial [5373]. Here the greater fragmentation of the sherds was doubtless accelerated by their physical redeposition and also by the brittle nature of the ceramic.

*Discussion*

The Principal Place assemblage comprises both plain and decorated open/neutral round-based bowls and smaller, plain, open bowls/cups with plain, rolled and externally expanded rims. Closed vessels are in a minority. Examination of vessel fabric, form and decoration indicates that the Principal Place ceramic assemblage is essentially of Plain Bowl and Decorated Bowl type, although vessels with Ebbsfleet Ware traits suggest that elements of it are likely to fall late within the overall tradition. As such it clearly post-dates the Carinated Bowls, exemplified locally by the vessels from Blackwall (Raymond 2008, fig 4), Clapham (Densem & Seeley 1982, 179, fig 5 no. 1), Erith (Bennell 1998, 23) and possibly Vauxhall (Milne *et al* 2011, 289, fig 7).

Plain Bowl and Decorated Bowl material has been recovered from a wide range of depositional contexts within the middle and lower Thames valley (below, Fig 14) and beyond, including Yeoveney Lodge, Staines (Robertson-Mackay 1987), Terminal 5, Heathrow (Leivers *et al* 2010), Kew Bridge Road, Brentford (Cotton 2017), Orsett (Kinnes 1978) and Kingsborough (Gibson & Leivers 2008). Further afield, similar assemblages have been noted at St Osyth (Lavender 2007), the Stumble (Brown 2012), and Springfield Lyons (Brown 2013). A small series of radiocarbon dates obtained from the absorbed lipid residues (below) bracket the mid-4th millennium cal BC and are generally in line with others associated with such ceramic assemblages (Whittle *et al* 2011, 759–78; below, Fig 10). On the face of it the latest date would help to account for the observed Peterborough Ware traits, although it is derived from the seemingly early-looking vessel <P 12> (Alistair Barclay pers comm).

Despite the general petrographic and geochemical homogeneity of the analysed ceramic sherds, there appear to be several distinct but overlapping sub-fabrics. This may suggest that the assemblage contains pottery made from two or more different but related types of base clay, to which flint temper was added. These strata could have been two layers within a single clay deposit, or two geographically separate deposits. The absence in the analysed assemblage of other deliberate additions such as grog or shell may indicate that the sherds were the products of a group of potters, following a single tradition. While it is not possible to rule out the existence of pottery made with similar raw materials in several places, the assemblage has the compositional characteristics of locally produced ceramics.

Some 5km further down the river at Blackwall (located on Fig 14), sherds of Early Neolithic Carinated Bowl were analysed petrographically and geochemically by Vince (2004; 2008). He recorded two flint-tempered fabrics that bear some similarities to the sherds analysed in this study. His 'Group C' contained abundant silt-sized quartz and muscovite inclusions as per sub-fabric 1 and one thin section from 'Group B' was comparable to sandy sub-fabric 2. Shell was present in some of the Blackwall sherds too but was not detected in any of the Principal Place samples. Geochemically, some differences exist between the Blackwall Group B and Group C sherds (Vince 2004, 8–9) and those from Principal Place, as the latter include higher Ba, Fe, La, Sr, Zr and lower Co, Ni and Pb. In a PCA plot of both sets of data, which were collected by the same laboratory and can therefore be directly compared, the six flint-tempered Blackwall sherds group separately from the Principal Place ceramics (Fig 4b). This confirms that, despite certain petrographic and technological similarities, they are not likely to have derived from the same clay source, although all were probably made 'within a few kilometres of the site[s] where they were found' (Vince 2008, 225).

At other sites where petrographic analyses have been attempted a rather similar picture of local manufacture has tended to emerge, for example Yeoveney Lodge, Staines (Robertson-Mackay 1987, 67), and Abingdon (Avery 1982, 33–5). The differences detected in the suites of fabrics employed at Kingsborough K1 and Kingsborough K2 meanwhile suggested that the users of the two largely contemporaneous enclosures were exploiting different but still probably local clay sources (Gibson & Leivers 2008, 251). At Eton Rowing Course, by contrast, the incorporation of quartzite and shell hinted at the presence of some non-local

fabrics of possible Midland origin (Barclay *et al* 2013, 110).

At least four of the 28 Principal Place vessels, comprising just over 14% of the assemblage, feature decorative elements. This is comparable to the figure of *c.*12% quoted for the larger assemblage at Orsett and 16% for Hurst Fen (Kinnes 1978, 264), but rather higher than the 6% for Kingsborough K1 and 6.4% for Kingsborough K2 (Gibson & Leivers 2008, 251), 6% for Heathrow, Terminal 5 (Leivers *et al* 2010, 9), 4.3% for Yeoveney Lodge, Staines (Robertson-Mackay 1987, quoted in Leivers *et al* 2010), and 4% for Kew Bridge Road, Brentford (Cotton 2017, 15). Elements of these various assemblages share affinities with Mildenhall Ware, whose currency in East Anglia has been bracketed to between 3785–3650 cal BC (*95% probability; start Mildenhall Ware*) and 3485–3305 cal BC (*95% probability; end Mildenhall Ware*) (Healy in Hills & Lucy 2013, 15–16, figs 1.10, 1.11).

As far as detailed decorative traits are concerned, tooled linear decoration combined with incised stab-and-drag motifs as seen on <P 4> (Fig 6) has been noted at Etton (Pryor *et al* 1998, 210–11), with a vertical variant being particularly common at Hurst Fen (Clark *et al* 1960) and Kingsborough (Gibson & Leivers 2008). While the overall decorative scheme of the Principal Place vessel is difficult to reconstruct from the few surviving sherds, it may have been arranged in panels and seems to have extended below the shoulder onto the lower pot wall as at Springfield Lyons (Brown 2013, 91, figs 3.16, 3.17).

The presence of Peterborough Ware traits within the assemblage, including 'closed forms with upright or hollow necks, sometimes with in-turned rims, pits or impressions in the neck' (*eg* <P 1> Fig 5 & <P 9> Fig 7) is comparable with elements of the ceramic assemblages from Eton Rowing Course (Barclay *et al* 2013, 120), Runnymede Bridge (Longworth & Varndell 1996, 100–5), and the causewayed enclosure at Yeoveney Lodge, Staines (Robertson-Mackay 1987, 76, 84). Finger-pressed 'dimpled' rims were present at Kingsborough K1 (Gibson & Leivers 2008, fig 7 P145) and Yeoveney Lodge, Staines (Robertson-Mackay 1987, fig 43 P76, fig 49 P149), while fingertip impressions below the rim, as seen at Principal Place (<P 1>), are present amongst the assemblages at the Eton Rowing Course (Barclay *et al* 2013, 147, fig 5.36 no. 199) and Kingsborough K2 (Gibson & Leivers 2008, fig 9 no. 3), and more generally on Ebbsfleet Ware itself (*eg* Burchell & Piggott 1939).

Lugged vessels (*cf* <P 5> Fig 6) are well represented in Early Neolithic assemblages and include both perforated and unperforated examples. In the middle and lower Thames lugged vessels are present at, for example, Yeoveney Lodge, Staines (9 examples; Robertson-Mackay 1987, 88), Terminal 5 Heathrow (4 examples; Leivers *et al* 2010, 6 no. 27) and Kingsborough (5 examples; Gibson & Leivers 2008, 246), although none were recorded at Orsett (Kinnes 1978, 263). Rows of pre-firing perforations of invariably small diameter are another common element and considered to be decorative at Staines (Robertson-Mackay 1987, 88), Spong Hill (Healy 1988, 68) and Terminal 5, Heathrow (Leivers *et al* 2010, 6). Multiple examples were recorded at Kingsborough (14 examples; Gibson & Leivers 2008, 246 and fig 7 P104), Hurst Fen (7 examples; Clark *et al* 1960, 239 and fig 21 P23–P26) and the Eton Rowing Course site (Barclay *et al* 2013, 111, 133 fig 5.27 P37, 135 fig 5.28 P54).

The bifurcated impressions on the shoulder of the closed vessel (<P 9> Fig 7) were possibly made either with the cloven hoof of a roe deer neonate, a small lamb/kid, or a piglet (Alan Pipe pers comm). These are without close parallel, though their positions recall the finger impressions below the rim on <P 1> (Fig 5) and the deep pits in the necks of Peterborough Ware. Vessels with such atypical decoration are rare but not unknown within Early Neolithic assemblages, as at the Stumble (Brown 2013, 49), for example. Of the three possible identifications listed above, roe deer fawn seems the most likely, though not conclusively so. After red deer, roe are the second most frequent wild species recorded in the Early Neolithic faunal record (Serjeantson 2011, 42). Fawns are usually born in May/June but have a high mortality rate and are often left unattended in long grass at the woodland edge to protect them from predators during the day.

The uses to which the various vessels were put is set out in detail below, but here it can be noted that the refiring of some sherds, including many apparently basal pieces, suggests that cooking was achieved by standing the vessels directly in the hearth embers. Nearly 25% of all sherds in pit [5422] were so affected – a figure that compares with those from Kilverstone Areas E, B and I (27%, 41% and 19%, respectively) (Knight 2006, 31–2). However, at Kilverstone the refitting of fresh, abraded and burnt sherds suggested that the transformation must have occurred post-breakage but prior to deposition.

Similar occurrences were noted in the midden deposits at Eton Rowing Course (Barclay *et al* 2013, 110).

### *Organic Residue Analysis of the Principal Place Early Neolithic Pottery*

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Organic residue analysis has long contributed to a wide range of archaeological questions relating to production, use and technological change in vessels, resource acquisition and exploitation, trade and exchange, but is most notable for its contribution to elucidating prehistoric diet and subsistence practices, and in the reconstruction of animal management practices worldwide (Evershed 2008; Roffet-Salque *et al* 2017). A combined molecular and isotopic approach allows the identification of terrestrial animal fats as proxies for carcass processing and secondary product exploitation (Evershed *et al* 1997a; Dudd & Evershed 1998; Mottram *et al* 1999; Copley *et al* 2003), aquatic products (Copley *et al* 2004; Hansel *et al* 2004; Craig *et al* 2007; Hansel & Evershed 2009; Cramp & Evershed 2014), plant oils and waxes denoting vegetable and plant oil consumption (Evershed *et al* 1991; Dunne *et al* 2016), and beeswax, resins, tars and bitumen (Charters *et al* 1993; Evershed *et al* 1997b; Urum-Kotsou *et al* 2002; Stern *et al* 2008; Brettell *et al* 2014; Roffet-Salque *et al* 2015) used in a wide range of technological and cultural activities.

#### *Results*

Lipid analysis and interpretations were performed using established protocols described in detail in earlier publications (*eg* Dudd & Evershed 1998; Correa-Ascencio & Evershed 2014). A selection of Early Neolithic sherds (n=32, including sherds from 16 vessels and 12 unattributed body sherds) comprising fragments of bowls and smaller cups from each of the four pits were selected for analysis (see PDF Supplement: Table 10). For a correlation between the contexts of the pottery and the material selected for lipid analysis see Table 2, column 8.

The lipid recovery rate was extremely high at 94% (n=29 sherds, 14 vessels and 11 unattributed body sherds), which compares favourably to sherds investigated from other Southern British Neolithic sites, although a similarly high level of lipid preservation is observed at sites in Scotland (89% on average) and on the island of Ireland (*c*.90%), probably due to acidic soils that inhibit the leaching of lipids into the surrounding groundwater (Cramp & Evershed 2014; Smyth & Evershed 2015).

The mean lipid concentration from the sherds was 1.6mg $g^{-1}$, with a maximum lipid concentration of 16.6mg $g^{-1}$. A number of the potsherds contained high concentrations of lipids (*eg* sample no. PPL005, 4.1mg $g^{-1}$, PPL008, 3.0mg $g^{-1}$, PPL010, 5.1mg $g^{-1}$, PPL019, 7.1mg $g^{-1}$ and PPL020, 3.7mg $g^{-1}$), demonstrating excellent preservation. This probably indicates that these were vessels that were subjected to sustained use in the processing of high lipid-yielding commodities. To date, analysis of the total lipid extracts of the 29 sherds, using GC and GC-MS, all contained sufficient

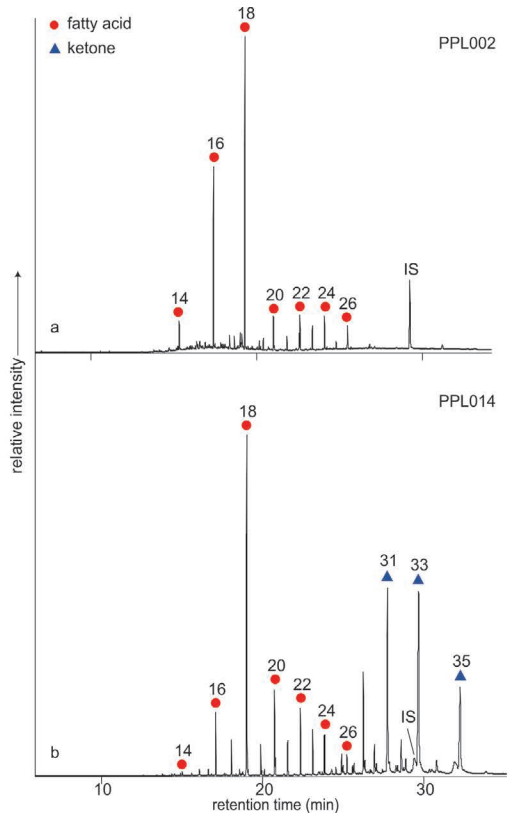


*Fig 8 Partial gas chromatograms of acid extracted FAMEs from: a. PPL002 (<P1> decorated bowl, Fig 5); b. PPL014 (<P5> lugged plain bowl, Fig 6) (circles, n-alkanoic acids (fatty acids, FA); triangles, mid-chain ketones; IS, internal standard, C34 n-tetratriacontane)*

concentrations (>5µg $g^{-1}$) of lipids that can be reliably interpreted (Evershed 2008). These comprised lipid profiles that demonstrated free fatty acids, palmitic ($C_{16}$) and stearic ($C_{18}$), typical of a degraded animal fat (Figs 8a, 8b), were the most abundant components (Evershed *et al* 1997a; Mottram *et al* 1999).

Extracts from all sherds, aside from samples PPL008, PPL018 and PPL022, include a series of long-chain fatty acids (in low abundance), containing $C_{20}$ to $C_{28}$ acyl carbon atoms (Figs 8a, 8b). It is thought these LCFAs probably originate directly from animal fats, incorporated via routing from the ruminant animal's plant diet (Halmemies-Beauchet-Filleau *et al* 2013; 2014). Significantly, in five sherds (three vessels PPL006 (<P 4>), PPL014 and PPL032 (<P 5>), PPL023 (<P 15>), and body sherd PPL027; Fig 8b) odd carbon number ketones were present ($C_{31:0}$, $C_{33:0}$ and $C_{35:0}$, blue triangles), often in high abundance. Experimental analysis has shown these ketones, found in a monomodal distribution, originate from the pyrolysis of acyl lipids and ketonic decarboxylation reactions that occur in unglazed ceramic vessels during cooking, when the temperature exceeds 300°C. These ketones are thought to accumulate gradually with repeated use (Evershed *et al* 1995; Raven *et al* 1997), suggesting that these vessels were used for the sustained processing of animal products.

Analyses of surface or 'burnt-on' residues, evidence of cooking failures, found on PPL016 and PPL018 (see PDF Supplement: Table 10), also identified palmitic ($C_{16}$) and stearic ($C_{18}$) acids, together with a series of long-chain fatty acids (in low abundance), containing $C_{20}$ to $C_{26}$ acyl carbon atoms, probably originating directly from animal fats (Halmemies-Beauchet-Filleau *et al* 2013; 2014).

GC-C-IRMS analyses (Supplement: Table 10) were carried out on the sherds (n=29) and the surface residues (n=2) to determine the $\delta^{13}C$ values of the major fatty acids, $C_{16}$:0 and $C_{18}$:0, and ascertain the source of the lipids extracted, using the $\Delta^{13}C$ proxy. The $\delta^{13}C$ values of the $C_{16}$:0 and $C_{18}$:0 fatty acids reflect their biosynthetic and dietary origin, allowing non-ruminant and ruminant adipose and ruminant dairy products to be distinguished (Dudd & Evershed 1998; Copley *et al* 2003). Here, ten sherds from seven vessels (PPL002 and PPL007 (<P 1>), PPL003 (<P 3>), PPL006 (<P 4>), PPL009 (<P 10>), PPL014 and PPL032 (<P 5>), PPL019 and PPL020 (<P 12>), PPL024 (<P 16>)) and two body sherds (PPL004, PPL011) (n=12 sherds, 41%, Fig 9a) plot within the dairy reference ellipse, suggesting these vessels were solely used to process dairy products. A further six extracts from one vessel and five body sherds (PPL022 (<P 14>), PPL016, PPL018, PPL026, PPL028, PPL031) (n=6, 21%, Fig 9a) plot just outside the dairy ellipse, indicative of some mixing of animal products in prehistory, although it is likely that they were predominantly used to process milk products. These data suggest

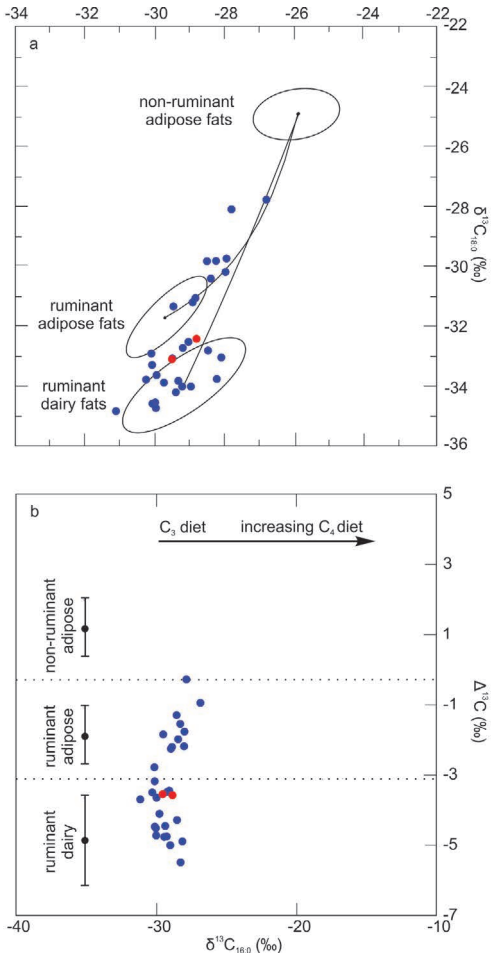


*Fig 9. Graph a (upper) shows $\delta^{13}C$ values for the $C_{16}$:0 and $C_{18}$:0 fatty acids for archaeological fats extracted from Principal Place Neolithic ceramics, with $\delta^{13}C$ values for the $C_{16}$:0 and $C_{18}$:0 fatty acids for archaeological fats extracted from surface residues on PPL016 and PPL018 shown in red; the three fields correspond to the P= 0.684 confidence ellipses for animals raised on a strict $C_3$ diet in Britain (Copley* et al *2003); each data point represents an individual vessel. Graph b (lower) shows the $\Delta^{13}C$ ($\delta^{13}C_{18}$:0 – $\delta^{13}C_{16}$:0) values from the same potsherds or surface residues; the ranges shown here represent the mean ± 1 s.d. of the $\Delta^{13}C$ values for a global database comprising modern reference animal fats from Africa (Dunne* et al *2012), UK (animals raised on a pure $C_3$ diet) (Dudd & Evershed 1998), Kazakhstan (Outram* et al *2009), Switzerland (Spangenberg* et al *2006) and the Near East (Gregg* et al *2009) published elsewhere*

clear vessel specialisation with 62% of vessels being used to mainly process dairy products. Furthermore, the two 'surface' or 'burnt-on' residues (from body sherds PPL016 and PPL018) plot very closely to their respective absorbed lipid $\delta^{13}C$ values, with both plotting just outside the ruminant dairy ellipse, confirming the vessel or vessels were almost wholly used to process dairy products.

Lipid extracts from two vessels and one body sherd (PPL005 (<P 3>), PPL012 (<P 6>) and PPL015) (n=3, 10%, Fig 9a) plot within the ruminant adipose ellipse, suggesting those vessels were used solely to process ruminant carcass products, with a further vessel and a body sherd (PPL021 (<P 13>) and PPL017) (n=2, 7%) plotting either just on or outside the ruminant carcass ellipse, indicative of some minor mixing of animal products in prehistory, although it is likely that they were predominantly used to process ruminant carcass products. In total, three vessels and two body sherds (17%) were used to process ruminant carcass products. Finally, four vessels (PPL001 (<P 1>), PPL008 (<P 9>), PPL010 (<P 11>), PPL023 (<P 15>) and two body sherds (PPL027, PPL029) (total 21%) plot between the ruminant (cattle, sheep or goat) and non-ruminant (pig) adipose product ellipses, suggesting some mixing of these animal products, although at minor levels. Interestingly, no vessels were dedicated solely to porcine product processing.

Ruminant dairy fats are differentiated from ruminant adipose fats when they display $\Delta^{13}C$ values of less than –3.1 ‰, known as the universal proxy (Dunne *et al* 2012; Salque 2012). Significantly, lipid residues from a total of 18 sherds (11 sherds from eight vessels and seven body sherds) plot within the ruminant dairy region (Fig 9b), confirming that these vessels were used to process dairy products, such as milk, butter, and cheese. The two 'surface' or 'burnt-on' residues (PPL016, PPL018), had $\Delta^{13}C$ values of –3.6 ‰ and –3.6 ‰, respectively; this is in good agreement with the $\Delta^{13}C$ values of the absorbed residues from the same sherds at –3.2 ‰ and –3.5 ‰, respectively. Eight sherd extracts plot within the ruminant adipose region with two further vessels plotting on the borderline between ruminant and non-ruminant adipose, although both were predominantly used to process

ruminant products (in total, seven vessels and three body sherds). The one remaining body sherd plots on the borderline between dairy and ruminant adipose fat (Fig 9b).

*Compound-Specific Radiocarbon Analyses*

Compound-specific radiocarbon analyses of organic residues extracted from archaeological pottery sherds were performed using protocols described in detail in recent publications (Casanova *et al* 2017; 2018; 2020). Here, we report compound-specific radiocarbon measurements on absorbed food lipids extracted from five vessels and one body sherd.

All radiocarbon determinations were performed on a MICADAS AMS (Synal *et al* 2007) by the Bristol Accelerator Mass Spectrometer (BRAMS) facility at the University of Bristol. Data reduction was performed using the software package BATS (Wacker *et al* 2010) and measurements on fractions of different fatty acids from the same sherd were combined as described by Casanova *et al* (2020). The chronological modelling was undertaken using OxCal v4.2 (Bronk Ramsey 2009) and the currently internationally agreed radiocarbon calibration curve for the northern hemisphere, IntCal20 (Reimer *et al* 2020).

Absorbed $C_{16}$:0 and $C_{18}$:0 fatty acids extracted from five sherds of undecorated bowls (PPL05 (<P 3>), PPL010 (<P 11>), PPL012 (<P 6>), PPL015, PPL020 (<P 12>) and one sherd from a plain cup PPL021 (<P 13>) were dated; of these, four vessels provided radiocarbon results that pass the quality assurance criteria employed to ensure accurate dating (Table 3; Casanova *et al* 2020). Two vessels represented by only single sherds (PPL012 (<P 6>) and PPL015) come from pit [5375]. The combined results on these two sherds are not statistically consistent (T'=23.6, T'(5%)=3.8, v=1; Ward & Wilson 1978). PPL012 (<P 6>) is clearly residual and PPL015 provides a *terminus post quem* for the cutting of pit [5375] of 3635–3380 cal BC (*95% confidence; BRAMS-2479*; Reimer *et al* 2020; Stuiver & Reimer 1986). The other two vessels represented by multiple refitting sherds from <P 12> (PPL020) and a single sherd from <P 13> (PPL021), come from pit [5422]. The combined results on these two samples are also not statistically consistent (T′=5.6, T′(5%)=3.8, ν=1; Ward & Wilson 1978). In this case, PPL021 is probably residual and PPL020, since it comes from a vessel that is represented by multiple conjoining sherds, provides a date for the cutting of pit [5422] of 3520–3360 cal BC (*95% confidence; BRAMS-2483*; Reimer *et al* 2020; Stuiver & Reimer 1986). It should be noted that the combined measurements from PPL015 and PPL020 are also not statistically consistent (T′=7.0, T′(5%)=3.8, ν=1; Ward & Wilson 1978), which means either that pits [5375] and [5422] are not contemporary or, perhaps more likely, that worn sherd PPL012 is also residual and both pits date to the time when PPL020 was deposited. Unfortunately, the sherds from pits [5371] and [5377] did not produce radiocarbon measurements that pass the quality assurance criteria employed in this study and so are undated by radiocarbon. The presence of conjoining sherds from vessel <P 1> in both features, however, strongly implies that they were contemporary. If the fragments of polished flint axe, three from pit [5371] and one from pit [5422], are from the same object, then it is also possible that all four Neolithic pits were cut in one episode. In the absence of radiocarbon dates on samples that were undoubtedly freshly deposited in each pit, however, this can only be suggested, not demonstrated.

The range of dates of the sherds from pits [5375] and [5422], and the presence of clearly earlier material in both features, raises the question of the source of the artefacts deposited in these pits. On the basis of the refitting sherds from vessels <P 1>, <P 5> and <P 12>, some of the material was probably freshly deposited in the pits, although there are clearly also sherds from earlier vessels. One possibility is that the material deposited was drawn both from assemblages in contemporary use and from artefacts that had previously been deposited in middens.

Fig 10 places the combined dates for the four sherds that produced reliable measurements from Principal Place in a chronological model for the currency of vessels in the Plain Bowl and Decorated Bowl traditions from the Thames Gateway

*Table 3. Radiocarbon determinations on lipids extracted from pottery vessels from Principal Place*

| Sample no. | Illustrated <P> no. (total no. sherds in vessel) | Lipid assignment | Compound dated | Laboratory no. | Conventional radiocarbon age (BP) (statistical consistency) |
|---|---|---|---|---|---|
| PPL005 | <P3> (1) | ruminant adipose fat | $C_{16:0}$ | BRAMS-2477.1.1 | 4624 ± 34 (X) |
| | | | $C_{18:0}$ | BRAMS-2478.1.1 | 4765 ± 30 |
| PPL010 | <P11> (2) | non-ruminant/ ruminant adipose fat | $C_{16:0}$ | BRAMS-2616.1.1 | 4716 ± 37 (X) |
| | | | $C_{18:0}$ | BRAMS-2617.1.1 | 4858 ± 33 |
| PPL012 | <P6> (1) | ruminant adipose fat | $C_{16:0}$ | BRAMS-2618.1.1 | 4894 ± 34* |
| | | | $C_{18:0}$ | BRAMS-2619.1.1 | 4928 ± 33 |
| | | | **combined** | **BRAMS-2618** | **4911 ± 27** |
| PPL015 | - (1) | ruminant adipose | $C_{16:0}$ | BRAMS-2479.1.1 | 4708 ± 33* |
| | | | $C_{18:0}$ | BRAMS-2480.1.1 | 4771 ± 30 |
| | | | **combined** | **BRAMS-2479** | **4742 ± 22** |
| PPL020 | <P12> (M) | dairy fats | $C_{16:0}$ | BRAMS-2483.1.1 | 4628 ± 40* |
| | | | $C_{18:0}$ | BRAMS-2484.1.1 | 4670 ± 34 |
| | | | **combined** | **BRAMS-2483** | **4652 ± 26** |
| PPL021 | <P13> (1) | ruminant adipose fat | $C_{16:0}$ | BRAMS-2485.1.1 | 4732 ± 32* |
| | | | $C_{18:0}$ | BRAMS-2486.1.1 | 4734 ± 30 |
| | | | **combined** | **BRAMS-2485** | **4733 ± 22** |

Key: (M) multiple conjoining sherds; (X) $C_{16:0}$ and $C_{18:0}$ conventional radiocarbon age statistically different at the 5% significance level (Ward and Wilson 1978); * $C_{16:0}$ and $C_{18:0}$ conventional radiocarbon age statistically identical at the 5% significance level (*ibid*)

(from Thanet to the Blackwater Estuary and upriver as far as Staines/Eton, including sites from tributaries such as the Medway and Lea) (see PDF Supplement: Table 11). Only radiocarbon dates directly associated with the relevant ceramics have been included (see PDF Supplement: Table 10), and dates from samples that may have an old-wood offset have been modelled using the charcoal outlier model proposed by Dee and Bronk Ramsey (2014; Outlier Model ('Charcoal', Exp (1–10, 0), U (0, 3), 't'). Equivalent models for the currency of Carinated Bowl and Peterborough Ware in the same area are provided in PDF Supplement Figs 15, 16. Modelled date ranges are given *in italics* in the text and tables, with calibrated radiocarbon date ranges in normal type.

Further, the pits from Principal Place are put in their contemporary, regional context in Fig 11. This provides a schematic illustration of the currency of different ceramic types derived from the models defined in Fig 10 and PDF Supplement Figs 15, 16, and compares this to key parameters from monuments, timber structures, and other activity that occurred in the Thames Gateway in the early and mid-4th millennium cal BC (see PDF Supplement: Table 12).

## *Discussion*

The Principal Place ceramic assemblage provided a unique opportunity for a programme of organic residue analysis, using a combined molecular and isotopic approach, to determine whether absorbed food residues could be extracted from these Neolithic ceramic vessels. In the event the assemblage yielded the highest known lipid

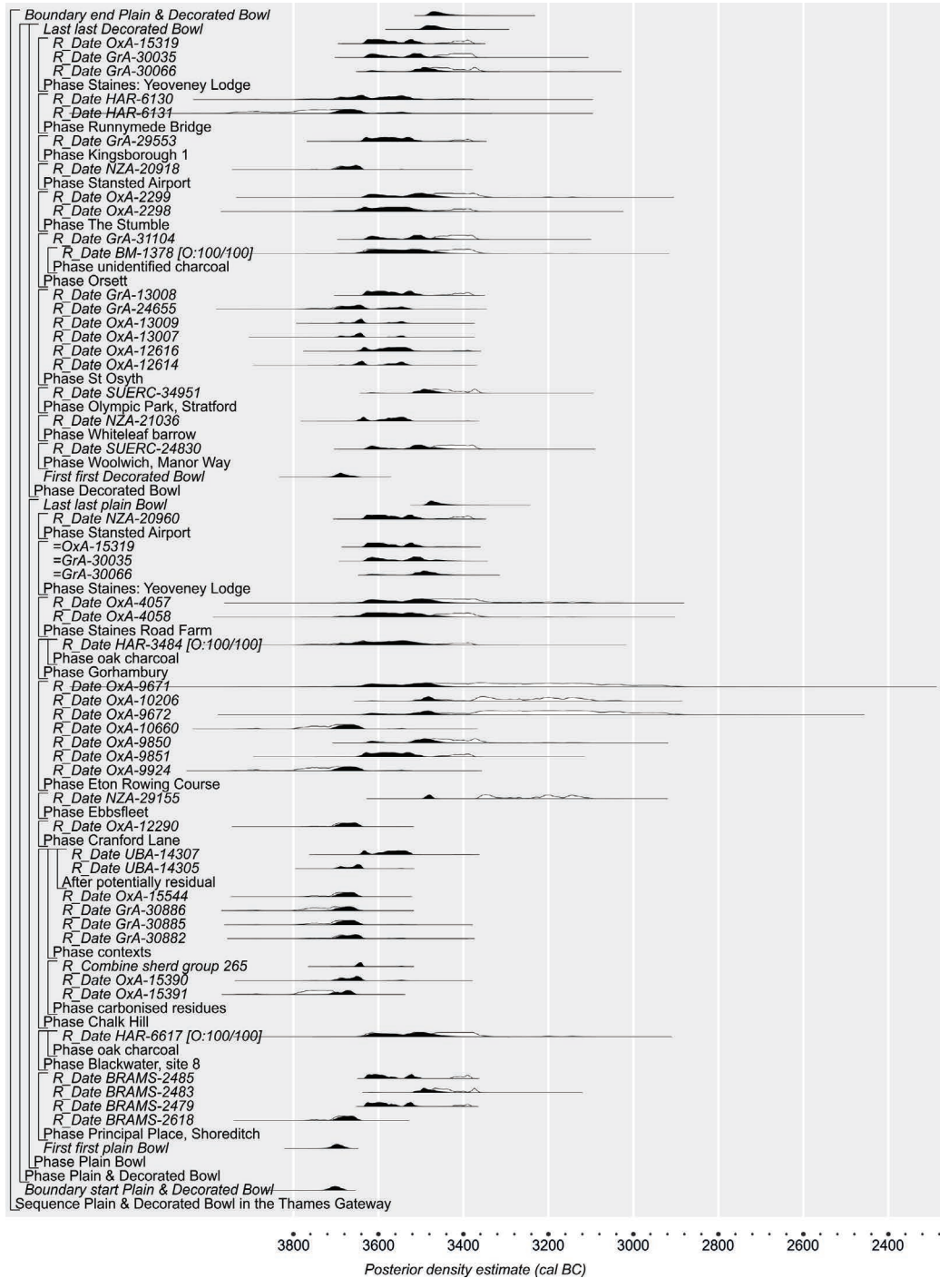


*Fig 10. Probability distributions of dates associated with the use of early Neolithic Plain and Decorated Bowl pottery in the Thames Gateway. Each distribution represents the relative probability that an event occurs at a particular time. For each date, two distributions are plotted: one in outline, which is the result of simple radiocarbon calibration, and a solid one, based on the chronological model used. Distributions other than those relating to particular samples correspond to aspects of the model. The large square brackets down the left-hand side, along with the OxCal keywords, define the overall model exactly*

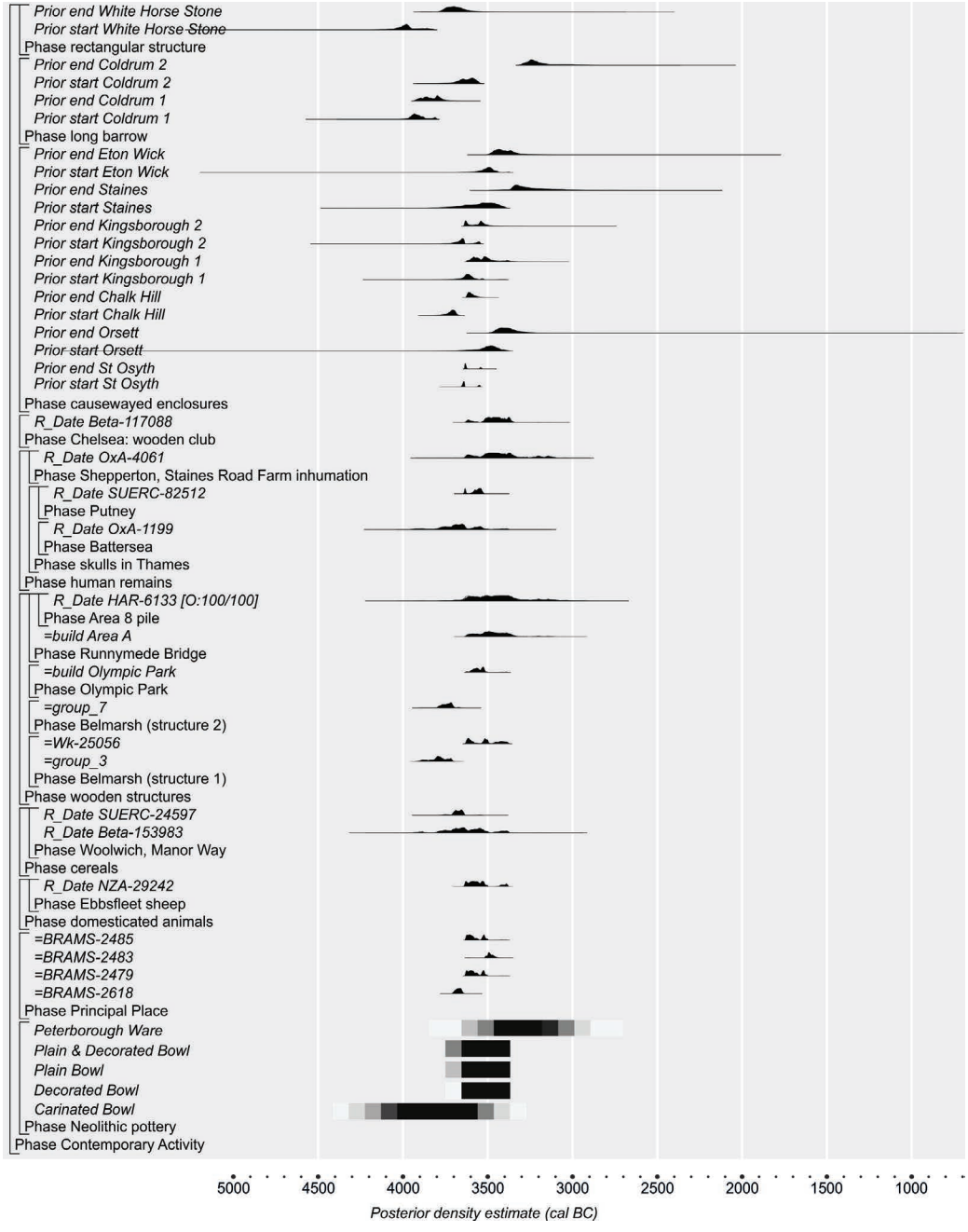


*Fig 11. Schematic diagram illustrating the periods of use of different ceramic types in the Thames Gateway in the early and middle 4th millennium cal* BC *and key parameters of dates associated with other contemporaneous activity. Phase Neolithic pottery: bars are derived from the models defined in Fig 10 and Supplement Figs 15, 16. The darker the bar the more probable that a type was in use at a particular time. Parameters: distributions derive from the models defined by Whittle* et al *(2011, fig 7.6 (St Osyth), fig 7.15 (Kingsborough), fig 7.17 (Kingsborough 2), fig 7.26 (White Horse Stone), fig 7.27 (Coldrum), fig 8.3 (Staines), and fig 8.5 (Eton Wick), reprogrammed in OxCal v4 and recalculated using IntCal20, except for those for Chalk Hill (Clark* et al *2019, fig 46, recalculated using IntCal 20), Orsett (Supplement Fig 17), and for the wooden structures from Belmarsh, the Olympic Park, and Runnymede Bridge Area A (Supplement Figs 18, 19); other distributions are calibrated radiocarbon dates (Stuiver & Reimer 1993). The higher the bar the more probable that the named parameter dates to a particular time*

recovery (94%) retrieved to date from a British Neolithic site. The results, determined from GC, GC-MS and GC-C-IRMS analyses, demonstrate that 18 sherds (62% of lipid-containing extracts, 11 sherds from eight vessels and seven body sherds), with $\Delta^{13}C$ values of less than −3.1 ‰, were routinely used to process dairy products, such as milk, butter, and cheese. This is comparable to a study of 438 potsherds from six southern British Neolithic sites, where dairy products were observed in approximately 57% of the lipid-containing extracts and 25% of all the sherds, although this varied across sites (Copley *et al* 2005). These sites include domestic and non-domestic contexts (causewayed enclosures) and it seems that generally higher abundances of dairy product processing are noted at domestic sites. An overwhelming predominance of dairy product processing (80%) was assoc-iated with Neolithic pottery throughout the north-east archipelago of the British Isles (Cramp & Evershed 2014) and from the island of Ireland (89%; Smyth & Evershed 2015).

Extracts from a further ten sherds suggest these were used routinely to process mainly ruminant animal carcass products, with one sherd belonging to a vessel used to process both ruminant and minor amounts of non-ruminant (porcine) products. However, no vessels were used solely to process the latter. The overall absence of pig product processing at Principal Place is comparable to results from the Eton Rowing Course and Hambledon Hill (Copley *et al* 2005), although this might suggest that porcine products were processed in other ways (*eg* spit roasting).

Interestingly, two sherds from <P 1> (PPL002, PPL007) display $\Delta^{13}C$ values of −5.0 and −4.3 ‰, respectively (denoting dairy product processing), whereas sherd PPL001, from the same vessel, has a $\Delta^{13}C$ value of −1.0 ‰, suggestive of ruminant carcass product processing. This raises the possibility of the secondary use of broken vessels in the Neolithic. For example, the pot may have been used to process dairy products and, once broken, a slab was 'recycled' to burn animal tallow, possibly as some sort of lamp. Alternatively, the vessel was used for cooking ruminant adipose products (beef or sheep meat); then, once broken, one of the remaining parts of the pot was used as a spoon, scoop, or bowl for dairy products (milk, butter, or cheese).

As discussed, the pottery comprises Plain Bowl and Decorated Bowl of Early Neolithic type, consisting of thin-walled medium-sized open/neutral bowls, together with several smaller open bowls/cups. There does not appear to be any relationship between vessel types and commodities processed; for example, both the Decorated and Plain bowls were used to process dairy products (n=3 Decorated, n=15 Plain) and ruminant adipose (n=2 Decorated, n=8 Plain). A Plain Bowl with a rolled rim <P 11> was used to process mixed ruminant and minor amounts of non-ruminant (porcine) products.

The new statistical model (Fig 10) places the Principal Place material within the Plain Bowl and Decorated Bowl pottery tradition of the Thames Gateway. The dates indicate that the pottery was used over a relatively lengthy period spanning the middle centuries of the 4th millennium cal BC, although it may have been deposited in the pits from which it was recovered in 3520–3435 cal BC (*95% probability; BRAMS-2483*; Fig 10). There is little doubt that the compound-specific dating of absorbed lipids represents something of a game changer for British prehistoric ceramic studies. It offers a way forward to researchers looking at the directional spread and chronological development of certain pottery styles and promises to provide reliable chronologies at sites where other organic material does not survive or is demonstrably intrusive, as at Principal Place.

## STRUCK FLINT

*Jonathan Cotton (MOLA)*

A combined total of 200 pieces of struck flint was recovered from the four Early Neolithic pits (Table 4; Fig 12). Of this, 120 pieces came from pit [5375], 62 from pit [5422], 15 from pit [5371] and three from pit [5377] (Fig 2). A further 14 pieces were recovered from other contexts to the north; these include a handful of post- and stakeholes and the brickearth deposit into which they had been driven.

The assemblage is in feather-sharp

*Table 4. Struck flints from the four Neolithic pits; the total (n=200) represents 93% of the struck flint recovered from the site*

| Pit no. | Fill no. | Flakes (frags) | Blade-like flakes (frags) | Spalls | Irregular waste | Other | Total |
|---|---|---|---|---|---|---|---|
| 5371 | 5370 | 1 | 2 | 8 | 1 | 3 polished axe flakes | 15 |
| 5375 | 5374 | 13 (17) | 21 (3) | 60 | 3 | 1 end scraper<br>1 microdenticulate<br>1 utilised flake | 120 |
| 5377 | 5376 | | (2) | 1 | | | 3 |
| 5422 | 5421 | 9 (6) | 14 (7) | 18 | 2 | 1 core tablet<br>1 polished axe frag<br>1 end scraper<br>2 microdenticulates<br>1 utilised flake | 62 |
| Total | | 23 (23) | 37 (12) | 87 | 6 | 12 | 200 |

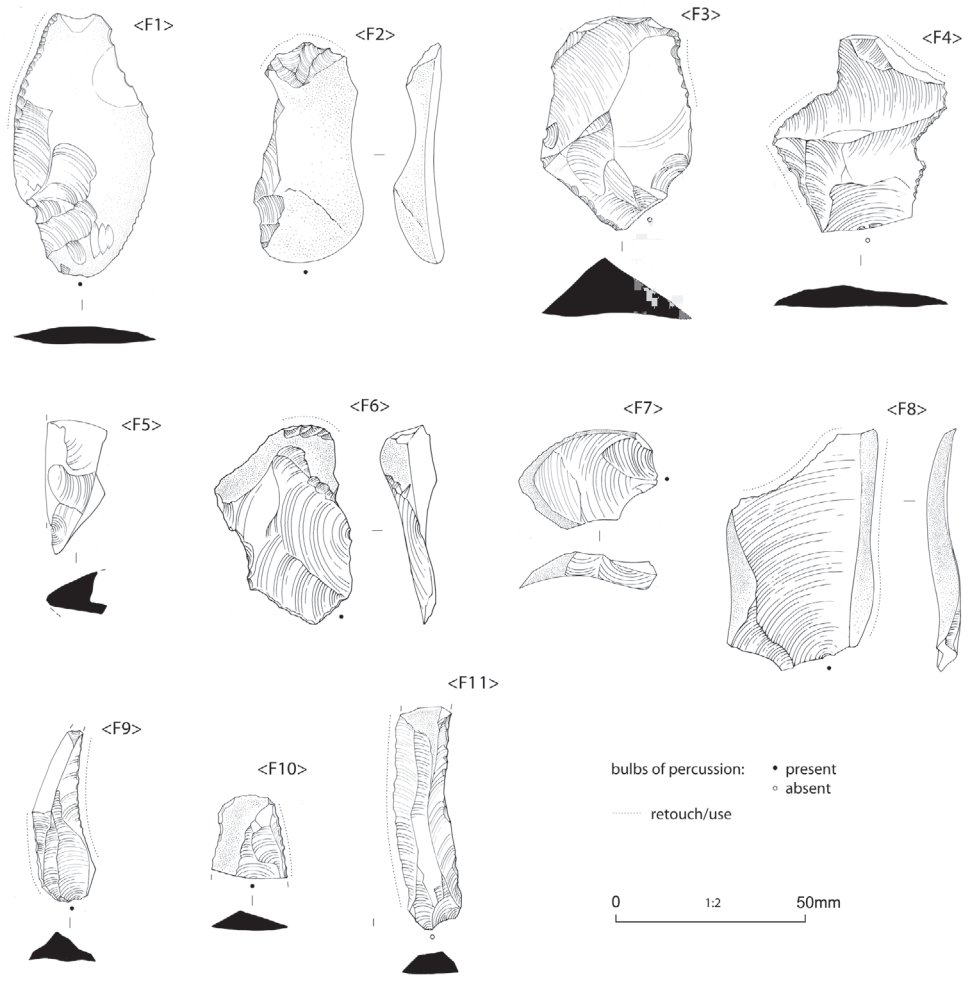


*Fig 12. Early Neolithic flint <F1>–<F11> from the pits and brickearth deposit [5226] at Principal Place (catalogued in Appendix 2) (scale 1:2)*

condition with no hinge or step terminations or signs of surface re-cortication; none had been burnt. The raw material mostly comprises water-rolled flint cobbles presumably obtained from the local terrace gravels and river foreshores. Nearly a quarter of the total is made up of Bullhead Bed flint with its characteristic greenish cortex and orange sub-cortical band. This too would have been locally obtained. At least four fragments of opaque pale grey flint struck from one or more polished flint axes may have a more distant origin.

The modest lithic assemblage is dominated by debitage in the form of unmodified flakes, narrow blade-like flakes, spalls (<10mm), a single core rejuvenation tablet and irregular knapping waste. No usable cores were present; these had presumably been removed for further reduction elsewhere. Many of the blanks are small and the high number of spalls (>45% of the assemblage) is probably accounted for by the 100% sampling of the pit fills. Tools are few but comprise two short end scrapers improvised on secondary flakes <F 2> and <F 6>, together with four micro-denticulates on broken blade-like flakes <F 4>, <F 9>, <F 10> and <F 11>. In addition, several pieces show macroscopic traces of marginal use wear: these include a broad flake detached from a polished flint axe <F 1> from the fill of pit [5371].

The Bullhead Bed flint appears to have been preferentially selected for the production of narrow blade-like flakes; the single core-rejuvenation tablet <F 7> is of this material too. Moreover, it is possible that the four fragments of polished flint axe of pearl-grey flint, three from pit [5371] and a fourth <F 5> from pit [5422], originated from the same artefact. Several other pieces of opaque grey flint from pits [5371] and [5375] are seemingly of axe quality but lack the tell-tale areas of surface polish.

## ENVIRONMENTAL MATERIAL

*Alan Pipe and Karen Stewart (MOLA)*

In addition to the pottery and struck flint, a range of environmental data was retrieved from the sieved samples taken from the four Early Neolithic pits. This comprised small assemblages of animal bone, unattributable burnt bone, mollusca and charred archaeobotanical remains composed of unidentified wood charcoal and seeds. The attributions listed (Tables 5–7) are based on those contained within the initial assessments; no detailed analyses were undertaken. Given the clear presence of medieval cereal grains in these deposits (Table 8), some or all this material may be intrusive.

Small quantities of fragmented animal bone were present in pits [5370], [5376] and [5421] (Table 5). Most comprised pieces of otherwise unidentifiable medium-sized mammal bone, together with common periwinkle (*Littorina littorea*) from [5374] (sample {515}) and low numbers of fish bones from [5370], [5376] and [5421], one of which (sample {518}) was identified as a cod (family) vertebra. The presence of cod in an Early Neolithic context is intriguing as it is a deep-sea marine fish. It could represent a line-caught individual, although the rarity of any fish (freshwater or marine) in Neolithic contexts is now well attested (*eg* Serjeantson 2011, 47–9). That said, a cod vertebra associated with Ebbsfleet Ware sherds was present at the eponymous Ebbsfleet site itself (Wenban-Smith *et al* 2020, 357–9, pl 21.4). Fish bones retrieved from samples taken from the Early Mesolithic site on the River Colne at Three Ways Wharf, Uxbridge, included both herring and cod and were regarded there as intrusive (Lewis with Rackham 2011, 29–30), and – given the demonstrably intrusive cereal grains from Principal Place – this is on balance also likely to be the case here.

Five contexts containing burnt bone were identified at assessment: these comprised the four Neolithic pits and Roman cremation burial [5372]. Only small quantities of burnt bone were present in the Neolithic pits, each with a total weight of less than 10g (Table 6). The bone was heavily fragmented and lacked identifiable morphological features, making it impossible to determine whether it was of animal or human origin.

Charred botanical samples were retrieved from each of the four Neolithic pits and comprised low concentrations of unidentified wood charcoal along with occasional charred seeds and grains (Table 7). Charred grains of free-threshing wheat

*Table 5. Animal bone and mollusca from samples {516}–{518}*

| Context no. | Sample no. | Context type | Wt (kg) | Medium-sized mammal | Very small mammal | Fish and mollusca | Comments |
|---|---|---|---|---|---|---|---|
| 5370 | {516} | fill of pit 5371 | 0.002 | 25 | 0 | 2 | |
| 5374 | {515} | fill of pit 5375 | | | | | common periwinkle |
| 5376 | {517} | fill of pit 5377 | 0.002 | 15 | 0 | 3 | |
| 5421 | {518} | fill of pit 5422 | 0.002 | 40 | 1 | 3 | cod (family) vertebra |

*Table 6. Summary of the burnt bone from samples {515}–{518}*

| Context no. | Sample no. | Context type | Wt (g) | % ID frags | Largest frag (mm) | Mean frag size (mm) | Colour |
|---|---|---|---|---|---|---|---|
| 5370 | {516} | fill of 5371 | 5.6 | 0 | 7.9 | 5 | 50% off-white, 50% unburnt? |
| 5374 | {515} | fill of 5375 | 3.0 | 0 | 11.2 | 10 | 70% off-white, 30% unburnt? |
| 5376 | {517} | fill of 5377 | 2.5 | 0 | 8.2 | 10 | 50% off -white, 50% unburnt? |
| 5421 | {518} | fill of 5422 | 1.8 | 0 | 10.8 | 5 | 50% off-white, 50% unburnt? |

*Not known if animal or human origin; age and/or sex not known

*Table 7. Summary of botanical remains from samples {515}–{518}*

| Context no. | Sample no. | ID | Abundance | Diversity | Comments |
|---|---|---|---|---|---|
| 5370 | {516} | charred grain | occasional | low | *Triticum*: free-threshing wheat |
| 5370 | {516} | waterlogged seeds | occasional | | Furmitory |
| 5376 | {517} | charred wood | occasional | | unidentified wood |
| 5421 | {518} | charred wood | occasional | | unidentified wood |
| 5421 | {518} | charred grain | occasional | low | *c.*5 grains: *Hordeum*; *Triticum* |
| 5421 | {518} | charred wood | occasional | | unidentified wood |
| 5421 | {518} | waterlogged miscellaneous | occasional | low | unidentified wood |

(*Triticum aestivum*) and barley (*Hordeum* sp) from Neolithic pit [5421] (sample {518}) returned radiocarbon dates that fell within the 13th century AD, confirming that all were intrusive (Table 8). This occurrence has been widely observed (*eg* Pelling *et al* 2015), although many such instances date to the Middle rather than the Early Neolithic (*eg* Powell *et al* 2015, 297; Roberts & Marshall 2020, 25–6 and table 11). Charred seeds of fumitory (*Fumaria* sp) were also present in pit [5370] (sample {516}) alongside free-

*Table 8. Radiocarbon dates from charred grains in pit [5421]*

| Laboratory no. | Sample reference | Material | $^{14}$C age (BP) | $\delta^{13}$C (‰) | Calibrated date |
|---|---|---|---|---|---|
| SUERC-80210 | PPL11-518-01 | single charred grain (*Hordeum*) | 734+/-29 | -22.5 | 1265–1283 (1σ)<br>1254–1292 (2σ) |
| SUERC-80211 | PPL11-518-02 | single charred grain (*Triticum aestivum*) | 731+/-29 | -23.9 | 1266–1284 (1σ)<br>1256–1293 (2σ) |
| SUERC-80212 | PPL11-518-03 | single charred grain (*Triticum aestivum*) | 766+/-29 | -23.7 | 1254–1276 (1σ)<br>1218–1283 (2σ) |

threshing wheat (*Triticum* sp). Fumitory is a scrambling weed of broken ground that could fit within an Early Neolithic context, although its association here with free-threshing wheat suggests that it too may be intrusive.

## CONCLUSION: PRINCIPAL PLACE AND ITS EARLY NEOLITHIC CONTEXT

Principal Place lies within the Walbrook valley, just outside the Roman and modern City of London. Previous work has drawn attention to the widespread attrition or truncation of the prehistoric land surface of this area due to Roman and later activity. Despite these limitations an attempt has been made to reconstruct a prehistoric topographic template for the area later occupied by Londinium and its immediate hinterland (Holder & Jamieson 2003). While still evolving and in many respects deficient, these data do allow the site to be placed within a broad landscape setting (Fig 13).

Immediately north of the area occupied by the Roman town, the Walbrook valley took the form of a shallow basin drained by a network of subsidiary streams. It was in or close to this shallow basin and adjacent to an active stream channel that the Early Neolithic activity was focused (Fig 2). Work at Liverpool Street Station some 500m to the south recorded Roman flooding and truncation episodes relevant to understanding the taphonomy of the Principal Place deposits (Ranieri & Telfer 2017, 46–50). Although samples taken from low down in channel deposits here were only broadly datable to the later prehistoric period (Virgil Yendell pers comm), these contained plant types that grow in or near fresh water, including rushes and crowfoots, together with low levels of charcoal likely to indicate anthropogenic activity, while scaraboid dung-beetles suggested the presence of grazing herbivores (Ranieri & Telfer 2017, 48–9). Work on several other sites further down the Walbrook indicates that during later prehistory the middle section of the valley was dominated by open lime woodland on the valley sides, with mixed oak/hazel on the lower slopes and alder in the valley floor (*eg* Hill & Rowsome 2011, 254–6). This broadly corresponds with the wider emerging regional picture (*eg* Stastney *et al* 2021).

The small group of Early Neolithic pits located at Principal Place invites comparison with pit-dominated East Anglian sites, such as those at Hurst Fen in Suffolk and Spong Hill and Kilverstone in Norfolk (Garrow *et al* 2006, 82–3). The significance of pit deposits has been widely debated (*eg* Anderson-Whymark & Thomas 2012) with a range of explanations offered, many going 'beyond the mundane'. At Principal Place there is no compelling evidence to indicate that any of the buried material was specially selected for deposition, however; rather it seems to represent a random accumulation of variably worn pottery and struck flint generated by quotidian activity (as Saville 2002). This is not to deny a spiritual, customary, or performative motivation behind the physical acts of digging and infilling the features: such acts could simply have been a normal and unquestioned feature of everyday living.

The linear arrangement of the Principal Place features (Fig 2) may be compared with sites such as Kilverstone, where the

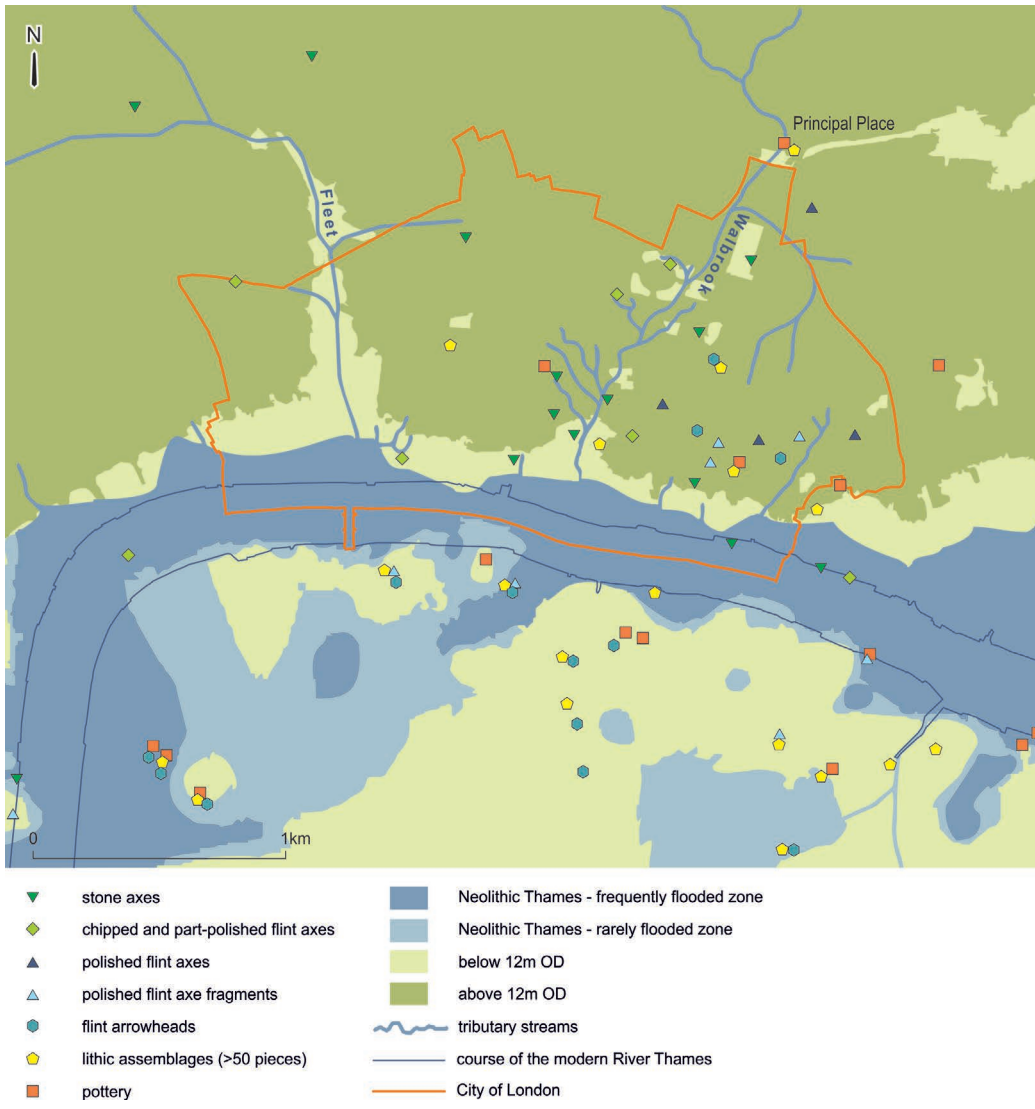


*Fig 13. A distribution map of Neolithic finds and features in and around the City of London (after Merriman 1987; Holder & Jamieson 2003; with additions), showing a 'best-estimate' approximation of the Neolithic topography including minor tributary streams, with the floodplain based on the modelled surface of the Pleistocene gravel and 'dryland' derived from the Environment Agency LIDAR digital terrain model, where the 12m contour roughly approximates the edge of the Taplow Gravel Terrace (contains public sector information licensed under the Open Government Licence v3.0) (scale 1:30,000)*

disposition of multiple pits suggested successive rather than simultaneous episodes, although the incorporation of fragments of the same vessels in each was taken to indicate that they had been drawn from a common source (Garrow *et al* 2006, 76). The undifferentiated nature of the pit fills at Principal Place and the presence of a mix of variously sized and worn sherds, including substantial conjoining fragments of individual vessels spread across several pits, could indicate that here too the fills were drawn from a pre-existing source or sources such as occupation surfaces, or middens that had accumulated over a relatively extended period (as Needham & Spence 1997).

No physical traces of these posited pre-pit sources survived or could be expected to survive, however, as such fragile and ephemeral deposits would have been highly susceptible to seasonal flooding within the valley floor (for which there is good evidence at the Crossrail Broadgate/Liverpool Street Station site further downstream: Ranieri & Telfer 2017, 46–51), as well as to disturbance during the development of the area as a Roman cemetery – a point reinforced by the redeposition of the Early Neolithic sherds in Roman cremation [5373].

Whether the pits were associated with other structures remains an open question. It is possible that the various post- and stakeholes cutting into the surviving expanses of brickearth to the north may be relevant here (Fig 2), although these are not closely datable, and no meaningful distribution pattern could be discerned either. Pits and house structures are sometimes found together but nothing approaching such a structure was noted at Principal Place, and it may be that it was a long-established midden that drew people cyclically to the spot, as has been argued for the midden deposits at Eton Rowing Course (Allen *et al* 2013, 497–8). The close juxtaposition of the pits rather suggests that they were at least broadly contemporary with one another, if backfilled with a range of earlier material drawn from elsewhere. As such they may have marked the periodic (re)commencement of activity, punctuated episodes of use, or represented acts of closure. Significantly, the latest radiocarbon date (*BRAMS-2483*; Fig 10) derives from a vessel represented by multiple sherds (PPL020 <P 12>), one of two dated from pit [5422], while an earlier date (*BRAMS-2479*) was returned from worn singleton PPL012 (<P 6>). This suggests that the latest deposition in the pits is likely to be most reliably dated by vessels comprising multiple refitted sherds and not by worn singletons, and secondly could be taken to support the suggestion that the ceramics derived from a pre-pit source.

Turning to the contents of the pits themselves, the ceramics were probably manufactured using locally available raw materials as at Blackwall (Vince 2008), although the homogenous nature of the local geology means that no specific clay source(s) could be identified. The pottery comprises Plain Bowl and Decorated Bowl and includes elements with early Peterborough Ware traits. Fig 10 shows that all the PPL11 dates fit very happily within the currency of Bowl pottery and that, if we are correct in interpreting the pits as a single event best dated by *BRAMS-2483*, then this falls at the transition to Ebbsfleet Ware. This radiocarbon date offers a plausible horizon for the transition, though it was obtained from a ceramically 'early-looking' vessel <P 12> (Alistair Barclay pers comm).

Decorative novelty is to be expected amongst these Early Neolithic assemblages, as Healy (1988, 71) and others have pointed out, but the repetitive use of a small, bifurcated hoof to create impressions on the shoulder of vessel <P 4> – if correctly identified as such – seems to be unique. Whether roe deer fawn, young sheep/goat, or piglet remains an open question, though the former is here considered the likeliest (Alan Pipe pers comm). Roe deer are the second most frequent wild species recorded in Early and Middle Neolithic faunal assemblages after red deer (*eg* Serjeantson 2011, 42). At the Coneybury Anomaly a mixed faunal assemblage dominated by domesticated cattle and wild roe deer was interpreted as the outcome of a meeting between local farmers and hunter-gatherers (Gron *et al* 2018).

The lipid recovery rate at Principal Place compares favourably with that of other contemporary assemblages. There is clear evidence in over 90% of the samples for the processing of dairy products such as milk, butter, and cheese, and for the processing of ruminant products from cattle and sheep. In this respect it conforms to the picture emerging from other sites further up the Thames valley (Copley *et al* 2005). There does not appear to be any correspondence between vessel types and the uses to which they were put, however, and some of the vessels had probably seen repeated use. Despite the presence of non-ruminant (porcine) products recovered from one sherd, no vessels were used solely to process the latter. This compares with the assemblages from Eton Rowing Course and Hambledon Hill (Copley *et al* 2005) and might suggest that porcine products

were being processed in other ways, such as spit roasting. That said, pig is not generally well represented within Early Neolithic faunal assemblages compared to cattle (*eg* Serjeantson 2011, 28).

The Principal Place lipid data are particularly welcome in view of the paucity of good faunal assemblages from the region, excepting the midden assemblages from Runnymede (where pig *is* present in some quantity: *eg* Serjeantson 2006, 118–19) and the Eton Rowing Course (Needham & Trott 1987; Allen *et al* 2013). The presence of dairy products and ruminant adipose fats suggests an economic strategy incorporating a mixed meat/fat and milk output (as Copley *et al* 2005, 528). Grains of free-threshing wheat from pit [5422] were taken to be intrusive as only hulled varieties were available in the Neolithic, and this was confirmed by radiocarbon dates that centred on the later 13th century AD (Table 8). Intriguingly this phenomenon has been repeatedly noted elsewhere in relation to Middle Neolithic pits (*eg* Roberts & Marshall 2020, table 11), where the absence of cereals has been interpreted as representing a significant decline in arable agriculture later in the Neolithic. Local Early Neolithic communities were certainly cultivating cereals, however, for charred chaff has been recovered from Blackwall (Robinson 2008, 228–9) together with a cache of emmer wheat and chaff from Woolwich Manor Way at East Ham on the A13 (Pelling 2012, 250). Moreover, cereal impressions on Early Neolithic sherds have been recorded locally at Launders Lane, Rainham (Howell *et al* 2011, 34) and from the Thames foreshore at Vauxhall (Milne *et al* 2011, 288).

The accompanying lithic assemblage also reflects the exploitation of local resources, with Bullhead Bed flint seemingly preferentially selected for blades and narrow flakes. This type of flint is well represented at other Early Neolithic sites within the middle and lower Thames (*eg* Cramp & Leivers 2010, 11; Bishop *et al* 2017, 18–19; Butler & Leivers 2008, 253). Moreover, its distinctive greenish cortex is readily identifiable in the hand and the colour may have been particularly resonant for Neolithic communities – many of whose stone axes derived from rock sources of greenish hue, including the Alpine jades and Groups I (Cornwall, Mounts Bay) and VI (Great Langdale). Opaque pearl-grey flint seems to have been preferred for polished axes at this time, and the four flakes from two of the Principal Place pits could well derive from a single implement. A mined, possibly South Downs origin for this type of flint has been suggested (*eg* Bradley 2015, 182) – although other unlocated surface sources may also have been exploited (*eg* Whittle *et al* 2011, 783–4).

The Principal Place pit group joins an expanding range of Early Neolithic sites in the middle and lower Thames (Fig 14), many of which are now secured by radiocarbon dates (see Fig 11). These point to a pioneering phase of activity characterised by Carinated Bowl pottery, followed by a broader-based mature phase of interventions characterised, as at Principal Place, by Plain Bowl and Decorated Bowl pottery. Sites encompass the early grave at Blackwall (Coles *et al* 2008), midden deposits, house structures (*eg* Barclay & Chaffey 2014) and wooden trackways (Hart 2015; Crockett *et al* 2002) alongside earthen monuments of varied size and form ranging from large causewayed enclosures (*eg* Hedges & Buckley 1978; Robertson-Mackay 1987), to smaller horseshoe-shaped enclosures (*eg* Ford & Pine 2003; Framework Archaeology 2006, 72–80) and ring ditches (*eg* Carew *et al* 2006; Jones 2008; Howell *et al* 2011, 24–34). Finds of flint and stone axes (including several early jadeitite examples) from the Thames and its foreshores have long been a notable feature of the region too (*eg* Lawrence 1929; Adkins & Jackson 1978), to which trove can now be added an independently dated alder wood club from Chelsea and several human crania from Putney (*eg* Webber & Ganiaris 2004; Schulting & Bradley 2013, table 6; Stuart Wyatt pers comm). Excepting the early burials from Blackwall and from Coldrum in the Medway valley (Fig 11), most of the available dates fall later and within the mature Early Neolithic. Contrary to expectation these include the causewayed enclosures at Orsett, Staines, and Eton Wick, which appear to date to the 35th century cal BC rather than the 37th century cal BC (Whittle *et al* 2022, fig 13.3A), and as such are broadly contemporary with the infilling of the Principal Place pits.

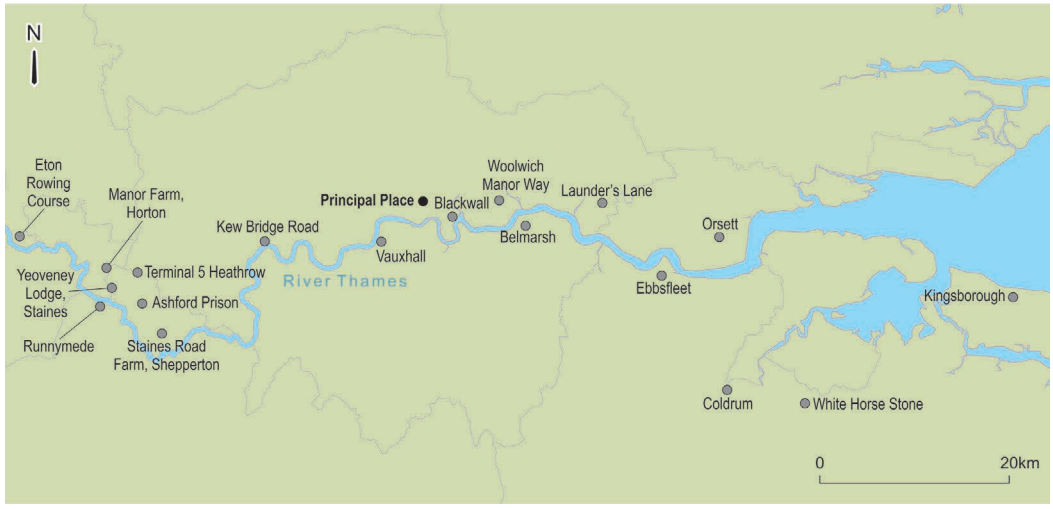


*Fig 14. Selected Early Neolithic sites in the middle and lower Thames (scale 1:800,000)*

Historically, stratified prehistoric contexts from the area of Roman London and its immediate environs are few and Neolithic contexts even rarer (*eg* Merriman 1987, 322–4 and fig 1; Holder & Jamieson 2003, 36 and illus 10). Principal Place is a notable first. Hitherto, only scraps of impressed Middle Neolithic Peterborough Ware have been recorded from within the Roman town and from several other locations on the north bank just beyond (*eg* Thompson 2007; Powell & Leivers 2012, 27–9), along with small assemblages of struck flint, most of which appear to be residual in much later, often early Roman contexts. Most eye-catching are a long-known series of *ex-situ* Neolithic flint and stone axes from Roman and later contexts just within and without the walled area (Celoria & Macdonald 1969, 34), to which can now be added a diminutive unsourced stone example from an early Roman context on the Bloomberg site in the middle Walbrook valley (Bowsher & Marshall 2013), and a polished flint axe from the medieval cemetery levels at Spitalfields some 250m or so to the south-east of Principal Place (Bradley 2002, SRP98 <2518>). Merrifield (1987, 9–16) argued plausibly that such objects circulated as protective amulets amongst Roman and later Londoners. The unexpected survival *in situ* of Early Neolithic pits in the upper Walbrook valley containing a pottery assemblage rich in absorbed lipids offers the first unequivocal evidence for the presence of Neolithic communities hereabouts and provides a firm background against which some of these historical *ex-situ* pieces might be set.

## APPENDICES

### *Appendix 1: Catalogue of Illustrated Pottery (Figs 5–7)*

See Table 1 for ceramic concordance, including fabric identifications, condition and sampled sherds' individual accession and sample numbers; all illustrated vessels sampled except <P 8>.

<P 1> [5370] (n=37, Wt 1418g) and [5376] (n=24, Wt 623g) <1807>
At least 61 sherds weighing 2041g (nearly 32% of the entire assemblage) comprising substantial conjoining portions of a thin-walled (9mm) deep bag-shaped bowl *c.*200–220mm Diam with a slightly incurving and finger-pressed rim, with a row of worn fingertip impressions just below. Traces of perfunctory external smoothing and wiping on the interior.

<P 2> [5370] <1808>
Single sherd of thin-walled (7mm) open bowl with a concave neck and gently expanded rim. The sherd appears to have been overfired or refired.

<P 3> [5370] <1809>
Single sherd of neutral thick-walled (10mm) bowl *c.*280mm Diam with externally thickened rim and traces of surface wiping.

<P 4> [5370] <1810>
Five non-conjoining sherds of thin-walled (6mm) S-profile open bowl with concave neck and gently carinated shoulder. Angled stab-and-drag decoration has been incised within zones of horizontal and vertical tooled lines applied with a rounded ?bone point on the exterior; the interior features two horizontal rows of angled stab-and-drag incisions at the rim.

<P 5> [5372] (Roman cremation burial fill) and [5374] <1817>
Multiple conjoining rim and body sherds of a thin walled (7mm) open bowl with a slightly beaded rim, concave neck and gently carinated shoulder, the latter emphasised by the addition of a low elongated unperforated lug. There are traces of a smoothed exterior surface and interior wiping.

<P 6> [5374] <1814>
Single sherd of a thin-walled (7–8mm) open bowl with an externally thickened square rim.

<P 7> [5374] <1815>
Single sherd of a small thin-walled (8mm) open hemispherical bowl/cup with a simple pointed rim.

<P 8> [5374] <1816>
Single small sherd of a thin walled (7–8mm) open bowl with two small perforations (4mm Diam) pierced through the base of the neck prior to firing.

<P 9> [5376] <1811>
Three non-conjoining sherds (body x 2, rim x 1) of a closed, thin-walled (7mm) bowl *c.*280mm Diam with an expanded rim and rounded shoulder featuring a pair of deep bifurcated impressions at the base of the neck below the rim. The impressions may have been formed using the cloven hoof of a stillborn animal such as a roe deer neonate (Alan Pipe pers comm).

<P 10> [5376] <1812>
Single sherd of a small open, thin-walled (6–7mm) bowl/cup with a simple slightly thickened rim *c.*180mm Diam.

<P 11> [5376] <1813>
Two conjoining sherds of a thin-walled (9mm) open bowl *c.*260mm Diam with an externally expanded, rolled rim.

<P 12> [5421] <1818>
Multiple sherds of a thin-walled (7mm) open bowl 250mm Diam with a slightly beaded rim, concave neck and gently carinated shoulder (similar in form to <P 5> above but in a different fabric).

<P 13> [5421] <1819>
Single sherd of a thin-walled (8mm) open hemispherical bowl/cup *c.*150mm Diam with traces of external smoothing.

<P 14> [5421] <1820>
Single sherd of a thin-walled (7mm) upright/neutral bowl *c.*250mm Diam with slight external thickening.

<P 15> [5421] <1821>
Single small sherd of a closed bowl with externally expanded, rolled/flattened, rim.

<P 16> [5421] <1822>
Single sherd of a thick-walled (8–10mm) upright/neutral bowl with simple slightly thickened rim.

<P 17> [5421] <1823>
Two non-conjoining sherds of a thin-walled (5–6mm) upright/neutral open bowl with a slightly expanded rim and a low ledge shoulder below.

## APPENDIX 2: CATALOGUE OF ILLUSTRATED FLINT (FIG 12)

<F 1> <1859> [5370]
Large flake from a polished flint axe of opaque pearl-grey flint with traces of edge wear/use at its distal end. L 68mm; W 37mm.

<F 2> <1860> [5374]
End scraper improvised on the distal tip of a narrow blade-like primary flake of semi-translucent grey-brown flint with thin water rolled grey cortex. L 67mm; W 26mm.

<F 3 <1861> [5374]
Robust snapped tertiary flake of semi-

translucent smoky grey-brown flint (?Bullhead Bed) with traces of use wear along one margin. L 50mm; W 40mm.

<F 4 <1862> [5374]
Microdenticulate on one edge of a snapped broad tertiary flake of Bullhead Bed flint. L 50mm; W 40mm.

<F 5> <1863> [5421]
Edge fragment from a polished flint axe of opaque pearl-grey flint. L 36mm; W 17mm.

<F 6> <1864> [5421]
Irregular end scraper worked on the distal end of a secondary flake of opaque grey-brown flint with smooth buff-grey cortex. L 44mm; W 30mm.

<F 7> <1865> [5421]
Small core-rejuvenation flake (tablet) of Bullhead Bed flint. L 35mm; W 23mm.

<F 8> <1866> [5421]
Broad secondary flake (hard hammer mode) with traces of edge wear/utilisation. L 55mm; W 40mm.

<F 9> <1867> [5421]
Microdenticulate on a narrow blade-like flake of pale grey-brown flint. L 43mm; W 13mm.

<F 10> <1868> [5421]
Microdenticulate on the distal end of a narrow blade-like flake of Bullhead Bed flint. L 20mm; W 19mm.

<F 11> <1869> [5226] (brickearth)
Microdenticulate on a broken narrow blade-like flake of semi-translucent grey-brown flint. L 57mm; W 13mm.

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# ROMAN DOMESTIC DEVELOPMENT TO THE NORTH OF THE FORUM: EXCAVATIONS AT CROSBY SQUARE, CITY OF LONDON EC2

*Ken Pitt*

*With contributions by Ian M Betts (building material), Joanna Bird (decorated samian), Jo M Mills (samian stamps), Michael Marshall (coins), James Morris (animal bone), Karen Stewart (plant remains), Amy Thorp (pottery) and Angela Wardle (accessioned finds)*

## SUMMARY

*An excavation at Crosby Square (22 Bishopsgate) in the City of London uncovered a fragmentary sequence of Roman occupation spanning the 1st to the 4th century AD. This report considers the results in relation to the interim findings from the adjacent unpublished site of 28–32 Bishopsgate to produce an account of the development of this small area on the north side of the core of the early settlement. Pre-Flavian activity was concentrated on the east side of a north–south road (beneath modern Bishopsgate) and suggests a peripheral area with possible stock enclosures and simple timber buildings. Clay and timber strip buildings spread across the excavated area from around AD 70, some furnished with decorated wall plaster and tessellated floors. These were replaced by one or more masonry buildings from around the mid-2nd century AD, with finely decorated wall plaster, tessellated (and probably figurative mosaic) floors and a plunge pool. Although difficult to reconstruct, the late Roman sequence suggests continued occupation, but with a decline in status and the construction of new clay and timber buildings that stood until at least the mid-4th century AD.*

*The results are discussed in terms of the local road network and current understanding of the developing settlement. Consideration of finds and environmental evidence provides information on aspects of what appears to have been principally a residential and domestic area.*

## INTRODUCTION

This article considers the topography, geology and Roman development of two sites at Crosby Square, City of London, EC2. The principal focus is on fieldwork carried out in connection with the development now known as '22 Bishopsgate', on a site bounded on the west by Bishopsgate, to the east by Undershaft, to the south by 6–8 Bishopsgate and to the north by Great St Helen's.[1] The approximate centre of the site lies at National Grid Reference 533105 181201. It was excavated by MOLA (Museum of London Archaeology) under the site code CYQ05 (referred to here as 'site A'). Reference is also made to the findings from a previous watching brief and excavation within the development area undertaken between May and June 1982 by the Museum of London's (MOL) former Department of Urban Archaeology (DUA) at 28–32 Bishopsgate under the site code BOP82 (referred to here as 'site B') (Schofield 1998, 181; Williams in prep). The location of the two sites and the areas of excavation are shown in Fig 1, while the sites are shown in relation to some of the principal features of the Roman city in Fig 2.

Archaeological evaluation of site A was

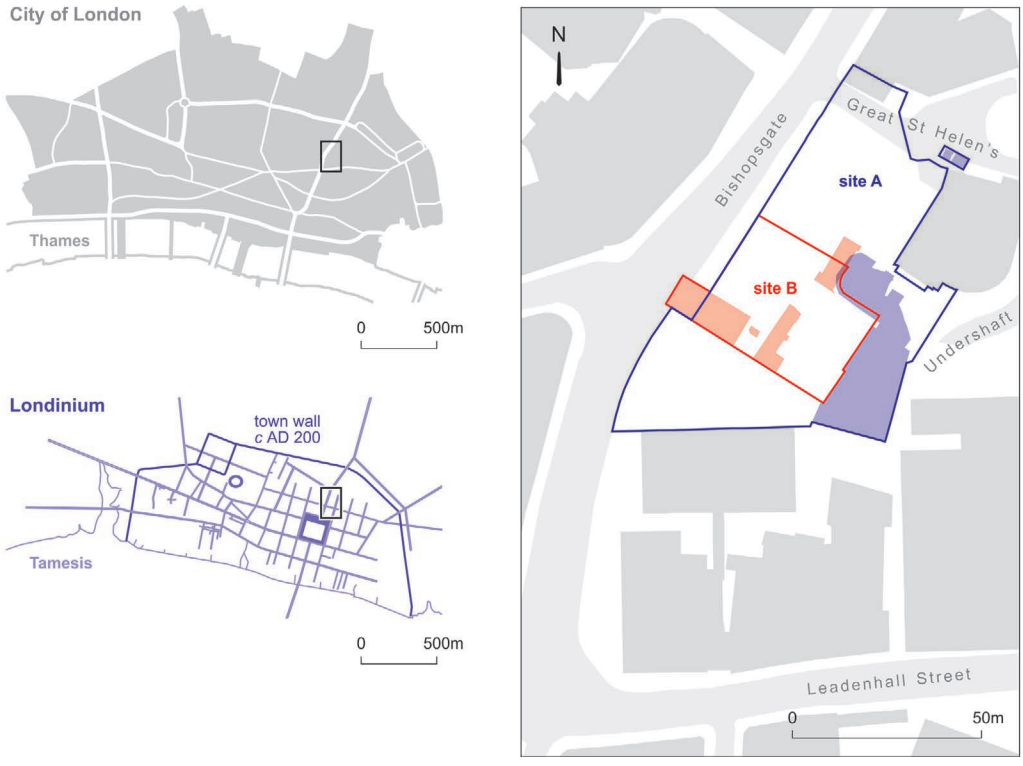


*Fig 1. Plan showing (left) the location of the study sites in relation to the modern City of London and the Roman town (scale 1:50 000), (right) the areas of excavation in tone (scale 1:2000)*

undertaken in April 2005 (Pitt 2005) and July–August 2006 (Pitt 2006). Additionally, in February–March 2007, a watching brief was conducted on two boreholes (one in Bishopsgate, the other in Great St Helens) and in September 2007 a watching brief and small excavation took place along the south side of Great St Helens. Subsequent fieldwork took place as a staged programme of mitigation, with 4 Crosby Square excavated in November 2007–February 2008 and a secant pile trench along the northern and eastern sides of Crosby Square subject to watching brief and excavation between March and July 2008; the northern 4.3m of the pile trench were subject to a depth restriction, with no ground reduction below *c.*12.90m OD. An isolated trench was excavated on the south side of Great St Helens in October–November 2008, at the north-east corner of the site, in advance of a sewer connection. Excavation of the remainder of Crosby Square occurred in two phases, from December 2008–March 2009 and September–October 2009.

This article presents the results of the investigations as a chronological narrative, supplemented by a discussion of the more significant aspects. The archaeological sequence on site A is organised by period and land use – buildings, structures and open areas (B1–B13, S1–S7, OA1–OA16) – beginning with the earliest material. Previous analysis of the site B archaeological sequence used similar land-use terminology; to avoid potential confusion, this terminology is not used here when discussing site B. The basic unit of cross-reference throughout the archive that supports this report is the context number, shown in square brackets, preceded by the site prefix letter to distinguish the individual site, thus: A[100] for context 100 on CYQ05 and B[100] for context 100 on BOP82. Site prefix letters

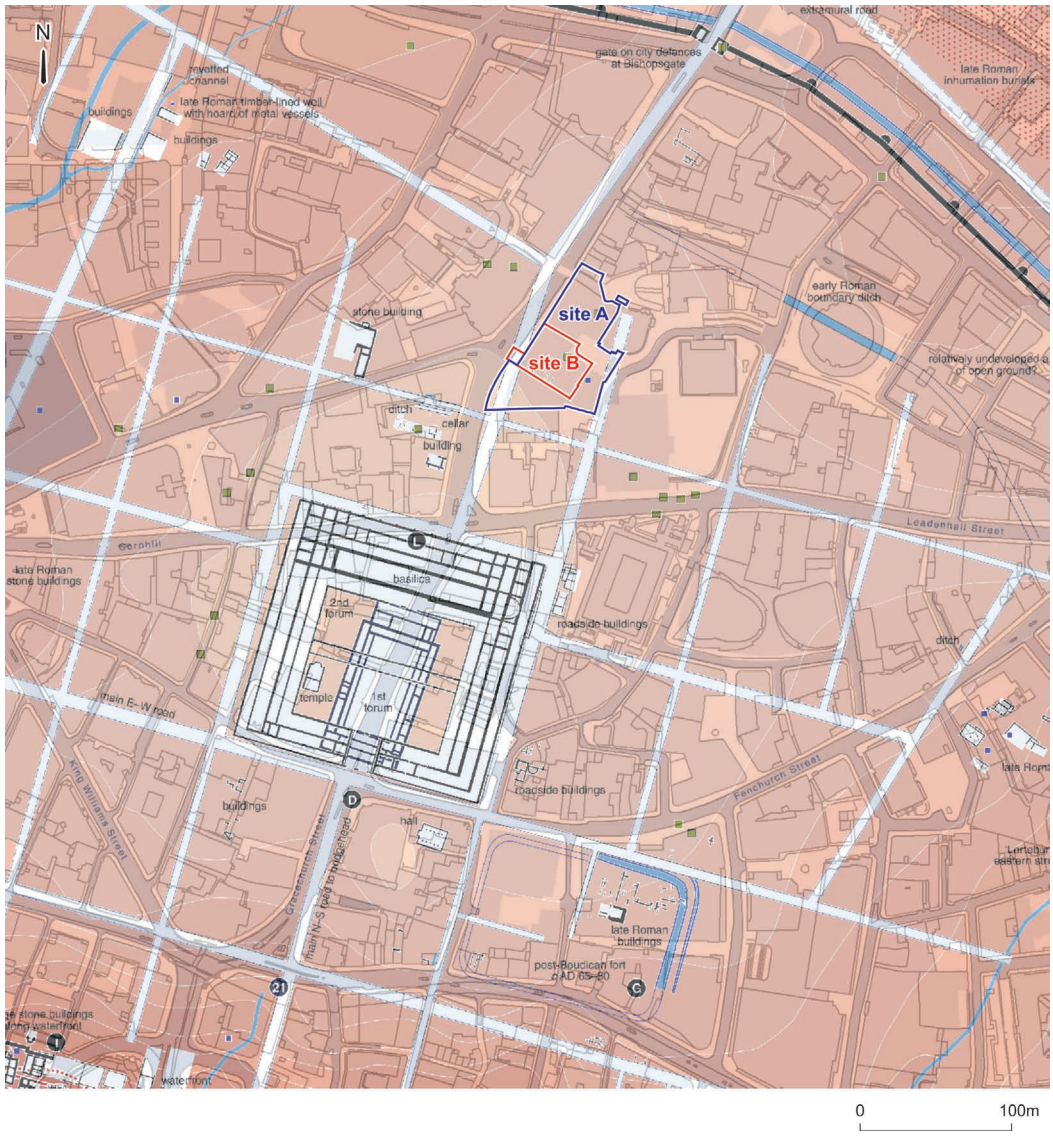


*Fig 2. Plan showing the study sites in relation to some of the principal features of the Roman town (base map: MOLA 2011) (scale 1:5000)*

are used in the same manner for accession numbers (A/B<100>). The conventions used in the illustrations are shown in Fig 3. The main structural features from site B are shown in outline only on the period and phase plans (full publication of that site will be in Williams in prep).

Key findings of specialist analyses have been integrated into the narrative, but it has not been possible to include the full reports here; these are available in the project archive (Betts 2012; Bird 2011; Mills 2011; Morris 2011a; Stewart 2011; Thorp 2011; Wardle 2012) under the relevant site code at the MOL Archaeological Archive at Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED. Selective aspects of the specialist reports on the Roman finds and faunal assemblage, including building materials, pottery, decorated samian, glass,

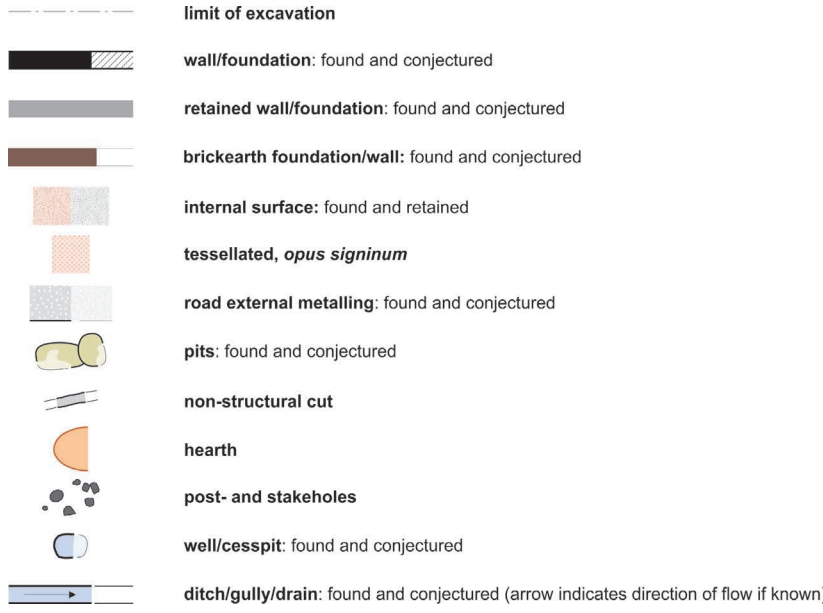


*Fig 3. Graphical conventions used in this report*

accessioned finds, coins and animal bones, are available as online supplements on the LAMAS website. Detailed descriptions of the building material fabrics and complete lists of the pottery codes used in this report, their expansions and date ranges, are available at http://www.museumoflondonarchaeology.org.uk/Publications/Online-Resources/MOLA-ceramic-codes.htm.

Certain finds selected for illustration are numbered by category as: <A 1>–<A 3> (architectural stone), <G 1>–<G 15> (glass), <P 1>–<P 2> (pottery), <S 1>–<S 23> (accessioned finds), and <T 1> (ceramic building material). Details of this material are given in the catalogues and concordance tables appended to the report. A large and significant collection of Roman wall plaster from the study sites (<WP1>–<WP91>) is not detailed here but is the subject of a separate study in this volume (Betts 2023), as is the post-Roman archaeological sequence (Pitt 2023).

## NATURAL TOPOGRAPHY (PERIOD 1)

### *Natural Brickearth (OA1)*

The study sites lie on level ground on the northern flank of the eastern of the two gravel hills that underlie the modern City of London. These hills were originally capped with brickearth. The surface of natural brickearth was recorded at a broadly consistent height across the excavated areas, lying at 11.89m OD in the north-east, at 11.90m OD in Crosby Square, and between 11.70 (north) and 11.95m OD (south) at 4 Crosby Square.

## PRE-FLAVIAN ACTIVITY, *c.*AD 50–70 (PERIOD 2)

### *Site Clearance and Preparation (OA2)*

The earliest activity on site A was the clearance of any trees and undergrowth and small-scale quarrying (OA2, Fig 4). No topsoil or subsoil horizons survived, possibly due to the systematic stripping of the turf and the top-/subsoil. The digging of a few gullies, possibly for drainage or marking out, also occurred. A possible grave contained no human remains; these were probably removed when settlement encroached into this area. The pottery is sparse, with a total of just 14 sherds present from all features, but sherds of La Graufesenque samian (SAMLG)

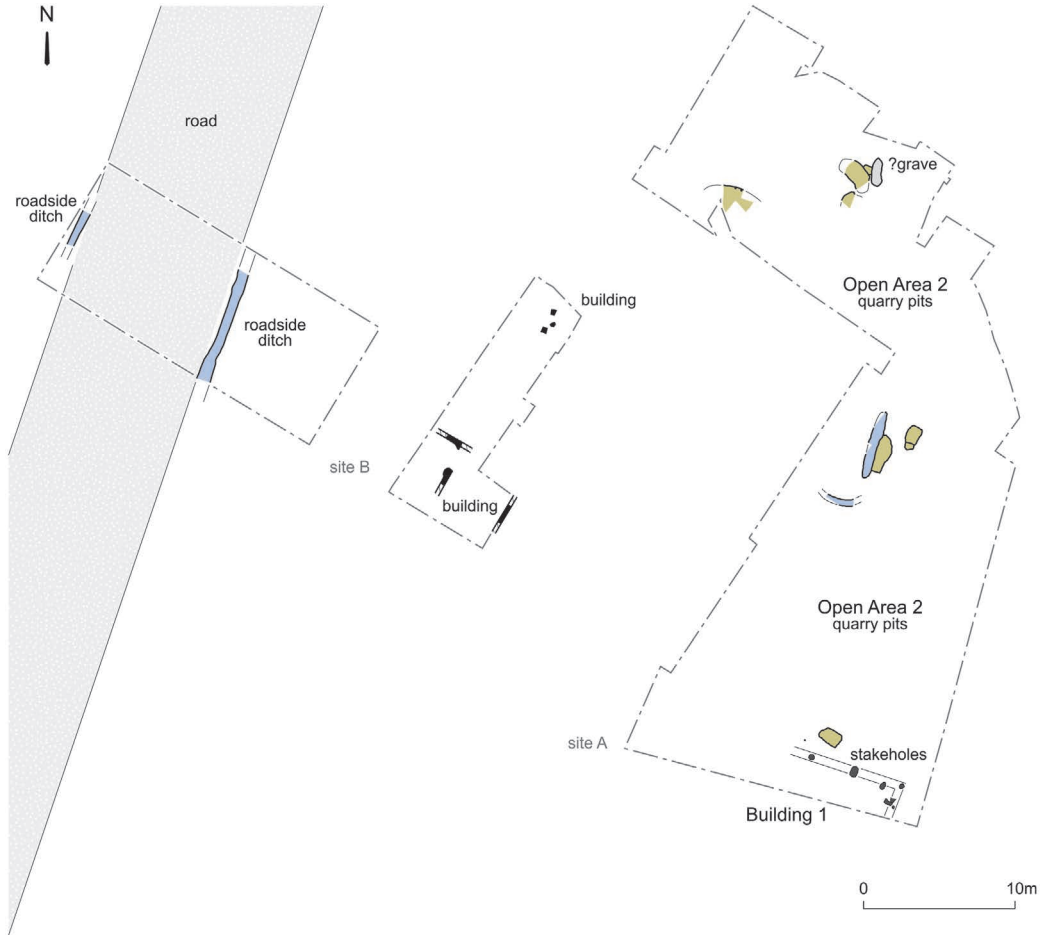


*Fig 4. Plan showing the principal features of period 2 at site A with an outline of contemporary activity on site B (scale 1:500)*

and Highgate Wood ware B (HWB) indicate a date range of *c.*AD 43–100 and the position of these features within the stratigraphic sequence suggests a pre-Flavian date is probable.

A ditch in this area contained a fine copper-alloy mount in the form of a lion claw, <S 17> (Fig 5), which would have adorned a corner bracket from a rectangular item of furniture, probably a stool or footstool. The mount is classically Roman, the style familiar from objects found at Pompeii and elsewhere (see PDF Supplement: Wardle (b)). The use of the motif demonstrates a familiarity with Roman iconography and material culture. As it has a mid-1st-century date, perhaps it was imported from the Continent by an early settler in Londinium associated with the army or administration.

### *Earthfast Building (B1)*

A group of stake- and postholes cut into natural brickearth probably represents the north-east corner of an earthfast building (B1, Fig 4). A stakehole to the north may be part of an external veranda. Five sherds of pottery recovered from the backfill of one posthole in Building 1 are dated *c.*AD 60–120.

### *Summary of Contemporary Activity on Site B*

Site B saw more intensive early activity, with four phases dated prior to *c.*AD 70, only the




*Fig 5. Copper-alloy furniture mount in the form of a lion's paw <S17> from Open Area 2 (scale 1:1)*

last of which is shown in Fig 4. Site clearance and possible marking-out ditches were followed by the establishment of a north–south thoroughfare on the western side of the site, with a gravel-surfaced external area and a clay and timber building on its eastern side. Overlying spreads of probable Boudican fire debris, a series of low banks defined possible agricultural or stock enclosures, one of which contained further simple clay and timber buildings. These were fragmentary and may have been for storage, but at least one seems to have been a strip building (Evans 2009).

### *The Early Roman Road Network in the Vicinity of the Site*

A major north–south thoroughfare was identified in the western part of site B, onto which the buildings identified on that site would have fronted. It was at least 9m wide, subject to resurfacings and provided with drainage ditches on either side (Fig 4) (Williams in prep). Williams has suggested that there may have been a gate across the road at this point and that some of the banks related to an early settlement boundary (*ibid*).

However, the remains of B1 on site A lie *c.*53m from this road and it is more likely that this building fronted onto a north–south road conjectured to run immediately to its east (Fig 2) and this road alignment, although not certain, is shown on Fig 4 and subsequent plans. The evidence for this road is considered more fully below (see below, Discussion).

## FLAVIAN TO ANTONINE DEVELOPMENTS, *c.*AD 70–?200 (PERIOD 3)

Analysis of the stratigraphic sequence suggests there were five broad phases of activity on site A in period 3. These cannot be closely dated within the period and the sequence of development given here involves a degree of conjecture, with uncertainties indicated in the text.

### *Site Preparation and Pitting (OA3), Late 1st Century AD (Period 3, Phase 1)*

*Open Area 3*

The period 2 activity was sealed by a 0.30–0.50m thick layer of redeposited brickearth, cut by a few pits, a possible well and a ditch (OA3; not illustrated). The layer extended across the whole of site A with a surface at between 11.98m and 12.32m OD and is likely to represent material dumped to prepare the area for the construction of buildings. It contained a mixed ceramic assemblage which dates the onset of this activity to *c.*AD 70. Several pottery sherds, all from variants of bead-rim jars, displayed significant burning and a distinctive red residue on their surfaces; similar residues have been noted on pottery from the large-scale glass-working site at 35 Basinghall Street (BAZ05) and elsewhere (Wardle 2015, 131). The dumps also produced an elaborate and very well-preserved Hod Hill brooch made from tinned copper alloy, <S 1> (Fig 26), which although it was undoubtedly made (and imported) in the mid-1st century, may still have been in use around AD 70 (Mackreth 2011, 133). Domestic artefacts included a ceramic open lamp, <S 14> (Fig 29).

A wide, shallow curvilinear ditch *c.*0.3m deep, with a line of stakeholes along each edge, does not respect other observed alignments on either of the study sites, and was presumably an early drainage feature. A shallow gully along the eastern limit of excavation may indicate marking out activities. Concentrated in the northern part of site A were several quarry pits that had been backfilled with domestic refuse, probably reflecting the fact that this part of the site was developed later than the areas to the south and west. Sealing the pits were




*Fig 6. Shaped opus signinum <T1> from Open Area 3 (scale 1: 6)*

further dumps, which produced a number of personal and domestic items: the broken head of a copper-alloy hairpin, A<147>; copper-alloy tweezers, <S 10> (Fig 28); an olivary probe from a ligula or spatula, A<456>; and part of the nozzle of a colour coated imported factory lamp (*firmalampe*), A<79>. Part of an unusual basin-like structure made from *opus signinum*, <T 1> (Fig 6), was also recovered; similar curved pieces were also found in later contexts (OA4, OA11).




*Fig 7. Plan of the principal features of period 3, phase 2 (B2, B4, OA5, OA6) on site A, with an outline of contemporary activity on site B (scale 1:500)*

### *Clay and Timber Buildings and Open Areas (B2, B4, OA4–OA6), Late 1st Century AD (Period 3, Phase 2)*

#### *Building 2*

A clay and timber strip building (B2), consisting of two rooms with brickearth floors separated by a brickearth sill, was built over the southern part of Open Area 3 (Fig 7). One of the floor deposits in the eastern room dates to *c.*AD 70–85 from a decorated La Graufesenque samian Dragendorff form 29 bowl (SAMLG 4DR29). A single sherd from a Highgate Wood ware C round-bodied necked jar with decorated shoulder (HWC 2E) is considered intrusive within an assemblage (a total of 37 sherds) that is otherwise consistent with a mid-/late 1st-century AD date. A broadly contemporary floor produced an irregular copper-alloy coin of Claudius 1, A<15>, an imitation of Lyon Atelier I, *á la grosse tête* of *c.*AD 43–65 (see PDF supplement: Marshall). A fragment of blue-green cast ribbed (pillar moulded) bowl, <G 1> (Fig 24), came from an occupation layer in this building.

#### *Open Area 5*

To the north of Building 2 lay an open area (OA5), its southern edge defined by a sequence of two wide, shallow ditches (Fig 7), the later and more northerly of which



*Fig 8. View of mud brick wall and white tessellated floor under excavation in Building 4 looking south-west*

produced a small pottery assemblage (15 sherds), dated to *c.*AD 70–90 by a sherd from a decorated La Graufesenque samian Dragendorff form 37 bowl (SAMLG 4DR37).

*Building 4*

Building (B4) (Fig 7) survived as an L-shaped mud brick wall founded on timber beams (since decayed). To the north and east of the wall lay a fine white tessellated floor, probably the border to a mosaic, with a surface at 12.32m OD (Figs 8, 9, 22). To the west and south a second room had a brickearth floor. Badly-preserved plaster applied to the west side of the wall carried some painted decoration and indicated traces of a scheme which included areas of red and a horizontal turquoise band. The western extent of this room (and probably the building) was marked by a brickearth sill with three timber posts within its fabric, although the slight variation in alignment between this and the mud brick wall may hint at further, unrecognised phases of construction.

*Open Area 6*

To the rear of Building 4 lay a yard or garden area (OA6) (Fig 7). The first activity here was the digging of a marking out slot parallel to the back wall of the building. This was sealed by dumping/levelling and then two parallel gravel paths were laid down, along with a land drain constructed from reused roof tiles (imbrices) (*c.*AD 50–160).

*Summary of Contemporary Activity on Site B*

Contemporary Flavian developments on site B included a resurfacing of the north–south road with new drains constructed on either side. The eastern drain was probably covered. A range of buildings with earth floors and brickearth sills incorporating substantial timber uprights was constructed, with a probable portico fronting onto this

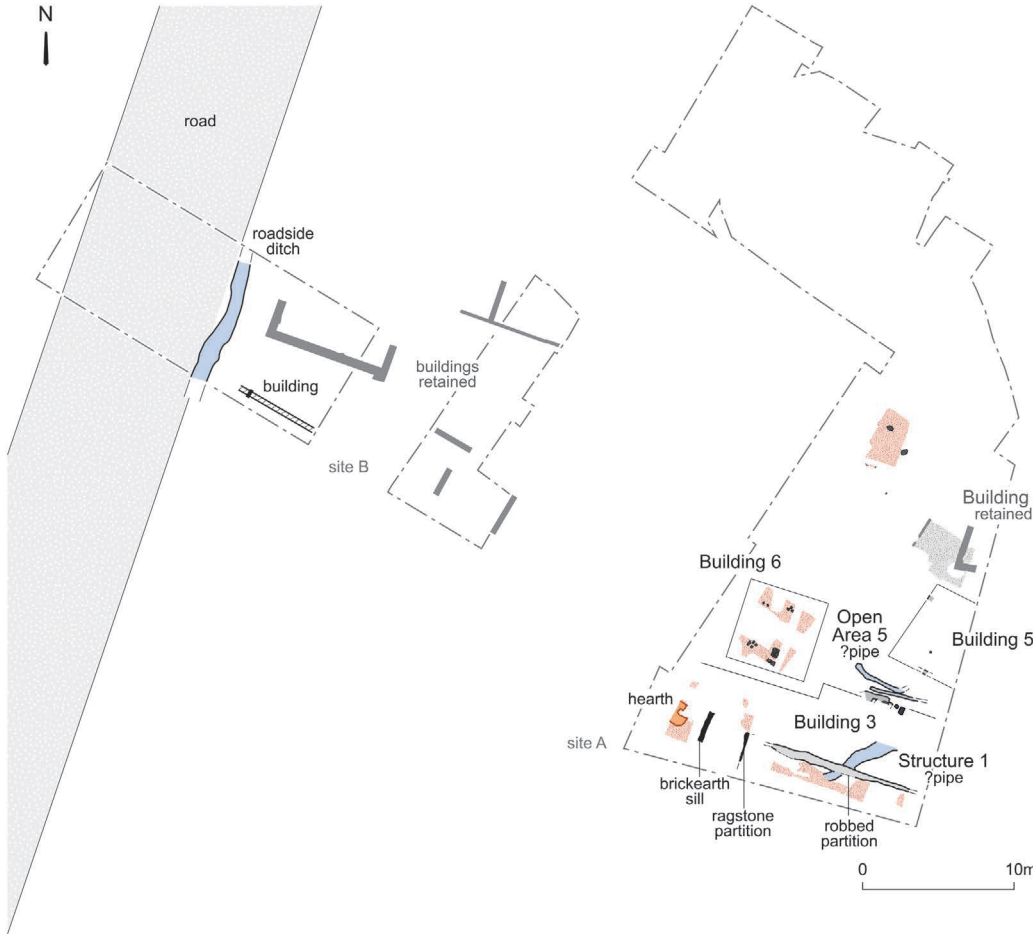


*Fig 9. Plan of the principal features of period 3, phase 3 (B3–B6, OA5) on site A, with an outline of contemporary activity on site B (scale 1:500)*

road (Fig 7). A pre-Flavian clay and timber building (Figs 4, 7) may have remained in use (Williams in prep).

### *More Intensive Development (B3–B6, OA4–OA5, S1), Early/Mid-2nd Century AD (Period 3, Phase 3)*

#### *Open Area 4*

The demolition of Building 2 created an open area (OA4, not illustrated) within which two small hearths, a few pits and a gully represent probably ephemeral activity. Nearly all the pottery associated with Open Area 4 was recovered from the fills of one of the refuse pits in the east and was Trajanic (*c.*AD 100–20) in date, with a single sherd of black-burnished ware 1 (BB1) considered intrusive. This pit also contained a factory lamp, <S 15> (Fig 29), stamped by a late 1st-/2nd-century Gaulish potter.

#### *Building 3 and Structure 1*

A replacement building (B3), of somewhat uncertain plan but aligned east–west, was then constructed over Open Area 4 (Fig 9). The walls were of mud brick, founded on timber sill beams with occasional upright posts, and the floors were of brickearth, compacted mortar and gravel. The extant remains suggest a large room to the east (and probable front) of the building, with

a smaller room to the west, separated by a possible brickearth sill, A[588]. A hearth deposit in the western room produced a few charred lentils (*Lens culinaris*), a single legume of horse bean (*Vicia faba*) and a number of wheat (*Triticum* spp) grains. Most of the recorded partition walls appear to relate to a late rebuilding (below). A timber water pipe (S1) may have run under the floor of the larger, eastern room, where a linear cut contained an iron collar from a pipe joint, A<364>, although it was not certain that the collar was *in situ*.

A later refurbishment of Building 3 involved the insertion of a north–south partition wall, surviving as a slot containing posts packed around with Kentish ragstone rubble and mortar. An east–west partition subdividing the front part of the building may have been contemporary but is represented only by a robbing cut. The latest surfaces within the building were of *opus signinum*, of which one small area to the south of the east–west partition and close to the road frontage was *c.*0.3mm thick with a surface at *c.*12.33m OD. Further west a thin spread of *opus signinum*, possibly intended as bedding for a tessellated floor, survived at 12.73m OD, indicating either that successive phases of floor are present or that the floor levels of this building stepped up further away from the road (Fig 9). The internal walls may have been decorated with painted plaster (Betts 2023, <WP2>, fig 2).

In general, the pottery from Building 3 was present in small groups and provides only a broad date range. However, the building is very likely to have been constructed in the early 2nd century AD for two reasons. Firstly, the preceding Open Area 4 clearly postdates *c.*AD 100; secondly, floor deposits associated with the later refurbishment of the building contain pottery which, whilst again only present in small groups, is consistently later than *c.*AD 120.

A make-up layer produced a tile (fabric group 2815) with its sanded underside scored by a blunt tool or stick, possibly a half box-flue, used in Roman Britain during the period *c.*AD 40–70, although clearly residual in this context. Domestic vessel glass associated with this building includes a large storage jar, <G 5>, and the neck of a jug or flask, <G 7>, both in blue-green glass and of late 1st-/2nd-century date (Fig 24).

*Building 4 (Retained)*

Building 4 was retained and extended to the west and north (Fig 9) over its former yard (OA6). Part of a collapsed, plastered mud brick wall was recorded, showing that one of the new rooms was painted with an elaborate polychrome decorative scheme, incorporating candelabra and plain and foliate borders (Betts 2023, <WP3>–<WP6>, fig 5). The fragmented remains of a patched *opus signinum* floor lay at *c.*12.36m OD, overlain by a possible hearth and an associated occupation deposit that produced abraded charred cereal grains. A silt deposit on the floor may be further occupation or make-up deposited prior to the insertion of the final, tessellated, floor of Building 4. Only a few tesserae remained *in situ*, at *c.*12.40–12.47m OD, but indicated that the floor was probably a mosaic featuring a white background and grey design. Most of the tesserae are of plain white hard chalk, but a few are cut from yellow (fabric 2454) and red (fabric group 2815) ceramic tile, and from dark grey Kimmeridge cementstone, <A 1> (Fig 23). One tessera appears to be a broken piece of flint or possibly chert. The mosaic was laid on an *opus signinum* base which had been covered by a thin layer of white plaster into which the individual tesserae were set. The gaps between the separate tesserae were then grouted with either white plaster or very fine pink *opus signinum*.

The pottery from the make-up deposits beneath the floors of Building 4 was Flavian (AD 69–96) in date, including sherds from a SAMLG Dragendorff form 33 cup (6DR33), but these ceramics are thought to be residual and a slightly later date of *c.*AD 100–60 (derived from a single sherd from a HWC 2E) is a better fit with the stratigraphic sequence. Small fragments of domestic glassware were found on floor surfaces within the building, with the only identifiable forms, apart from bottle glass, being a colourless beaker of the late 1st century AD, <G 3> (Fig 24), and the handle from a late 1st-/2nd-century AD blue-green jug, <G 8> (Fig 25). A stamped SAMLG Dragendorff form 18 dish (5DR18) (A<344>) reading OFRVFI by the potter Rufus iii dated *c.*AD 65–95 (Mills 2011) was found in the destruction debris of this building, presumably redeposited from period 3, phase 2.

*Building 5 and Building 6*

The space between Buildings 3 and 4 (*ie* the former OA5) was developed during this phase of activity, with fragmentary evidence for two further clay and timber structures, although their status as free-standing buildings is debatable. Building 5 was represented by a stakehole and two robbed beam slots (Fig 9). A possible Kentish ragstone foundation or post pad was only recorded in section during the trial work. The evidence for Building 6 (Fig 9) consisted of three phases of brickearth floor and associated post- and stakeholes, but no walls survived. The earliest floor was at 12.54–12.63m OD, the latest was truncated horizontally at 13.04–13.13m OD. The walls may have been decorated with imitation marble painted plaster (Betts 2023, <WP7>, fig 6). Based on the presence of sherds of black-burnished wares, central Gaulish samian (SAMCG) and HWC vessels, a Hadrianic/early Antonine date may be suggested. The final floor has a *terminus post quem* of *c.*AD 150 based on a single sherd of east Gaulish samian (SAMEG); a *nummus* of Crispus, A<14> (see PDF supplement: Marshall) must be intrusive from later disturbance.

*Gullies and a Water Pipe (OA5)*

Between Building 3 and Building 5, the formerly ditched southern boundary of Open Area 5 was recut as a series of gullies, running parallel to the long axes of these buildings (Fig 9). A wooden water pipe was laid in one of these gullies, indicated by fragments of two iron collars, A<360> and A<361>; these were found 2.2m apart and would have joined separate sections of the pipe. The fills of this gully are dated to the early 2nd century AD.

*Summary of Contemporary Activity on Site B*

The road and the clay and timber buildings to the north remained in use, with some evidence for remodelling, including new brickearth floors. To the south, a new building, defined by brickearth wall lines, was constructed (Fig 9). The early clay and timber building in the south-east of the site may have been retained. Most of the latest floors were scorched and all were sealed by a thick deposit of redeposited fire debris, thought to be evidence of a Hadrianic-period fire (Williams in prep). Painted plaster from the debris probably derived from these buildings (Betts 2023, <WP8>–<WP14>, figs 7, 8).

***Redevelopment of the Area (B7, B8, OA7), Mid-2nd Century AD (Period 3, Phase 4)***

*Open Area 7*

The phase 3 buildings on site A fell into disuse and appear to have been demolished at the same time. Spreads of demolition material were found over much of the southern part of the site, particularly overlying Buildings 3–5 (OA7; not illustrated). In addition to the collapsed wall (above), demolition layers associated with Building 4 produced a few pieces of roofing tile and further painted wall plaster, showing additional evidence for elaborate polychrome decoration and curved pieces from door or window surrounds (Betts 2023, <WP15>–<WP23>, figs 9, 10).

The pottery assemblages from Open Area 7 contained consistently 2nd-century AD material. Destruction debris from Building 4 contained an illegible stamp on a Les Martres-de-Veyre samian (SAMMV) sherd, probably a Dragendorff form 27 cup (6DR27) of Hadrianic date (Mills 2011). Most of the remaining pottery is Hadrianic to early Antonine in date (*c.*AD 120–60). An exception is a pit cut into the demolished Building 5, dated to after *c.*AD 160 by a single sherd from a black-burnished ware 1 Gillam form 226 bowl (BB1 4G226).

Personal items include two bone pins, <S 3> and <S 4> (Fig 27); the former is exceptionally small and slender and may have been used as a fastener. Two incomplete bone needles, A<28> and A<30>, appear to be standard forms but only the lower edge of each eye survives. Domestic items include two small fragments of open lamps in Verulamium/London region white ware (VRW), A<388>, and unsourced oxidised ware (OXID), A<384>. A small assemblage (14 fragments) of glass is entirely domestic in character, consisting chiefly of naturally-coloured blue-green sherds. Three forms can be distinguished (Fig 25): a funnel




*Fig 10. Plan of the principal features of period 3, phase 4 (B7, B8) on site A, with an outline of contemporary activity on site B (scale 1:500)*

mouth jar, <G 6>; a jug (handle), <G 9>; and a small square bottle, <G 12>, which retains its full profile and is made from poor quality glass. The only recognisable metal object is a copper-alloy *as* of Domitian A<13>, dated to AD 87–8 (see PDF supplement: Marshall).

*Building 7 and Building 8*

Further buildings were constructed over the demolition spreads, although later truncation means that those in the southern parts of site A are poorly understood. Building 7 is represented only by a masonry foundation built in irregularly coursed Kentish ragstone rubble (Fig 10), which survived to a maximum height of 13.40m OD. The building would have followed the previously established alignment. A new, if lower status, building (B8) was constructed on the site of Building 4 (Fig 10). Its ground plan is uncertain, but it was founded on beams and posts with a possible brickearth floor at 12.45m OD in a south-eastern room. A small, residual pottery assemblage can only provide a date of *c.*AD 120–60 or later for the floor of this building. Finds from robbed postholes and a robbed beam slot included mosaic-size white hard chalk tesserae, a few yellow ceramic tesserae (fabric 2454) and red ceramic tesserae (fabric group 2815), all probably residual. The robbing fills also produced a small iron ladle, <S 18> (Fig 30).

*Summary of Contemporary Activity on Site B*

Understanding of the later sequence on site B is hampered by the extent of post-Roman disturbance. Following the earlier fire event, the north–south road continued in use and at least two buildings were constructed, represented by a brickearth sill in the south-east of the site and by a fragment of tessellated floor (surface at 13.13m OD) bedded on *opus signinum*, seen only in a watching brief in the extreme north-eastern corner of the site (Fig 10) (Williams in prep).

The southernmost building had gone out of use and was superseded by a pit (B[354]) containing a large ceramic assemblage dated to *c.*AD 145–60, which may have been from the clearance of a substantial kitchen or cookshop (see below, Discussion). On the other hand, there is no dating evidence for the building with the tessellated floor and it is quite possible that it is, in fact, contemporary with the following phase of development on site A (and that it is part of B9 room G).

### *High-Status Redevelopment (B9–B11, OA8–OA10, OA15, S2), Mid/Late 2nd Century AD (Period 3, Phase 5)*

*Open Area 8*

Building 8 was dismantled and much of the southern part of site A was covered by dumps of silt mixed with demolition material between 0.3m and 0.4m thick (OA8, not illustrated). Due to the extent of truncation, it is uncertain whether Building 7 was also demolished at this time. The debris contained roofing tiles, bricks, combed and knife scored box-flue tile, tegula mammata and a small quantity of stone and ceramic tesserae. The origin of the dumped material is uncertain, but it included a triangular *opus sectile* paving stone cut from hard chalk, <A 2> (Fig 20), from a high-status 1st-century building. Plaster included a simple panelled design and one or more floral schemes in green, white and black (Betts 2023, <WP24>–<WP29>, figs 11, 12).

The pottery assemblage from Open Area 8 is rather mixed, reflecting both its origin as redeposited material and extensive later Roman and post-Roman disturbance.

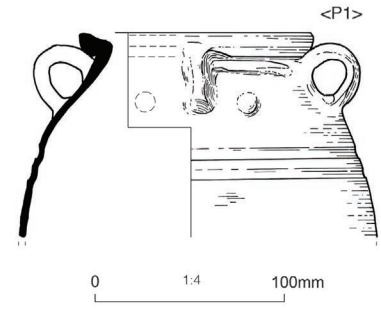


*Fig 11. Verulamium/London region white ware face pot (VRW 2FACE) <P1> from Open Area 8 (scale 1:4)*

Early Antonine (*c.*AD 140–60) material is most common, including two stamped Dragendorff form 33 cups (6DR33), one in Lezoux samian (SAMLZ) by the potter Biturix reading [BIT]VRIXF and another in central Gaulish samian (SAMCG) by an unknown potter, probably named Bualialus; both reaffirm the Antonine date of this assemblage (Mills 2011). The pottery is typical of domestic refuse, with a wide range of cooking and serving vessels. Alongside this is one more unusual vessel – five sherds from a well-executed face pot in Verulamium/London region white ware (VRW 2FACE), <P 1> (Fig 11). Late 2nd-century AD pottery is also present in this area, including a SAMCG Dragendorff form 31 bowl (5DR31) stamped by the potter Macrinus iii reading MACRINV[S], dated to *c.*AD 150–85 (Mills 2011), and a black-burnished ware 1 Gillam form 226 bowl (BB1 4G226), dated later than *c.*AD 160. A decorated Rheinzabern samian Dragendorff form 37 bowl (SAMRZ 4DR37) dated to *c.*AD 225–50 is likely to be intrusive.

A sample from a possible midden deposit in Open Area 8, A[1235], contained a charred botanical assemblage that included cereal grains, grass seeds and seeds of crop weed taxa, including stinking mayweed (*Anthemis cotula*) and fat hen (*Chenopodium album*). The area also produced a variety of personal and domestic artefacts. A bone hairpin, <S 6> (Fig 27), is likely to have had a terminal in the form of a female head. Domestic artefacts include fragments of a shale vessel, probably a shallow circular tray, <S 13> (Fig 30). A poorly moulded factory lamp, <S 16> (Fig 29), could date from the 2nd century




*Fig 12. Fragment of engraved glass beaker with Greek inscription <G2> (scale 2:1)*

and there are 18 fragments of glass. Most are from fairly utilitarian vessels, chiefly bottles – six fragments representing a minimum of four vessels. Other vessels include the thick concave base from a jug or more probably a jar <G 10> (Fig 24) and a finer colourless bowl or jar with out-turned fire-rounded rim <G 4> (Fig 24).

One fragment is quite remarkable. This is from the rim of a facet-cut colourless beaker, <G 2> (Fig 12), similar in form to other luxury colourless beakers from London (Shepherd 2008, 242–3), a form that is widespread in the Roman world from east to west (Oliver 1984). The new fragment, however, is engraved in the area normally reserved for faceting, is inscribed in Greek and has few parallels in Roman Britain (see PDF supplement: Wardle (a)). Only a small part of the design has survived, possibly from a chariot race or other circus/amphitheatre scene. Greek inscriptions are rare but far from unknown in London and emphasise the cosmopolitan nature of the inhabitants.

An octagonal handle, <S 19> (Fig 31), made from mahogany obsidian is an extremely rare find. It is possible that this handle was part of a small knife or razor for personal use.

*Building 9 and Structure 2*

A substantial building (B9) (Fig 13) containing at least seven rooms (A–G) was constructed over the previously undeveloped part of Open Area 3 (above, period 3, phase 1). The principal foundations of Building 9 consisted of Kentish ragstone rubble masonry bonded by a coarse light grey sandy lime mortar, set into construction trenches approximately 0.5m deep. Other walls defined modifications to the internal layout forming extra rooms; these were either built in mud brick or reused tile and brickearth (see below). Associated painted plaster suggests elaborate decorative schemes on the internal walls, including the use of bright red cinnabar, an imported (and expensive) pigment rarely seen in London (Betts 2023, <WP30>–<WP67>, figs 13–18).

Building 9 is likely to be late Antonine (*c.*AD 160–80) in date, although the pottery assemblages from it (as described per room below) are small and have wide date ranges, with many sherds likely to be residual. Like many other Roman buildings on sites A and B, Building 9 would have had a tile roof. One imbrex from an associated robber cut is embedded in roof mortar showing the position of the underlying tegulae flanges and the overlaying imbrex. A relief-patterned combed box-flue tile of 1st-century date, keyed with die 23 (fabric 3054), which probably came from a tilery situated near the south coast (Betts *et al* 1994, 19–20), is a residual or reused item.

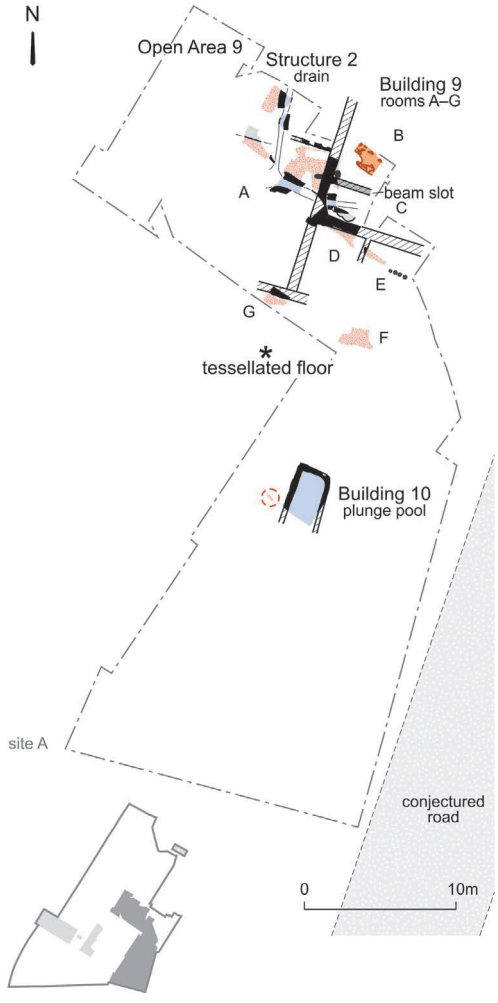


*Fig 13. Principal archaeological features of period 3, phase 5 (B9, B10, OA9) on site A (scale 1:500), with inset showing the relationship of this trench to the other excavation areas*

Room A

The northern limit of room A (Fig 13) was defined by a wall constructed from reused roof and floor tiles bonded with a hard sandy mortar and set on a brickearth sill/levelling deposit. Both sides of the wall were rendered in white mortar and it survived to a maximum height of 12.43m OD. Two phases of brickearth flooring were then laid down, the upper (slumped) surface surviving at 12.13–12.31m OD. A quarter-round *opus signinum* moulding, *c.*0.10m high, lay at the base of the northern and eastern walls. It was cut by a single posthole, possibly evidence of an internal feature against the eastern wall. Further areas of brickearth floor to the west and north-west may be part of room A or a separate room.

A possible change of layout or use is suggested by make-up dumps over the floors of room A and the insertion of a tile-lined drain (below, S2). A fragment of brickearth floor appears to be contemporary with this drain and is the last surviving activity associated with room A.

Room B

Room B was represented by a posthole and an associated mortar floor surface at *c.*12.24m OD. A robber cut indicated the position of the southern wall of the room. The latest activity was a tile oven (Fig 13) set into a slight depression and dated to *c.*AD 150–260 by a single sherd of SAMEG.

Room C

A mortar floor at 12.28m OD was found in room C. Two structural cuts and a posthole may relate to internal features or a slight remodelling of this room. Pottery recovered from the posthole is dated *c.*AD 120–250. As with room A, this room was later affected by the insertion of a large drain (below, S2).

Room D

Room D had a low quality tessellated floor made up of small irregular pieces of tile set into *opus signinum* at 11.88–12.08m OD.

Room E

Dividing rooms D and E was a brickearth wall sill set into a cut *c.*0.20m deep. An alignment of close-set postholes may relate to the construction of the building or the early use of this room. Laid over these was a pinkish white *opus signinum* floor at *c.*12.19m OD, itself subsequently replaced by a low quality tessellated floor at 12.26–12.37m OD.

Room F

An isolated series of brickearth and mortar surfaces may represent another room (room F) in Building 9 (Fig 13). The earliest floor, at 12.17m OD, incorporated pottery dated to AD 50–160. A subsequent floor incorporated a brickearth hearth, its surface at 12.44m



*Fig 14. View of the tessellated pavement in Building 9 room G, looking south-east*

OD. A robbed north–south aligned beam slot may indicate the original eastern extent of room F, although later alterations are shown by its robbing and a series of overlying compacted mortar floors which reached a maximum height of 12.56m OD.

Room G

A north–south beam slot probably formed the original western wall of room G (Fig 13). A brickearth floor laid up against the sill showed signs of burning, possibly indicating a nearby hearth (not illustrated). Another brickearth floor at 12.19m OD was then laid down.

Room G was subsequently enlarged. This is indicated by the robbing of the above beam slot and the deposition of demolition material as levelling to *c.*12.62m OD. A single, black-burnished ware sherd provides only a *terminus post quem* of *c.*AD 120 for this activity. A large assemblage of wall plaster was recovered from the demolition debris, along with fragments of roofing tile (most showing evidence of reuse), brick and shaped mortar. The wall plaster, which may have decorated the earlier room G, shows part of a floral decorative scheme in cream, white, bluish-grey, dark red on bright red, with border areas in black, cream, pink and bright red, and part of a green hanging garland (Betts 2023, <WP63>–<WP67>, fig 18).

The refurbished room G contained a plain red tessellated pavement (which may have formed the entire floor or possibly been the extensive border around a polychrome mosaic or stone floor at its centre) with occasional grey and orange tesserae cut from ceramic tile (fabric group 2815). It was set in *opus signinum* at 12.64–12.68m OD (Fig 14). This floor was later replaced by a brickearth surface at *c.*12.98m OD, which was cut into by a beam slot indicating the division of room G into two rooms (not illustrated). The fragment of tessellated floor found in the north-east corner of site B may also have lain in this room (Fig 13).

*Structure 2*

At some point during the occupation of Building 9, a masonry drain (S2) (Figs 13,

15) was inserted through the north–south masonry wall dividing rooms A and C. The drain was constructed from reused roofing tile and brick, bonded with a coarse yellow brown sandy mortar. In the side walls, tegulae were laid flat with the flanges on the inner face of the drain, with compacted gravel and broken tile used as levelling and as infill behind. The base was formed from tegulae bonded with mortar over an *opus signinum* base, 0.20m thick. At least one tegula has had its flanges deliberately knocked off to make it more suited to reuse. The tile-lined drain was 0.30–0.40m wide and sloped down from north to south, 12.55m OD to 12.34m OD, before turning east down to 12.19m OD. The truncated sides of the drain survived to a maximum height of 0.31m. One tegula measured *c.*456mm in length, three others had a breadth of 340–353mm, whilst an imbrex had a length of 412–421mm (all in fabric group 2815). There was also part of a probable lydion brick measuring 446mm in length. All this ceramic building material is dated to *c.*AD 50–160 as is the single sherd of pottery from its construction – part of a Verulamium/London region white ware flagon/jar (VRW 1/2).



*Fig 15. View of masonry drain (S2) under excavation, looking west*

*Open Area 9 and Open Area 10*

To the west of Building 9, a possible external yard (OA9) (Fig 13) consisted of a make-up deposit containing frequent building material fragments overlain by a moderately compacted gravelly surface at 12.40–12.48m OD. Associated pottery was sparse, but a single sherd of Les Martres-de-Veyre samian is dated to *c.*AD 100–235. A spread of demolition debris (OA10, not illustrated) across the yard surface may be related to the remodelling or demolition of Building 9.

*Building 10*

To the south of Building 9, and very probably contemporary with it, was a masonry plunge pool (B10) (Figs 13, 16). This pool was obviously rectangular, but as its southern end was missing due to later disturbance its overall size is unknown. The internal dimensions of the surviving portion of the pool were: length (north–south) 2.81m and width (east–west) 1.8m. The pool floor lay at 11.96m OD and its truncated lining walls survived to 12.32m OD. It was constructed on a 0.30m thick base of rough-hewn Kentish ragstone bonded with *opus signinum*/mortar on which the pool sides had been built in reused ceramic bricks (276–315mm in breadth by 35–38mm in thickness) with a small number of reused fragments of tegula. Up to 0.30m of *opus signinum* was then laid over the base and up against the pool sides and both sides and base rendered in a dark red *opus signinum* 40–70mm thick. Finally, the sides were covered by a layer of blue paint. Blue was a very expensive artificial pigment. A greenish-grey deposit on the painted surfaces is almost certainly limescale, suggesting that the pool held warm or hot water. A small part of the wall lining the northern side of the pool was rebuilt in a rough mix of tiles, *opus signinum* and mortar, possibly indicating the blocking of a step into the pool.



*Fig 16. View of the plunge pool (B10) under excavation, looking north*

A tiny area of *opus signinum* floor (measuring 0.21 by 0.53m, or *c.*0.11m²), to the west of the plunge pool, its surface at 12.73m OD (Fig 13), appears to be related because it was directly covered by destruction debris which in turn was cut by the robbing out of the pool masonry. A small mosaic-size Kimmeridge cementstone tessera was found associated with this floor. No other evidence survived to indicate the plan of the building in which the pool lay.

*Open Area 15*

In the isolated trench excavated at the north-west corner of site A (see Fig 1), the first activity after general clearance (above, OA2) was the dumping of a layer, 0.70m thick, of redeposited brickearth, raising the ground level to 12.43m OD in the west and 12.59m OD in the east (OA15, not illustrated). This activity is dated to *c.*AD 120–40 from a large section (14 sherds) of a VRW ring-necked flagon (1B5), perhaps broadly contemporary with Open Area 7, above). Cut into this layer was a small pit probably for the disposal of rubbish. It contained a medium assemblage of 39 sherds with a slightly wider date range of *c.*AD 120–60 based on the presence of black-burnished fabrics alongside Highgate and Verulamium/London region wares.

*Building 11*

Built over Open Area 15 was a building (B11) (Fig 17) consisting of at least two rooms, both with light reddish cream *opus signinum* floors, at 12.69m OD in the western room and 12.76m OD in the eastern room. The wall dividing these two rooms had been robbed out (see OA16), but the plastered east face survived *in situ*, with a 60mm tall, quarter-round *opus signinum* moulding at its base. The plaster survived to a maximum height of 13.13m OD. The robbing together with impressions on the back of the plaster

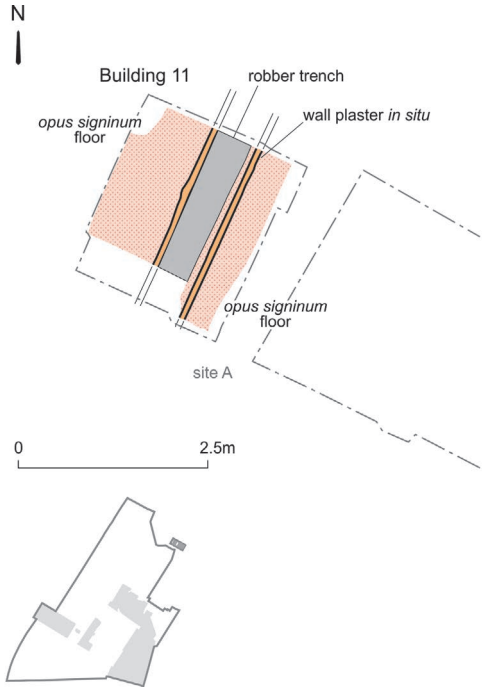


*Fig 17. Detail plan of Building 11, period 3, phase 5, on site A (scale 1:100), with inset showing the relationship of this trench to the other excavation areas*

indicate a building with masonry foundations and a stone and tile superstructure. The only pottery associated with the building was residual.

Fragments of painted wall plaster from two rather poorly executed decorative schemes were found, associated directly with Building 11 or with its robbing (below, OA16). The first can be reconstructed as a dark red dado with white and yellow splashes and white borders enclosing panels of imitation marble breccia (Betts 2023, <WP68>–<WP70>, fig 19). The second appears to be from a room with the middle zone of the wall decorated in pale green panels with dark red borders (*ibid*, <WP71>, fig 19).

*Summary of Contemporary Activity on Site B*

It is possible that the site B building with the tessellated floor, described under the previous phase (period 3, phase 4), was retained into, or even first constructed in this phase (period 3, phase 5), perhaps lying in Building 9, room G (above); hence it appears on both Figs 10 and 13. The road is assumed to have continued in use as it was subsequently repaired during period 4 (below). The absence of other buildings that can be dated to later than the mid-2nd century AD is considered below (see Discussion).

## LATE ROMAN OCCUPATION, *c.*AD 250–400 (PERIOD 4)

Buildings 9, 10 and 11 define the final period 3 uses of Site A, and their demolition (to form OA11, OA12 and OA16 respectively) marks the onset of period 4. The debris in the north of the site (OA11, OA16) sealing Buildings 9 and 11 consistently post-dates *c.*AD 250. Some, at least, of the pits and wells in Open Area 13 (whose backfills dated *c.*AD 270–400) could have been contemporary with the continued use of Building 9. And whilst dating evidence suggests that the plunge pool (B10) may have been demolished (OA12) during the first half of the 3rd century, this was an apparently discrete structure whose disuse need not also imply that of Building 9. Consequently, attaching a date to the start of period 4 is difficult. The date range of *c.*AD 250–400 that has been used reflects the majority of the ceramic dating. However, it remains quite possible that Buildings 9 and 11 remained in use into the 4th century AD.

### *Demolition of Buildings 9 and 10, and External Activity (OA11–OA14, S3, S4)*

*Open Area 11*

Building 9 was demolished and the area was levelled (OA11, not illustrated) with waste material derived from this destruction, to a maximum height of 13.20m OD. This debris contained roofing tile, brick and a few stone and ceramic tesserae. One imbrex was made at Harrold, Bedfordshire (fabric 2456), a type which was brought into London around AD 270–350. This could have been used at some point to repair or modify Building 9, which would imply that it remained in use for at least a century. More unusual is a red painted cream colour tile (fabric 2454), which is similar to a painted imbrex from the same tilery, found in a Roman building

at East Farleigh, Maidstone, Kent (A Daniels pers comm). A small quantity of wall plaster was also found that is almost certainly from different rooms (B, C) in Building 9 (Betts 2023, <WP72>–<WP75>, fig 21). A demolition layer over Building 9 room A produced plaster with a graffito depicting what may be a *venatio* (hunting scene) (*ibid*, <WP76>, fig 22).

Open Area 11 deposits contained mostly residual pottery. However, demolition debris sealing Building 9 rooms B and C is dated to *c.*AD 250–400 by sherds of Alice Holt/Farnham ware (AHFA), while a pit or robber cut over Building 9 room C and a levelling deposit over Building 9 room F were both dated to *c.*AD 350–400 by sherds of Portchester ware D (PORD).

*Open Area 12*

Building 10 was demolished and the plunge pool was partially robbed out before the area was levelled over (OA12, not illustrated). Building material recovered includes wall plaster, roofing tile, brick, tegula mammata, an *opus spicatum* paving brick and a piece of pumice stone, a rare find in Roman London. There are also a small number of tesserae, mainly cut from red ceramic tile, although some are cut from yellow tile (fabric 2454) and four from hard white chalk. Most of these tesserae probably originated from either a red tessellated pavement or a plain border around a decorated mosaic floor. A mostly residual pottery assemblage included a small quantity of late Roman material (A[797]) dated to *c.*AD 200–50 on the presence of a variety of finewares and mortaria, including sherds from two imported Speicher ware late wall-sided mortaria (SPEC 7LWAL), one of which, <P 2> (Fig 18), has sooting concentrated on the rim.

Some notable personal and domestic artefacts were also found, many of which may have been in use in the period 3 buildings. They included a ligula, <S 11> (Fig 28), two pins and a needle. Fine bone hairpin <S 5> (Fig 27) dates from the 1st or 2nd century, while <S 7> (Fig 35) is a later form, in use from around AD 200. A bone needle, <S 12> (Fig 27), has seen some use and the broken point appears to have been reworked. The only obviously domestic items are 16 fragments of glass, of which seven are bottle fragments, one the base of a square bottle (Isings form 50) with a moulded circle and cross, <G 13> (Fig 24). The other vessel fragments are small body sherds of naturally-coloured and colourless glass, with one good quality colourless vessel with a trail, A<295>, which dates from the 2nd century AD.

A circular copper-alloy lock plate, <S 22> (Fig 31), is surprisingly well preserved, but from an apparently undisturbed context, and was probably affixed to a box or chest, while a Venus figurine, <S 23> (Fig 33), may have been used in a household shrine. A gaming piece, A<72>, was carefully trimmed from a samian vessel of probable 2nd-century date. The most unusual artefact in this group is a well-preserved iron spade sheath, <S 20> (Fig 31), the cutting edge of which would have protected the blade of a wooden spade.

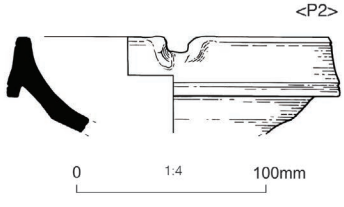


*Fig 18. Speicher ware late wall-sided mortarium from Open Area 12: <P2> (scale 1:4)*

*Open Area 13*

A series of rubbish pits and two wells (OA13) (Fig 19) may either represent activity in a yard or garden associated with Buildings 9 and 10 if their occupation extended into period 4, or be associated with Structures 5, 6 and/or 7 (see below). The rubbish pits were between 0.21m and 0.84m deep and unremarkable; one produced a crude silver-plated copper-alloy copy of a *denarius* of Hadrian, A<12>. The northern well was at least 4.3m deep and was badly disturbed by modern foundations. It was only partly excavated and its depth was determined by augering. While no evidence of a lining was seen, it is assumed to have possessed a timber lining of some description. The other well was *c.*1.6m square and 0.7m deep. It was only visible at 9.61m OD; above this level its timber lining appears to have been robbed out and as a potential robber cut extended up to 13.23m OD, so the original depth of this well may

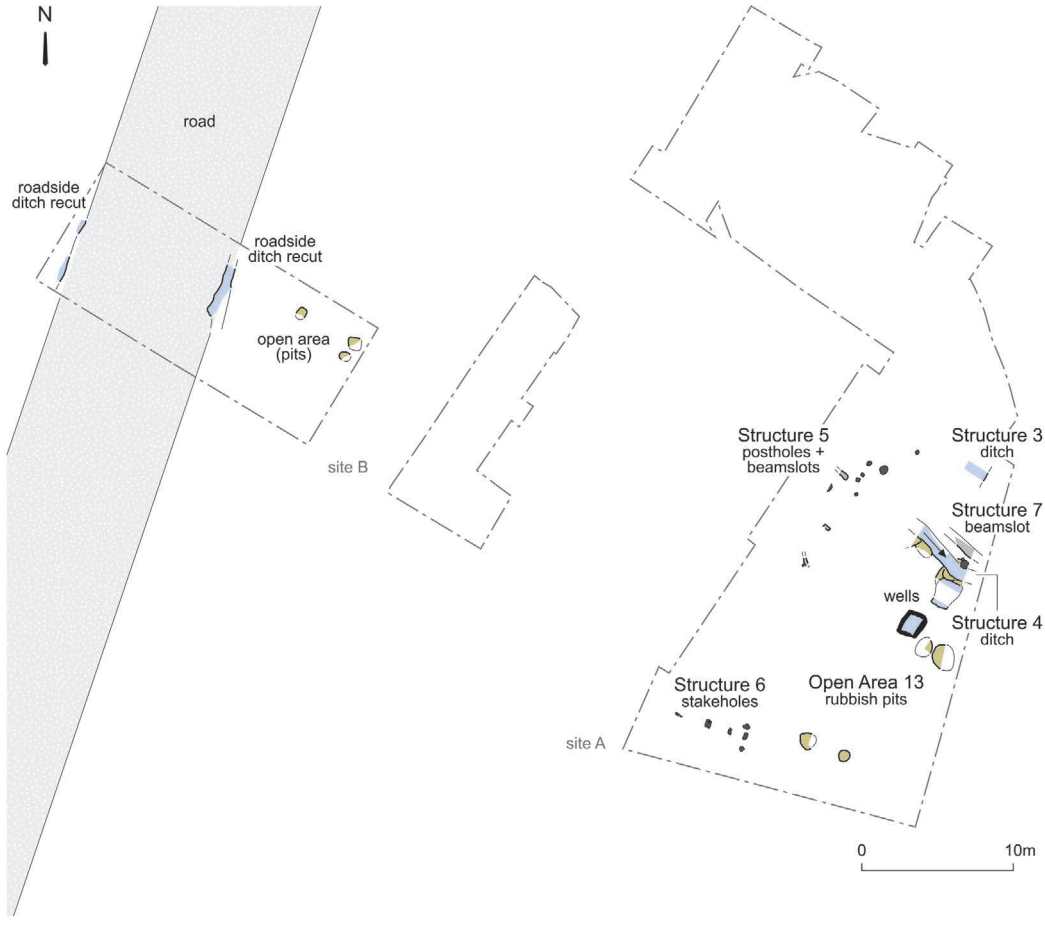


*Fig 19. Plan of the principal archaeological features of period 4 (OA13, S3–S7) on site A, with an outline of contemporary activity on site B (scale 1:500)*

have been 4.32m. A timber box-frame lining survived at the base, measuring *c.*1.0m by 1.3m. The disuse backfill contained mainly Roman pottery (*c.*AD 270–400) but also a single sherd of medieval pottery dated to *c.*AD 900–1050, which may be contamination from later slumping or robbing activity. As with other period 4 land uses, most of the pottery recovered from Open Area 13 is residual 2nd-century AD material. However, the small quantity of late Roman pottery sherds indicate that this activity took place between the second half of the 3rd century AD and the late 4th century. The latest of the pit fills were dated to *c.*AD 325–400 by a single sherd of an Oxfordshire red/brown colour-coated ware bowl (Young form C50) with white painted decoration (OXRC 4 WPD).

*Open Area 14*

Sealing the pits and wells of Open Area 13 were dumps of brickearth derived material (OA14, not illustrated) that incorporated moderate quantities of plaster, mortar and ceramic building material. The surface of these deposits, which probably represent dumping of debris from the demolition of buildings on the study sites or nearby, lay at 12.51–13.45m OD with a fall from south to north. Building material includes roofing tiles, some of mid-2nd-/3rd-century date (fabric 2453), brick, combed box-flue tiles, possible sandstone roofing or paving and various small groups of wall plaster. There is also a triangular *opus sectile* paving slab cut from Kimmeridge cementstone. A few

red ceramic tesserae are also present. The pottery assemblages are dated on a small quantity of late Roman pottery, with a similar range of fabrics present to the late Roman open areas. The latest material is dated *c.*AD 350–400 by sherds of PORD. Fragments of late 1st-/2nd-century glass vessels may well derive from the demolished buildings. They included parts of colourless beakers, A<274> and A<275>, and four fragments of square bottle, representing at least two vessels. An incomplete bone hairpin, A<26>, is also residual and the group also includes some corroded iron fittings, among which is part of a double-spiked loop, A<353>, and a lock bolt, <S 21> (Fig 32), of a type more commonly seen in copper alloy.

*Open Area 16*

In the isolated trench at the north-east corner of site A, the masonry foundations of the period 3 Building 11 were robbed out and the area levelled over (OA16, not illustrated) to 13.14–13.23m OD with demolition material. This included roofing tile and mud brick, as well as daub keyed for the attachment of wall plaster. This suggests that the period 3 Building 11, or at least part of it, was of clay and timber construction. A large quantity of wall plaster, possibly derived from the underlying building, included part of a garland in pink and brownish-red on a pale grey background, a floral design in pink and brownish-orange (Betts 2023, <WP77>, fig 23) and a blue and yellow design on a dark red background next to a blue and white border (*ibid*, <WP78>, fig 23). Two shallow pits were cut into this levelling and a possible posthole, all intercutting, and represent a period of abandonment in this area. Dumps of probably imported material then raised the ground to 13.48m OD.

Pottery dates of *c.*AD 250–400 were obtained from this dumping and the earlier demolition debris. An unusual aspect of the assemblages is the presence of a selection of sherds from Camulodunum form 306 bowls (4C306; below, Discussion). A distinctive form of late Roman glass bottle <G 15> (Fig 34) that dates to the late 3rd/4th century was also recovered from the latest phase of dumping. Building material included an imbrex made from a highly unusual pale maroon and grey clay with pale greenish-yellow outer skin (fabric 3056), an import from outside the London area.

*Structure 3 and Structure 4*

Two ditches (S3, S4) (Fig 19) cut across Open Area 13. The northernmost (S3) was aligned north-east to south-west. Its fills produced a few sherds of residual 2nd-century pottery. To the south was a shallow ditch (S4) whose base sloped downwards from west to east (12.54m to 12.36m OD) and survived to a depth of 0.20m. Its backfill contained 26 sherds from a 3rd-century AD Nene Valley colour coated beaker (NVCC 3).

***Late Roman Structures (S5–S7)***

*Structure 5*

A series of robbed postholes and beam slots represent a late Roman structure or earthfast building (S5) (Fig 19). These survived to 12.54–12.98m OD and the robbing backfills contained pottery dated to *c.*AD 350–400 based on the presence of OXRC and PORD.

*Structure 6*

Eight post- and stakeholes forming a T-shape are probably part of a structure or earthfast building (S6) (Fig 19). The posts had either been pulled out or cut off leaving the timbers to rot *in situ*. They were cut from 13.33–13.38m OD and produced two sherds of AHFA, dated to *c.*AD 250–400.

*Structure 7*

A robbed-out beam slot and posthole probably represent a temporary structure (S7) (Fig 19) or part of a building. No other structural remains were found in this area, so the former seems more likely. These were cut from 12.79–12.83m OD and are dated to *c.*AD 350–400 by two sherds of PORD.

***Possible Late Roman Buildings (B12, B13)***

A sequence of deposits overlying Open Area 16 hints at the existence of late Roman buildings, in the north-east of site A. However, the evidence was both poorly preserved and difficult to interpret due to the restricted

area available for excavation. To the south, two late Roman masonry structures may be conjectured on the basis of post-Roman robbing trenches (below, period 5).

*Building 12*

A possible brickearth floor (B12, not illustrated) at 13.73m OD was cut by a possible beam slot and a shallow pit. The base of the slot, which sloped downwards from south to north, was very irregular and cut by the pit or robbed structural cut at its north end. A stakehole to the north is also probably part of this building.

*Building 13*

Overlying Building 12, two dumped deposits formed the make-up for a light pink *opus signinum* floor (B13, not illustrated) at 13.87–14.01m OD. A single posthole was found associated with this floor. The latest levelling layer for this building is dated *c.*AD 350–400 by a single sherd of PORD.

*Summary of Contemporary Activity on Site B*

The roadside ditches on site B were recut, suggesting continued maintenance of the road (Fig 19). The primary fill of the eastern ditch can be dated after *c.*AD 300 by a sherd of late Roman 'calcite-tempered' ware (CALC). The disuse of both ditches can be shown to post-date *c.*AD 350 by the recovery of sherds of PORD from their final fills. The excavation of a few small, undiagnostic pits points to some late Roman activity adjacent to the east side of the road (Fig 19), with ceramics providing date ranges of *c.*AD 250–400 and *c.*AD 270–400 (Williams in prep).

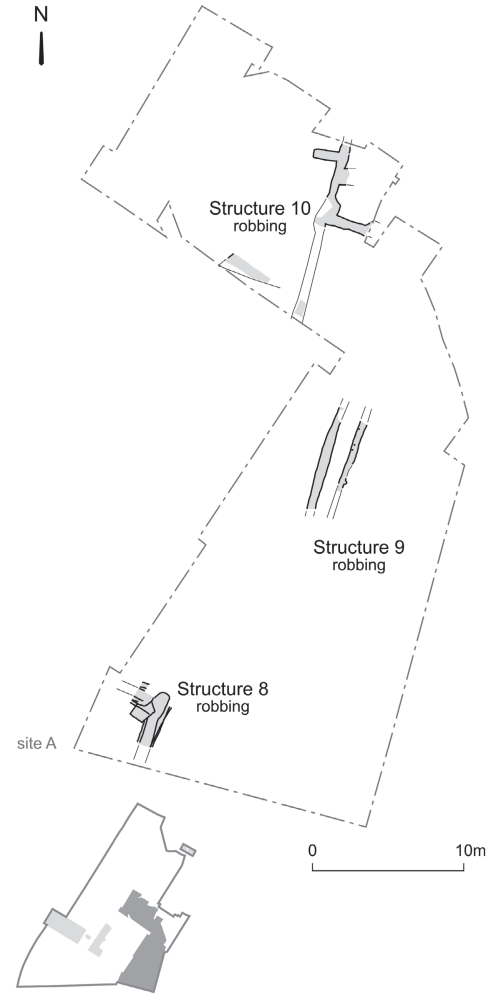


*Fig 20. Plan of the principal 10th- and 11th-century AD (period 5) features on site A (scale 1:500), with inset showing the relationship of this trench to the other excavation areas*

## SUMMARY OF LATE SAXON AND MEDIEVAL ACTIVITY, *c.*AD 900–1500 (PERIOD 5)

The post-Roman sequence (Fig. 20) is discussed more fully in a separate report in this volume (Pitt 2023). On site A, three groups of linear trenches and pits (S8–S10) are thought to be evidence for the robbing of building stone during the reoccupation of the area in the 10th and 11th centuries (*ibid*, 160, fig 4). Structure 10 robbed the foundations of Building 9, but if Structures 8 and 9 really are robber trenches, then they hint at the existence of two further late Roman masonry structures, otherwise unrecognised. Various groups of pits on site B were provisionally dated to the Saxo-Norman period (not illustrated), including some which had been cut through the north–south road in the west of the site (Evans 2009). This suggests that medieval Bishopsgate street was reinstated centuries later on a more westerly alignment than its forgotten Roman predecessor.

## DISCUSSION

### *Pre-Flavian Development*

The evidence for pre-Flavian (period 2) activity on site A was limited to quarrying, the digging of gullies and the construction of a solitary earthfast building, analogous to that from site B where, apart from the development of the north–south road, possible stock enclosures and storage buildings are all suggestive of activity on the periphery of the settlement. The sites lie outside or north of the line of the double ditches at 7 Bishopsgate (Sankey 2002, 3), that have been interpreted as part of the immediately post-Boudican temporary defences protecting the core of the early settlement, or possibly part of a Claudian period military enclosure (Perring 2022, 51–5). The earliest settlement was probably situated along the eastern side of the road on site B: possible Boudican fire deposits were identified at site B, but not on site A.

Clay and timber strip buildings may have been constructed on site B in the decade following the Boudican fire. A few finds, such as the lion's paw mount <S 17> (Fig 5) from a high-quality, imported piece of furniture, indicate high-status individuals within the locality, but stand in contrast to the lack of architectural pretension shown in the buildings constructed on the study sites during period 2.

Interestingly, the majority of the small quantity of animal bones dating to period 2, from site B are from sheep/goat and this is the only point when sheep/goat dominated the faunal assemblage on both sites (Table 6). Possibly this dominance represents the continuation of Iron Age dietary trends (Albarella 2007; Hambleton 1999; Maltby 1981) into the earliest part of the Roman period, or a reliance on resources produced by a less Romanised countryside (*cf* Thomas 2008). However, there are distinct hints of Romanisation in the period 2 faunal assemblage. The one cow element present is a scapula that has had its spine removed during the filleting process, a classical Roman butchery style (Maltby 2007; Seetah 2006). A roe deer tibia fragment, possibly derived from hunting a wild creature, is a possible high-status indicator.

### *The Local Road Network*

Two arterial roads of Roman London which can be assumed to be primary features of the town are, firstly, the one running northwards from the Thames crossing and, secondly, the east–west aligned road it meets at a 'T'-junction. The north side of this junction was initially a gravelled open area, which may have served as a marketplace (Dunwoodie *et al* 2015, 32–3, fig 33), and subsequently became the site of the forum. The Roman road to the north ('Ermine Street'), was almost certainly another primary route constructed in the first years following the establishment of London (both the early zone of settlement and Ermine Street are shown for example by Perring 2015, 27, fig 3). Were it not for the presence of the marketplace and subsequently the forum, Ermine Street could have been a northward extension of the road running northwards from the Thames crossing. However, the presence of the marketplace (possibly) and the forum (certainly) blocked this route. Consequently, the development of the road network in the part of Roman London around Crosby Square, north of both the zone of earliest settlement and the forum, remains open to conjecture.

The north–south Roman road on the western side of site B has been previously interpreted as forming a section of Ermine Street (Fig 2). However, after the building of the Flavian forum (and even more so after the forum's subsequent reconstruction on a far grander scale), traffic heading south would have had to go round three sides of the forum before continuing towards the Thames crossing. There is also the strong suggestion that there was another north–south road immediately to the east of site A (Fig 2): there are many observations of a road on this alignment further south, where it appears to have pre-Boudican origins, such as at 15–18 Lime Street (Schofield 1998, 64) and 1–7 Whittington Avenue (*ibid*, 287–8), but none north of the probable observation at 139–144 Leadenhall Street (*ibid*, 63). Importantly, this road runs up the eastern side of the expanded, early 2nd-century forum and basilica complex and were it to continue in a straight line would also arrive at Bishopsgate, where Ermine Street left Roman London. As a result, it has been suggested that this was the original route of

Ermine Street (Dunwoodie *et al* 2015, 32–3, fig 33, 76–8, fig 62) and this would relegate the road at site B to being no more than a side street.

The alignment of the Roman buildings on site A would be perpendicular to a north–south road to their east, though as this road was broadly parallel to that recorded at site B, it follows that the buildings are orthogonal to both roads. However, as noted previously, the remains of Building 1 at site A are *c.*53m distant from the road on the west side of site B, which is a considerable distance in the context of Roman London – the Roman strip buildings fronting onto the main east–west road through Londinium do not usually extend more than *c.*25m back from the road (see for example Hill & Rowsome 2011, 136–7, fig 134).

### *The Character of the Flavian to Antonine Occupation*

On site B, a sequence of clay and timber strip buildings is overlain by a destruction horizon dated to *c.*AD 120/125 and identified as evidence of the Hadrianic fire (Williams in prep). Only two fragmentary buildings overlay this horizon, at least one of which was disused by the mid-2nd century AD. On site A, a series of Roman clay and timber buildings do not obviously correspond to those excavated on site B and it is considered likely that they fronted onto the conjectured extension of a north–south road to the east (above). Some of these buildings were of high status, with tessellated floors and decorated plaster on mud brick walls. From around the mid-2nd century AD, buildings with masonry foundations appear on site A, including one with a plunge pool painted with a rare blue pigment (Fig 16), an indicator of wealth. The rooms were decorated with high-quality painted plaster on the walls, and some had tessellated floors. Again, the buildings are likely to have fronted onto the conjectured road to the east, although the possibility that they represent a cluster of high-status buildings, set back from the street frontages, in a more exclusive, secluded part of the insula should not be ruled out.

A similar sequence of clay and timber buildings being replaced by larger higher-status masonry properties in the mid- to late 2nd or early 3rd century AD is seen on many sites in the City of London, such as 1 Poultry (Hill & Rowsome 2011, 367–77), 7 Bishopsgate (Sankey 2002, 7–13) and Plantation Place (Dunwoodie *et al* 2015, 119–45). The evidence for the probable construction of timber structures in period 4 (B12, B13; below), also demonstrates that in Roman London masonry buildings could be superseded by wooden ones.

On both sites, the archaeological sequence was fragmented and truncated. However, the near-absence of post-Hadrianic structures on site B, other than a fragment of mosaic floor found in the watching brief on that site (Fig 13; Williams in prep) and which seems likely to have belonged to a room in Building 9 on site A, is notable. Whilst truncation is likely to account for some of this lack of evidence at Site B, more deeply cut features such as robber cuts removing walls, were also absent, and large pit B[354] containing the clearance of a substantial high-status kitchen (possibly related to the disuse of A:B7) suggests that part at least of Site B was now open ground used for refuse disposal.

It is likely that the concentration of structural evidence on Site A reflects a real change in the character of this insula, with high-status buildings lining the eastern road whilst land close to the western road was, in places, open ground. As discussed above, it is likely that the western road (Site B) had declined in importance after the construction of the second forum and that the eastern road had become the preferred route to Bishopsgate and Ermine Street.

Further evidence for high-status buildings close to Site A is provided by antiquarian reports of a polychrome mosaic found at the south-west corner of Crosby Square in 1836 (Merrifield 1965, 288, gazetteer 324) and fragments of tessellated pavement found on the north side of the square in 1908 (*ibid*, gazetteer 325). Further north, a mosaic pavement found in St Helen's Place in 1733 (*ibid*, 287, gazetteer 319) lies on the axis of the eastern road.

On the west side of Bishopsgate, directly opposite site B, a series of tessellated pavements were discovered (Merrifield 1965, 287–8, gazetteer 320–3), most plain, but including one fine polychrome mosaic with a central panel bearing a representation of a

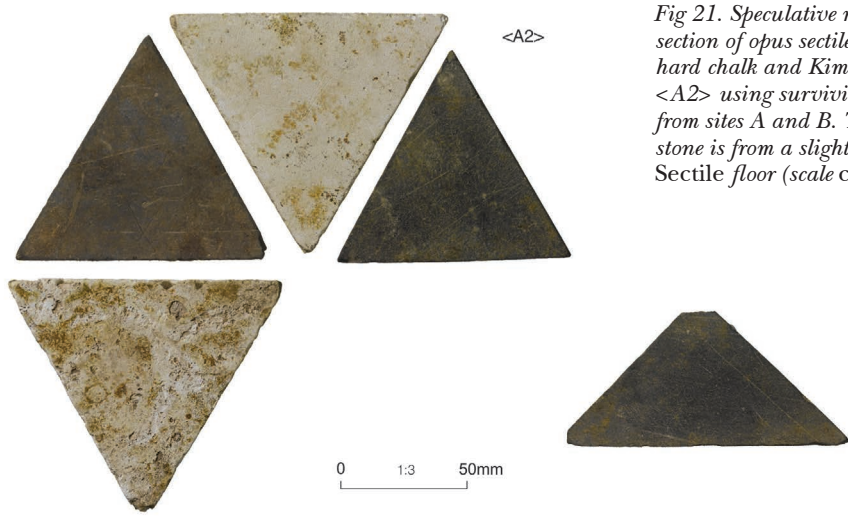


*Fig 21. Speculative reconstruction of a section of opus sectile floor made from hard chalk and Kimmeridge cementstone <A2> using surviving* ex-situ *fragments from sites A and B. The separate paving stone is from a slightly smaller size* Opus Sectile *floor (scale* c. *1:3)*

Bacchante (or Maenad) on a panther (*ibid*, 288, gazetteer 323). This distribution indicates some high-status 2nd-century and later buildings fronting onto the western road.

*Building Materials*

In addition to the *in-situ* remains, evidence for high-quality early Roman masonry buildings in the general area is provided by residual and reused building material. An elaborate cornice moulding, B<670>, cut from grey Purbeck marble from Dorset was found in redeposited Hadrianic fire debris on site B (Williams in prep). Both sites produced evidence for fine-grained sandstone used as paving, although as this was all found *ex situ* it cannot be stated that any building on site A or B had such a floor. Of particular interest is the presence of six triangular pieces of *opus sectile* paving. The use of cut stone blocks of triangular and other shapes to form a decorative stone pavement was an early Roman building technique that would have been restricted to a limited number of prestigious 1st-century AD buildings in Roman London (Pritchard 1986, 185). White blocks cut from hard chalk and dark grey examples cut from grey Kimmeridge cementstone suggest an *opus sectile* floor with an alternating pattern of light and dark coloured stones, <A 2> (Fig 21). One grey block from site B is cut from Purbeck marble, <A 3> (Fig 22).

*Opus sectile* paving seems to have been quickly superseded by the use of ceramic and stone tessellated floors during the late 1st century AD. There is good evidence for tessellated floors within the buildings constructed on site A in period 3 (above; Figs 8, 14, 22). All the stone tesserae are of small mosaic size, the vast majority cut from hard white chalk. White tesserae seem to have formed the background in black and white mosaic floors decorated in dark grey and black Kimmeridge cementstone from Dorset. Others clearly come from polychrome mosaics, such as the example in the extension of Building 4 in period 3, phase 3 (Fig 23). The absence of tessellated pavements from the late 1st- to mid-2nd-century roadside buildings on site B (Williams in prep) strongly suggests that, as the area developed, site A became the focus of higher-status occupation.




*Fig 22. Opus sectile paving <A3> cut from Purbeck marble from site B (scale c.1:3)*

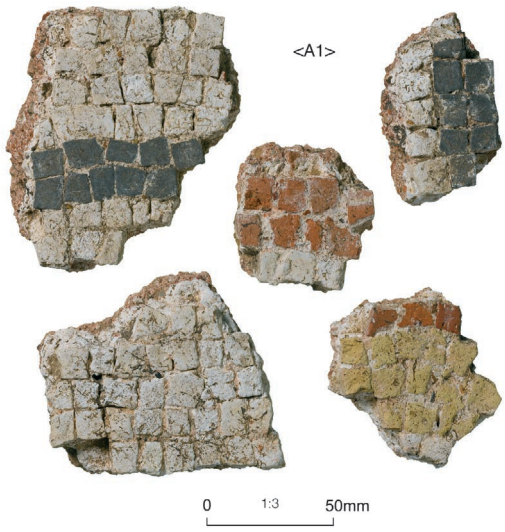


*Fig 23. Mosaic floor fragments <A1> from Building 4 (scale c.1:3)*

*Pottery*

The range of ceramic vessels from site A is typical of domestic refuse from daily life in Londinium. A dominance of both Alice Holt/ Surrey ware and black-burnished wares being used as cooking jars is evident, with frequent sooting still visible on a high proportion of sherds. Limescale residue is also perceptible on the interior of some of these jars, indicating the heating of liquids. Pitting across the open areas of the site contains the higher proportion of these disused domestic vessels. The assemblage indicates that the use of site A was residential. Burning and residues on a number of late 1st-century AD jars from Open Area 3 hint at some industrial activity taking place in the vicinity, possibly related to glass working (above, OA3).

On site B a significant group of semi-complete ceramic vessels had been disposed of in the backfill of a large pit, B[354], probably as a single event *c.*AD 140–5 (see above, period 3). The assemblage included many amphorae, beakers, bowls, flagons, jars and mortaria; possibly it represents a clearance group from the kitchen of an important property, or even the refuse from a large 'cookshop' rather than a small household (Tyers 1984, 368, 374). The study sites are close to the forum (Fig 2) and could have been an appropriate location for a cooked food retailer. The assemblage from site A does not contain any directly comparable groups in terms of vessel forms and preservation, but it is noteworthy that the assemblage from Open Area 8 is dominated by early Antonine material, with one large group that has a high proportion of cooking and serving vessel forms present dating *c.*AD 145–60.

*Glass*

Most of the recognisable forms among the late 1st- to late 2nd-century AD glassware from site A are domestic in character. There is very little (three fragments) strongly-coloured glass or cast glass dating from the mid-1st century and only one example of a cast ribbed bowl (Isings form 3), <G 1> (Fig 24), which was ubiquitous in the mid- to late 1st century. The general adoption of

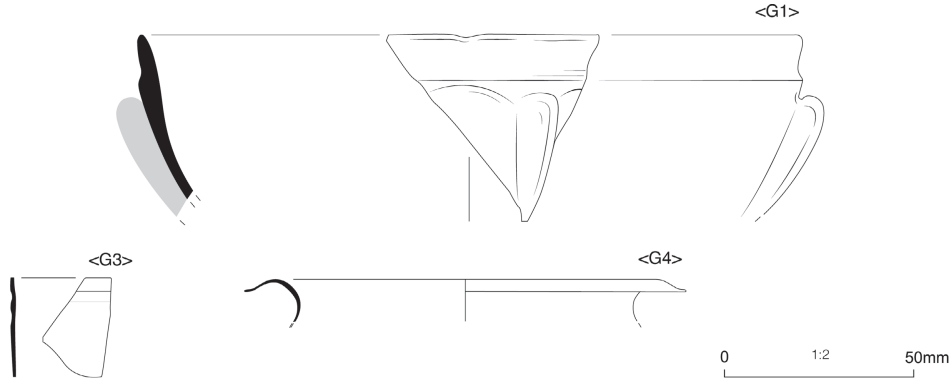


*Fig 24. Cast ribbed bowl <G1> and two free-blown colourless glass vessels: beaker <G3> and bowl or jar <G4> (scale 1:2)*

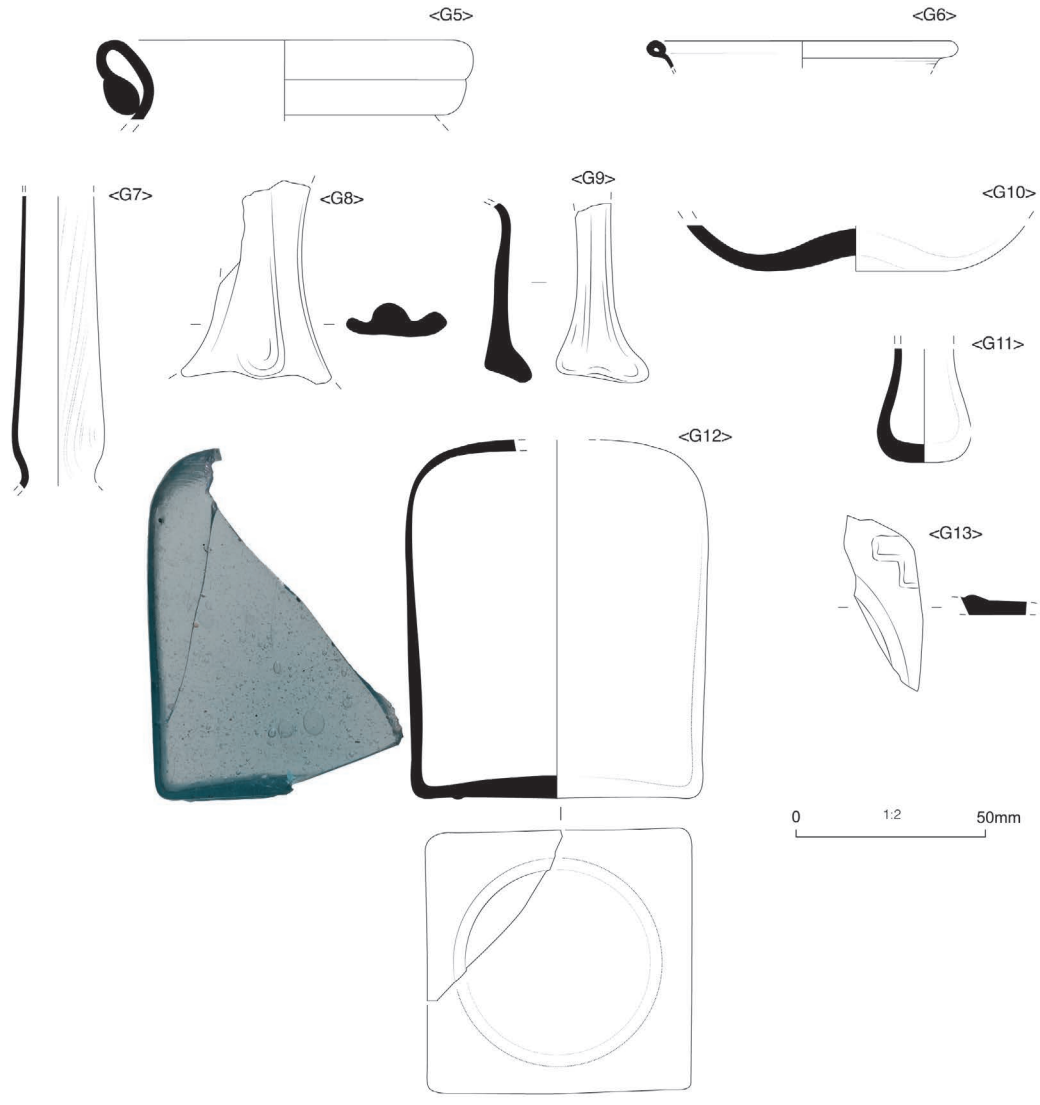


*Fig 25. Free-blown, naturally-coloured glass jars and jugs <G5>–<G10>, phial <G11> and bottles <G12>, <G13> (scale 1:2)*

the technique of blowing glass saw a great increase in the available variety of forms and in the later 1st century transparent colourless glass became fashionable for high-quality table wares, as <G 3> and <G 4> (Fig 25), but this site has produced a truly outstanding fragment, <G 2>, with a Greek inscription (Fig 12). Apart from these vessels there are numerous fragments of colourless glass (28), but no recognisable forms. The finds from site B include a fine colourless indented beaker, B<671>, from B[387].

The remainder of the assemblage consists of more utilitarian vessels made from naturally-coloured blue-green glass. These vessels included a variety of jars such as <G 5>, <G 6> and jugs <G 7>–<G 10>, together with phials or unguent flasks, such as <G 11>, all widely found in domestic assemblages in London (Fig 25). There are 21 fragments of bottles, such as <G 12>, a very well-preserved example, and <G 13>, with a distinctive base moulding (Fig 25). The individual portions represented and the range of colours, all

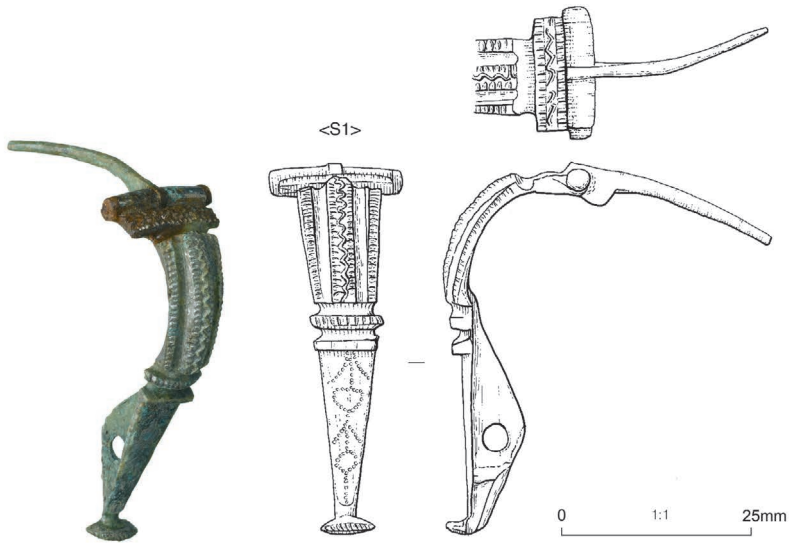


*Fig 26. Copper-alloy Hod Hill brooch <S1> (scale 1:1)*

varying degrees of blue-green, suggest that a minimum of six vessels are represented.

*Registered Finds*

Most of the artefacts found on site A came from period 3 (*c.*AD 70–200) contexts. Although most were from external dumps that cannot be securely linked to individual buildings, it is reasonable to suppose that they reflect the material culture of the local inhabitants.

The objects illustrate several important aspects of domestic daily life. They are best considered by functional group (Table 5). The range at site A is somewhat limited, with only one copper-alloy brooch, <S 1> (Fig 26), but this is a very decorative Hod Hill type. The only other dress accessories from the period up to *c.*AD 200 are hairpins, which were used in great numbers from the later 1st century to secure increasingly elaborate women's hair styles. There is one incomplete copper-alloy pin A<147>, of Cool Group 1 (Cool 1990), with a spherical head, but the other five examples are bone. Pins <S 3>–<S 5> (Fig 27) are typical of those worn in the late 1st/2nd century. There is a similar range of hairpins from the neighbouring site B, several of which are from the mid-2nd-century AD pit that contained a possible clearance group of ceramics (above). Pin <S 6> (Fig 27) is a distinctive form that originally had a terminal in the form of a human bust, but the head is now lost (Hall & Wardle 2005, 175). Both

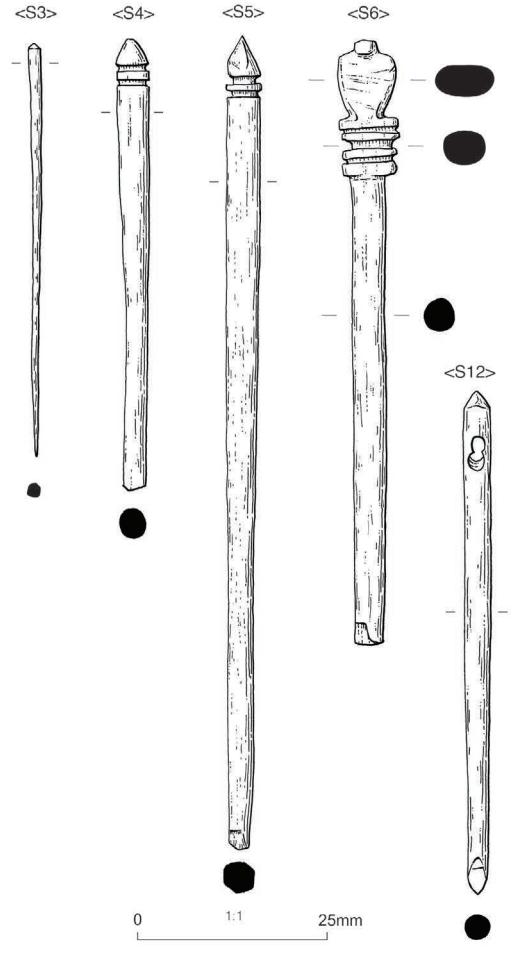


*Fig 27. Bone hairpins <S3>–<S6>, with bone needle <S12> (scale 1:1)*

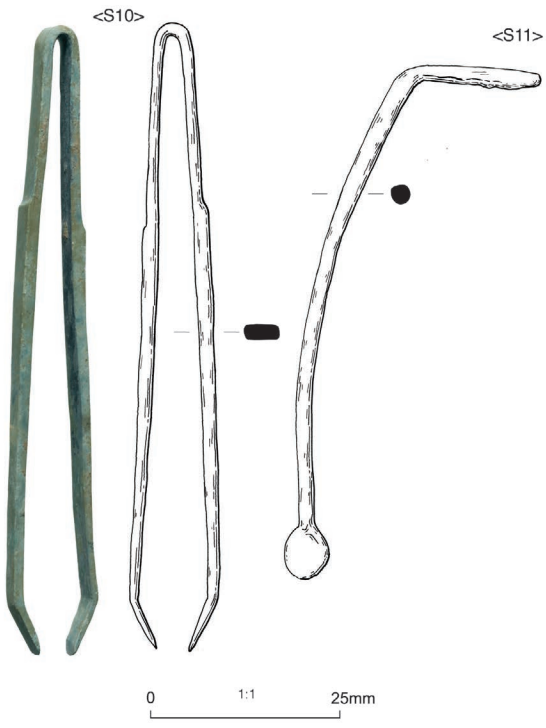


*Fig 28. Copper-alloy toilet implements: tweezers <S10> and ligula <S11> (scale 1:1)*

sites produced many bone needles, as <S 12> (Fig 27) (five from site A and 10 from a single pit at site B), but no other implements directly associated with the manufacture or working of textiles were found in Roman contexts.

Small toilet implements are significant as they demonstrate the practice of personal grooming in Roman Britain, but the only such objects from site A are two sets of tweezers, as <S 10> and two ligulae as <S 11>, used for extracting ointments from pots or jars (Fig 28). None are intrinsically datable, although the illustrated tweezers were found in a later context. A similar small range was found at site B, the artefacts including a bone ligula, but it should be noted that 7 Bishopsgate to the south-west produced a very fine copper-alloy balsamarium (Wardle in Sankey 2002, 12–13, fig 10).

Domestic items are more varied. Apart from the early mount (above, <S 17>) there are no items of furniture, but both imported and locally-made ceramic lamps are well represented with nine individual fragments from site A, eight of which are from period 3 contexts, and




*Fig 29. Ceramic lamps from period 3 contexts <S14> (scale 1:2), <S15> and <S16> (scale 1:1)*

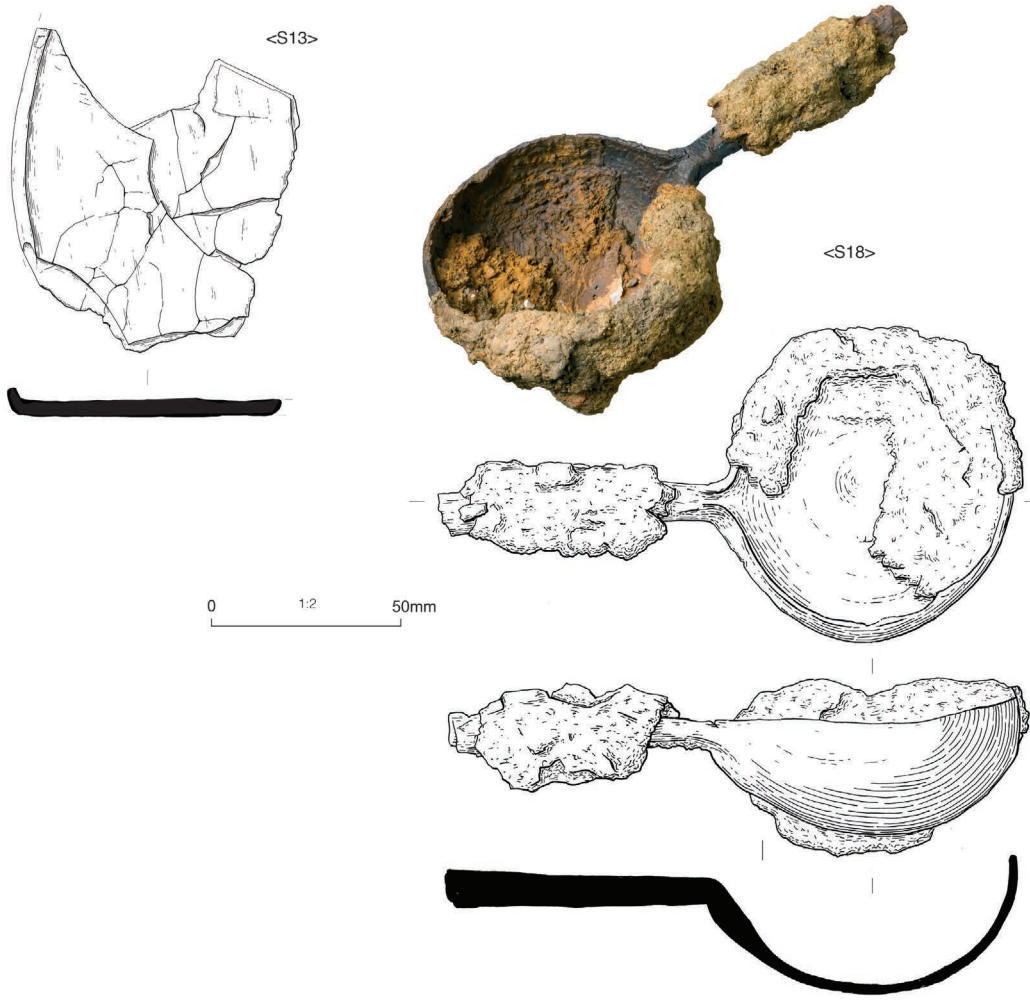


*Fig 30. Domestic utensils; shale vessel <S13> (scale 1:1) and iron ladle <S18> (scale 1: 2)*

there were another six from site B. A fragment of mid-1st-century AD Lyon ware lamp, A<73>, was residual in a period 3 context. Also recovered are parts of four open lamps in Verulamium/London region white ware (VRW) and unsourced oxidised ware (OXID) (as <S 14>), and four fragments of factory lamp, one (<S 15>) a product of the potter ATTUSA who worked in Gaul from around AD 75–125 (Eckardt 2002, 204) and one poorly moulded in OXID (<S 16>) (Fig 29). These fragments are all typical of the forms discussed by Eckardt (2002, 69), conforming to the general distribution patterns north of the forum area. The use of lamps in Roman Britain was essentially a military and urban phenomenon, notably biased towards Colchester and London, and is interpreted by Eckardt as a social and cultural statement, certainly in the 1st century (*ibid*, 153), after which factors of supply for both lamps and fuel may be of greater significance.

Fragments of quern stone, A<470>, from Building 9, imported from the Mayen area of Germany, are typical of those found throughout London, while an iron ladle, <S 18> (Fig 30), from Building 8 is remarkably well preserved, its circular bowl still complete. A fragmentary shale vessel, <S 13> (Fig 30), is likely to be from a tray or shallow dish. The material, from the Kimmeridge beds in Dorset, was fashionable for both furniture and serving vessels.

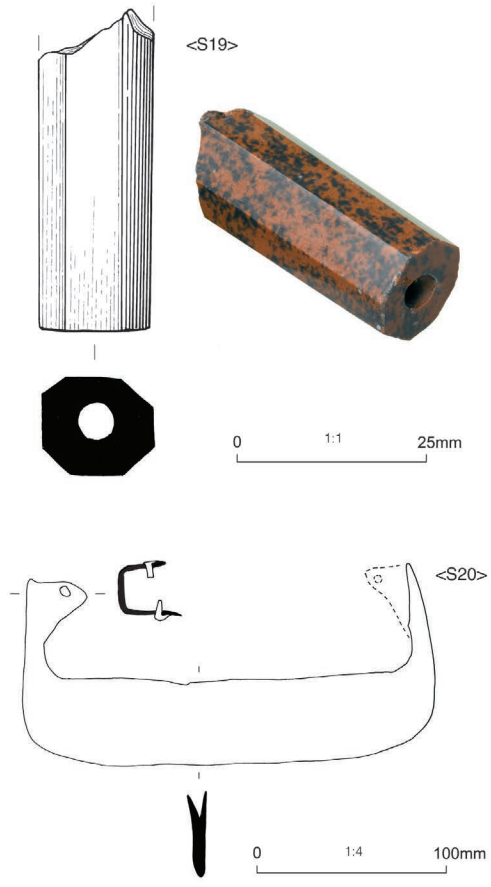


*Fig 31. Tools: obsidian handle from a small knife or razor <S19> (scale 1:1) and iron spade sheath <S20> (scale 1:2)*

There is little evidence of leisure activities from site A, with only two glass gaming pieces of standard plano-convex form, A<72> and A<224>, and two improvised from ceramic vessels, an amphora, A<382>, and a samian bowl, A<72>. Tools are similarly poorly represented, but an obsidian handle, <S 19> (Fig 31), possibly from a small knife or razor, was presumably a luxury item. A more utilitarian object, from the period 4 robbing of Building 10 (OA12), was an iron spade sheath, <S 20> (Fig 31), which would have formed the cutting edge on a wooden spade. Such tools would clearly have been ubiquitous for the cutting of foundations and ditches, or in agricultural activities, but the perishable nature of their materials makes them quite rare on London excavations.

The buildings produced a small range of the types of fittings seen on most urban sites, some perhaps from furniture, as the small copper-alloy rings A<97> and A<113>, others clearly structural or used for domestic security, as lock bolt, <S 21>, and lock plate, <S 22> (Fig 32).

A broken 'pipeclay' figurine, <S 23> (Fig 33), depicts Venus and may have been revered

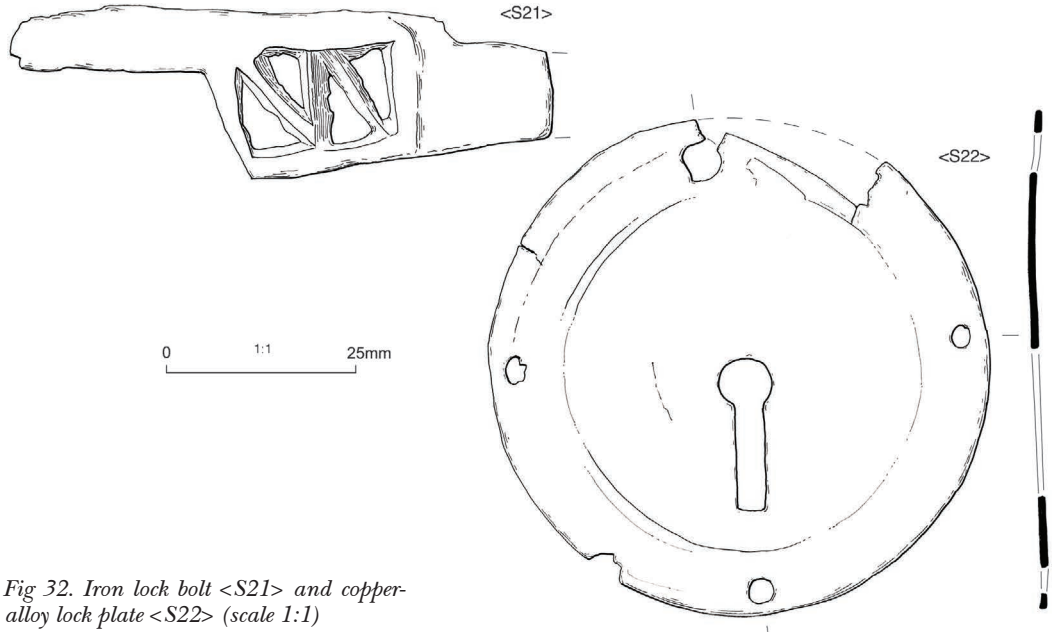


*Fig 32. Iron lock bolt <S21> and copper-alloy lock plate <S22> (scale 1:1)*




*Fig 33. Ceramic Venus figurine <S23> (scale 1:1)*

in a domestic shrine. Such figurines were imported in great numbers from Gaul during the 2nd century and were undoubtedly used in private devotions (Fittock 2015).

Viewed collectively, the 1st- and 2nd-century AD finds display a familiarity with Roman material culture. Many of the artefacts cover the basic trappings of urban life seen elsewhere over much of London, but the objects of great quality and rarity, for example the inscribed glass beaker, <G 2> (Fig 12), and obsidian handle, <S 19> (Fig 31), and indeed the furniture mount, <S 17> (Fig 5), from an earlier period, point to a degree of sophistication and luxury in the community generally. This is essentially the same picture suggested by other investigations in the area north of the forum and basilica, such as 3–5 Bishopsgate (Milne *et al* 1984; Schofield 1998, 194–5), 7 Bishopsgate (Sankey 2002), 145–146 Leadenhall Street (Schofield 1998, 294) and Lion Plaza (McKenzie 2011).

*Plant Remains*

Charred cereals dominate the small food plant assemblages from period 3 (Stewart 2011), but these were too abraded to identify to species, making it impossible to tell if these samples reflect the broad patterns identified in London and across Roman Britain (Greig 1991). The charred grains present may have been imported or grown locally for grinding, brewing or fodder. The low numbers of cereal grains present, and their level of abrasion, probably indicate that these do not represent primary deposits. The presence of lentils (*Lens culinaris*) in the Building 3 hearth illustrates the availability of imported foodstuffs and the adoption of 'Roman' styles of cooking.

High concentrations of elder (*Sambucus nigra*) seeds, along with blackberry/raspberry (*Rubus fruticosus/idaeus*), hemlock (*Conium maculatum* L) and rush (*Juncus* spp) seeds were also noted, suggesting the presence of

nitrogenous damp ground, typical of urban areas with poor drainage.

*Animal Bones*

The period 3 animal bone assemblage (Table 7) corroborates an interpretation of site A as being characterised by high-status occupation in the late 1st/2nd century AD. For example, there is evidence that the occupants either participated in hunting or were able to consume the animals caught. The numbers of wild mammal elements present increase in period 3, with red deer, roe deer and hare elements represented. Of the roe deer elements, only one antler fragment is represented; the rest of the remains consist of a number of mandible and long bone fragments. Mandibular tooth wear (after Tomé & Vigne 2003) indicates both adult and juvenile animals are represented. Knife marks are also present on a number of the deer long bones showing signs of dismemberment and filleting. The hare remains show a similar pattern, with some mandibular and head elements present but the rest of the remains consisting of the meat-bearing long bones. Butchery marks were also present on some of these remains. A heavy knife or cleaver has been used to dismember portions of the hind leg, including chopping through a femoral distal epiphysis. There is also evidence of a knife being scraped up a femoral shaft to remove the meat from the bone. Although hunting is often referred to in Roman literature and iconography (Toynbee 1973), faunal evidence is uncommon. Cool (2006, 112) has shown deer and hare remains are often present on military or high-status sites.

A high-status diet is also indicated by the particularly high proportion of identified pig (32%, n=155) and chicken (17%, n=85) bones from site A in this period. This is in contrast to the pattern seen on other urban sites where cattle are the most common species (King 1978; 1999). Maltby (2010, 185) has noted that pig remains tend to be more abundant on sites located near the centre of towns. Within the military domain there are several instances of where pork, venison and chicken are the meats associated with the commanding officers (Cool 2006, 82).

***Character of the Late Roman Occupation***

As is commonly the case in London, the late Roman sequence on the study sites is poorly understood due to the impact of later disturbance. It is uncertain how long the period 3 masonry buildings survived, but they appear to have been replaced by less substantial timber structures on site A that stood until at least the mid-4th century AD. Building alignments suggest continuity with earlier periods and the roadside ditches on site B were maintained until at least *c.*AD 350. But, in contrast to period 3, there is little period 4 evidence to suggest occupation by particularly high-status households.

*Pottery*

An interesting aspect of the late Roman pottery assemblage from site A is the occurrence of Camulodunum form 306 bowls (4C306) in the late Roman (period 4) features. A total of 27 sherds of this form were recovered from Open Area 16 and Building 13 (a further 8 sherds were also recovered from post-Roman contexts); the variability of the rim shape makes it difficult to estimate the number of vessels represented. The form has an unusual distribution pattern and may have had ritual associations, especially as one of the largest published concentrations is an assemblage from a later use of the temple of Mithras by a new cult, possibly associated with Bacchus (Groves 1998, 103).

*Glass*

Only a few fragments of late Roman glassware can be identified with certainty. At site A there are three identifiable forms: a colourless late 2nd- to early 4th-century bowl, <G 14>, a 4th-century bowl fragment, A<155> (?as Isings 116), and a 3rd-/4th-century bottle, <G 15> (Fig 34). Only the last was found stratified in a late Roman context (the others were residual in contexts assigned to period 5) and the position is perhaps analogous to that at 1 Poultry (Wardle 2011, 490, table 43), where several 4th-century cups and bowls were found in deposits of dark earth immediately overlying the well-constructed late Roman buildings.

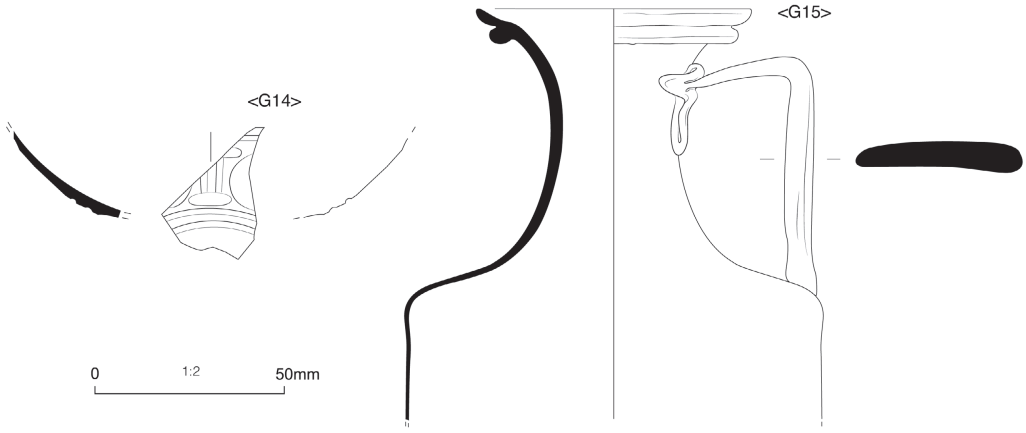


*Fig 34. Late Roman glass vessels: bowl <G14> and bottle <G15> (scale 1:2)*

*Registered Finds*

Few objects dated intrinsically to the later Roman period are from Roman contexts and many of the artefacts in contexts dating to period 4 are clearly residual. There is, however, a persistent presence of later material, much of it in post-Roman groups, which provides some limited material evidence for the character of occupation in the later buildings.

There are often difficulties in identifying later Roman artefacts in London in the domestic environment. The only dress accessories seen here are bone hairpins of Crummy type 3, as <S 7> (Fig 35), a type that dates generally after *c.*AD 200 and reflects a change in hair fashions. There are two other certain examples of this form from period 5 contexts, including <S 8>, which is exceptionally short. Other forms of personal ornament include two bracelets, again, both from post-Roman contexts. A complete shale armlet, <S 2> (Fig 35), is likely to have been worn by a woman in late Roman London. There are many parallels for this form in 3rd- and 4th-century burials and it is similar in style to the jet armlets fashionable at the time (Barber & Bowsher 2000, 118, 139–40, table 111, 349). The fragment of a rare glass bracelet, <S 9> (Fig 35), in deep purple, appearing black, is also typical of the period.

The post-Roman deposits (period 5, OA17–OA19) produced a number of residual Roman coins, the two latest examples were issues of Constantius II (AD 345–65) A <20>, and Constans (AD 347–8) A <443> (see PDF supplement: Marshall).

*Animal Bones*

In the period 4 (after *c.*AD 200) faunal assemblage, the species proportions change. Pig, wild mammal and bird remains become much less common, and cattle remains are dominant (see Table 6). This could represent a decline in the status of the occupants, or perhaps a change in dietary tastes. King (1999) has argued that beef consumption tended to become more important in the later Romano-British period.

The recovery of the skull and forelimbs of a dog from Open Area 16 is of interest. There are no signs of deliberate disarticulation on the bones, or evidence that the bones were exposed above ground before deposition, so they could represent the disturbed remains of a complete dog burial. Partial or complete dog skeletons are not uncommon on Roman sites and they appear to be particularly common in urban centres (Morris 2012b). Interpretations can range from population culling (Maltby 1993) to the ritualistic continuation of Iron Age traditions (Fulford 2001; Woodward & Woodward 2004). The possible ritual association of the Camulodunum 4C306 sherds from the same land use have been noted above. Dog remains are commonly associated with temple sites and appear to be linked to ideas

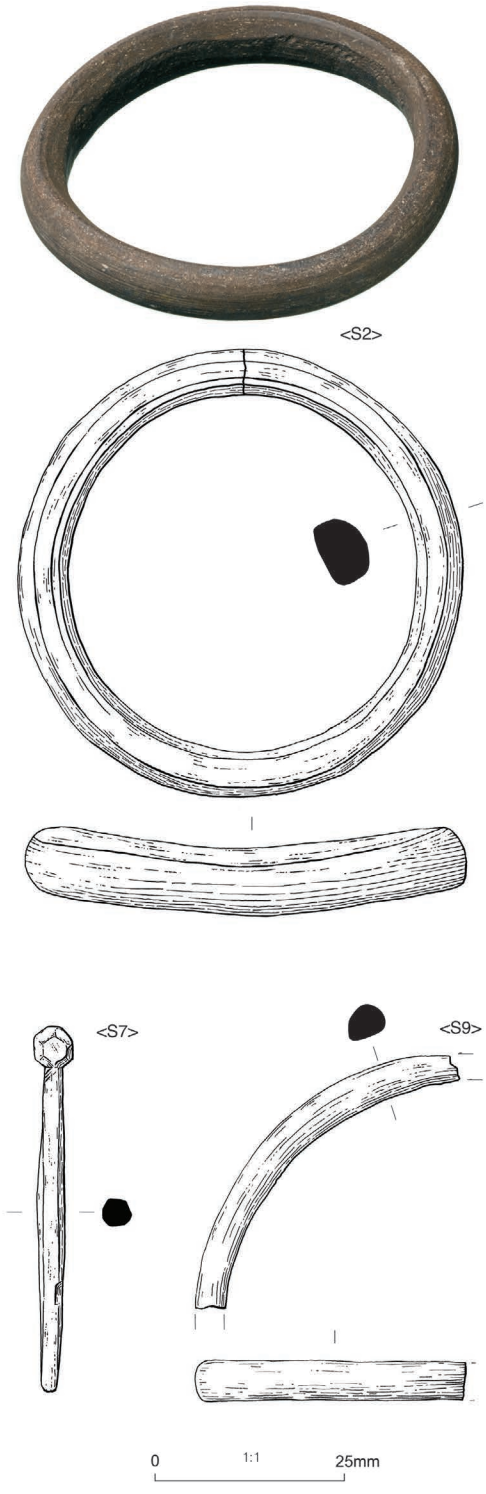


*Fig 35. Late Roman dress accessories and personal ornament: shale armlet <S2>, bone hairpin <S7> and part of a glass bracelet <S9> (scale 1:1)*

of healing and water (Smith 2006). It is therefore possible that the deposition of the pottery and dog remains may be linked to the same ritualistic act.

## SPECIALIST CONTRIBUTIONS

The following reports are available from the LAMAS website as a PDF supplementary file with a separate bibliography, figures and tables. The figure and table numbers used in these reports represent a direct continuation of the above sequences.

**The Roman Building Materials** *Ian M Betts*

**The Roman Pottery** *Amy Thorp*

**Catalogue of the Decorated Samian Ware** *Joanna Bird*

**The Roman Glass** *Angela Wardle* (a)

**The Roman Accessioned Finds** *Angela Wardle* (b)

**Catalogue of the Roman, Medieval and Post-Medieval Coins and Jetons** *Michael Marshall*

**The Animal Bones** *James Morris*

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and Alison Tigg. Craig Halsey carried out the on-site geoarchaeological work. The initial identification of the Roman coins was carried out by Julian Bowsher. The excavation of site B was supervised by Christopher Evans; Tim Williams kindly provided a draft of the forthcoming *Archaeology of Roman London: Vol 4* (Williams in prep) from which details of the site B sequence are derived. Site photography was by Maggie Cox. Finds conservation was undertaken by Liz Goodman and studio photography was by Andy Chopping and Edwin Baker. Graphics were prepared by Judit Peresztegi (plans) and Hannah Faux (finds). The project was managed for MOLA by Robin Nielsen (fieldwork) and Julian Hill (post-excavation); †Bruno Barber and Julian Hill edited this report for publication.

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## NOTES

[1] The site comprised the previous properties at 22–24 Bishopsgate, 4 Crosby Square, Crosby Square and Crosby Court (38 Bishopsgate).

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*London and Middlesex Archaeological Society Transactions, 73 (2022), 79–106*

# ROMAN WALL PLASTER FROM CROSBY SQUARE, CITY OF LONDON EC2

*Ian M Betts with Ken Pitt*


## SUMMARY

*This paper presents the findings of specialist analysis of the Roman wall plaster from an excavation at Crosby Square (22 Bishopsgate) in the City of London. The Roman archaeological sequence is published elsewhere, but the plaster is of sufficient interest to merit a more detailed report. The assemblage dates principally to the late 1st and 2nd centuries AD and illustrates the diverse decorative schemes and rare pigments that were used in high status buildings in a residential area to the north of the forum.*


## INTRODUCTION

A large quantity of Roman wall plaster, some of high quality, was recovered from excavations by MOLA at 22–24 Bishopsgate, 4 Crosby Square, Crosby Square and Crosby Court (38 Bishopsgate) in the City of London EC2 (site code: CYQ05; referred to here as 'site A'). A similar, although smaller, assemblage was recovered during the excavation of the adjacent site of 28–32 Bishopsgate by the Museum of London's (MOL) former Department of Urban Archaeology (DUA) (site code BOP82; referred to here as 'site B'). Site and trench locations are shown in Fig 1. The Roman sequence from site A is published elsewhere (Pitt 2023b) in a report that also summarises the findings from site B in advance of its publication (Williams in prep), but the Roman plaster is presented separately, to allow more detailed consideration of the material than would otherwise be possible.

### *Overview of the Assemblage*

In total there are 2957 individual fragments of plaster from site A and many hundreds more from site B, although many are of relatively small size. There is no plaster from pre-Flavian contexts and most appears to have been used in buildings dating from the late 1st century to the late 2nd century AD. This reflects the fact that the site was on the periphery of the settled area of Roman London until at least *c.*AD 70. Considerable quantities of plaster were found in late Roman and post-Roman contexts, mostly in contexts relating to the demolition and robbing of earlier structures.

Most of the colours used in the various decorative schemes are derived from naturally occurring pigments, but an artificial pigment was used in the better-quality work: Egyptian blue. The rare natural pigment bright red cinnabar was confirmed by X-ray fluorescence (XRF) analysis. Egyptian blue or blue frit was more expensive than naturally occurring pigments as it is artificial and produced from a compound of copper calcium silicate baked in an oven (Ling 1991, 208). In many cases it was used in small quantities in narrow bands and for embellishing candelabra decoration, and less commonly as a background colour. Despite its added expense, Egyptian blue is relatively common on the more elaborate decorative schemes found in London, such as covering the walls of a building at 8–13 Lime Street (Betts & Telfer 2018) and at

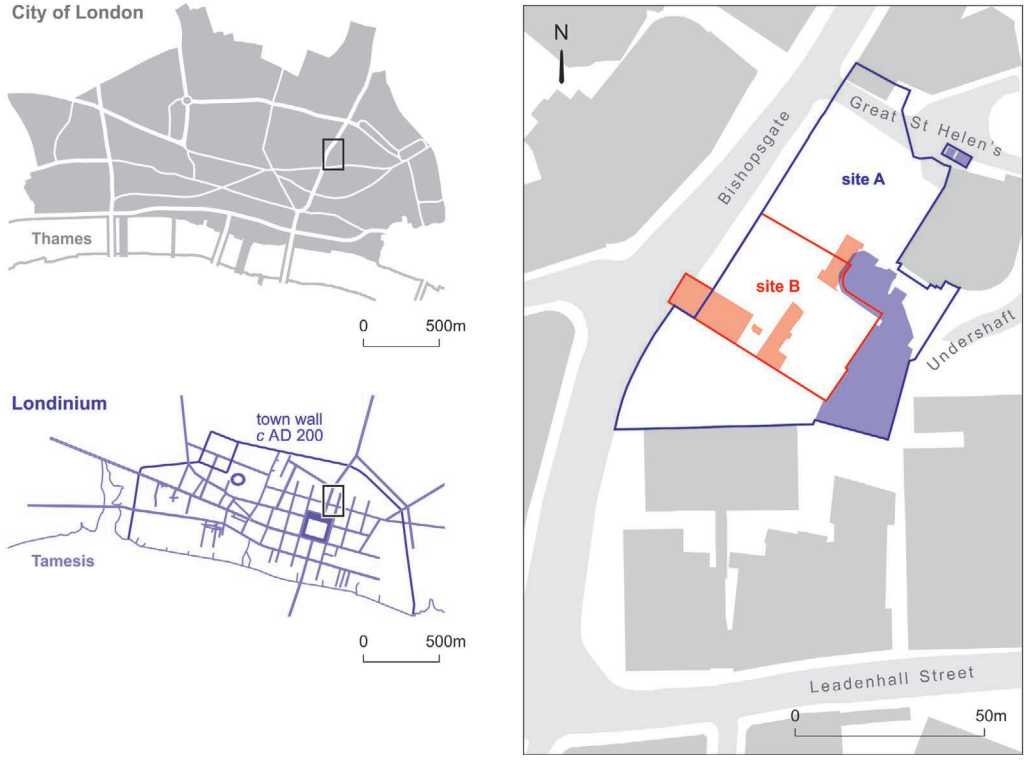


*Fig 1. Plan showing (left) the location of the study sites in relation to the modern City of London and the Roman town (scale 1:50 000), (right) the areas of excavation in tone (scale 1:2000)*

the Courage's Brewery excavations in north Southwark (Goffin 2003, 142, building 16).

Bright red cinnabar (mercuric sulphide) was particularly expensive as it had to be imported from Spain. For this reason it is rarely found in London and, when it is present, it is restricted to decorative schemes of the highest quality. Cinnabar was used in the architectural scheme recovered from the bathhouse complex at Winchester Palace, dated to around AD 120–200 (Goffin 2005, 120–6), and was also noted from excavations at 1 Poultry (Goffin 2011, 488). At site A, the majority of plain and decorative fragments with cinnabar were found associated with room A of Building 9, which has a *terminus post quem* of *c.*AD 120, but on stratigraphic grounds is thought to date to the mid/late 2nd century AD (Pitt 2023b). A large assemblage of wall plaster, including areas of cinnabar, was also recovered from demolition debris from the walls of Building 9. Further plaster with areas of cinnabar, almost certainly from the same building, was found in Open Areas 6, 11, 12 and 14, and a small number of post-Roman contexts. The owner of Building 9 must have been particularly wealthy to embellish the plastered walls with expensive imported red cinnabar. Most of the plaster is painted above a white plaster preparation layer (intonaco) but there are also numerous fragments painted on top of a pink intonaco.

The plaster assemblage from site A contains an unusually high number of curved fragments that are probably from door and window openings. There are various dado fragments including some with an imitation breccia design. The others are of the more usual splashed 'marble-style' decorative type. Various panel border areas are also present.

### *Textual and Graphical Conventions*

The text uses the convention adopted by

Davey and Ling (1982, 81) whereby a 'line' is up to 4mm, a 'stripe' is 5–19mm and a 'band' is 20–200mm. Areas above 200mm are probably square or rectangular panels, which are more commonly found in the middle zone of the wall.

Not every piece of wall plaster from sites A and B is described. Many of the smaller plaster assemblages, particularly from post-Roman contexts, are not discussed. Full details of these, and the other plaster from the site, can be found under the relevant site code at the Museum of London Archaeological Archive at Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED. Attention has been directed towards the larger plaster groups and the smaller groups showing particular decorative features.

This article presents an illustrated description of the wall plaster from site A in order of its appearance by period, phase and land use, beginning with the earliest material and following the sequence described in the main excavation report (Pitt 2023b). It should be noted that the definition of phases of activity within period 3 on site A involves a degree of conjecture, with uncertainties indicated in the text. Land uses are abbreviated as follows: buildings (B1–B13) and open areas (OA1–OA16). Previous analysis of the site B archaeological sequence used similar land-use terminology; to avoid potential confusion, this terminology is not used here when discussing plaster from site B. The basic unit of cross-reference throughout the archive that supports this report is the context number, shown in square brackets, preceded by the site prefix letter to distinguish the individual site, thus: A[100] for context 100 on CYQ05 and B[100] for context 100 on BOP82. Site prefix letters are used in the same manner for accession numbers (A/B<100>). Wall plaster selected for illustration is numbered <WP 1>–<WP 91> and a concordance to the archive is provided in the appendix (Table 1).

## THE ROMAN STRATIGRAPHIC SEQUENCE

The Roman stratigraphic sequence is reported elsewhere (Pitt 2023b); this short summary is based on that account. Pre-Flavian activity (period 2) was concentrated on the east side of a north–south road found on site B and suggests a peripheral area with possible stock enclosures and simple timber buildings. Following a phase of ground preparation from around AD 70 (period 3, phase 1), clay and timber strip buildings spread across both sites, some furnished with decorated wall plaster and tessellated floors (period 3, phases 2, 3). On site B there was evidence for the destruction of some of these buildings, probably during a Hadrianic period fire of *c* AD 125, while those on site A may have remained in use.

At least two buildings were constructed on site B after the fire, but the extent of later development is unclear due to post-Roman truncation. On site A, the phase 3 buildings were cleared and replaced in the mid-2nd century AD (period 3, phase 4) by further buildings, one of masonry, one clay and timber. Later in the 2nd century AD one or more masonry buildings with finely decorated wall plaster, tessellated (and probably figurative mosaic) floors and a plunge pool were constructed (period 3, phase 5). Although difficult to reconstruct, the late Roman sequence (period 4) suggests continued occupation, but with a decline in status and the construction of new clay and timber buildings that stood until at least the mid-4th century AD. The site was not reoccupied until the late Saxon and medieval period (period 5), when refuse pits were dug and some Roman masonry was robbed.

As nearly all the plaster is considered to have decorated the walls of the period 3 buildings, a series of schematic plans summarises the main structural developments on the study sites during period 3, phases 2–5 (Fig 2). Further details of the archaeological sequence are available in the main report (Pitt 2023b).

## THE ROMAN WALL PLASTER

### *Wall Plaster from Flavian to Antonine Contexts,* c.*AD 70–?200 (Period 3)*

#### *Late 1st Century AD (Period 3, Phase 1)*

Open Area 3

A significant quantity of wall plaster was found in Open Area 3, a site-wide series of levelling dumps (not illustrated) that

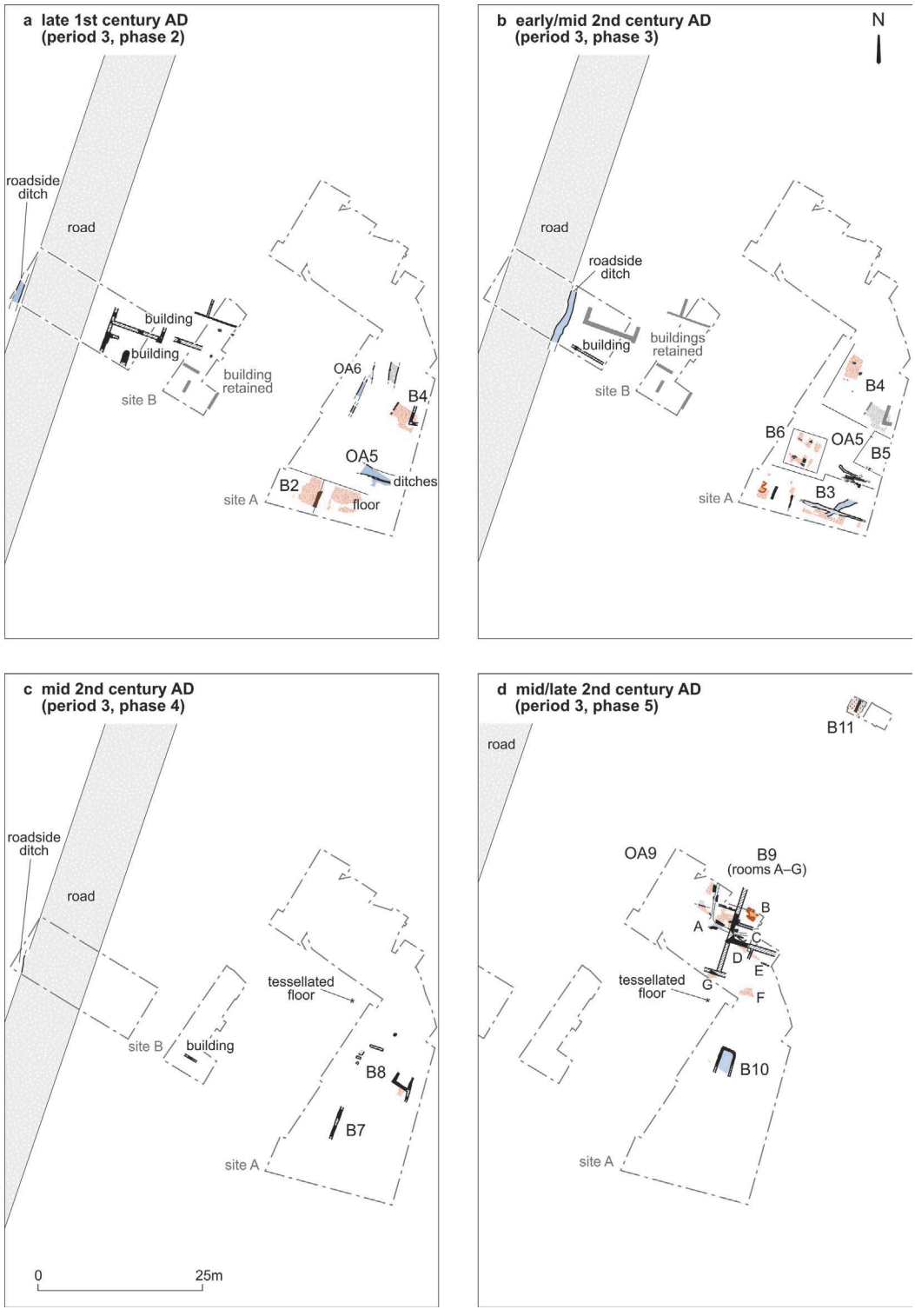


*Fig 2. Schematic plans showing developments on the study sites during period 3, phases 2–5 (scale 1:1000)*

prepared the area for redevelopment. Much of the decorative plaster came from a pit fill and seems to link with that found associated with Building 9 (below, <WP 31>, <WP 36>, <WP 38>, <WP 42>–<WP 44>, <WP 46>, <WP 47>, <WP 50>–<WP 61>), which suggests that this land use has little stratigraphic integrity and that the pit represents later disturbance.

Further plaster came from a possible truncated well, although this could represent later material that had slumped into the top of the feature. The decorative design seems to comprise plain red panels framed with either a 2mm wide white line or a 4mm wide yellow line. At least one red panel was bordered by a white stripe (*c.*7mm wide) followed by a black band. Somewhere beneath the black band was a yellow band 39mm wide, a black border 11–12mm wide and a pale pink dado with red and black spots. Another area of pale pink dado has red, yellow, white, green and black spots bordering the black stripe. Some of this is painted above a poor quality uneven top surface. Also present are other border areas in various combinations of green, white, red, grey (probably faded black) and yellow.

*Late 1st Century AD (Period 3, Phase 2)*

Building 4

Fragments of badly-preserved plaster were found attached to the west face of a mud brick wall of Building 4 (Fig 2a). Areas of red paint were present, with traces of a horizontal turquoise band. The building had both brickearth and tessellated, possibly mosaic, floors.

Open Area 6

An important plaster group was found in a dumped deposit in this yard behind Building 4 (Fig 2a). One area shows a faded polished surface with a white stem, together with traces of decoration in yellow, green and possibly blue on a faded red background. There are border areas in various combinations of red, cream and bluish-white. A white (and cream?) stripe appears to frame the edge of a red panel. Possibly part of the same scheme are border areas in white, red and grey.

A fragment of white plaster with a 12mm wide red stripe has a thicker intonaco suggesting it originated from a different room or separate building. There are also two areas of red cinnabar that possibly came from Building 9 (below, <WP 49>); if so, this would be further evidence of unrecognised later disturbance of deposits in open areas on site A.

*Early/ Mid-2nd Century AD (Period 3, Phase 3)*

Open Area 4

From a rubbish pit in Open Area 4 (not illustrated), which represents a short hiatus between the demolition of Building 2 and the construction of Building 3 (Fig 2b), is a fragment of plaster showing what may be part of a clawed insect or spiky plant painted in green on a black background, <WP 1> (Fig 3). This was found with border areas in various combinations of white, green, red, yellow and dark red. One dark red and white border is from a curved door or window opening. There is also a small area of what appears to be a decorative design in green, yellow and grey.

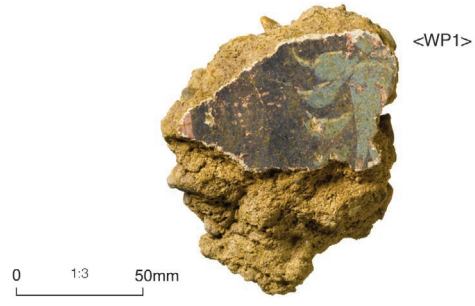


*Fig 3. Wall plaster possibly showing an insect or plant <WP 1> from Open Area 4 (scale 1:3)*

*Building 3*

There are various fragments of wall plaster associated with Building 3 (Fig 2b), but it is not certain if these came from its mud brick walls; some pieces may have come in as building rubble from elsewhere. Most plaster is either plain or shows border arrangements in various combinations of red, white, blue, grey, cream, dark red and black. There are two groups of decorated plaster. A make-up layer produced poorly preserved pale red plaster with a small area of decoration in yellow, brownish-orange and green adjacent to a 9–10mm wide white stripe, followed by

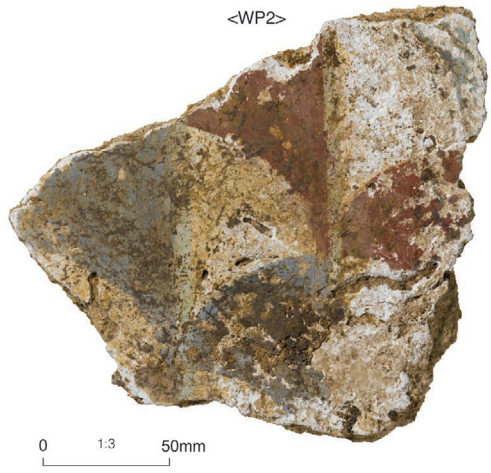


*Fig 4. Wall plaster <WP 2> from a gravel surface in Building 3 (scale 1:3)*

an 86mm wide cream band and a *c.*7mm wide white stripe. This appears to be followed by an area of faded grey. This may link with an abraded decorative scheme in cream, brown, green and pale green painted above a similar shade of faded grey.

From an internal gravel surface is part of a faded and partially discoloured complex decorative scheme showing various triangular shapes in blue, pale yellow, dark red and discoloured white, <WP 2> (Fig 4). This has close similarities to the decorative scheme recovered from Open Area 7 (below), although painted in different colours.

Present in other contexts are fragments of black plaster decorated in various combinations of green, blue, red, pink, orange and white. There is also part of a white dado with black, dark red and yellow paint splashes.

Building 4 (Retained)

Building 4 was retained and extended to the north and west in mud brick with a new mosaic floor (Fig 2b). Over 100 fragments of wall plaster were recovered from a collapsed wall. Most of the plaster in one context joins to reveal part of a large faded candelabrum with a disk shaped element painted in green, reddish-brown and yellow on what was probably originally a black background that has now faded to grey, <WP 3> (Fig 5). There are also border areas in black | white (6mm) | red, and green | black (7mm) | white, and parts of a pale greenish-grey dado with dark red and yellow spots. The central part of the design probably comprises red panels with decorative candelabra set in the vertical black borders, edged in white, between the panels.

The plaster from a second context shows various decorative elements but it is uncertain if these all form part of the same decorative scheme (Fig 5). The largest fragment shows a red, white and yellow border area with decoration in orange, dark red and white in one of the yellow areas, <WP 4>. There are also parts of a possible candelabrum in dark red, cream, grey and white on a red background, <WP 5>. Other fragments show a foliate design in green on a black background, <WP 6>, probably parts of the decorative scheme described above.

There are border areas in yellow | red (5mm) | cream (2–3mm) | black, including plaster with a slightly curved surface. Another border is black | white (7mm) | green (40mm) | black (11mm) | white. Also present is a corner area in white bordered by red. Two further areas of curved plaster believed to derive from Building 4 were recovered from Open Area 7 (below).

Building 6

A small number of dado fragments showing an imitation marble breccia design in cream, brownish-yellow, white and red, <WP 7> (Fig 6), were recovered from a brickearth floor of the poorly preserved Building 6 (Fig 2b). There is also a red area with a white line (4mm) and areas of plain red and brownish-yellow. All this is painted on a pink intonaco layer. Other fragments show traces of what appears to be pale blue decoration on a red background painted on white intonaco, a border painted white | red (3mm) | white (31mm) | red, and areas of plain white and black.

Wall Plaster from Possible Hadrianic Fire Debris on Site B

On site B, clay and timber strip buildings (Fig 2b) were destroyed by fire and an extensive spread of redeposited burnt debris covered their remains. This was interpreted as probable evidence for the Hadrianic fire




*Fig 5. Wall plaster <WP 3>–<WP 6> from a collapsed wall of Building 4 (scale 1:3)*

of *c.*AD 125 (Pitt 2023b; Williams in prep). The deposit contained various fragments of wall plaster along with other building material, which suggest that at least some of the material derived from higher status buildings nearby. No clear evidence for the Hadrianic fire was found on site A.

The site B wall plaster includes a number of border areas in various combinations of green, yellow, black, pink, dark red and

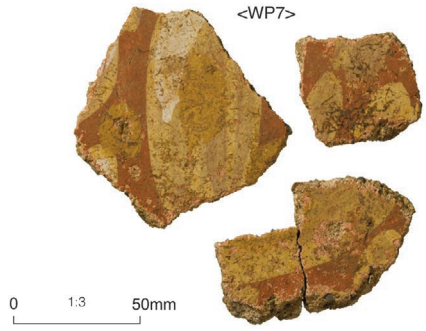


*Fig 6. Wall plaster <WP 7> from the brickearth floor of Building 6 (scale 1:3)*

yellow, <WP 8>–<WP 11> (Fig 7). The best preserved border is faded grey (originally black?) | white (5mm) | green (43mm) | white followed by traces of what may be an area of red, <WP 8>. There are also a number of plain yellow areas, probably from a central panel, including one with decoration in red. A fragment of dark red plaster shows a complex pattern in cream bordering a green band, <WP 9>.

A piece of white plaster with a red stripe was present, but this may be from a separate building. Some of the borders are painted on shaped corner fragments, probably from door or window openings. One is painted in blue,

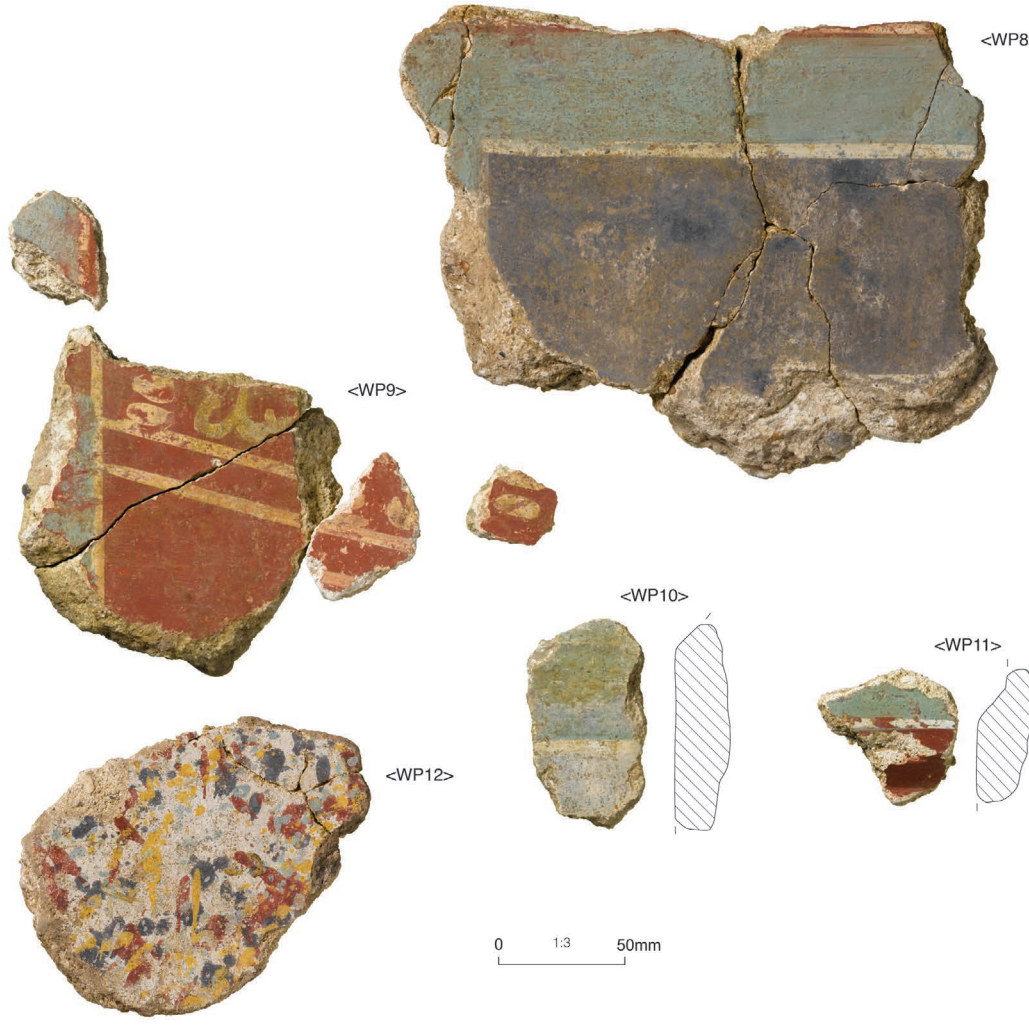


*Fig 7. Wall plaster <WP 8>–<WP 12> from possible redeposited Hadrianic fire debris on site B (scale 1:3)*




*Fig 8. Wall plaster <WP 13> and <WP 14> from possible redeposited Hadrianic Fire debris on site B (scale 1:4)*

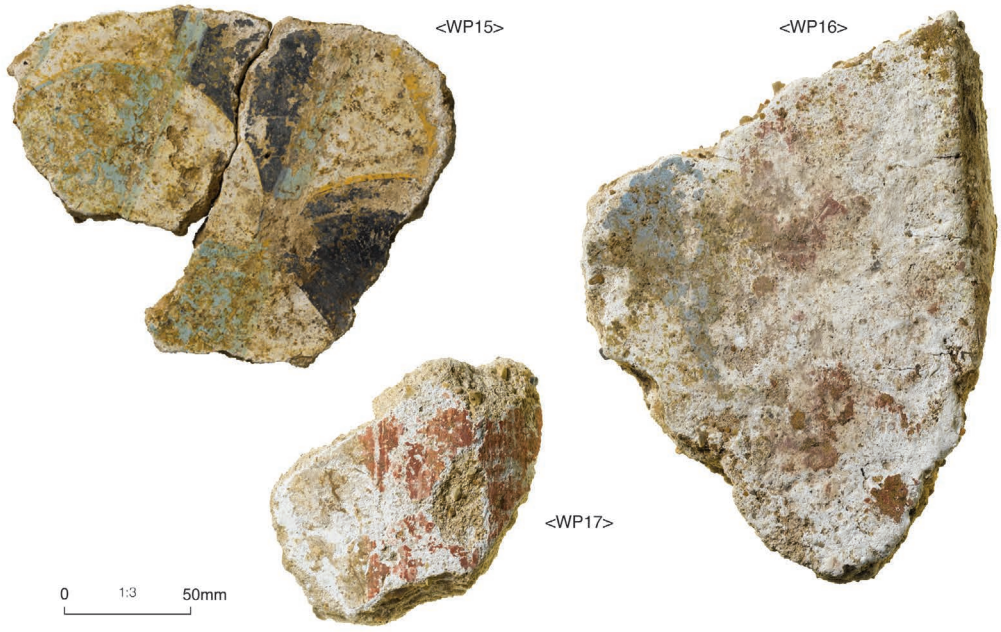


*Fig 9. Wall plaster <WP 15>–<WP 17> from Open Area 7, probably debris from the demolition of Building 4 (scale 1:3)*

white and green, <WP 10>, while another is green, white and dark red, <WP 11> (Fig 7).

One fragment shows an elaborate white dado with dark red, black, green and yellow splash decoration, <WP 12> (Fig 7). There is also what appears to be a dado painted in imitation marble breccia style with yellow areas separated by red lines. The only decoration present is a small fragment showing green foliate decoration on a white background.

Further fragments from the fire debris on site B provide evidence for red panels framed by a cream stripe that are separated by black borders (52mm wide) edged by white lines (3mm wide), <WP 13> (Fig 8). This border scheme may lie above a pink dado with yellow, red and white splashes bordered by a black band (19mm) edged in white (both 5mm wide) and green, <WP 14> (Fig 8). A further border shows what appears to be a vertical black band edged with white stripes between two areas of dado.

Fire debris directly overlying one of the site B strip buildings (B[282], B[320]) contained black plaster with traces of decoration in white and red, and red cinnabar with traces of probable foliate decoration in dark red, green and white. The latter was painted using the help of a faint guideline cut into the plaster. There are also border areas in various combinations of green, white, black, grey, yellow, purple and green. Also present is a curved corner piece in green, white and dark red.

### *Mid-2nd Century AD (Period 3, Phase 4)*

#### Open Area 7

Open Area 7 (not illustrated) represents a phase of levelling dumps in advance of further construction. Redeposited demolition debris, probably from the walls of Building 4 (above, period 3, phase 3), produced a few pieces of plaster showing a faded and discoloured decorative area in black, yellow, green and white showing various circular and triangular shaped elements, <WP 15> (Fig 9). It was found with two curved areas, probably from door or window surrounds, one dark red and blue, the other plain dark red, <WP 16>–<WP 17> (Fig 9).

Also present in Open Area 7 is wall plaster

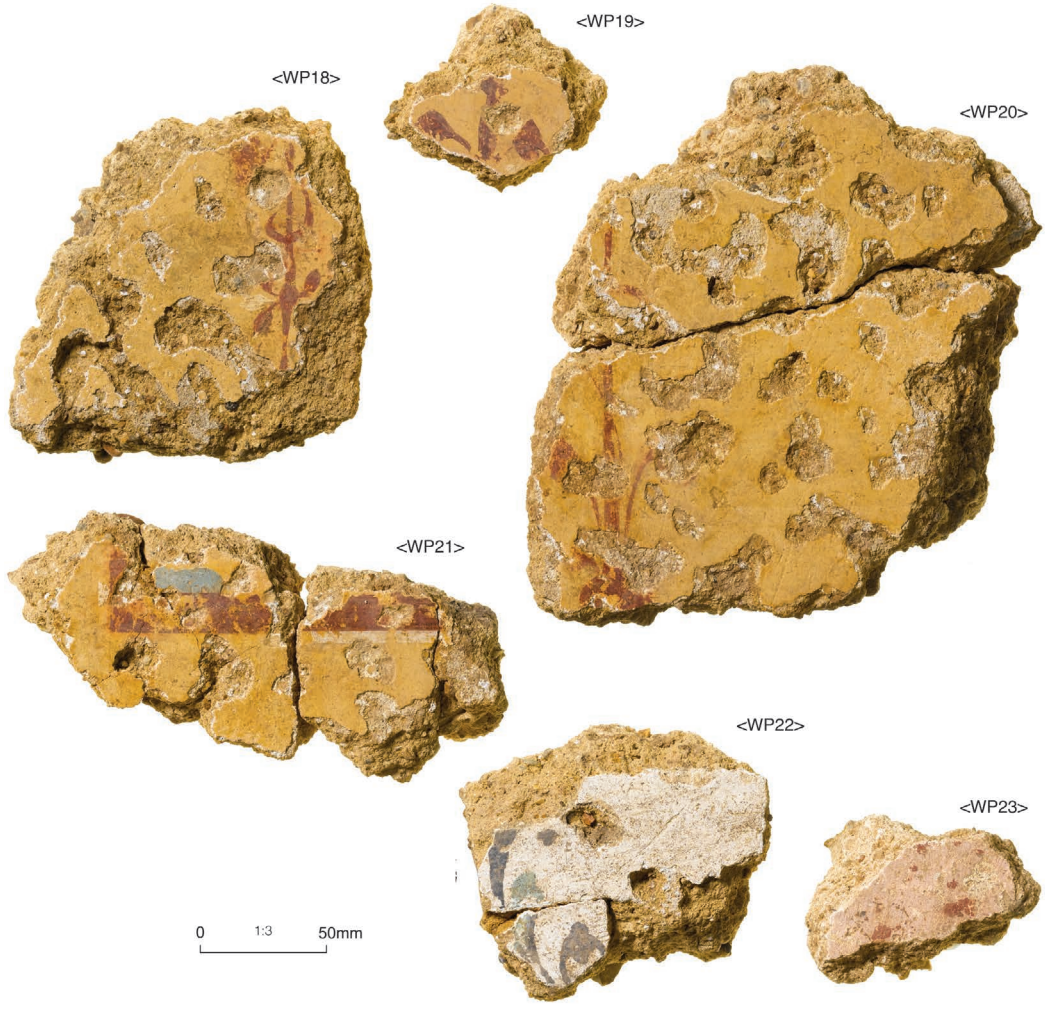


*Fig 10. Wall plaster showing pecked surfaces in preparation for replastering <WP 18>–<WP 23> from Open Area 7 (scale 1:3)*

with a dark red candelabrum design and a panel corner area on a yellow background, <WP 18>–<WP 21> (Fig 10). A patch of blue is present in the panel corner, <WP 21>. The top surface of the plaster is heavily pecked to allow the attachment of a second plaster layer. A smaller area showing green and black foliate decoration on white also has a pecked surface indicating it comes from the same room, <WP 22> (Fig 10). A fragment of pink dado with dark red and white splashes, <WP 23> (Fig 10), probably comes from the lower part of the wall, although there are no peck marks in the surviving surface.

Building 7 and Building 8

Two buildings, one masonry (B7), the other clay and timber (B8), were constructed over Open Area 7 (Fig 2c). Demolition material from the overlying Open Area 8 (below, <WP 24>–<WP 29>) may have come from one or both of these buildings.

Wall Plaster from Site B

One significant group of contemporary wall plaster was found on site B, in the backfill of a large pit, B[354], dated by ceramics to *c.*AD 145–60. This is thought to have derived from

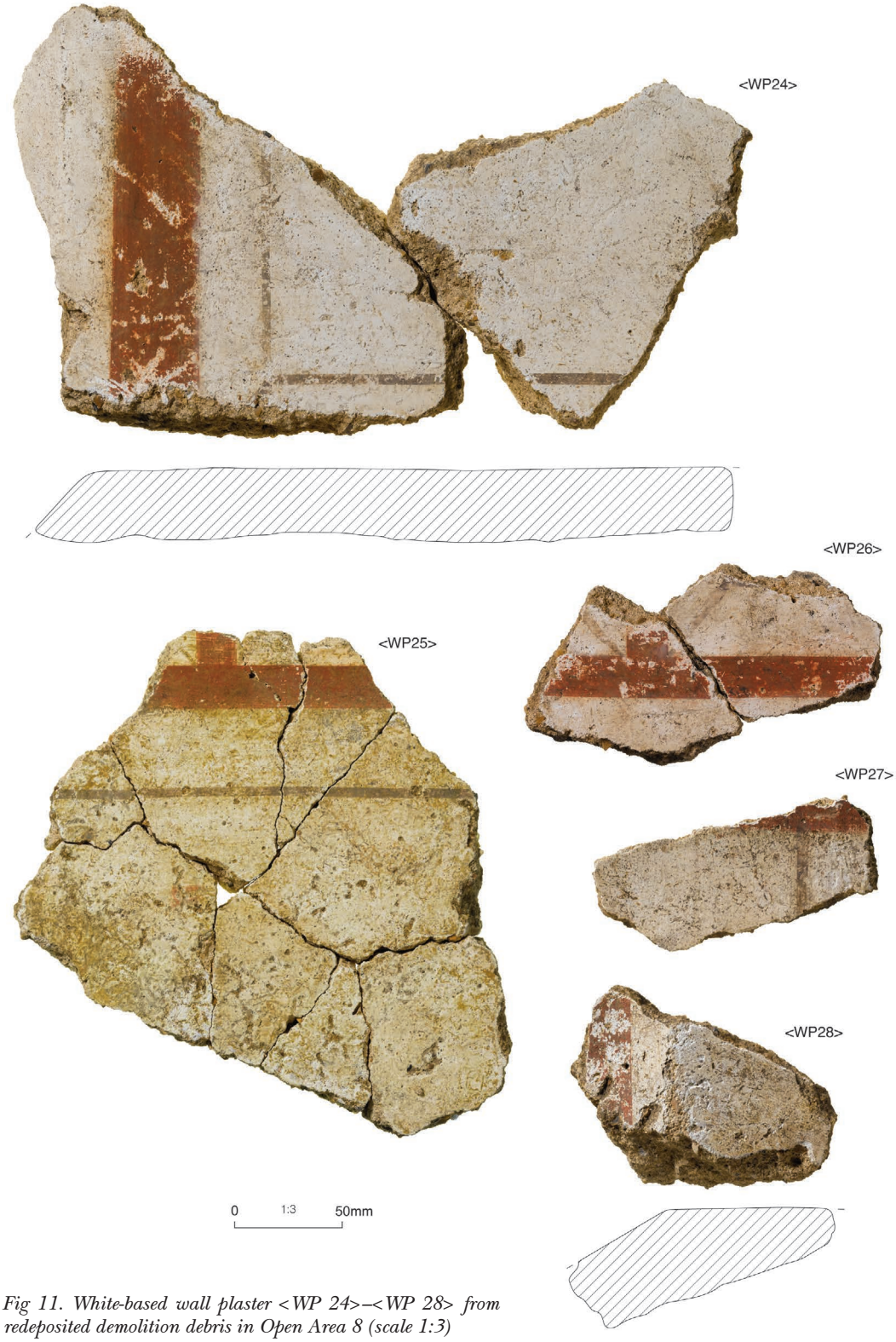


*Fig 11. White-based wall plaster <WP 24>–<WP 28> from redeposited demolition debris in Open Area 8 (scale 1:3)*

the demolition of a phase of immediately post-Hadrianic buildings (Fig 2c). The assemblage includes border areas in various combinations of grey, white, red, yellow and black. There are also two plain red pieces painted using cinnabar and a plain white moulded area from around a door or window opening. These are all painted above a white intonaco. The only sign of decoration is one area showing a green leaf on a red background adjacent to a 4mm thick cream line. This is on a pink intonaco, as is a dado area painted dark red with small white spots. The latter is a close imitation of Egyptian porphyry. Also with a pink intonaco, and therefore probably from the same room, is a piece of plain yellow plaster.

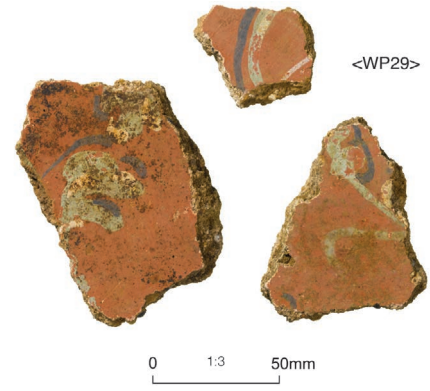


*Fig 12. Red-based wall plaster decorated with a foliate scheme <WP 29> from Open Area 8 (scale 1:3)*

*Mid-/Late 2nd Century AD (Period 3, Phase 5)*

Open Area 8

One large collection of plaster (146 fragments) was found in dumps of mixed silt and demolition debris (OA8, not illustrated) overlying the demolished remains of Building 7 and Building 8. Two decorative schemes are present, which are almost certainly from different rooms, if not different buildings.

The first comprises a fairly simple scheme with white panels surrounded by dark red bands and black stripes (5mm), <WP 24>–<WP 28> (Fig 11). There are black stripes at a 45° angle in the panel corners. The red bands range from 18mm to 48mm in width. Two curved pieces are from what appear to be door or window openings (<WP 24>, <WP 28>). There are no obvious dado fragments, suggesting the lower part of the wall may have been predominantly plain white.

The other scheme comprises a few scraps of red plaster with the remains of a foliate design in green, white and black, <WP 29> (Fig 12). There are also possible parts of the same decorative scheme showing blue and maroon, and plain green. The foliate scheme is associated with a border area in green | white (6mm) | dark red | plain green with a 2–3mm yellow line.

Building 9

The remains of Building 9 were badly disturbed, but this was clearly a high-status masonry building with tessellated and possibly polychrome mosaic floors, with later modifications in mud brick and tile (Fig 2d). Construction could have begun in the previous phase of activity, but it is placed here on the assumption of a relationship with a masonry plunge pool (B10) to the south.

A total of 843 fragments of wall plaster were found associated with Building 9, some from make-up dumps and floor surfaces (so possibly derived from elsewhere), but others came from contexts representing the demolition of the walls of Building 9. Plaster that appears to have come from the same decorative schemes as used in Building 9 was found in Open Areas 3 and 6 (the likely disturbance of these areas has been noted above), and in Structure 10, the latter representing the robbing of the foundations in period 5 (below). This material is discussed here as a single assemblage.

The biggest group of plaster (406 fragments) comes from a make-up dump associated with the remodelling of room A (Pitt 2023b), so may relate to the internal decoration of Building 9 as first built. Most comprise fragmented foliate decoration in black, green, purple and red on white, <WP 30> (Fig 13). This is bordered by a black stripe 4–5mm wide followed by a yellow stripe. A few pieces of a decorative pattern in black, red and yellow on white from Open Area 3 may belong to the same scheme, <WP 31> (Fig 14).

A large quantity of wall plaster was

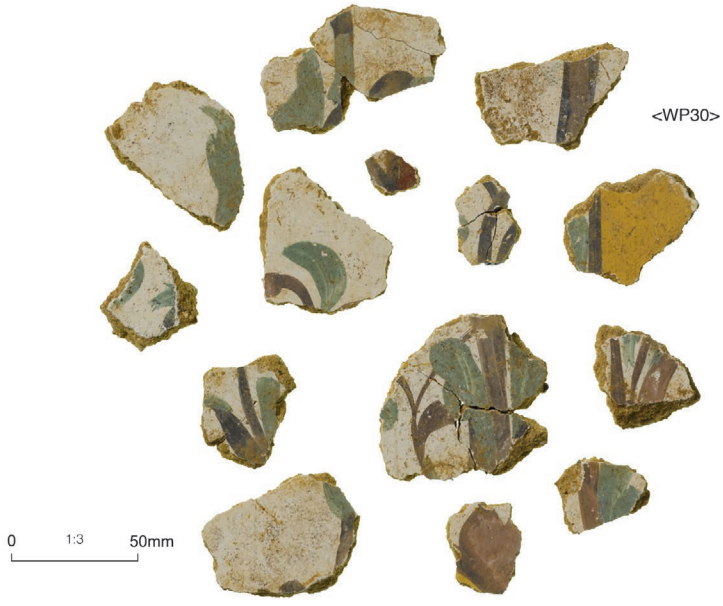


*Fig 13. Wall plaster with foliate decoration <WP 30> from a make-up dump in Building 9 (scale 1:3)*

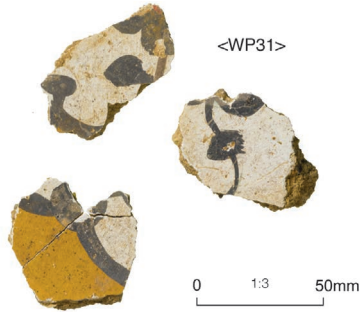


*Fig 14. Wall plaster <WP 31> from Open Area 3, possibly derived from Building 9 (scale 1:3)*

recovered from the levelling deposits associated with the earliest surviving floors of Building 9, leaving it uncertain that the plaster actually adorned this building. An even larger amount of plaster (242 fragments) from what appears to be the same decorative scheme was found in a pit fill in Open Area 3 and a few other fragments in a dump in Open Area 6 (above). Two main design types are present.

DESIGN 1

Part of an elaborate design with candelabra, a foliate design and what appears to be a hanging garland. This is painted in green, red, cream, brownish-orange, white, blue, yellow and grey on a black background. Some of the plaster is of outstanding quality, containing both Egyptian blue and bright red cinnabar.

Unfortunately, it is not possible to reconstruct the overall decorative design, although various fragments can be partially reconstructed, <WP 32>–<WP 49> (Fig 15). These show at least two candelabra painted with cream and orangey-brown, decorated with volute-like ornamentation and at least two calyx-ornaments, <WP 42>, <WP 43>. Another piece shows a plate-like feature with vertical prongs above and a decorative loop below, <WP 36>, <WP 37>. Also present are parts of what appear to be a wreath or garland in various shades of green attached to the hanging loop, <WP 38>–<WP 41>.

The plate-like elements with vertical prongs and ribbons knotted to hanging garlands show clear similarities to the plaster from Verulamium, although these are on a red background. Similarly, the 'candelabra growing from an onion shaped volute-ornament' on the Verulamium schemes is paralleled at site A, <WP 35> (Fig 15). The Verulamium schemes are dated to around AD 180 (Davey & Ling 1982, 171–5, figs 41–2, LXXXII, LXXXV). Decoration on black

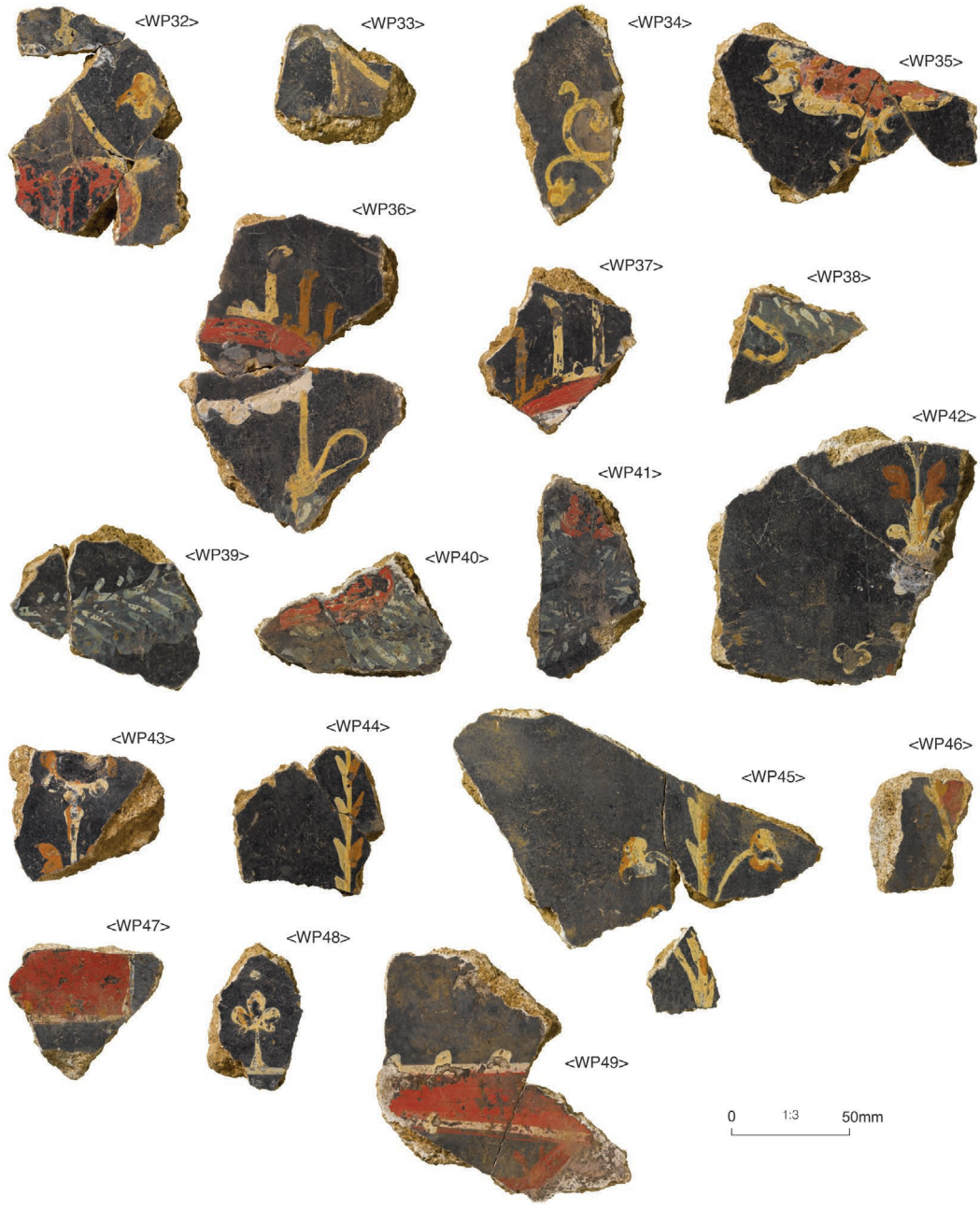


*Fig 15. Wall plaster with designs on a black background <WP 32>–<WP 49> from Building 9 with parts of what may be the same decorative scheme found in Open Areas 3, 6 and 11 (scale 1:3)*

was commonly a late 1st- to 2nd-century decorative technique, which would fit in with the date of the Crosby Square assemblage.

DESIGN 2

The second scheme shows borders and a foliate pattern in dark red, bright cinnabar red, yellow, blue and green, red and other




*Fig 16. Wall plaster with designs on a predominantly red background <WP 50>–<WP 61> from a rubbish pit in Open Area 3 but believed to be from Building 9 (scale 1:3)*

colours, <WP 50>–<WP 61> (Fig 16). Again, it is not possible to reconstruct the overall scheme, nor is it possible to suggest the relationship with design 1. What appears to be a hanging garland is again present on a number of fragments, <WP 54>–<WP 56>.

A group of plaster from redeposited demolition debris overlying Building 9 room B shows border areas in white | red, white | yellow, and yellow | dark red (5–6mm) | white. Another piece shows a 4–5mm wide green stripe on white. The overall design appears to consist of white panels edged by a green stripe bordered by dark red and/or a

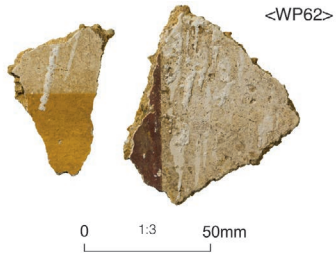


*Fig 17. Wall plaster with streaks of white plaster on the painted surface <WP 62>, probably from the demolition of Building 9 (scale1:3)*

dark red stripe followed by yellow. The odd feature of this plaster is the streaks of white plaster on the surface <WP 62> (Fig 17).

A large assemblage of wall plaster was recovered from contexts representing the demolition of the north wall of Building 9, room G, <WP 63>–<WP 67> (Fig 18). This room contained an area of plain red tessellated pavement, either a monochrome floor or possibly the border around a polychrome mosaic or stone floor. The plaster shows part of a foliate scheme in cream, white, bluish-grey and dark red on bright red, <WP 63>, <WP 64> (Fig 18). There is also a border area in black | cream (3mm) | cinnabar red (24mm) next to a decorative area in various shades of yellowish-cream, white and brownish-orange, <WP 65>. Also present is an area of red with part of a green hanging garland, <WP 66>. A further possible border area shows a crossed pattern painted in cream, pink and black, <WP 67>. Possibly from another room is part of an imitation breccia design with yellow and red lines, probably from a dado (not illustrated).

Building 11

A number of large fragments of wall plaster from two decorative schemes were found associated with a masonry building of at least two rooms (Building 11) found in an isolated trench in the north of site A (Fig 2d). Further plaster from both schemes was recovered from Open Area 16 (below). These are all considered here as a single group. Some of the plaster has large smoothed slightly semi-circular marks in the mortar base. These appear to be the impressions of a stone- and tile-built masonry wall. One plaster fragment from Open Area 16 has an actual tile embedded in the mortar base.

Some of the thick (*c.*45–53mm) plaster from the first decorative scheme, which would have covered the eastern face of an internal wall, was found *in situ*, although the wall itself had been robbed. The surviving plaster survives to a height of 350mm and comprises a dark red dado with white and yellow splashes (100mm high), a horizontal white band (86mm high) bordered by a crudely painted dark red stripe (5mm wide) with an area of imitation marble breccia in pink and red above, <WP 68> (Fig 19). The imitation marble may not be an actual marble type, although it does have a superficial resemblance to certain varieties of *rosso antico* from the Mani peninsula in the Peloponnese region of Greece (Price 2007, 122). At the base of the wall is an *opus signinum* quarter-round moulding.

The other surviving fragments, <WP 69>, <WP 70> (Fig 19), suggest the lower dado may have comprised panels of imitation marble breccia surrounded by white bands, separated by areas of dark red splashed




*Fig 18. Wall plaster with various decorative schemes <WP 63>–<WP 67> from the demolished walls of Building 9 (scale 1:3)*

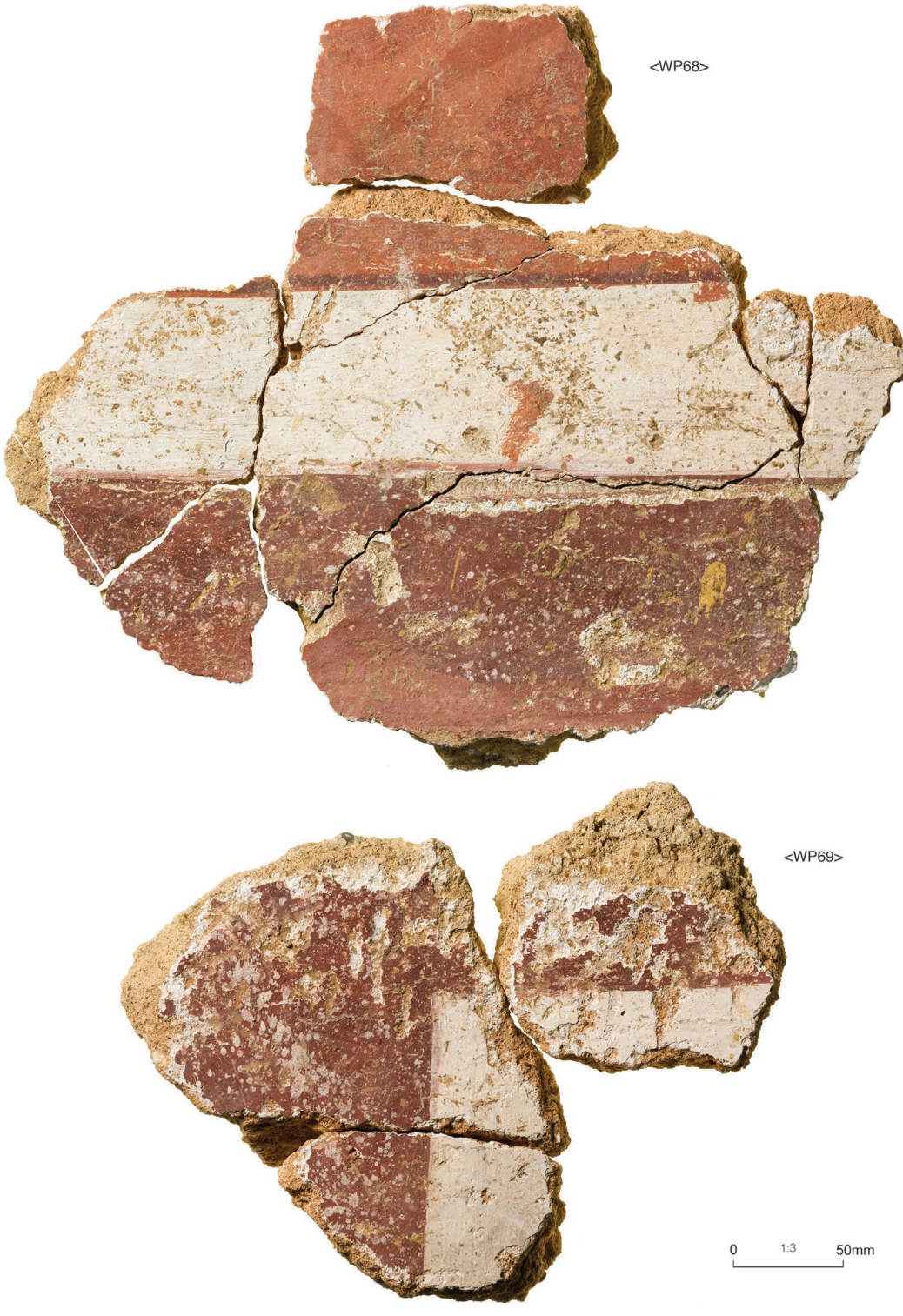


*Fig 19. (above and opposite) Wall plaster from Building 11 <WP 68>–<WP 71> (scale 1:3)*


<WP70>
? room corner
<WP71>
0 1:3 50mm

decoration. The plaster is of relatively poor quality; one fragment shows a large linear depression accidentally added before the plaster dried, while other areas show where the red paint has accidentally covered part of a white band.

Closely associated with the first decorative plaster, although from the middle zone of a wall, were a large number of fragments showing a border area in dark red and pale green separated by a white stripe 4–5mm wide. The dark red plaster abruptly stops in a straight line some 65mm from the white stripe, <WP 71> (Fig 19). This abrupt stop may represent a room corner. Also present are a lot of plain green fragments, one of which has a white stripe 5–7mm wide. These green pieces, some of which are quite large, probably come from a plain green panel. Some of the plaster shows evidence of burning, as part of the mortar backing has a pink tinge and part of the green painted surface is discoloured to a darker shade of green. There are also fragments of dark red plaster from another room or building (not illustrated).

### *Wall Plaster from Late Roman Contexts,* c.*AD 200–400 (Period 4)*

All the plaster discussed here comes from contexts which pre-date the period 4 buildings. It is likely, therefore, that much of the period 4 assemblage derives from the period 3 buildings.

#### Open Area 11

Open Area 11 represents spreads of silt and demolition material overlying Building 9, probably used to level the area. Deposits in this area incorporate a small quantity of wall plaster that is almost certainly derived from the demolition of a number of different rooms in Building 9 (period 3, phase 5; above), although debris from other buildings may also be present. Some plaster has a pink intonaco, while on others the intonaco is white. The plaster with the white intonaco shows a faded and burnt candelabrum in dark red, light blue and possibly white on what may be a yellow background. There are also border areas in white | red (20mm) | white and red | white (2mm) | black, together with green plaster with traces of yellow and red decoration. Also present is a small part of the green and black foliate design on a white background and an area of plain cinnabar red of the type used in Building 9 (above, <WP 30>; Fig 13). The plaster with the pink intonaco is probably from a plain red panel. There is also an area of plain brownish-yellow.

Further wall plaster was recovered from another dump layer. Again, two colours of intonaco are present, suggesting they are part of the two schemes described above. The plaster with the white intonaco shows a small area of imitation marble breccia dado painted in yellow and red situated next to a white border, <WP 72> (Fig 20).




*Fig 20. Wall plaster with imitation marble breccia pattern <WP 72> from a demolition dump in Open Area 11 (scale 1:3)*

The pink intonaco plaster, <WP 73>–<WP 75> (Fig 21), has various yellow border areas with a grey band edged in white stripes, <WP 73>, and a dark red band edged in white stripes, <WP 74>. There is also a fragment with red and yellow separated by a white stripe, <WP 75>. One area has what appears to be dark red decoration. The plaster clearly derives from a wall containing plain yellow panels bordered by red and grey bands edged in white.

Of particular interest is a white border area with the remains of a red stripe and the edge of a red band with a graffito between, <WP 76> (Fig 22), from another dump layer in Open Area 11. The graffito has been examined by Roger Tomlin who believes it could be a *venatio* scene representing a real hunt or a mock hunt in an arena. The animals depicted appear to be horned beasts (?bulls). Other plaster shows that this red band measures 21–22mm and is followed by a further area of white. These are on a white intonaco. There is also part of a border area on a pink intonaco with dark red and yellow

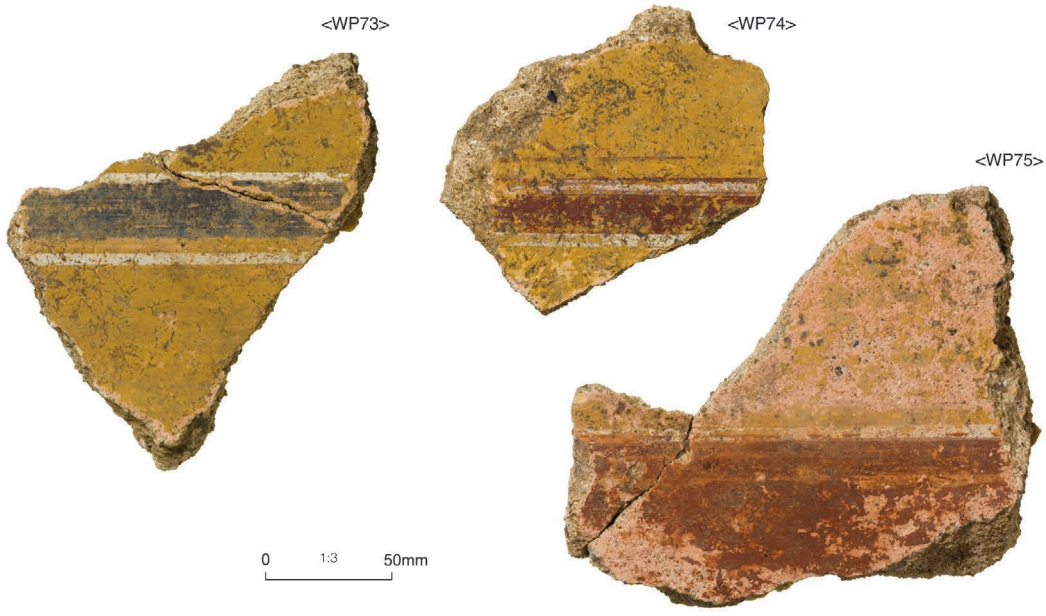


*Fig 21. Wall plaster with pink intonaco and yellow panels <WP 73>–<WP 75> from a demolition dump in Open Area 11 (scale 1:3)*

separated by a 5mm wide white stripe. Scored lines on the surface of two fragments could be keying applied to aid the attachment of a later mortar backing layer.

Open Area 12

Open Area 12 represents the partial robbing of the masonry plunge pool (Building 10; Pitt 2023b) that lay to the south of Building 9. Some wall plaster from the robber fills has the remains of a faded decorative scheme in dark red on a yellow background that is painted on a pink intonaco. This was found with plain dark red plaster from a probable panel with a white and blue border. Other borders are: dark red | white (4mm) | green and white | blue (25mm) | white | black. Painted on white intonaco is a white dado with red spots, white plaster with a red line (4mm wide) and a grey | white (15mm) | black border.

Open Area 16

A large quantity (170 fragments) of wall plaster is present in Open Area 16, which represents levelling deposits overlying the demolished Building 11 (period 3, phase 5; above), although only the largest groups have been examined. Present is what appears to be part of a garland in pink and brownish-red on a pale grey background. There is also a possible candelabrum design in pink and brownish-orange. This is next to a scored guideline in the plaster surface, <WP 77> (Fig 23). Also present is an unusual blue and yellow design on a dark red background next to a blue and white border, <WP 78> (Fig 23).

### *Wall Plaster from Late Saxon and Medieval Contexts,* c.*AD 900–1500 (Period 5)*

A large quantity of Roman wall plaster was recovered from post-Roman contexts on site A, illustrating the reworking of Roman stratigraphy beginning at the time this part of London was reoccupied in the later 10th century AD (Pitt 2023a). A considerable amount comprises small groups of plain coloured plaster and various small areas of border. Only the more important residual plaster is discussed and illustrated here, although details of the full assemblage are available in the project archive (Betts 2012).




*Fig 22. Graffito on wall plaster <WP 76> probably showing a hunting scene; found in demolition material in Open Area 11 (scale 1:3; detail 1:1)*







*Fig 23. Wall plaster <WP 77> and <WP 78> from Open Area 16, probably demolition debris from Building 11 (scale 1:3)*

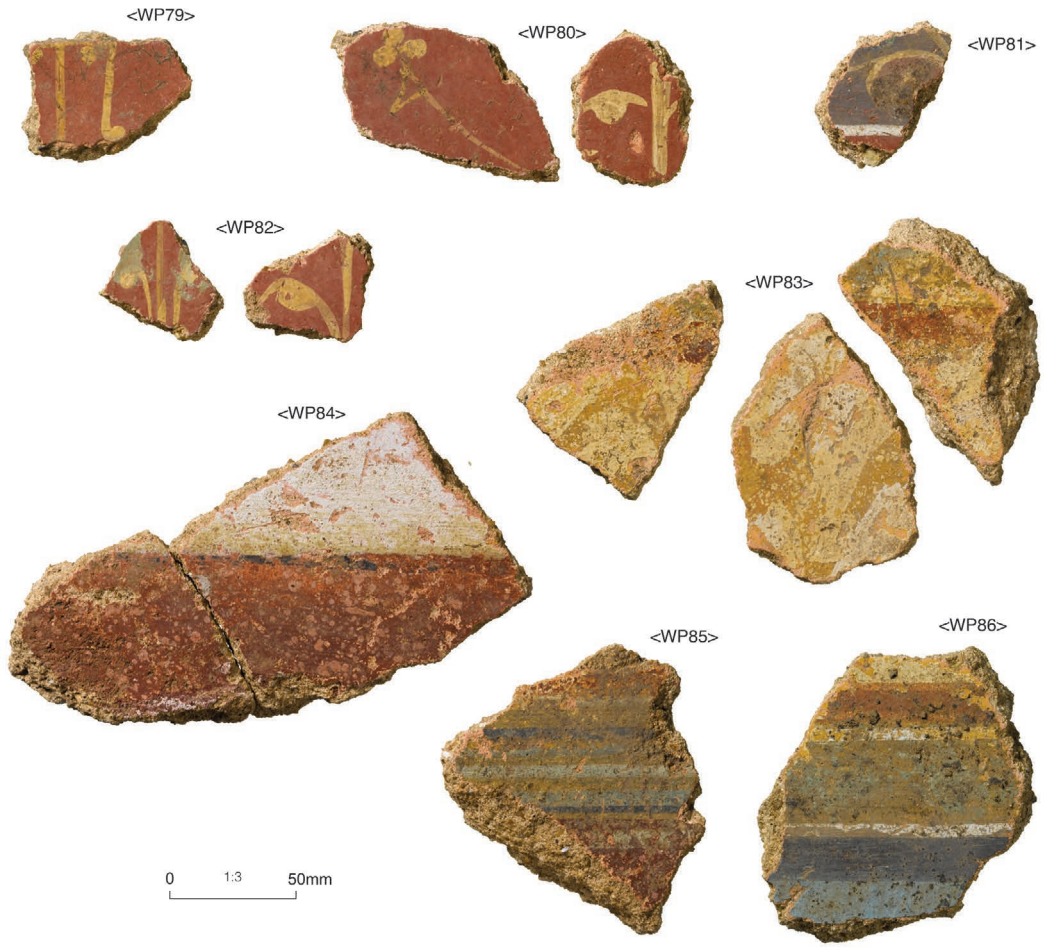


*Fig 24. Pink intonaco wall plaster <WP 79>–<WP 86>, found in Open Area 18 (scale 1:3)*

Open Area 18

From Saxo-Norman and later medieval dumped deposits and rubbish pits in Open Area 18 (overlying the site of Building 9, period 3, phase 5; above) came over 90 fragments of Roman plaster. Various colours (white, pink, cream and yellow) and thicknesses of intonaco are present, emphasising the disparate origins of the assemblage.

PINK INTONACO

Plaster with a pink intonaco, <WP 79>–<WP 86> (Fig 24), includes a decorative area in yellow and green on a red background, perhaps part of a candelabrum design, <WP 79>, <WP 80>, <WP 82>. This was found with a dark red | white (5mm) | bluish-green (26mm) | white border and plain red plaster. There is also one red and white area bordering dark red, cream and green decoration on black, <WP 81>.

Various dado and border areas, <WP 83>–<WP 86> (Fig 24), include a dado that comprises imitation marble breccia painted in cream, white and brownish-yellow that borders red (*c.*14mm) | white | and possible decoration in cream and bluish-green, <WP 83>. Another area of imitation marble, probably from a different panel area, is painted in brownish-yellow, cream and red. Other areas of dado have pink splashes on a dark red background. Some of this dado borders a black stripe and an area of white,

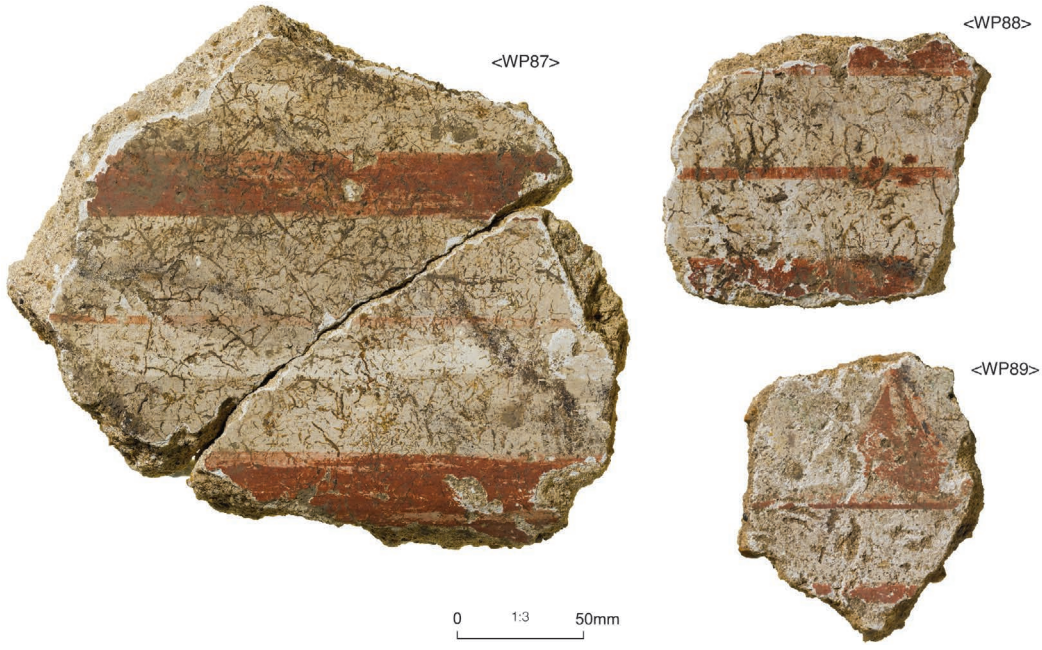


*Fig 25. White intonaco wall plaster <WP 87>–<WP 89> from a rubbish pit in Open Area 18 (scale 1:3)*

<WP 84>. The white may be a plain panel set into the dado. A further area of pink splashed dark red dado lies next to a multi-banded border in black and various shades of green and black, <WP 85>. The other border areas are in combinations of white, red, dark red, blue, greenish-blue, black and possibly yellow, <WP 86>.

WHITE INTONACO

One rubbish pit, A[1559], produced fragments of a white dado with red, yellow and black splashes. This has a 1–2mm white intonaco and two distinct mortar backing layers. The initial layer is of cream mortar 30mm thick, which is followed by a creamy-white mortar layer 13–17mm thick. This is of interest as the base of the cream layer has a pattern of repeating diamond indicating it was applied to a keyed daub wall. This keying was impressed into the daub by a carved wooden roller, which suggests a *c.*AD 50–200 date (Russell 1994, 47–50).

Other rubbish pits produced a red and white area from what may be a door or window opening, <WP 87> (Fig 25), a red stripe with two decorative dots at either side, <WP 88> (Fig 25), and a triangular pattern, <WP 89> (Fig 25), which perhaps may be related to the plaster with triangular elements from Building 3, <WP 2> (Fig 4), and Open Area 7, <WP 15> (Fig 13). There is also a white dado with yellow, black and red splash decoration.

Dumped material included various parts of a yellow stripe framing a plain red panel, including one corner area, <WP 90> (Fig 26). There is a dado with black, yellow and

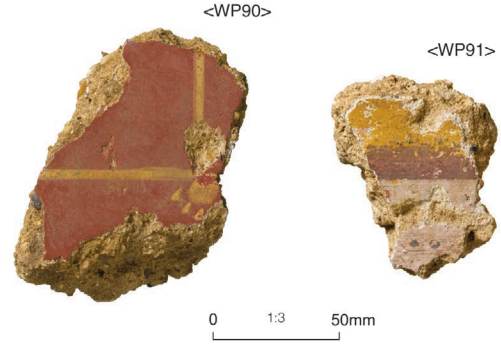


*Fig 26. White intonaco wall plaster <WP 90> and <WP 91> from dumping in Open Area 18 (scale 1:3)*

red spots on a pink background that is bordered by dark red (13mm) and yellow, <WP 91> (Fig 26).

## CONCLUSIONS

Nearly 3000 fragments of wall plaster were recovered from site A, with hundreds more from the adjacent excavations on site B. Small areas of *in-situ* plaster were found attached to the walls of Building 4 (late 1st century AD) and Building 11 (mid-/late 2nd century AD) (Fig 2). The best quality wall plaster came from Building 9, a masonry building with tessellated floors, built in the mid-/late 2nd century AD. In addition to natural earth pigments, there are areas of Egyptian blue or blue frit, an artificially produced glassy pigment containing copper calcium silicate and Spanish bright red cinnabar (mercuric sulphide). Cinnabar in particular is especially rare, having been noted on less than a dozen sites in London. Its high cost meant that it was only present in the most lavish decorated schemes, such as that used for Building 9. The fragmentary nature of the plaster has meant that it has not been possibly to reconstruct the overall design of the plaster from Building 9, although certain elements closely match more complete schemes found at Verulamium.

Other structures with evidence for internal decorative plaster range in date from the Flavian to late Antonine periods (period 3, phases 3–5; Buildings 3, 6, 8, 11), while other groups of interest were found redeposited in various open areas, including the plaster with scratched graffito from Open Area 11, <WP 76> (Fig 22); others were recovered from late Roman and post-Roman contexts.

Although fragmentary, the plaster from the two sites provides a vivid snapshot of the diverse decorative plaster used in buildings situated to the north of the forum and supports the excavated evidence for high status occupation in the Crosby Square/Bishopsgate area, particularly in the 2nd century AD (Pitt 2023b).

## APPENDIX: CONCORDANCE

Table 1 provides a concordance to the site A and B archive. It also supplies period/phase and land use information both for the context in which the plaster was deposited and for its conjectured original use, where possible. It should be noted that the phasing within period 3 is conjectural and that open areas in particular suffered from problems of definition, residuality and intrusion. Where conjectured links between wall plaster from different land uses made in the text appear to conflict with the relative chronology suggested by the recorded stratigraphy, this is made clear in the text.

*Table 1. Details of the illustrated wall plaster*

| Catalogue no. | Site/Context | Period/phase (deposition) | Land use (deposition) | Period/phase (conjectured) | Land use (conjectured) | Fig no. |
|---|---|---|---|---|---|---|
| <WP1> | A[778] | 3.3 | OA4 | ?3.2 | ?B4 | 3 |
| <WP2> | A[798] | 3.3 | B3 | | | 4 |
| <WP3> | A[849] | 3.3 | B4 | | | 5 |
| <WP4> | A[879] | 3.3 | B4 | | | 5 |
| <WP5> | A[879] | 3.3 | B4 | | | 5 |
| <WP6> | A[879] | 3.3 | B4 | | | 5 |
| <WP7> | A[418] | 3.3 | B6 | | | 6 |
| <WP8> | B[387] | *cf* 3.3 | - | ?*cf* 3.2 | | 7 |
| <WP9> | B[387] | *cf* 3.3 | - | ?*cf* 3.2 | | 7 |
| <WP10> | B[387] | *cf* 3.3 | - | ?*cf* 3.2 | | 7 |
| <WP11> | B[387] | *cf* 3.3 | - | ?*cf* 3.2 | | 7 |

*Table 1 (cont.). Details of the illustrated wall plaster*

| Catalogue no. | Site/Context | Period/phase (deposition) | Land use (deposition) | Period/phase (conjectured) | Land use (conjectured) | Fig no. |
|---|---|---|---|---|---|---|
| <WP12> | B[387] | *cf* 3.3 | - | ?*cf* 3.2 | | 7 |
| <WP13> | B[318] | *cf* 3.3 | - | ?*cf* 3.2 | | 8 |
| <WP14> | B[318] | *cf* 3.3 | - | ?*cf* 3.2 | | 8 |
| <WP15> | A[669] | 3.4 | OA7 | ?3.3 | ?B4 | 9 |
| <WP16> | A[669] | 3.4 | OA7 | ?3.3 | ?B4 | 9 |
| <WP17> | A[669] | 3.4 | OA7 | ?3.3 | ?B4 | 9 |
| <WP18> | A[286] | 3.4 | OA7 | ?3.3 | | 10 |
| <WP19> | A[286] | 3.4 | OA7 | ?3.3 | | 10 |
| <WP20> | A[286] | 3.4 | OA7 | ?3.3 | | 10 |
| <WP21> | A[286] | 3.4 | OA7 | ?3.3 | | 10 |
| <WP22> | A[286] | 3.4 | OA7 | ?3.3 | | 10 |
| <WP23> | A[286] | 3.4 | OA7 | ?3.3 | | 10 |
| <WP24> | A[219] | 3.5 | OA8 | ?3.4 | ?B7, B8 | 11 |
| <WP25> | A[219] | 3.5 | OA8 | ?3.4 | ?B7, B8 | 11 |
| <WP26> | A[219] | 3.5 | OA8 | ?3.4 | ?B7, B8 | 11 |
| <WP27> | A[219] | 3.5 | OA8 | ?3.4 | ?B7, B8 | 11 |
| <WP28> | A[219] | 3.5 | OA8 | ?3.4 | ?B7, B8 | 11 |
| <WP29> | A[219] | 3.5 | OA8 | ?3.4 | ?B7, B8 | 12 |
| <WP30> | A[1804] | 3.5 | B9 | | | 13 |
| <WP31> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 14 |
| <WP32> | A[1808] | 3.5 | B9 | | | 15 |
| <WP33> | A[1808] | 3.5 | B9 | | | 15 |
| <WP34> | A[1808] | 3.5 | B9 | | | 15 |
| <WP35> | A[1806] | 3.5 | B9 | | | 15 |
| <WP36> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 15 |
| <WP37> | A[1326] | 3.5 | B9 | | | 15 |
| <WP38> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 15 |
| <WP39> | A[1326] | 3.5 | B9 | | | 15 |
| <WP40> | A[1317] | 4 | OA11 | 3.5 | B9 | 15 |
| <WP41> | A[1326] | 3.5 | B9 | | | 15 |
| <WP42> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 15 |
| <WP43> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 15 |
| <WP44> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 15 |
| <WP45> | A[1808] | 3.5 | B9 | | | 15 |
| <WP46> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 15 |
| <WP47> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 15 |
| <WP48> | A[1808] | 3.5 | B9 | | | 15 |
| <WP49> | A[956] | 3.2 | OA6 | 3.5 | B9 | 15 |

*Table 1 (cont.). Details of the illustrated wall plaster*

| Catalogue no. | Site/Context | Period/phase (deposition) | Land use (deposition) | Period/phase (conjectured) | Land use (conjectured) | Fig no. |
|---|---|---|---|---|---|---|
| <WP50> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP51> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP52> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP53> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP54> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP55> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP56> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP57> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP58> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP59> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP60> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP61> | A[1844] | 3.1 | OA3 | 3.5 | B9 | 16 |
| <WP62> | A[1735] | 3.5 | B9 | | | 17 |
| <WP63> | A[1643] | 3.5 | B9 | | | 18 |
| <WP64> | A[1643] | 3.5 | B9 | | | 18 |
| <WP65> | A[1643] | 3.5 | B9 | | | 18 |
| <WP66> | A[1643] | 3.5 | B9 | | | 18 |
| <WP67> | A[1643] | 3.5 | B9 | | | 18 |
| <WP68> | A[1386] | 3.5 | B11 | | | 19a |
| <WP69> | A[1406] | 3.5 | B11 | | | 19a |
| <WP70> | A[1406] | 3.5 | B11 | | | 19b |
| <WP71> | A[1406] | 3.5 | B11 | | | 19b |
| <WP72> | A[1471] | 4 | OA11 | ?3.5 | ?B9 | 20 |
| <WP73> | A[1471] | 4 | OA11 | ?3.5 | ?B9 | 21 |
| <WP74> | A[1471] | 4 | OA11 | ?3.5 | ?B9 | 21 |
| <WP75> | A[1471] | 4 | OA11 | ?3.5 | ?B9 | 21 |
| <WP76> | A[1785] <441> | 4 | OA11 | ?3.5 | ?B9 | 22 |
| <WP77> | A[1371] | 4 | OA16 | ?3.5 | ?B11 | 23 |
| <WP78> | A[1385] | 4 | OA16 | ?3.5 | ?B11 | 23 |
| <WP79> | A[1304] | 5 | OA18 | | | 24 |
| <WP80> | A[1579], A[1541] | 5 | OA18 | | | 24 |
| <WP81> | A[1575] | 5 | OA18 | | | 24 |
| <WP82> | A[1465], A[1511] | 5 | OA18 | | | 24 |
| <WP83> | A[1562] | 5 | OA18 | | | 24 |
| <WP84> | A[1562] | 5 | OA18 | | | 24 |
| <WP85> | A[1562] | 5 | OA18 | | | 24 |

*Table 1 (cont.). Details of the illustrated wall plaster*

| Catalogue no. | Site/Context | Period/phase (deposition) | Land use (deposition) | Period/phase (conjectured) | Land use (conjectured) | Fig no. |
|---|---|---|---|---|---|---|
| <WP86> | A[1562] | 5 | OA18 | | | 24 |
| <WP87> | A[1253] | 5 | OA18 | | | 25 |
| <WP88> | A[1253] | 5 | OA18 | | | 25 |
| <WP89> | A[1253] | 5 | OA18 | | | 25 |
| <WP90> | A[1582] | 5 | OA18 | | | 26 |
| <WP91> | A[1562] | 5 | OA18 | | | 26 |

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*London and Middlesex Archaeological Society Transactions, 73 (2022), 107–145*

# A ROMAN WATERCOURSE, MEDIEVAL AND TUDOR DEVELOPMENT AND BELL YARD AFTER THE GREAT FIRE: EXCAVATIONS AT FARADAY BUILDINGS NORTH, CITY OF LONDON EC4

*Guy Hunt and Peter Rowsome*

*With contributions by Ian Betts (building material), Julian Bowsher (coins), Nigel Jeffries (post-Roman pottery and glassware), Michael Marshall (small finds), Michael Mulryan and †Chris Phillpotts (documentary research), Kevin Reilly (animal bones), Karen Stewart (plant remains) and Amy Thorp (Roman pottery).*

**SUMMARY**

*In 2005–6 excavations at Faraday Buildings North in the City of London revealed that archaeological deposits survived in two small but significant areas of a large redevelopment site. Excavation along the western side of the site revealed a truncated Roman sequence that began with evidence of an early Roman north–south aligned drainage ditch that may have followed the line of a natural stream channel. Medieval recuts of the ditch recorded at excavations to the west of the site have sometimes been called the 'western stream' but are now interpreted as a man-made drainage channel combining elements of natural streams as well as Roman and later ditches. The ditch recorded at the study site cut into the sloping hillside and was at least partially backfilled in the 1st century AD, some fills containing redeposited fire debris that may have come from the Boudican destruction of AD 60/61. One of the backfills contained a large assemblage of early Flavian cooking jars, drinking beakers and flagons dated AD 70–75/80. The area to the east of the ditch was heavily truncated, with only the bases of Roman cut features surviving. These included early Roman surface drains, quarries and refuse pits as well as a few late Roman pits. The site was some distance from known Roman roads, so may have remained an open space for most of the Roman period.*

*Towards the centre of the site a deeply stratified sequence of Saxo-Norman, medieval and later deposits overlay the truncated Roman land surface in a narrow north–south strip beneath Bell Yard. The evidence included ephemeral remains of Saxo-Norman timber buildings. Intensive pitting to the north and south of the buildings contained midden fills that included three bone skates. The pits were sealed by 13th- and 14th-century dumps that were superseded by more rubbish pits and the chalk foundations of a building. The cellar of a late medieval building had an eastern wall that was rebuilt in brick in the 16th century and continued in use until the Great Fire. The medieval and Tudor discoveries can be correlated with documentary evidence for the site and may have been associated with the 12th- to 15th-century Abbot of Peterborough's Inn and the later Bell Inn, which leased the property from* c.*1424 until the early 18th century.*

*All of the buildings on the site were destroyed by the Great Fire of 1666. Associated evidence included*

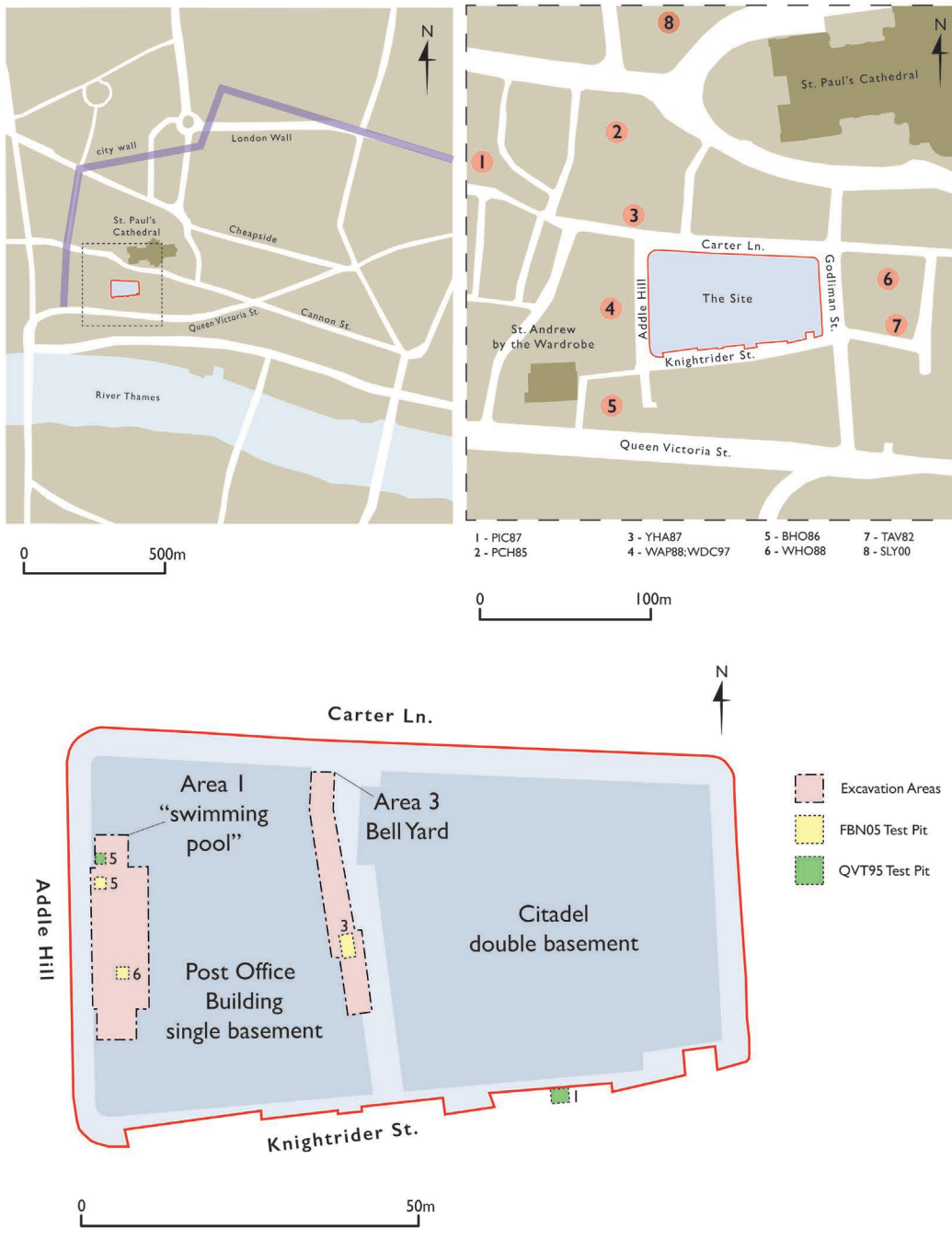


*Fig 1. (top left) Site location: position in the City of London (scale 1:25,000); (top right) vicinity of the site including locations of nearby sites mentioned in the text (scale 1:4,000); (bottom) development area showing evaluation test pits and excavation areas (scale 1:1,000)*

*fire debris infilling a cellar, containing pottery and glassware that may have been used in a drinking establishment. A narrow north–south alley was established across the centre of the site after the Great Fire. Known as Bell Yard from 1682 onwards, the alley continued in use until the recent redevelopment of the site. Most of the post-fire properties were re-established on their pre-existing footprints but the new alleyway required changes to the adjacent property frontages. Excavations in Bell Yard identified the brick walls of two buildings to the west of the alley and two buildings and a yard to its east. The archaeological evidence corresponds with the layout shown on the 1676 Ogilby and Morgan map. The site retained much of its late 17th-century layout until the western half was redeveloped for the Post Office Savings Bank in the 1890s and the eastern half was used for the construction of the bomb-proof Citadel telephone exchange in 1941–2.*

## INTRODUCTION

This publication presents the results of archaeological excavations undertaken by L – P: Archaeology for Grange Hotels in 2005–6. The investigations took place in advance of the construction of the Grange St Paul's Hotel on a site formerly known as Faraday Buildings North, London EC4 and located at National Grid Reference 531950 181050 (Fig 1), hereafter referred to as 'the site'. This development covered an entire City block defined by Carter Lane, Godliman Street, Knightrider Street and Addle Hill. The modern ground surface in the area slopes down from *c.*16m OD at the crest of the 'western hill' near St Paul's Cathedral to *c.*6m OD along the north embankment of the Thames. The modern street surface of Carter Lane lies at *c.*14.6m OD near the site's north-eastern corner but is 1m lower at its north-western corner. The surface of Knightrider Street along the south side of the development lies at *c.*12m OD. Prior to the hotel redevelopment the property was occupied by two British Telecom buildings separated by a narrow north–south lane called Bell Yard (Fig 2).

Desk-based assessment of the site collated evidence of previous archaeological work in the vicinity (Hunt 2004). A 1995 Oxford Archaeology evaluation of the development site (site code QVT95), included evidence of truncated natural gravel, Roman quarrying and post-medieval deposits recorded in test pits on the western part of the site and untruncated natural brickearth overlain by Roman stratigraphy in a Knightrider Street test pit (Wilkinson 1995). Further evaluation work by L – P: Archaeology in 2005 included seven new test pits (Hunt & Morse 2005, fig 1). The test pits showed that late 19th- and 20th-century development had truncated most of the site down to natural gravel, but confirmed that archaeological deposits survived on about a tenth of the area. These findings informed the production of the excavation programme and the Written Scheme of Investigation (Hunt 2005).



*Fig 2. Unpromising beginnings: machine removal of concrete slabs in Bell Yard; view looking north-east with St Paul's in the background*

Due to the depth of the existing basements surviving archaeological strata were restricted to two relatively small areas, located on the western side of the single-basemented 'Post Office Building' in a zone earmarked for construction of a hotel swimming pool (Area 1) and in an unbasemented north–south strip of ground beneath Bell Yard near the centre of the site (Area 3). Examination of the area beneath the Post Office Building

basement slab along the west side of Bell Yard revealed only truncated natural deposits (Area 2; not illustrated). No archaeological deposits survived on the site to the east of Bell Yard, where the double-basemented Citadel telephone exchange was constructed in 1941–2.

Archaeological excavations took place between November 2005 and February 2006. The findings are described and interpreted in a detailed assessment report (Morse & Hunt 2009). An Updated Project Design set out the programme of developer-funded analysis and publication work (Hunt 2009).

### *Organisation of this Article and the Site Archive*

The site sequence is described as a chronological narrative, with natural geology followed by historic periods divided into phases: Early Roman (phases R1–4), Late Roman (phase R5), Saxo-Norman and Early Medieval (phases M1–3), Later Medieval (phases M4–5) and post-Medieval (phases PM1–3). Periods and phases cover defined time spans specific to the site and based on the stratigraphic, documentary and finds-dating evidence.

The basic unit of reference in this report is the context, with selected numbers shown in square brackets: [10]. Analysis work assigned contexts to groups which were assigned to the following land uses: Open Areas (OA1–OA17), Buildings (B1–B8) and Ditches (D1–D4). Contemporary land uses are grouped together to form the chronological periods and phases. Selected finds and environmental evidence is integrated into the chronological narrative and specialist reports referenced and summarised where necessary. Illustrated or catalogued finds are numbered and shown in angled brackets with a category prefix, thus: pottery <P1>–<P11> and small finds <S1>–<S6>. Environmental sample numbers are shown in curly brackets, thus: {100}. Graphical conventions are shown on individual Figures.

Roman pottery was assessed and analysed using standard MOLA methods and fabric codes (Richardson 2009; Thorp 2015). The post-Roman pottery has been identified using the MOLA type series and standard Museum of London pottery codes (Jeffries 2009). Detailed descriptions of the relevant pottery codes (including vessel types) with their date ranges are posted on the Museum of London Archaeology website.[1]

Archaeobotanical remains were recovered from 24 bulk environmental samples, processed by flotation and identified using the MOLA reference collection (Giorgi 2009; Stewart 2015). Animal bones from the site were recorded, quantified and assessed in accordance with MOLA procedures (Reilly 2009). Building material was assessed using standard Museum of London recording forms and fabric codes (Betts 2009).[2]

The Faraday Buildings North site records, including specialist analysis reports and associated data, are included in the site archive under site code FBN05; records from the 1995 site evaluation are archived under site code QVT95. The records and associated artefacts are stored at the Museum of London Archaeological Archive (formerly LAARC) at Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED.

## TOPOGRAPHICAL, GEOLOGICAL, ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

### *Topography and Geology*

The site is located on the Thames floodplain where Quaternary period river gravels were deposited in a series of terraces. The City of London lies on the Taplow Gravel terrace which is locally capped by deposits of the Langley Silt complex, commonly called brickearth. The underlying solid geology is Eocene London Clay (British Geological Survey 2013).

Topographically, the pre-Roman site lay on the southern side of a low hill centred on present-day St Paul's and defined by the north bank of the Thames *c.*150m to the south, the river Fleet *c.*300m to the west and the Walbrook stream *c.*600m to the east. In the 1st-century AD the City's 'western hill' crested at about 13m OD and sloped down to the tidal shore of the Thames at *c.*1m OD (Watson 2006, 9–10).

Small natural watercourses that cut into the western and southern flanks of the 'western hill' have been observed at several archaeological sites and for a long time were

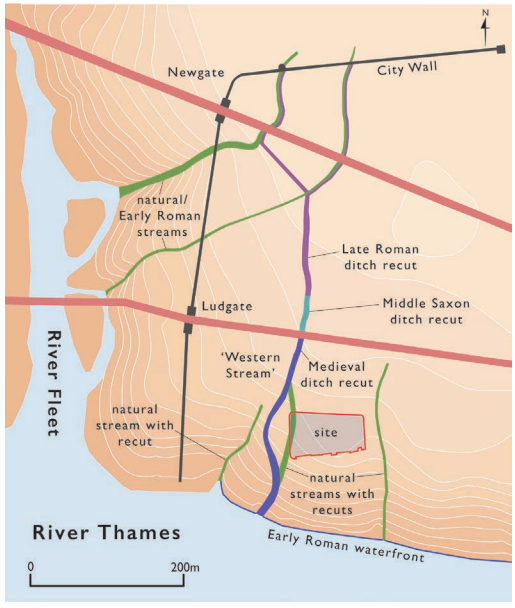


*Fig 3. Natural streams south and west of St Paul's and their reorganisation as manmade Roman, Saxon and medieval drainage ditches making up the 'western stream'; shown in relation to the topography of Londinium's 'western hill' and its main roads, waterfronts and defences*

interpreted as parts of a single north–south aligned natural watercourse referred to as the 'western stream' (Fig 3). The streams on the north-west side of the western hill were first observed by Norman and Reader at the GPO site in Newgate Street in 1907–8, where two parallel north–south channels pre-dated the Roman city wall (Merrifield 1965, 189). A 1961–2 watching brief at Paternoster Square observed the same tributaries, which appeared to converge and run south in what was interpreted at the time as a natural stream channel that was subsequently converted into a Roman ditch (Merrifield 1965, 192; Shepherd 1988, 6–7). Excavations further to the south in the 1980s found evidence of later drainage ditches that were backfilled in the medieval period and ran southwards to the Thames. A review of these discoveries suggested that this 'western stream', or at least the southern part of its route, was in fact a 'vast man-made feature' (Bentley 1987, 334).

More recent excavations have shown that the various natural streams recorded on the north-western side of the 'western hill' were fed by the upper gravel terrace spring line in the Smithfield area and flowed south-west to the Fleet (Pitt 2006, 46–8, fig 55; Askew 2007; Lyon 2007, 10–11, fig 11; Watson 2006, 10–13; Watson 2012, 36–8; Askew 2014, 12, fig 2). These north-western streams were separate from short natural water channels located on the south side of the 'western hill' which were fed by the lower gravel terrace spring line and ran south to the Thames. The southern streams may have existed at St Andrew's Hill to the west, at Wardrobe Place (WAP88) and Wardrobe Court (WDC97) near the west side of the study site (Tyler 2000, 29–32) and at 13–23 Carter Lane (WHO88) to the east (Schofield 1998, 287).

### *Roman Activity*

The site was located in the south-western corner of the Roman settlement, which may have been a peripheral and relatively undeveloped area. It was situated *c.*150m north of the early Roman river bank and *c.*100m south of the east–west road to Ludgate while the main road to Newgate lay nearly 300m away (Rowsome 2011; Hill & Rowsome 2011, 275–6). During the mid-1st–century AD settlement to the west of the Walbrook was concentrated along the main east–west road while areas further from it were primarily used for quarrying, rubbish disposal and burials (Wallace 2014, 48–63; Perring 2022, 83–6). The site probably lay beyond the postulated western boundary of the late 1st-century settlement (Perring & Roskams 1991, 108; Perring 2022, 155–6), but was *c.*200m to the east of the later city wall. The lack of evidence for early Roman buildings or occupation near the site is consistent with its peripheral location. Activities in the immediate vicinity included terracing and levelling of the sloping ground and the dumping of refuse and debris as landfill. Widespread gravel and brickearth quarrying also took place across the area, with quarry pits recorded at St Paul's Churchyard (PCH85) and Wardrobe Place (WAP88) to the west of the study site and at 13–23 Carter Lane (WHO88) to its east (Schofield 1998, 287) (Fig 1).

The dominant Roman feature in the vicinity of the study site may have been a drainage

ditch following a natural stream course projected to lie just to the west of the recent excavations. However, surviving evidence for the Roman phase of the ditch has proven difficult to identify on sites south of St Paul's. Excavations at St Paul's Churchyard (PCH85), at Wardrobe Place and Wardrobe Court (WAP88; WDC97) and at Bible House (BHO86) were notable for large post-Roman ditches (Bentley 1987). More evidence of Roman drainage was found to the north-west of St Paul's, where construction of the Roman city wall in *c.*AD 200 blocked the canalised early Roman phases of the natural streams that flowed south-west to the Fleet (Pitt 2006, 4). This seems to have prompted the reorganisation of the area's drainage, with the headwaters of the natural streams north of Newgate diverted into ditches that joined to form a single man-made drainage channel running south across the Paternoster Square site (Watson 2006, 10–13; Askew 2007, 256, figs 2–3; Watson 2012, 36). The ditch must have continued south of the Roman road to Ludgate as a more steeply-sloping channel, emptying into the Thames where the riverbank had not been developed, to the west of the settlement's quays and port facilities and to the east of the line of the late Roman city wall (Brigham 1990) (Fig 3).

It seems likely that the southern section of this drainage ditch was subject to erosion, silting and rubbish dumping that resulted in its partial infilling; consequently it required periodic scouring or recutting. This maintenance work may have resulted in a deeper and wider channel, removing evidence of its original dimensions and profile.

Other Roman developments in the area included antiquarian evidence of east–west aligned masonry walls running along Knightrider Street to the east of the study site for a distance of nearly 200m. The date and function of the walls is uncertain but, given the sloping ground, they may have been terrace retaining walls, perhaps defining the north side of a precinct along the Thames waterfront, where substantial 2nd-century buildings formed part of a major temple complex (Bradley & Butler 2008, 65–72). Construction of the Roman riverside wall in *c.*AD 270 was followed by work on a new building complex that included monumental riverside platforms dated to AD 294. These can be associated with the emperor Allectus (AD 293–6), who may have commissioned new temples as well as administrative buildings (Williams 1993). Londinium was abandoned in the early 5th century, but peripheral areas of the settlement away from the main roads and waterfronts, including much of its south-western quarter, may have been abandoned several decades earlier or, indeed, never built on at all (Perring 2022, 377–93; Hill & Rowsome 2011, 447). The Roman drainage ditch recorded at the development site may have been clogged with refuse or sediment before the end of the Roman period but probably remained visible in the landscape.

### *Saxon and Medieval Evidence*

Past archaeological work in the vicinity of the site can be combined with documentary evidence and historic maps to trace the medieval development of the area. A documentary research assessment of the paper and on-line catalogues held by the British Library and other archives (see bibliography) identified printed, manuscript and cartographical sources relevant to the site (Phillpotts 2011) before a short historical research report examined selected documents relating to individual properties in more detail (Mulryan 2012).

St Paul's Cathedral was established in AD 604, probably on its present site, but excavations within its immediate environs have found little in the way of contemporary evidence (Vince 1990, 10; Watson 2012, 39–40). Residual Early-to-Middle Saxon chaff-tempered ware pottery was recovered near the study site at Horn Tavern (TAV82) (Schofield 1998, 188) and a more recent synthesis has identified other traces of activity along the waterfront (Schofield *et al* 2008). The consensus is that a small ecclesiastical settlement lay to the south of the cathedral in the Middle Saxon period (Watson 2012, 39), but that the rest of the area within the Roman walls was not extensively reoccupied until the 10th century (Vince 1990, 26–9, 124–9).

The most significant evidence for Middle Saxon activity in the area comes from the

south-west corner of the Paternoster Square site (SLY00), where excavation and scientific dating of the large north–south aligned 'western stream' drainage channel has established that it was in use in the 7th–8th centuries AD (Watson 2012, 33). It was dug in the 7th century, but probably followed the line of a Roman precursor which it entirely truncated. The Saxon ditch may have served both as a drain and a boundary for the western side of a cathedral enclosure before being backfilled in the 12th century (Watson 2012, 39).

Excavations at St Paul's Churchyard (PCH85) to the south found that the ditch was repeatedly recut in the early medieval period and backfilled in the 12th century (Bentley 1987). Deposits described as 'black dumps' were also observed at 36–38 Carter Lane (YHA87; Schofield 1998, 260) and may have been medieval ditch backfills. At Wardrobe Place (WAP88) and Wardrobe Court (WDC97) the ditch was also recut before early 12th-century infilling (Tyler 2000, 31). A medieval ditch recut and backfill sequence at Bible House (BHO86) produced similar dates (Bentley 1987).

Collating the evidence from the various observations and phases of the north–south ditch, it is clear that it formed a large scar on the landscape of the western hill, measuring nearly 500m long, 15–20m wide and 4–5m deep. The base of the ditch lay at *c.*7.5m OD in the north near Newgate Street, *c.*7m OD west of St Paul's and *c.*6m OD just north of its mouth (Fig 3).

Two Norman fortifications were located a short distance to the west of the line of the drainage ditch south of Ludgate. Baynard's Castle occupied a prominent site on the Thames waterfront by 1087. The smaller Montfichet's Tower was built to the south-east of Ludgate by 1136 and part of its moat was recorded at 52–66 Carter Lane (PIC87; Watson 1992). Both castles fell out of use in the 13th century and were dismantled by 1300 (Carlin & Belcher 1989, 65, 89). Each had enclosing defensive ditches whose eastern sides lay quite close to the line of the north–south 'western stream' ditch, which may have been recut at about the same time. It has been suggested that the north–south ditch was contiguous with the eastern side of the Baynard's Castle defensive ditch (Schofield 1984, 38), though this remains unproven. A westward bow in the course of the medieval ditch at Wardrobe Court (Tyler 2000, 29) could hint at a connection with the north-eastern corner of the Baynard's Castle ditched enclosure. What is more certain is that all three ditches went out of use and were backfilled in the 12th century, possibly shortly after Henry I granted part of the disused ditch of Baynard's Castle to the Bishop of London in 1111 for construction of a wall and a road (Schofield 2011, 162). As London grew the 'western stream' ditch must have been an increasingly significant obstacle to the development of nearby streets and properties so there may have been calls for its backfilling (Figs 4a, 4b).

The street plan of the area was established before the 13th century. The site was bordered by Carter Street (now Carter Lane) on the north, Haggen Lane (now Godliman Street) on the east, Knightrider Street on the south and Atheling Street (now Addle Hill) on the west (Carlin & Belcher 1989, 64, 68, 76, 78; Fig 4a). The precinct of St Paul's Cathedral was walled along the north side of Carter Lane by the 13th century. The modern street names were all in use by the 18th century (Phillpotts 2011).

The site lay within the Castle Baynard Ward of the medieval City, and in the parish of St Gregory by St Paul's. Land at the site was granted to Peterborough Abbey before the Conquest, though it is not clear how this grant relates to later acquisitions by the abbey in the area (Mulryan 2012).

Three groups of 12th-century buildings and properties can be identified at the study site. St Paul's bakehouse and brewhouse were established as adjoining properties on the west side of Haggen Lane to prepare bread and ale for the cathedral and the Bishop's Palace. In 1369 the Dean and Chapter of St Paul's had a row of 20 shops built along the road frontage of the plot. The contract provides considerable detail about the buildings to be erected (see below; Salzman 1952, 441).

In *c.*1162 the Dean and Chapter granted a measured plot of land between its brewhouse and the house of Gilbert Fastigurt to one of its canons, Master Ralph the Divine (Phillpotts 2011; Mulryan 2012). In the early 13th century, the Abbot of Peterborough

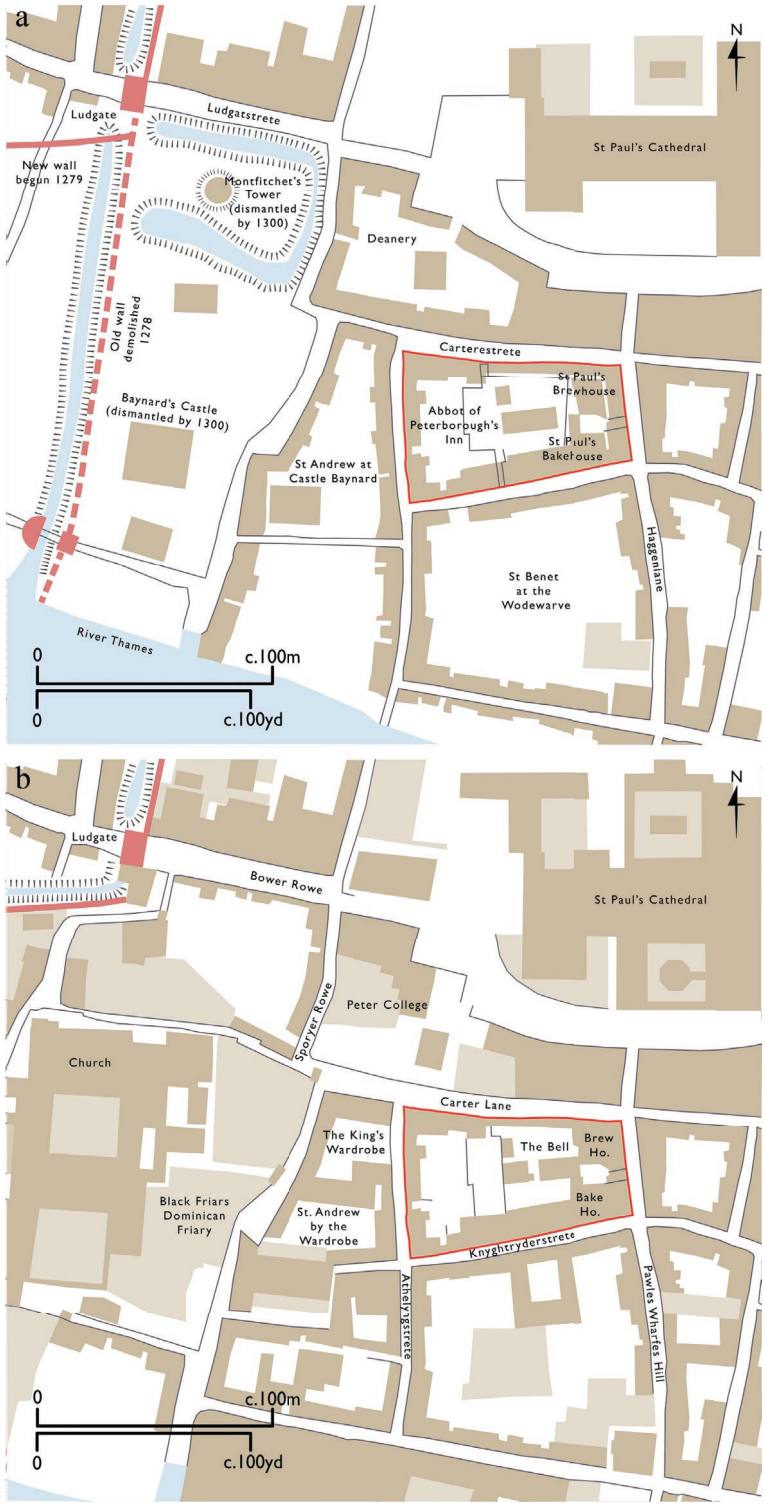


*Fig 4. Medieval development south-west of St Paul's: a. documented streets, properties and major features in* c.*1270–1300; b. documented streets and properties in* c.*1520; source (Barron* et al *2020) (© Historic Towns Trust)*

purchased the plot from the executors of one of the canons of St Paul's. The Abbot bought part of Fastigurt's land soon afterwards and made further acquisitions extending the property in 1250–62. These properties, located in the central part of the development site, were used to establish the London inn of the Abbot to serve as his base in the capital. The inn contained several residences, plus other buildings used as a depot in the trade links of the abbey with the capital. The inn remained in use until *c.*1420, when the Abbot of the day moved to a new premises on Fleet Street.

Property fronting Atheling Street on the west side of the development site, abutting the Abbot's inn to the east and Carter Lane to the north, was the subject of a series of transactions recorded on the Husting Rolls of the City from 1269 onwards. This land had belonged to the King's surgeon, and passed to Richard of the Queen's Wardrobe in 1288. Tenements to the south, in the south-west corner of the study site, were sold in the early 14th century. The owner and adjacent householders included a leather tawyer, a tiler, an apothecary, corn-chandlers and woodmongers. By 1374 the southern property had three shops along Atheling Street (Mulryan 2012).

Tenements on the west side of Atheling Street were bought up by Sir John Beauchamp in the 1340s and developed into a mansion, houses and shops around a small square known as Beauchamp's Inn. The property was sold to Edward III after Beauchamp's death in 1360 and the King's Great Wardrobe, which served as the storehouse for the royal tapestries, clothes and accessories, was built there in 1361–6. The Wardrobe included residential and official buildings as well as stores (Ellis 1948). Substantial medieval stone foundations associated with these buildings have been recorded at Wardrobe Court (Tyler 2000, 32).

### *Post-Medieval and Later Properties*

The Abbot of Peterborough leased out his property to the Bell Inn, which existed from *c.*1424 until at least 1708 (Fig 4). In 1598 Richard Quyney wrote a letter from the inn to his friend William Shakespeare (Wheatley 1891, vol i, 336). Peterborough Abbey was dissolved in 1539 and its London lands, including the Bell Inn, were part of an endowment granted to the new Bishopric of Peterborough, founded in 1541, which still held the freehold of the inn in the 17th century. By that time the Mermaid Inn and Maidenhead Inn stood on the north-west and south-west parts of the site respectively, each with its own courtyard. On the eastern part of the site the properties of the Dean and Chapter of St Paul's were surveyed for sale by a commission of Parliament at the end of the Civil War in 1649–50 (Phillpotts 2011).

The Faithorn and Newcourt map of 1658 shows that the site was completely occupied by multi-storey buildings a decade before the Great Fire of September 1666, but Leake's 1667 map confirms that all of these structures were destroyed in the fire (Fig 5). Rebuilding saw most of the pre-Fire layout re-established, though the alley later known as Bell Yard is first documented after the fire. Disputes concerning building plots on the site were submitted for arbitration to the Fire Court in 1668 and boundary lines and foundations were laid out by the City surveyors over the next four years, with full measurements recorded (Jones 1966). Most of the pre-Fire lessees replaced their buildings and were given extensions of their leases. After the rebuilding, the T-shaped Bell Yard or Court accessed the interior of the Bell Inn property, now divided into tenements. In 1720 it was described as 'a very good open Court, with handsome Houses, well inhabited' (Strype 1720). To the east, St Paul's Bakehouse Court similarly gave access to tenements on the site of the former brewhouse and bakehouse (Phillpotts 2011).

Post-Great Fire properties to the west of Bell Yard were replaced in 1890 by the Post Office Savings Bank, which became part of the Central telephone exchange and renamed Faraday Building North in 1902. Older buildings to the east of Bell Yard were demolished before the Second World War. The Blitz showed just how vulnerable the Post Office telephone system was to air raid damage and at the end of 1940 the vacant site was selected as the location for a windowless and heavily-reinforced concrete 'fortress-type structure', part of a war-time network of secure telephone exchanges in Whitehall and the City. Construction of


a
N
31
17
15
23
21
29
b
N
Office
Exchequer Office
Phisitian's Colledge
Black & White Court
Old Bayley
Pater noster
Amen Corner
Ave Mary lane
Paules Churchyard
The Old Change
Watling
Ludgate
Ludgate Street
Creed lane
Deanes Yard
Carter lane
Sermon lane
Change
The Ward robe
Knightrider
Doctors Commons
S. Peters hill
Lambert hill
Thames
Thames Street
S. Andrew hill
Blackfriars lane
164
105
161
107
0
150m
150yd

the double-basemented and bomb-proof Citadel building began in May 1941 and was completed in just seven months, with its complex exchange equipment installed and ready for use in November 1942 (Epps 1946; Hay 1946). The telephone exchange buildings to the west and east of Bell Yard continued in use until 1982.

## CHRONOLOGICAL NARRATIVE

### *Natural Geology and Topography*

Natural deposits were recorded at several locations on the site (OA1; not illustrated). A 1995 evaluation test pit near the south-east corner of the site in Knightrider Street recorded untruncated natural gravel at *c.*10.3m OD, sealed by a 1.3m thick capping of clean brickearth that formed a natural surface at *c.*11.6m OD. Natural deposits observed elsewhere on the site were truncated. Test pits dug on the western part of the site in 1995 and 2004 encountered truncated natural terrace gravel [108] at *c.*9.5m OD. Natural gravel [200] lay at *c.*9.2m OD in the nearby Area 1 enabling works and 'swimming pool' excavation. Patches of truncated brickearth [531] overlying natural gravel [532] were also recorded at 11.16m OD in Area 3 beneath Bell Yard. Observations at other sites in the vicinity indicate that the untruncated natural brickearth surface lay above 12m OD to the north-east of the site. From there the surface sloped downwards to *c.*11m OD in Knightrider Street while also sloping down and thinning out towards the conjectured location of a stream channel to the west of the site (Hunt 2004; Hunt & Morse 2005).

### *Roman Activity* c.*AD 50–410 (Phases R1–R5)*

#### *Introduction*

Early Roman activity (phases R1/R2) survived along the western side of the site, where the eastern edge of a north–south aligned drainage ditch cut into natural gravel. Quarries, pits, dumping and a gully lay to the east. Ditch backfilling may have included redeposited Boudican fire debris. Later 1st-century evidence (phases R3/R4) included two small gullies along with external dumping and pitting. Dumping over the subsided fills of the first drainage ditch included an assemblage of early Flavian pottery dated to AD 70–75/80. Truncation had destroyed the post-1st-century sequence except for two late Roman cut features dated to AD 250–400 (phase R5).

#### *Early Roman Activity* c.*AD 50–75 (R1/R2)*

##### The 'Western Stream' Drainage Ditch and External Deposits (Phase R1)

The earliest extant evidence for Roman activity on the site was represented by the steeply-sloping eastern side of a large north–south aligned watercourse or drainage ditch cut into the natural gravels, Ditch 1 (D1). This feature, recorded as cut [230] in the north and cut [589] to the south, was traced for a distance of *c.*11m and continued beyond the northern and southern limits of excavation. The truncated upper edge of the ditch cut lay at *c.*9.2m OD and sloped at 1:1 to an unbottomed level of *c.*7.9m OD, the base of the ditch lying beyond the western limit of excavation (Fig 6).

Associated ditch fills were discoloured clayey sands and sandy erosion deposits (predominantly [588]). The early ditch fills contained two sherds of La Graufesenque samian (SAMLG), one from a Dragendorff form 29 bowl (4DR29), a type which went out of general production around AD 85 (Thorp 2015). These features were initially thought to be individual quarry pits, but post-excavation analysis established that they were more likely to be associated parts of a large north–south aligned drainage ditch. The steep eastern side of the cut may have required a timber revetment to retain the loosely-compacted natural gravel, but no evidence of a structure survived.

*Fig 5. (opposite) a. Faithorn and Newcourt Map of London 1658; detail showing the dense pre-Fire development in the vicinity of the study site south of St Paul's (© The British Library Board (Maps Crace Port. 1.35)); b. Leake 1667 'Exact Survey of the Streets, Lanes and Churches contained within the ruins of the City of London'; detail showing the area around St Paul's after the Great Fire (© The British Library Board (Maps Crace I.50))*

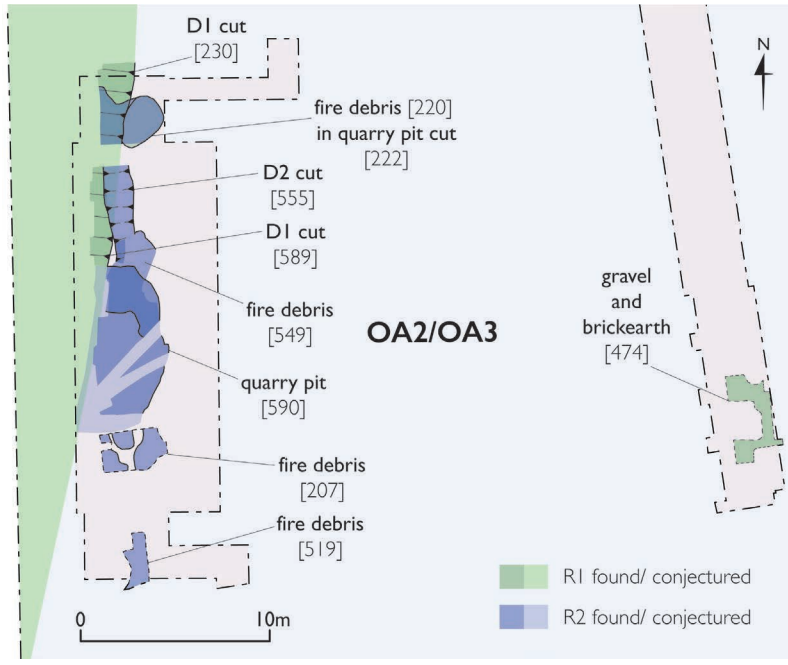


*Fig 6. Principal archaeological features from the Early Roman period (phases R1–R2) c.AD 50–75 (scale 1:400)*

The area to the east contained scattered cut features and external deposits truncated at *c.*9.2m OD (OA2). Four sub-circular pits were recorded just to the east of Ditch 1, dug into natural gravel (Fig 7). Quarry pit [222] was *c.*2m in diameter and contained a single backfill [221]. The only dating evidence was a single sherd of a Sugar Loaf Court ware jar (SLOW 2) dated AD 50–80 (Thorp 2015). Three smaller pits located further south were undated. Truncated patches of redeposited natural gravel and brickearth [474] were recorded *c.*30m to the east at the south end of Area 3 at 10.7m OD.

External Activity Sealed by Redeposited Fire Debris (Phase R2)

A sequence of external dumped deposits, interspersed with the digging and infilling of pits and capped by redeposited fire debris (OA3), was recorded along the eastern side of Ditch 1. Dumped deposits tipped into Ditch 1 at the north end of Area 1 included grey silt layers [576]/[577] that contained a small assemblage of Roman pottery. The combination of imported fine wares present indicates that the latest date of deposition was likely between *c.*AD 60/61–75 (Thorp 2015). Similar silt and gravel dumps overlay the ditch to the south and were sealed by layers of domestic refuse [574] and [224] that included charcoal, animal bones and organic material.

A truncated 5m length of a north–south gully cut [555] *c.*2m wide and 0.7m deep (Ditch 2) overlay the dumping near the eastern side of Ditch 1. An iron junction collar <62> recovered from gully fill [565] would have been used to connect sections of bored wooden water pipe, though may not have been *in situ* (Marshall 2015). Iron pipe collars have been found at more than 12 locations in Roman London (Williams 2003, 245, fig 24.1; Telfer & Blackmore 2017, 153). The example recovered at Paternoster Square (Keily 2006, 99, <S63>), just to the north of the site, suggests that a piped water supply or drainage system may have existed locally. Dumping and pitting overlay the disused gully and the southern part of Ditch 1, including four small pits and a large quarry cut [590] backfilled with mixed fills of silt and gravel.



*Fig 7. Western basement 'swimming pool' excavation area showing the truncated surface of natural gravel cut by the edge of a north–south Roman drainage ditch and quarries; view looking west*

The dumps and pits were sealed by the deposition of abraded and redeposited fire debris [220], [549], [207] and [519] at *c.*9m OD. Associated sherds of pottery were in forms consistent with a late Neronian to early Flavian date of AD 60/61–75 (Thorp 2015). The dumping may have been associated with the clearance of Boudican fire debris from areas of roadside building to the east and north (Wallace 2014, 77–88, fig 36).

### *Early Roman Activity* c.*AD 75 to Early 2nd Century (R3/R4)*

#### Drainage Gullies and External Dumping and Pitting in the Later 1st Century (Phase R3)

External activity continued in the later 1st century AD and included the digging of two new drainage ditches as well as scattered pitting along the western side of the site (OA4) and truncated at *c.*9.2m OD (Fig 8). Dumped deposits sealed the earlier pits and ditches, levelling the subsided and uneven surface. The area to the east was badly truncated, with only the bases of scattered cut features and thin patches of external deposits surviving. A truncated ditch cut [538] (D3) followed the same alignment as the earlier Ditch 1 but was less than 1m wide and 0.3m deep, surviving over a distance of *c.*5m and terminating in a rounded southern end. Fill [537] contained a single base sherd of Sugar Loaf Court ware (SLOW) dated to AD 50–80 (Thorp 2015).

To the east, in the northern part of Area 3, a parallel north–south ditch cut [529] (D4) was truncated but at least 0.4m deep, with a base at *c.*10.6m OD. The ditch may have cut through a thick sequence of silt dumping [523]/[525] immediately to the east and surviving up to 11.77m OD.

The area to the east of Bell Yard was truncated by a deep modern basement, but the 1995 evaluation test pit (QVT95, TP1) excavated to the south-east along Knightrider Street encountered natural or redeposited brickearth at 11.5m OD

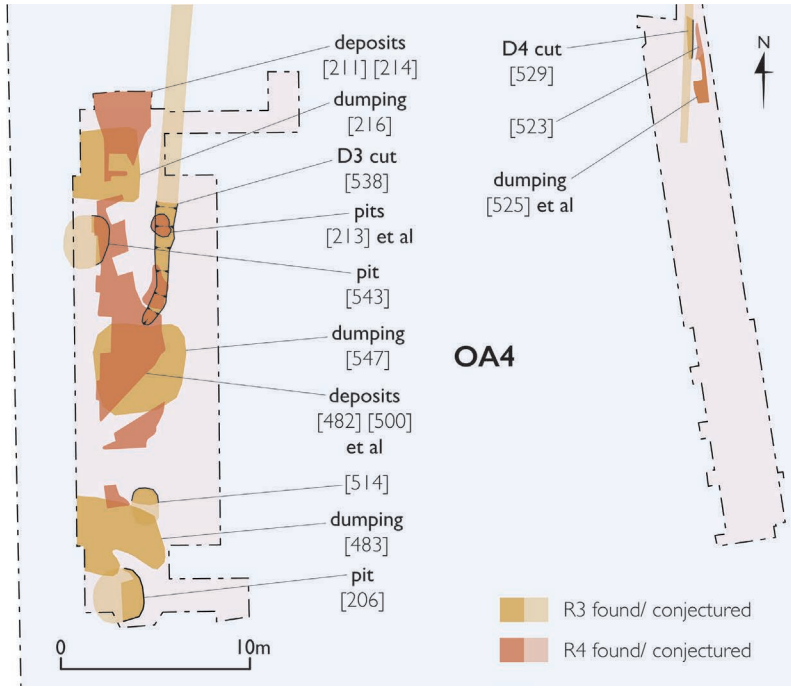


*Fig 8. Principal archaeological features from the Early Roman period (phases R3–R4) c.AD 75–early 2nd century (scale 1:400)*

(Wilkinson 1995). Overlying deposits were described as brickearth makeups sealed by occupation deposits and Roman building debris at up to 12.9m OD (Wilkinson 1995; Hunt & Morse 2005), though this level seems far too high for *in-situ* Roman strata.

On the western side of the site small pit cuts [543] and [514] lay to the south-west of gully Ditch 3. Quarry pit cut [206] contained several backfills but none of the pits produced significant dating evidence. To the north-west a sequence of five undated external layers (predominantly [216]) at *c.*9.2m OD sealed the subsided fills of underlying pits. In the central part of the area dump deposits (predominantly [547]) overlay the southern end of gully Ditch 3. These deposits contained a small assemblage of Roman pottery dated to AD 50–80 by sherds of Sugar Loaf Court ware (SLOW), though the presence of an early Roman micaceous sandy ware round-bodied jar (ERMS 2B) suggests that a late Neronian to early Flavian date of AD 60/61–75 is most likely (Thorp 2015). Further south, a sequence of seven dump deposits (predominantly [483]) at *c.*9.1m OD sloped downwards towards the partially backfilled Ditch 1 to the west. Pottery included sherds from three Sugar Loaf Court ware (SLOW) vessels and a Romano-British flat-bottomed amphora (81J), giving an overall date of AD 50–80 (Thorp 2015).

### Dumping and Pitting Continuing into the 2nd Century (Phase R4)

Continued external activity was recorded on the western side of the site below *c.*9.2m OD (OA4 continued in use) but horizontal truncation meant that little survived to the east (Fig 8). A sequence of eight dump deposits (predominantly [482]) in the south-central part of Area 1 continued a process of backfilling, raising and levelling the ground surface. A particularly large assemblage of 252 sherds of early Flavian pottery was recovered from deposit [500]. The pottery was quite different from other assemblages from the site and was interpreted as domestic refuse made up of smashed cooking jars, drinking beakers and flagons as well as smaller quantities of tablewares and transport vessels (amphorae). The

pottery is well-preserved with no abrasion and indicates that the vessels were deposited shortly after disposal (Thorp 2015).

Substantially complete vessels include a fine micaceous reduced ware ovoid beaker with barbotine decoration of crescent shapes grouped in threes <P1> (FMIC 3B BAD). This distinctive decoration is occasionally found on ring-and-dot-beaker fabric (RDBK) versions of the beaker for which the optimum dating is *c.*AD 70–5 (Green 1978, 115). Jars dominated the assemblage (Fig 9) and included an early Roman micaceous sandy ware round-bodied jar with thickened or out-turned rim and burnished decoration <P2> (ERMS 2B BUD) and smashed Alice Holt/Surrey ware necked jars with carinated shoulders and burnished decoration <P3>–

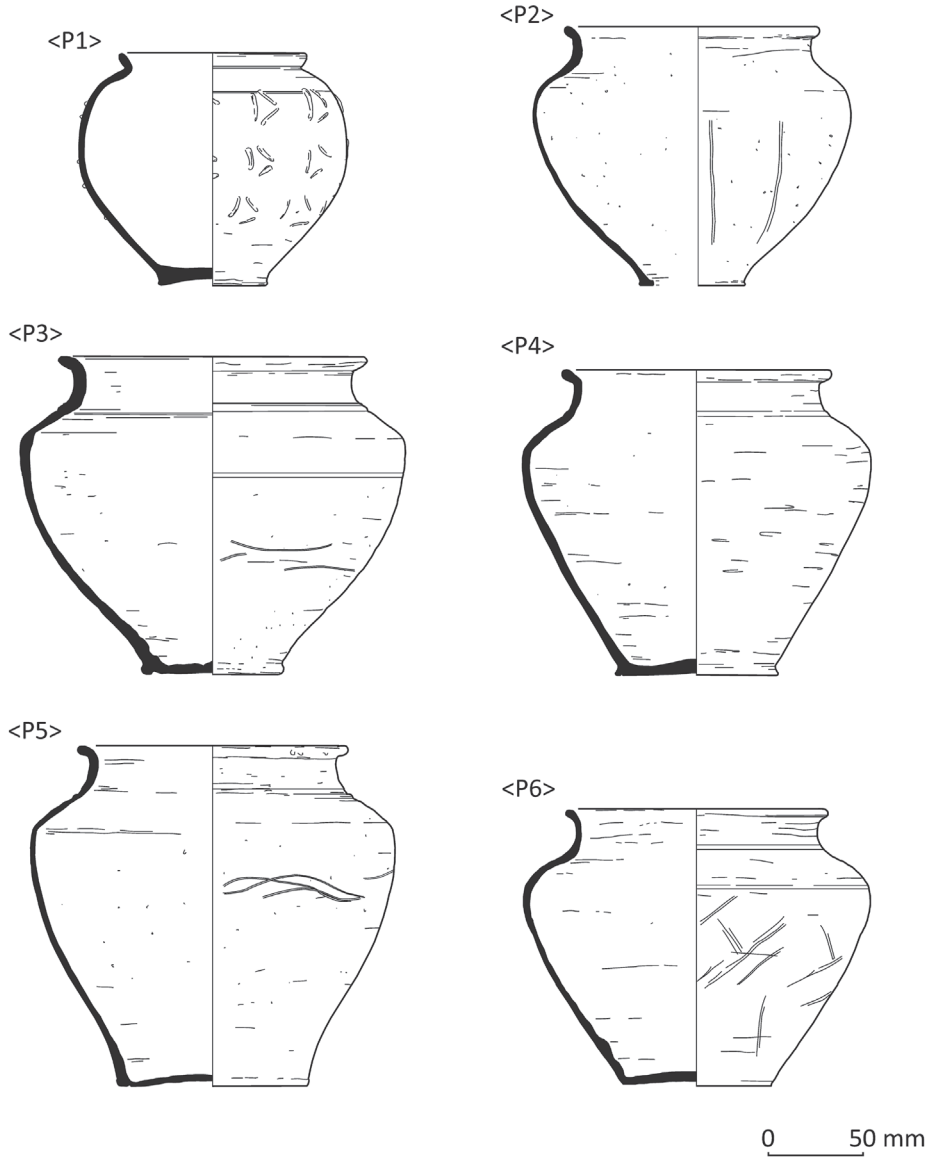


*Fig 9. Early Flavian pottery assemblage from deposit [500] in phase R4, Open Area 4: Early Roman micaceous sandy ware round-bodied jar <P1>; fine micaceous reduced ware ovoid beaker <P2>; Alice Holt/ Surrey ware necked jars <P3>–<P6> (scale 1:4)*

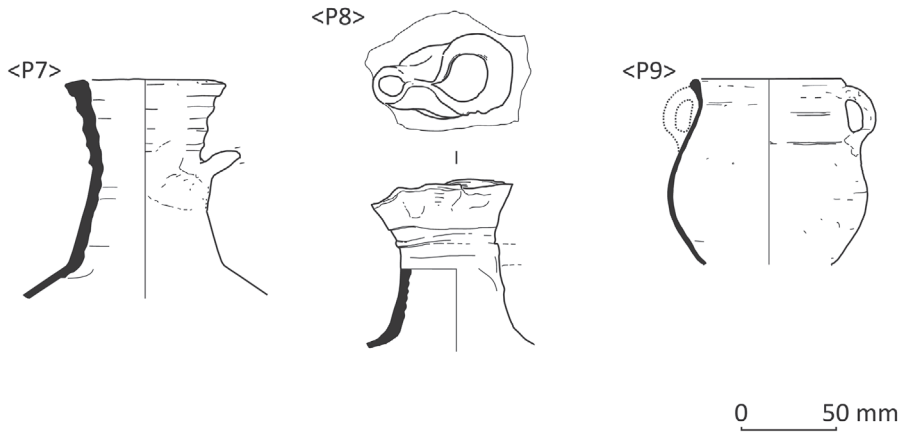


*Fig 10. Early Flavian pottery assemblage from deposit [500] in phase R4, Open Area 4: Verulamium region white ware ring-necked flared-mouth flagon <P7>; Verulamium region white ware pinched-mouth flagon <P8>; Oxidised ware jar <P9> (scale 1:4)*

<P6> (AHSU 2C BUD), most with clear signs of use represented by distinctive patches of sooting on their exterior surfaces. Other notable vessels in the assemblage include Verulamium region white ware flagons in ring-necked flared-mouth <P7> (VRW 1B2) and pinched-mouth forms <P8> (VRW 1C), and an Oxidised ware jar in two-handled honey pot form <P9> (OXID 2K) (Fig 10). The presence of Verulamium region white ware ring-necked flared-mouth flagons (VRW 1B2) and absence of fabrics such as Eccles ware (ECCW) and Sugar Loaf Court ware (SLOW) confirm a late Neronian to early Flavian emphasis. The overall combination of wares strongly suggests a date on the cusp of the Flavian period (AD 70–75/80) for the assemblage (Thorp 2015). Deposit [500] also contained a small rim sherd of blue and white glass <55> from a good quality mid-1st century polychrome cast vessel (Marshall 2015).

Small assemblages of pottery were recovered from five other deposits in the dumping sequence and contain a similar range of wares. The latest came from dump [482] and is dated AD 70–120 based on sherds of Highgate Wood ware C (HWC) and fine micaceous reduced ware (FMIC) beakers, though it should be noted that HWC vessels do sometimes occur in pre-AD 70 assemblages (Thorp 2015). Context [482] also contained the largest assemblage of Roman animal bones from the site, including cattle, red deer and a part of an articulated horse skeleton (Reilly 2009).

A physically separate dumping sequence was recorded at the north end of Area 1. Deposit [214] was notable for the presence of mixed building debris and ceramic tiles (Betts 2009). Overlying deposit [211] contained cattle and horse bones (Reilly 2009) as well as 42 sherds of pottery comparable to the assemblage from context [500] and also dated to AD 70–75/80 (Thorp 2015). Disarticulated human remains, including a tibia and a mandible, were recovered from contexts [211] and [500], perhaps derived from disturbed inhumations in the vicinity (Powers 2009).

Two Roman small finds from the site were selected for illustration, a small copper-alloy Hod Hill brooch <S1> from context [211] and a ceramic Roman disc or roundel <S2>. The brooch, dated *c.*AD 43–70, belongs to a Continental style that was popular in early Roman London (Fig 11). The ceramic disc was a residual find, recovered from the medieval period M3 Open Area 9 context [370]. It was made from ceramic building material, its edges deliberately shaped but rough and perhaps unfinished (Marshall 2015) (Fig 12). The function of ceramic roundels is uncertain and has been discussed by Crummy (1983, 93–6), who illustrates similar examples from Colchester (*ibid*, 96,

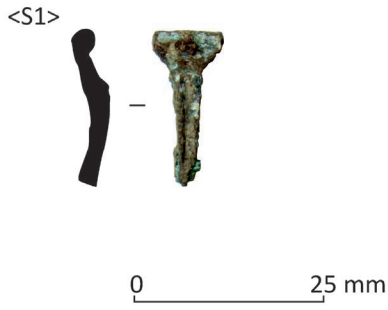


*Fig 11. Copper-alloy Hod Hill brooch <S1> from phase R4, Open Area 4 context [211] (scale 1:1)*

fig 100, nos 2483–90). Large thick roundels made of tile and amphora may have been used as lids or stoppers if well-shaped and combined with a sealant such as pitch to achieve an air- or watertight seal.

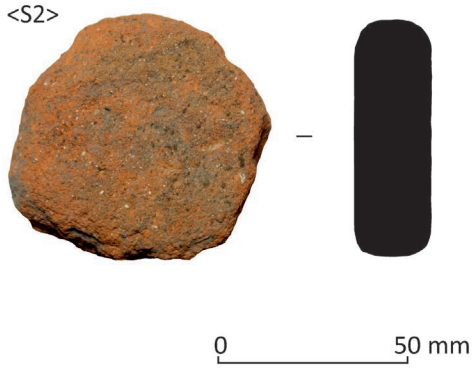


*Fig 12. Roman ceramic disc <S2> residual from phase M3, Open Area 9 context [370] (scale 1:2)*

The dumped deposits in Area 1 were overlain by four small pit cuts (predominantly [213]). Pit cut [521] fills contained a few sherds from early Roman sandy ware B (ERSB) vessels suggesting a Flavian date of AD 70–100 (Thorp 2015). A truncated patch of redeposited gravel capped by brickearth [523] was the only surviving evidence of possibly contemporary external activity in Area 3 to the east.

*Late Roman Activity* c.*2nd Century to* c.AD *400 (R5)*

Two Isolated Late Roman Pits (Phase R5)

Truncation at *c.*9.2m OD meant that only two late Roman cut features survived, both presumably dug from a much higher ground surface (OA5) (not illustrated). The two features were over 30m apart and no other late Roman contexts were recorded at the site.

A large pit cut [501] measuring *c.*2m square was recorded near the western side of the site in Area 1. It contained a series of fills capped by deposit [480], which was associated with a small assemblage of pottery dated to AD 270–400 as well as fragmentary horse bones and part of a redeposited human skull. The pottery was consistently late Roman and included sherds of Oxfordshire red colour-coated ware (OXRC), Alice Holt/Farnham ware (AHFA), Much Hadham oxidised ware (MHAD) and other Oxfordshire ware vessels. The group is notable for a lack of residual pottery normally very common in City assemblages of this date (Thorp 2015).

Analysis of environmental sample {10} from pit fill [480] identified a small charred grain assemblage dominated by free-threshing wheat (Stewart 2015). The absence of associated chaff meant that the wheat species could not be identified but bread wheat has been found at other late Roman sites in London (Giorgi 2004). The charred wild seed assemblage was quite small and consisted of taxa likely to have been growing alongside the cereal crop, such as grasses and stinking chamomile. The sample also contained significant quantities of waterlogged plant remains, with rushes being the most numerous. Blackberry and fig seeds may be remains of food consumption. Taxa that occur most often on waste ground included hemlock and stinging nettle.

Pit cut [476] measured *c.*1.5m square and was located to the east in Area 3. Fill [475] contained a single pot sherd from an Alice Holt/Farnham ware bowl (AHFA 4) dated to AD 250–400 (Thorp 2015).

*Roman Period Discussion*

The Roman sequence recorded at the site is difficult to interpret as the hillside location and extensive truncation mean that the

surviving evidence was limited. Most of the surviving strata lay along the western side of the site below *c.*9.2m OD and can be dated to the 1st century (phases R1/R2 and R3/R4). The eastern side of a large north–south aligned cut may be part of an early drainage ditch (D1) which followed the route of a natural stream channel. Little can be said about the environment of this feature as it was not recorded below 7.9m OD so could not be bottomed and the upper backfills were not waterlogged. It seems unlikely that it was part of a gravel and brickearth quarry as other quarry cuts recorded in the vicinity were much smaller sub-circular pits. A sequence of pitting and external dumping overlay the edge of the conjectured ditch (OA2) and was cut by a north–south drain (D2) which contained an iron collar of a type used to join sections of bored wooden water pipes (Marshall 2015). Overlying layers of redeposited fire debris may represent post-Boudican dumping carted in from built-up areas to the east (OA3). Associated pottery was consistent with a late Neronian to early Flavian date of AD 60/61–75 (Thorp 2015).

A similar pattern of external activity dominated by pitting and dumping (OA4) post-dated the redeposited fire debris (phases R3/R4). Two small north–south gullies may represent local surface drainage (D3, D4). Dumped deposits may have been tipped into the partly infilled eastern side of Ditch 1. Pottery dating suggests that phase R3 dumping took place at a late Neronian to early Flavian date of AD 60/61–75. Phase R4 layer [500] contained the largest Roman pottery assemblage from the site, its overall combination of wares indicating a date on the cusp of the Flavian period *c.*AD 70–75/80. The latest pit fills assigned to phase R4 contained a few sherds of pottery giving a Flavian date of AD 70–100 (Thorp 2015).

A large assemblage of redeposited Roman building material was recovered from 1st-century contexts. Building debris included fragments of keyed daub and daub with wattle marks, some of it burnt, which probably came from clay-and-timber buildings located elsewhere in the settlement. Scored box-flue tiles from phase R4 deposit [482] may have come from a 1st-century masonry building located elsewhere (Betts 2009).

Two widely separated and truncated rubbish pits dated to *c.*AD 270–400 (OA5) were the only evidence for late Roman activity (phase R5). Given the site's peripheral location, set back from the waterfront and main roads in the relatively underdeveloped south-western corner of the settlement, it is possible that external quarrying, pitting and dumping were the dominant activities throughout the Roman period. The Roman sequence included relatively few registered finds, most of them badly preserved and unidentifiable, but eight 3rd- and 4th-century Roman coins were recovered from medieval contexts, reflecting the degree of truncation of late Roman deposits on the site. The latest coins dated to AD 360–5 (Bowsher 2015; Marshall 2015).

Though the excavation included only a small part of the truncated eastern side of the early Roman drainage ditch (D1) it makes a valuable contribution to the interpretation of the feature sometimes called the 'western stream', but now known to have been composed of several natural and man-made drainage features subjected to repeated reorganisation in the Roman, Saxon and medieval periods. The new evidence from the study site builds on a 1980s review of known sites along the proposed route of the watercourse (Bentley 1987) and more recent excavation reports (see above). The Faraday Buildings ditch can also be compared with observations at three nearby excavations to the north-west (PCH85), west (WAP88; WDC97) and south-west (BHO86), which may represent medieval recuts of an earlier ditch (Fig 13).

The variations in the southern part of the 'western stream' route are difficult to interpret, but its course clearly changed through time. Silting and flood events may have caused the pre-Roman natural watercourse to migrate and an alternative route may have followed the line of modern St Andrew's Hill for a while. The early Roman conversion of a natural stream course into a managed drainage ditch may have involved the straightening or repositioning of clogged or meandering channels. There is no doubt that the feature crossing the west side of the study site dates from the 1st century AD. Ditch cuts recorded further west at Wardrobe Place and Wardrobe Court were medieval, but may represent recuts of a Roman precursor.

Fourteen bulk environmental samples

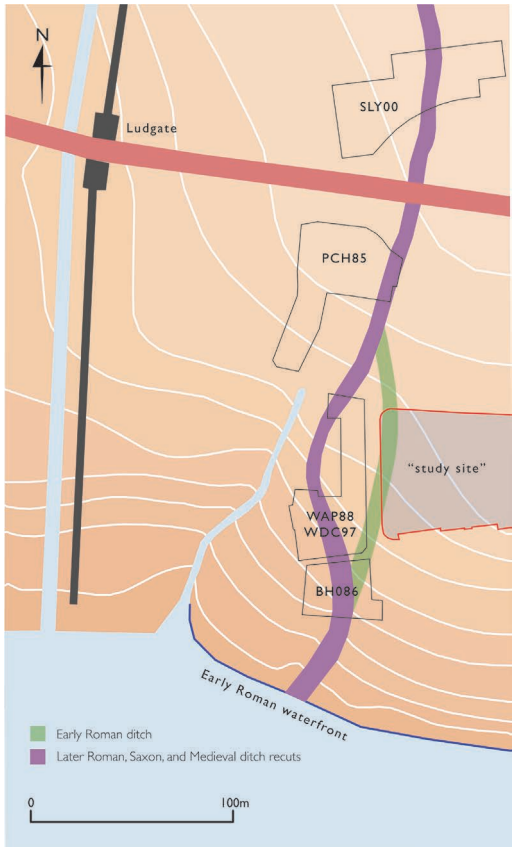


*Fig 13. Early Roman drainage ditch recorded at the study site and later Roman, Saxon and medieval ditch cuts recorded at nearby sites to the west and north*

were collected from Roman deposits, but most exhibited very poor preservation of plant remains and provide no insight into the environmental conditions at the site. Charred botanical assemblages were dominated by charcoal, with few other plant remains present (Stewart 2015). The Roman faunal assemblage was relatively small. It was dominated by sheep/goats and cattle represented by a wide range of skeletal parts, signifying the presence of processing as well as food waste (Reilly 2009).

## *Medieval Development* c.*10th Century to 1550 (Phases M1–M5)*

### *Introduction*

No sub-Roman or Saxon activity was identified at the site, which may not have seen any significant use between *c.*AD 400 and the 10th century, though some Middle Saxon activity has been recorded in the vicinity. A deep sequence of medieval deposits survived in a narrow strip beneath Bell Yard and is divided into early and later medieval periods. The early medieval period from the 10th century to *c.*1250 (phases M1–M3) began with external deposits overlain by the truncated remains of two successive Saxo-Norman timber buildings. Deep refuse pits were dug in external areas to the south and north of the buildings. The later medieval period to *c.*1550 (phases M4–M5) included a thick sequence of dumps, makeups and midden deposits overlain by large pits and the chalk foundations of a building. This was followed by the construction of a cellared stone building associated with external makeups and demolition dumps.

### *Documentary Background*

A review of the documentary evidence for the medieval period (Phillpotts 2011) can be found in the introduction. Information on selected properties at the site (Mulryan 2012) is provided below.

According to the *Chronicle of Hugh Candidus*, compiled by a monk of Peterborough in the 12th century, some of the first grants the monastery was given in the mid-11th century by Earl Harold (Godwinson) included land in London near the minster of St Paul's and 'the haven (*portum*) which is called Etheredeshythe' (Mellows 1949, 70). Another manuscript describes this grant as land in London 'next to Paulesbiri near Headred's gate' (*ibid*, 70). In about 1162 a land grant records that the Dean and Chapter of St Paul's gave 60ft of land to Canon Master Ralph the Divine between the brewhouse (*bracinum*) on the eastern part of the site and the house of a Gilbert Fastigurt (GL MS 25121/1071). Between 1204–10, Canon Thomas de Husseburne sold to Acharius, Abbot of Peterborough, land and houses along with a chapel and opening of windows onto the brewhouse of St Paul's (GL MS 25121/1062). This could be the same land that was in the possession of Ralph the Divine on the western part of the site and may represent a further extension of the abbey's land in the area (Mulryan 2012).

The St Paul's bakehouse and the brewhouse shared a mill in a complex of 12th-century buildings on the eastern part of the site. Four servants worked in the bakehouse, three in the brewery and two at the mill. A clerk of receipts was also present. The brewery and the bakehouse were under the charge of a single officer called the *custos bracini*. Payments *ad bracinum* were received by him, who then rendered an account of the receipts and the expenditure of the brewery, which included the bakehouse and the mill (Hale 1858, cxxviii–cxxix, 165ff).

In 1369 the Dean and Chapter decided to construct 20 timber-framed shops on the brewery and bakehouse road frontage. A surviving contract states that two carpenters (Roger Fraunkeleyn and Johan Page) agreed to build a range of 86 yards in length, forming a row of shops running westwards from St Paul's bakery to the property of the 'abbey of the Burgh' (the Abbey of Peterborough's land and Abbot Inn) (GL MS 25121/1796; Salzman 1952, 441).

A year later an agreement was made between a mason, Pieres de Webbenham, and the Dean and Chapter to build the stonework for a range of 18 shops, each one measuring 11ft long and 25ft wide. The mason was given detailed instructions to

> pull down an existing wall to 1 foot above the ground, and to level it to carry the groundsills of the shop-fronts; to build another wall 2 feet thick, parallel with this at the back, carrying it up to carry the joists of the first floor; to make sleeper walls, 1 foot high, at the ends, and party walls dividing the cellars and reaching up to the first-floor joists, and foundations for the principal posts. He is also to make ten stone pits for privies, 10 feet deep, eight of them being double [*ie* serving two houses]; and ten fireplaces, eight of these also being double, the hearths shall be made of stones and tilesherds, and the flues of 'Flanders tiles', or bricks, the chimneys being carried 1 foot above the roof. (GL MS 25121/1074; Salzman 1952, 443)

Both of the contracts seem to refer to the same U-shaped piece of land around the bakehouse and brewhouse complex, stopping where the Abbot Inn begins. The 1370 contract includes two less shops than a year earlier, perhaps the result of some modifications to the plans in the interim (Mulryan 2012).

Within the surviving rolls of the Court of Husting of Medieval London some precise measurements of plots of land at the site survive. In 1302 a tenement in Aethingstrete was sold that was 9ft in length and 10ft in width (HRolls 34 n.97). This seems to be the approximate size for most of the buildings on the eastern side of this road at the time (Mulryan 2012). The properties appear to be houses until 1374, when shops are described below three houses on the corner of Athelingstrate and Knightrider Street in the parish of St Gregory (HRolls 102 n.37). In 1376 a property on the same corner changes hands again (HRolls 104 n.3).

## *Early Medieval Activity* c.*10th Century to 1250 (M1–M3)*

### Saxo-Norman Activity *c.*10th Century to 1050 (Phase M1)

The earliest Saxo-Norman deposits overlay a late Roman pit in the southern part of Area 3. A thick layer of brickearth [470], interpreted as external dumping that formed a surface at *c.*11.5m OD, contained a single sherd of 11th-century pottery. The deposit was sealed by two thin brickearth treads (OA6). Several features post-dated the brickearth and may represent beam slots and postholes associated with a timber structure of uncertain plan and extent (B1). East–west linear cuts [469] and [479] were *c.*1m wide and *c.*3m apart, extending beyond the eastern and western limits of excavation. Fill [468] contained one of only three sherds of Late Saxon shelly ware (LSS) from the site, dating to between *c.*AD 900 and *c.*1050 (Jeffries 2009). Post-hole [422] and pit [467] lay between the two east–west cuts, with post-hole fill [414] containing a sherd from a Surrey ware (ESUR) jar dated to *c.*1050–1150 (Jeffries 2015). Two closely-spaced north–south aligned cuts [447] and [456] lay a few metres to the south, but did not intersect with the east–west cuts and may have been external features in Open Area 6. Fill [465] in slot [447] contained a fragment of a Saxo-Norman lava rotary quern stone <58> (Marshall 2015) (Fig 14).




*Fig 14. Principal archaeological features from the Early Medieval period (phases M1–M3)* c.*1050–1250 (scale 1:130)*

Saxo-Norman Building and Pitting *c.*1050–1150 (Phase M2)

Near the southern end of excavation Area 3, a shallow construction cut [461] with linear south and east sides contained five compacted silt and lime mortar fills (predominantly [424]) and included a few sherds of pottery dated 1050–1150. The feature was described as a rammed foundation, possibly for timber sill beams forming the south-eastern corner of a structure (B2) overlying Building 1. The building was heavily truncated and its plan and extent is unknown. The contemporary ground surface for both buildings may have been at *c.*11.5m OD. The majority of the medieval pottery in layers [424] and [443] is handmade early medieval shell-tempered ware (EMSH) found in a common range of jar forms (Jeffries 2015).

External dumps and deep, intercutting, vertically-sided refuse pits were located immediately to the south of Building 2 at levels up to *c.*12.1m OD (OA7) (Fig 15). One square pit cut [450] was *c.*2m deep and contained seven mixed fills. Pit fills [426] and [432] were associated with pottery dated *c.*1050–1150 and fill [435] contained a bone skate <S4>. The assemblage mostly comprised large joining sherds of EMSH with early medieval sand and shell-tempered (EMSS) ware in jar forms. A Thetford ware storage jar or spouted pitcher <P10> (THET) recovered from fill [426] (Fig 16) is wheel-made pottery dated *c.*AD 900–1100, from sites in East Anglia (Jeffries 2015).

An environmental sample {7} from pit fill [431] contained a small charred grain assemblage of oat and free-threshing wheat grains. Charred seeds of corncockle, stinking chamomile and vetch may be contaminants of a cereal crop. A small waterlogged botanical assemblage from this sample is probably derived from either food waste or cess, with blackberry and fig seeds present (Stewart 2015). Fills [431] and [432] contained fish bones from both riverine (cyprinid and eel) and estuarine (herring, plaice/flounder, smelt and cod/whiting) species (Reilly 2009).

Pit [450] was sealed by patches of dumping that was cut by another large 2m deep pit cut [411] containing traces of a wattle lining [421] and five fills. Primary fill [417]



*Fig 15. Early medieval square pits found during excavation work in Bell Yard*

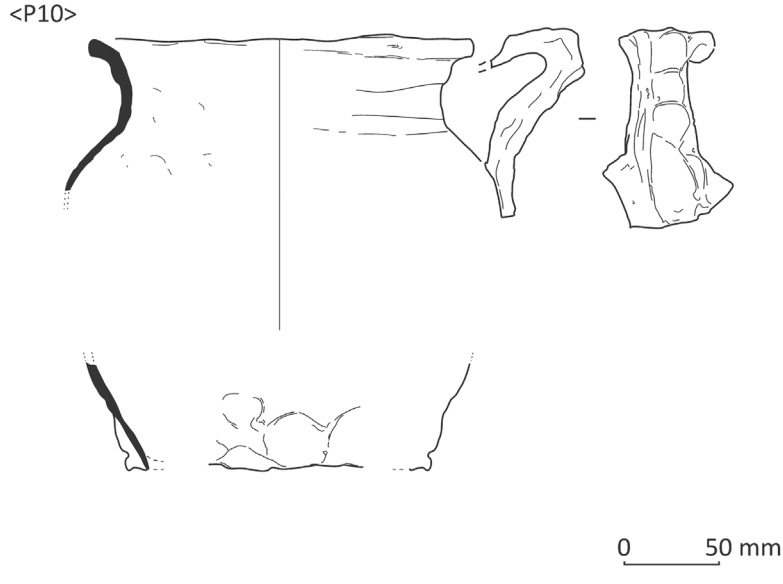


*Fig 16. Early medieval Thetford ware storage jar or spouted pitcher <P10> from phase M2, Open Area 7 [426] (scale 1:4)*

contained pottery dated *c.*1050–1150 and a bone skate <S3>.

Three more pits lay in this area. A deep, vertical-sided rectangular pit cut [403] contained a wattle lining [471] and five fills, the latest being [391]. The pottery assemblage from this pit is dated *c.*1080–1200 by the presence of coarse London-type ware (LCOAR) (Jeffries 2015; Vince 1985, 44). A later rectangular pit cut [415] had three fills dated *c.*1080–1150 and pit cut [387] contained a single undated fill.

Three more deep, vertically-sided refuse pits were recorded *c.*20m to the north (OA8). Pit cut [516] was nearly 2m deep and contained a clay-silt midden deposit [515] with pottery dated *c.*1080–1200. Pit cut [511] was *c.*1.9m deep and held a mixed midden fill [510] containing pottery dated *c.*1080–1150 and animal bones, Roman tile fragments, oyster shells and charcoal fragments. Another large pit cut [507] contained an undated fill (Fig 14).

Four truncated pits were located *c.*30m to the west and provide evidence of external activity (OA10; not illustrated). Only one of these pits contained early medieval pottery, but all of these features were square and shared a diagonal alignment not seen in earlier phases, implying that they are all contemporary. Square pits [595] and [489] contained Roman residual pottery and ceramic building material, while pit [534] was undated. The fill [488] of pit [489] was associated with a faunal assemblage that included chickens, amphibians and fish (cyprinid, plaice/flounder and eel) indicative of the exploitation of riverine and estuarine fisheries (Reilly 2009).

Pit cut [490] and its fill [487] contained a Saxo-Norman bone skate <S5> and a single sherd of pottery dated AD 970–1100. Fill [487] was also associated with a large animal bone assemblage that included sheep/goats and cattle as well as domestic birds (chicken, goose and duck) and game represented by fallow and roe deer, curlew and small passerines (Reilly 2009). An environmental sample {11} from fill [487] contained a charred wild seed assemblage as well as grains of free-threshing wheat and rye. The wild seed assemblage was dominated by grasses, with some brome grass and pea or vetch recorded. The mix of wheat and rye grains is likely to represent a typical medieval maslin crop. Maslins were a winter-sown cereal crop, with maslin flour generally used to produce bread (Stone 2006). Mineralised plant remains included wild seeds, particularly sedges and corncockle, a common weed of cereal crops (Stewart 2015).

### Saxo-Norman Bone Skates from Phase M2

*Michael Marshall*

Relatively few Saxo-Norman small finds were recovered from the site but the three bone ice skates <S3>–<S5> (Fig 17; Table 1), recovered from phase M2 refuse pits, are noteworthy (Marshall 2015).

In *c.*1170–83 William Fitz Stephen wrote in his *Description of London* that when the marshes at Moorfields were frozen some Londoners fitted to 'their feet the shin-bones of beasts, lashing them beneath their ankles, and with iron-shod poles in their hands they strike ever and anon against the ice and are borne along swift as a bird in flight…' (Stenton 1934, 58). Bone skates, most typically made from the lower limb bones of either cattle or horses, are relatively common finds in Britain, especially in the early medieval period (MacGregor 1976). A number of groups from London have been published (*eg* Pritchard 1991, 208; West 1982; Wroe-Brown 2016, 89–90, fig 20) and over 100 examples are now known from the City alone, demonstrating their widespread popularity.

The group of skates from Faraday Buildings is small but interesting. The use of a cattle radius for the largest skate <S3> is quite unusual (*cf* West 1982, 303, no. 2). While the skate is well-shaped, it shows a large amount of wear and the holes for leather thongs/fastenings at the heel have been worn through and altered or repaired. Perhaps skate <S3> had been customised by a thrifty owner who was loathe to replace it. This contrasts sharply with skate <S4>, made of a more typical horse metacarpal, which was minimally worked. Skate <S4> shows little if any sign of use-wear and could even be unfinished.

The length of bone skates is dictated by the raw materials used and they may not have been very closely fitted to their wearer's




*Fig 17. Saxo-Norman bone skates: <S3> from phase M2, Open Area 7 context [417]; <S4> from phase M2, Open Area 7 context [435]; <S5> from phase M2, Open Area 10 context [487] (scale 1:4)*

feet. However, they can probably still provide a general impression of their owner's size. Skates <S3> and <S4> are broadly comparable and could accommodate adult-sized feet, but skate <S5> is much smaller. This difference, achieved by making the skate from a sub-adult cattle metacarpal, may suggest that <S5> was intended to be used by a young child.

*Table 1. Summary of key features of the bone skates from phase M2*

| No. | Context | Landuse | Length (mm) | Raw Material | Condition | Shaped toe | Perforated toe | Perforated heel | Wear on underside |
|---|---|---|---|---|---|---|---|---|---|
| <S3> | pit [411] | OA7 | 241+ | cattle radius | broken | yes | yes | yes (and reworked) | heavy |
| <S4> | pit [450] | OA7 | 215 | horse meta-carpal | complete | yes | no | no | none |
| <S5> | pit [490] | OA10 | 144.5 | sub-adult (unfused) cattle metatarsal | complete | partial | no | no | little |

External Activity Including Pitting *c.*1150–1250 (Phase M3)

The phase M2 evidence in excavation Area 3 was sealed by external makeups, midden dumps and deep cess and refuse pits (OA9) associated with slightly later pottery assemblages. A thick horizon of mixed dumping and midden layers was recorded as a series of spits at the southern end of Bell Yard and raised the external ground surface to *c.*12.5m OD. A loamy clay deposit [352] included organic material and significant amounts of Roman and medieval building material as well as pottery dated 1170–1200. Another sequence of middens and dumps (predominantly [346]) was associated with pottery dated 1140–1200. Three pits were located just to the north of the midden deposits. One rectangular pit [438] had an organic or wooden lining and backfill [434], which contained pottery dated 1270–1300. The pit was overlain by large sub-rectangular pit cut [420]. Another deep vertical-sided rectangular pit [509] lay 10m to the north and contained a dark green silt fill, probably decayed cess. Associated pottery from fill [508] was dated 1180–1270. This pit probably dates to the last half of the 12th century, based on the presence of two partly contemporary fabrics: south Hertfordshire greyware (SHER) and shelly-sandy ware (SSW) (Jeffries 2015).

*Later Medieval Activity* c.*1250–1550 (M4–M5)*

Stone Building and Yards *c.*1250–1350 (M4)

The later medieval evidence recorded in Area 3 was notable for the first chalk building foundations in the site sequence. A narrow east–west aligned chalk rubble foundation [416] in shallow construction cut [423] may have been the base for a boundary wall or part of a structure (B3). This trench-built foundation was partly robbed out and truncated at 12.2m OD. No associated floors or internal areas were identified (Fig 18).

External deposits, mostly located to the south of foundation [416], may have been associated with adjacent yard areas with surfaces recorded as high as *c.*13.5m OD (not illustrated). Rubbish pits [343], [368] and [398] contained fills dated to 1270–1350, while a nearby dump layer was composed

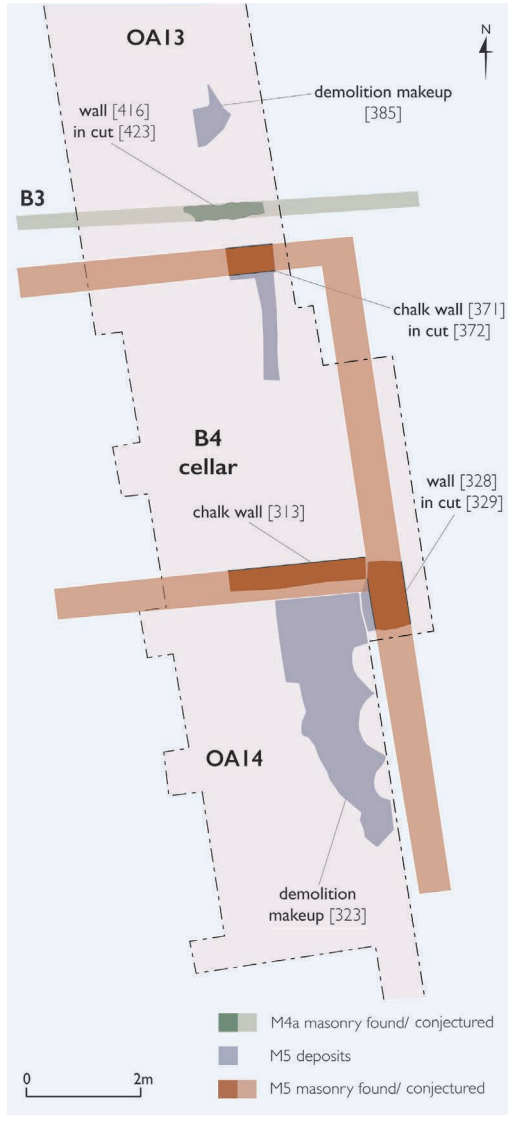


*Fig 18. Principal archaeological features from the Later Medieval period (phases M4–M5)* c.*1250–1550 (scale 1:130)*

of crushed chalk and lime mortar mixed with building debris [334] (OA11). Wall [416] was sealed by a series of dumps and building debris [400], with similar deposits and makeups [324] to the south (OA12). Associated pottery was dated to 1240–1350 and was notable for its poor condition, characterised by small-sized sherds. These deposits are dated after *c.*1240 by the occurrence of Kingston-type ware (KING). An incomplete copper-alloy hinged fitting




*Fig 19. Medieval copper-alloy hinge <S6> from phase M4, Open Area 12 context [324] (scale 1:1)*

<S6> was recovered from context [324] (Fig 19). This object is of uncertain function, but may be some kind of strap fitting or fastener (Marshall 2015).

A Late Medieval Building and Yard *c.*1350–1550 (M5)

External dumping and makeups, including demolition debris, sealed the phase M4 activity. Deposits (predominantly [385]) lay at *c.*13m OD in the northern part of the Bell Yard excavation area (OA13). Similar deposits (predominantly [323]) were recorded *c.*6m to the south at 13.4m OD and contained pottery dating to *c.*1240–1350, late medieval yellow bricks imported from the Low Countries (Betts 2009), and a silver coin of John II of Brabant <10> dated to *c.*1296–1300 (Bowsher 2015; Marshall 2015). Two small sub-circular refuse pits [321] and [381] cut into the truncated eastern edge of layer [323] and contained residual 11th- and 12th-century pottery (OA14).

The space between Open Areas 13 and 14 was occupied by the eastern portion of a cellared masonry building (B4) (Fig 18). The horizontal base of cut [312] formed a sunken floor level at *c.*11.5m OD and defined a cellar *c.*2m deep, measuring *c.*6m north–south and extending beyond the limit of excavation to the west. The cellar possessed chalk rubble walls [372] to the north, [328] to the east and [313] to the south. The walls survived to a height of *c.*13.5m OD and were *c.*0.5m thick, built of uncoursed, chalk rubble fragments bonded by brown sandy lime mortar. The southern wall [313] was notable for a wider footing of chalk blocks [428] and associated construction trample and backfill [427] containing pottery dated after 1300 (Jeffries 2015). The eastern wall [328] was associated with construction cut backfill [314] which contained residual pottery and animal bones. Wall foundation [328] extended further south than east–west wall [313], perhaps indicating the location of another building.

*Medieval Discussion*

Most of the medieval deposits were truncated, but a deep and complex sequence of strata survived between *c.*11.0 and 13.5m OD in a narrow strip beneath Bell Yard, representing a sample of what was lost during the construction of the 19th- and 20th-century basements to the east and west.

The early medieval evidence dates from as early as the 10th century to *c.*1250 (phases M1–M3). The earliest activity, which generated very few datable finds, consisted of brickearth dumping (OA6), overlain by an early 11th-century timber building (B1). It was sealed by another timber structure (B2). Deep refuse pits and external dump layers were located to the south (OA7) and north (OA8). A few other truncated pits were recorded *c.*30m to the west (OA10). The second medieval phase in Bell Yard was dated to *c.*1050–1150 and contained most of the medieval pottery recovered at the site, as well as three Saxo-Norman bone skates (Fig 17). A third phase consisted of external dumping, midden deposits and pitting dated *c.*1150–1250 (OA9).

Documentary evidence indicates that the Abbot of Peterborough may have owned land at the site as early as the 11th century. St Paul's bakehouse and brewhouse was established on the eastern part of the site in the 12th century as a complex of buildings around a yard. To the west, the Abbot of Peterborough's Inn occupied the centre of the site, making it likely that the Bell Yard sequence includes buildings and yards associated with the Abbot's property.

Evidence for the later medieval period (phases M4–M5) was also recorded in the

Bell Yard, dated *c.*1250–1550. External dumping and pitting continued between *c.*1250–1350 (OA11, OA12). This phase was associated with the first chalk building foundations (B3), possibly part of the Abbot of Peterborough's property. A final phase of medieval activity dated to *c.*1350–1550 included construction of chalk masonry cellared building (B4). This cellar may have been part of the Bell Inn, documented from *c.*1424 onwards. External makeups and demolition dumps lay to the north (OA13) and south (OA14) of the cellar.

### *Post-Medieval Development* c.*1550 to the Present (Phases PM1–PM3)*

#### *Introduction*

The late medieval cellared building (phase M5) was repaired or rebuilt and continued in use until 1666. Two undated and truncated wells were recorded to the west (phase PM1). The latest cellar floor was sealed by *in-situ* burning associated with the Great Fire. The post-Fire sequence (phase PM2) includes the establishment of a narrow north–south alley known as Bell Yard, with new roadside buildings and yards to its west and east. One of the PM1 wells may have continued in use, located in a courtyard associated with the Maidenhead Inn. The archaeological evidence corresponds closely with 17th- and 18th-century mapping of properties at the site. Modern activity (phase PM3) included 19th- and 20th-century buildings.

#### *Documentary Background*

A review of the documentary evidence can be found in the introduction (Phillpotts 2011), with information on selected properties summarised below (Mulryan 2012). There is a large amount of documentary material relating to 17th-century and later properties at the site, with many of the documents from the land surveys and disputes after the Civil War and the Great Fire.

A 1649–50 survey of the properties of the Dean and Chapter of St Paul's (GL MS 11816A) contains details of the tenants and their tenements 'after' the bakehouse. Measurements of the tenements show the mid-17th-century boundaries of individual properties on the eastern half of the study area, which seem to have changed very little from the medieval layout. The survey gives the width of the southern side of the 'bakehouse' plot as 176.75ft from the south-east corner of the site to the beginning of the former Abbot of Peterborough's land. Thirteen three-to-five storey tenements, each of 24 or 25ft depth and equipped with cellars, lay along this frontage. Two properties on the west side of Paules Chaine (later Godliman Street) abutted the bakehouse building to the rear, each being 25 and 23ft in depth. A narrow passage from the street led to Paul's Bakehouse Yard and marked the location of the bakehouse, though the position of the brewhouse is unclear. Mathew Hancocke, a brewer, bought four of the bakehouse tenements in 1650 for £248 13s 9d (GL MS 25245).

All of the properties at the site were destroyed in the Great Fire but most of the tenements were rebuilt on their pre-Fire property boundaries, with the re-established layout shown on the Ogilby and Morgan map of 1676 (see below). This map shows how properties lacking a street frontage were accessed via narrow alleys and courtyards, including Bell Court (k80 and k81). Morgan's 1682 map of the City also shows this north–south aligned alley but refers to it as Bell Yard (Saunders 2013, pl 22). Examples of some of the documented post-Fire tenements at the site are given below.

The Fire Court that existed in the years immediately after the Great Fire established that Benjamin, Lord Bishop of Peterborough, had leased the Bell Inn and other tenements in Carter Lane and Knightrider Street belonging to the late monastery of Peterborough to James Noell and George Perier from July 1661 to 1682. The court ruled that these properties were to be rebuilt, with the rent arrears paid by the tenants and their leases extended by 40 years at the old rent (Jones 1966 & 1970, vol 2.314–15, decree D.240).

Peter Mills and John Oliver undertook a survey of building sites in London after the fire that includes precise measurements and drawings for certain 17th-century tenements, with three property surveys relating to the study site. A plan of Addle Hill in August 1667 shows four tenements of various sizes along

the east side of the street on the study site. In the north, at the corner of Carter Lane, a large property owned by a Mr Ellis measured 90ft north to south. Two small tenements lay to the south. A property at the corner of Knightrider Street and marked 'tavern' was part of the Maidenhead Inn. The width of the road is marked as 7ft (Jones & Reddaway 1962–6, vol 2.20v).

A survey of a tenement on the north-east corner of the study site, owned by Walter Smith in early 1670, also gives measurements in feet and inches. The names of surrounding tenants are given where their properties abutted this plot (Jones & Reddaway 1962–6, vol 5.84v). An October 1672 plan is also given of a property abutting the east side of Paul's Bakehouse Court and includes measurements, orientation and surrounding tenants (*ibid*, vol 5.157).

The Mermaid Inn, located at the north-west corner of the site, is first mentioned in 1637 (Rogers 1928, 82). The Bell Inn disappears from the records after 1708 (Harben 1918, 65), indicating that the new archbishop of Peterborough relinquished the leasehold at that point.

Many streets in the vicinity of the site were given new names in the mid-19th century, at a time of changes in civic boundaries and organisation. Several streets lost their 'Great' and 'Little' prefixes at this time (Harben 1918, 126). The new Post Office Directory, another element of the Victorian systemisation drive, states that Bell Yard was now 41 Carter Lane and Paul's Bakehouse Court was 6 Godliman Street (Harben 1918, 65). By this time 3 Godliman Street housed the registry of the Consistory Court and the Bishop of London's registry for marriage licences, while the office of the Registrar of the High Court of the Admiralty had an address in Paul's Bakehouse Court (Wheatley 1891, vol 2.120; vol 3.52).

## *Post-Medieval Activity* c.*1550 to the Present (PM1–PM3)*

### *Repair and Use of Building 4 up to the Great Fire* c.*1550–1666 (PM1)*

The late medieval cellar (B4) continued in use until the Great Fire (Fig 20), its eastern wall repaired or rebuilt with random

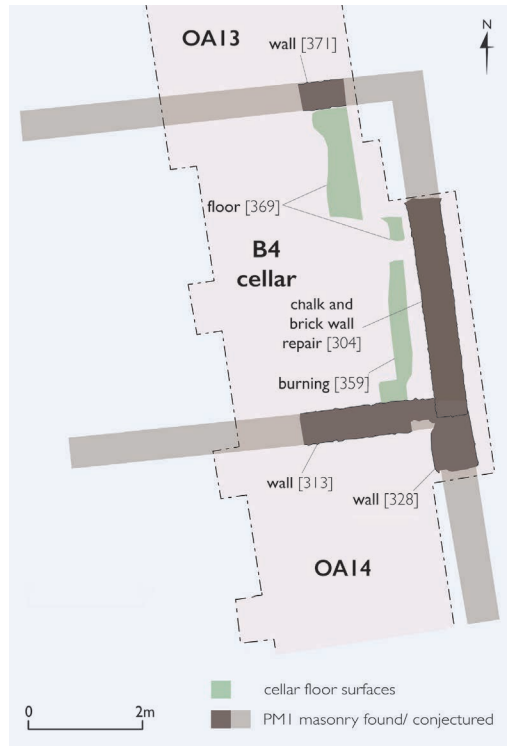


*Fig 20. Principal post-medieval features up to the Great Fire (phase PM1)* c.*1550–1666 (scale 1:130)*

courses of roughly-squared chalk blocks and unfrogged bricks [304] bonded by a soft grey sandy lime mortar and surviving up to 13.49m OD (Fig 21). A series of beaten earth floors [369] at *c.*11.8m OD survived within the cellar and included pottery dated to *c.*1580–1700. Sherds came from a Frechen (FREC) stoneware jug and post-medieval Essex red ware (PMBL) flared mug sherds were retrieved from these floors along with the folded foot of a mixed alkali colourless glass pedestal beaker or goblet <26> in the *façon de Venise* style (Jeffries 2015). The floor sequence was overlain by sandy tread deposits [366] and [394] at 11.9m OD. A new gravel floor surface [365] at 11.93m OD was sealed by [364], a series of six very thin layers of waterlain sand.

A final compacted gravel floor [358] included pottery dated 1550–1700. The floor was sealed by charcoal and ash deposit [359] at *c.*12.0m OD containing pottery dated to 1620–1700 and interpreted as *in-situ* burning associated with the Great Fire.



*Fig 21. North–south wall [304] forming the east side of the pre-Great Fire Building 4 cellar; mixed coursing of chalk and brick visible in the west-facing elevation (2m scale)*

Taken together the two contexts contained 22 pottery sherds from up to 11 vessels, the majority of them manufactured in the Rhineland. Cross-joining sherds from up to eight German Frechen stoneware jugs were retrieved in addition to single sherds from a post-medieval Essex red ware mug and a Surrey-Hampshire border white ware with brown-glaze (BORDB) bowl. Frechen jugs are among the most ubiquitous finds on London sites of this date, their popularity explained by their suitability for serving or storing alcohol (Jeffries 2015).

Glassware recovered from Great Fire deposits [358] and [359] included soda or mixed alkali colourless glass beakers or goblets in the *façon de Venise* style (Willmott 2002). The two beakers are represented by pedestal bases with folded foot fragments <40>, <42>, <43>, with the third vessel part of an inverted-baluster stem goblet <44> (*ibid*, pl 7, 58). A northern European (probably English) potash glass cylindrical beaker had an applied rigaree-patterned base ring <41> (*ibid*, 36–42).

Registered finds from deposits [358] and [359] include a scale tang iron knife <33>, a bone die <38> and a decorative rosette (?)pin head made of copper alloy <39> (Marshall 2015). A small faunal assemblage recovered from deposit [359] included chicken, cat, goose, hare and rabbit bones (Reilly 2009).

Two truncated and undated circular wells were recorded to the west in excavation Area 1 (OA17; not illustrated). The northernmost well cut [548] had a chalk lining [539] and a base at *c.*8.7m OD. Well cut [210], which lay *c.*8m to the south and was *c.*1.8m in diameter, contained an outer lining of chalk and an inner lining of ragstone blocks [208]. The well shaft was *c.*1m in diameter and contained unbottomed backfill [209]. The location of well [210] coincides with the position of the courtyard of the Maidenhead Inn shown on both Ogilby and Morgan's map of 1676 (Fig 25, c9) and Rocque's map of 1746 (Fig 27). Both wells lacked brick linings, suggesting that they may date from the medieval period, but they might have been constructed with reused masonry. They

were therefore assigned to period PM1, though their construction and usage dates remain uncertain. The spatial location of well [210] indicates that it was still in use in the late 17th century.

### Post-Great Fire Rebuilding: The Establishment of Bell Yard and Nearby Properties *c.*1666 to the 19th Century (PM2)

The post-Great Fire sequence included evidence for the disuse of the Building 4 cellar, establishment of the alley known as Bell Yard (OA15) and the construction of new buildings and yards along the alley's western (B5, B6) and eastern (B7, B8, OA16) sides (Fig 22). The two earlier wells recorded to the west in Open Area 17 may have continued in use, with one coinciding with the documented location of the Maidenhead Inn's courtyard. Bell Yard and other properties on the site are shown in some detail on Ogilby and Morgan's 1676 map and Rocque's 1746 map.

Post-fire dumping of demolition material, including rubble and fire debris, was used to backfill the eastern portion of the Building 4 cellar. The earliest deposit in the disused cellar included a large amount of chalk demolition rubble [353]. This may have been derived from the collapse or demolition of the north and south walls of the cellar. The rubble layer was followed by three more demolition backfills, topped by dump [303] at 13.4m OD, which contained a few sherds of 17th-century pottery.

Fragmented pottery recovered from cellar backfills [303] and [353] is similar to the group of FREC jugs and PMBL mugs from the Great Fire deposits in phase PM1 (Jeffries 2015). The most noteworthy item from the post-medieval ceramic assemblage comes from backfill [303] and is a rare green-glazed Surrey/Hampshire Border ware lantern <P11> (BORDG) dated *c.*1550–1700 (Fig 23). Red bricks recovered from backfills [303] and [306] included one with an indented border that strongly implies it was manufactured before the Great Fire (Betts 2009).

The backfilled B4 cellar formed a base level for the establishment of a narrow north–south alley with surviving surfaces at up to *c.*13.5m OD, known from 1682 as Bell

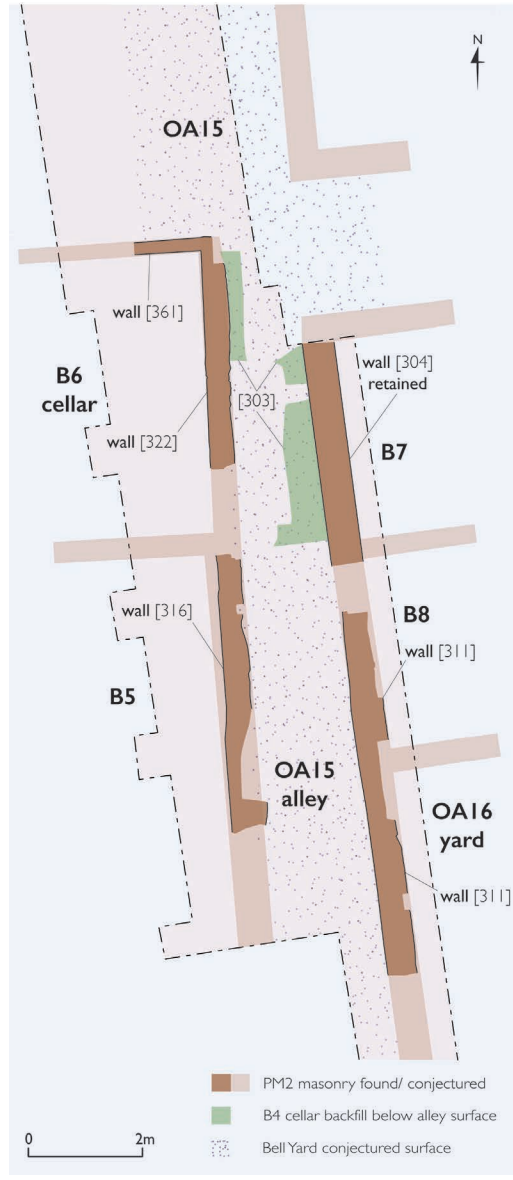


*Fig 22. Principal archaeological features from the post-Great Fire period (phase PM2) c.1666–1890 (scale 1:130)*

Yard (OA15). External dumps and pits were also recorded to the north of the Building 4 cellar, where Bell Yard widened from *c.*2m (6ft) to at least 2.5m (8ft). Demolition deposit [384] was followed by a series of pit cuts [383], [376] and [374]. The cuts, which contained backfills of demolition rubble and fire debris, were undated. The original depth

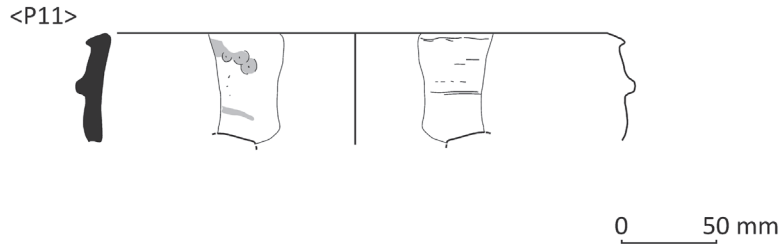


*Fig 23. Surrey white ware with green glaze lantern <P11> from phase PM2, Open Area 15 backfill [303] in disused Building 4 cellar (scale 1:4)*

and extent of the post-Great Fire dumping and ground makeup activity is unclear due to truncation (Fig 24).

The new buildings established along the eastern and western sides of Bell Yard after the Great Fire can be identified on Ogilby and Morgan's map of 1676 (Fig 25). Building 6 was located on the west side of the alley and incorporated parts of the north and south wall lines of the earlier Building 4. The new building also contained a shallow 1.5m deep cellar with a floor at *c.*12.0m OD. The building's north–south aligned eastern wall [322] survived to 13.4m OD along the Bell Yard frontage. The wall was built of random courses of chalk and brickwork bonded by loose grey sandy lime mortar and featuring a brick and tile facing. An east–west aligned red brick wall [361] intersected with wall [322] to form the right-angled north-east corner of the building. The south side of Building 6 was truncated but was probably built on the position of the south wall of the pre-fire Building 4. Building 6 was *c.*6m wide, significantly wider than its predecessor (B4). No internal floor levels or occupation deposits survived and the cellar was backfilled with demolition rubble [360] at an uncertain date, possibly in the late 19th century when the western part of the site was redeveloped.



*Fig 24. Excavation of Bell Yard lane surfaces bordered by the brick walls of Buildings 5 and 6 on the left (west), and Buildings 7 and 8 on the right (east); part of the earlier Building 4 cellar is visible in the background; view looking north*

Building 5 lay to the south of B6 and is represented by a north–south foundation [320] and red brick wall [316] surviving to 13.5m OD along the western side of Bell Yard. No internal floor levels or occupation deposits survived. The southern side of the building was truncated and its western and southern extent lay beyond the Area 3 limits of excavation.

To the east of Bell Yard, Building 7 had a *c.*4m long north–south alley frontage wall line which survived to 13.5m OD and reused the phase PM1 wall [304] of Building 4. The property's east–west flanking walls and internal area were truncated or lay beyond the eastern limit of excavation.




*Fig 25. Ogilby and Morgan Map of the City of London 1676; detail of the study site area with a 'best fit' overlay of land uses, showing the phase PM2 layout of Bell Yard (Open Area 15), Buildings 5–8, yard Open Area 16 and Maidenhead Inn courtyard (Open Area 17) (© The British Library Board (Maps Crace Port. 2.61))*

Building 8, located on the south side of Building 7, is also thought to have had a *c.*4m long alley frontage, formed by the northern part of red brick wall [311] at 13.5m OD. The flanking walls and internal area of the building were truncated. Further to the south, wall [311] may have formed an external boundary wall that enclosed a yard (OA16) on the eastern side of Bell Yard (Fig 26).

Stone-lined well [210] may have continued in use (OA17; not illustrated), located within the Maidenhead Inn courtyard shown on both Ogilby and Morgan's map of 1676 (Fig 25, c9) and Rocque's map of 1746 (Fig 27).

### Bell Yard, the Post Office Savings Bank and the Citadel Mid-19th Century to Present (PM3)

Small post-Great Fire properties along the eastern and western sides of Bell Yard survived into the 19th and 20th centuries, with Bell Yard itself (OA15) continuing in use until recently. A Victorian vaulted red brick sewer [418] ran north–south in a tunnel beneath the northern half of Bell Yard, the south end connected to a vertical access or drainage shaft [301] constructed of yellow stock bricks. Clay tobacco pipes associated with sewer construction were dated *c.*1860–1910. The Goad Insurance Plan of 1886 of properties at the site (Fig 28) is remarkably similar to that shown on the Ogilby and Morgan map of 1676, over two centuries earlier.

The properties to the west of Bell Yard were demolished in 1890 to allow construction of the Post Office Savings Bank, which housed the Faraday Building North Central telephone exchange from 1902 onwards. Post-Great Fire properties to the east of Bell Yard continued in use into the 20th century. Paul's Bakehouse Court was accessed from Godliman St via a covered alleyway and is depicted in a pencil drawing of 1902 (Fig 29). The small properties, yards and alleys east of Bell Yard were demolished before the Second World War. The vacant site was chosen for the 1941–2 construction of a secure war-time telephone exchange known as the Citadel, which occupied the area until the recent redevelopment.



*Fig 26. Post-Great Fire alley surfaces in Bell Yard: wall [311] along the east side of the alley marks the frontage of Buildings 7 and 8 (upper right) and yard Open Area 16 (bottom centre); view looking north-west*

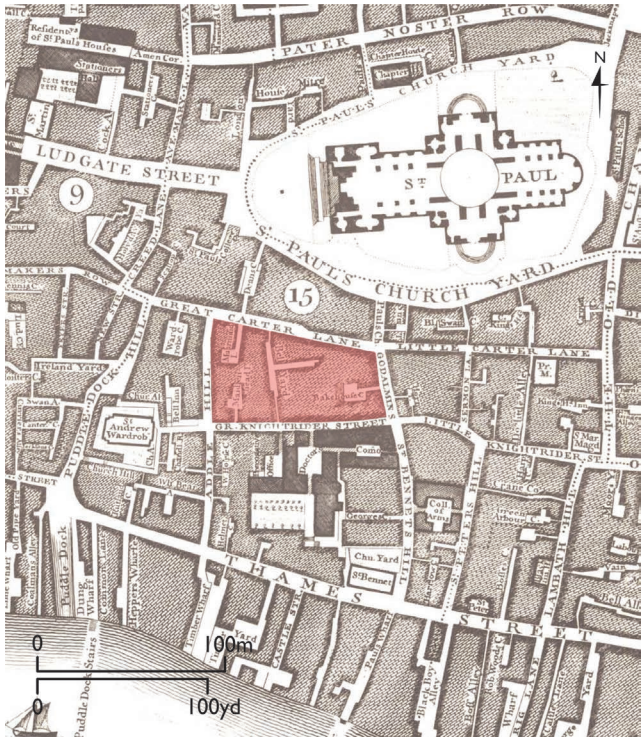


*Fig 27. John Rocque's Map of London 1746; detail of St Paul's area showing the western part of the City (© The Trustees of the British Museum under a Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0))*

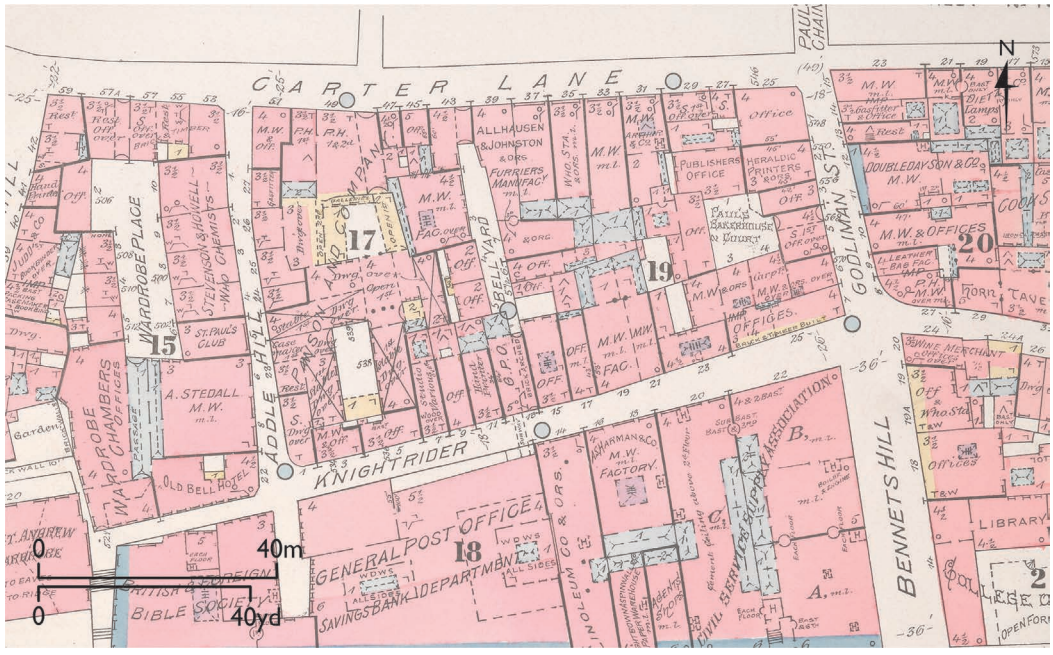


*Fig 28. Goad Insurance Plan vol. 1 sheet 3 1886; detail showing properties and businesses on the development site (© The British Library Board (Maps 145.b.22.1))*

*Post-Medieval Discussion*

The eastern wall of the late medieval cellar (B4) was rebuilt in brick and continued in use until its destruction in the Great Fire (phase PM1). The eastern part of the cellar contained a sequence of beaten earth and gravel floors at *c.*12m OD which were sealed by charcoal and ash from *in-situ* burning. The post-medieval pottery assemblage was relatively small; nearly all of it dated to the 17th century (Jeffries 2009). The pottery and *façon de Venise* glass tableware recovered from the cellar was similar to assemblages from other London drinking establishments destroyed in the Great Fire, including the Guildhall banqueting hall, the Bear Inn and a probable ale-house or tavern on Rood Lane (Jeffries *et al* 2014).

The post-Great Fire sequence (phase PM2) included the backfilling of the earlier cellar, followed by the establishment of a narrow north–south alley that became known as Bell Yard (OA15). New roadside buildings and yards were constructed along the alley's western (B5, B6) and eastern (B7, B8, OA16) sides. The archaeological findings correspond well with the property layout shown on the Ogilby and Morgan map of 1676.

To the west, two undated wells may have been established in the late medieval period but probably continued in use up to the Great Fire and perhaps longer (OA17). The southern well may have been located in a courtyard associated with the Maidenhead Inn and shown on both the Ogilby and Morgan map of 1676 and the Rocque map of 1746. Modern evidence (phase PM3) included a Victorian sewer and the continued use of Bell Yard (OA15).

## CONCLUSIONS

The archaeological excavations at Faraday Buildings North are notable in several ways. Although the site was severely truncated, with only two small areas of archaeological survival representing less than 5% of the total site footprint, targeted evaluation and excavation resulted in significant findings that exceeded the project's apparently limited potential. The results of the work have contributed to key areas of research that add




*Fig 29. Paul's Bakehouse Court, 6 Godliman St in 1902; pencil drawing by Robert Randoll (1864–1952); view looking east (© London Metropolitan Archives (City of London))*

to our understanding of the development of the area in the Roman, medieval and post-medieval periods.

The site lay on the south side of the Roman settlement's 'western hill' where the sloping surface of the natural sand and gravel terraces (OA1) was cut by small streams running south to the Thames. The area lay to the west of the initial settlement and was some distance from the waterfront and the nearest Roman roads. As a result, it may not have experienced significant development beyond external land uses such as drainage, pitting and quarrying.

In the Roman period the earliest activity (phases R1/R2) was defined by a north–south aligned mid-1st-century drainage ditch (D1) which may have followed the course of a natural stream channel. Quarries, pits and external dumping lay to the east (OA2) and included a small surface drain (D2). Backfilling of the ditch began while more quarrying and pitting took place nearby (OA3). The cut features and fills were sealed by redeposited fire debris which may have been associated with landscaping and levelling of the sloping ground after the Boudican fire. Debris from built-up areas of the settlement to the east and including building material typical of early clay-and-timber buildings could have been carted to the study area and dumped.

Later 1st-century external activity (phases R3/R4) included two small north–south drains (D3, D4) as well as external dumping and pitting (OA4). Dumping was most intensive over drainage channel D1 on the west side of the site and may have been

intended to compensate for subsidence of earlier backfills. The dumping included a large assemblage of early Flavian pottery dated to AD 70–75/80. External dumping may have continued into the early 2nd century and later but the evidence was truncated. Evidence for the later Roman period (phase R5) was sparse due to horizontal truncation though the bottoms of two isolated cut features dated to AD 250–400 did survive (OA5).

The early drainage channel at the western edge of the excavation is the most important Roman research finding from the site. It is the best evidence yet found for the conjectured route of an early Roman ditch south of the Ludgate Roman road and adds to the overall understanding of natural streams and later drainage ditches on the western and southern sides of the 'western hill' (Bentley 1987; Tyler 2000, 29; Pitt 2006, 4; Askew 2007; Watson 2012, 36) (Fig 3).

A deep and complex sequence of medieval strata survived in a narrow north–south strip beneath Bell Yard. Extant evidence from the early medieval period (phases M1–M3) dated from as early as the 10th century up to *c.*1250. Redeposited brickearth (OA6) was overlain by the truncated remains of an 11th-century timber building (B1) sealed by the south-eastern corner of another possible timber structure (B2). Deep refuse pits lay to the south (OA7) and north (OA8) of the buildings. Midden dumps and further pitting dated *c.*1150–1250 covered the initial buildings and pits, raising the ground surface significantly (OA9). The most significant finds from this period were three bone ice skates. A few truncated pits were also recorded *c.*30m to the west (OA10).

The later medieval period (phases M4–M5) is dated *c.*1250–1550. External midden layers, dumps and deep refuse pits (OA11, OA12) were associated with the earliest evidence of chalk buildings at the site (B3). A more substantial stone building with a large cellar (B4) was constructed between *c.*1350–1550 and flanked by external areas used for more dumping and pitting (OA13, OA14).

The post-medieval sequence (phases PM1–PM3) was interrupted by the Great Fire of September 1666, which destroyed all of the buildings at the site. The late medieval cellar (B4) continued in use up until its destruction in the Fire. Beaten earth and gravel floors in the cellar were sealed by *in-situ* burning and building debris that included an interesting Great Fire assemblage of pottery and *façon de Venise* glass tableware similar to contemporary assemblages recovered from the cellars of drinking establishments elsewhere in the City.

The late medieval and Tudor archaeological evidence from the excavations is complemented by documentary records. The combined evidence suggests that the cellared building and adjacent yards were associated with the 12th- to 15th-century Abbot of Peterborough's Inn and the later Bell Inn, which leased the property from *c.*1424 until after the Great Fire.

Most of the properties built on the study site just after the Great Fire remained in the same ownership and corresponded closely with their pre-Fire footprints. An exception to this was Bell Yard, a narrow north–south alley established across the middle of the site as part of the rebuilding work (OA15). Bell Yard continued in use until the recent redevelopment and the excavations allowed the recording of brick walls of property frontages along the alley's western (B5, B6) and eastern (B7, B8, OA16) sides. The archaeological evidence can be compared with the layout shown on the Ogilby and Morgan map of 1676. While the excavated central portion of Bell Yard was only *c.*2m (6ft) wide compared to a width of *c.*6m (20ft) shown on the 1676 map, the recorded layout was generally a good fit with the mapped locations of the adjacent properties. Two truncated wells recorded on the western part of the site may have continued in use until the Great Fire and later (OA17). The southernmost well may have been located in the Maidenhead Inn courtyard shown on both the Ogilby and Morgan map and the 1746 Rocque map.

The urban fabric of the site, dominated by small properties and buildings of three-to-five storeys in height that hugged the road frontages or were accessed via alleys and courtyards, retained much of its late 17th-century look until the end of the 19th century. An example of this remarkable continuity is Paul's Bakehouse Court, located near the eastern side of the site, off Godliman Street (Fig 29). The location and layout of

Bakehouse Court had changed very little from that documented in the late 13th century and in *c.*1520 (Fig 4), or in its post-Great Fire form as shown on maps by Ogilby and Morgan in 1676 (Fig 25, k82), Rocque in 1746 (Fig 27) and Goad Insurance in 1886 (Fig 28).

The part of the study site to the west of Bell Yard was redeveloped for the Post Office Savings Bank in the 1890s and the site of a telephone exchange building from 1902. The area to the east of Bell Yard was cleared for redevelopment before the Second World War and used for the construction of the bomb-proof Citadel telephone exchange in 1941–2. The Grange Hotels redevelopment involved the demolition of the old telephone exchange buildings and the removal of the narrow, dark alley known as Bell Yard which divided them. The opportunity to investigate the relatively small areas of archaeological evidence that survived at the site yielded surprisingly productive results providing new insights into the development of the area over the last two thousand years.

## ACKNOWLEDGEMENTS

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## NOTES

[1] MOLA http://www.mola.org.uk/medieval-and- post-medieval-pottery-codes, 2014 version (accessed 24 March 2021). The 2007 version of this document was used in the reports cited in this article.

[2] MOLA http://www.mola.org.uk/Roman ceramic building materials fabrics: dating, fabric groups, sources and distribution codes, and MOLA https://www.mola.org.uk/medieval-and-post-medieval-ceramic-building-materials-fabric-dating-codes (accessed 20 May 2022). The 2007 version of these documents were used in the reports cited in this article.

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# ON THE ORIGIN AND DEDICATION OF THE CHURCH OF ST MAGNUS THE MARTYR, LONDON

*Matthew Payne and Michael Cooper*


## SUMMARY

*This article reassesses the dedication of the church of St Magnus the Martyr in the City of London, arguing that instead of the 12th-century St Magnus of Orkney, the church was in fact dedicated to St Magnus of Anagni, an early saint from Italy whose cult was widespread. This materially affects our interpretation of the date of the founding of the church, and as a consequence the spread of the parish structure in London, and the respective influence of northern and continental saints in southern England.*


## INTRODUCTION

The church of St Magnus the Martyr, which sits at the north end of the original position of London Bridge, at a significant entry point into London, is widely stated to have been founded in the 12th century and dedicated to St Magnus of Orkney.[1] This article will argue that a mistake over the latter has led to a misinterpretation of the former, with significant ramifications for our understanding of the development of the parish structure in early medieval London. In fact, as we hope to establish, the original church was probably built in the early 11th century, at the same time as the first bridge over the Thames, and dedicated to the Italian saint, St Magnus of Anagni, whose cult was widespread, if not especially popular.

## LOCATION

The church's location at the north end of London Bridge was clearly strategically and financially important (Fig 1). A stone bridge was begun across the Thames in 1176 and was not completed until about 1209.[2] The construction of this improved way into London was doubtless the impetus for a dispute over the advowson of the church that arose between Westminster Abbey and the Priory of Bermondsey, which both saw the increasing value of the church's position. This dispute was not resolved until 23 April 1182, when an agreement was drawn up between the two houses to divide the advowson equally between them, taking turns to appoint the resident priest.[3] But there had been a wooden bridge across the river at this location for many years before the stone bridge was built. The Pipe roll of 1130, for example, records £25 drawn 'for two arches of London bridge'.[4] Archaeological evidence suggests a bridge had been present from the 11th century.[5]

The riverside parishes that developed in the 11th century were of course important also for shipping. Land reclamation from the Thames had begun in the late 10th century, and continued through the 11th century.[6] Only four churches were apparently located on the new land south of the Roman riverside wall, All Hallows the Great, All Hallows the Less, St Magnus and St Botolph Billingsgate.[7] The last of these, along with Botolph Wharf, appears to have been developed in the 11th

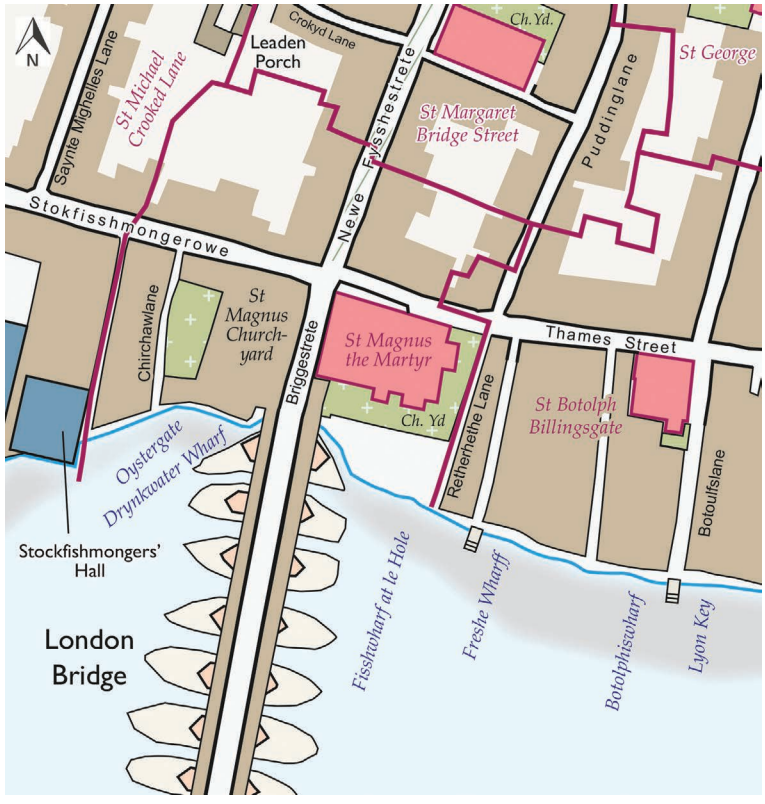


*Fig 1. The location of the church of St Magnus the Martyr, London, c.1520 (extract from the Map of Tudor London, C Barron & V Harding (eds) 2022)*

century on reclaimed land south of the derelict riverside wall, presumably to enable docking before the obstruction of the new bridge.[8] In the 11th century 'the majority of churches were presumably privately-owned', and founded as private chapels, but a church in this location might rather have functioned as a 'public' church for local inhabitants and those crossing the bridge.[9]

Such an important entry point for the city must surely have boasted a church from an early date, whatever its dedication. The creation and boundaries of the parish of St Magnus and of Bridge Ward reflect the construction of the Saxon bridge in the 11th century.[10] The small ancient parish extended about 100m along the waterfront either side of the bridge, from *Stepheneslane* (later *Churchehawlane* or Church Yard Alley) and *Oystergate* (later called Water Lane or Gully Hole) on the west side to *Retheresgate* on the east side, and was centred on the crossroads formed by Fish Street Hill (originally Bridge Street, then New Fish Street) and Thames Street. The ancient parish was situated in the south-east part of Bridge Ward, which evolved in the first half of the 11th century between the embankments to either side of the bridge.

## EARLY REFERENCES

The earliest documentary reference to the church of St Magnus comes in the 'first charter' of William I to Westminster Abbey.[11] This charter purports to have been issued in 1067.[12] In it the king granted to the abbey a series of churches and property in London, including

> a wooden chapel and half of the stone church of St Magnus near the bridge, with all its lands, given by a citizen named Lyfing [Livincgus], who had become a monk along with his son, and whose wife had dedicated herself to religion.[13]

The charter as we currently have it is in fact a later forgery, compiled by the monks of Westminster in the 12th century as part of a long-running campaign of self-

aggrandisement and the promotion of the claims of Edward the Confessor for canonisation. It rewrites a draft version, omitting many places so as to focus on London.[14] The draft, while not including the same properties (including St Magnus), does include the main text of the charter. These two charters provide exact parallels to two diplomas of Edward the Confessor, the 'first charter' (WAM XCV), and a draft of the same (WAM Book 11 fols 43v–45v). Diplomatic and palaeographical evidence both point to all four of these charters having been produced during the specific forgery campaign of Osbert de Clare in the 1130s.[15] There are several other grants and exemptions which form part of the same programme.[16] Osbert had been Prior of Westminster before 1121, but seems to have been sent to Ely *c.*1123. He was back at Westminster as Prior in 1134, and the main forgery work of the abbey monks dates from the following years. It is likely that each charter was produced for Osbert to take with him to Rome, a journey he set out on in 1139, taking with him a commendatory letter to the Pope from King Stephen to promote the canonisation of King Edward.[17]

The petition was refused by the Pope for lack of testimony, resulting in Osbert's removal as Prior. Although the mission was a failure, it did produce a papal bull dated 22 April 1139, which makes reference to the forged WAM XCV, indicating that these documents had certainly been compiled by that date.

The same apparently also applies to the second reference to the church, a supposed writ of Henry I, datable in theory to between 24 May 1108 and April 1116.[18] In this charter the king instructed the bishop of London, the archdeacon and the chapter of St Paul's that Westminster Abbey was to have those churches that his father had granted it, including 'half the stone chapel of St Magnus the Martyr with the whole parish'. This charter (or its now-lost original) was almost certainly also an Osbertian forgery. As such, it must presumably date from after 1135 and the death of Henry I himself, since it would have required a forged king's seal to be appended. This would have attracted terrible royal punishment if it had been produced during Henry's lifetime.

Emma Mason points out that errors in referring to the bishop suggest that the forger was working with the text of another charter, also purporting to be a writ of Henry I, and claiming to date from between December 1127 and August 1133.[19] This charter instructs that Westminster Abbey is

> to hold peaceably the church of St Magnus the Martyr in London and its parish, as in the time of William I and William II, and earlier in his own reign; and during the episcopate of Hugh de Aurea Valle, Maurice and Richard de Belmeis.

This appears to refer back to the first forged charter of Henry I, which in itself demonstrates it to be a forgery (since this is likely to have been produced after 1133). It also refers to the whole church, not half the church, as the two earlier spurious charters do.

If this interpretation is correct, these charters were produced well before the abbey's legal dispute with the Priory of Bermondsey over the advowson of the church (but were doubtless used as evidence by the Abbey). Further, it demonstrates that a stone church was in place at the north end of London Bridge by the late 1130s, and, given the ease of finding living testimony which could easily verify it, presumably for some years before. In fact, it seems probable that the first church was indeed in place by the reign of William I, and that Osbert's forgery was based on informal archival material that may well reflect genuine donations by London citizens in the reign of William I (often in return for entering monastic orders). Westminster Abbey had very little London property before 1066, so it may well reflect a genuine donation by William I. The London properties of Westminster Abbey appear to have been the subject of great anxiety in the 12th century, resulting in a large number of royal documents (both forged and genuine) that attempt to confirm and settle their status.

## ST MAGNUS OF ORKNEY

Magnus Erlendsson, Earl of Orkney is believed to have been executed on 16 April 1117, having been captured by his enemy Haakon in the church of Egilsay.[20] He was sanctified by Bishop William of Orkney in 1136, nearly 20 years later, and a new church built on the

site of his death. Another church at Kirkwall (later St Magnus Cathedral) was begun in 1137 for the new saint's relics. Although his cult spread through northern Europe and Scandinavia, inspiring a sequence of Lives and sagas, there is no other evidence that it penetrated into England.[21] In the liturgical calendar, his saint's day was accepted as the date of his execution, 16 April.

The only medieval authority of which we are aware to connect St Magnus of Orkney with the London church was William of Worcester (1415–*c.*1482). Written in the late 15th century, William's notebooks, known as his *Itinerary*, state

> *Sanctus Magnus Rex et comes de Orkenway iacet in ecclesia insule de Eglesey in villa de Kyrkway, in scrinio in insula de Orkenway et fuit conceptus prope pontem Londoniarum*
>
> St Magnus the king and earl of Orkney lies in the church on the island of Egilsay in the town of Kirkwall, in a shrine on the island of Orkney and was born near London Bridge.[22]

According to Worcester himself, he was supplied with information on Orkney by a certain 'Seyntclere', who was a canon there but was then in London.[23] This suggests that the conflation with the more common St Magnus was made by Worcester himself, and probably does not represent a widespread belief in late medieval London. Later writers do not pick up Worcester's hypothesis (partly due, no doubt, to its survival only in note form).

The connection with St Magnus of Orkney does not reappear until the 19th century, when it was put forward by the Danish archaeologist Professor Jens Jacob Asmussen Worsaae.[24] He first made the suggestion during his visit to Britain in 1846–7, and subsequently elaborated on it in his published work.[25] Although not universally accepted, the association with the Orkney saint was encouraged after the discovery in 1919 of the relics of St Magnus of Orkney in Kirkwall, and the connection was formally confirmed by the Bishop of London on 11 March 1926. The 20th-century dedication recognises that the original dedication was probably to a different St Magnus, suggesting a process of 'medieval transference' for the shift to the Orkney saint.

As we have seen, the first mentions of the London church occur in charters that can be dated to the period 1135–9, and in terms suggesting that the church was already of some age. A dedication to a remote saint, whose canonisation only occurred in 1136, seems an extremely distant possibility.

## THE FEAST OF ST MAGNUS IN ENGLAND

In the liturgical calendar used throughout England, and indeed in most of medieval Europe, the feast of St Magnus was recognised as 19 August.[26] It had been celebrated since at least the 8th century.[27] He features as a saint in Gelasian liturgical books, that is, books ascribed to Pope Gelasius I (d AD 496) but stemming from a single survival probably written at the nunnery of Chelles in central Frankland *c.*AD 750, which itself was apparently based on Roman usages of up to a century before that. The *sanctorale* (fixed saints' feasts in the liturgical calendar) used in England from the 10th century usually featured a conflation of these saints and Gregorian saints. St Magnus features in the *Old English Martyrology*, a collection of over 230 hagiographies compiled from numerous sources in Mercia in the second half of the 9th century. This states that 'on the nineteenth day of the month [August] is the feast of the martyr St Magnus, whose mass can be found in the older massbooks.'[28] This suggests that the *Old English Martyrology* drew on 'an old sacramentary [an early service book containing only the elements spoken or sung by the priest] ... of Campanian, and possibly Capuan, origin'.[29] St Magnus appears elsewhere and earlier in, for example, the *Walderdorff Calendar Fragment* of the 8th century (predating the *Martyrology*), which survives for the months of July to October only, and which commemorates two English bishops (Paulinus and Honorius of Canterbury).[30]

The feast persisted. The *Missal of Robert of Jumièges* (so-named because it belonged to him while bishop of London, 1044–50, after which he gave it to the monastery of Jumièges, where he had formerly been abbot) was probably written in Canterbury in the early 11th century.[31] From a liturgical perspective, the manuscript is notable for

the large number of masses commemorating both English and Continental (especially Flemish) saints whose cults developed in late Anglo-Saxon England.[32] The calendar of the *Missal* contains an entry for *Sci magni mar* under 14 Kal Sept (*ie* 19 August).

St Wulfstan's *Homiliary* contains an entry for *Sancti Credani Abb et Sancti Magni mart.*[33] It was produced in the Benedictine cathedral priory of St Mary the Virgin, Worcester for the use of the prior, St Wulfstan (d 1095), in the 11th century. A psalter produced in Wells in the third quarter of the 11th century (*c.*1060) contains an entry for *Sancti Magni mar* for 19 August,[34] as does the *Arundel Psalter* produced by Eadui Basan in Canterbury *c.*1012–23;[35] he is similarly listed in the 12th-century *St Albans Psalter.*[36] St Magnus does not appear in the 10th-century additional calendar to the *Leofric Missal*, probably inserted while the manuscript was at Canterbury,[37] but he is listed in the 11th-century *Leofric Psalter*, made at Exeter during the episcopate of Leofric (1050–72).[38]

This demonstrates that from the 8th century onwards, throughout southern England, the Feast of St Magnus was accepted as being celebrated on 19 August. The subject of this feast was not St Magnus of Orkney (feast day 16 April, canonised in 1137), but rather St Magnus of Anagni.

## ST MAGNUS OF ANAGNI

The St Magnus celebrated on 19 August was generally understood to have been Magnus of Ceccano in Lazio, also known as Magnus of Fondi or more commonly Magnus of Anagni, whose cult emanated from southern Italy in the 3rd century.[39] According to hagiography, he was a native of Apulia who succeeded St Redemptus of Trani as bishop of that city and who was famous for miracles. According to the *Passio* (the account of his martyrdom), he was arrested during a great persecution and was brought to a temple to make sacrifice, where at his entry all the idols were broken, the soldiers were blinded, and he was liberated by an angel. Magnus then went to Naples, where he was received by St Januarius (a martyr bishop of Benevento not ordinarily thought of as having been in Naples in his lifetime), went to Rome on pilgrimage, performed miracles, and was martyred on this day during the Decian and Valerianic persecution (seen in this account as a single event) at a place that some additions to the *Passio* specify as today's Fondi in southern Lazio.

The monastery at Fondi is dedicated to St Magnus, and originally claimed to house the saint's relics. It contains a 12th-century fresco of the saint. At the construction of the cathedral at Anagni in the late 11th century, the main altar was dedicated to him, since his relics had been translated there.[40] Ceprano had a church dedicated to him from the late 10th century.

## ST MAGNUS OF ANAGNI IN ENGLAND

Although he does not feature in Jacobus de Voragine, *Legenda Aurea*, written in *c.*1260 and the standard reference work for the lives of saints in the late medieval period (suggesting perhaps a lack of interest in the saint himself), it is noteworthy that St Magnus does appear in the calendar of a psalter produced in the first half of the 13th century by one of the houses that claimed the advowson of the London church dedicated to him, the *Westminster Psalter.*[41] This is the earliest surviving calendar for the house.[42]

Local references of the same period confirm the widespread recognition of the saint's day. In 1274 Edward I and Eleanor were crowned at Westminster Abbey on 19 August 'being the Feast of St Magnus'.[43] On 19 August 1298 great celebrations were made in London for Edward I's victory over the Scots. The Fishmongers' Company processed through the streets bearing company items, including a knight dressed as St Magnus 'because it was on St Magnus's day', according to John Stow.[44] In the 1280s Edward I's almsgiving increased notably, in 1283/4 including the offering of alms to 30 poor on the Feast of St Magnus.[45] And manuscript calendars and the offices for saints' feast days, such as that produced in the 1380s for the lavish new missal for Westminster Abbey, the *Litlyngton Missal*, confirm his permanence in the liturgical year through to the 16th century (see Fig 2).[46]

## RELICS OF ST MAGNUS

An increased devotion to St Magnus in the

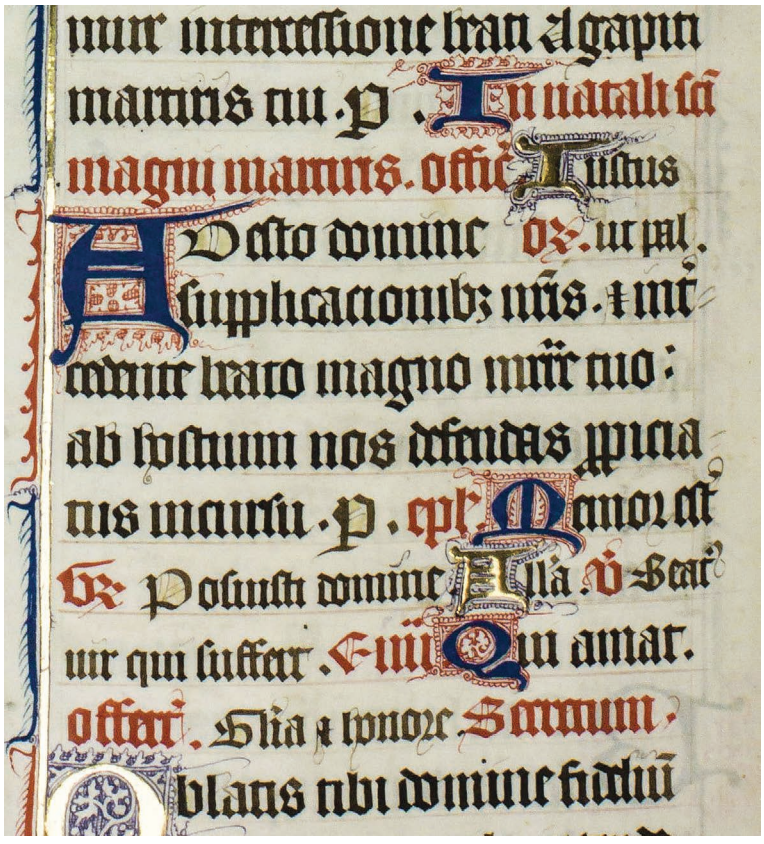

*Fig 2. A detail of the Litlyngton Missal, c.1384 (Westminster Abbey, MS 37, fol 264). The text describes the Office of St Magnus (by kind permission of the Dean and Chapter of Westminster)*

10th and 11th centuries may be reflected in (or have been prompted by) the appearance in England of several relics of the saint at the same time. This in turn may have been prompted by the translation of the remains of the saint himself to Anagni in the late 9th or early 10th century.[47] Four English houses claimed to hold relics of the saint.[48] Exeter Cathedral, seat of Leofric in the mid-11th century, claimed to own *de reliquiis sancti Magni episcopis et martiris* in a relic list dating from the late 12th century, but reflecting pre-Conquest relic collecting.[49] Peterborough monastery claimed to hold *de manu sancti Magni martyris*, supposedly procured by Abbot Aelsinus (abbot 1006–42) in 1013, when he accompanied Queen Emma into temporary exile in Normandy.[50] According to a 15th-century relic list, Salisbury Cathedral also owned a relic of St Magnus.[51] But most significantly, Westminster Abbey claimed to have been given a relic of the teeth of St Magnus by King Edgar (reigned AD 959–75) in the late 10th century. In the 15th century, the Westminster monk John Flete recorded the presence of the relic in his history of the monastery.[52] At about the same date, Westminster seems to have produced a manuscript collection of saints' lives that reflected the relics held by the church, and which includes a *Passio* of St Magnus.[53] Although such *Passiones* are rare in England, some other examples survive.[54]

This evidence suggests that his cult may have been enjoying some popularity in southern England during the 11th century. Moreover, his feast was cemented in the liturgical calendar throughout the medieval period.

## OTHER CHURCHES DEDICATED TO ST MAGNUS

Despite this continuity, and the presence of relics, St Magnus is an extremely rare dedication in England, suggesting his cult did not enjoy great popularity. In fact, in southern England, we are aware of only one

other instance. The small parish church of Moreton in Dorset is currently dedicated to St Nicholas. However, it was originally dedicated to St Magnus. In August 1410 the parishioners, 'for certain good reasons', petitioned the Bishop of Salisbury, in whose diocese it lies, to change the 'day of the dedication' from the Feast of St Magnus the Martyr on 19 August to 'the Sunday after the octave of the Assumption of the Blessed Virgin Mary' (*ie* 22 August), with the promise of a 40-day indulgence for those who adhered to it.[55] What the parishioners' motivation was is not specified, but it may well have related to the difficulty of celebrating their patronal feast during the octave of the Assumption.

When the church's dedication was changed to St Nicholas is not clear, nor is the origin of the early church, when presumably the original St Magnus dedication must have been made. But it is perhaps noteworthy that the parish of Moreton lies within the diocese of Salisbury, whose cathedral, as we have seen, boasted a relic of the saint.

The only other church in England currently bearing this dedication is in Bessingby with Ulrome in the Diocese of York. But this represents a rededication made when the church was rebuilt in the 19th century. Its medieval predecessor was dedicated to St Mary Magdalen.

## ST MAGNUS THE MARTYR CHURCH, LONDON

There is no evidence to suggest that the church of St Magnus the Martyr was dedicated to St Magnus of Orkney at some point between that saint's canonisation in 1136 and the dispute over its advowson in 1182. It seems clear that this was a 19th-century invention. All the surviving evidence, both documentary and archaeological, supports the conclusion that the church was an 11th-century foundation, probably established in the second quarter of the century, and dedicated from the start to the widely-recognised Italian saint, St Magnus of Anagni. Despite a general absence of popularity for St Magnus, several major religious houses boasted relics of the saint, including the Benedictine house at Westminster, which shortly after foundation claimed the advowson of the church.

The precise date of the foundation will probably never be known. The journey made by King Cnut to Rome in 1027 may have provided the immediate impetus. But some other connection with the relics may lie behind it. It is notable that churches were dedicated to St Olaf (St Olave) in London and Southwark in the mid-11th century, after the canonisation of Olaf Haraldsson, King of Norway in 1031.[56]

Throughout the medieval period Londoners immediately recognised St Magnus as referring to St Magnus of Anagni and that the relevant feast day was 19 August. This conclusion significantly affects our understanding of the church's history, as well as confirming the earlier development of the parish structure in London, and the influence – or lack thereof – of Scandinavian saints in the capital.

## ACKNOWLEDGEMENTS

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## NOTES

1 So, for example, Mason 1988, no. 70n; Oxley 1978, 118, 122–3; Hicks 2020, 582–601.

2 See Gerhold 2019.

3 Westminster Abbey Muniments (hereafter WAM) Book 11, fol 479. It is surely significant that the following year Bertram, the Prior of Bermondsey, acted as judge delegate over the appointment of the incumbent to the neighbouring church of St Margaret by London Bridge, whose advowson was also owned by Westminster Abbey (WAM Book 11, fols 477v–478r). The dispute over St Magnus is not referred to in the *Annales de Bermundeseia*, see Luard 1866, III, 444–7.

4 Green 2012, 113. No mention is made of any churches in the Pipe roll except the estates of Westminster abbey in Middlesex.

5 In fact, the first bridge may have been built by *c.*AD 990, but then rebuilt after it was pulled down by Olaf Haraldsson in 1014 in support of Ethelred. For the Saxo-Norman bridge, see

Watson *et al* 2001; Steedman *et al* 1992, 135. For the archaeological evidence from the area more generally, see Schofield *et al* 2018.

6 Naismith 2018, 176; Haslam 1988, 35–43.

7 Steedman *et al* 1992 stress that the four parishes 'extended only a short distance beyond the northern side of the street: their emphasis was wholly upon the waterfront, whose developing population they were clearly designed to serve'.

8 Schofield 1994, 35; Steedman *et al* 1992.

9 *ibid.*

10 The wards of London probably developed in the very early 10th century 'as the new intramural settlement was laid out. The subsequent changes in the number of wards and in their shape of their boundaries … are seen as reflecting the change in the area of settlement and ensuing population density. Thus it can be argued that there were initially some ten or so wards covering the core settlement from Bread Street and Queenhithe in the west to Billingsgate in the east, each relatively small in area. The broad shape and extent of most of this core group has largely been retained since *c* AD 900. There is, however, one obvious interloper in this neat 10th-century pattern, and that is Bridge ward, which seems to carve or extend its boundaries out of earlier wards on all sides, even almost [along Gracechurch Street] cutting Langbourn ward in two. This reflects the simple fact that the Alfredian town boasted no fixed link with the Surrey shore, but was content to be served by ferries. The archaeological evidence for the first Saxon bridge is sometime after AD 970, possibly around AD 1000, according to the dendrochronological evidence from the Fennings Wharf site in Southwark, where the remains of the southern bridgehead were found ...' Milne 2001, 129.

11 BL, Cotton Charter vi 3; WAM Book 11, fol 48r (13th-century enrolled copy). The standard modern edition is Bates 1998, 870–81, no. 290.

12 It is perhaps notable that Bermondsey Priory, with which the abbey disputed the advowson of St Magnus with Westminster, was not founded until 1082, according to the *Annales de Bermundeseia.* It was also founded by a London citizen, Alwin Child.

13 The retention in the forgery of the Old English 'c' in the name Livincgus may indicate that the forger was in fact working from an original note or copy. A Livingus, priest, and his wife had in the mid-11th century given the 'abbey of St Mary' (presumably either the minster of St Mary Overie in Southwark, St Mary Aldermary or St Mary le Bow: see Kissan 1937, 436) with additional land and property to Christ's Church Canterbury, which were disseised in 1067 when Odo became Earl of Kent. Archbishop Lanfranc restored the property to the priory in *c.*1076. See Bigelow 1879, 6.

14 WAM XXVI (Bates 1998, no. 324).

15 We are grateful to Dr Richard Mortimer for discussing this with us, and sharing his ongoing work on these early charters. For Osbert de Clare see Pearce 1916, 42.

16 For example WAM XX (Bates 1998, no. 305); BL, *Cotton Charter* ii.58; WAM XXVII (Bates 1998, no. 303).

17 Osbert also wrote a Life of St Edward in preparation for this *c.*1138. See Bozoky 2009, 173–86. The eventual success of the Abbey's campaign to have Edward sanctified in 1161 may have emboldened its monks to resolve longstanding disputes over church ownership.

18 WAM Book 11, fol 98. The standard edition is Mason 1988, no.70.

19 WAM Book 11, fol 98v.

20 Antonsson 2007; Palsson & Edwards 1988, 95–6. The cathedral in Kirkwall celebrated the anniversary of the martyrdom in 2017, although the precise date of the death of Earl Magnus continues to be the subject of debate.

21 In Denmark, the cult became centred on Roskilde. Its cathedral had an altar dedicated to the saint. But the identification seems to have become blurred; his feast day was celebrated on both 16 April and 19 August.

22 Cambridge, Corpus Christi College MS 210, fol 301.

23 Orme 2017, 209, 214.

24 William Stow (1722, 109) stated that the church was dedicated 'to the memory of St Magnus or St Magnes, who suffer'd under the Emperor Aurelian in 276, or else to a person of that name who was the famous apostle or Bishop of the Orcades'.

25 Worsaae 1852, 18: 'In the same neighbourhood, near London Bridge, there is also a church dedicated to St Magnus, which undoubtedly owes its origins to the Northmen, either the Norwegians or Danes. St Magnus was a Norwegian jarl who was killed in the 12th century in Orkney'.

26 See, for example, the *Sacramentarium Gelasianum*, Paris, *c.*AD 750 and the *Corpus Kalendarium* (www.cokldb.org).

27 See Pfaff 2009, 44, 56–60.

28 Rauer 2013, 165.

29 Bischoff & Lapidge 1994, 162. See for example, BL Cotton MS Julius A.X fol 140v.

[30] Gretsch 2006, 175.
[31] The manuscript is now at the public library of Rouen. See Atkins 1927, 219.
[32] Wilson & Wilson 2018.
[33] Oxford, Bodleian MS Hatton 113 and 114.
[34] BL, Cotton Vitellius E XVIII fol 5v.
[35] BL, Arundel MS 155.
[36] Hildesheim, Dombibliothek, St Godehard MS 1.
[37] Bodleian, MS Bodley 579. The core of the manuscript was produced in northern France in the late 9th century, then imported to Canterbury, before ending up with Bishop Leofric (1050–72) in Exeter.
[38] BL, Harley MS 863.
[39] Although his whole identity may well have been based on a misreading of the martyrology, *Andreas Tribunus magnus martyr* (the great martyr) being read in error as two separate saints. See Watkins 2015, 455; Baronius 1589, sub 19 August.
[40] It is an interesting coincidence that it was at Anagni that the Pope finally granted the canonisation of St Edward, on 7 February 1161.
[41] BL, Royal MS A XXII, fol 8v.
[42] See Pfaff 2009, 230.
[43] Riley 1863, 237–48.
[44] Stow 1614, 207.
[45] TNA, E 101/351/15.
[46] A representative sample of the calendars of 120 medieval liturgical books (www.cokldb.org) reveal St Magnus included for 19 August (and occasionally, in error, for 18 August). The earliest was produced for a Benedictine nunnery in Zadar, Dalmatia, *c.*1050–1100 (Oxford, Bodleian *Canonici Liturgical* 277). An interesting circular manuscript produced in Passau dates from the first half of the 13th century (Paris, Bibliotheque Nationale de France Département des Manuscrits, Latin 10526). A Premonstratensian book of hours from Moravia dates from 1204–19 (New York, Morgan Library MS M.739). English examples appear from the early 14th century. The *Taymouth Hours* (BL, Yates Thompson 13), was produced in England *c.*1325–50; the *Hungerford Hours* (BL, Add MS 61887), *c.*1330; the *Hours of Hawisia de Bois*, *c.*1325–30 (Morgan Library MS M.700); the *Beauchamp-Corbet Hours*, 1328 (Dr Jorn Gunther Rare Books, Basel). In contrast, only one manuscript contains an entry for St Magnus on 16 April, a Parisian manuscript produced *c.*1410 (Switzerland, private collection); the manuscript also includes St Magnus for 19 August. This is also the case with the *Aberdeen Breviary*, printed in Edinburgh in 1509 (ESTC S117099), which includes both saints. Twenty-six manuscripts include an entry for St Magnus abbot and confessor, but almost all of these date from 15th-century Germany (Morgan MS M.739 contains both 19 August and 6 September entries).
[47] Sources vary as to the date; possibly 20 April 914.
[48] See Thomas 1974, 426.
[49] Exeter Cathedral, MS 2861, printed in Thomas 1974, 481.
[50] Dugdale 1693, 347–8. The relic list was recorded by Hugh Candidus (*c.*1095–1160), a monk of Peterborough
[51] Wordsworth 1901, 36. See Thomas 1974, 426.
[52] Westminster Abbey MS 29, published as Robinson 1909, 70. The relic does not appear in later relic lists of those held in the Confessor's chapel, which survive for 1467 (WAM 9477), 1479 (WAM 9478) and 1520 (WAM 9485); see Luxford 2019, 204–30. This suggests that either it had disappeared in the interim, or, more likely, given the short period between Flete's list and the inventories, that Flete was recording more relics than were stored around the Shrine.
[53] Oxford, St John's College MS 147. The manuscript was first owned by Fr Thomas Lynne, who entered Westminster in 1451–2, and died in 1473/4 (Pearce 1916, 154). His ownership inscription is legible under UV light. It was subsequently owned by Fr William Grant (entered 1465–6), and then Fr William Grove (1484–5). Six of the 15 saints whose lives are included in the manuscript had relics that were claimed by the abbey, suggesting that the manuscript may have been used as a reference tool by those in charge of those particular relics. None of the recorded owners of the manuscript are known to have fulfilled the role of Keeper of the Shrine, which might support the suggestion that these relics were stored elsewhere in the Abbey.
[54] Cambridge University Library MS II.3.30 is a 12th-century *Passionale*, which contains one such (fol 180). Although the manuscript may have been produced in France, it seems to have been in England from an early date.
[55] Horn 1982, 111–12, no. 852.
[56] Most of these dedications probably date to the 1050s. See Dickens 1937–45. Olaf's son was named Magnus. He succeeded as king of Norway, and died in 1047.

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*London and Middlesex Archaeological Society Transactions, 73 (2022), 157–181*

# CROSBY PLACE, A 15th-CENTURY MANSION: EXCAVATIONS AT CROSBY SQUARE, CITY OF LONDON EC2

*Ken Pitt*

*With contributions by Ian M Betts (building material), Jacqui Pearce (pottery), Beth Richardson (accessioned finds) and James Morris (animal bone)*

## SUMMARY

*An excavation at Crosby Square ('The Pinnacle') in the City of London uncovered a fragmentary sequence of post-Roman activity and occupation spanning the late Saxon period to the 19th century. During the Saxo-Norman period, some Roman masonry foundations were initially robbed out and numerous refuse pits were subsequently dug across the site, which appears to have served as the backyards of various properties fronting onto the eastern side of Bishopsgate. In 1466 John Crosby, a prominent London merchant leased a house from the adjacent priory of St Helen Bishopsgate, which he transformed into an imposing mansion with a double courtyard plan known as Crosby Place. Fieldwork in 1982 and 2005–9 revealed elements of some of the buildings situated around or near the eastern or inner courtyard of Crosby Place. Structural development started around the inner courtyard with the construction of a cellared building during the 15th century, which was subsequently extended southwards and probably served as warehousing. This extended cellar may have been refurbished by the East India Company during their occupancy of Crosby Place in 1621–38. A substantial brick-lined cesspit was infilled in* c.*1640–80. Fieldwork revealed the surfaces of the inner courtyard and a sequence of early post-medieval buildings and structures erected along its southern side.*

*This report considers the 2005–9 fieldwork in conjunction with the results of the 1982 fieldwork at 28–32 Bishopsgate, which was inside the footprint of the present development.*

## INTRODUCTION

This article covers the post-Roman development of two sites at Crosby Square, City of London EC2, which were once occupied by the 15th-century mansion known as Crosby Place, part of which survived until the early 20th century. The Roman archaeological sequence is the subject of a separate article in this volume (Pitt 2023), as is a significant group of Roman painted wall plaster (Betts 2023). The principal focus is on fieldwork carried out between April 2005 and October 2009 in connection with the development known as 'The Pinnacle', on a site bounded to the west by Bishopsgate, to the east by Undershaft, to the south by 6–8 Bishopsgate and to the north by Great St Helen's (Pitt 2005, 2006). This site comprises 22–24 Bishopsgate, 4 Crosby Square, Crosby Square and Crosby Court (38 Bishopsgate), and the centre of the site lies at National Grid reference 533105 181201. It was excavated by MOLA (Museum of London Archaeology) under the site code CYQ05 (referred to here as 'site A'). Further details of the programme of archaeological work at site A is provided in the account of the Roman sequence (Pitt

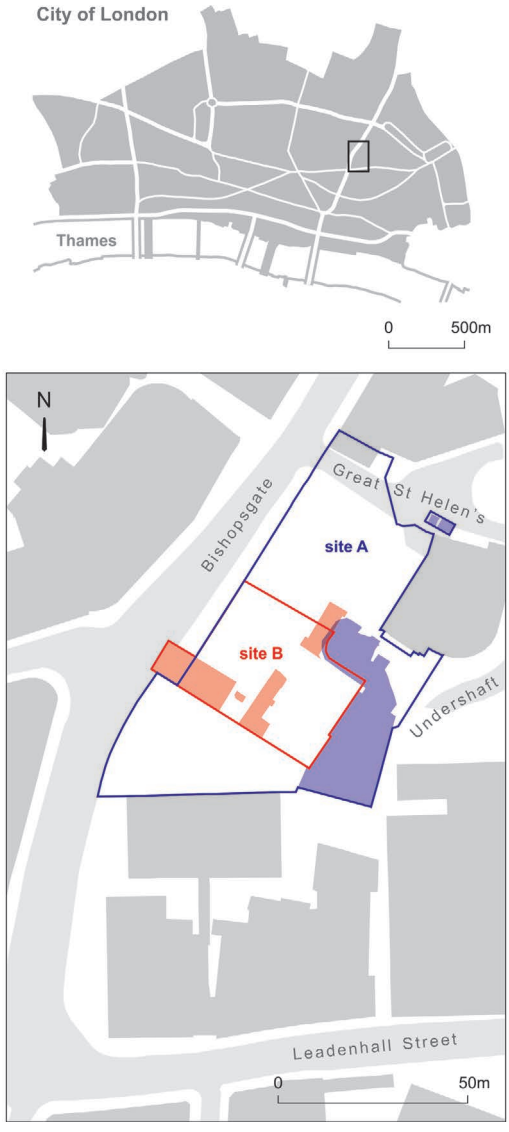


*Fig 1. Plan showing (above) the location of the study sites in relation to the modern City of London (scale 1:50,000); (below) the areas of excavation in tone (scale 1:2000)*

2023). Reference is also made to the largely unpublished findings from a previous watching brief and excavation within the development area undertaken between May and June 1982 by the Museum of London's (MOL) former Department of Urban Archaeology (DUA) at 28–32 Bishopsgate under the site code BOP82 (referred to here as 'site B') (Schofield 1998, 181; Evans 2009). The location of the two sites and the areas of excavation are shown in Fig 1 and the sites are shown in relation to some of the principal features of the late medieval city in Fig 2.

Across much of the site, basements had truncated archaeological deposits to *c.*13.90m OD. At this level, close to the maximum height of the latest Roman deposits, only cellars, wall foundations, and the bases of pits and other cut features survived. Within the former open area of Crosby Square itself, preservation was much better with deposits generally surviving to a height of *c.*15m OD.

This article presents the results of the investigations as a chronological narrative. The archaeological sequence on site A is organised by period and land use – buildings, structures and open areas (B14–B18, S8–S17, OA17–OA29) – beginning with the earliest material. Previous analysis of the site B archaeological sequence used similar land use terminology; to avoid potential confusion, site B land use terminology is not used in this report. The basic unit of cross-reference throughout the archive that supports this report is the context number, shown in square brackets, preceded by the site prefix letter to distinguish the individual site, thus: A[100] for context 100 on CYQ05 and B[100] for context 100 on BOP82. Site prefix letters are used in the same manner for accession numbers (A/B<100>). The conventions used in the illustrations are shown in Figure 3. The main structural features from site B are shown in outline only on the period and phase plans. They were digitised from original phase plans in the site B archive and located on the Ordnance Survey (OS) grid using the 'best fit' method and the single OS coordinate recorded on the site plan. The Survey of London plan of Crosby Place (Norman 1908, pl 18 as revised by Schofield 1994a, fig 194) was best fitted onto the structural remains found on site A.

Key findings of specialist analyses have been integrated into the narrative, but it has not been possible to include the full reports here; these are available in the project archive (Betts 2011; Connell 2011; Morris 2011; Pearce 2011; Phelps 2012; Richardson 2011; Stewart 2011) under the relevant site code at the Museum of London Archaeological

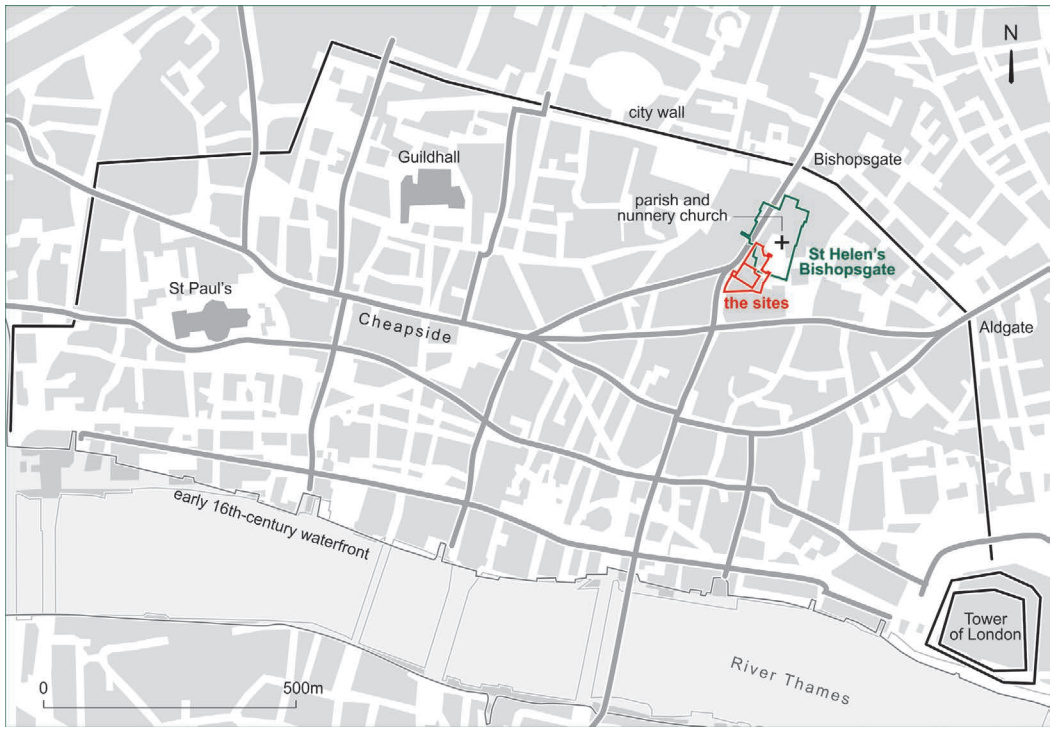


*Fig 2. Plan showing the study sites in relation to some of the principal features of the late medieval city and the precinct of the priory of St Helen Bishopsgate, superimposed on the modern street plan (scale 1:15,000)*

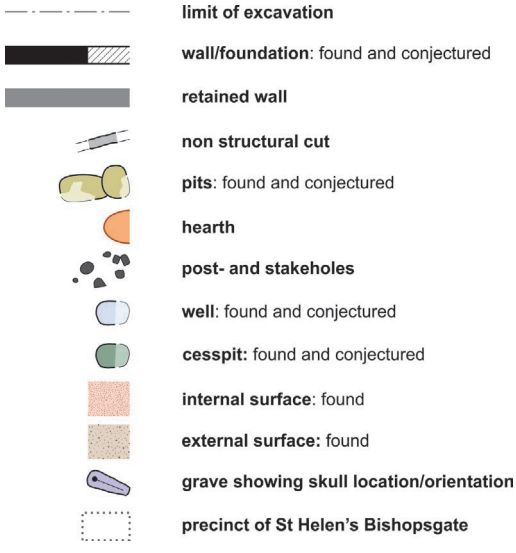


*Fig 3. Graphical conventions used in this report*

Archive, Mortimer Wheeler House, 46 Eagle Wharf Road, London N1 7ED. Users of the archive should be aware that for reasons not discussed here the first phase of Crosby Place (*c.*1466) was recorded in the Oracle database as post-medieval (period 6); this has been corrected in this report.

Detailed descriptions of the building material fabrics and complete lists of the pottery codes used in this report, their expansions and date ranges, are available at http://www.mola.org.uk/resources/medieval-and-post-medieval-pottery-codes. All pottery was quantified by sherd count (SC), estimated number of vessels (ENV) and weight in grams. Certain finds selected for illustration are numbered by category as: <G1> (glass), <P1>–<P3> (pottery), <S1>–<S9> (accessioned finds), and <T1>–<T5> (ceramic building material). Details of this material are given in the catalogues appended to the report.

## LATE SAXON AND MEDIEVAL ACTIVITY, *c.*AD 900–1500 (PERIOD 5)

Sealing the Roman sequence (Pitt 2023) on site A was a *c.*0.5m thick disturbed soil horizon, representing the hiatus between the abandonment of the Roman town and its reoccupation in the late Saxon period (OA17). The upper surface of this horizon survived at up to 13.5–13.75m OD and was cut by various poorly-defined robbing trenches and pits (below). The extent of later truncation and the evident mixed nature of the deposits and features limit the potential for reliable dating and phasing.

### *Saxo-Norman (c.AD 900–1200): Robbing of Roman Buildings (S8–S10)*

Some of the earliest post-Roman activity consisted of three separate clusters of linear features (S8–S10), assumed to relate to the robbing of Roman masonry wall foundations (Fig 4), although only one (S10) corresponded to the position of a building found in the excavation (Pitt 2023, B9), removing virtually all of the stone. Structure 10 was recorded to a maximum surviving height of 13.20m OD with a base at between 11.13 and 11.57m OD.

There may have been more than one phase of robbing caused by wall chasing, but the robbing cuts are of a similar date. Structure 8, for example, produced 60 sherds of medieval pottery from a minimum of 41 vessels (1263g), dating at the latest to *c.*1050–1150. Residual Roman sherds were more numerous. The post-Roman pottery consists mainly of early medieval handmade wares and late Saxon shelly ware (LSS), with one sherd of red-painted ware (REDP) and the spout of a glazed pitcher in Stamford-type ware (STAM) from Lincolnshire, <P2> (Fig 28). No fabrics or forms introduced after *c.*1080 were identified.

Evidence for the quarrying of building stone from Roman structures is often the earliest activity associated with the reoccupation of this part of the Roman town in the 11th century. Stone was seldom used in late Saxon and Saxo-Norman secular buildings and the robbed material may have been used as rubble elsewhere, or in an ecclesiastical building, perhaps even the nearby St Helen Bishopsgate (see Fig 2), which is documented as a parish church from the mid-12th century (Schofield 1994b, 104), although it may have earlier origins (Survey of London 1924, 1).

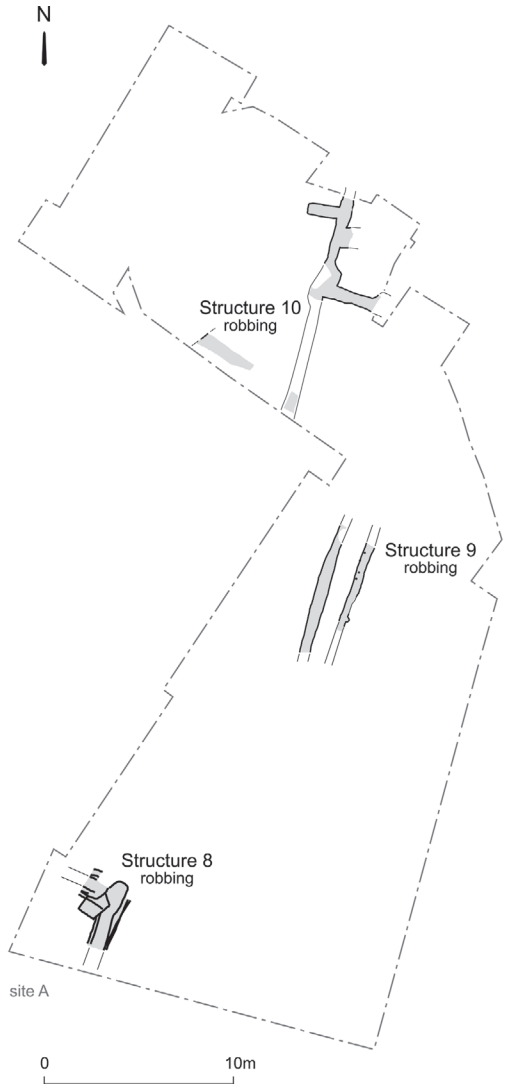


*Fig 4. Plan of Structures 8–10 robbing cuts (scale 1:400)*

### *The Bishopsgate Frontage*

On site B, various groups of pits were provisionally dated to the Saxo-Norman period (not illustrated), including some that had been cut through the north–south Roman

road in the west of the site (Evans 2009; Pitt 2023). This would suggest that the Roman road itself had no direct influence on the topography of the resettled city and should not be seen as the forerunner of medieval Bishopsgate. There is no archaeological evidence to date the re-establishment of Bishopsgate as a street, but many routes across the city seem to have originated in the early medieval period as a consequence of traffic following the most direct route from surviving Roman gates to key nodal points, in this case, perhaps the northern bridgehead, thought to have been established around AD 1000 (Watson *et al* 2001, 52–3; Cowie 2014, 23–4).

The existence of a functioning city gate at Bishopsgate was first documented in 1086 (Carlin & Belcher 1989, 66), while the establishment of the extramural parish church of St Botolph-without-Bishopsgate by the late 12th century and the presence of cess and rubbish pits dating to *c.*1050–1200 at Alderman's House directly north of the church (Carlin & Belcher 1989, 86; Douglas 2022, 69), confirm that this area had been reoccupied before 1150, and possibly as early as 1050. The dates of the earliest post-Roman robbing and pitting on sites A and B would seem consistent with an 11th-century date for the reoccupation of the locality, plus the contemporary reinstatement of the Bishopsgate's street, as it was described in 1275 (Carlin & Belcher 1989, 66).

The priory of St Helen's was a house of Benedictine nuns, established on the site of an earlier parish church with the same dedication *c.*1200–15 (Carlin & Belcher 1989, 87; Reddan & Clapham 1924). Thereafter the priory also functioned as a parish church, which still exists to the north-east of the site. The northern part of site A was inside the priory precinct (Fig 2) and all of sites A and B were inside the medieval parish of St Helen's. A lease of 1466 from the convent to Sir John Crosby (below) makes reference to six tenements fronting onto Bishopsgate (Norman 1908, 42; Schofield 1994a, 161). Antiquarian records indicate that some of these tenements possessed vaulted undercrofts (Schofield 1994a, 161), but no structural remains of the buildings that existed along the medieval street frontage survived on site B.

### *Open Ground Behind the Bishopsgate Frontage (OA17, OA18)*

Refuse pits and dumps of redeposited occupation material were recorded across most of site A and are dated to the Saxo-Norman and medieval periods (Fig 5). Repeated pit digging over several hundred years had resulted in extensive reworking of earlier material and consequent difficulties in establishing a reliable relative chronology, so it was not possible to accurately phase the pits. The distribution of the pits seemed to be fairly uniformly dense with extensive intercutting (where there was significant survival of archaeological deposits), so there was no clear evidence from their spatial distribution for property divisions, although it can be assumed that most of the excavated area lay in the backyards or gardens of various properties fronting onto Bishopsgate to the west. A few of the latest pits may have been dug within the gardens of Crosby Place or its predecessor (below). Two open areas are indicated on the plan, but these were assigned to distinguish the more truncated sequence at 4 Crosby Square (OA17) from the more intact sequence beneath Crosby Square itself (OA18), rather than any meaningful contemporary medieval land use. Two external hearths were recorded, *c.*2.50m apart (Fig 5), one built from ceramic peg tiles set in brickearth, the other burnt brickearth set in a shallow cut, with an associated stakehole that may have been part of either a windbreak or cooking stand. The function of these hearths is uncertain, but blacksmithing is a possibility as small quantities of ironworking waste (probably derived from smithing) was recovered from both open areas (Phelps 2012).

Although pitting appears more intensive in Open Area 18, this is, at least in part, a reflection of the less truncated sequence. The site B excavations also revealed a number of contemporary cess and rubbish pits, provisional finds dating indicates that these features range in date from the Saxo-Norman period to 14th century (not illustrated) (Evans 2009).

Open Area 17 to the south produced a total of 193 sherds of pottery from a minimum of 116 vessels (3790g). The pottery is chronologically mixed, although




*Fig 5. Plan of Open Areas 17 and 18 (scale 1:400)*

most comes from contexts that have been dated between *c.*1000 and 1150. Four sherds were from pottery made *c.*AD 900–1050 but were found in contexts that are too small to allow accurate dating, especially in an area of mixed deposits such as this. Occupation deposits that had slumped into the top of a Roman well (Pitt 2023, OA13) produced the largest group of pottery in this area, yielding 64 sherds from at least 19 vessels (1396g), dated to *c.*1050–1100. The pottery in these 10th- to early 12th-century contexts consists mainly of sherds from jars or cooking pots and bowls in early medieval handmade fabrics that were widely available across London at this period, with a few sherds from wares imported from the Rhineland, Stamford and Thetford. In most contexts these are found with sherds of late Saxon shelly ware (LSS), dating to *c.*AD 900–1050. Three contexts are dated to *c.*1240–70 by sherds of Kingston-type ware (KING) in sufficient quantities to suggest that this is the most likely date of deposition, although they also include residual sherds dating to the 10th and 11th centuries. The latest pottery is dated to *c.*1270–1350 by the presence of sherds of Mill Green ware (MG) (see PDF supplement: Pearce).

Large quantities of pottery were recovered from Open Area 18 (1276 sherds from a minimum of 835 vessels, 15690g). The finds cover a very wide date range, from the 10th to 15th centuries. Most of the earlier contexts, up to the late 13th century, are small in size, with fewer than 30 sherds in each, and evidence for chronological mixing typical of the generalised dumping of domestic waste. Contexts dated to the late 11th to late 12th century include the usual range of early medieval handmade wares, as well as sherds of London-type wares after *c.*1080 and a small number of Continental imports. The main forms are cooking pots or jars, dishes, bowls (*eg* a large flared bowl in early medieval shell-tempered ware (EMSH) <P1> (Fig 28)), and jugs or pitchers. The larger contexts date mostly after *c.*1240, with medium-sized collections (*c.*30–100 sherds) from a cluster of pits in the east of the area. This cluster also produced pottery dated at the latest to *c.*1350–1400 by Surrey white wares from various sources (*eg* a Cheam white ware (CHEA) cooking pot <P3>, (Fig 28)), as well as London-type wares, with residual earlier fabrics occurring in most of the larger contexts. There are also a few later sherds that are probably intrusive, the main period of deposition apparently taking place in the second half of the 14th century.

A possible moneyer's upper ('hammer') die, <S8> (Fig 6) was found in one pit. It is cylindrical with traces of a design at one end and splaying from hammering at the other. Medieval dies were usually forged from iron, but this example is made from a




*Fig 6. Medieval copper-alloy punch or moneyer's hammer die <S8> from Open Area 18 (scale 1:1)*

hard copper alloy. Finds of moneyer's dies are very rare, partly because of corrosion and partly because they were reused and/or destroyed after use (Archibald *et al* 1995); it is possible that this unusual copper-alloy example belonged to a forger.

Environmental samples from the pits contained a limited range of plant remains and interpretation is hampered by the high levels of disturbance indicated by the date range of the ceramics. In samples from both Open Area 17 and Open Area 18, durable charred grains were relatively common. The four cereals represented (free-threshing wheat, barley, rye and oats) were all grown in the London region throughout the medieval period, with wheat being the most important and widely grown crop (Campbell *et al* 1993, 24, 38). The surviving assemblage does suggest the presence of damp and nitrogenous deposits, with plants such as elder, hemlock and marshwort (*Apium* spp) particularly indicative of these environments (Stewart 2011). The faunal remains were dominated by cattle, although all three species of major domesticates were present (see PDF supplement: Morris). It is possible that the primary butchery of some of the carcasses represented in Open Area 17 took place on site.

Sealing the pits, the latest activity in Open Area 18 involved the dumping of soil across the whole of the area. This presumably represents consolidation for a new phase of activity, possibly the construction of Crosby Place or its predecessor (discussed separately, below). The deposits contained a large amount of earlier residual material but are dated to the 15th century. One particular large context A[1114] is dated to *c.*1400–50, with ceramics made up from fabrics and forms common across London at this time. A copper-alloy buckle, A<137> was also present, with a plain oval frame with offset narrowed bars, a pin and a folded sheet plate, recessed for the frame with four intact rivets. It is similar to examples from London dating from the 13th and 14th centuries (*eg* Egan & Pritchard 1991, 75, fig 45) although a 15th-century date is also possible. A circular cast copper-alloy mount <S9> (Fig 7), possibly featuring a heraldic image, may have been attached to a leather harness mount or bridle boss. It was found with 40–50 small domed-headed nails or rivets that may be related. A wrought iron woodworking wedge <S7> (Fig 8) is another extremely unusual survival. Wedges are very rarely excavated because such large pieces of hand-forged iron had high intrinsic value for reuse as scrap metal. This example is therefore a significant find, stratified in a medieval context, but because it cannot be dated typologically and because of the element of residuality in this area, an earlier date cannot be ruled out.

Medieval peg roofing tiles were found scattered throughout both open areas; these are of two round nail-hole type with either splashes or more uniform glaze over the bottom third of the upper surface. Other types of building material from the period include an early medieval curved tile (the only example of a roofing tile dating to the early 12th/early 13th century from the site), a ridge tile (one of only three from the site), a probable louver, <T2> (Fig 9), in coarse London-type ware (LCOAR) and two small pieces of grey slate that may have been used as roofing. A small number of floor tiles were recovered from the late dumped material

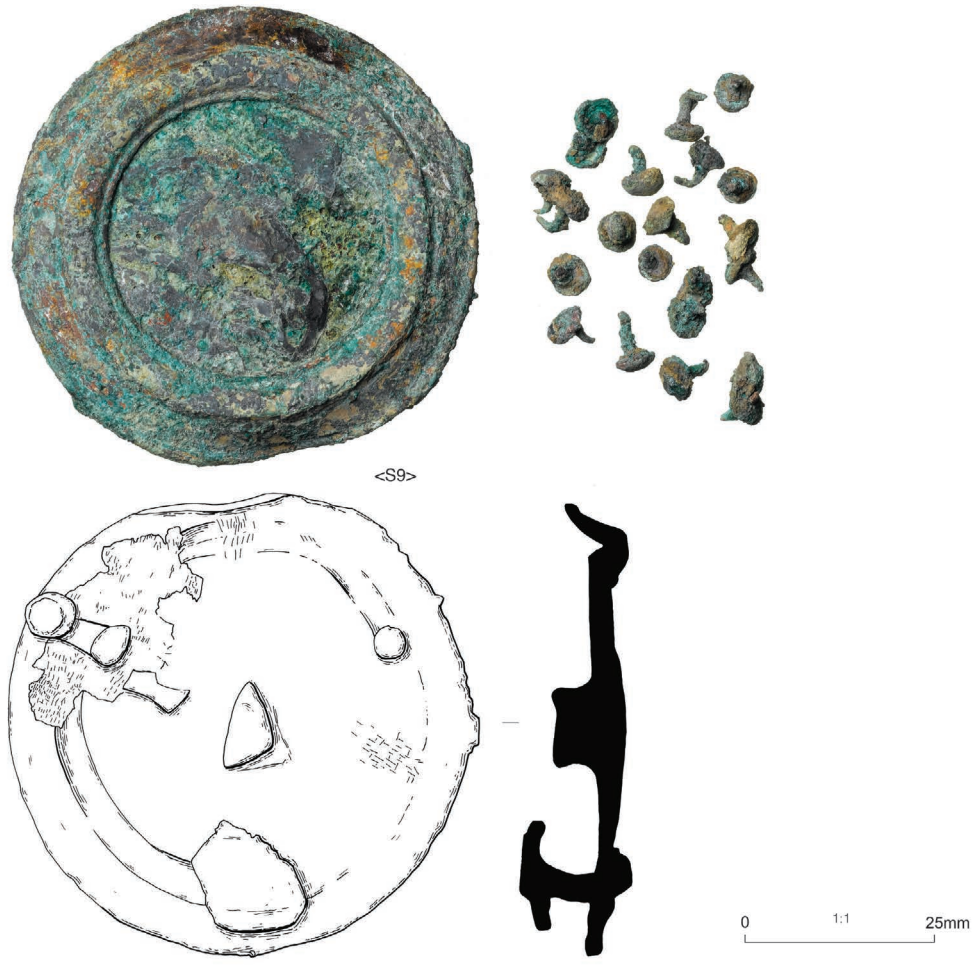


*Fig 7. Medieval copper-alloy mount <S9> with a selection of associated studs or nails from Open Area 18 (scale 1:1)*

in Open Area 18. Most are plain glazed Low Countries (Flemish) imports dating to the 14th to late 15th century, but there is also a decorated mid- to late 14th-century Penn tile from Buckinghamshire (see PDF supplement: Betts). These floor tiles may have come from a building within the precinct of the priory of St Helen Bishopsgate or from the forerunner of Crosby Place (below).

The isolated inhumation burial of an unsexed subadult aged *c.*11 years was found in this area, lying supine, extended and facing east (Fig 5). The grave was some 0.55m deep and was cut from at least 13.10m OD. No evidence for a coffin was found. The backfill produced only residual Roman pottery, but the grave was cut into a dated pit, which provides a *terminus post quem* of *c.*1180. The apparently normative burial rite suggests this should probably be seen as an outlier to the group of burials found near the northern limit of site A (below, OA19), although the grave's isolation suggests this individual was deliberately segregated from the rest of the cemetery population for religious or cultural reasons.

### *Cemetery of St Helen Bishopsgate (OA19)*

A group of 18 east–west orientated inhumations (OA19, not illustrated) were recorded in a small, detached area of excavation at

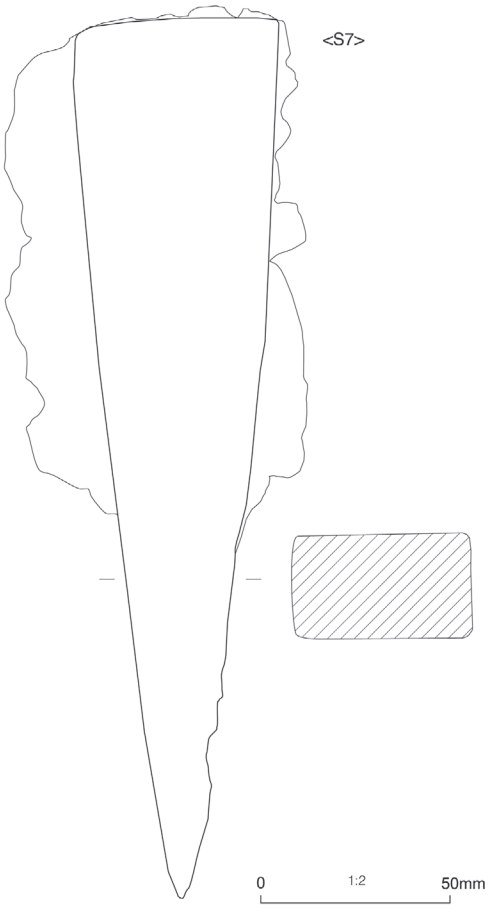


*Fig 8. Iron woodworking wedge <S 7> from Open Area 18, partly drawn from X-radiograph (scale 1:2)*




*Fig 9. Part of a probable louver <T2> from Open Area 18 (scale 1:2)*

the north-east corner of site A (see Fig 1). The burials include males and females and a range of subadult and adult age groups, which suggests that they represent a demographically normal population (Connell 2011, 4–5). A few sherds of medieval pottery, from jugs in London-type and Kingston-type wares (LOND, KING), were associated with these graves and are dated to *c.*1240–1350.

These burials were probably located on the southern fringes of a cemetery attached to either the parish church or priory of St Helen's Bishopsgate (see above; Fig 11). These features and other matters relating to the priory will be reported in detail in a forthcoming report integrating results from a number of excavations within the priory precinct (Lerz in prep).

## CROSBY PLACE: ORIGINS AND EARLY DEVELOPMENT, ?14TH CENTURY TO *c.*1500

### *Historical and Antiquarian Summary*

Crosby Place was an exceptionally fine late medieval mansion set back behind the frontage of properties on the east side of Bishopsgate. Parts of the medieval complex survived until 1908 when the area was redeveloped. In recognition of the architectural and historical importance of the hall (Fig 10), it was carefully demolished and in 1926–7 rebuilt on a new site in Chelsea. A detailed account of the historical and antiquarian sources for the origins and development of Crosby Place – including a plan by Frederick Nash of the vaults as existing in 1816 – is provided by the *Survey of London* (Norman 1908), with updated summaries by Schofield (1993, 123–6; 1994a, 160–3). Only the broad outline is repeated here. The evident sophistication of the buildings demonstrates the levels of luxury and ostentatious display to which the City of London's merchant classes and secular leaders aspired.

Sometime before 1466, wealthy London merchant John Crosby leased a large house from the priory of St Helen Bishopsgate. This property had been previously occupied by a merchant from Genoa, Caetano Pinelli. The extent and layout of the original property is uncertain, but a later lease refers to it as



*Fig 10. View of the interior of Crosby Hall in 1907, prior to its demolition (by permission of Historic England)*

'all that tenement, with the rooms, solars, cellars and garden adjoining'. A stone-built undercroft, recorded prior to its destruction in 1899, is thought to have been part of this 14th- or 15th-century property (Fig 11). It was vaulted in two quadripartite bays with freestone ribs and chalk webs, aligned north-west to south-east, and entered via a stair at its south-east corner.

Crosby's original lease does not survive but in 1466, the year of his election as Member of Parliament for the City, the lease was renewed (and is known from a transcribed copy; Goss 1908). This lease suggests that additional properties were being added to Crosby's existing tenancy. Besides the Pinelli/Crosby house (above), the property now included a lane from the east side of the house which ran south-east, six messuages on the Bishopsgate frontage between the existing house on the south and the Tower of St Helen's (presumably a priory gatehouse) to the north, one 'below the gate under the tower', with a vacant plot behind it stretching 58½ft (17.8m) to the east, and two further messuages 'below the close' of the priory. The priory also allowed vehicular access through the close to St Mary Axe. Crosby extended and rebuilt the property into a large mansion between 1466 and his death in 1475. His crest survived on a boss in the vault of the hall oriel window and he was buried in St Helen Bishopsgate. A reconstructed plan of Crosby Place is shown in Fig 11, although some buildings to the east and south of the hall may post-date Crosby's ownership.

After Crosby's death the succession of late 15th-century tenancies is incompletely known, but the mansion was used as a lodging by Richard Duke of Gloucester (later King




*Fig 11. Plan of Crosby Place following Norman (1908, pl 18), Lobel (1989, map 4) and Schofield (1994a, fig 194), also showing the earlier undercroft, and the walls found on sites A and B (scale 1:1000)*

Richard III) in 1483 and by Burgundian ambassadors in 1495.

### *Pre-Crosby Buildings*

No new evidence for the property occupied by Crosby before 1466 was found on sites A or B. It may be that the two-bay cellared range, known from the antiquarian sources and fronting onto Bishopsgate (above; see Fig 11 pre-1466 undercroft), marks the eastern extent of the 14th- or earlier 15th-century buildings.

### *Crosby's Mansion,* c.*1466–75*

All of the excavation areas on sites A and B that produced medieval structural remains were located to the south of the outer (or entrance) court of Crosby Place. The structural sequence was fragmentary, complex and not closely dated. Where conjecture is necessary, this is explicitly stated. What is clear is that the complex of buildings set out in previously published plans was not constructed as part of a single programme of works, as has often been assumed to have been the case.

#### *A Cellar to the South of the Hall (B14)*

A rectangular cellar was built in a construction cut dug from at least 13.9m OD (Fig 12). The trench-built masonry foundations were constructed in a shallow trench from 11.85m OD, but no floors survived. The walls were faced in randomly coursed, rough-hewn

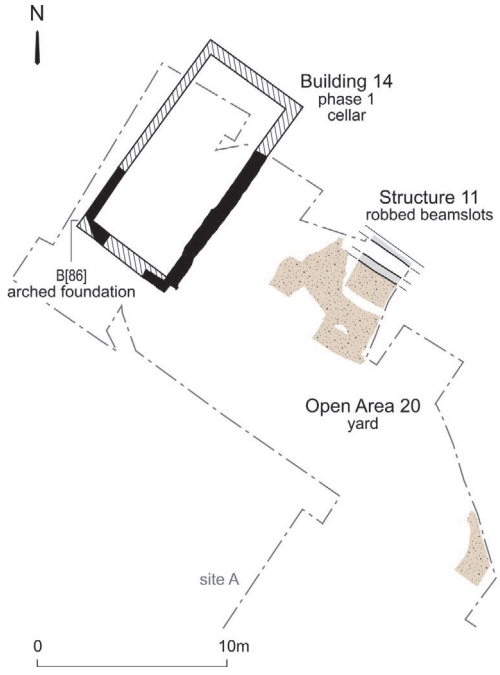


*Fig 12. Plan of cellar Building 14 (phase 1), Open Area 20 and Structure 11 (scale 1:400)*

chalk and Kentish ragstone, over a rubble core incorporating some flints, peg tiles and bricks, all bonded with light yellowish-brown lime mortar. The cellar walls were up to 0.70–0.80m wide, although above 14.09m OD the wall face was set back to carry the springing of a four-centre-arch brick barrel vault (Fig 13) and the upper continuation of the wall was only 0.48m wide. The walls were recorded to a maximum height of 14.86m OD. It was noted that part of the southern wall of the cellar had an arched footing, B[86] (Fig 12).

The vault was aligned south-west to north-east, following the long axis of the cellar. It was formed from bricks (fabric 3046; Table 2) dated to *c.*1450–1600. Occasional tile spacing courses followed the same axis. It survived to a maximum (incomplete) height of 14.94m OD.

The presence of the arched footing led its excavator to suggest that this section of wall may have been part of the pre-Crosby property (Evans 2009). Such foundations, however, were often used to span localised areas of soft ground. Moreover, the brick vault is integral to the structure and matches the description of the vault under Crosby Hall itself, which was carried on a four-centred brick barrel vault (Norman 1908, 61, pl 36). It is considered that this cellar is part of the complex developed by Crosby and broadly contemporary with the hall.

The cellar of Building 14 was subsequently extended to the south-west (Fig 14). The excavator of site B considered that the initial phase of this extension took place during Crosby's occupancy (Evans 2009) and no dating evidence was recovered from site A to contradict this view. A hiatus in construction, however, is suggested by the butt jointing of the extension against the original cellar and the use of more varied materials in the walls, particularly brick. Furthermore, the varying wall thicknesses might suggest that several different builds are present. The phasing of the extension should therefore be regarded as uncertain. The west wall of the extended cellar was the most intact and was constructed from 12.40m OD, surviving to a maximum height of 14.53m OD. The shallower footings here suggest that the floor, which did not survive, may have been higher in the extension than in the cellar to the north. Two parallel walls recorded on site B (B[30], B[246], B[648], B[987]), built in similar material although much disturbed by later underpinning and truncation, supply the approximate outline of the structure (Fig 14). How the southern extension was initially roofed was not apparent.

### *Yard to the South of the Cellar (OA20, S11)*

To the south-east of Building 14, on site A, was a compact external gravel surface, interpreted as a yard (OA20) (Fig 12) at 13.89–14.46m OD. Associated finds include a small number of peg tiles, fragments of plain glazed Low Countries floor tiles, and 27 sherds (22 ENV, 352g) of medieval pottery, the latest dated to *c.*1350–1500, including fragments from D-shaped dripping dishes in coarse Surrey-Hampshire border ware (CBW), typical of this period. There is no pottery introduced after *c.*1380 present, although all contexts are small and therefore less reliable as dating indicators.

Along the northern edge of this yard were two parallel beam slots that had been robbed out and are probably part of a structure (S11)



*Fig 13. View of the east wall of the west range of Crosby Place under excavation, looking north; the brick vault, backfilled with concrete is visible to the left (west)*

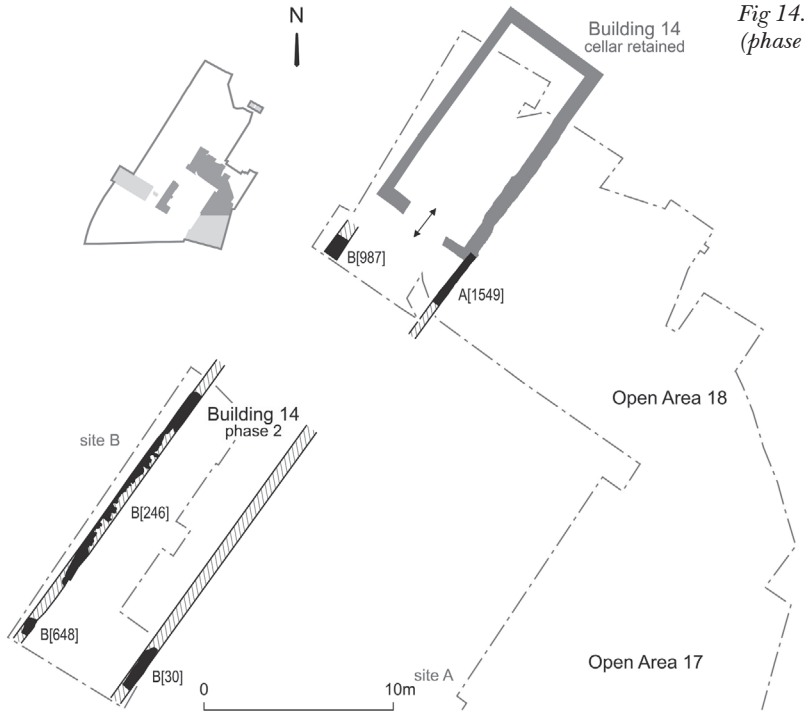


*Fig 14. Plan of cellar Building 14 (phase 2) (scale 1:400)*

of unknown plan and function. They were cut from *c.*14.45m OD and were 0.43m and 0.47m deep. Five sherds of pottery (5 ENV, 47g) were recovered from their backfills and are dated to *c.*1270–1350; these appear to be residual. Given the dating and the effects of truncation, the association of these land uses with Building 14 is uncertain. At some point after *c.*1480 the yard seems to have reverted to a garden or waste ground (below, OA21).

## CROSBY PLACE: LATER DEVELOPMENTS, AFTER *c.*1500 (PERIOD 6)

### *Historical and Antiquarian Summary*

Tenants and owners of Crosby Place in the 16th and early 17th centuries included prominent London citizens and foreign ambassadors, such as Bartholomew Reed (Goldsmith; mayor, 1501), Sir John Rest (Grocer; mayor, 1505), Sir Thomas More (1523) and Antonio Bonvisi (merchant, 1524–47). Following the suppression of the priory of St Helen Bishopsgate in November 1538, the king granted Crosby Place to Bonvisi in August 1542 (Norman 1908). Sir John Spencer (Clothworker; mayor, 1594) bought the property in 1594, and is credited with its restoration and the building of a warehouse to the south-east of the complex (Norman 1908, 61) and a tower (Goss 1908, 84).

The East India Company were tenants in 1627–38 (Evans 1990, 654; Foster 1913) and they restored the 'stone warehouse at Crosby House' and repaired 'the turret and other decayed places' (Goss 1908). The property was not damaged by the Great Fire, but another fire in the late 17th century is thought to have damaged some of the buildings to the south of the hall. The layout of the buildings is shown on the Ogilby and Morgan map completed in 1676 (Fig 15).




*Fig 15. Crosby Place on Ogilby and Morgan's map of* c.*1676 (Guildhall Library) with location of Sites A and B superimposed*

The later ownership of the site is discussed by Norman (1908, 15–32). As well as his plan of the vaults (above), Frederick Nash recorded views within vaults on the south side of Crosby Hall, which may include the one described below, as it existed in 1816. These are reproduced by the *Survey of London* (Norman 1908).

### *16th-/17th-Century Rebuilding*

Again, all of the structural remains on sites A and B were located to the south of the outer (or entrance) court of Crosby Place. An indication of the high quality of decorative work being undertaken somewhere in the complex in the first half of the 16th century is an unstratified stove tile <T5> bearing the arms of Henry VIII (see Fig 27).

#### *?Warehouse (B14 Refurbished)*

The southern extension of Building 14 was refaced internally in randomly coursed, rough-hewn chalk, Reigate stone, Kentish ragstone, flints, bricks and peg tiles (Fig 16, B14 phase 3). The new skin wall was 0.30m wide and 1.4m high (to a maximum of 13.80m OD) and formed the platform from which a new brick barrel vault sprang (Fig 17). Only fragments of the vaulting survived, 0.40m thick and constructed of red bricks (fabric 3033; Table 2) dated *c.*1550–1700. Observations on site B suggest that the vault employed a four-centred arch. This work may relate to the warehouse constructed by Spencer in 1594 and is probably the narrow north–south range shown by Ogilby and Morgan (above; Schofield 1994a, 163), although the implication of the current phasing is that it was itself, at least in part, a rebuild of an earlier structure. Two possible doorways were cut in the (retained) west wall.

A complex series of alterations in brick was recorded on site B to the south. These are poorly dated and the earliest structural elements are grouped together here (Fig 16, B14 phase 4) as evidence for a phase of renovation. A brick door opening was inserted in the original south end wall of Building 14, phase 1, presumably replacing an earlier opening. The western jamb of this doorway was found on site B, giving a width

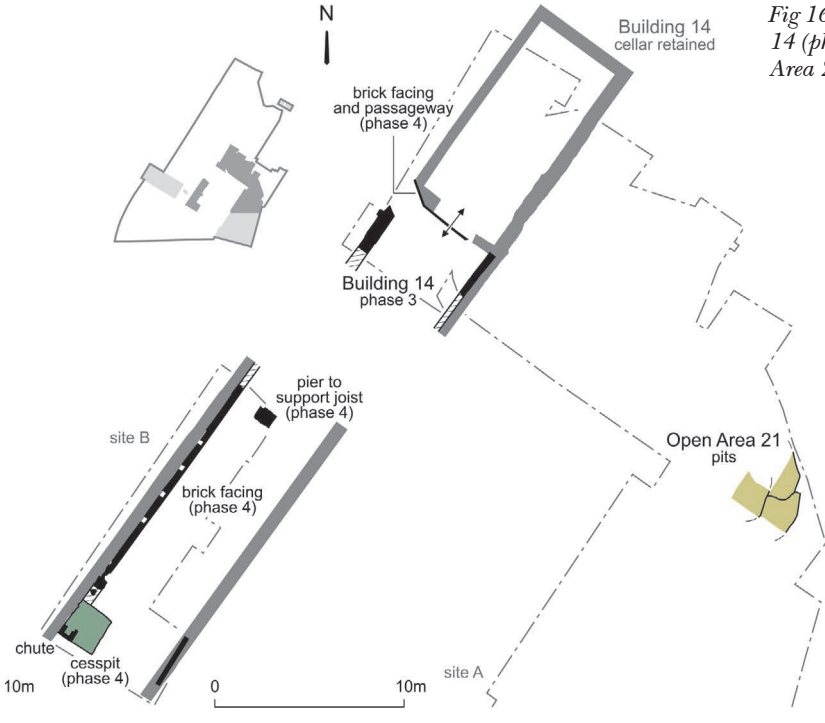


*Fig 16. Plan of cellar Building 14 (phases 3 and 4) and Open Area 21 (scale 1:400)*



*Fig 17. View looking east, showing the refaced east wall of Building 14, abutting earlier walls; the scale rests on the course from which the brick vault sprang (0.5m scale)*

of *c.*3m. Brick rebuilds and refacings of the walls in the southern part of the building were also recorded, including the formation of a passageway aligned north-west–south-east. An undated brick pier (not illustrated) may have supported a joist for a timber floor at *c.*13.20m OD.

A substantial square brick-lined and vaulted cesspit, *c.*2.35m deep B[197], was built against the western wall of this phase. A brick chute indicated material draining into the pit from the south. The upper or disuse backfills of the pit are dated to *c.*1640–80. These deposits contained a rich and diverse finds assemblage which included clay tobacco pipes (*c.*1640–80), a copper-alloy token issued during either the reign of James I or Charles I (1603–44), an ivory-handled knife, a pair of iron dividers and glassware, including beakers, bottles, cups, flasks and phials. The ceramics included Chinese porcelain (Evans 2009).[1]

It is considered probable that these phase 4 works relate to the period of the East India Company's occupation of the building. The cellars of Building 14 remained as voids until they were filled with concrete, presumably during the 1980s redevelopment of Crosby Court.

### *Garden or Waste Ground South of the Warehouse (OA21)*

After Structure 11 was robbed (see above; Fig 12), a series of deposits was dumped across the former yard (OA20) to approximately 14.45m OD (Fig 16, OA21). These deposits included peg roofing tiles and a number of floor tiles. Two types are present: decorated Penn tiles from Buckinghamshire and plain glazed imports from the Low Countries. One Penn tile has a previously unpublished design, <T1> (Fig 18). Several large pits were dug for refuse disposal in what may have been a garden or area of waste ground to the east of Building 14.

A large pottery assemblage (205 sherds, 165 ENV, 2381g) included mostly residual medieval material, reflecting disturbance and redeposition. The land use is dated

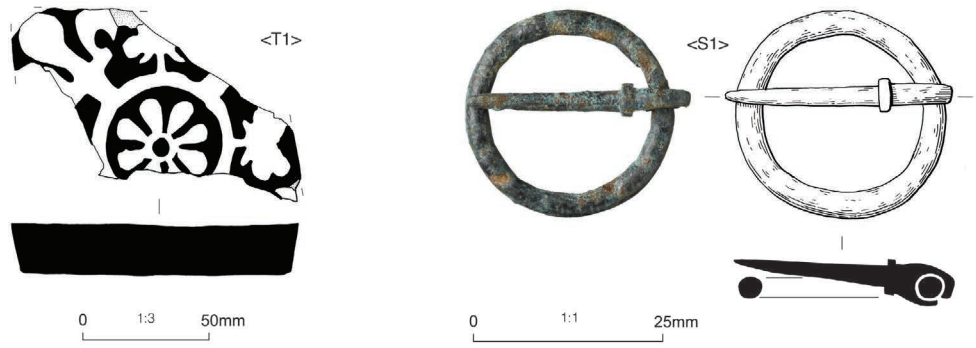


*Fig 18. Finds from Open Area 21, probably residual: Penn floor tile <T1> (scale 1:3); copper-alloy brooch <S1> (scale 1:1)*

by seven sherds of post-medieval pottery to *c.*1480–1600. One pit also produced a residual medieval copper-alloy annular brooch with a plain frame and a free-moving collared pin, <S1> (Fig 18).

*Part of the Eastern Range (B15, OA22)*

To the east of Building 14, a north-west–south-east aligned foundation was built in randomly coursed rubble masonry, constructed of roughly-hewn chalk and flint blocks bonded with yellow sandy mortar. The foundation trench, cut from 13.88m OD, was 0.25m deep, and the wall survived to 14.26m OD (Fig 19, B15). On the south side of the wall a compacted dark orange sand and gravel surface at 14.03–14.09m OD represents the only recovered internal surface, from which 12 sherds (12 ENV, 394g) of pottery were recovered. These included London-area early post-medieval red ware (PMRE), dating to *c.*1480–1600, and Surrey-Hampshire border ware that dates to *c.*1550–1700. The rest of the pottery is residual medieval material. The extant wall is interpreted as the north wall of a building on the south side of a courtyard to the east of Crosby Hall, which is visible on the Ogilby and Morgan map (Fig 15) and on various reconstruction plans (*eg* Fig 11). The south wall of Building 15 did not survive. Current evidence would therefore suggest that the eastern courtyard ranges post-date the Crosby period.

To the north of Building 15 lay a flint and Kentish ragstone courtyard surface (OA22)




*Fig 19. Plan of Building 15 and Open Area 22 (scale 1:400)*

at *c.*14.27m OD (Fig 20). It was made from rough-hewn blocks laid on a sand bedding. Only a few sherds of residual medieval pottery were recovered from this surface.

*Demolition of the Eastern Range (OA24)*

Dumps of rubble (OA24, not illustrated) that raised the ground level in the courtyard



*Fig 20. View of cobbled yard (Open Area 22) and the northern wall of Building 15 under excavation, looking south-east; the brickwork relates to later rebuilding*

area to 14.18–14.52m OD may represent the demolition of Building 15. Large quantities of building material included peg roofing tiles (some glazed), a ridge tile, overfired bricks and various plain glazed Low Countries floor tiles. There were also blocks cut from Caen stone and Kentish ragstone, plus a Reigate stone moulding with the faint trace of pink paint and white plaster on one cut face. A small and rather mixed pottery assemblage included one sherd of early Surrey-Hampshire border ware (EBORD), dated to *c.*1480–1550, and one sherd from a flowerpot in London-area post-medieval red ware (PMR), dating to any time between *c.*1580 and 1900+. Residual medieval sherds were present and a silver groat (annulet issue) of Henry VI (1421–71), A<17> (see PDF supplement: Marshall), was also recovered; these finds imply that there was localised ground disturbance of earlier deposits, probably in the late 16th century. The east range was subsequently rebuilt on two occasions (B16, phases 1 and 2), but these events are poorly dated.

*The Eastern Range Rebuilt, Phase 1 (B16, OA25)*

A new, similar but slightly narrower building (B16) (Fig 21) was constructed on the site of its predecessor (B15). It was constructed of similar materials to its predecessor, but the southern wall included some reused yellow and red medieval bricks, the former being a 14th-/late 15th-century import from the Low Counties, and a plain yellow glazed Low Countries floor tile of similar date. The exterior (south) face of the southern wall was rendered. The walls survived to 14.27m OD (north) and 14.88m OD (south). To the north of the building was an open area (OA25) containing fragmentary metalled surfaces and an area of burnt clay, charcoal and ash at 14.15–14.31m OD, either a temporary hearth or the site of a fire, although there was no indication that this was extensive enough to relate to either of the documented 17th-century conflagrations (above). Finds from OA25 included a copper-alloy Nuremberg jeton A<16>, issued

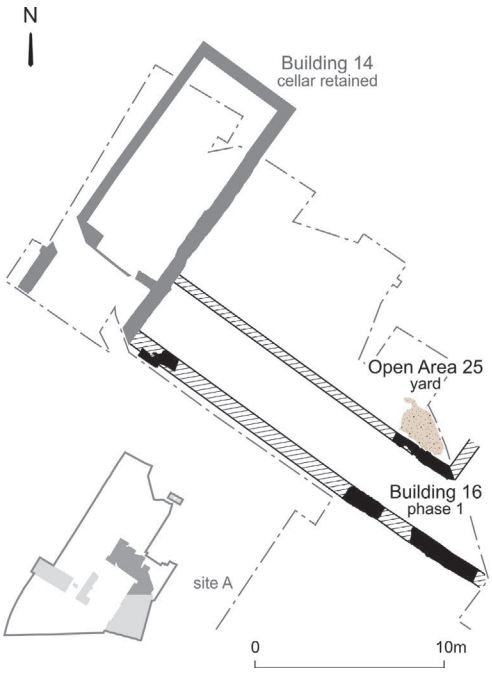


*Fig 21. Plan of Building 16 and Open Area 25 (phase 1) (scale 1:400)*

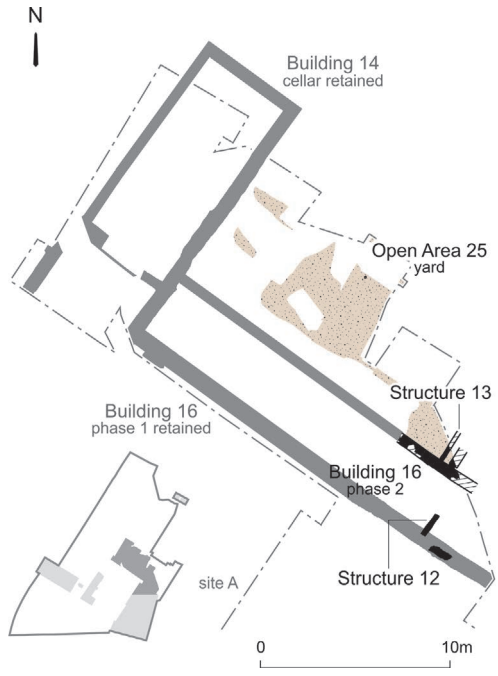


*Fig 22. Plan of Building 16 and Open Area 25 (phase 2) with Structures 12 and 13 (scale 1:400)*

by Hans Krauwinckel II (*c.*1590–1600) (see PDF Supplement: Marshall).

*The Eastern Range Rebuilt, Phase 2 (B16, OA25)*

The east end and possibly the whole of Building 16 (Fig 22) was rebuilt with red bricks in English bond and English cross bond, using the lower courses of the demolished walls as footings. The north wall survived to 14.74m OD and its external face was rendered in creamy beige mortar down to 14.20–14.49m OD. More of the previous south wall had survived demolition, but two rebuilt courses were recorded to a height of 14.99m OD. This phase appears to have been constructed entirely from reused building materials; the red bricks are probably of 16th-century date (fabrics 3033, 3046) and a number of plain glazed Low Countries floor tiles dating to *c.*1480–1600 were also recovered. Cut into the north wall was a drain (S14, not illustrated) made from reused medieval building material including plain green-glazed Low Countries floor tiles and a brown-glazed floor tile that may belong to the late 13th- to early 14th-century Eltham Palace/Lesnes Abbey group.

Within the building a series of dumped deposits (OA27, not illustrated) and three small pits probably relate to its refurbishment. The latest material present suggests a date of *c.*1670–1700 on the basis of styles and forms in tin-glazed ware (TGW) and clay tobacco pipe. A narrow and shallow wall foundation constructed of reused red bricks (S12) (Fig 22) may be an internal partition.

To the north of the rebuilt Building 16 lay a yard (OA25 phase 2; Fig 22) surfaced with cobbles and granite setts at 14.45–14.58m OD, laid over sand and gravel bedding. An undated wall (S13) (Fig 22) of stretcher bond brickwork was constructed over the yard and may be part of a later veranda or other external feature built against the north wall of Building 16, but due to its very fragmentary survival, its extent and structural interpretation are uncertain.

To the south of the building lay a few mortar and brickearth spreads and dumped deposits, which are indicative of the presence

of an open area (OA26, not illustrated), possibly part of the geometrically-planned formal garden shown on Ogilby and Morgan's map (Fig 15).

### *Late 17th-Century and Later Occupation*

Cartographic evidence suggests that the northern half of the gardens to the east of Building 14 and south of Building 16 were built over in the late 17th or early 18th century. The archaeological survival for this phase of activity was however limited due to extensive truncation following the 1908 demolition of the historic buildings of Crosby Place and various subsequent redevelopments of the site.

#### *Cellar (B17)*

A small rectangular cellar or cesspit (B17) (Fig 23) was constructed of red bricks laid in English bond with a soft dirty creamy white sandy mortar. The walls survived to 13.11m OD and were *c.*0.60m high, truncated horizontally. The dark red bricks used are of mid-17th-/18th-century date. No internal deposits were noted.

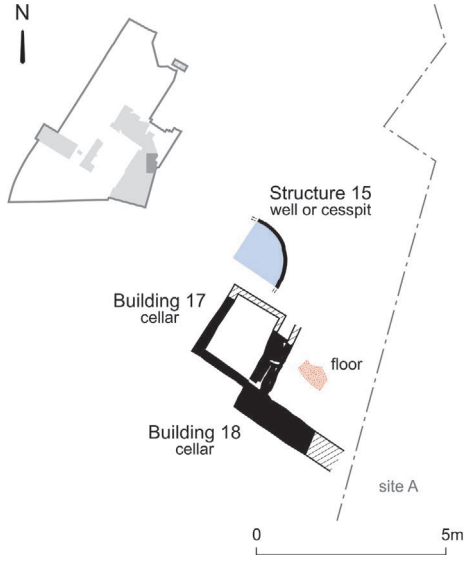


*Fig 23. Plan of Buildings 17 and 18, and Structure 15, with inset (left) showing location in relation to the site boundaries (scale 1:200; inset 1:2000)*

#### *Later Cellar (B18)*

Built over the eastern wall of Building 17 and extending east was a new cellar (B18) (Fig 23), originally constructed of bricks and rubble masonry (Kentish ragstone, Reigate and flint) bonded with a light brown sandy lime mortar. At a later date the west wall was rebuilt in brick. A possible beaten earth floor was found at 12.87m OD.

#### *Well or Cesspit (S15)*

Contemporary with and to the north-east of Building 18 was an oval or possibly semi-circular brick-lined structure, which perhaps served as a cellar or a soakaway (S15, Fig 23), constructed of unmortared dark red bricks of probable 18th-century date (fabric 3032) laid in header bond. Its disuse is closely dated to *c.*1830–40 by a small pottery assemblage (see PDF supplement: Pearce).

A small group of glassware and accessioned finds related to grooming, hygiene and hair care came from the backfill of the feature. They are probably personal possessions, possibly derived from one household, although it is also possible that they originated from a shop or other commercial premises. The glass is a mixed group consisting of 18th- and 19th-century domestic and pharmaceutical items. Two fragmentary wine or cordial glasses are of 18th-century date. One, A<206>, in heavy lead glass, has heavy twisted gadroon moulding below a small bucket- or funnel-shaped bowl in a typically early 18th-century 'Anglo-Venetian' style (*cf* MoL Reserve Collection 34.139/128 and 129, dated *c.*1721–5), while the other (not illustrated) is much plainer with a small bucket-shaped bowl and solid undecorated stem. The rest of the glassware is of early/mid-19th-century date, with pieces from three tall cylindrical pharmaceutical phials made from colourless glass, a partially mould-blown rectangular bottle with a long neck (possibly a medicine bottle) and a small mould-blown colourless glass bottle, <G1> (Fig 24), with the stamped lettering 'Hendrie Perfumer London', presumably relating to the perfumer and hair merchant Robert Hendrie of 12 Titchbourne Street, Haymarket, who insured his premises in 1834.[2]




*Fig 24. Perfume bottle <G1> from Structure 15 well or cesspit (scale 1:1)*

The other finds are all domestic and personal items, many of which would also have been used for grooming and hair care. Two incomplete ivory double-sided combs, A<414> and A<415>, have very closely spaced teeth, principally for the removal of nits. A single-sided tortoiseshell comb, A<416>, has a missing end and may be part of a hair-comb or a side-comb used to hold hair in place. A wooden comb, A<24>, also incomplete, has long, slightly curved, widely-spaced teeth and would have been used decoratively, to secure a bun. Four bone brushes, <S3>–<S6> (Fig 25), may have been (variously) nail-, shoe- or small clothes-brushes, or had other functions. They are an interesting group; one, <S3>, is plain, but the other three have completely different styles of decorative handle. A small ivory handle, A<21>, probably from a fan and a bone mount, A<35>, with a narrow central rectangular section flanked by two arms with oval terminals, are also thought to be dress accessories or other personal items. A pair of tortoiseshell-framed spectacles, <S2>, has round lenses, a high bridge and straight arms. 'Temple' spectacles like these gradually superseded armless spectacles (such as pince-nez) in the 18th century. Edward Scarlett, a London optician and spectacle maker is credited with producing the first English examples of 'temple' spectacles with ear hooks in 1727.[3]

*Demolition of Building 16 (OA29)*

The demolition of the eastern range (above, B16) is represented by layers of rubble (OA29, not illustrated) overlying this part of the site. A number of floor tiles were present, including a decorated Penn floor tile, whilst the rest are plain glazed imports from the Low Countries. The latter appear to be a mixture of 14th- to 15th-century and late 15th- to 16th-century types. Eighteen sherds of pottery (17 ENV, 328g) were recorded, ranging in date from *c.*1080 up to the 17th century, with the latest contexts dated by tin-glazed ware to *c.*1630–80, but even these sherds are likely to be residual. These layers were cut by a drain (S17, not illustrated) built from unfrogged red bricks. The lining walls of the drain survived to 14.90m OD.

## CONCLUSIONS

Due to the impact of previous redevelopments, the structural remains of Crosby Place recovered during the 1982 and 2005–9 fieldwork were truncated and fragmentary, but enough survived to reveal that previously published plans (Fig 11), represent a multi-period complex with a complicated history of structural additions and alterations. Crosby Place during the 15th century apparently consisted of various ranges of buildings arranged around two principal courtyards. This double courtyard plan was a design feature of a number of Tudor period royal palaces within the Greater London area including Eltham, Nonsuch and Richmond (Thurley 1993, fig 85, plans 5.11). Some aristocratic residences of the mid-15th century, such as Sudeley Castle in Gloucestershire and Wingfield Manor in Derbyshire (Pevsner 1978, 321–2; Verey & Brooks 1999, 673–7), also possess double courtyards. The presence of an unstratified stove tile depicting the Royal Arms of Henry VIII (Fig 27), provide a glimpse of the sort of sumptuous fittings that once adorned Crosby Place.

The outer courtyard of Crosby Place was entered from Bishopsgate via a gatehouse. This courtyard was surrounded on four sides by principal residential buildings occupied by the owner's family, which included the hall. Further east lay a smaller, inner




*Fig 25. Tortoiseshell spectacle frames <S2> and bone brushes <S3>–<S6> from the backfilling of Structure 15 (scale 1:1)*

courtyard which, unusually for residences of this type, could not be reached directly from the outer court by horses or vehicles (Fig 11); instead, the inner courtyard was entered from the east via the back gate at the end of Crosby Street.

It is probable that the inner courtyard had service buildings such as the bakehouse, stables, store rooms and servants' accommodation (but not perhaps the kitchen) ranged around it. Fieldwork has confirmed that this inner courtyard was an original feature of Crosby Place and fragments of its surfaces were excavated (OA 20, Fig 12; OA 22, Fig 19). The earliest inner courtyard building excavated was part of its western range, represented by a large cellar (B14, Fig 12) which would have provided additional

storage space or cool storage for perishable food stuffs. This cellared building was subsequently extended – more than tripling its size (B14 phase 2, Fig 14) – suggesting that it and the entire adjoining southern range of buildings were intended as warehousing. It is possible this extension was constructed by Sir John Spencer after he acquired Crosby Place in 1594 and refurbished by the East India Company during their occupancy of Crosby Place in 1621–38 (B14 phase 3, Fig 16). There is cartographic evidence that the inner courtyard was entirely surrounded by buildings before 1676 (Fig 15), but this development may have only taken place during the 16th or early 17th century. Part of the southern range of the inner courtyard buildings (B15, Fig 19) was excavated confirming that it was not cellared. It was rebuilt during the later 17th century (B16 phase 1, Fig 21). Subsequent structural additions (S15, B17, B18, Fig 23) all appear to represent the encroachment by buildings into the northern part of the large formal garden (OA21) depicted in 1676 to the south of the inner courtyard (Fig 15). By 1746 according to Rocque's map this formal garden had been completely built over (Hyde 1982, pl 13).

Interestingly, the history of Crosby Place mirrors that of the City of London. When Crosby Place was built in *c.*1466–75 by a wealthy London merchant as his prestigious mansion, London was already England's leading mercantile centre. Until 1621 Crosby Place was occupied by a succession of wealthy merchants, then it was taken over by the East India Company as their headquarters. This trading company, which became a vast multi-national commercial enterprise, was founded on New Year's Day in 1600 by a group of London merchants (Keay 1991, 14). In late 1616 or early 1617 the East India Company leased part of Crosby Place for warehousing (Forster 1913, 108–9). Then in September 1621 the expansionist company directors took over the whole of Crosby Place as their new, much larger and more prestigious head office, which they occupied until their lease expired in 1638 (*ibid*, 111). Subsequently, in 1678 the East India Company again leased part of Crosby Place as warehousing (*ibid*, 139). By this date the City was becoming a leading international centre for commerce and finance. By 1842 the hall at Crosby Place was no longer being used as a warehouse; instead it was converted into a literary and scientific institution and in 1868 it became a restaurant (Norman 1908). Finally, in 1908 the now redundant Crosby Place was replaced by the head office of the Chartered Bank of India, reflecting once again the changing function of the City.

## SPECIALIST CONTRIBUTIONS

The following reports are available from the LAMAS website as a PDF supplementary file with a separate bibliography, figures and tables. The figure and table numbers used in these reports represent a direct continuation of the above sequences.

**Ceramic Building Materials** *Ian M Betts*

**Medieval and Post-Medieval Pottery** *Jacqui Pearce*

**Catalogue of Illustrated Medieval and Post-Medieval Accessioned Finds and Vessel Glass** *Beth Richardson*

**The Animal Bones** *James Morris*

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The excavation of site A was supervised by Ken Pitt, assisted by Hana Lewis, Paul Thrale and Sadie Watson. The excavation of site B was supervised by Christopher Evans, and access to the site archive was provided by staff of the Museum of London

Archaeological Archive. Conservation was undertaken by Dylan Cox and Liz Goodman, site photography by Maggie Cox, studio photography was by Andy Chopping and Edwin Baker. Graphics were prepared by Judit Peresztegi (plans) and Hannah Faux (finds). The project was managed for MOLA by Robin Nielsen (fieldwork) and Julian Hill (post-excavation); †Bruno Barber edited this report for publication. Thanks to Bruce Watson for his comments on an earlier draft of this article, and to Cecilia Levratto Francese, Museum of London Archaeological Collections Manager for providing additional archival information on the finds from cesspit B[197].

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## NOTES

1 This assemblage was not re-examined during this phase of post-excavation; this information is derived from the BOP82 archive.

2 *Sun Insurance Office Ltd policy register, 1834; insured: Robert Hendrie, 12 Titchbourne Street*, Haymarket, perfumer and hair merchant, 7 May 1834, London Metropolitan Archives CLC/B/192/F/001/MS11936/544/1175880).

3 *Science Museum Collections – Edward Scarlet*, https://collection.sciencemuseum.org.uk/people/cp47532/edward-scarlett (accessed 18 February 2022).

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*London and Middlesex Archaeological Society Transactions, 73 (2022), 183–221*

# EXCAVATIONS AT 1–5 BENJAMIN STREET, FARRINGDON, ISLINGTON, EC1: ACTIVITY WITHIN THE OUTER PRECINCT OF THE HOSPITALLER PRIORY OF ST JOHN OF JERUSALEM AND EVIDENCE FOR 'WESTMINSTER' TILE PRODUCTION

*Ian Hogg and Isa Benedetti-Whitton*

*With contributions by Enid Allison, Lucy Allott, Luke Barber, Trista Clifford, Hayley Forsyth-Magee, Emily Johnson, Louise Rayner and Alastair Threlfall*

## SUMMARY

*Archaeological investigations at 1–5 Benjamin Street, Farringdon, located in the south-western corner of the outer precinct of the Hospitaller Priory of St John of Jerusalem, revealed a series of closely spaced 13th- and 14th-century cesspits, which contained significant quantities of well-preserved ceramic building material, including a large amount of medieval 'Westminster' floor tiles. Many of the floor tiles were warped and fused suggesting that they are kiln wasters. The quantity of wasters and kiln debris found suggests that a production site existed close by; potentially it was the kiln discovered in the early 1860s during the construction of the Metropolitan Line. The discovery of waste material and kiln debris within the precinct indicates a clear link between the priory and the local manufacture of floor tiles.*

*After a hiatus of activity during the late 14th to early 15th century, further cesspits were excavated in the late 15th and early 16th centuries, although these were smaller than the earlier examples. This activity had ceased by the mid-16th century. In 1540 as part of the Dissolution the priory was closed and its outer precinct passed into multiple occupancy. By the late 17th century, the site had been completely redeveloped for suburban housing.*

## INTRODUCTION

Between April 2015 and December 2017, Archaeology South-East (UCL Institute of Archaeology) undertook a programme of archaeological investigation at 1–5 Benjamin Street, Farringdon, in the London Borough of Islington (NGR: 531620 181880). The fieldwork was commissioned by RPS Group on behalf of Knight Harwood in advance of the redevelopment of the site (Fig 1). The site is located at the junction between Benjamin Street and Turnmill Street, close to the corner of Cowcross Street and to the east of Farringdon Station. The site was subject to various phases of watching brief and evaluation (Archaeology South-East 2015a; 2015b; 2018), which established the presence of post-medieval structural remains cutting earlier post-medieval deposits, which

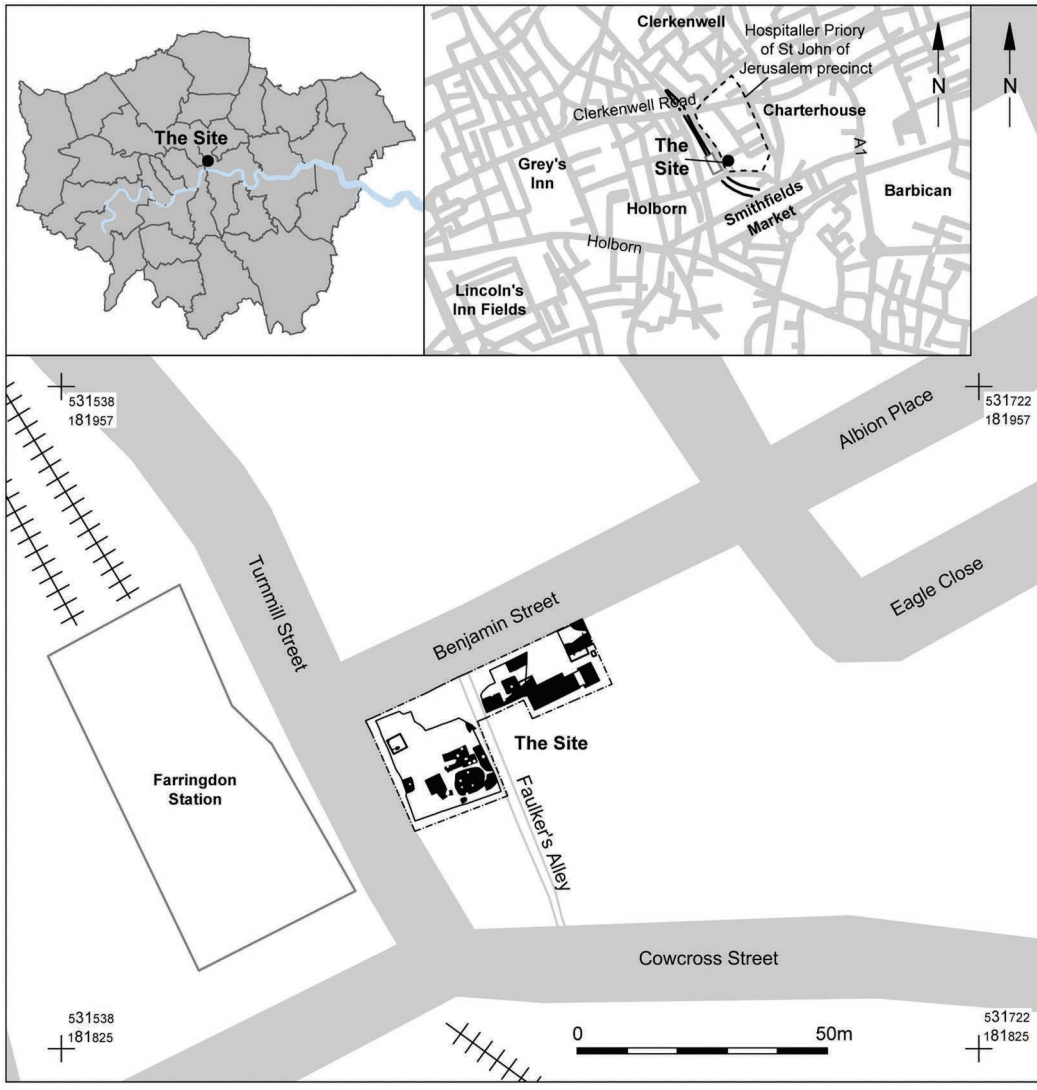



*Fig 1. Site location*

in turn overlay medieval cut features. A watching brief was conducted on obstruction removal during perimeter sheet piling; the site was subsequently reduced for a piling mat to be laid and then piled. The excavation, conducted between September and December 2017, initially involved the removal of the piling mat and ground reduction down to the archaeological horizon.

The Museum of London site code for this project is BJN15. The project archive will be deposited with the Museum of London Archaeological Archive subject to acceptance. In the text and figures selective context numbers appear in square brackets [10] and significant features are identified by their group number: G11. Registered finds are identified by their accession numbers (RF <1>). Environmental samples are denoted by numbers in curly brackets {1}. The usage of medieval and post-medieval pottery codes and medieval and post-medieval ceramic building material fabric codes follows those of the Museum of London.[1]

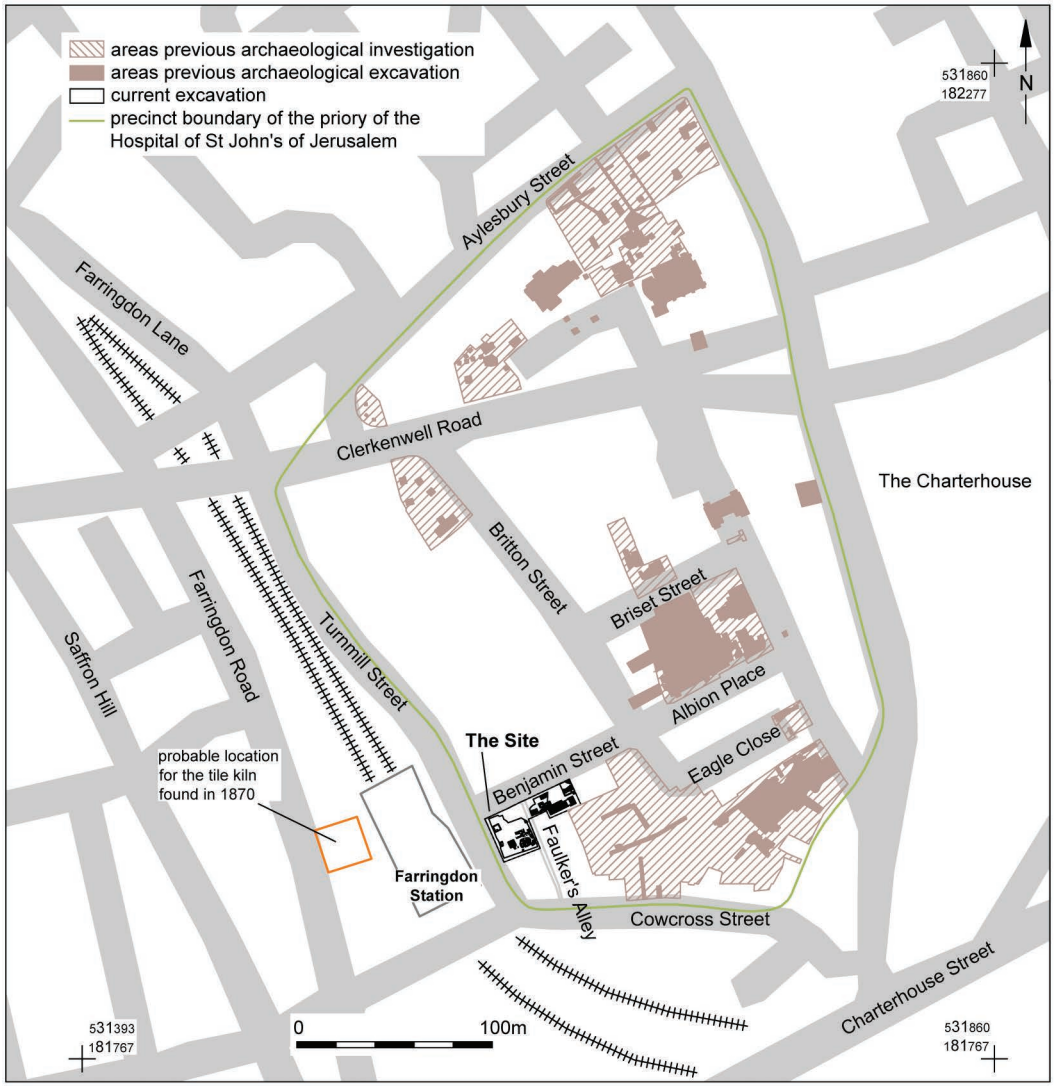



*Fig 2. Location of previous excavations in the area*

## ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

Prehistoric and Roman activity in the vicinity of the site is scarce, although pits and possible ditches of Late Iron Age date were recorded during excavations at the nunnery of St Mary's to the north (Sloane 2013, 20) and Roman quarry pits recorded during excavations to the north-east (Sloane & Malcolm 2004, 20). Possible Saxon inhumations were recorded to the east although the dating of these burials remains tentative (*ibid*, 21–2).

In 1144 the headquarters of the English chapter of the Order of the Hospital of St John of Jerusalem (the Knights Hospitaller) was established in this area of Clerkenwell. This extensive monastic complex, which was known as the Priory of the Order of the Hospital of St John of Jerusalem, has been extensively investigated (Pitt & Bluer 2009; Sloane & Malcolm 2004) (Fig 2). This religious order originated in Jerusalem prior

to the First Crusade, but it was not until the early 12th century that they achieved prominence as one of the military orders active in the Holy Land. The provincial branches of the order gained influence and land through their role in the Crusades, each chapter having an administrative headquarters.

The English headquarters was founded on ten acres granted by Jordan de Bricet, Lord of Clerkenwell Manor (Cockburn *et al* 1969, 194), who also founded the nunnery of St Mary, Clerkenwell just to the north of the priory. Although starting life as a modest, round-naved church, the burgeoning fortunes of the Order in England allowed the construction of a large complex of buildings just south of Aylesbury Street. The Benjamin Street site lies in the south-west corner of the outer priory precinct which was bound by Cowcross Street and Turnmill Street. The priory's growth during the 13th and 14th centuries was due to a combination of factors such as the Knights Templar being abolished in 1312 and absorption of Templar lands by the Hospitallers. During these centuries the priory became an economic as well as religious focal point for the area, with the 'hospital' purchasing property surrounding the precinct and several businesses and industries taking place (Sloane & Malcolm 2004, 203). Evidence for tilemaking has been recorded in the surrounding area, with a tile kiln found in the 19th century at Farringdon Road (Price 1870, 31–6) and at the nunnery of St Mary's, Clerkenwell (Sloane 2013, 160–1).

The priory's growth was checked when it was extensively damaged by fire in 1381 during the 'Peasant's Revolt' (Sloane & Malcolm 2004, 90). This damage took time to repair and the priory was not fully rebuilt until the early 16th century. This second period of prosperity did not last long as the Dissolution led to the priory's demise in 1540; the inner precinct was seized by the Crown while the surrounding properties, including parts of the outer precinct, were sold off (*ibid*, 222–4). However, this appears to have had a negligible effect on many of the crafts taking place there (*ibid*, 274). The main priory buildings were not immediately destroyed and after the death of Henry VIII, Princess Mary was granted the buildings of the inner precinct. Despite this, it appears that the priory church was 'blown up' in 1549–50 (Stow 1908, ii, 84–5), and some of the salvaged material was reused in the construction of Somerset House. Although in April 1557 Queen Mary ordered that the Hospitallers reoccupy the priory as part of her Catholic and monastic revival (Cockburn *et al* 1969, 199), nothing seems to have happened before the accession of Elizabeth in November 1558, when a return to Protestant doctrine ended all attempts to re-establish any monastic houses. Subsequently, the inner precinct was used for the rehearsal of plays (Chambers 1906, 13).

The area of the site is depicted in some detail on the Agas woodcut map of *c.*1561–70. The precinct wall along the eastern side of Turnmill Lane was still standing. There were a few buildings (almost certainly houses) along Cowcross Street and Turnmill Lane, while part of the site was subdivided, by fencing and hedges, into what appear to be garden plots (Prockter & Taylor 1979, pl 5). By 1676 according to Ogilby and Morgan's map (Hyde 1992, pl 12, 13), the entire area of the site was occupied by a dense mosaic of small properties fronting onto the eastern side of Turnmill Street and northern side of Cowcross Street. Access to the numerous properties situated back from the street frontage was provided by a new series of alleyways. One of these, 'Falconers Alley', latterly known as Faulker's Alley, was already in existence by 1676, but its name was recorded until 1682 (Saunders 2013, pl 10). Benjamin Street almost certainly originated as another alleyway and by 1746 it was recorded as a street (Hyde 1982, pl 4).

Although the inner precinct remained relatively intact well into the 17th century, the outer precinct became divided between the wealthy northern portion and the poverty-stricken southern area in which the Benjamin Street site is located (Pinks 1881, 282). Over the following two centuries, the area was extensively developed, with houses lining Benjamin Street, Cowcross Street, Turnmill Street and Faulker's Alley which bisected the site. By the early 19th century, the north-west portion of the site was occupied by the Red Lion Public House, with housing and gardens occupying the rest of it. The area became increasingly industrial

and commercial in character through the 19th century, with warehouses replacing the housing in the eastern portion of the site. Since the demolition of the remaining houses in the 1960s at 1 Benjamin Street, commercial properties occupied the entire site.

## GEOLOGY AND TOPOGRAPHY

The underlying solid geology of the site comprises Eocene London Clay. The top of the truncated London Clay was recorded at 11.21m OD in the east of the site, sloping down to 8.61m OD in the west. No overlying terrace gravels or other drift deposits were encountered due to modern truncation. It has been postulated that the original natural subsoil horizon would have existed locally at between about 11m and 13m OD (Sloane & Malcolm 2006, 19, fig 10). Successive phases of development have largely masked the original topography, although a natural slope from east to west, extending down into the Fleet Valley can still be observed. The modern ground surface stands at around 14m OD in the eastern portion of the site and slopes down to 11.8m OD in the west.

## ARCHAEOLOGICAL SITE SEQUENCE

### *Period 1: Pre-Priory Activity*

One sherd of residual Late Iron Age/early Roman pottery of 1st-century AD date and one fragment of Roman brick were recovered from the excavations (Table 1), but no *in-situ* deposits belonging to these periods were identified. Evidence of Roman activity or stray finds have been discovered on several nearby excavations. The presence of this material can be explained by the close proximity of the Roman city of Londinium (Bluer & Pitt, 2009, 160; Sloane & Malcolm 2006, 20).

### *Period 2: Medieval* c.*1200–1380*

#### *Earliest Cut Features: Cesspits and their Finds*

The first significant phase of activity was dominated by ten large, sub-rectangular cesspits (Fig 3, G2), typically with vertical sides and flat bases and, in some, evidence of a wooden lining was recorded (*eg* [1020]). The pits varied greatly in size, ranging from 1.2m to 6.1m in length, and similarly in

*Table 1. Characterisation of pottery assemblage by period*

| Period | No./weight (g) | Average sherd size (g) | No. of different fabric groups |
|---|---|---|---|
| Late Iron Age/Early Roman (C1st AD) | 1/36 | 36.0 | local – 1 |
| Early medieval (mid-C11th–early C13th) | 8/184 | 23.0 | local – 4 |
| High medieval (C13th–mid-/later C14th) | 74/615 | 8.3 | local – 6<br>regional – 0<br>imported – 0 |
| Late medieval (mid-/later C14th–mid-C16th) | 16/123 | 7.7 | local – 3<br>regional – 0<br>imported –1 |
| Early post-medieval (mid-C16th–mid-C18th) | 69/2251 | 32.6 | local – 10<br>regional – 1<br>imported – 1 |
| Late post-medieval (mid-C18th–mid-C20th) | 4/3826 | 956.5 | local – 1<br>regional – 2<br>imported – 0 |

NB. Totals include all residual/intrusive and unstratified material. Local equates to London area wares (includes Surrey, Essex and Hertfordshire); Regional to other English wares

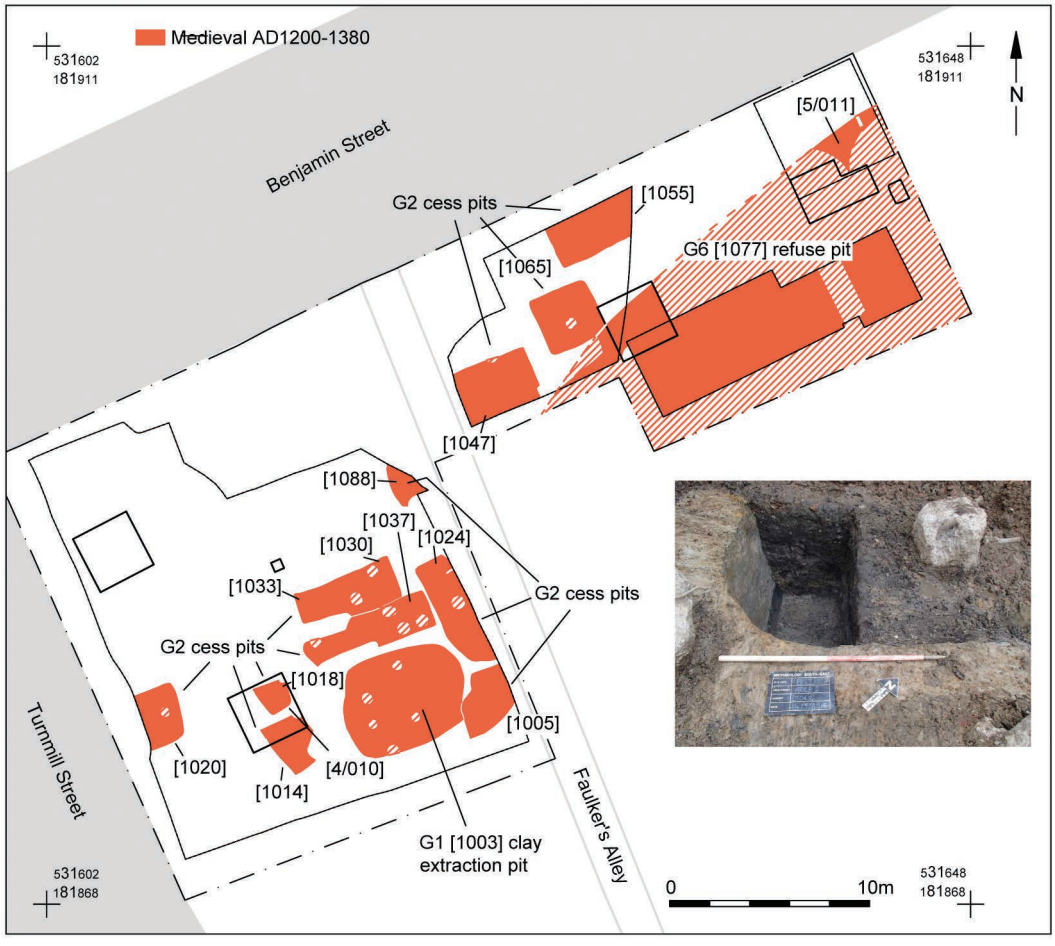



*Fig 3. Period 2:* c.*1200–1380 features*

depth with some as shallow as 0.34m, while another, [1024], was 3.11m deep. This was in part due to the modern truncation across the site but variation in the dimensions was clearly apparent. The pits were located between 10.42m OD towards the eastern end of the site, down to 8.43m OD close to the western perimeter. A degree of planning was evident in the laying out of these pits, as they were all on a similar alignment, often lying extremely close together but never intercutting. Pit [1014] had a posthole at the base, perhaps suggesting that it was covered or its sides revetted in some way. The lower fills of these pits comprised organic-rich deposits, containing mammal and fish bones (with traits such as warping and acidic erosion associated with human digestion, alongside larger bones with evidence of butchery, more typical of domestic waste). Caprines were the most abundant domestic species represented (see below: Johnson), while herring was the dominant fish species (see below: Forsyth-Magee). A wide variety of plant remains were recovered from the lower fills including wild and cultivated fruits and nuts, cereals and weeds (see below: Allott). The insect remains recovered from the lower fills were dominated by taxa found in decomposing organic matter, indicating that this material is likely to have included human faeces, industrial waste, a substantial component of domestic rubbish and some debris derived from inside buildings including bed bugs (see below: Allison).

The upper fills of these cesspits were

largely made up of fragments of ceramic roof and floor tiles mixed with clay; this distinct change in deposition suggests that the upper fills were used to seal the smelly organic material. The material included numerous wasters derived from tile manufacture and provides significant new evidence for the production of 'Westminster' tiles in this area (see below: Benedetti-Whitton; Betts 2002, 10–11).

The pottery recovered from these cesspits is mainly early/mid-13th to mid-14th century in date and the sherds are notably larger and fresher than those from other periods. None of the pits produced more than a few sherds indicating that these features were not primarily used for the disposal of general domestic waste. Coarsewares are dominated by South Hertfordshire greywares (SHER: 25/109g), as well as probable Limpsfield cooking pot sherds (LIMP: 2/136g) and coarse medieval sandy wares (MCS: 5/9g). Jugs are dominated by London-type ware (LOND); these are well decorated with white slip under clear or green glaze, wavy combing and rouletted applied strips. The London jugs are supplemented by plainer types produced from the Kingston (KING) industry (9/34g). The most distinctive vessel was a miniature baluster jug in a quite fine Kingston ware (see P1, Fig 9). Although the general form is well known (Pearce & Vince 1988, figs 83–4) the current example has a pronounced furrow around its girth and splayed base. The quality of the jugs present suggests a degree of prosperity (Barber 2019).

Other finds recovered from these cesspits include: a large antler needle-like implement (RF<1>, Fig 9); two rectangular bone plaques (RF<11>, RF<12>), likely to be bone working waste, all from cesspit [1024]; two leather shoe fragments, one a partial sole from a shoe (RF<8>) from cesspit [1024] and one a clump, or sole repair patch fragment (RF<10>) from cesspit [1014]; which also contained a leather strap (RF<9>). A fragmentary and distorted lathe-turned wooden bowl of birch (*Betula* sp) was recovered from cesspit [1055] (RF<7>, Fig 9) (see below: Clifford & Threlfall). The deposits inside the bowl contained two melon/cucumber seeds (see below: Allott).

Pit [1003] was sub-circular in shape (3.72m diameter and 2.02m depth, height of top, 9.43m OD), but otherwise similar to the other pits; potentially this pit was dug for a different purpose, possibly for clay extraction, before being utilised as a cesspit. Indeed, although it seems likely that the rectangular pits were excavated to be used as cesspits, it is possible the extracted clay was used by local industries, including nearby tile production.

The largest feature from this period was a possible refuse pit in the eastern portion of the site (G6, [1077]). This huge feature was at least 22m long, 2.27m deep, with a maximum height of 10.88m OD; its full extent was not clearly defined within the confines of the excavation. Its northern edge ran on a north-east to south-west alignment, terminating before the start of the western portion of the site. This feature was initially interpreted as a channel or large ditch, but it is similar to a very large refuse pit recorded during archaeological work to the north-east (Sloane & Malcolm 2004, 121). Its lower fills consisted of alluvial deposits, consistent with a damp environment close to the banks of the River Fleet and, given this location, it is possible that the feature was originally dug to extract clay for the manufacture of tiles and then naturally infilled with rainwater and alluvial sediments accumulated in the base. These fills generally comprised dark blue-grey to grey-black silts up to 1.37m thick. Subsequently this feature was used to dispose of organic refuse and gradually infilled. The upper fills were far less organic, comprising sterile brown and orange silts and gravel up to 0.93m thick. Only 10 sherds of pottery were recovered from this feature, which included (SHER) cooking pots (5/40g), one with rectangular club rim, and LOND jugs (5/11g) with just plain clear or green glazes (Barber 2019).

This phase of activity ended abruptly in the late 14th century, potentially as a result of the damage sustained to the priory in 1381 during the Peasant's Revolt and activity was not resumed until the late 15th century.

### *Period 3:* c.*1470–1540*

Despite the length of time that had elapsed, when activity on site resumed it was of a similar nature to what had happened

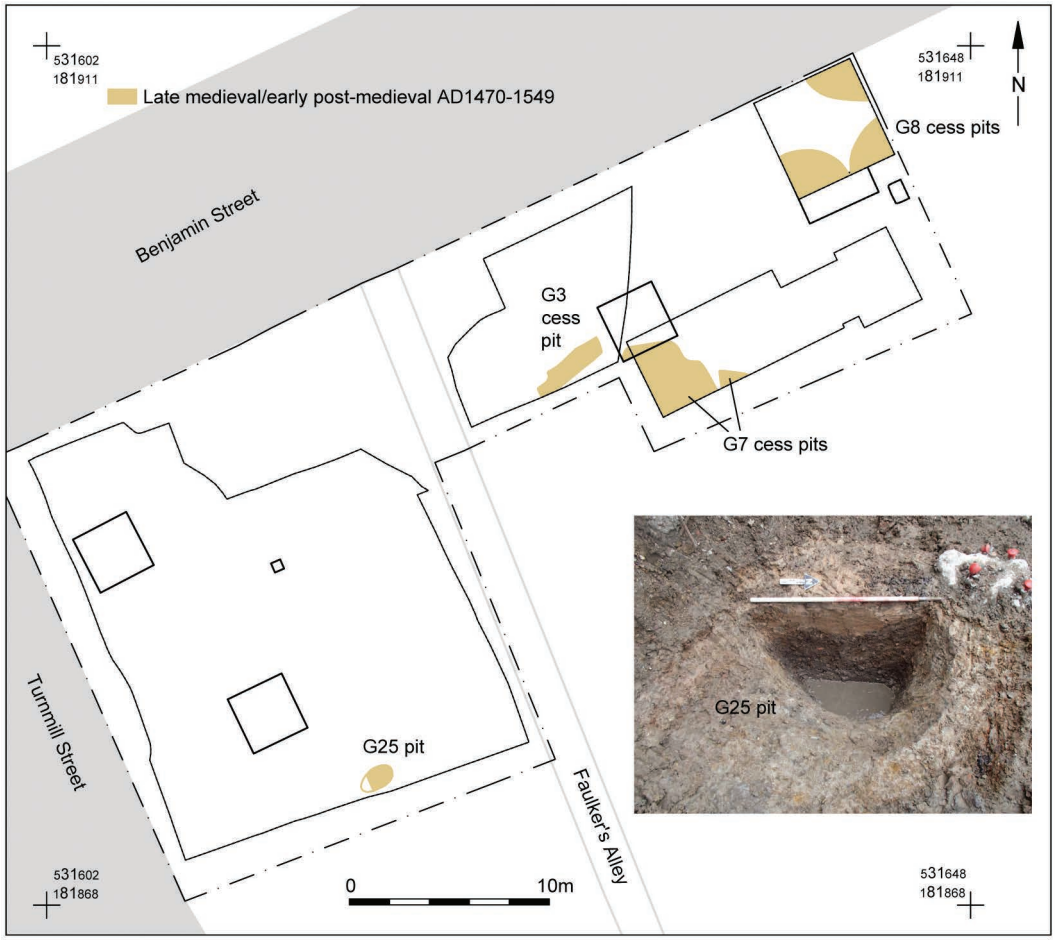



*Fig 4. Period 3:* c.*1470–1549 features*

previously. More cesspits were dug; some were similar in form to their predecessors (G3), but there appears to have been even less uniformity in shape or profile with a greater variety in terms of the presence of both large and small unlined circular or oval shaped pits (G3, G7, G8, G25; Fig 4). These pits varied greatly in depth, again at least in part due to the modern truncation, with some as little as 0.19m in depth and others in excess of 1.20m; this difference resulted in a variation of up to 0.70m in the level of the bases of these features (G7: 10.54m & 9.95m OD). The diversity of these pits compared to their earlier counterparts suggests they were laid out in a more ad hoc way. The primary cesspit fills were generally similar to their predecessors, consisting of organic, dark grey and black clays and silts with upper fills of brown and yellow clay. These fills were not as uniform as those of the earlier pits and the upper fills contained notably less tiles. One of the pits (G25) lay some distance to the south-west of the others (maximum height 9.58m OD), it was small, oval and relatively deep (in excess of 1.20m). It contained some of the most cess-rich fills of any feature on site.

Little pottery was retrieved from the 15th- and 16th-century features, attesting to the relatively low level of activity during this period. The assemblage from this period consists of coarse border ware (CBW), Cheam whiteware (CHEA) and a single sherd of Siegburg stoneware (SIEG). The majority of these sherds were intrusive in earlier medieval deposits or residual in later

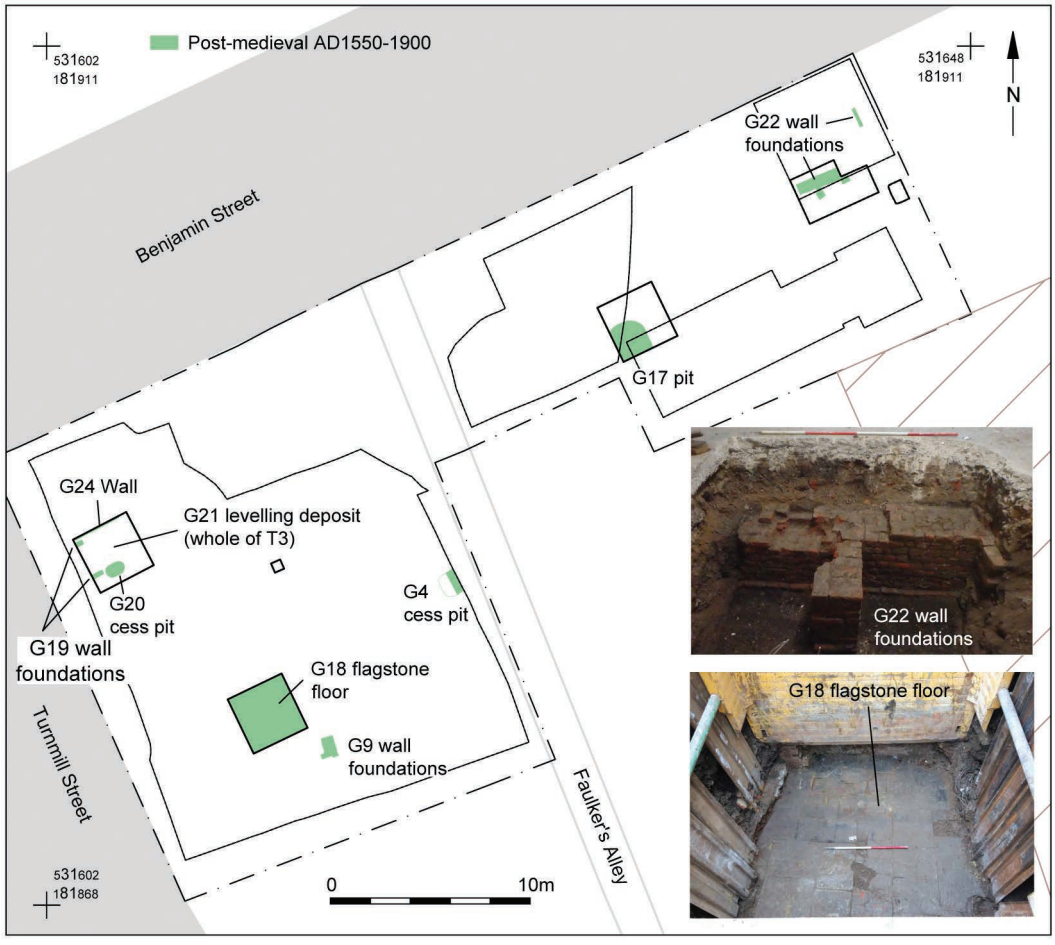



*Fig 5. Period 4:* c.*1550–1900 features*

post-medieval deposits. Just four sherds were from contemporary pits: scraps of CBW and CHEA (from pits in G7) and a 4g sherd from a possible pipkin in London-area early post-medieval redware (PMRE) (from pit G25) (Barber 2019).

### *Period 4:* c.*1540–1900*

After the Dissolution of the priory, the amount of activity in this portion of its former outer precinct appears to have declined; it took some time for the residential redevelopment of the site to begin. Cartographic evidence shows that in *c.*1561–70 the area of the site was occupied by garden plots, but before 1676 it had been completely built over (see above).

Due to the degree of truncation caused by 19th- and 20th-century basements and foundations, as well as the recent ground reduction and piling, there was scant structural survival of the earlier post-medieval buildings on site (Fig 5). The evidence consisted of fragmentary and truncated red brick-built wall foundations and related structures. Discoveries included wall foundations running perpendicular to Turnmill Street, relating to the housing fronting this road (G19). Rectangular, red brick-lined cesspits associated with the housing fronting Turnmill Street (G20) and Faulker's Alley (G4) were also recorded, the dark organic fills contained only residual medieval and early post-medieval pottery and ceramic building material. As part of the redevelopment of the area, attempts

were made to alleviate the prevailing damp ground conditions by raising ground levels through the external dumping of deposits of pale grey silts (G13), observed at 12.31m OD. Finds from these deposits included late 16th- or 17th-century pottery as well as fragments of ceramic floor and roof tiles.

The following centuries witnessed further housing development along the roads surrounding the site; evidence of plots belonging to the housing fronting onto Benjamin Street and Faulker's Alley included an oval external rubbish pit (G17), 1.80m in diameter, 0.50m deep and containing animal bone and mid- to late 17th-century pottery. Dark grey silt garden soil horizons of the same date range were observed in the east of the site; they varied in thickness between 0.40m and 1.50m and were recorded at between 12.53m and 13.01m OD. The 18th century saw some redevelopment of individual house plots with external dumping or levelling of crushed brick and mortar (G5) recorded in the east of the site (at 13.23m OD, with a depth of 0.42m) and a flagstone paved cellar floor (G18) associated with housing fronting onto Turnmill Street. The floor was only investigated during the evaluation, when an area measuring at least 3.00m square was recorded at a height of 9.33m OD; no associated walls were seen. The flagstones sat upon a mottled brown sand bedding deposit containing clay tobacco pipes dated to *c.*1730–80. The cellar was infilled with a 1.80m thick deposit of demolition rubble and silt (G15), containing 19th- and 20th-century material.

Evidence of 19th-century development consisted of the brick-built wall foundations of the buildings fronting onto Benjamin Street (G22, G24) and Turnmill Street (G9), and associated levelling deposits (G21). These truncated walls were constructed of unfrogged bricks in post-Great Fire fabrics laid in English pattern and bonded with lime mortar (not illustrated). In most cases only a few courses of brickwork survived, recorded at heights of between 9.63m OD in the centre of the site and 13.28m OD at its eastern end. The levelling deposits contained ceramic building material and concrete fragments and were observed at a height of 9.63m OD.

The post-medieval pottery assemblage was the largest recovered in terms of weight and dated mainly to the 17th century, primarily from the levelling deposits and garden soils, as well as intrusive material present within the earlier cesspits. Redwares dominated the assemblage; most of the vessel types represented were domestic in function. Imported pottery was represented by Frechen stoneware jugs and bottles (Barber 2019).

## THE 'WESTMINSTER' TILES

*Isa Benedetti-Whitton with Louise Rayner*

### *Introduction*

The archaeological work at 1–5 Benjamin Street produced a large quantity of well-preserved ceramic building material (CBM), totalling 596 hand-collected pieces (weight 67.6kg), and a further 609 fragments (weight 6.1kg) from bulk samples (Table 2). Within the assemblage was an unusually large amount of medieval 'Westminster' floor tiles, dating to the late 13th or early 14th century (Betts 2002, 25).[2] Many of the floor tiles were warped and fused suggesting these were wasters; most were probably derived from a nearby production site.

A 'Westminster' tile kiln has long been known to have existed in the Farrington Road area. It was discovered nearby in the early 1860s during the construction of a railway line (see below) (Fig 2). This kiln was recorded *in situ* by John Edward Price (Price 1870; Betts 2002, 5). The only record of it is the published drawing, so the Benjamin Street assemblage is highly significant in terms of providing tangible evidence for the manufacture of 'Westminster' tiles in this locality. Although previous archaeological work in the area has produced finds of 'Westminster' tiles, including a few 'waster' tiles and some unused examples (Betts 2002, 10), this is the largest assemblage of wasters recovered to date, which alongside several fused stacks of roof tiles that may have formed part of the kiln structure, makes this the first assemblage with a large and indisputable quantity of kiln waste in close proximity to the area where the Farringdon Road tile kiln was located. Over 160 'Westminster' floor tile fragments were collected at 1–5 Benjamin Street, not including material recorded as floor tile wasters. A cursory examination of archaeological reports for the Clerkenwell-Farringdon-Smithfield area has failed to

identify any other sites that come even close to producing so many examples, although there have been occasional finds of tile fragments and wasters.

'Westminster' tiles are named after Westminster Abbey, where a large number of distinctive floor tiles bearing a standard repertoire of emblems remain *in situ* in the Muniment Room. These examples are dated to the late 1250/60s; while those in the Pyx Chamber are believed to be slightly later (Betts 2002, 23–4). Earlier floors laid using 'Westminster' tiles include Lambeth Palace Chapel, *c.*1240/50s, whilst both the Guildhall Chapel and Clifford Hall in the City of London have 'Westminster' tile floors believed to date to *c.*1270/80s (*ibid*, 24). Excavations at Holywell Priory in Shoreditch (Bull *et al* 2011; PCA 2012) uncovered significant stretches of *in-situ* 'Westminster' tile pavement.

### *Methodology*

All material was quantified by form, weight and fabric. Fabrics were identified with a x20 binocular microscope and catalogued using the MOLA fabric codes where possible. In those instances where a MOLA equivalent was unknown, site-specific fabric descriptions were defined using the following conventions: frequency of inclusions as sparse, moderate, common or abundant; the size of inclusions as fine (up to 0.25mm), medium (0.25–0.5mm), coarse (0.5–1.0mm), and very coarse (more than 1.0mm).

Despite the large quantity of 'Westminster' floor tiles present, relatively few examples were of the decorated variety. Where this was possible, the relevant design code has been identified and referenced (Betts 2002). A full breakdown of all CBM collected from Benjamin Street can be found in Table 2;

*Table 2. Quantification of all hand-collected CBM*

| CBM form | Quantity | % of total | Weight (g) | % of total |
|---|---|---|---|---|
| | | *Evaluation* | | |
| Floor tile | 41 | 6.9 | 5695 | 8.4 |
| Roof tile | 92 | 15.4 | 6594 | 9.8 |
| Floor tile waster | 6 | 1.0 | 1430 | 2.1 |
| Other waster | 4 | 0.7 | 829 | 1.2 |
| Brick | 4 | 0.7 | 8238 | 12.2 |
| Brick spall | 4 | 0.7 | 63 | 0.1 |
| Ridge | 2 | 0.3 | 319 | 0.5 |
| Mortar | 1 | 0.2 | 7 | 0.0 |
| ***Subtotal*** | ***154*** | ***25.8*** | ***23,175*** | ***34.3*** |
| | | *Excavation* | | |
| Roof tile | 280 | 47.0 | 18554 | 27.5 |
| Floor tile | 123 | 20.6 | 14736 | 21.8 |
| Floor tile waster | 16 | 2.7 | 7771 | 11.5 |
| Other waster | 10 | 1.7 | 1275 | 1.9 |
| Ridge tile | 6 | 1.0 | 969 | 1.4 |
| Brick | 3 | 0.5 | 589 | 0.9 |
| Roman brick | 1 | 0.2 | 436 | 0.6 |
| Hard core | 1 | 0.2 | 12 | 0.0 |
| Wall tile | 1 | 0.2 | 19 | 0.0 |
| Tile spall | 1 | 0.2 | 29 | 0.0 |
| ***Subtotal*** | ***442*** | ***74.3*** | ***44,390*** | ***65.6*** |
| **Total** | **596** | **100** | **67,565** | **100** |

*Table 3. Fabric descriptions for medieval 'Westminster' floor tiles*

| Fabric | Description |
|---|---|
| FT1 | gritty-looking and micaceous fabric, with scatter of medium quartz and mica flakes, sparse amounts of iron oxide speckle. Some examples with clusters of quartz. MOLA 'Westminster' fabrics 2199 and 2892? |
| FT2 | as FT1 but with lenses of cream silt and sparse calcareous inclusions. Calcareous material also present in moulding sand. |
| FT3 | fine, hard orange fabric with fine mica and few other inclusions. MOLA 'Westminster' fabric 3081? |

for further details see the post-excavation assessment report (Archaeology South-East 2018). Only the 'Westminster' tiles are discussed below.

### *'Westminster' Tiles from Benjamin Street*

#### *Floor Tiles*

Despite the size of the assemblage, the fabrics present were fairly homogenous and typical of a medieval assemblage from London. Three floor tile fabrics were distinguished (Table 3), but it is likely that FT1 and FT2 represent variations of the same fabric. Similar variety has been noted in other 'Westminster' tile assemblages. Betts describes five variations of the 'Westminster' floor tile fabric, at least two of which were present within the current assemblage (Betts 2002, 11).

The floor tile fabrics were very similar to roof tile fabric 2587, a similarity also noted by Betts (*ibid*). The hypothesis that the roof tiles in 2587 and 'Westminster' floor tiles were produced by the same workshop using the same clay source and then fired in the same kilns is supported by the common features that the roof and floor tile fabrics present within this assemblage possess. This hypothesis is further supported by the presence of a number of vitrified and vesicular waster fragments. In several instances pieces of peg tile can be seen adhering to pieces of floor tile, clearly as a consequence of overheating during firing, further suggesting that both the fabric 2587 roof tiles and 'Westminster' floor tiles were fired in the same kilns. A complete ridge tile in fabric 2587 was also recovered (T16, Fig 8).

Only a small quantity of decorated 'Westminster' floor tiles were present in the assemblage, with significantly more examples being plain-glazed. Decorated tiles were produced by creating an impression on the tile surface, which was then filled with white clay slip. When the tile was glazed the design would show up yellow against a shiny brown background.

Within the decorated group, 13 designs were complete enough to be securely identified. The designs represented comprise (Betts 2002): W1, W19–W21, W47, W71, W97, W99, W114, W118, W131, ?W136 and W138. The most complete examples are illustrated (Figs 6–8). Most designs were uniquely represented within the assemblage aside from the fleur-de-lys design W71 for which two examples were identified (T17 & T18, Fig 8).

One tile apparently represents a new tile design, consisting of a ?hunting dog or other heraldic symbol (T3, Fig 6); no tile design incorporating this motif exists in Betts's (2002) catalogue nor in the catalogue of similar looking, but slightly later Penn tiles (Hohler 1942).

Plain-glazed tiles were made in various shades of brown, yellow or green, and this full range is present in the assemblage, including yellow and pale green glaze over slip. On many of the over-fired examples from Benjamin Street the glaze appeared black or otherwise discoloured (T13, T14 & T15, Fig 8). There are also examples of plain-glazed triangular tiles and knife-scored tiles in the assemblage in a range of sizes and glaze colours.

Many over-fired, warped and vitrified examples provide evidence for the presence of one or more kilns, as these traits are typical of manufacturing waste. Floor tiles

with impressions along their edges from being stacked during the firing process (T14 & T15, Fig 8), and examples of floor tile fragments and roof tile fragments fused together are also present (T1, Fig 6; T11, Fig 7).

***Catalogue of Illustrated Tiles***

Data format: Tile no; type (floor or roof); fabric (FT1 etc or MOLA CBM fabric code for roof tiles); description; Betts 2002 design no. (W1 etc); context.

*Pit [1005] (Fig 6)*

T1
Floor tile, vitrified FT2, impressed design with yellow-brown glaze, part of another tile fused to upper surface (stacking scar), buckled/warped, four? branches extending diagonally outwards from centre, within clover-leaf-like frame, ?fleur-de-lys in each corner (complete width 110mm), W97; fill [1004].

T2
Floor tile, FT2, two conjoining pieces, four linear petals interposed with dots (complete width 125mm), W18; fill [1004].

T3
Floor tile, FT2, yellow-brown glaze with damaged surface, partial design featuring a ?hunting dog or heraldic lion, face in profile; fill [1004].

T4
Floor tile, FT1, yellow-brown glaze; two fragments probably from same tile though no direct join, showing wings and tail of dragon, W20; fill [1004].

*Pit [1014] (Fig 6)*

T5
Floor tile, highly vitrified, four branches of ?foliage extending diagonally from centre to each corner of the tile (complete width 110mm), W99; fill [1011].

T6
Floor tile, FT1, yellow-brown glaze; bottom right-hand corner with back legs of horse, W1; fill [1011].

*Pit [1018] (Fig 7)*

T7
Floor tile, vitrified FT1, yellow-brown glaze with surface spall, two concentric circles with central dot and additional dots in each corner, W138; fill [1017].

T8
Floor tile, vitrified FT2, green and dark green glaze; impressed with fleur-de-lys/floral design coming from corners and central motif which appears to be larger version of the same but is not complete or very clear (incomplete width 125mm), this fragment is similar to other incomplete examples W110/W111; fill [1043].

*Pit [1030] (Fig 7)*

T9
Floor tile, FT1, impressed design of stag with yellow-brown glaze, identified by Betts as a small-size tile design representing a hunting forest scene; this example is a smaller size tile (complete width 105mm), W19; fill [1031].

T10
Floor tile, vitrified FT1, yellow-brown glaze with damaged surface upper (roughly circular shaped scar), only part of the decorated design survives but appears to be W136 (complete width 107mm); fill [1031].

T11
Roof tile, 2586/87, fused stack of three roof tile fragments, scars from other tiles in glaze; fill [1031].

*Pit [1033] (Fig 8)*

T12
Floor tile, FT2, yellow/brown glaze with some damage, approximately half a tile, slightly warped/buckled surface, rose set within an ornate roundel (complete width 110mm), W131; fill [1032].

T13
Floor tile, vitrified FT1, dark green glaze, air bloated and cracked (max complete width 140mm); fill [1032].

T14
Floor tile, vitrified FT1, dark glaze, air bloated with series of fused tile stacking scars on front and back surfaces; fill [1032].

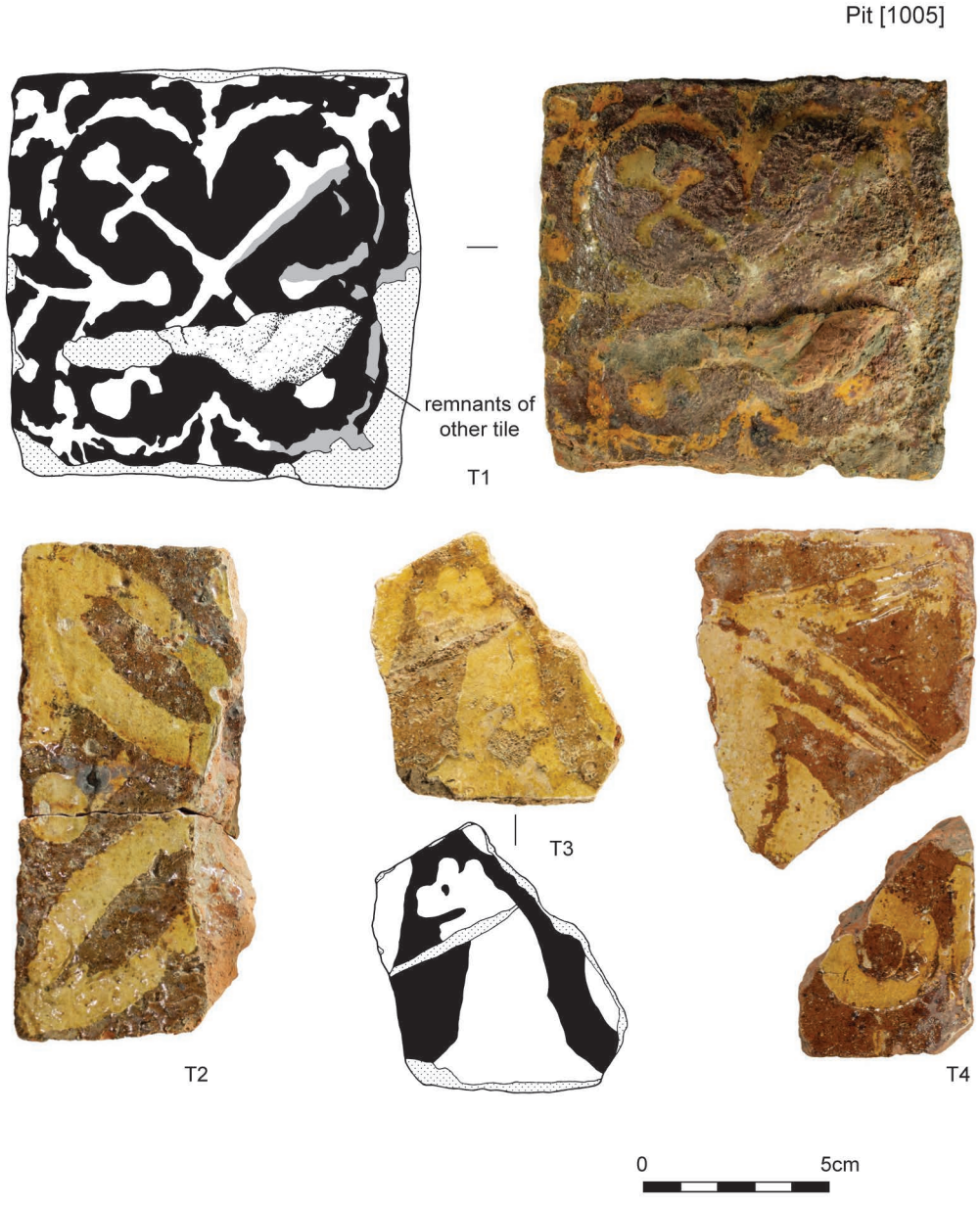
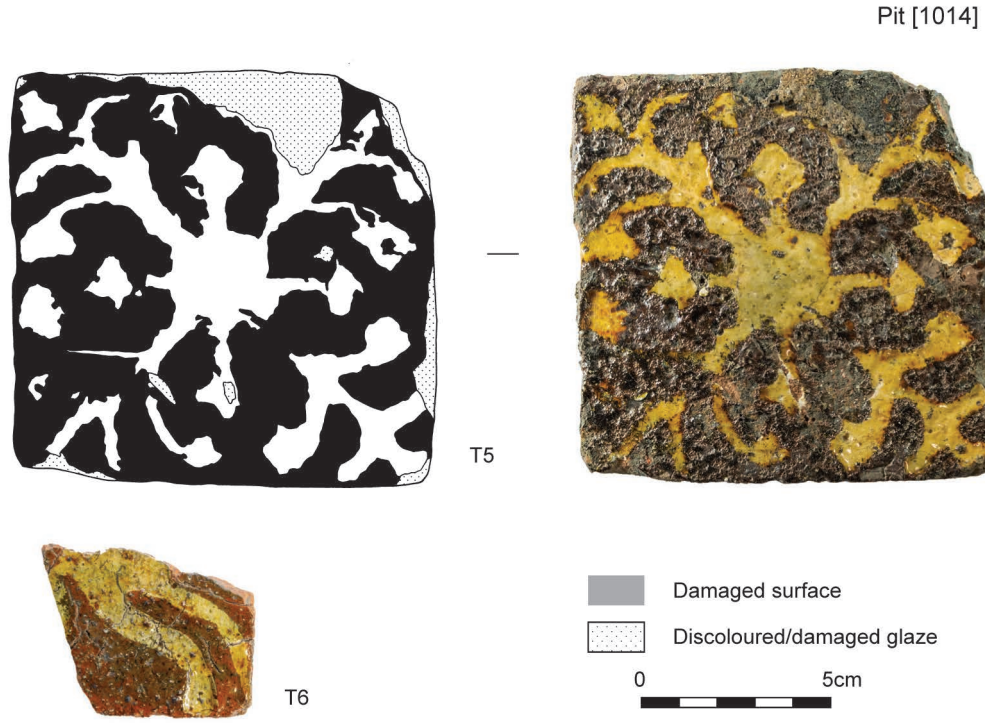



*Fig 6. Selected tiles from pit [1005] and (opposite) pit [1014]*




*Pit [1037] (Fig 8)*

T15
Floor tile, vitrified FT1, dark glaze, air bloated with fused tile stacking scars on front and back surfaces and edges; fill [1036].

*Pit [4/010] (Fig 8)*

T16
Roof tile, 2587, small fragment of ridge tile with splashes of greenish glaze, 1x round nail hole; fill [4/009].

T17
Floor tile, FT1, impressed design with yellow-brown glaze, simple fleur-de-lys, set diagonally (complete width 102mm), W71; fill [4/009].

*Pit [5/011] (Fig 8)*

T18
Floor tile, FT1/2, corner fragment, lower part of fleur-de-lys set diagonally (incomplete width 100mm), W71; fill [5/010].

T19
Floor tile, FT1, unglazed tile with white slip decoration, outline of stamp impression of a quadruped (possibly a lion) with a back leg, tail and front claw visible, large spalling scar in centre of tile (complete width 140mm), W21; fill [5/010].

### *Distribution*

With few exceptions, nearly all of the CBM was recovered from the upper fills of the period 2 cesspits. The amount of CBM recovered from the pits varied considerably; some examples located in the western part of the site produced large amounts. Pits with the largest assemblages included: [4/010] (43 frags/4569g); [1005] (22/5488g); [1014] (193/9581g); [1037] (34/4930g); [1033] (46/8621g); and in the eastern area from pit [1065] (49/6700g). The distribution of the assemblage suggests regular, successive discarding of waste material over a period of time, whilst the kiln or kilns were in use. It is possible that tile production was carried out locally on an intermittent basis for

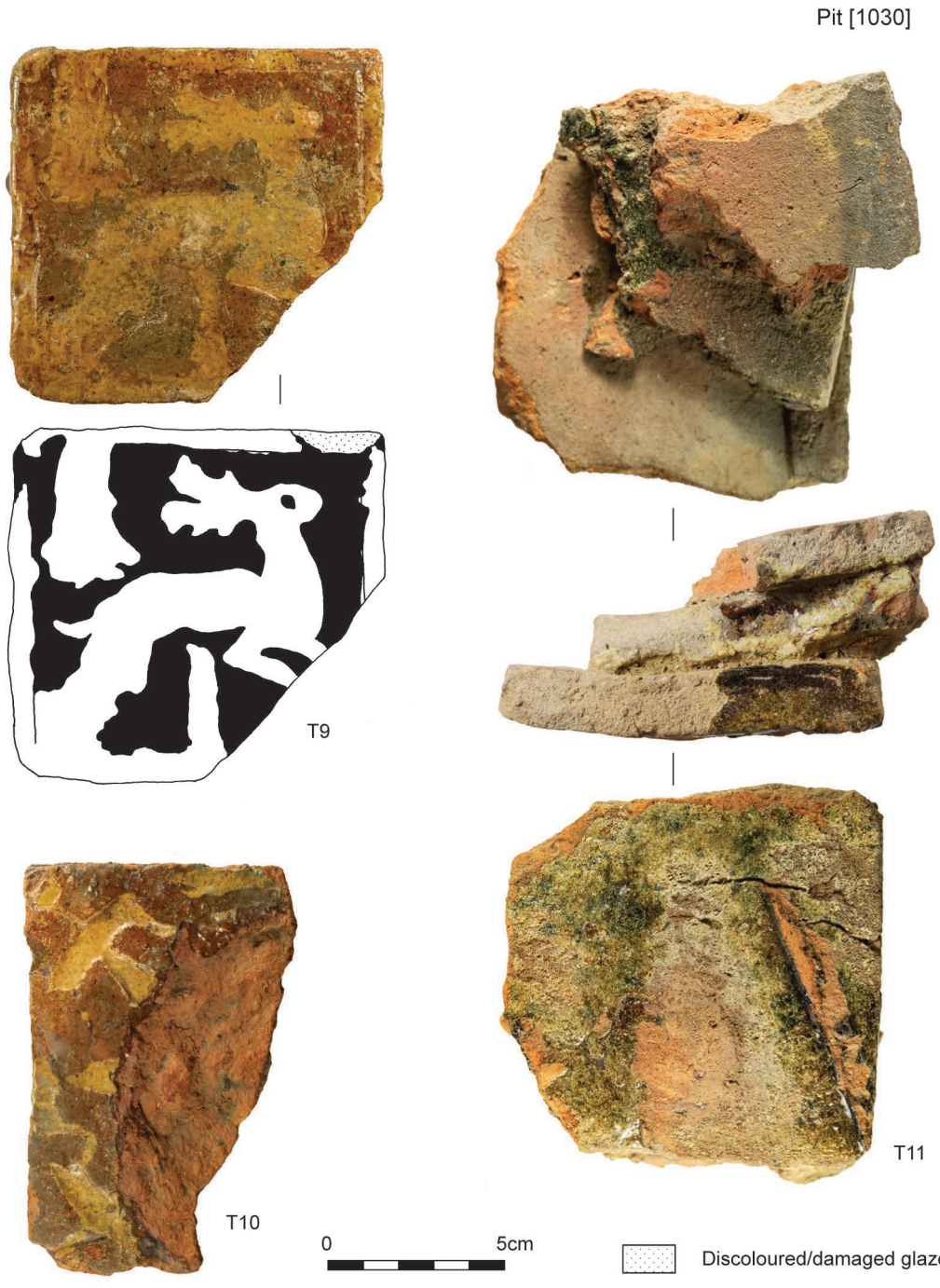



*Fig 7. Selected tiles from pit [1030] and (opposite) pit [1018]*




some years. Each pit assemblage contains a mixture of discarded floor tiles, warped wasters and roof tile. It is possible that the roof tiles were also produced at the same kiln, and/or were used in the structure of the tile kilns. Fragments of vitrified roof tile and stacks fused by glaze were present in several features (*eg* T11, Fig 7).

### *The Location of the Lost Tile Kiln at Farringdon Road Reconsidered*

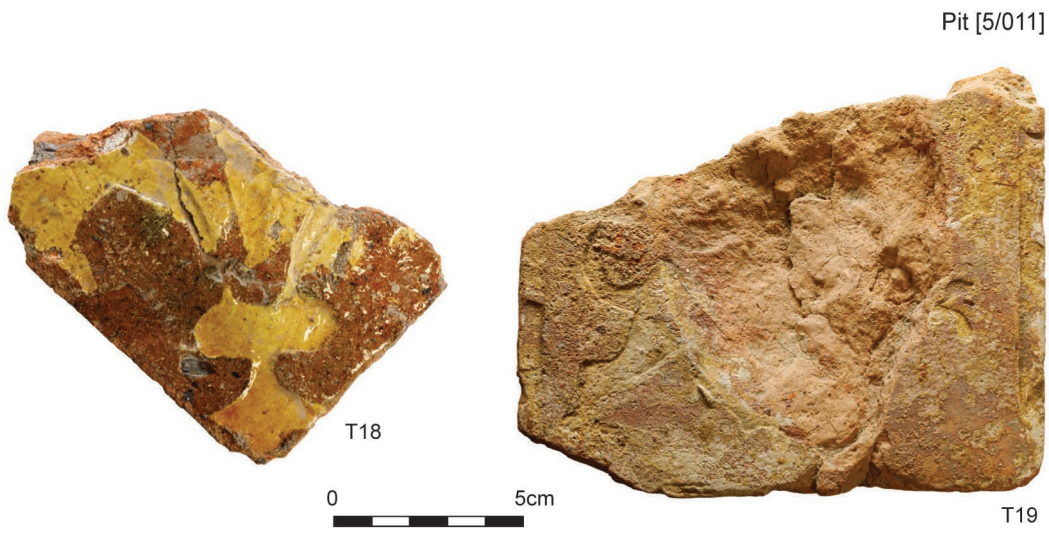
The large number of 'Westminster' tile floors discovered across London strongly suggest a London-based manufacture site, as do several of the most common 'Westminster' tile fabric types. These fabrics have been discussed at length (Betts 2002, 11), and the similarity between the fabric of the 'Westminster' tile and the common London roof tile fabric MOLA 2587 was also noted during the post-excavation assessment of Benjamin Street (Archaeology South-East 2018). The exact dates for the production of 'Westminster' tiles remains unclear, in part due to the lack of excavated kiln(s) that could be subjected to scientific dating methods, but it is believed to have started in *c.*1250–60 and finished during the early 14th century (Betts 2002, 25).

There is general consensus that the tile kiln discovered in the early 1860s at Farringdon (Price 1870), was producing 'Westminster' tile (Betts 2002, 10–11; Bull *et al* 2011, 150). This kiln was discovered during the construction of the Metropolitan Railway from Paddington to Farringdon Street (construction started in 1860 and the new line opened in January 1863), and although Price (1870, 31) describes the location of the kiln as 'close to the Farringdon Street station, and occupies a portion of the site of Bowling Street, Peter Street …', its precise location remains unclear as the two streets he mentions (Bowling Street and Peter Street) no longer exist. It should also be noted that the original location of Farringdon Station terminus (1863–5) was slightly different to its present one, as it moved in 1865 when the Metropolitan Line was extended to Moorgate. The other information provided by Price that remains pertinent is that 'the kiln … is some 14 feet from the surface level of Turnmill Street' (*ibid*, 31).

Unlike the other now defunct street names mentioned by Price, Turnmill Street does still exist, and can be used as a reference point on historic maps. The 1799 Horwood plan of London shows Peter Street running between Turnmill Street and Saffron Hill, just to the south of the turning for Benjamin Street (see below: Cartographic Sources). Bowling Street is not recorded, but Bowling Alley lies just to the north and may be relevant, implying that Bowling Street represents an error made by Price. An 1857 map of




*Fig 8. Selected tiles from pit [1033], pit [1037], pit [4/010] and (opposite) pit [5/011]*




London still shows Peter Street but by 1862 it has gone, although St Peter's Church sits on the corner of Cross Street and Saffron Hill within a block with a short stretch of unnamed road to the south, which might be the surviving remnants of Peter Street. By 1868 much of this area is occupied by Farringdon Street station and the layout of the area has changed considerably. Despite the changing topography, map regression has established the most probable location for the Farringdon 'Westminster' tile kiln, which is shown on Figure 2. The present Farringdon Station (built in 1865) lies to the east of the road it is named after, and immediately beyond this (to the north-east) is 1–5 Benjamin Street, where the deposits containing significant quantities of 'Westminster' tile and wasters were uncovered. Interestingly, a watching brief conducted only a little further to the north-east, at 6–9 Benjamin Street, recorded no archaeological deposits and only 19th- and 20th-century basements (MoLAS 1999), which are likely to have removed any earlier deposits and the relevant evidence for tile production.

Other excavations within the vicinity of Benjamin Street have also produced fragments of 'Westminster' tile. The most significant finds are the decorated tile groups from: Wendel House; 13–21 West Smithfield and 22–29 Hosier Lane (WSI97); King Edward Buildings (GPO site) and Newgate Street (KEW98); and 96–100 Clerkenwell Road (TCR96) (Betts 2002, 67–8). Well-preserved groups were collected from both the Wendel House and King Edward Building sites, amongst which many 'Westminster' motifs were identified. The 96–100 Clerkenwell tile group was considerably smaller and less well-preserved, but is almost of greater significance as, of the four pieces of tile collected, none showed any sign of use and two appeared to be wasters (Smith & Betts 1997). At the time of the 99–100 Clerkenwell Road excavation, these two wasters and two seemingly unused tiles were described as 'the first time that evidence of 'Westminster' tile manufacture [had] been found in the Farringdon-Clerkenwell area' (*ibid*). As there were no discernible designs present on the tiles and two were so warped, there was a degree of uncertainty as to whether these tiles were definitely from the Farringdon Road kiln, or whether the tiles might have come from the nunnery of St Mary's Clerkenwell, which is known to have produced roof tiles during 1350–1480.

The large quantity and character of the 'Westminster' tiles and wasters recovered from 1–5 Benjamin Street removes any uncertainty about the presence of kiln waste in this locality. In addition to the 'Westminster' tiles, there were many examples of roof tiles fused together with glaze (T11, Fig 7). Similar stacks of heat-bonded roof tiles 'covered with

a highly vitreous glaze' are described by Price (1870, 33).

The medieval tile industry has been discussed at greater length elsewhere (*eg* Stopford 1992; Drury 1981), and it is not a primary concern of this report other than to consider how the Farringdon Road kiln relates to the postulated models of organisation (Stopford 1992). The proximity of this kiln to several ecclesiastical buildings, including St John's to the north and the priory of St Bartholomew to the south, suggests a link with one or more of these religious establishments. Kilns providing 'in-house' tile manufacture for religious buildings have been identified at several ecclesiastical sites including Norton Priory in Cheshire, Chertsey Abbey in Surrey, and Melrose Abbey on the Scottish Borders (Stopford 1992, 348; Anderson 2013, 249). Price also made this connection, noting that in 1843, during redevelopment of a site at Cloth Fair, within the former precinct of St Bartholomew's Priory

> many glazed tiles of early workmanship were found … similar to those from the kiln … giving additional weight to the conjecture that, the kiln being situated so near the priory, and in equal proximity to that of St. John's Clerkenwell, it may … have been employed in the manufacture of decorative tiles for both these places. (Price 1870, 35–6)

However, despite there being examples of the finished 'Westminster' tiles at the church of St Bartholomew-the-Great, and both St Mary's and St John's Clerkenwell, an 'in-house' model for tile production does not fit, as 'Westminster' tiles were used at so many other religious establishments and produced at other sites besides Farringdon (Betts 2002, 12–15). Nor is there any apparent correlation between the presence of 'Westminster' tiles and religious buildings attached to a particular religious order. The three monastic houses mentioned above all belonged to the Augustinian Order, but 'Westminster' tiles have also been found in buildings belonging to the Carthusians and Cistercians amongst others, as well occasionally at secular buildings, for example Edward III's residence at Rotherhithe (*ibid*, 62–5).

The production incentive for the 'Westminster' tile industry therefore would appear to be commercial in nature, although the exact nature of the enterprise remains unclear. Betts (2002, 12–13) has suggested the existence of a number of possible production sites across several counties, but none of these examples have a recorded kiln site, so it is only inferred from the fabric types that these tiles are of local manufacture. 'Westminster'-type tiles have even been found in large numbers as far north as the Scottish borders; although in terms of form there is some variation, the designs for the most part correspond to those defined by Betts, suggesting either knowledge or exposure to the established repertoire of 'Westminster' designs (Anderson 2013).

The precise economic model for the manufacture of 'Westminster' tile remains unclear. The distribution of 'Westminster'-type tiles across the rest of Britain suggests a combined production model, with an established kiln site (or sites) in London and a number of satellite production sites elsewhere, where tilers experienced in the manufacture of 'Westminster' tiles travelled or established themselves on a temporary basis in order to fulfil the needs of their local customers. Betts makes a similar hypothesis when he asserts that the 'Westminster' tiles found in the Midlands were almost certainly 'made by the same tilemakers who worked in London' (Betts 2002, 12). This 'franchise' or satellite model is further supported by the fact that the 'Westminster'-type tiles found at Melrose Abbey appear to have been made locally, suggesting that tilers with an awareness of 'Westminster' tile travelled north to create a similar product for an abbey client.

Despite their ubiquity, 'Westminster' tiles still pose questions that are yet to be satisfactorily answered. However, the floor tile assemblage from 1–5 Benjamin Street, in conjunction with Price's (1870) account of the discovery of kiln in the early 1860s, provide definitive evidence for one secure production site for 'Westminster' tiles.

*Table 4. Animal bone assemblage by period showing total fragment count (N), the number of identifiable specimens (NISP) and the proportion of bones displaying varying preservation levels*

| | | | Preservation % | | |
|---|---|---|---|---|---|
| **Period** | **N** | **NISP** | **Poor** | **Moderate** | **Good** |
| 2 | 2007 | 796 | 0.1 | 17.3 | 82.7 |
| 3 | 697 | 68 | 0 | 80.3 | 19.7 |
| 4 | 29 | 21 | 0 | 67.9 | 32.1 |
| **Total** | **2733** | **885** | **0.0** | **33.9** | **66.1** |

## SPECIALIST REPORTS

### *The Animal Bones*

*Emily Johnson*

An assemblage of 2,733 animal bones weighing approximately 2076g in total was analysed. The material was derived from both hand-collected and bulk-sampled contexts, with bones from samples particularly well-represented in this assemblage. The majority of the assemblage was derived from 13th–14th-century (Period 2) features, with 15th–16th-century (Period 3) material also well-represented (Table 4). The preservation of the assemblage was generally very good. The bones were almost universally stained dark brown to black, which made identification of burning particularly problematic. Material recovered from the bulk samples was heavily fragmented.

A total of 83 specimens were fully identified to taxa and element, and a further 802 to taxa type or size (Table 5). The assemblage was dominated by fish bones (n[umber represented]=658), the taxa of which are discussed below. Of the domestic mammals, cattle were the best represented (n=28), followed by caprines (n=27, including both sheep and goats), and pig (n=11). Dog was also minimally represented (n=1). Bird bones were likewise relatively common in the assemblage (n=33), including domestic fowls, ducks and geese, but also some indeterminate smaller birds. Small mammals were fairly well represented (n=27), including rabbits (n=2), and small rodents such as rat (n=1) and mouse (n=1). The abundance of fish, avian and small mammal bones attests to the excellent preservation and sampling strategy.

*Table 5. Taxa abundance in the overall and phased assemblages by NISP*

| | | Period | | |
|---|---|---|---|---|
| **Taxa** | **NISP** | **2** | **3** | **4** |
| Cattle | 28 | 15 | 4 | 9 |
| Caprine | 19 | 15 | 3 | 1 |
| Sheep | 5 | 3 | 0 | 2 |
| Goat | 3 | 3 | 0 | 0 |
| Pig | 11 | 7 | 0 | 4 |
| Dog | 1 | 1 | 0 | 0 |
| Rabbit | 2 | 2 | 0 | 0 |
| Rat sp | 1 | 1 | 0 | 0 |
| Mouse sp | 1 | 0 | 1 | 0 |
| Chicken | 6 | 6 | 0 | 0 |
| cf Chicken | 1 | 1 | 0 | 0 |
| Duck sp | 4 | 4 | 0 | 0 |
| Goose sp | 1 | 1 | 0 | 0 |
| Large mammal | 38 | 33 | 3 | 2 |
| Medium mammal | 51 | 38 | 10 | 3 |
| Small mammal | 23 | 16 | 7 | 0 |
| Bird | 31 | 30 | 1 | 0 |
| Small bird | 1 | 0 | 1 | 0 |
| Fish | 658 | 620 | 38 | 0 |
| Indeterminate | 1848 | 1211 | 629 | 8 |
| **Total** | **2733** | **2007** | **697** | **29** |

#### *Period 2: 13th–14th Century*

Material belonging to this period was largely recovered from the G2 cesspits (n=1488) and the G6 [1077] refuse pit (n=466). Fish bones were particularly abundant, but birds and small mammals were also relatively

well-represented. Caprines were the most abundant domestic species, followed by cattle and pigs, while domestic birds including domestic fowl, geese and ducks were represented.

Cattle bones were largely represented by cranial material such as large skull fragments, mandibular fragments, teeth and one atlas fragment. Other elements represented were all parts of the distal limbs, including distal tibia and metapodia. Of these postcranial elements, two metapodia and one distal tibia were fused and a further distal tibia was unfused. One permanent mandibular third molar showed evidence of linear enamel hypoplasia, suggesting periods of poor nutrition during growth. One whole metacarpal was measured (von den Driesch 1976) which gave a greatest length of 189mm, and therefore a calculated height at withers of 1157.6mm (Fock 1966).

Specimens identified as caprine were represented by elements of the whole skeleton, including cranial material, long bones such as scapulae, humeri and femora, and extremities. Of seven specimens suitable for epiphyseal fusion ageing, six were fully fused, including late-fusing bones such as the femur and calcaneum (Silver 1969). Four caprine mandibles were ageable through eruption and attrition sequences, giving ages of 1–2 and 2–3 years old for sheep, and 2–3 and 6–8 years for goats (Payne 1973). This brief analysis of caprine slaughter suggests that some animals lived to fusion maturity, *ie* 2.5–3.5 years old and beyond (Silver 1969), whilst others were slaughtered earlier. The 2–3 years old goat mandible showed evidence of ante-mortem tooth loss. A further caprine maxilla presented with malocclusion of the first permanent molar. Evidence of butchery with both knives and cleavers was identified on caprine bones in this period, particularly evident on a sheep horn core with heavy chopping to separate it from the cranium.

Bones identified as pig were represented by cranial material, long bones and the extremities. All bones suitable for fusion analysis were unfused (n=4), including the early-fusing pelvis (<1 year old; Silver 1969). This suggests that young pigs were often consumed before they were one year old. One pig canine was identified as female.

Domestic dogs were represented by one whole cranium in the G2 cesspits, but no other dog remains were present, suggesting that this wasn't part of a complete animal burial. The skull was small, with a maximum length of 143.5 mm from akrokanion to prosthion and a maximum width of 85.1mm (Von den Dreisch 1976), giving a cephalic index of 59.3. This characterises this animal as dolichocephalic, or long-headed (Helton 2009). The cranium showed two depressed fractures above the left orbit and on the left nasal bone; these are likely to be evidence of post-mortem taphonomic damage, perhaps caused by compaction, which affected some fish vertebrae.

### *Period 3: Late 15th–16th Century*

Material from this period was all derived from the G7 cesspits, almost entirely represented by material from sample <19>. Fish were again particularly well represented, and small mammals and birds were present, although not in such large quantities as in period 2. One mouse specimen was identifiable in the small mammals, but no identifications of bird taxa were attempted. A mixture of human excrement and kitchen refuse may be present based on the presence of highly fragmented indeterminate material and fish bones, in addition to larger specimens unlikely to have passed through the human digestive system.

### *Discussion*

Despite the relatively small number of identifiable specimens in the faunal assemblage, it still has implications for diet and deposition practices, particularly in the 13th–14th-century assemblage.

The animal bone assemblage supports the interpretation of these features as cesspits. Signatures of digested materials are more abundant in lower fills, including fish bones, some of which show characteristic warping that experimental archaeology has shown can be caused by human digestion (Butler & Schroeder 1998), and very small indeterminate fragments, some of which had acidic erosion, again associated with human digestion.

However, even in the lower fills there is some material which cannot be representative

solely of human excrement. Large bone specimens, often identifiable to species and showing evidence of butchery, most likely represent the deposition of domestic waste. This mixture of waste sources has been identified at both Winchester Palace (Rielly 2006; Smith 2013) and Worcester, where fish bones were found alongside larger fragments of chicken bones that could not possibly have been swallowed or digested by humans (Grieg 1981, 275). As well as the more casual deposition of small amounts of domestic rubbish during the lifetime of the cesspit, it is quite possible that when these features became foul smelling or 'soured' they became convenient receptacles for the disposal of household waste, and indeed were often filled in with any available rubbish or the upcast of the replacement pit dug nearby (Evans 2010). This practice is reflected in the assemblage from Benjamin Street, as it is often the upper fills of cesspits that have the more abundant signatures of domestic waste.

These cesspits also provide an indication of diet. The taphonomic signature for digested material gives direct evidence for the consumption of fish, the taxa of which are discussed below. The assemblage also indicates the consumption of cattle, caprines, and pigs, perhaps most likely by the occupants of the priory. Hospitaller priories provided travellers and the sick that they accommodated with meat (Phillips 2009, 8), so the presence of these species is not unexpected.

### *The Fish Bones*

*Hayley Forsyth-Magee*

The site produced a moderately sized assemblage of 609 fish bones, retrieved from 11 contexts of medieval date (Table 6). The majority of the assemblage, consisting of 573 specimens, derives from the period 2 cesspits (G1, G2). A small quantity of fish bones were also retrieved from a period 3 (G7) cesspit.

The assemblage was recovered from wet-sieved bulk samples and is in a moderate state of preservation. The fish bones have suffered a degree of fragmentation and abrasion, in part due to the fragility of certain elements such as cranial bones and the size of the species represented. The assemblage is somewhat biased towards the more robust vertebral elements of herring and cod.

A range of marine, migratory and estuarine fish were identified from the assemblage. The

*Table 6. Fish Bone NISP (Number of Identifiable Specimen) counts by Period*

| | Period | |
|---|---|---|
| **Taxa** | **2** | **3** |
| Clupidae (herring family) | 1 | - |
| *Clupea harrengus* (herring) | 62 | 4 |
| *Osmerus eperlanus* (smelt) | 2 | - |
| *Anguilla anguilla* (eel) | 19 | 1 |
| Gadidae (cod family) | 17 | 1 |
| *Gadus morhua* (cod) | 31 | 1 |
| *Melanogrammus aeglefinus* (haddock) | 2 | - |
| Pleuronectidae (flatfish family; plaice/flounder) | 7 | 3 |
| *Pleuronectes platessa* (plaice) | 1 | - |
| *Chelidonichthys lucerna* (gurnard (tub)) | 4 | |
| Rajidae (ray family) | 6 | 1 |
| Cyprinidae (carp family) | 2 | |
| Fish | 419 | 25 |
| **Total** | **573** | **36** |

*Table 7. Fish skeletal element representation for Periods 2 and 3*

| | Cranial | | | | | | | | Appendicular | | | Axial | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Taxa** | **Dentary** | **Quadrate** | **Premaxilla** | **Frontal** | **Cranial Frag.** | **Branchiostegals** | **Ceratohyal** | **Epihyal** | **Cleithrum** | **Postcleithrum** | **Supracleithrum** | **Vertebra** | **Vertebra (Precaudal)** | **Vertebra (Caudal)** | **Buckler Spine** | **Postcranial Frag.** | **Fragments Indeterm.** |
| Clupidae | | | | | | | | | | | | 1 | | | | | |
| Herring | | 1 | | | | | | | | | | 58 | | 7 | | | |
| Smelt | | | | | | | | | | | | 2 | | | | | |
| Eel | | | | | | | | | | | | 15 | 5 | | | | |
| Gadidae | | | 1 | | | 7 | 1 | | | | | 4 | 3 | 2 | | | |
| Cod | | | 1 | | | | 1 | 1 | 1 | 1 | 2 | 9 | 5 | 11 | | | |
| Haddock | | | | | | | | | | | | 2 | | | | | |
| Flatfish | 1 | | | | | | | | | | | 9 | | | | | |
| Plaice | | | 1 | | | | | | | | | | | | | | |
| Gurnard (Tub) | | | | 4 | | | | | | | | | | | | | |
| Ray | | | | | | | | | | | | | | | 7 | | |
| Cyprinidae | | | | | | | | | | | | 2 | | | | | |
| Fish | | | | | 336 | | 1 | | | | | 13 | | | | 85 | 9 |
| **Total** | **1** | **1** | **3** | **4** | **336** | **7** | **3** | **1** | **1** | **1** | **2** | **115** | **13** | **20** | **7** | **85** | **9** |

species of fish most commonly represented consist of herring (Table 7). Moderate quantities of cod, Gadidae family and eel bones were also recovered. Smaller quantities of flatfishes, ray, gurnard, haddock, smelt, Cyprinidae and plaice were also present.

Bone robustness, preservation, taphonomic processes and recovery methods can explain the disparity between the numbers of cranial elements retrieved compared to vertebral elements. Vertebral centra are much more likely to survive intact through archaeological processing than the delicate cranial elements due to their robust morphology. Taphonomic processes such as digestion, bioturbation, trampling underfoot, animal scavenging and burial conditions all have an effect on the presence and absence of the recovery of various types of fish bones from the bulk samples.

*Discussion*

The species present are comparable to the popular species of herring, cod, Gadidae species and eel recovered from other medieval sites in England (Serjeantson & Woolgar 2006, 106–7; Holmes 2017, 91–4). An abundance of these species is particularly common at ecclesiastical sites (Serjeantson & Woolgar 2006, 111–13; Holmes 2017, 93). The Augustinian Rule adopted by the Hospitaller Priory included a vegetarian diet and fasting on certain days. As fish was not considered to be 'meat', this could be eaten on fast days (Serjeantson & Woolgar 2006, 130), whilst the sick and infirm who visited the hospital were allowed to consume some red meat (Phillips 2009, 8).

Herring (11%) dominates the assemblage, a similar pattern to those assemblages

from: Battle Abbey, Sussex (Locker 2000); Eynsham Abbey, Oxfordshire; St Mary's Clerkenwell; St Mary's Spital, Tower Hamlets; St Gregory's Canterbury; and Fishergate York (Serjeantson & Woolgar 2006, 116). Herring, a seasonal resource, were fished in the Thames estuary and the North Sea at this time using nets (Serjeantson & Woolgar 2006, 116). The presence of cranial elements as well as vertebrae (Table 6), suggests that whole fish were being consumed on site. It is likely, due to the location of the site, that fresh herrings were consumed; however, specimens may also have been preserved by smoking, salting or pickling, increasing the longevity of the fish without spoiling the flesh, making a seasonal resource available all year-round (Wheeler & Jones 1989, 28; Serjeantson & Woolgar 2006, 117). A small quantity (n=5) of herring vertebrae have been crushed, indicating that some of these elements had been consumed and passed through the human gut, eventually ending up in cesspits associated with G2 pits [1033] and [1055] and from the refuse pit G6 [1077].

Given the relatively large size of cod and other Gadidae species compared to herring, they would have been of greater importance because of the increased meat yield despite being less numerous in the assemblage (Serjeantson & Woolgar 2006, 117). The variety in Gadidae (including cod) sizes are indicative of local catches (Holterman 2016), fished by lines in estuarine waters (Reilly 2007) as recorded in 12th-century London assemblages (Orton *et al* 2014, 527), with larger specimens fished by boat from deeper waters (Serjeantson & Woolgar 2006, 107) and are therefore unlikely to be the result of salt-fish or stockfish consumption (Hagen 2006, 357, 397). However, fish bones recovered from previous excavations at St John's Priory (Locker 2004) are consistent with preserved specimens; represented only by vertebrae, suggesting that some preserved fish were stored and consumed at the priory (Locker 2000, 195).

None of the bones from the cod or Gadidae species showed any signs of butchery marks or hook removal, although it is possible to gut and fillet a fish without leaving any traces of knife cuts on the bones (Wheeler & Jones 1989, 65–6; Holterman 2016). Filleting often leaves knife cuts to the appendicular elements (Table 6), however no cut marks have been observed on the bones in this assemblage.

The size of the eel (3%) vertebrae suggests that these fish were caught in local rivers. The River Thames is close to 1–5 Benjamin Street, making it the most likely source of eel exploitation. Elvers (young eels) were often caught in large numbers as they travelled upstream, or as maturing adults as they migrated back to the sea during November–January (Wheeler 1979, 60–4; Wheeler & Jones 1989, 164). The vertebrae size suggests that both elvers and maturing adults were exploited, caught in traps such as eel-bucks in the River Thames (Wheeler 1979, 60–4; Cowie & Blackmore 2008, 115–24). A small number (n=3) of eel vertebrae from cesspits had been crushed indicating that these elements had been consumed and passed through the human gut.

Additional migratory species within the assemblage included flatfishes (2%) (Pleuronectidae; plaice/flounder) and plaice (1%). The flatfish vertebrae and cranial element of plaice are small in size, which suggests they were caught in the Thames estuary and were likely fished using lines or traps (Locker 1988). The presence of cranial and post-cranial elements suggests that whole fish were processed and consumed onsite. Flatfish had an enhanced cash value (Serjeantson & Woolgar 2006, 117), indicating that certain inhabitants of the priory consumed a high-status diet. However, only a small number of specimens were found compared to previous excavations at the priory.

A very small number of marine species consisting of ray (1%), gurnard (tub) (1%) and smelt (1%) were present within the assemblage. These species are common in several medieval ecclesiastical assemblages (Serjeantson & Woolgar 2006, 118). A small quantity of freshwater fish were also present within the assemblage, identified as Cyprinidae (1%). Fishponds started to become common at ecclesiastical houses from the 12th century onward (Serjeantson & Woolgar 2006, 124), and it is likely that there was a fishpond at St John's Clerkenwell, given that this was the English headquarters of the Hospitallers (Locker 2004).

The fish bones have survived well in the archaeological deposits due in part to their disposal in cesspits, rapidly buried along with other organic refuse (Wheeler & Jones 1989, 63). Quantities of herring and eel are often found in medieval cess deposits (Nicholson 2009); these fish are relatively small in size and the bones are frequently consumed when fish are eaten whole (Nicholson 1993). A number of herring and eel vertebrae appear to have been crushed, indicating that they were consumed (Nicholson 1993; Butler & Schroeder 1998) and passed through the gut, eventually ending up in the cesspits. Not all fish bones retrieved from the cesspits had been consumed and digested, a number of Gadidae vertebrae were too large. The crushing of these vertebrae was consistent with trampling underfoot, suggesting that food waste (Locker 2004, 180) was also disposed of in the cesspits.

The fish remains recovered from the site are representative of cess and domestic food waste (kitchen and table waste), including refuse from the preparation and consumption of fish. The fish remains indicate an exploitation of inshore, coastal, estuarine, marine and freshwater resources. It is likely that the majority of these fish were caught locally in the Thames estuary, fished from the inshore waters around the North Sea coast and in deeper offshore waters, while freshwater species may have been farmed in the priory's own pond.

### *The Registered Finds*

*Trista Clifford and Alastair Threlfall*

The registered finds from period 2 features represent a restricted range of objects relating to domestic activity, manufacture, trade and personal possessions.

A large antler needle-like implement, RF<1> (Fig 9), was recovered from cesspit [1024]. The object measures 211+mm in length and has a spatulate head with circular perforation (Diameter 3.5mm) and tapers to a pointed terminal. The perforation is much smaller than those typically seen on bone needles and pins of this period. The surface is highly polished. On the upper surface, just below the perforation, are inscribed horizontal lines and a cross: I I X I I I; further down the shaft are three further incised horizontal lines: I I I. This form of decoration is very common on bone implements.

A slightly earlier parallel comes from a 9th–11th-century Norse period feature at Birsay (Curle 1982, ill 48 no. 112), it is a large bone needle (Length 160+mm) and of comparable form with a similarly small perforation. The author was of the opinion that this exceptionally large pin was 'evidently not' a dress pin or needle (*ibid*, 74). The object is also comparable with two very large medieval bone 'needles' from Norwich (Margeson 1993, nos 1449, 1450), however it seems unlikely that such a large implement would be required even for coarse work such as netting; another possible function may be as a baling pin used to secure bales of wool or cloth. In this case the incised symbols may represent tally marks. A number of thin wooden 'pins or pegs' of 13th- and 14th-century date, ranging in length from 53mm to 155mm, 'perhaps used on the warping board … or in connection with [the] baling of wool' were recovered from the City of London waterfront at Custom House (Tatton-Brown 1974, 201; Henig 1975, 153). Wooden baling pins from York, recovered from deposits ranging in date from 12th/13th to 16th century at Coppergate are of similar length to the Benjamin Street example, though none exhibit tally marks (Walton Rogers 1997, 1717).

A lathe-turned wooden bowl, RF<7> (Fig 9), came from cesspit [1055]. The bowl is of birch (*Betula* sp) and roughly hemispherical in form (estimated diameter *c.*21cm) with no foot ring and only a small flat base. A turned groove on the exterior surface running parallel to the rim is the only decorative embellishment observed. Two melon/cucumber seeds were recovered from inside the bowl (see below: Allott). This bowl has parallels from elsewhere in London (*eg* Egan 1998, fig 166 no. 577). Finds recovered in 1929 from a chalk-lined well discovered at the Bank of England premises included an assemblage of 14th-century, London-type ware, Kingston-type ware and Coarse Border ware bowls and jugs, plus a number of lathe-turned beech wood, circular bowls. Seven of the smaller wooden bowls ranged in diameter from 14.7cm to 22.4cm, all possessed small flat bases (Dunning 1937, 416, fig 3).




*Fig 9. Pottery and finds from period 2 cesspits: P1, Kingston ware miniature baluster jug, pit [1020], fill [1019]; RF<1> antler implement, pit [1024] fill [1043]; RF<7> wooden vessel, pit [1055], fill [1053]*

The cesspits also produced two leather shoe fragments and a leather strap of medieval date. RF<10> is a clump, or sole repair patch fragment from cesspit [1014], fill [1011] which exhibits tunnel stitching on the flesh face, while cesspit [1024], fill [1043] produced a partial sole from another shoe, RF<8>. The toe of the sole is missing, however the thin waist and turnshoe construction method suggests a late 12th–15th-century date. Leather strap fragment RF<9> has five circular piercings and impressions from corresponding circular lost rivets visible along one edge. A very similar strap was recovered from 13th- or 14th-century waterfront deposits in the City of London (Egan & Pritchard 1991, 211, no. 1139). A small number of other undiagnostic leather fragments were also recovered from the Period 2 deposits.

Two small rectangular bone plaques were retrieved from bulk sample <15> from cesspit fill [1043]. RF<11> (L 27.5mm) has a highly polished surface and exhibits a countersunk central attachment hole. RF<12> is a small strip of bone (L 25mm) with three circular indentations drilled into the upper surface. These plaques are likely to be waste pieces derived from bone working.

A rectangular iron staple, RF<6>, was recovered from cesspit fill [1012]; the form is similar to several medieval examples illustrated by Goodall (2011, fig 9.5) with arms turned under. These staples may have fulfilled a binding function.

The few finds recovered from Period 3 features are likely to be casual losses. A bone ice skate, RF<4>, was recovered from cesspit fill [1072]. The skate is made from a cattle metatarsal trimmed to a square section, and exhibits marked polishing on one surface from contact with the ice. This form is well attested in medieval London (Egan 1998, 294; Marshall 2023). Period 4 cesspit G20, fill [3/004] produced a U-shaped facetted drop earring made from jet, with silver cylindrical findings (RF<5>). A Victorian or later date is suggested for this piece of jewellery. Lastly, a lathe-turned bone disc, possibly a counter, was recovered from a Period 4 garden soil horizon [5/004] (RF<3>).

### *Macrobotanicals*

*Lucy Allott*

*Introduction*

Eleven bulk samples were collected from ten features. The period 2 samples were taken from cesspits (G2) and from the large, probable refuse pit [1077] (G6), in the east of the site. The period 3 sample was also extracted from a cesspit and has been included for comparison with the earlier assemblages.

*Results*

The samples produced a broad array of plant macrofossils including seeds, nutlets or other fruiting structures, twigs, buds and small bark fragments. The majority were preserved uncharred in waterlogged, mineral-rich anoxic conditions within the organic and clay-rich fills of well-sealed pits which were used for disposal of human excrement/cess and domestic waste. Charred plant macrofossils were infrequent in comparison and although the deposits produced mineral-rich assemblages, very few of the plant remains were preserved as a result of mineral replacement.

*Period 2: 13th–14th Century – Quarry Pit G1, Pits G2 and Refuse Pit G6*

Nine of the 11 samples were derived from G2 cesspits, which produced the largest and most diverse assemblages. Assemblages recovered from the G1 quarry pit and G6 refuse pit were smaller, but broadly reflect the same composition.

Uncharred plant remains form the bulk of the assemblages and are significantly more diverse than the charred assemblages. All of the samples contained abundant remains of wild and cultivated fruits and nuts, such as: apple/pear (*Malus/Pyrus* sp); mulberry (*Morus nigra*); wild strawberry (*Fragaria* sp); blackberry/raspberry (*Rubus fructicosus/idaeus*); elder (*Sambucus nigra*); plum/bullace (*Prunus domestica*); sloe/blackthorn (*P spinosa*); cherry (*P avium/cerasus*) and hazelnut (*Corylus avellana*). These remains were primarily preserved as uncharred, waterlogged remains with occasional miner-

alised or part mineralised seeds. Non-native fruits included: mulberry; fig (*Ficus carica*); grape (*Vitis vinifera*); and melon/cucumber (*Cucumis melo/sativus.*). The latter was only represented by two seeds in sample {21} [1053] from within the wooden bowl RF<7> from pit [1055]. The two seeds retain attributes that suggest both cucumber and melon may be represented, the significance of which is considered below. One of the grape seeds from sample {17} [1053] (pit [1055]) retained adhering mineralised fruit. Remains of fruits dominate both samples from cesspit [1055] with only occasional weed taxa represented and a notable absence of charred remains. Hemp (*Cannabis sativa*) was recorded in cesspit [1024]; it may have been cultivated for its fibres or medicinal properties.

Charred plant remains were limited to: occasional cereal caryopses of wheat (*Triticum* sp); bread type wheat (*Triticum* cf *aestivum* sl) (also represented by a rachis fragment); hulled barley (*Hordeum vulgare*) and oats (*Avena* sp), either wild or cultivated. Oat grain was also preserved uncharred together with large grass caryopses. Non-cereal crops such as pea/bean (*Pisum sativum/Vicia* sp) and a broad/celtic bean (*Vicia faba*) were present in only two of the sampled deposits from G2, while other charred remains included a few examples of vetch/wild pea (*Vicia/Lathyrus* sp). No charred remains were recovered in either sample from cesspit [1055].

Weeds made up the remaining botanical assemblages and they were derived from various vegetation habitats, typically occurring as arable weeds, ruderals or in grassland vegetation. Potential arable weeds included: stinking mayweed (*Anthemis cotula*); corncockle (*Agrostemma githago*); wild radish (*Raphanus raphanistrum*); knotgrass (*Polygonum aviculare*); black bindweed (*Fallopia convolvulus*); fool's parsley (*Aethusa cynapium*); small nettle (*Urtica urens*); fumitory (*Fumaria officinalis*); and corn buttercup (*Ranunculus* cf *arvensis*). Species typical of waste ground included: goosefoots (*Chenopodium* spp), including fat hen (*C album*); oraches (*Atriplex* sp); stinging nettle (*Urtica dioica*); hemlock (*Conium maculatum*); and henbane (*Hyoscyamus niger*). Damp marshy ground species were represented by (*Carex* sp) hemlock and some of the buttercup taxa such as celery-leaved buttercup (*Ranunculus sceleratus*), plus meadow/creeping buttercup (*R acris/repens*). Evidence for woodland vegetation was limited, it consisted of: elder; white bryony (*Bryonia dioica*); nipplewort (*Lapsana communis*); and wild strawberry (*Fragaria vesca*).

*Period 3: Late 15th–16th Century – Pit G7*

A hazel nutshell fragment was the only identifiable charred botanical specimen from the sample {19} [1075]. Uncharred plant remains were better represented in the assemblage and the fruit seeds present included: elder; fig; grape; and blackberry/raspberry. Weed seeds included: stinging nettle; wild strawberry/cinquefoil; knotgrass/dock; spurges and buttercups; and some species such as the celery-leaved crowfoot that are typical of riparian habitats.

*Discussion*

The purpose of sampling the contents of the cesspits was to try and determine whether the plant remains recovered indicated the presence of primary faecal waste and/or domestic refuse and to see what information they provided on the diet of the people who produced the faeces. Cesspit deposits may have accumulated in several ways. For instance, they may have remained open for extended periods of time being regularly cleaned out and reused (Evans 2010), as well as becoming foci for dumping domestic refuse while still being used for cess disposal. Alternatively, cesspits might have latterly been used solely for the disposal of domestic rubbish. Therefore, these features have the potential to contain botanical remains derived from a range of sources, reflecting several possible modes of accumulation. As such they also have the potential to reveal a variety of plant-using activities and when waterlogged anoxic conditions are present, may preserve remains such as epidermal parts of plants that are rarely present in dry archaeological conditions. The assemblages can provide information regarding agriculture, horticulture, access to exotic imported goods and the local vegetational habitats.

Evidence for crop husbandry or processing was limited to free-threshing wheat, barley, oat and some legumes. The majority of grains were charred and as such they are unlikely to represent consumed waste. They may derive from discarded kitchen hearth waste or accidental charring during heating and drying prior to storage or grinding. The scarcity of these remains suggests such activities were limited.

Cereal bran is considered an indicator of the presence of human faecal waste (Smith 2013; Hall *et al* 1983; Grieg 1981) and is certainly in evidence on sites such as Winchester Palace (Giorgi 2006) and the London Charterhouse (Giorgi 2002). Its absence in the Benjamin Street samples and the overall scarcity of uncharred grain or chaff of cereals and grasses is conspicuous given the high proportions of other uncharred botanical remains.

The majority of weeds identified in these deposits are indicative of a range of vegetation habitats. Many are common on disturbed/waste ground, grassland and/or are associated with cultivated land and there is a great deal of overlap between these habitats. There are however several taxa that provide a little more specific information. Of the arable weeds, stinking chamomile was recorded in three of the cesspits, notably those that also contained bread-type wheat grain and may provide evidence for land under cultivation. They are typically associated with heavier clay soils which are also suited to cultivation of free-threshing bread-wheat. By contrast, taxa such as corn chamomile and sainfoin are more typical of calcareous soils. Corncockle produces large seeds that require removal by hand from crops since the seed renders flour unpalatable and can be poisonous if consumed in large amounts. On the whole, large seeds requiring hand removal from grain, such as large grass seeds and corncockle, are not a prominent component of any of the assemblages, which lends further support to the scarcity of evidence for crop remains. The assemblage is instead dominated by ruderals, many of which, such as stinging nettle, hemlock and henbane, prefer nitrogen rich soils and may be indicative of ground containing rotting organic matter or manure. The range of taxa indicative of damp, marshy conditions is relatively restricted, although they are present in low quantities in almost all contexts and are a moderately common component of cesspit deposits (Smith 2013).

Other plant remains typically associated with cesspit deposits, such as fruit seeds and stones, are relatively common. Such remains are resilient and pass through the human gut relatively unchanged. The prominence of fruit seeds in these assemblages, and in medieval and post-medieval cesspits in general, is interesting given the suggestion that at this time fruit was rarely consumed fresh and was more often cooked or preserved through pickling and drying (Dyer 2006, 208). Fruits were also turned into drinks such as wine, verjuice or cider. Regardless of how the fruit was processed, it appears that the seeds and sometimes quite large fruit stones were commonly consumed together with the fruit, described as digestible fruit seeds (Smith 2013).

While some of the native fruits may have grown naturally in or near the area, it is probable that a proportion was obtained from orchards and perhaps gardens associated with the priory. An idea of what species could have been grown locally is indicated by the records from the Bishop of Winchester's manor in Southwark, which show that during the late 13th and 14th centuries vines were cultivated and an orchard planted (Giorgi 2006; Carlin 1996, 38–40). Although vines can be grown successfully in Britain it is likely that figs were imported because they require a warmer climate to produce mature seeds.

Melon/cucumber (cucurbit genus) were represented by only two seeds, recovered from deposits inside the turned wooden bowl RF<7>, dated to the 13th–14th century. Both are waterlogged and very fragile, but preserve important morphological features that suggest both melon and cucumber may be present. They have not been separated taxonomically here because these traits are subtle and more specimens would be required to satisfactorily verify these differences. At other sites in London where cucurbits have been recorded, such as Finsbury Pavement (Giorgi 1997) and St Mary Spital (Davis 1997), the deposits date to the 16th century or later. The Benjamin Street seeds therefore represent a very early occurrence, particularly for the possible presence of

melons in London. While cucumber could have been successfully cultivated in Britain, as it can tolerate cooler conditions and still set fruit, melon requires a warmer climate and careful irrigation to ensure fruit development, which suggests these remains (if melon was present) were most likely derived from imported fruit or food. During the medieval period melons in Europe were more akin to cucumbers, both in their oval to elongated shape and bland, rather than sweet, taste and are likely to have been eaten cold or pickled, similarly to cucumbers. They are sometimes referred to as vegetable melons and are documented in herbals such as *Tractatus de Herbis*, the earliest surviving version of which was produced before *c.*1330 (Paris *et al* 2012). They were very different to the sweet melons which appear to have arrived in Italy in the late 15th century (*ibid*), and subsequently were recorded in an illustration dating between 1515–18 at a villa in Rome (Janick & Paris 2006). It may not have been till the 17th century that sweet melons, which we would recognise as similar to modern cultivars, were successfully grown under glass in Britain.

Although many of the weed taxa could have been consumed, unequivocal evidence for other food or economic plants such as herbs, spices, vegetables and oil or fibre-rich plants is limited. Hemp (*Cannabis sativa*) provides a possible exception and was most likely cultivated for its fibres. It is also evident in low quantities in late medieval and post-medieval deposits from St Mary Spital (Davis 1997), a 16th–17th-century cesspit at St John's Priory, Clerkenwell (Davis 2004) and 16th-century-building activity on the waterfront at Winchester Palace in Southwark (Giorgi 2006). Parsnip or wild parsnip (*Pastinaca sativa*), cabbage/mustard (*Brassica* sp) – in particular black mustard (*B* cf *nigra*) – and wild radish (*Raphanus raphanistrum*) are other examples of plants that most likely occurred wild, but may also have been gathered and utilised for their edible parts.

*Conclusions*

Using the model presented by Smith (2013), it is possible to examine whether botanical remains from the Benjamin Street assemblages support the evidence for the presence of human faecal waste in the cesspit features. Smith suggests that fig and cereal bran are strong indicator 'species' while other digestible fruit, spice seeds, hay/straw indicator taxa or waterside taxa provide indicator groups that form a package of remains typical of cesspits. Of these, the fruits are strongly represented in the Benjamin Street assemblages and there is some evidence for other edible seeds. Notably however, there was no record of cereal bran or taxa indicative of hay/straw. Weeds, particularly ruderals, were very prominent and their diversity suggests multiple origins of these remains. It appears therefore that the deposits contain amalgams of waste, some of which may have been consumed and of faecal origin although many of these could also derive from kitchen waste or plants growing in the vicinity of the site.

### *The Insect Remains*

*Enid Allison*

*Introduction*

Seven samples from G2 cesspits (period 2) and a single sample from a G7 cesspit (period 3), were examined for insect remains. Detailed analysis was carried out on four samples and the rest were recorded by scanning. Very few insect remains were recovered from the G7 cesspit and these are not discussed further.

*Interpretative Methods*

The main sources of ecological information are Bantock and Botting (2019), Cox (2007), Duff (2012), Luff (1998; 2007), Morris (1990; 2002; 2008; 2012), plus Southwood and Leston (1959). Other sources are mentioned where relevant.

The beetles and bugs were categorised into broad ecological groups to aid interpretation based on Kenward *et al* (1986), Kenward (1997) and Smith *et al* (2020). Aquatic insects were subtracted from the rest of the assemblage to calculate percentages for the terrestrial fauna; waterside and damp ground taxa have been included in the terrestrial group. Some taxa are included in more than one group, while others are

uncoded, either because they occur in a wide variety of habitats and situations, or because it was not possible to identify the available sclerites closely enough.

*The Insect Assemblages*

The samples selected for detailed analysis were from G2 pits: the primary fill of cesspit [1014], fill [1013] {11}; the tertiary fill of cesspit [1024], fill [1042] {15}; the lower fill of cesspit [1033], fill [1032] {12}; and the primary fill of cesspit [1047], fill [1050] {18}. All the G2 insect assemblages, including from the three scanned samples, were very similar in implication and they are discussed together below.

The seven samples from the G2 pits produced moderately-sized to large assemblages of beetles and bugs that were dominated by taxa found in decomposing organic matter (48–69% of the terrestrial fauna in the analysed samples). Many of the taxa are synanthropes (species favoured by artificial habitats associated with human occupation and activity). The species composition of the assemblages indicated that disposal of various types of occupation waste had occurred in addition to human faecal material. For an occupation site the diversities of the whole assemblages were moderate to high, which also indicates mixed origins or perhaps ecological succession within some components.

*Discussion*

The conditions within the pits appear to have been moist and muddy. There were indications that a variety of waste probably contributed to the fills and this is likely to have included human faeces and a substantial component of domestic rubbish and debris from inside buildings.

Insect remains from the cesspits generally provide only very limited information on human diet, since few species were regularly ingested with foodstuffs. Bean weevil *Bruchus* cf *rufimanus*, which was identified in two samples, is an exception to this and would have been contained within, and consumed with, infested pulses. Occasional charred pulses were noted among the plant remains in samples, but no waterlogged specimens were recorded (see above). This is not unusual, however, since pulses that are neither charred nor mineralised do not survive well in waterlogged deposits, and in such cases bean weevils often provide the main evidence for their consumption (*eg* Allison & Hall 2001; Carruthers & Allison 2015).

Distinctive groups of insects, characteristic of a house fauna, indicated the deposition of debris derived from within buildings. The largest house fauna was recovered from sample {15} and there were indications that this debris had come from inside long-lived buildings of reasonable quality, particularly from the abundance of *Epauloecus unicolor*, a spider beetle that in archaeological contexts appears to be associated with such places (Kenward 2009, 309). Several bed bugs in sample <18> were also of particular interest. The remains were comparable with *Cymex lectularius* which is associated with human dwellings, although the species is only separable with certainty from *C columbarius*, found on pigeons and mainly associated with dovecotes by an antennal character that is absent from archaeological material (Southwood & Leston 1959). Smaller pale bug abdomens were probably from bed bug nymphs which would suggest a breeding population. There are very few archaeological records of bed bugs: there are Roman specimens from Alcester in Warwickshire and Carlisle in Cumbria (Osborne 1971; Kenward 1999), and 10th-century and post-medieval (possibly Victorian) records from York (Kenward & Hall 1995; Hall *et al* 1993). These finds have been discussed elsewhere (Kenward & Allison 1994, 69; Kenward & Hall 1995, 764–5; Kenward 2009, 209). Kenward (*op cit*) has suggested that this species of bed bug (*C lectularius*) may require high quality buildings for its long-term survival and that the bugs might have been repeatedly introduced into Britain rather than maintaining stable populations. A high-status establishment such as the priory, probably with travellers arriving from warmer foreign locations, might have provided an ideal place for populations to have become established.

At least some of the debris derived from inside the buildings probably came from workshops where ‘dirty’ activities including

wool processing was carried out. Ked puparia were recorded from samples from three separate pits and their occurrence in archaeological deposits appears to be connected with the cleaning of sheep fleeces or wool rather than the presence of living sheep. In Anglo-Scandinavian tenements in York, for example, they were most frequently identified from house floors and more rarely from pits or other features where there was evidence for the disposal of waste from within buildings (Kenward & Hall 1995, 775–7). Other examples include large numbers of keds and sheep lice (*Bovicola ovis*) recovered from the fill of a drain beneath a room in a post-medieval Icelandic farmstead, where they were thought to have accumulated as a result of washing fleeces or wool (Buckland & Perry 1989).

Single individuals of *Trox scaber* were recorded in several samples and were probably associated with the house faunas. Its natural habitat appears to be in birds' nests, especially in hollow trees, particularly if they contain bones (Jessop 1986, 14). The species is regularly recorded from urban archaeological sites where it is especially associated with the floors of ancient buildings, which presumably provided a comparable situation (Carrott & Kenward 2001). In some cases, there appears to be a connection with the working and tanning of skins, leather working or horn processing and with finds of bark (Hall & Kenward 2011). Bark fragments were noted in the plant assemblage, but the insect evidence was too limited to suggest a connection with tanning.

Scarabeoid dung beetles (chiefly Aphodiinae spp) were recorded in most samples and they were probably attracted to some of the fouler accumulations of organic material on the site or in the cesspits, including human faeces. Some of the species represented will exploit vegetable refuse as well as dung. They have excellent dispersal abilities that enable them to find new sources of fresh dung and they would usually have been a common element in the background fauna of any settlement where animals were kept, used for transport, or grazed on land nearby. Because of their mobility, it is not possible on the current evidence to say whether livestock was kept within the vicinity of the cesspits, however. An interesting record among the dung beetles was of *Heptaulacus testudinarius* which is associated with dry dung and rotting plant material. Today this species is rarely found in southern England and in 1992 it was listed as 'endangered' (Hyman & Parsons 1992, 392).

Although a few outdoor insects might perhaps have arrived on site with imported or cut vegetation, most species present probably represent the local environment or in some cases plants associated with midden material. The various plant-feeding taxa and ground beetles present were generally consistent with reasonably dry, grassy or waste ground and garden-like habitats, including disturbed or cultivated land.

## DISCUSSION

The site's location in the southern-western corner of the outer precinct of the priory (Fig 2), offers an insight into activity at the edge of this important religious centre. Such peripheral locations in London's monastic houses were often used as a source of revenue and were commonly developed for housing or industry. While it should be noted that the levels of truncation, particularly in the west of the site, could have removed any structural remains, the presence of various closely-spaced cesspits on site during the 13th and 14th centuries would have left little room for any such activity (Fig 3), and the stench would have rendered the area unattractive to potential residents.

The size, shape and density of the Period 2 cesspits suggests that rather than being dug at random, as evidenced in other parts of the outer precinct (Sloane & Malcolm 2004, 203), the pitting was undertaken in an organised, systematic way, to maximise the utilisation of the area. While these pits were latterly systematically used for the disposal of large quantities of cess and organic rubbish, it is not certain if they were initially created for this purpose. As the excavation of these pits was broadly contemporary with the nearby production of 'Westminster' floor tiles (see above), it is possible that they were dug to provide clay for manufacturing tiles and the resulting voids then used for the disposal of waste material. One of the cesspits possessed a wooden lining to facilitate its reuse, although none had evidence for chalk

linings, like the cesspits in the inner precinct to the north (*ibid*, 79–80). As the Benjamin Street cesspits were dug into impermeable clay there would have been no drainage of rainwater or the liquid fraction of any waste material, therefore the usual decay of organic material would have been impeded by waterlogging, and they were not the ideal receptacle for waste disposal. Contemporary stone-lined cesspits were normally dug into the terrace gravels, so any liquid waste would have naturally seeped away. Previous excavations inside the southern portion of the outer precinct (OA14 on COW89 which lies immediately to the east of the site: Sloane & Malcolm 2004, 19, fig 10) also identified large cut features, some of which were interpreted as quarry pits intended for the extraction of London Clay. One of these features was sealed by a dump of roof tiles (*ibid*, 84–5).

While the lower fills of the cesspits provide evidence for the deposition of human faeces, they also indicate that these pits were used for the deposition of more general domestic waste, with butchery marks present on some of the larger animal bones. The insect assemblage similarly indicates that the deposited material had a variety of sources including human faeces, debris from inside buildings (including indications that material derived from high quality houses) and industrial waste. The presence of species associated with industry, particularly wool, textile and possibly tanning, support the view of the outer precinct being dominated by commercial, industrial and trading activities (Sloane & Malcolm 2004, 203). The relative paucity of domestic pottery in these contexts is notable, reflecting the lack of actual settlement within this part of the priory precinct and suggesting such material was disposed of elsewhere. This absence of nearby settlement implies that the organic rubbish being disposed of here was transported from elsewhere within the precinct.

The upper pit fills are notable for their evidence for tile manufacture; the deposits themselves were most likely an attempt to seal the pits after ending the disposal of organic waste materials. Medieval tile making was an important local industry and products included 'Westminster' floor tiles (Betts 2002, 10). The large quantity of material as well as the presence of wasters definitively establishes that the manufacture of 'Westminster' tiles did occur nearby. The precise location of the tile kiln discovered in the early 1860s (Price 1870, 31) is problematic, but it was probably located about 50m to the west (Fig 2). A parcel of land on Turnmill Street was owned by a 'William the Tiler' (le Pavor) in the late 13th century, further attesting to the presence of this industry in the area.[3]

As discussed above 'Westminster' tile floors are known at a number of ecclesiastical buildings, most notably at Westminster Abbey. Unlike some other tile kilns which manufactured material for specific ecclesiastical sites, no definite documentary link to St John's Priory has been found (Stopford 1992, 348). While the site was located in the south-west corner of the outer precinct of the priory, the kiln itself would have lain outside the priory boundary, so it may well have been controlled by someone else. The usage of 'Westminster' floor tiles at many different religious houses within the Greater London area and beyond supports the view that this industry did not lie under the control of one particular religious order. The tiles have been recorded as far away as the Scottish Borders and it has been postulated that they were manufactured not just at the 'main' Farringdon Road kiln but also at a number of subsidiary kilns operated by experienced tilers. The medieval tile industry was frequently tightly regulated on a regional or local level, often through the guild system, which could have restricted the opportunities for outside contractors (Betts 2002, 20). The other possibility was that tiles were sometimes produced in-house. The diverse occurrences of 'Westminster' tiles suggests that their production did not adhere to either of these systems and instead the tileries produced material for a variety of religious houses, castles and parish churches. The roof tile manufacturing recorded at the nunnery of St Mary's to the north along with the 'Westminster' tile-making using local clay, may have formed part of a larger industry focused on the River Fleet (Sloane 2013, 162).

The cessation in activity in the late 14th century would certainly be consistent with

the severe damage the priory was described as suffering during the Peasants Revolt (Sloane & Malcolm 2004, 90) and the end of the production of 'Westminster' tiles. The previous excavations undertaken at St John's found 'very little evidence of a great conflagration', but traces of fires and other more modest evidence did indicate that 'normal business was interrupted in the 14th century' (*ibid*, 129). The 15th century has been interpreted as a period of consolidation and improvement of infrastructure to allow the priory to meet its hospitality function (*ibid*, 129, 207). The lack of activity on the Benjamin Street site during this period is curious, but presumably other locations were used for the disposal of cess and other waste during this period. This pattern is repeated in the pits from earlier excavations (COW89, OA14), which was also interpreted as evidence for a low density of domestic occupation (*ibid*, 85).

The late 15th- to mid-16th-century activity coincided with the rebuilding of the priory before its demise at the Dissolution. The cesspits from this period mainly lay in the eastern portion of the site, cutting into the former huge refuse pit rather than the earlier cesspits. These pits, while similar in many ways to their earlier counterparts, were generally shallower and their distribution more dispersed. While the location of these pits suggests some knowledge of the location of the earlier cesspits, they do not appear to have been laid out as systematically and certainly not as densely spaced as before. The upturn in the fortunes of the priory during the later 15th and early 16th centuries can be seen in the recommencement of the digging of cesspits, but their lower density might indicate that the population of the priory precinct did not reach the levels seen earlier.

Following the dissolution of the priory, the site appears to have initially been used as gardens, but by the late 17th century it had been developed for housing. The fragmentary remains of housing dating from the 18th and 19th centuries attest to the continued occupation of the street frontage with yards to the rear of these properties. The 19th and 20th centuries saw increased industrial and commercial usage of the site.

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## NOTES

[1] *Medieval and post-medieval pottery codes MOLA* (2014), available online at the MOLA Resource Library (accessed 24 January 2023); *Medieval and post-medieval ceramic building materials fabric dating codes MOLA* (2014), available online at the MOLA Resource Library (accessed 24 January 2023).

[2] *Medieval and post-medieval ceramic building materials fabrics MOLA* (2007 edition), Westminster floor tiles are dated from 1250 to +1300.

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# SOME EXAMPLES OF ICONOCLASM AND THE CONCEALMENT OF RELIGIOUS GOODS IN LONDON DURING THE REFORMATION RECONSIDERED

*Bruce Watson*

**SUMMARY**

*During 1547–53 as part of the English Reformation all places of worship were stripped of their statues and other signs of traditional religion, including most of their church plate and clerical vestments. It is documented that some of these banned church goods were sold off, while others were seized by the Crown or destroyed. However, it is often overlooked that some of these banned goods were concealed and have since been rediscovered by chance, including the Mercers' Company sculpture of the dead Christ. A number of these concealed images had already been deliberately damaged, presumably by iconoclasts, implying that these two processes were linked. In addition to the Mercers' sculpture, the wider significance of the phenomena of artefact concealment and iconoclasm are also considered here.*

## INTRODUCTION

The removal and destruction of religious images from all places of worship during 1547–53 was one of the most direct and visible manifestations of the English Reformation (Wilson 2012, 256–83; Duffy 1992, 478–503). In 1536 Henry VIII made himself Supreme Head of an independent English branch of the Catholic Church (Wilson 2012, 177). This decision and Henry's subsequent religious policy created ideological confusion, as although he adopted a Catholic doctrine (despite rejecting papal authority), he also endorsed the closure of over 800 monastic houses, which involved nationwide Protestant-style iconoclasm. Within the City of London and its immediate environs 20 monastic houses and hospitals, plus one college, were closed.[1] Therefore, the adoption of a Protestant doctrine by the Church of England in 1547–8 immediately after Henry's death, can be interpreted as an attempt by the Crown to rationalise a contradictory religious policy (*ibid*, 181–221). This ideological shift towards Protestantism involved a much more extensive campaign of iconoclasm which extended to every parish church in England and Wales.[2] In the City this campaign involved the stripping out and destruction of many of the fixtures and fittings of St Paul's Cathedral and 109 parish churches (Walters 1939, 67–8). This new nationwide campaign of iconoclasm was a blatant attack on traditional religion; public opposition to this policy included a rebellion in south-western England (Fletcher & MacCulloch 1997, 50–61) and the widespread concealment of banned religious goods.

In December 1547 an act of Parliament abolished all the chantries and their assets were seized by the Crown (Duffy 1992, 454–7). This legislation, which was a further attack on traditional religion, closed all the

independent chantry chapels including one on London Bridge.

## ICONOCLASM IN LONDON BEFORE THE REIGN OF EDWARD VI (1547–53)

During Whitsun week in 1527 Thomas Bilney preached at the parish church of St Magnus the Martyr in the City. The presence of the church's new rood screen figures that still required gilding seems to have inspired him to attack 'image worship' and advocate iconoclasm. Shortly afterwards Bilney was charged with heresy and imprisoned in the Tower of London, until he recanted. Subsequently he retracted his recantation and was burnt at the stake in August 1531 at Norwich (Aston 1988, 165–6).

Shortly before 1533 (probably during 1532), a servant of Sir Thomas More, named Cliff, with a history of 'madness' or mental illness,[3] damaged a sculpture of St Mary the Virgin and the infant Christ located on London Bridge.[4] Cliff broke the head off the figure of Christ and afterwards some of the bridge's residents complained to More about this damage. Cliff's action was almost certainly inspired by an earlier (date not recorded) act of iconoclasm on the bridge when a statue of St Thomas Becket had been pulled down (Aston 1988, 214; Guy *et al* 1988, 16).[5] These two actions appear to be the earliest recorded examples of iconoclasm in London during this period.

It is important to realise that many of the outbreaks of iconoclasm that occurred during the Reformation in some European countries like the Netherlands or parts of Switzerland were carried out by 'grass roots' movements, sometimes linked with regime change.[6] However, in England the situation was quite different as iconoclasm, like changes of doctrine, was closely managed by the Crown, which curtailed the scope for unauthorised actions. For instance, in February 1538 when the Crucifix from the 'Rood of Grace' at Boxley Abbey in Kent (which was being closed), was publicly displayed at Westminster before Henry VIII, it was revealed that the eyes and lips of the figure of Christ being crucified were moved by 'strings', not 'the power of God', as a device to encourage offerings from pilgrims. Therefore, it was publicly condemned as a fraudulent image and unworthy of veneration. Subsequently, on 24 February, this discredited image was the subject of an iconoclastic sermon delivered by the Bishop of Rochester, John Hilsey, at St Paul's Cross (outside the City's cathedral), after which it was smashed to pieces (Aston 2016, 114; Wriothesley 1875, 74–6).

Another early example of iconoclastic propaganda was the execution of the Franciscan friar John Forest on 22 May 1538. Forest was a member of the Observant Franciscans at Greenwich and had been found guilty of treason for refusing to acknowledge Henry VIII as Supreme Head of the Church of England and was burnt at Smithfield before an estimated crowd of over 10,000 people, along with a wooden statue of a Welsh 'idol' known as 'Darvell Gadarn' (St Derfel from Llanderfel). The statue was ridiculed in a ballad pinned up in 'great letters' on the gallows on which Forest hung in chains (Aston 2016, 115–16, 777–8; Wriothesley 1875, 79–80).[7] Forest's burning was accompanied by a sermon delivered by the evangelical Bishop Hugh Latimer of Worcester calling on him to repent (Corrie 1845, 391–2; Wriothesley 1875, 79–80). It has been suggested that this gruesome public spectacle was intended 'to discredit two causes: service to the pope and to images' (Aston 2016, 115). Certainly, this event appears to have inspired 'certaine lewde persons' to destroy the rood screen of St Margaret Pattens Church in the City later the same day (Wriothesley 1875, 81). Ten of the offenders were caught and brought before the Court of Aldermen, but another 20 were never found (Brigden 1989, 290). Throughout the 16th century, numerous religious dissenters (both Catholic and Protestant) were burnt at Smithfield (Keily 2022, 18).[8] One reason for these public executions was not simply draconian judicial punishment, but a belief by the authorities that religious dissent could not be eradicated unless all the dissenters were destroyed (Aston 2016, 113), and there was a biblical edict that pagan 'idols' were to be burnt (*Deuteronomy* 7:5). So, fire could be seen as the scriptural answer to religious dissent.

On 10 February 1546/7, the king's Council was informed by Edmund Bonner, Bishop of London, and the Lord Mayor that in 1546

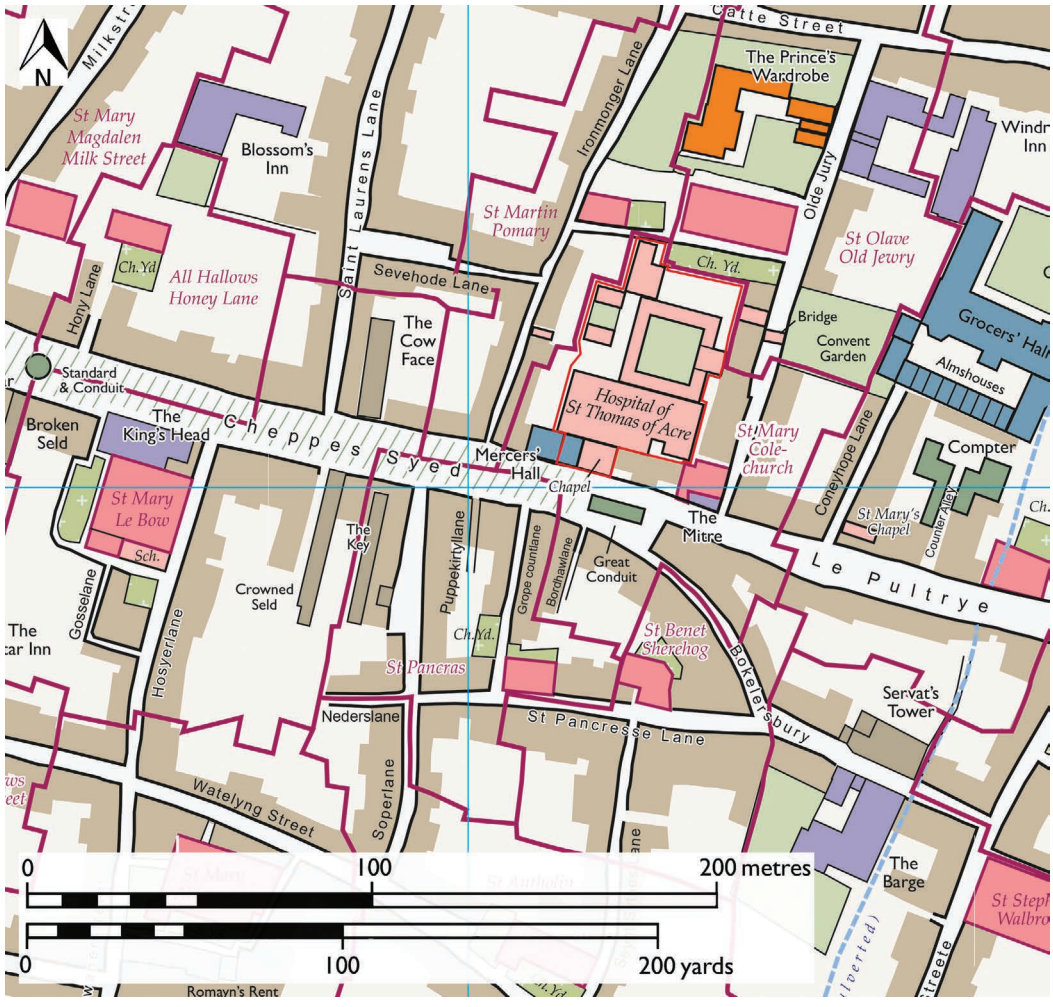


*Fig 1. The Mercers' Hall and church of Hospital of St Thomas of Acre, Cheapside,* c.*1520, (source Barron et al 2020. © British Historic Towns Atlas)*

the rector and churchwardens of St Martin Pomary in Ironmonger Lane in the City (Fig 1), had removed their crucifix (presumably on the rood loft, which they had replaced with the royal arms) and all the images from their parish church, and then painted biblical texts of dubious accuracy on its walls. The churchwardens and rector claimed in their defence that they had only removed objects that they considered to be 'idolatry'. The Council rejected this argument and threatened the offenders with imprisonment in the Tower of London; each was obliged to pay a surety of £20 and they were ordered to erect a new crucifix within two days (Gairdner 1904, 242–3). These Protestant sympathisers were punished for being out of step with official policy (Brigden 1989, 424).

## PROTESTANT ICONOCLASM IN LONDON

When Henry VIII died on 28 January 1546/7, religious doctrine in his realm was beset with inconsistencies and contradictions (see above). The ideological confusion which Henry had created may explain the actions of the parishioners of St Martin Pomary. In the summer of 1547, the announcement of a royal visitation of the whole country and

the production of a new set of articles and injunctions marked the formal adoption of the Protestant faith and provided people with a more consistent doctrine. This new religious policy formally promoted iconoclasm (Duffy 1992, 448–50). Following the issue of these new injunctions on 31 July 1547 the veneration of images was banned and their removal from churches was ordered (*ibid*, 450–3). On St George's Day (23 April) 1547, William Peryn preached at the church of St Andrew Undershaft in the City that it was good to 'worship pictures of Christ and the saints'. On 19 June in the same church Peryn publicly recanted before going into exile explaining how he had been 'deceived' (Howes 1631, 594), showing how quickly religious doctrine was changing (Brigden 1989, 430). In September Bishop Bonner was imprisoned in the Fleet Prison for opposing the scale of the iconoclasm within his diocese until he recanted (*ibid*, 433). The London iconoclasts were so indiscriminate that by mid-September 1547 the king's Council attempted to restrain them by ordering that 'all images and pictures in every church to which no offering nor prayer is made' should be retained, but significantly they did not order the restoration of any 'images wrongfully torn down' (*ibid*, 430). During this turbulent period there were instances in some London parishes of tension between iconoclasts and traditionalists concerning the removal or retention of images and certain liturgical goods like pyxes (*ibid*, 431–3, 453–4).[9] All Hallows Church in Bread Street in the City between 1549 and 1551 sold two defaced, painted wooden statues of 'freres' or 'friars' for 1s 4d (Walters 1939, 88),[10] showing that even damaged images were still saleable.[11]

During Edward VI's reign secular statues in London also suffered from iconoclasm, implying that some people exceeded the Crown's instructions regarding images. For example, according to the Elizabethan historian John Stow, statues of the mythical king Lud and the other sovereigns adorning the City's gatehouse at Ludgate all had their heads knocked off and were 'defaced'. These particular civic statues were subsequently repaired during Queen Mary's reign. When Ludgate was rebuilt in 1586, Lud and the statues of the other kings on its eastern façade were retained and Queen Elizabeth's 'picture' was added to the western side (Stow 1908i, 38–9), showing that royal images were quite acceptable to the Anglican Church. William Elderton (d *c.*1592), a London attorney produced these lines of doggerel in the 1560s:

> Though most the images be pulled down,
> And none be thought remayne in Towne,
> I am sure there be in London yet,
> Seven images such, and in such a place,
> As few or none I think will hit:
> Yet every day they shew their face,… .
> (Stow 1908i, 272).

He described four of these statues as Christ, 'Justice, Fortitude and Temperance', confirming that he was referring to the 15th-century south porch of the City's Guildhall. During the Tudor period, the façade of the porch was decorated with statues of Moses, Aaron and Christ, representing divine law, plus the four cardinal virtues, Temperance (or possibly Discipline), Prudence, Justice and Fortitude, representing civic justice. When the porch was demolished in 1788 the central statue of Christ had already been removed, but the other six were still there (Aston 1988, 327–9, figs 15a–c). The stone statues of the four virtues (each 140cm high) dating from *c.*1430 are now in the collections of the Museum of London.[12] Elderton implies that these statues had not been defaced by iconoclasts simply because of their location and remained in public view. Their survival implies that the City's rulers were tolerant of both religious and secular images.

On 27 November 1547, when Bishop William Barlow of St David's, Wales, preached a sermon against idolatry at St Paul's Cross in front of the pulpit he displayed, for effect, a banned image of 'Our Lady' (St Mary the Virgin). It had been discovered during the recent 'visitation' or inspection of the cathedral intended to ensure that the 1547 injunctions had been carried out. This image had been discovered wrapped in 'seercloth' and hidden 'in a corner of' the building. Barlow also displayed an image of the Resurrection of Christ. After the sermon both these 'idols' were publicly destroyed (Wriothesley 1877, 1). Protestant iconoclasm often sought the destruction of images as part of a strategy of ideological purification,

an action which was directly inspired by the Old Testament.[13] Iconoclasm was also a very visual way to attack the symbolism of traditional religion and demonstrate a change of doctrine. Fire was an easy way to destroy wooden images, but it was not the best way to wreck stone sculpture. John Stow recalled in later life, how in 1549 a fanatical preacher at St Paul's Cross had convinced the crowd that the maypole stored under the eaves of the church of St Andrew Undershaft was an idol, so they immediately sawed it up and then took the lengths of timber home to use as firewood (Stow 1908i, 143–4). According to the 1552 inventory of London parish church goods, much valuable plate and other items such as vestments had already been sold off (Walters 1939, 22). The main motives for the sale of parish church goods during 1548–53 were to avoid the confiscation of valuable items by the cash-strapped Crown and to raise money to replace the income that many parishes had lost after the abolition of the chantries in 1548 (Brigden 1989, 388–91; Walters 1939, 4–7).

During 1547–53 it has been estimated that 43 of the City's 109 parish churches (39%) were selling off their brass funerary memorials. The main reason for these sales is believed to be iconoclasm carried out by 'Protestant zealots', but 'speculative profiteering' was apparently a motive in some cases (Hutchinson 2022, 337–8).[14] Sales of 'despoiled brasses' from City churches peaked during 1548–51, coinciding with the abolition of the chantries and the threat of Crown confiscation of valuable goods such as metalwork and plate (*ibid*, 325, table 1). In 1552 the parish of St Thomas the Apostle reported that the sale by the churchwardens of various altar stones and marble pillars had been agreed by the parish, but that the sale of various 'plates of latten [brass] which were taken from graves' had not been agreed (Walters 1939, 618). In other words, the sale of monumental brasses was clearly opposed by some parishioners, who might have been the descendants of the individuals commemorated. Funerary monuments and their images were not banned in the 1547 articles and a 1550 statute tried to prevent the indiscriminate destruction of 'images' on graves and funerary monuments providing that they were 'purely commemorative' (Aston 1988, 269). This legislation was clearly needed as in October 1552, the Bishop of London, Nicholas Ridley, was only prevented from 'pulling down' John of Gaunt's tomb in St Paul's Cathedral by an order from the king's Council (Aston 1988, 270).[15] This intended desecration confirms that some London reformers were ignoring the Crown's instructions regarding funerary monuments.

## THE MARIAN CATHOLIC REVIVAL (1553–8) AND THE RE-ESTABLISHMENT OF THE ANGLICAN CHURCH

On 3 August 1553, when Queen Mary's accession was celebrated by her formal entry into the City of London, an Italian merchant recorded: 'images of the saints and the virgin [St Mary] brought from their places of concealment were visible in the windows of people's houses' (Aston 1988, 278). Clearly some people were already anticipating a Catholic revival, which quickly happened and involved the reinstatement of religious images in churches (Wilson 2012, 285–8). An inventory of the goods of St Stephen Walbrook in the City compiled in December 1558 included the parish's sacred relics (Pendrill 1937, 21–2). As many of these items can be equated with the 22 relics of 'god, and his saints' recorded as part of the church's goods in a late 15th-century inventory (Milbourn 1881, 341–2), it appears that this material had been concealed *en masse* during Edward VI's reign and then recovered and reinstated during the Marian Catholic revival.

In 1559 iconoclasm was again widespread across London due to the end of the Marian Catholic revival and a return to a more Protestant doctrine (Aston 1988, 301). In 1559–60 the churchwardens of St Andrew Holborn in the City burnt their three rood images (Cox 1913, 23). In August and September 1559, the London Merchant Taylor and diarist Henry Machyn recorded various bonfires of rood screen figures and other religious images removed from the City's parish churches (Nichols 1848, 207–9). This new phase of iconoclasm was carried out in response to the *Royal Articles and Injunctions of Queen Elizabeth*, issued in 1559. Part of these articles (item 45) stated:

> whether you know any that keep in their houses undefaced any images, tables, pictures or other monuments of feigned … idolatry and superstition, and do adore them, and specially such as have been set up in churches, chapels or oratories.

One of the injunctions (item 35) reiterated the ban on retaining 'abused images, tables [painted wooden or alabaster relief panels decorating either the front or rear of altars] …' etc in private houses (Frere & Kennedy 1910, 6, 21). The wording of item 45 makes it clear that the authorities anticipated that some banned goods would be removed from parish churches and then be concealed in the homes of parishioners instead of being destroyed. It was the responsibility of individual parishes to ensure that this did not occur. How diligently these searches were carried out is uncertain as many people may not have wanted to denounce their friends and neighbours. However, some parishes did carry out searches. For instance, in 1560 after meeting up for breakfast one morning, the churchwardens of St Alphege's, London Wall searched their parish for banned painted 'pyctures and images' (Cox 1913, 10).

## THE MERCERS' SCULPTURE OF CHRIST

On 30 April 1954, during the rebuilding of the Mercers' Hall, a magnificent sculpture of the dead Christ was discovered. This sculpture has been aptly described as 'a masterpiece' of early 16th-century European art, which 'proclaims two deaths, the death of God and the death of an entire tradition of British art' (Graham-Dixon 1996, 22). It is now displayed within the Mercers' Hall in Ironmonger Lane, City of London (TQ 325812), which was rebuilt in 1672–82 after the Great Fire and had been destroyed again in 1941 during the Blitz. The sculpture was discovered by workmen at a depth of 1.5m, under the floor of the former western antechapel of the church of Hospital of St Thomas of Acre (see below; Fig 1). Sadly, the 1954 redevelopment of the Mercers' Hall was not monitored by the archaeological staff of the Guildhall Museum, so our understanding of the context of this sculpture is limited.[16] Apparently it was discovered lying on its side, the head to the north 'against the east wall of the middle vault, just south of the central line of the building' (Evans & Cook 1954, 168). This wording implies that the sculpture was concealed within the hospital church's subterranean central vault (Woods 2007, 57). However, what is not clear is whether the sculpture was simply concealed within the vault (perhaps behind a false wall) or buried below the floor of this vaulted lower storey: the latter seems the most plausible interpretation.[17] Why and when the sculpture was buried there will be discussed later.

This sculpture consists of a life-sized representation of the supine dead Christ lying on a wooden bier or stretcher (length 1.97m, width 0.686m) (Figs 2, 3). Originally Christ's left arm lay across his chest and his right arm lay by his side (his fingertips survive). Both of the effigy's arms have been smashed, the right arm at the shoulder and the left at the elbow. His groin is covered by an untied loincloth. As this sculpture was carved from a single piece of Chilmark limestone (quarried in the Salisbury area), it was probably produced in southern England (Woods 2007, 62). Clearly the Mercers' sculpture was produced by a highly skilled craftsman, as details like Christ's anatomy and his face 'twisted in a grimace of pain' are depicted with a high degree of realism (Graham-Dixon 1996, 22–4). The figure has been dated on stylistic grounds to *c.*1500–20 (Evans & Cook 1954, 168–71; Williams 2013, 68–9), or shortly before 1515 (Woods 2007, 61). It is considered probable that the sculpture was produced by a craftsman from the north-eastern Netherlands, because of its similarity to several late Gothic figures produced in this area (*ibid*, 61, 62, pl 23). The cloth covering the bier is adorned with three abbreviated Latin biblical quotations: *Philippians* 2:8 'He was humble and walked the path of obedience all the way to death – his death on the cross'; a line from *Psalm* 75:3 – in the Catholic Psalter – 'he made his abode in peace';[18] and 'Jesus King of the Jews' (*ibid*, 57–8). This choice of wording shows a detailed knowledge of Catholic liturgy and biblical texts.

Originally the entire figure would have been painted in naturalistic colours (traces of which are still visible), which would



*Fig 2. The Mercers' Hall sculpture of the dead Christ; notice how the iconoclasts have carefully removed the objectionable parts of the statue leaving the majority of it intact (reproduced courtesy of the Mercers' Company)*



*Fig 3. Close-up of Christ's head and shoulders; notice the missing right arm and damage to his nose and the top of his head (reproduced courtesy of the Mercers' Company)*

have added to its realism (Graham-Dixon 1996, 24; Woods 2007, 57). The intention of this sculpture was to provide an emotive experience of the Passion of Christ, something which Protestant reformers would have condemned as 'idolatry' along with the devotional cult of images.[19] Interestingly, the sculpture has suffered considerable damage before being concealed: the top of the effigy's head is missing; his nose has been broken (Fig 3); his left forearm/hand and his entire right arm are missing as are both his feet. Other damage or graffiti includes an 'X' incised into the upper right-hand side of the effigy's chest, the significance of which is unknown. The crown of thorns is present (under Christ's head). The extent of this damage is indicative of a deliberate and targeted attack, which managed to remove four of Christ's five wounds. Curiously, there was relatively little damage to his head, a part of the body that was frequently targeted by iconoclasts (Williams 2013, 68–9; see below). None of the missing portions of the sculpture were recovered in 1954, which suggests that they were not concealed with it (Evans & Cook 1954, 168), and that the damage had taken place before the sculpture was concealed or disposed of.

## THE MERCERS' SCULPTURE: DOCUMENTARY EVIDENCE

Mercers' Hall was located from the beginning of the 15th century on Cheapside between the south side of St Thomas's Hospital and the street frontage. St Thomas's Hospital (also known as the Hospital of St Thomas Acon or Acre) was founded in 1227–8 by the citizens of London on the reputed birthplace of St Thomas Becket, for the newly militarised order of St Thomas of Acre. It possessed an imposing church (strictly speaking it could be described as a chapel as it was a non-parochial place of worship) situated close to the northern side of Cheapside in the central business district of the City of London. In 1514 the Mercers' Company became lay patrons of the hospital and during 1517–24 they helped fund its rebuilding programme, while simultaneously constructing a new, larger company hall and a chapel in front of the hospital church. The latter possessed a nave with twin aisles and a choir with two side chapels. There were another five or six chapels located within other parts of the church. It has been estimated that the church was about 39.6m long and some 12m to 13.7m wide (Watney 1906, 134). The Mercers' new chapel was consecrated in October or November 1524 (Keene & Harding 1987) (Fig 1). This ambitious rebuilding and sponsorship programme proclaimed the increasing importance of the Mercers as a livery company.

On 29 February 1523 the General Court of the Mercers' Company agreed to adorn the altar of their new chapel. After Sir John Aleyn offered to sponsor this work, the Mercers agreed to pay Walter Vandale of Antwerp, a 'carver', £50 (Flemish currency) to produce an altarpiece (Evans & Cook 1954, 169; Watney 1906, 107). This agreement is considered very unlikely to record the commissioning of the sculpture of Christ as it cannot be described as an altarpiece (Keene & Harding 1987). As there is no documentary evidence concerning the commissioning of this sculpture by the Mercers' Company in their extensive records, it is much more likely that it was paid for by a wealthy benefactor to St Thomas's Hospital. It was suggested by Evans and Cook (1954, 175) that this sculpture might have been commissioned by Thomas Butler, 7th Earl of Ormond, as a part of an Easter Sepulchre that also would have doubled as his own tomb. In his will written in 1515 (the year of his death), the earl expressed a wish to be buried 'to the north side of the high altar in the said church where the sepulture of almighty God is used yearly to be set on Good Friday …' (Evans & Cook 1954, 175; Woods 2007, 61).

Medieval Easter Sepulchres in English churches varied from quite simple structures representing Christ's tomb, intended to hold the Blessed Sacrament from Maundy Thursday until Easter Sunday, to much larger and more elaborate structures that could include sculptured representations of the dead Christ and associated figures variously described as the 'Lamentation' or the 'Entombment' (Murray & Murray 1998, 154–5, 268). The interpretation of the Mercers' Christ as part of an early 16th-century Easter Sepulchre that also doubled as a tomb is problematic as surviving English examples from this period generally consist of a masonry chest tomb with a canopied shrine above (Woods 2007,

60). For example, the combined chest tomb and Easter Sepulchre of Christopher Urswyk (1521–2) in St John's Church, Hackney is of this design (RCHME 1930, 44, pl 94). The fact that Stow in *c.*1600 recorded the presence of the tomb of 'Thomas Butler, Earl of Ormond' inside the former hospital church (Stow 1908i, 269) confirms that it had not attracted the attention of iconoclasts during the Reformation, so it may have been a chest tomb on which the Blessed Sacrament could be stored (as stated in Ormond's will). The survival of Ormond's tomb suggests that it is more likely that the Mercers' Christ originally formed part of a separate bequest, perhaps an Entombment tableau within the hospital church.

In September 1538 Thomas Cromwell's staff dismantled St Thomas's shrine in Canterbury Cathedral. All the precious metals, gemstones and jewellery which adorned the shrine were seized by the Crown (Wriothesley 1875, 86). The marble base of the shrine was smashed and the saint's remains scattered. St Thomas's cult was banned on 16 November 1538, when he was denounced as a traitor to the Crown and de-canonised (Duffy 1992, 412; Wriothesley 1875, 89).[20] This decision necessitated the immediate removal of all images of the banned saint. The pope's response to these actions was to excommunicate Henry VIII on 17 December 1538 (Beer & Speakman 2021, 223–4).

St Thomas's Hospital was suppressed on 21 October 1538, when 'the master and brethren [were] put out and all goodes taken to the King's treasurye' according to Charles Wriothesley's chronicle (1875, 88). Soon afterwards the Mercers' Company started to negotiate the purchase of its church, precinct and three adjoining properties (which the hospital had owned) with the Crown. The sale of the freehold was completed on 21 April 1542 at a cost of £969 17s 6d (Watney 1906, 129). The purchase was complicated by the fact that the Crown had leased the hospital premises for 21 years to Thomas Mildmay in November 1539, so the Mercers had to buy him out before they could take possession of the property in May 1542 (*ibid*, 140–1). How the hospital church was used while it was in the possession of Mildmay is not documented. One condition of this acquisition was that the Mercers' Company maintained a grammar school of 25 pupils, continuing a role that the hospital had previously undertaken (Keene & Harding 1987). According to Stow, by *c.*1600 the Mercers' chapel had been converted into shops and the former hospital chapel 'now called the Mercers' chapel' was being used as a grammar school (Stow 1908i, 269).

## THE MERCERS' SCULPTURE: THE DATE AND CONTEXT OF ITS CONCEALMENT

It has been suggested that the Mercers' sculpture of Christ was probably buried in *c.*1547–8, when such religious images were banned as 'idolatrous' (Aston 2016, 248–9; Woods 2007, 58), while Barnard (2020, 312) suggested that it may have been defaced and then concealed in 1550–1. In June 1542 the Mercers' Company records state that workmen had been called in to view the 'altars, some time called Thomas Becket's altar' and in September some altar surrounds were taken down (Watney 1906, 142–3), which confirms that the former hospital church had not yet been stripped of all of its fittings. In 1547–8 according to the Mercers' Company accounts 5s 2d was paid for the 'taking down' of all 'images' from their place of worship in accordance with the new Protestant articles, which seems like a plausible context for the removal and concealment of the sculpture. In 1550–1 the altars in both the Mercers' chapel and the former hospital church were removed, the altar cloths and vestments sold, and the interior of the church was whitewashed in accordance with Bishop Ridley's instructions (Keene & Harding 1987). On 28 March 1550 the Mercers' Company general court ordered the removal of all the altars from their church (Watney 1906, 156). This event appears to be the latest plausible date when the sculpture of Christ could have been concealed. However, when the sculpture had been damaged is another matter; this event might have taken place along with the other acts of iconoclasm when the hospital was suppressed in 1538 or subsequently.

There are three possible motives for the burial or concealment of this sculpture. First, the damaged image may simply have been buried as a convenient method of

disposing of an unwanted large and heavy object. Secondly, after the sculpture had been ritually defaced (see below), the iconoclasts might have decided to complete this anthropomorphic style of punishment by giving it a hasty burial. Thirdly, the most plausible motive for its burial was its preservation as a sacred and valuable object despite its damaged state (Barnard 2020, 311–12; Williams 2013, 69). As it was buried within part of the hospital church, this choice of location could be interpreted as an attempt to retain it within a sacred space.

## THE COMPOSITION OF THE MERCERS' SCULPTURE AND ITS EUROPEAN PARALLELS

While it is possible that the Mercers' sculpture of Christ was produced as a single figure, other contemporary examples strongly suggest that it is much more likely it was produced as part of a tableau. Broadly contemporary tableaux generally depict Christ's mother (St Mary the Virgin) and his followers (including St Mary Magdalene, St John and St Joseph of Arimathea, who after Christ's death asked Pilate for his body so he could bury it). The moment depicted in these tableaux is Christ's followers mourning his remains after he had been taken down from the cross and before his body was washed, anointed with spices and wrapped in 'a new linen sheet' (*Matthew* 27:59). These actions were in accordance with the Jewish custom of preparing a body for burial (*John* 19:40; *Luke* 23:53; *Mark* 15:46; *Matthew* 27:59). Such scenes are often described as Christ's Entombment (even though he had not yet been buried). Both the Utrecht and Woerden (Netherlands) sculptures of the dead Christ were originally centrepieces of Entombment tableaux, like many other continental examples (Woods 2007, 63).[21]

If the Mercers' sculpture of Christ was originally part of a tableau, then what happened to the other figures? As no other fragments of statuary were recovered in 1954, their absence deserves some consideration. First, perhaps the other figures sustained some damage during 1538–53 and then they were concealed elsewhere on the Mercers' premises and have never been discovered. Secondly, possibly the other figures were very badly damaged during



*Fig 4. The late 15th- or early 16th-century mourning tableau in Nevers Cathedral, France (early 20th-century postcard, image in public domain)*

1538–53 and therefore their fragments were not deemed worth concealing inside the church and they were disposed of elsewhere instead. At St Cuthbert's Church at Wells in Somerset, during the Reformation (probably in 1547–53) numerous fragments of very badly smashed stone statuary were used to infill redundant internal niches, which were then plastered over,[22] an action which seems more like the dignified disposal of unwanted material than the concealment of sacred images that might be reinstated. Thirdly, perhaps the figure of Christ as the centre of the tableau was recognised by the Mercers' Company as its most important element and therefore it was the one that they chose to save from destruction.

While it is quite probable that the Mercers' sculpture was originally produced as part of a tableau, in the absence of any other figures or secure documentary evidence, its overall design remains uncertain. However, one clue to its possible design is provided by the fact that the right-hand side of the bier was obviously intended to be seen, while its left was intended to be placed up against a wall. Presumably the bier would originally have been set on a raised plinth giving it the appearance of an altar (Evans & Cook 1954, 172–3). This fact implies that any associated figures would have stood at either end of the bier. The inferred location of any grieving figures represents a significant difference between the Mercers' sculpture and many contemporary French and German tableaux depicting either Christ being mourned or his Entombment, as in these scenes the figures are invariably clustered around three sides of the bier or tomb. The usual spacing of these figures can be seen in a late 15th- or early 16th-century mourning tableau composed of life-sized, sculptured stone figures now displayed in the crypt of Nevers Cathedral, in France. These figures were restored and repainted during the 19th century (Fig 4). A very similar spatial arrangement of figures can be seen in Christ's Entombment at Mainz Cathedral, in Germany. In this tableau produced in *c.*1493 the figure of the dead Christ bears a striking similarity to the Mercers' sculpture (Marks 1990, 27; Fig 5).

The Mercers' sculpture of Christ was



*Fig 5. The entombment of Christ produced* c.*1493 by Master Valentinus, in the Chapel of St Magnus, Mainz Cathedral, Germany. Notice the three seated, helmeted and armoured soldiers in the foreground guarding the tomb (© José Luiz Bernardes Ribeiro, CC BY-SA 4.0, https://commons.wikimedia.org/w/index.php?curid=61625462 (accessed 2021))*

one of a number of images or statues that adorned the church of St Thomas's Hospital before 1538. The presence of various altars or possibly chapels within the church dedicated to St Anne, St Katherine, St Luke, St Mary the Virgin (the 'Lady Chapel'), St Nicholas, and St Stephen, all indicate the presence of images of these particular saints. It is documented that an image of St Michael the Archangel stood on a pillar before St Thomas's altar; there were also images of St Mary Magdalene, St Martin and St Mary the Virgin 'Gysnâ or Gisinâ' (pregnant). There was a large cross on the high altar and chapels dedicated to the Holy Cross and the Trinity (Watney 1906, 134–5). There were also two internal images of the church's patron saint (see above). Some idea of how many other images this wealthy hospital church might have possessed is provided by comparison with an inventory of the contents of the parish church of St Stephen Walbrook, dating from the reign of Edward IV (1463–83). It lists 33 images or statues displayed within various parts of the church of which at least 15 were wooden. Six of the wooden statues were described as unpainted, confirming that not all medieval images were brightly decorated. At least two images were alabaster and one of stone, while the composition of the others is not stated (Milbourn 1881, 332–5).

## ICONOCLASM, CATHOLICISM AND ANTI-CATHOLIC PROTESTS AT ST THOMAS'S CHURCH

In April 1535 Friar Robert Ward had complained to Thomas Cromwell in his role as Vicar-General of the Church of England that the stained glass in the church of St Thomas's Hospital included 'a superstitious and popish resemblance in the absolution of the king …'. The offending image depicted a naked Henry II kneeling before St Thomas's shrine while being beaten with 'rods' by monks as part of his penance for his involvement in the saint's death (Gairdner 1885, 236). Ward professed to be shocked by the imagery of this royal humiliation 'knowing as he did what false teaching was based on it' (Aston 2016, 372–3). It was a timely reminder of the imagery of a previous power struggle between the Crown and the Church, which Henry II had lost. In 1538 an image of St Thomas Becket which 'stood' at the high altar of the hospital church of St Thomas of Acre and a second nearby image depicting his martyrdom were both 'taken down' on Cromwell's orders. The 'story' of St Thomas's martyrdom illustrated in the same church's stained glass windows was removed on 3 October (Brigden 1989, 292; Wriothesley 1875, 87). It is probable that these various acts of iconoclasm coincided with the suppression of the hospital in October 1538 (see above). About this date across London all the other images of the previously popular St Thomas Becket were removed (Brigden 1989, 292). After Becket's cult was abolished the dedication of the chapel on London Bridge was changed to St Thomas the Apostle, until its closure as a chantry in 1549 (Watson *et al* 2001, 112). In 1539–40 the Bridge House accounts record that 2s was paid to a Southwark painter 'for defasynge [defacing] … dyvers [different] pyctures of Thomas Beckett in Our Lady Chapel upon the bridge'. In 1543 an embroiderer was paid 13s 4d for changing a representation of Becket's martyrdom into an image of 'Our Lady' (Welch 1894, 77). Clearly the staff of the bridge chapel were trying to adapt their banned images to make them politically acceptable.

While the extent of the 1538 damage to the fittings of the hospital church is unknown, its occurrence raises two questions. First, was it only restricted to the removal of prominent images of St Thomas Becket and valuables? Certainly, the subsequent removal of certain 'images' from the former hospital church in 1547–8 (see below) confirms either the survival or reinstatement of some statues. Secondly, is it possible that all remaining sculptures (including perhaps Christ) within the hospital church were damaged by iconoclasts around the time of its closure? Perhaps the Mercers' Company was aware that as the surviving image of the de-canonised St Thomas stood over the street entrance of the hospital church it was on public display and therefore was vulnerable to attack. Possibly, this threat prompted the Mercers to take down the statue in 1538–9 (before they acquired the church) and discreetly store it within their premises (Barnard 2020, 305–6; Watney 1906, 159),

perhaps with the intention of reinstatement if the opportunity arose. Meanwhile the Mercers (presumably after they acquired the hospital in 1542) replaced St Thomas's statue with a sculpture of a 'maiden's head' – which is still their livery company's logo today (Barnard 2020, 305).

The Company records state that on 28 December 1553 its officers were instructed by the Lord Chancellor, Stephen Gardiner, Bishop of Winchester, to reinstate St Thomas's statue over the church entrance, which makes it clear that its restoration was not their idea (Barnard 2020, 306). The Mercers subsequently commissioned the production of a replacement stone image, which suggests that the original was irreparably damaged. Possibly the damaged statue was used as a template for the new one to emphasise a symbolic continuity as the Mercers' Company now owned the former hospital.

On 6 September 1553 the Mercers' Company gave orders for their church's high altar to be set up again (Brigden 1989, 531; Watney 1906, 158), and they also decided to move the date of the election feast of the new company wardens back to St Thomas's feast day (29 December); in the same year the company paid £4 8s 4d for 'a new picture of St Thomas over the street door' (Barnard 2020, 312; Watney 1906, 159). These three decisions show that the Mercers were quick to publicly proclaim their Catholicism. Following Mary's accession on 19 July 1553 and the official restoration of Mass in December, there was a period of relative religious liberty (Brigden 1989, 587), before the Catholic revival began (Duffy 1992, 524–64). According to Strype (1822, 333) the statue of St Thomas Becket was reinstated on 14 February 1554 on the 'orders of the lord chancellor and other bishops', while according to Wriothesley (1877, 127), it was done on the orders of the 'king and queen's council'.[23] During the night of 16 February the fingers of the saint's hand which was bestowing a blessing were broken, followed on the next night by St Thomas's neck and the top of his crosier, implying that the saint had now been decapitated as part of a targeted programme of damage. Machyn noted in his diary that 'grett sham yt was done' by this second attack (Nichols 1848, 82). He stated that this attack was carried out by 'serten lude feylous' (certain lewd fellows), implying it was carried out by a group of people rather than an individual. Strype (1822, 333) claimed that Barnes, a Mercer who lived next door over the company chapel was suspected of carrying out these attacks,[24] but nothing was proven against him or his servants. Instead, Barnes was instructed to pay a large surety and to 'watch' over and repair the damaged statue.

This outbreak of anti-Catholic activity coincided with Sir Thomas Wyatt's rebellion. This rebellion, which was a very serious threat to Mary's regime, was prompted by the unpopularity of her forthcoming marriage to Philip of Spain and her restoration of the Catholic Church. On 28 January 1554, 500 or 600 men of the London militia – 'the Whitecoats' – marched out to fight the rebels. However, when the militia encountered the rebels in Rochester, three-quarters of them deserted and the remainder fled back to London in disarray (Brigden 1989, 537–8; Fletcher & MacCulloch 1997, 84–5). On 3 February Wyatt's rebel force reached Southwark, but they were unable to cross London Bridge, which was defended by the City authorities. After waiting three days hoping that the Londoners would change sides and support the rebellion, Wyatt's army marched westward and crossed the Thames upstream and then managed to reached Ludgate due to the craven conduct of Crown forces. Here after Wyatt's supporters were refused entry to the walled city, they realised that London would not support them despite the sympathetic attitude of many of its citizens, and surrendered (Barnard 2020, 308–9; Fletcher & MacCulloch 1997, 86–7). The City's support of the Crown against the rebels had been a decisive factor in their defeat, but the difficulties that the Crown had in suppressing the rebellion showed its weakness and highlighted the unpopularity of Mary's policies (Fletcher & MacCulloch 1997, 87–93). On 12 February gallows were specially set up around London for the public execution of captured rebels. Two pairs of gallows were erected in Cheapside and two days later six rebels were executed there (Nichols 1842, 55).

The repaired statue of St Thomas was reinstated on 2 March at Barnes's expense, but it was attacked again on 14

March (Wriothesley 1877, 127). This time St Thomas's head and one of his arms were broken off. Clearly these repeated attacks had annoyed the authorities, as the following day the mayor of London issued a proclamation offering a reward of 100 gold crowns and a pardon for anyone who named the iconoclasts, but no one came forward (Nichols 1848, 83; Strype 1822, 333). Brigden (1989, 593) suggested that this particular statue was repeatedly targeted by iconoclasts as it was 'a special symbol of London's idolatry'.

On the morning of 8 April, a dead cat with a shorn head dressed in imitation Catholic clerical vestments and holding a symbolic Eucharistic bread in its front paws was discovered along with a 'bottle', hanging on the Cheapside gallows.[25] The dead cat was cut down at 6am and taken to Bishop Bonner,[26] who later displayed it during a sermon delivered at St Paul's Cross. The Lord Mayor of London promptly offered a reward of £6 13s 4d to anyone who revealed the perpetrators of this 'fact', but the reward was never claimed and no one was charged (Wriothesley 1877, 114). According to popular superstition witches possessed a familiar 'imp' that took the form of an animal, usually a cat or dog (Thomas 1971, 530). Catholic liturgy was not only being publicly ridiculed, it was being associated with witchcraft. The impression is that the 1554 attacks on St Thomas's statue and then the highly symbolic display of the dead cat on the gallows recently erected to hang rebels were a series of dramatic, nocturnal anti-Catholic actions carried out in one of the City's main streets. It appears that the Lord Mayor and his officials could not stop these events, despite offering rewards. Therefore, the perpetrators were able to repeatedly attack an image of one of the City's patron saints and mock the authority of the Catholic Church with impunity. The inference is that while iconoclasm was officially condemned by the civic authorities in London during the Marian Catholic revival, it was not robustly opposed.

St Thomas's statue was presumably repaired and reinstated yet again as on the morning of 9 January 1559 it was recorded that the statue was discovered to have been 'broken and cast down'. A 'bill' denouncing the presence of this statue was posted on the church door (Wriothesley 1877, 143). An Italian resident in London wrote to one of his countrymen on 23 January 1559, that this statue had been 'stoned and beheaded' and then 'pulled down'. St Thomas was replaced by 'the stucco statue of a little girl', which remained *in situ* until the company's premises was destroyed in the Great Fire of 1666 (Barnard 2020, 299).

## OTHER LONDON EXAMPLES OF THE CONCEALMENT OF RELIGIOUS GOODS

Two 15th-century wooden statues representing the standing figure of a monk (0.48m high) and a seated figure of God the Father personified as a pope (Fig 6) were recovered from the Thames in 1824–41 during dredging on the site of medieval London Bridge. It is likely that both these statues were originally part of the fixtures of the bridge chapel and may have been thrown into the river by iconoclasts during the Reformation. However, it is possible that the statue of God the Father, which was discovered complete apart from both hands was actually concealed within one of the bridge starlings (Cherry 2001; Watson *et al* 2001, 112–13).

In 1882, during the redevelopment of 20 Mark Lane in the City, six fragments of sculptured relief alabaster panels of 15th-century date were discovered embedded in a brick culvert, implying that they had been deliberately buried (Fig 7) (Povah 1894, 11).[27] How much damage these fragments sustained during their recovery in 1882 is not known, but it is probable that they were already fragmentary. Originally these alabaster panels probably formed part of a reredos depicting scenes from the life of St John the Baptist and Christ,[28] perhaps in the nearby church of St Olave's, Hart Street. Motives for retaining smashed religious artefacts were clearly complicated, as in October 1641 when St Leonard's Church in Eastcheap was 'purged' of 'superstitious pictures' (apparently stained window glass), one parishioner collected some of the broken pieces as a 'remembrance' to show future generations how their forefathers had purified this church (Aston 2016, 121–2).

In 1903–4 during the redevelopment of



*Fig 6. A late 15th-century wooden statue of seated figure of God the Father, personified as a pope, with the world (a globe) at his feet (height 590mm). Both the hands of the figure are modern replacements. It is on display at Sudeley Castle in Gloucestershire (photo by Ken Upton)*

Newgate Prison at Ludgate, demolition work on the southern side of the site revealed a number of 'fragments' of a late 15th-century limestone statue (height 1.0m) of St Christopher carrying the infant Christ on his shoulder built into a Tudor wall (Norman 1904, 139). St Christopher has lost most of his arms and legs, but retains his head, while Christ has lost his head and both forearms/hands.[29] Clearly before this statue was either concealed or reused as wall core infill, it had already been broken into several relatively large fragments, hence its immediate recognition and repair. Like the Mercers' Christ, the hands and feet of St Christopher had already been badly damaged, but his head remained intact.

On 23 November 1956, demolition of the north wall of the parish church of Holy Trinity Minories, Aldgate (until 1538 it was part of the monastic church of the Minoresses – Franciscan nuns), revealed a blocked door. The infill of this door incorporated a pinnacle containing a quatrefoil, on which was a painting of the *Agnus Dei*, and two conjoining limestone fragments of the body



*Fig 7. Two fragments of a 15th-century alabaster retable panel from Mark Lane depicting the birth of St John the Baptist (Luke 1:57). In the foreground of the larger fragment St John's mother Elizabeth (fully clothed) is reclining in bed, attended by two similarly attired female attendants, one of whom is holding the baby (MoL 11179/1; height 213mm, width 215mm). The smaller fragment (MoL 11179/2) depicts Zacharias writing down the baby's name on a scroll (Luke 1:63) (© Museum of London)*

of a mid-14th century headless and mutilated statue of a brightly painted female figure (height 0.89m), interpreted as *Synagoga*, a personification of the Jewish Synagogue, hence of Judaism (Fig 8). A third fragment of this sculpture, a right hand, was also found within the infill (Evans & Cooks 1956; Collins 1962, 160–4).[30] As this demolition was being archaeologically monitored the context of these finds is precise and the recovery of the material was systematic.

## THE CHRONOLOGY OF THE CONCEALMENT OF BANNED RELIGIOUS OBJECTS

The concealment of banned religious images and other goods during the English Reformation started during the 'Dissolution of the Monasteries' in 1536–40. A second period of the concealment of banned goods in 1547–53 concerned parish churches, prompted by the adoption of Protestant doctrine and the abolition of the chantries. The Marian Catholic revival encouraged the retrieval and restatement of some concealed church goods. However, Mary's death and the accession of Queen Elizabeth I in November 1558 prompted the re-establishment of the Anglican Church, and a third period of the concealment of banned goods (Aston 2016, 122–94; Duffy 1992, 448–503, 524–75; Scarisbrick 1984, 67–108; Watson 2021).

## THE MOTIVATION FOR THE CONCEALMENT OF RELIGIOUS OBJECTS

During the late 1540s some banned church goods were acquired by parishioners who concealed or stored them in their homes, then returned them during the Marian Catholic revival (Scarisbrick 1984, 101–4, 141). Many objects were concealed within churches, either under floors or within infilled internal cavities like niches, and



*Fig 8. A painting commissioned by Guildhall Museum showing the original colour scheme of the limestone statue of Synagoga (height 890mm) from the Minories. This statue has been selectively damaged: the head has broken off, both arms is missing and the torso broken at the waist. The broken right hand has been restored (source: Evans & Cooks 1956 frontispiece. (© Royal Archaeological Institute)*

have since been rediscovered by chance during restoration work (Aston 2016, 219–50; Watson 2021). Presumably, complete religious objects were concealed by the pious in the hope of their reinstatement, as happened during the Marian Catholic revival. For instance, in 1567 five vicars at Ripon Minster in North Yorkshire were accused of concealing in a 'vault' a variety of banned religious goods, including books and alabaster reredos panels (Fowler 1888, 344). It seems that as this material still existed in 1567, it had been concealed during the reign of Edward VI, brought out during the Marian Catholic revival and then concealed a second time after the accession of Elizabeth I.

Many religious images had sustained damage before being concealed. The degree of damage that some recovered images have sustained means that they could not be easily repaired and therefore their reinstatement appears to have been impractical, so another reason for the concealment of severely damaged images seems probable.[31] It should be remembered that severely damaged images would still have been considered sacred and there is a long tradition within the Catholic Church of venerating the relics of saints, even if they consist of a single bone (Bentley 1985, 41–62). On 8 November 2022 a tiny fragment of the skeletal remains of St Chad was installed in a new shrine inside Lichfield Anglican Cathedral.[32] The remains of St Chad (d AD 672) were preserved at Lichfield Cathedral until 1538 when Crown agents destroyed the three shrines containing his relics (Farmer 1992, 94). When the saint's remains were threatened with destruction some or all of them were removed by Arthur Dudley, Prebendary of Colwich (1531–77), who entrusted their care to his relatives (Foley 1878, 794–7). In 1841 when St Chad's Catholic Cathedral in Birmingham was consecrated some of these relics were installed in a new shrine located above the high altar (Wall 1905, 101–2), and it is a portion of this material which has now been returned to Lichfield.

In 1974, a severely mutilated late 14th-century stone statue of a seated figure of St Mary the Virgin holding the infant Christ (almost completely obliterated) was recovered from the precinct of Waltham Abbey in the Epping Forest District of Essex (Huggins & Bascombe 1975; Fig 9). This sculpture was interred face upward on an east–west alignment (head towards the west), 'enclosed by carefully laid rubble' or building materials within the backfill of a ditch. This interment can be dated to the second half of the 16th century by associated pottery (Huggins 1998, 123, 143). The excavator described this 'careful burial of



*Fig 9. Mutilated seated figure (height 750mm) of St Mary the Virgin from the precinct of Waltham Abbey. Notice how iconoclasts have removed the objectionable parts of the statue whilst leaving most of it intact (© Jack Littlefair, Waltham Abbey Historical Society)*

the mutilated Madonna … [as] the act of the pious following its desecration at the Reformation' (*ibid*, 123). Aston (2016, 244) suggested that this 'ousted icon', despite its 'headless, handless and childless' state, was disposed of with care and reverence reflecting its 'previous holy status'. Perhaps it was buried to save it from further damage. The statue is now (2021) on display within the crypt of the south chapel of Waltham Abbey.

Damage to religious images during the Tudor period invariably focused on faces, heads and hands. This recurring pattern of damage can be interpreted in several ways. First, it was probably seen as ritually humiliating the images and demonstrating that they were powerless to defend themselves, casting doubt on claims that they represented a sacred link between the faithful and God, when they could easily be damaged. The biblical inspiration for iconoclasm should be considered. For instance, *Daniel* (3:19–26) describes how four devout men were cast into a 'blazing furnace', but they emerged unharmed thanks to God's protection. Secondly, inflicting selective damage to images may have been perceived as an attempt to mutilate or dehumanise them, perhaps imitating some barbaric contemporary judicial punishments such as beheading, burning or mutilation (Barnard 2020, 311). For example, on 24 April 1555, as punishment for attacking and badly injuring a Catholic priest with a knife inside St Margaret's Church, Westminster, William Flower had one hand cut off before being burnt at the stake in St Margaret's churchyard (Foxe 2007, 221; Keily 2022, 42). In 1581 two men found guilty of sedition were publicly punished by having their right hands cut off with a cleaver in Westminster marketplace (Camden 1635, 339). Thirdly, damage may have been seen as one way of preventing the reinstatement and veneration of images. Concealing banned images in Tudor England was an act of disobedience that risked punishment (Aston 2016, 244), so it was not something to be undertaken lightly, particularly as tasks like burying or concealing the Mercers' sculpture of Christ must have been a collective undertaking, as moving it would have required a number of people.

## DISCUSSION

The numerous instances of concealed goods in both the archaeological and historical record implies that there was 'more resistance, concealment and evasion than has sometimes been supposed' (Scarisbrick 1984, 104). The problem is

> the archaeology of concealment is a subject that awaits proper investigation. How are we to interpret the various ways by which ousted church carvings were disposed of? (Aston 2016, 219)

The question of interpretation is vital to the understanding of the process of concealment, as many of these artefacts were recovered before this phenomenon was widely recognised; often their context was not archaeologically recorded and as a result it is not properly understood. Significantly, many

of these images appear to have sustained damage before concealment or disposal, confirming that at least two processes were involved.

Another important question concerns the public attitude of Londoners towards religious reform during this period. Some London merchants, due to their commercial connections with Germany and the Netherlands from 1518 onward, received first-hand experience of the new Protestant evangelicalism and circulated its publications (Brigden 1989, 109; Wilson 2012, 98–9). Many inland English communities were not exposed to these continental influences, so the impression is that Londoners were probably more radical in their beliefs than many of their contemporaries. From 1526 Protestant sympathisers among London's mercantile community were secretly importing and distributing illegally printed copies of the New Testament in English (Wilson 2012, 99–102). From the 1520s there was a growing number of 'parishes with radical religious traditions' across London, creating a deeply divided community of evangelists or reformers and traditional Catholics (Brigden 1989, 32–43, 106–18, 447–57, 634–5).

Some indication of the intensity of feelings that religious doctrine aroused during this period is illustrated by the assassination of Robert Packington. A prominent Mercer, an evangelist, and involved in the illegal importation of copies of the New Testament, Packington was shot on 13 November 1536 between five and six o'clock in the morning, while walking to the church of St Thomas of Acon to attend Mass (Wilson 2012, 191; Wriothesley 1875, 59). This atrocity provoked outrage and despite the offer of a substantial reward the perpetrator and their hirer were never identified, but some suspected vigilante conservative clerics, especially John Incent, Dean of St Paul's (Brigden 1989, 253; Wilson 2012, 191). Packington's murder coincided with the climax of a large-scale rebellion in northern England, the 'Pilgrimage of Grace', which was a protest against Henry VIII's religious policy (Fletcher & MacCulloch 1997, 25–35). On Passion Sunday during Lent in 1546, Dr Crome delivered a sermon at the Mercers' chapel based on *Hebrews* 9, which was highly critical of Catholic theology regarding sin and repentance (Strype 1822, 160). Then in 1553 the Mercers quickly abandoned Protestantism and readopted Catholicism (see above). Perhaps the absence of religious consensus might explain why various members of the Mercers in 1554–9 may have been simultaneously defacing and reinstating a statue of St Thomas on company property, while other members may have been responsible for both the defacing and subsequent burial of the sculpture of Christ between 1538 and 1550. The impression is that by the 1540s the corporate religious consensus of the 1520s, when the company had rebuilt its Catholic chapel, had completely broken down and had been replaced with ideological conflict, but there was still a corporate public demonstration of loyalty to the Crown and 'outward conformity' (Barnard 2020, 312–14). Members of the Mercers' Company served as lord mayor of London in 1536, 1537, 1539, 1541, 1543 (for only part of the year), 1547, 1549 and 1558, demonstrating their prominence within the City (Stow 1908ii, 182–3).

A lack of national consensus concerning the changes to doctrine during Edward VI's reign is indicated by the widespread evidence of the concealment of banned religious goods attributed to this period (as the dating evidence for many of these actions is lacking). However, while the motives for the concealment of material obviously included piety and the hope of restoration, other reasons such as protest at Crown confiscation or even perplexity at the rapidity of the imposed changes of doctrine should be considered (Morris 2012, 267). The phenomenon of concealment could be interpreted as evidence that many people unobtrusively supported traditional beliefs and cherished its symbols even in evangelical London (Brigden 1989, 456). In 1590, Henry Barrow, a London resident, recalled how quickly during the Marian Catholic revival churches had been furnished with 'idols' and other liturgical goods that had been previously concealed (Barrow 1590, 132). Perhaps Barrow as a strict Puritan was exaggerating the amount of banned religious items that had been retrieved and reinstated during the Marian Catholic revival.

In 1571, Edwin Sandes, Bishop of London,

instructed all parishioners within his diocese to check if there were any

> books of Latin popish services, albs, vestments … images, candlesticks, holy-water vats; or any other monuments of papistry superstition or idolatry reserved in your church, chapel or elsewhere in the hands or custody of any person or persons, which are not defaced and destroyed.

This particular instruction was issued by Sandes as part of a policy document on doctrine; it was closely based on aspects of the *Royal Articles of Queen Elizabeth*, issued in 1559. In 1605 the bishop of London instructed his parishioners to look out for popish 'ornaments of superstition' and other banned liturgical goods hidden in houses, which shows that the authorities were still concerned about the existence of concealed material (Fincham 1994, 33–8).

## CONCLUSIONS

The archaeological study of the concealment of banned religious objects during the English Reformation is a relatively new field of study, which provides a unique insight into the events of this turbulent period and offers a counterbalance to a historical narrative constructed from documentary sources. Barnard's (2020) account of St Thomas's statue over the entrance to the hospital church during the Reformation offers a new perspective on the concealment, iconoclasm and reinstatement of images during this period. The sheer number and diversity of concealed religious objects challenge the notion that the Catholic Church was failing and was widely unpopular in the early 16th century, making the English Reformation inevitable (Morris 2012, 267). We need to look out for further examples of religious objects that were concealed during and after the Reformation, as part of the study of the resilience of Catholicism and covert opposition to the Crown's changes of doctrine.

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## NOTES

[1] Figures taken from Barron *et al* (2020).

[2] In this article, 'iconoclasm' is defined as damaging or destroying religious images (including statues of Christ or the saints, carved relief alabaster panels, wall paintings, wooden panel paintings and stained glass).

[3] Until May 1532, Sir Thomas was Lord Chancellor and as a staunch Catholic he was an opponent of iconoclasm. Subsequently he quarrelled with Henry VIII and was executed in July 1535 for refusing to acknowledge the king as head of the Church of England. He was canonised by the Catholic Church as a martyr in 1935 (Farmer 1992, 345–8).

[4] In 1533 More referred to this act of iconoclasm and an earlier one on London Bridge in *The Debellation of Salem and Bizance*, but he did not provide any dates (Guy *et al* 1988, 16, lines 5–20), https://essentialmore.org./wp-content/uploads/2019/08/Debellation-8-20-2019.pdf (accessed 25 June 2020). This 2014 version uses modern spellings but follows the pagination of the 1988 volume. In 1492 the takings generated by a newly erected statue of St Mary the Virgin on London Bridge were the subject of a dispute (*Cal Papal Reg 15, 1482–92*, 498).

[5] The existence of a statue of St Thomas the Martyr on London Bridge is not documented, but as the bridge chapel was dedicated to him, the presence of an image of this particular saint outside the chapel would seem likely (Watson *et al* 2001, 109–13). In the 1420–1 Bridge House accounts 2s was paid 'for mending the paintwork [*picture*] of the image of St Thomas over the Bridge' (Harding & Wright 1995, 107). This image appears to have been a sign advertising the presence of the chapel.

[6] In 1528 the adoption of the Protestant faith

in the city state of Berne, Switzerland, was accompanied by an outbreak of iconoclasm, when the city's Catholic churches were stripped of their images, many of which were burnt. Dramatic evidence of this period of iconoclasm was uncovered during groundworks in 1986 on a terrace near the city's cathedral, when numerous fragments of completely smashed medieval stone statues were discovered (Aston 2016, 112, 223). Some of this material is now displayed in the Berne Historical Museum, including a headless *pietâ*, https://www.bhm.ch/en/collections/historical-collection (accessed 14 December 2021). In 1566–80 a wave of iconoclasm (the *Beeldenstorm*) engulfed the Netherlands region; many of its participants believed that by stripping their churches of images of false saints or idols that they were purifying them. From 1568 the Spanish Catholic rulers of the Netherlands region faced rebellion from the Dutch Calvinists and Lutherans, which led to a long-running war and the foundation of the Republic of the Seven United Low Countries in 1588 by the rebellious provinces (Arnade 2008, 90–124, 166–259).

[7] The remains of Darvell Gadarn's wooden staff and horse are preserved at St Derfel's Church, Llanderfel, Merioneth (Aston 2016, 242–3, fig 23; Farmer 1992, 131–2). Were these two objects concealed during the Reformation, hence their survival? John Forest was one of a number of English martyrs beatified by the pope in 1886.

[8] In the Tudor period, practically everyone convicted of a felony except petty theft faced the prospect of execution (Durston 2020, 17). After 1401 burning at the stake was the standard punishment for heresy; during the Marian Catholic revival about 275 Protestants were burnt at the stake, as policing the Reformation became one of the functions of the justice system (*ibid*, 1–4). What made burning such a heinous punishment was the length of time it could take if damp or insufficient fuel was used in the pyre. For instance, when William Flower was burnt at the stake in Westminster in April 1555 for assaulting a priest it is recorded that 'he endured the extremity of the fire, and was cruelly tortured, for the few fagots that were brought being insufficient to burn him they were compelled to strike him down into the fire, where lying along upon the ground, his lower part was consumed in the fire, whilst his upper part was little injured, his tongue moving in his mouth for a considerable time.' (Foxe 2007, 221).

[9] A pyx is a small cylindrical vessel for holding the host or consecrated bread of the sacrament. In the medieval period pyxes were often suspended over the altar. In modern Catholic churches a tabernacle on top of the altar generally fulfils this role.

[10] Probably images of St Francis of Assisi or his followers (Farmer 1992, 185–8).

[11] There is only one other instance of the sale of defaced images recorded in the 1552 London inventory of parish church goods: St Benet's, at Paul's Wharf (1548–9) sold 'dyuers olde Images' (Walters 1939, 196).

[12] Museum of London online collection https://collections.museumoflondonorg.uk/online/objects/search (accessed 25 June 2022). The statues represent Temperance or possibly Discipline (ID 2002.117/1a), Prudence (ID 2002.117/2a), Justice (ID 2002.117/3a) and Fortitude (ID 2002.117/4a). In 1972 these four statues were recovered from a garden in Wales; it is assumed that they were sold off after 1788.

[13] In 2 *Kings* 10:25–7, Jehu had all the worshippers of Baal found inside their temple put to death; he burnt 'the sacred pillar' in the temple's inner sanctuary and then converted the building into a latrine. Jehu's actions were an inspiration to Protestant iconoclasts, who turned to the Bible for spiritual guidance (Aston 2016, 111–15).

[14] The City of London in 1552 contained 109 parishes, of which only 84 have surviving inventories of church goods (Walters 1939, 20, 67–8); of these, 43 parishes were apparently selling off brass funerary monuments. Sales of funerary brasses are either documented or inferred for 25 parishes and a further 18 parishes are considered 'likely' to have sold off material (Hutchinson 2022, 337).

[15] John of Gaunt (d 1399), Duke of Aquitaine and Duke of Lancaster, was a prince, soldier and statesman. He was buried in the choir of St Paul's close to the high altar beside his first wife Blanche of Lancaster (d 1368). Their magnificent chest tomb was surmounted by alabaster effigies of them both. John endowed an adjoining chantry chapel. Both the tomb and the chapel survived until shortly before 1666 (Harris 2010).

[16] From 1950 until 1957 Ivor Noël Home was the Guildhall Museum field archaeologist; with the help of a few assistants and volunteers he carried out watching briefs and small-scale salvage excavations on many City of London sites during their redevelopment. The publicity generated by the discovery of the temple of Mithras in the summer of 1954 made some developers wary of allowing archaeologists

access to their sites in case their discoveries caused delays (Merrifield 1965, 17–22).

[17] In the absence of any archaeological fieldwork, the plan of this vault and any other remains of the medieval church that were uncovered were not recorded.

[18] Confusingly this verse corresponds with *Psalm* 76:2 in the modern Bible, 'He has his home in Jerusalem; he lives on Mount Zion'. The modern translation of this verse is significantly different from the historic version (Woods 2007, 57). All biblical quotes cited in this article are taken from the *Good News Bible* (2004).

[19] The second and third clauses of the First Commandment of the Catholic Church (moved to the beginning of the Second Commandment of the Anglican Church) prohibit the making and worshipping of images or idols (*Deuteronomy* 5:8–9; *Exodus* 20:4–5).

[20] Becket after his appointment as Archbishop of Canterbury in 1162 resigned as Lord Chancellor and started to quarrel with his former friend Henry II over matters of ecclesiastical jurisdiction, which Henry strongly opposed as he felt that it undermined his authority. As neither side would compromise, relations between the king and Becket completely broke down and in 1164 Becket went into exile for six years. Things were patched up in 1170 and Becket returned to Canterbury. However, relations between the king and Becket quickly deteriorated and in a moment of anger the king, who was completely exasperated at Becket's perceived disobedience, ordered his death. On 29 December 1170 Becket was brutally murdered inside Canterbury Cathedral by four knights who had voluntarily chosen to obey Henry's order. Becket's murder provoked international outrage and Henry was obliged to publicly atone for his part in it and accept all aspects of ecclesiastical jurisdiction. Immediately Becket's tomb became a scene of miracles and a popular place of pilgrimage. He was canonised in 1173. Henry VIII, due to his own dispute with papal authority, viewed Becket not as a martyr, but a traitor to the Crown. Hence his decision in 1538 to denounce Becket as a traitor, remove him from the Church of England's calendar of saints and erase all evidence of his cult (Beer & Speakman 2021, 39–79; Farmer 1992, 460–2).

[21] On the top edge of the Utrecht Christ's coffin is a hand (broken off at the wrist) representing a missing or smashed figure (Woods 2007, fig 23).

[22] In 1848 restoration work inside the chapel of St Catherine in the north transept of St Cuthbert's Church revealed that the niches of the concealed 13th-century reredos had been infilled 'with fragments of figures, all more or less mutilated, and with their faces turned to the wall, to give a smooth surface for the plastering by which they were concealed from view. In one of the windows on the north side of the chancel, which had been filled up …, were also found an immense number of fragments of figures, canopies of niches, pinnacles, and other ornamental portions. Every one of these figures was headless …' (Ferrey 1855, 93–4). Since 2016 the St Cuthbert's finds have been photographed, catalogued and conserved. See *The Unique Medieval Reredoses at St Cuthbert's Church, Wells*, https://stcuthbertwellsreredos.wordpress.com/tag/data-entry (accessed 29 October 2022).

[23] Only after Mary's marriage to Philip of Spain on 25 July 1554 did she become a joint ruler, so any earlier orders would have been issued by the queen's Council.

[24] This individual cannot be identified with any certainty in other records (Barnard 2020, 313).

[25] The intention was obviously to ridicule the consecrated wine and bread of the Catholic Eucharist (Murray & Murray 1998, 170, 461). An engraving of this event was published in 1784 (Keily 2022, 41).

[26] Edmund Bonner was bishop of London from 1539 until 1549, when he was sacked and replaced by Nicholas Ridley, who was sacked in July 1553 and burnt at the stake for heresy in October. Bonner was reappointed as bishop in September 1553 and sacked again in May 1559. He was then imprisoned for refusing to accept Elizabeth as head of the Church of England and died in prison four months later (Brigden 1989, 444–5, 463, 528, 576, 609).

[27] The largest alabaster panel fragment (Fig 5), depicts the birth of St John the Baptist (Museum of London ID 11179/1; it is illustrated in Povah 1894, 12). A second fragment from the same panel depicts Zacharias writing down the baby's name on a scroll (MoL 11179/2). The other fragments consist of: the head of an angel (MoL 11184); the upper portion of two defaced figures – Christ before Pilate, held by a soldier (MoL 11182); one of the three kings (Caspar) (MoL 11181); and an unidentified figure wearing long robes (MoL 11191). Details from online Museum of London collection (accessed 10 March 2022).

[28] A reredos consists of decorative panels at the back of an altar.

[29] The repaired statue is in the collection of the Museum of London (ID 7205).

[30] This figure (Museum of London: Acc. GM 146) along with *Ecclesia* would have symbolised the Old and New Covenant or Dispensations. The Old Covenant was established by the Ten Commandments, while the New Covenant was created by Christ's death and the institution of the Eucharist. Such pairs of sculptured figures are often found on medieval church portals. *Synagoga*, who represents the Synagogue of the Old Testament is normally shown as a dejected, blindfolded figure, holding the tablet of the Ten Commandments and a broken spear or sceptre. In complete contrast, *Ecclesia*, representing the church of the New Testament is portrayed as a triumphal figure (Murray & Murray 1998, 156).

[31] Displayed inside St Mary's and St Andrew's Church, Whittlesford in Cambridgeshire are numerous small fragments of badly smashed mid-15th- or early 16th-century alabaster reredos panels probably belonging to one more or altarpieces (Williams 2013, 60–1). This material was discovered in 1876 'imbedded in the walls of Whittlesford church'; apparently it was 'walled up in the south chapel' (Rosen *et al* 1978, 263–76).

[32] 'Saint's relic returns to cathedral 500 years on' *The Times* 7/11/22.

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# HEADSTONE MANOR, PINNER, HARROW: ARCHAEOLOGICAL INVESTIGATIONS 2016–17

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*With contributions by Lee G Broderick, John Cotter, Julian Munby, Rebecca Nicholson and Ian Scott*

## SUMMARY

*Monitoring of the excavation of new service trenches dug to the north-west of the historic house at Headstone Manor in 2016–17 led to the uncovering of a substantial masonry building containing at least two rooms. The presence of a tile-lined hearth and several areas of burning upon a clay floor suggest that it was the kitchen of the manor house. Radiocarbon dating confirmed that this activity was medieval. Removal of topsoil to the south of the standing building revealed more masonry foundations, probably of medieval date, interpreted as part of a demolished range of buildings extending beyond the medieval hall. This new evidence has allowed a reinterpretation of the plan of the early post-medieval manor house. Extensive amounts of dumped clay indicate the raising of the ground level within the moated enclosure; this clay was probably derived from the excavation of the moat during the early 14th century.*

## INTRODUCTION

### *Scope of Work*

Oxford Archaeology (hereafter OA) was commissioned in 2013 by Buttress on behalf of the London Borough of Harrow to carry out archaeological monitoring of the repair and refurbishment of the Scheduled Monument at Headstone Manor for use as a museum housing Harrow's historic and nationally important collections. Headstone Manor is located at Pinner View, Harrow, Middlesex, HA2 6PX and is centred on NGR 514090 189710 (Fig 1).

The Scheduled Monument (List Entry 1005558) comprises the Grade I listed medieval Manor House (the earliest surviving timber-framed building in Middlesex) and its associated water-filled moat, together with the early 16th-century Grade II* listed Great Barn, the Grade II listed Small Barn and a Grade II listed 18th-century granary. Two Listed Building and Scheduled Monument Consent (hereafter SMC) agreements were granted for work at the site: (S00074230) and (S00110337). OA produced an updated archaeological mitigation strategy (OA 2016), which was agreed with Iain Bright, Assistant Inspector for Historic England, prior to commencement of works. All work followed Greater London Archaeological Advisory Service (GLAAS) guidelines (2014).

The archaeological work initially consisted of a watching brief monitoring groundworks both on the Moated Island and the Outer Court, principally the excavation of new service trenches (Fig 1). On the Moated Island, the watching brief covered the excavation of heating duct and lighting cable trenches (Heating Duct II, Lighting Cable Trench VII), a drainage soakaway, landscaping and recording features exposed when internal floors were lifted.

When walls and robber trenches were revealed at shallow depth to the north of the Manor House, an area of 50m$^2$ was cleared




*Fig 1. Location of site*

to assist in determining where best to locate new services, and targeted trenches were dug to clarify the degree of preservation, date, stratigraphic complexity and extent of the revealed building next to the Manor House.

Removal of topsoil and subsoil to the south of the Manor House for landscaping revealed substantial flint walls, leading to further targeted trenching aiming to clarify the extent, date and relationships of these walls.

This report presents the medieval and early post-medieval discoveries made during the watching brief and excavations within the moated enclosure. It also makes use of the many below-ground investigations of the last 35 years that exist only as grey literature reports, whose results are considered and referenced where relevant in the discussion. A full account of the discoveries both in the Outer Court and on the Moated Island, including all the detailed specialist reports, can be found in the full reports (OA 2019a; 2019b) available both at the Headstone Manor Museum and as digital downloads from OA's online library. The digital archive can be found on the ADS and the physical archive will be deposited with the Headstone Manor Museum, Pinner Drive, Harrow. The site code for this fieldwork is HEM14.

The following conventions are used in this article: context numbers cited in the text appear in square brackets [1] and environmental samples are denoted by a capital S prefix, *eg* S2.

### *Layout, Topography and Geology*

The manorial complex, which is orientated south-west to north-east, has two parts (Fig 1). The Manor House sits within a square enclosure surrounded by a continuous moat, entered over a bridge on the south-western side. The bridge links the Moated Island to the Outer Court, which contains the Great Barn, Small Barn, and a granary brought from Pinner Park Farm in 1991.

The ground surface rises to the west, north and east of the Manor House, but slopes downwards to the south, where the Yeading Brook flows from east to west and is fed by streams and channels that flow past the western edge of the site, including an overflow channel for the moat. The Manor House is situated at the highest point within the moated enclosure, being 54.43m OD just to the south of the hall, and the ground slopes down to 54.08m OD at the south-west corner of the moat and 53.84m OD on the moat edge north of the Manor House. The height of the Outer Court is lower, with a marked southwards slope down to the north-east corner of the Small Barn and a general southwards slope to Pinner View.

The underlying solid geology of Headstone Manor consists of Eocene London Clay, overlain by a band of Lambeth Group clays, silts and sands derived from a former stream or river valley (BGS Viewer 2016).

### *Historical Background*

The documentary history of this property has been researched and published by Patricia Clarke (2000), from which this summary is mainly derived.

Headstone is first mentioned in *c.*1300, when Walter de la Hegge was a witness of the purchase of *Hegton.* although the estate probably extends back to *c.*1233 (Clarke 2000, 157). Timbers from the roof of the manor's hall produced a dendrochronological range of *c.*1310–15 for their felling (Howard *et al* 2000), and the hall and the northern cross-wing may have been built by the eponymous freeholder Walter (the place was called *Heggestone* in 1367). By 1332 it belonged to Roger Rameseyes who sold Headstone to Robert de Wodehouse, Treasurer of the Exchequer, and in July 1344, the Archbishop of Canterbury, John Stratford purchased it from de Wodehouse. Headstone subsequently became the archbishops' main Middlesex residence. From the end of the 14th century Headstone was leased out, but the use of the house, stables and gardens was reserved for the archbishop and his retainers when they visited.

Records mention a dovecote and (by May 1367) a chapel in which Archbishop Simon Langham ordained five clergymen (Clarke 2000, 161). A gatehouse, variously called the 'great gate', 'the western gate' or the 'old gatehouse' is mentioned from 1487 until 1533, when it was demolished along with adjoining houses that stood at 'the end of a long stable' (*ibid*, 164). The roof of the Manor House was tiled by the 15th century; in 1466, 90,000 tiles were bought for repairs and a further 16,000 tiles in 1486–8 (*ibid*, 163). The chapel was either demolished or repaired during extensive works in 1488–9 (Martin & Martin 2001, 6). When the moat was constructed is uncertain, but it must predate payments for its cleaning and refilling, plus building a new bridge, in 1466–7 (Clarke 2000, 163). Several farm buildings including a 'Great Stable' are also recorded, all presumably in the Outer Court. In 1514,

however, a new stable for three to four horses was planned for the Moated Island.

Headstone was held by the archbishop of Canterbury and used as an occasional residence until Thomas Cranmer exchanged it with Henry VIII on 30 December 1545. The king sold Headstone to Sir Edward Dudley, who in turn sold it to Sir Edward (later Lord) North, Chancellor of the Court of Augmentations.

Headstone Manor retained manorial rights until 1630, after which, now Headstone Farm, it was bought by Simon Rewse, the then lessee, who panelled the hall and built an extension to the rear. His will of 1637 left his wife Anne 'halfe of the profitte of the Orchard and Garden', together with part of the house and 'the outhousing from the gatehouse under the pigeon house to the moat' (Clarke 2000, 166). It is, however, unclear where the gatehouse was situated. The rest of the estate was left to his four sons.

Simon's son, Francis Rewse, was a Royalist in the Civil War, and the property was sequestered by the Parliamentary Middlesex Committee for Compounding. William Williams bought the estate in 1649, when the sequestration order was discharged, and built a substantial new wing containing cellars, a pantry, and bedrooms. He sold it in 1671 to Sir William Bucknall, in whose family it remained until 1823. Another wing was built in the 1770s, and a brick façade added to the house front.

The earliest map of the site is John Rocque's 1754 map of London and Middlesex, but it shows little detail. Four buildings are depicted, the Manor House, Great Barn and other buildings to the south-west and south-east, but the moat is not shown. Isaac Messeder's map of Harrow of 1759 has even less detail, but it does show the Manor House as narrower at the north-west end, an outline followed in all later maps.

Maps prior to the main Ordnance Survey (OS) series comprise the Enclosure map of 1817 and the Sale Map of 1819, maps of 1840 and a Sale Map of 1845, and the Sale of Particulars Map of 1860 (surveyed in 1853). The 1st edition OS map at 1" to 1 mile was printed in 1865 and was followed by further 1:2500 maps in 1878, 1896, 1913–14, 1935 and 1960. The 1845 map and the 1860 Sale of Particulars Map show a formal layout of beds within a grid of paths south of the hall, with an orchard to the east. Three buildings are shown to the north of the Manor, and records mention a brew house and outhouses for waterfowl and wood (*ibid*, 178). By the time of the 1896 2nd edition OS map, these structures had gone. In the 20th century, maps are supplemented by a number of photographs and sketches (*ibid*, 175–9, figs 10–13).

Following an agricultural depression in the 1840s, Headstone Manor Farm was divided in two and further sales left only the house and 63 acres when it was sold to Hendon District Council in 1925. The OS map of 1935 shows that the District Council implemented few changes during its early ownership of the site. The farmyard buildings had now lost their original functions, and as each one deteriorated it was demolished, while the Manor House also fell into decay.

### *The Extant Manor House Building*

*Julian Munby*

The historic building complex at Headstone Manor presents a complicated series of brick and timber-framed buildings with multiple tiled roofs and gables. The Manor House (first listed in 1951) was described in some detail by the Royal Commission on Historical Monuments inventory of Middlesex in 1937 (RCHME 1937, xxi, 103) and has been the subject of several analytical reports (Airs 1972; Harris 1989). In Pevsner's *The Buildings of England: Middlesex*, Headstone Manor only received a paragraph (Pevsner 1951, 133), but in the 1991 revision it merited a two-page entry (Airs 1991). Following a programme of dendrochronological dating (Howard *et al* 2000), the most recent and detailed analysis took place in 2001 (Martin & Martin 2001).

While establishing the descent of the manor and the owners or occupiers of Headstone, the historical study shows that the period under the ownership of the archbishops of Canterbury (1344–1545) is not well documented, although for much of the period it was leased out. While there are references to a new bridge, and repairs to the chapel, the roof of the house and barns (Clarke 2000, 163), these do not assist understanding of the layout of the house itself.

For the later building history of the house the most important documentary source is a partial schedule of contents in 1601, which gives a brief insight into the uses of ten rooms, mostly on the first floor, even if they cannot be exactly located and some may have been in parts of the building no longer extant (Clarke 2000, 164–5, appendix, 179; see Discussion below). A more certain account, though lacking in detail, was the 1638 specification of the extent of the dower interest of Ann Rewse, widow of Simon Rewse (responsible for much of the early 17th-century expansion of the house), which confirmed her area as being from 'the entry at the lower end of the hall' (*ie* the screens passage) northwards, indicating that this part of the premises was of sufficient size for her domestic needs.

The extant remains of Headstone Manor consist of the truncated hall and cross-wing, together with the much-rebuilt service end of the medieval house towards the north (as occupied by widow Rewse). The southern bay of the hall and the whole of the high or chamber end of the house have now gone. The excavations reported here record former elements located beyond the north and south ends of the current buildings, which appear to have become redundant after the major rebuilding of the property in the late 16th–18th century.

It is only necessary here to summarise the main building phases as identified by David and Barbara Martins' (2001) report (Fig 2).

*Phase A* represents the medieval buildings, dating from the second decade of the 14th century. This consisted of a hall with a cross-wing including the screens passage under a chamber above. Both hall and cross-wing have a crown-post roof, with a braced longitudinal purlin that prevented the roofs from moving, a common feature of the period, but the hall is of special interest because the central roof truss (now in the south wall) had long curving braces in place of aisle posts, and the tie beam carrying the longitudinal arcade plates and crown-post was extended outwards through the roof slope to support gabled 'dormer' windows. This achieved in timber framing what can be seen elsewhere in stone, for example in the late 13th-century hall of Stokesay Castle, Shropshire. With a hearth in the centre of the hall, the windows would have provided additional light for the upper end of the hall in the lost southern bay.

*Phase B* represents alterations of the mid- to late 16th century, when Richard Reading and his son Thomas were tenants of Sir Edward North. These alterations consisted first of a single bay extension at the north-east corner of the hall, built over a cellar, and likely to have functioned as a buttery, and second the reconstruction of the west wall of the hall with a large timber window, presumably to increase the amount of light at the north end of the hall. Although only surviving as a partial fragment, the next addition between 1560 and 1580 was the construction of a west range, a passage and side rooms leading northwards, possibly towards the kitchen, and probably with domestic accommodation above. Dendrochronological dating of timbers from this wing produced dates of 1558–85 (Howard *et al* 2000; Martin & Martin 2001, 12). Repairs were also undertaken on the framing of the hall screen wall which seems to have been subject to subsidence.

*Phase C* comprises changes made in the first half of the 17th century, under the tenancy (and then ownership) of Simon Rewse, Receiver General of Lord North. Together these resulted in the wholesale upgrading of the domestic offices, with a north wing containing a kitchen and bakehouse, both timber-framed but with substantial brick chimneys and multiple fireplaces on ground and upper floors. At this stage, if not earlier, the old kitchen outside the north end became redundant and was demolished. Other minor elements included the lean-to on the south side of the bakehouse and a rebuilt porch adjacent to it.

In *Phase E* (there is no Phase D) extra accommodation was provided on the east side of the hall, with an additional rear range (now lost) and an upper floor added to the adjacent Phase B 'buttery' in *Phase F*. Neither of these phases could be dated by dendrochronology, but they seem likely to belong to the mid- to late 17th century, when the chamber range (however modified) was still standing at the south end of the hall. Since there is no evidence that the hall was ever floored over, it must have remained open to the ceiling, so these rooms on the east side would have provided a very necessary upper

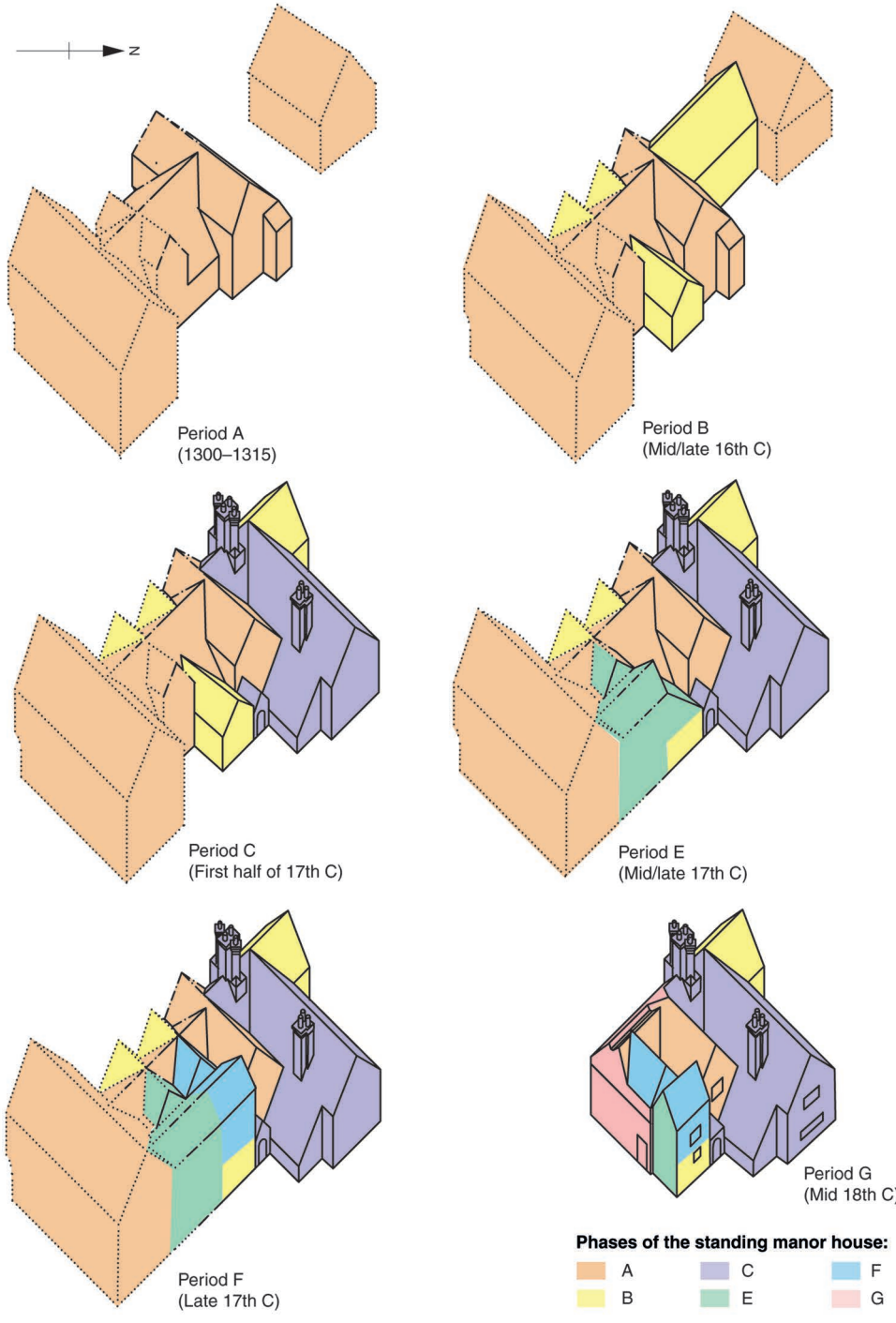



*Fig 2. Birds-eye view of the standing Manor House from the east, showing the sequence of development (from Martin & Martin 2001, drawing 367/3B)*

level passage or gallery access from one end to the other.

*Phase G*, the mid-18th century, saw the removal of the south end of the hall (possibly after a fire) and the reconstruction of the end wall in its current position. Perhaps the loss of accommodation at the south end of the house led to the building of the 18th-century north-east range (*Phase H*), a two-storey building with a timber east wall and a brick front facing west. However, there is evidence in the property documentation that the farm had been divided in two from the 1660s, and remained so for a century, although it is not certain whether the Manor House itself was divided or if a second house was provided on the site (Clarke 2000, 168).

Under the united ownership of Daniel Wilshin junior and his son John in *Phases J–K* (1767 to 1821), the north and west sides of the house were refaced with brickwork, which contains many initials of the Wilson family and others (Fig 3). Other minor internal alterations were made by them, but few notable changes were made through the rest of the 19th century.

### *Approach to the Excavation*

Buried walls were found only 300mm below ground level to the north-west of the Manor House and less than 250mm to the south-east. The depth required for services and landscaping was greater than this, and therefore justified clearance and planning of the remains sufficient to recover a plan. It was also hoped to provide significant new information that could be incorporated into the layout and educational displays for the museum. The scope of investigation was also constrained by the desire to restrict fieldwork to the minimum required to establish the date and character of the remains, both to preserve them undisturbed as far as possible and to limit costs.

## DISCOVERIES – MOATED ISLAND

### *Previous Archaeological Work in the Moated Enclosure*

In previous reports the orientation of the Manor House has been described variously as 'north–south' and 'east–west'; in the following account the actual north-west to south-east orientations are given.

During 1985, Harrow Archaeological Survey carried out a geophysical survey of the moated enclosure aiming to recover the plan of the demolished part of the hall. The results, however, mostly related to the formal gardens seen in various 19th-century plans and engravings (Watkins 1985).

In 1987, service trenches dug to the north-west of the Manor House revealed flint foundations (Fig 4), seen first by Patricia Clarke (Clarke 2000, 158 ftn 8) and then by Stephen Tucker while he was excavating the site of the Small Barn (Tucker 1987). Tucker noted a hearth and several further walls, while Clarke made brief notes and took several photographs, but there was no formal record of these discoveries, and the date of these walls was unclear.

In 1996, a resistivity survey of the grassed area south-east of the Manor House undertaken by GeoQuest Associates revealed linear anomalies interpreted as wall foundations (Hale & Grove 1996, fig 2; Fig 3). Three sides of the probable structure were mapped, but the south-eastern side was too close to the edge of the moat to be surveyed. A second area of high resistivity in the eastern corner of the island was interpreted as an area of hard standing or a cobbled yard (*ibid*, 5).

In 1997 the Central Archaeology Service (CAS) dug trenches to investigate the linear anomalies identified in the resistivity survey (Trenches SSD1, SSD2: Figs 3, 13; Busby & Griffin 1997), and uncovered a north-west to south-east aligned robber trench ([CAS24], [CAS43]), which in SSD2 overlay a flint wall or foundation ([CAS51]). No dating evidence was recovered from the wall or robber trench, but it was interpreted as the southern continuation of the hall. The robber trench was believed to continue into their trench SDD3 (*ibid*, fig 5, cut [87]), although it was not excavated. Another wall was identified ([CAS80]), continuing south-east just outside (west of) the line of cut [87], and another soil mark continuing south-west at right angles to this was interpreted as a building abutting the corner of the hall (*ibid*, fig 2). Further south, two north–south aligned flint walls ([CAS167], [CAS169]), were found in Trench SSD6.

The more westerly wall [167] was in line with [CAS80] and is interpreted as a north-west to south-east aligned structure attached to the southern end of the medieval hall.

During 2000, further excavations by the Central Archaeology Service identified the footings for the south-west and north-west elevations of the service end of the Manor's cross-wing and the north-west wall of a service passage between the cross-wing and the hall (Fig 3, cross-wing). The walls were built of chalk blocks and flint nodules, the latter both dressed and rough-hewn. North-west of the cross-wing, a small section of a flint wall was also found below the large fireplace and 17th-century chimney stack of the west range (Bond 2001; Fellows 2001).

Dredging of the moat in 2010 afforded an opportunity for recording of the moat and bridge by Heritage Network (Ashworth 2010). No deposits or finds predating the 1973 clearance came from the moat. Examination of the bridge and the brick moat revetment wall showed that the eastern arch of the bridge dates to the mid-17th century, while the western two arches date to the mid-19th century. No trace of an earlier bridge was found.

### *Heating Duct Trench II*

This trench ran north and north-east from the eastern end of the moat bridge to beyond the north-west corner of the Manor House (Fig 3), and was generally 0.65m deep, but was deepened to 0.9m where it encountered masonry. Just east of the bridge the trench uncovered two walls built of roughly dressed flint nodules set in a coarse sandy lime mortar (walls [501] and [477]; Fig 3, insert; Fig 5, Section 75). Later service trenches had removed both faces of wall [477], but one face of wall [501] probably ran north-west to south-east, and as [477] was roughly at right angles, these walls may have formed the corner of a building. The walls were abutted by deposits of mixed yellow and light blue-grey clay with pink mottling [507] and [467], neither of which produced any finds. Above these walls was a thin layer of sandy clay [509] containing flint and chalk rubble, possibly derived from demolition and the robbing out of the walls, but no datable finds.

Further north-west another flint wall of very similar construction [476] ran north-west to south-east across the trench at a depth of *c*.0.5m (Fig 3, insert). The wall was 0.6m wide and at least three courses high but was not bottomed (Fig 5, Section 70). It was abutted by a layer of blueish grey mottled silty clay [478] that contained a sherd of South Hertfordshire Ware pottery (1170–1350). To the south, there was a layer of flints visible in section above [478], which may either indicate that the wall returned just beyond the section or may represent a construction horizon within the dumping, as both this and layer [478] were overlain by the greyish yellow clay [467], here 0.4m thick. North of the wall, layer [478] was lower and was sealed by layer [457], a stiff orange-brown clay that also abutted the wall. This deposit, which contained occasional fragments of chalk, small pebbles and peg roofing tile fragments, continued north all along the trench (Fig 4). Both layers were cut by the robber trench of wall [476], whose fill [459] contained a half-brick of late 16th- or 17th-century manufacture.

### *Lighting Cable Trench VI*

This trench ran east-south-east from the moat bridge through a gap/gate in the garden wall and then turned east-north-east along a path and the south-east end of the Manor House (Fig 3, inset). At the west end of the trench a stiff yellow clean clay with pink mottles [603] (not illustrated), equivalent to [467] in Heating Duct Trench 2, was exposed. Where the trench passed through the current garden wall, it revealed a flint-and-mortar wall [598] running south-west to north-east below and alongside the original foundations of the brick garden wall [599]. Wall [598], which appeared to be diverging towards the south-east from the overlying wall, was at least 0.3m wide, and was abutted on the north-west side by layer [603].

### *Excavations to the North-West of the Manor House*

Following machine excavation to a depth of 0.3m, the area was cleaned and Trenches 1–5 were then excavated by hand (Fig 4). The Heating Duct Trench was then diverted along a pre-existing east–west drainage

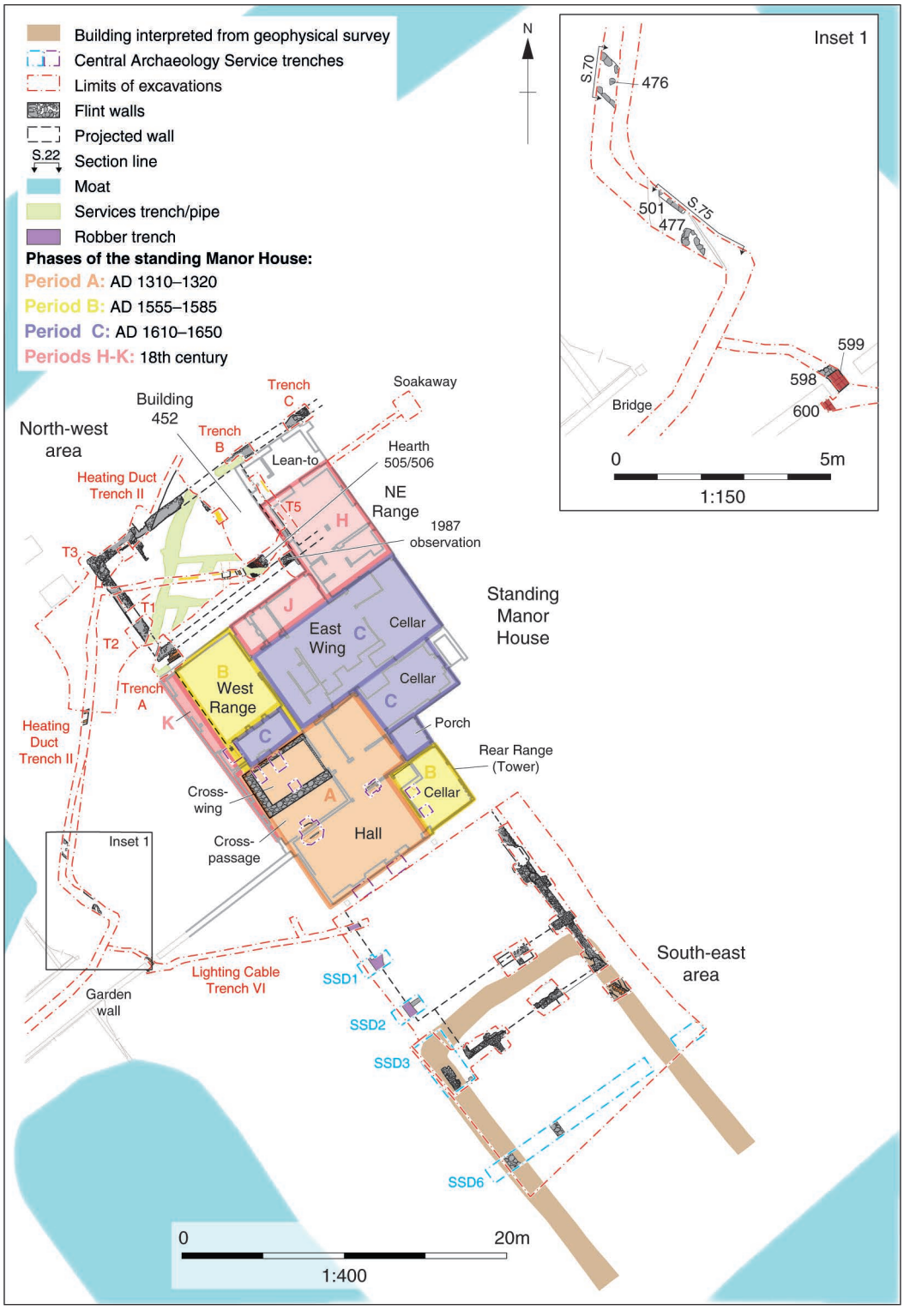



*Fig 3. Archaeological investigations on the Moated Island*

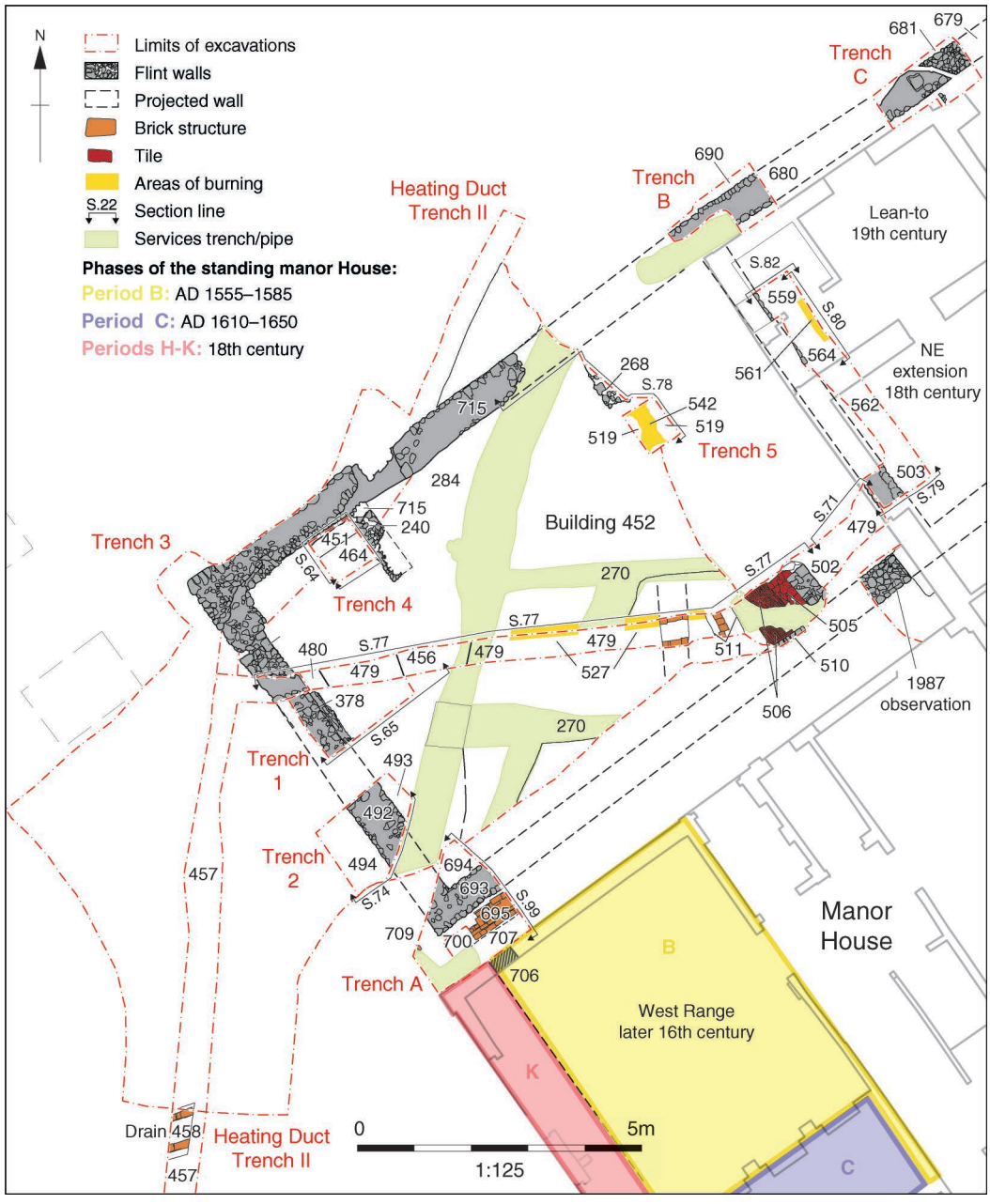



*Fig 4. Building 452, north-west of the standing Manor House*

trench, before turning north-westwards and cutting through the south-western wall of the northern extension to the Manor House, within which it ran north-westwards parallel to the wall. The east–west trench, which was 0.6m deep, was cleaned up and the north section drawn, providing a transect across Building 452 (Fig 8, Sections 71, 77). Once the scaffolding around the standing building had been removed, three further small trenches were excavated (A–C, Fig 4).

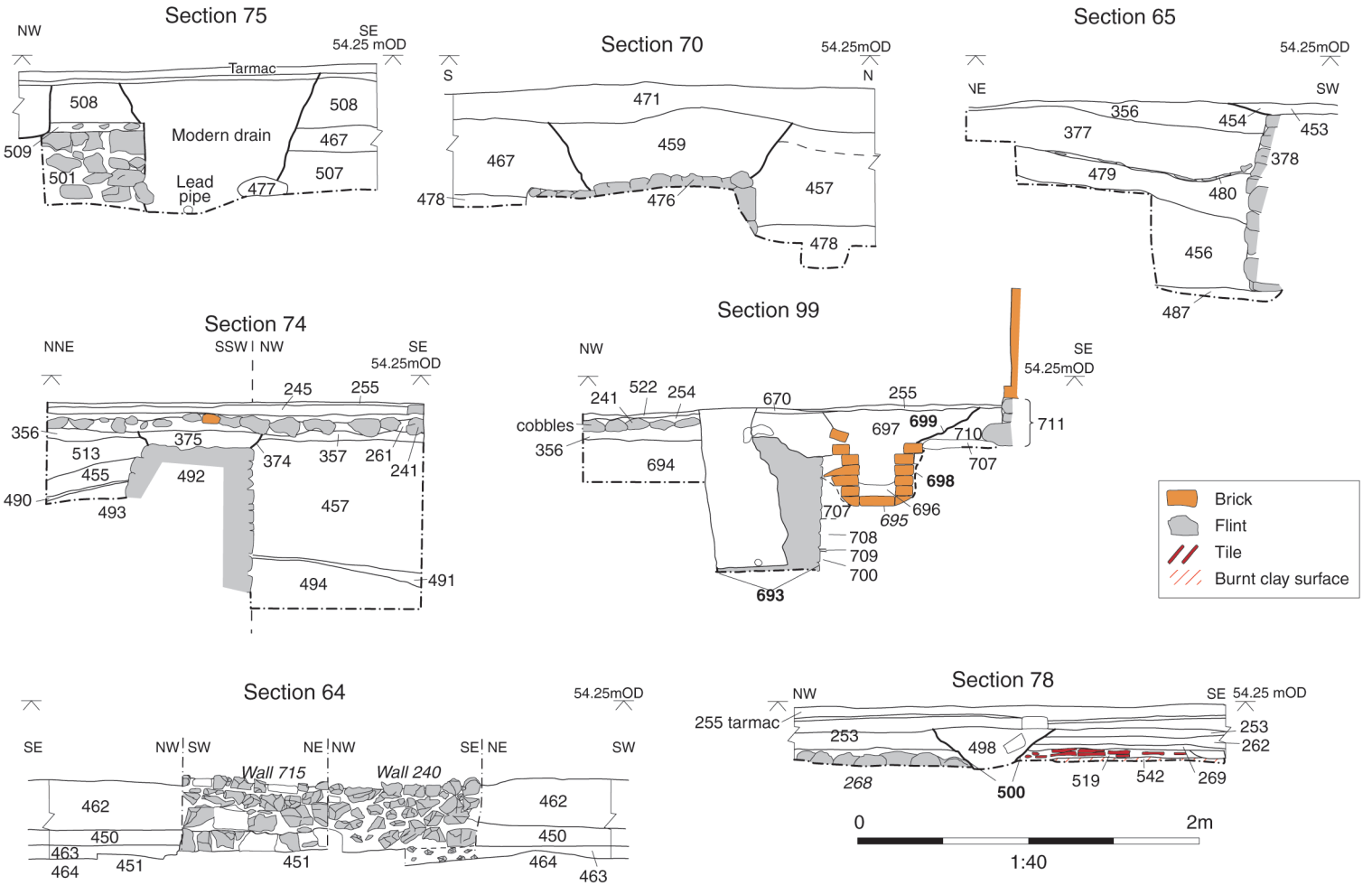



*Fig 5. Sections of Heating Duct Trench II, Trenches 1, 2, 4, 5 and Trench A*

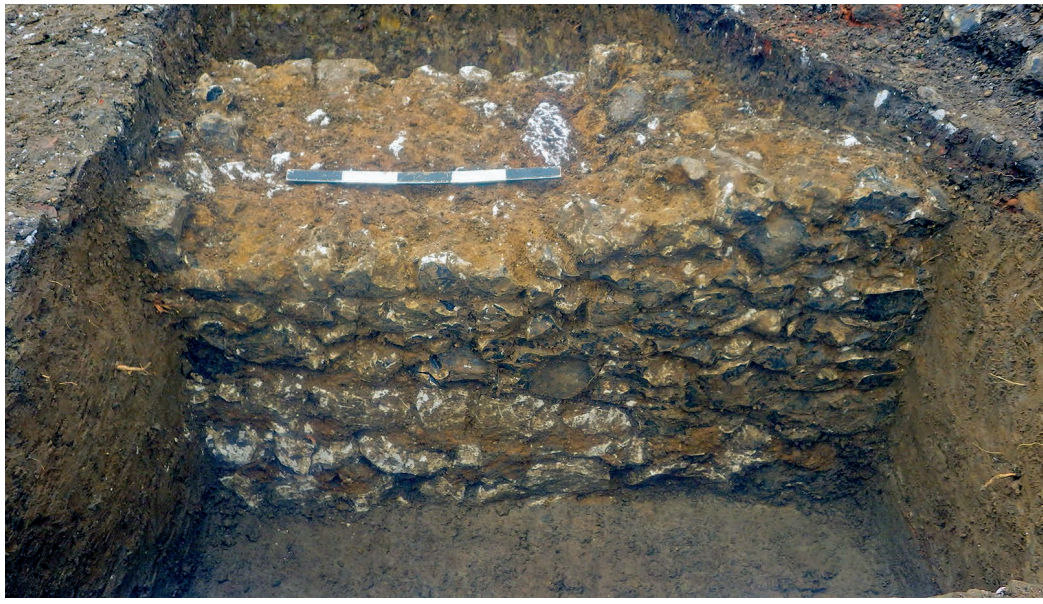


*Fig 6. Building 452, south-west wall [492] detail in Trench 2, view looking north-east (0.5m scale)*

*Building 452*

The earliest deposit seen was layer [487], a grey silty clay with orange-brown mottles at the base of Trench 1 (52.86m OD) underlying the flint and chalk south-western wall [260=378=492] (Fig 5, Sections 65, 74). The wall was *c.*0.6m wide and survived nearly 1.1m high. It was built of randomly coursed, roughly worked chalk blocks and flint nodules bonded with a coarse sandy lime mortar (Fig 6).

The upper courses of the wall were better dressed. In Trench 1, the lower courses were constructed mostly of chalk, while the upper courses were mainly of flint, but in adjacent Trench 2, and in Trench 4, where the north-west wall was partly revealed, flint and chalk were intermixed. These walls showed that Building 452 was 7.7m wide and at least 16.8m long (Fig 4). Wherever exposed, the outer walls were uniformly 0.6m (2ft) wide and of the same construction materials and mortar, but only in Trench 1 was the full depth of the wall revealed. Both ends of the south-western wall were exposed; the north-west corner, where particularly large flint blocks were used, was wider than the rest of the wall (Fig 7).

The north-western wall [715] was more heavily robbed (Fig 4), but a 7m length of its inner edge was exposed from the west corner, and the wall was followed north-east through Trenches B [680] and C [679]). Only the top of the wall was cleared except in Trench 4, which investigated its relationship with cross-wall [240] and the abutting stratigraphy (Fig 5, Section 64).

Only small areas of the south-east wall of this building were exposed. At the south corner (Trench A) wall [693] had been truncated along its inner side (Fig 4; Fig 5, Section 99), but the outer (south-east) side (which was not bottomed) survived to nearly 0.8m high. This masonry was recorded as wall [510] in Heating Duct Trench II and (including the 1987 observation by Tucker and Clarke) could be traced intermittently north-eastwards for 10.8m, but it was not followed beneath the standing building. The north-eastern limit of Building 452 was not established.

Building 452 was sub-divided by three cross-walls constructed of mortared flint blocks ([240], [502] and [503=559=564]; Fig 4). Only 1m of the top of wall [502] was exposed, and only 1.2m of wall [240], after which it appeared to end; the apparent



*Fig 7. Building 452, corner between walls [260=378=492] and [715], with wall 240 behind, view looking north-east*

continuation on the surface in Fig 7 is a later feature. Wall [503=559=564] was traced for 4.3m, but neither end was exposed. These walls were respectively 0.5m, 0.36m and 0.46m wide. Walls [240] and [502] were not keyed into the outer walls, so they were clearly constructed afterwards.

A possible fourth internal wall [268] was found north-east of wall [240] inside the north-west outer wall (Fig 4; Fig 5, Section 78), but its top was not obviously mortared, its relationship to the outer wall [715] was not established and it appeared to be at an angle to the outer wall. A small sondage (Trench 5) indicated that it ended only 1.2m from [439], with a burnt floor layer [542] overlain by a layer of roof tiles [519] beyond. It was therefore of similar length to wall [240] but was not certainly contemporary.

The robber trenches overlying the truncated walls were mostly very shallow, and very few finds came from them, but the robber trench overlying [715] contained occasional small fragments of handmade brick and was overlain by layer [242], which contained a sherd of 16th-century pottery and fragments of peg roofing tiles of 16th- and 17th-century type.

*Outside Building 452*

Outside the south-west side of Building 452, the lowest deposit exposed was in Trench 2 and consisted of a layer of grey clay with orange-brown mottles [494] at least 0.3m deep, which abutted wall [492] (Fig 5, Section 74). It was sealed by a 0.08m-thick deposit of orange-brown clay [491], which sloped down away from the wall and contained frequent fragments of chalk and struck flint and two small fragments of peg roofing tile. This deposit appears to represent a working surface relating to either the construction or repair of this wall. Layer [491] was sealed by a 0.8m-thick deposit of orange-brown clay [457] containing flecks of chalk and fragments of peg tile believed to have been manufactured during the 17th and 18th centuries, the same deposit seen in the Heating Duct Trench to the west (Fig 5, Section 70). There was no trace of a construction cut for wall [492] through any of these deposits.

In the Heating Duct trench, layer [457] was overlain by layer [467], both abutting the south-west wall of Building 452, but elsewhere layer [457] was sealed by a deposit

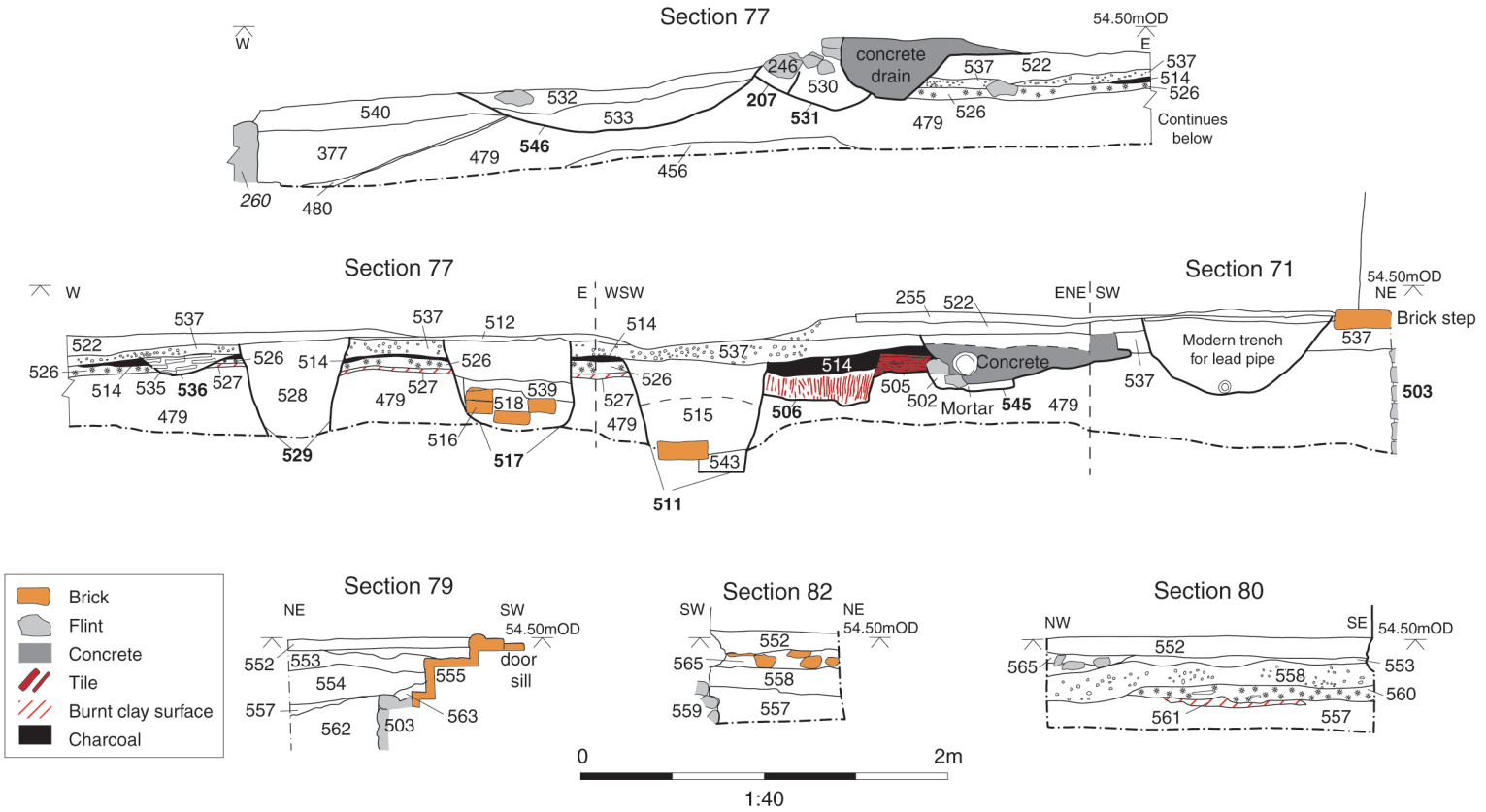



*Fig 8. Sections across Building 452 in Heating Duct Trench II*

of greyish-brown silty clay [357] containing frequent flecks of chalk and occasional flint nodules. Outside the north-west wall of the building only the top of the dumped clay, here a yellowish grey clay [243=690], was exposed and it contained no finds.

The stratigraphic sequence outside the south-east wall of Building 452 was the same as that outside the south-west wall in Trench 2 (Fig 5, Section 99). The lowest deposit exposed, [700], was equivalent to layer [494], but here containing three joining fragments of peg roofing tile whose fabric is generally dated to the 16th or 17th century. This deposit was sealed by a thin layer [709] containing fragments of chalk and flint equivalent to layer [491]. This was overlain by a brown clay layer containing frequent flecks of charcoal [708], and [708] in turn by a layer [707] of yellow and pink mottled clay 0.42m thick, similar to deposit [457]. An identical layer [694] was seen to the north-west of the robber trench of wall [693] inside the building.

*Deposits Within Building 452*

Within the western end of the building, wall [378] was abutted by a series of thick mottled clay layers (Fig 8, Sections 71, 77). The earliest, [456], was 0.5m thick and contained a 6g fragment of peg roofing tile tentatively dated to the 17th century or later. Above this, a sterile greyish brown silty clay [479] was seen across the whole of the interior as far as dividing wall [503]. Similar clay layers [493] abutting south-west wall [492] in Trench 2 and [464] in Trench 3, were probably equivalent, and beyond dividing wall [503], brown sandy clay with orange mottles [562] was probably another variant (Fig 8, Section 79). No finds came from these layers.

Around the edges of the interior of Building 452, in Trenches 1–3 and A, these deposits were sealed by a 50mm-thick compact layer composed of fragments of struck flint, chalk and lime mortar [480=490=451=463]. This deposit, which was not level, extended up to 1.1m from the inner face of the wall (Fig 5, Sections 64, 65, 74). It was similar to layer [491=709] outside the building, and probably represents a trampled surface contemporary with the construction of the building, hence the fragments of chalk and flint produced by dressing blocks and mortar spilt during construction. No pottery or roof tile fragments were found within this layer.

On the north-west side of the building in Trench 3, this 'working surface' was overlain by internal wall [240], and was sealed by make-up layer [450], a 0.1m-thick deposit of yellowish-brown silty clay containing frequent chalk flecks, which abutted the base of the wall (Fig 5, Section 64). Elsewhere, the 'working surface' was directly overlain (as was layer [450]) by a layer of yellow clay with pink or mauve mottles up to 0.42m thick ([284=377=455=462=467=557=694]). This extensive deposit covered the western part of the building interior. In Trench 2 this layer [455] contained two pottery sherds of late 12th- to mid-14th-century date and a third sherd of uncertain, but probably similar date. A further compact clay [513], which overlay [455], was similar to the make-up layers below, but as it slightly overlapped the inner face of the outer wall (Fig 5, Section 74) it may have been deposited later.

*Internal Wall 502 and Hearth [505/506]*

Cross-wall [502] was constructed against the south-east wall of the building [510] within a shallow cut [545] into clay make-up layer [479]. Modern services had removed the wall junction and only the very edge of wall [510] was visible (Figs 9, 11). A tile-lined hearth was constructed upon [479] against both walls (Fig 8, Sections 71, 77; Figs 9–11).

The hearth (53.90m OD) was constructed of a 0.3m wide band of horizontally laid peg roofing tiles ([505], butting up against wall [502] and an area of tiles set on edge [506] aligned parallel to wall [502], which was 0.6m wide against wall [510], and extended north-westwards for at least 1.05m. More tiles set on edge had also been placed along the face of wall [510], presumably to protect it from flaking in the direct heat. The tiles from [506] and [505] had fabrics usually dated to the 15th–16th and 16th–17th century respectively (see Cotter CBM below).

Wall [502] and hearth [505] were truncated less than 1m from the junction with wall [510] by a later drain. Just before this drain, the exposed flint wall gave way to a red quarry floor tile (Figs 9–11). It is difficult to interpret this tiny area of flooring, as only



*Fig 9. Hearth [505/506] abutting walls [502] and [510], view looking south-east (0.5m scale)*



*Fig 10. Wall [502] and hearth [505/506], showing floor tile at the end of the wall, view looking north-east (0.5m scale)*

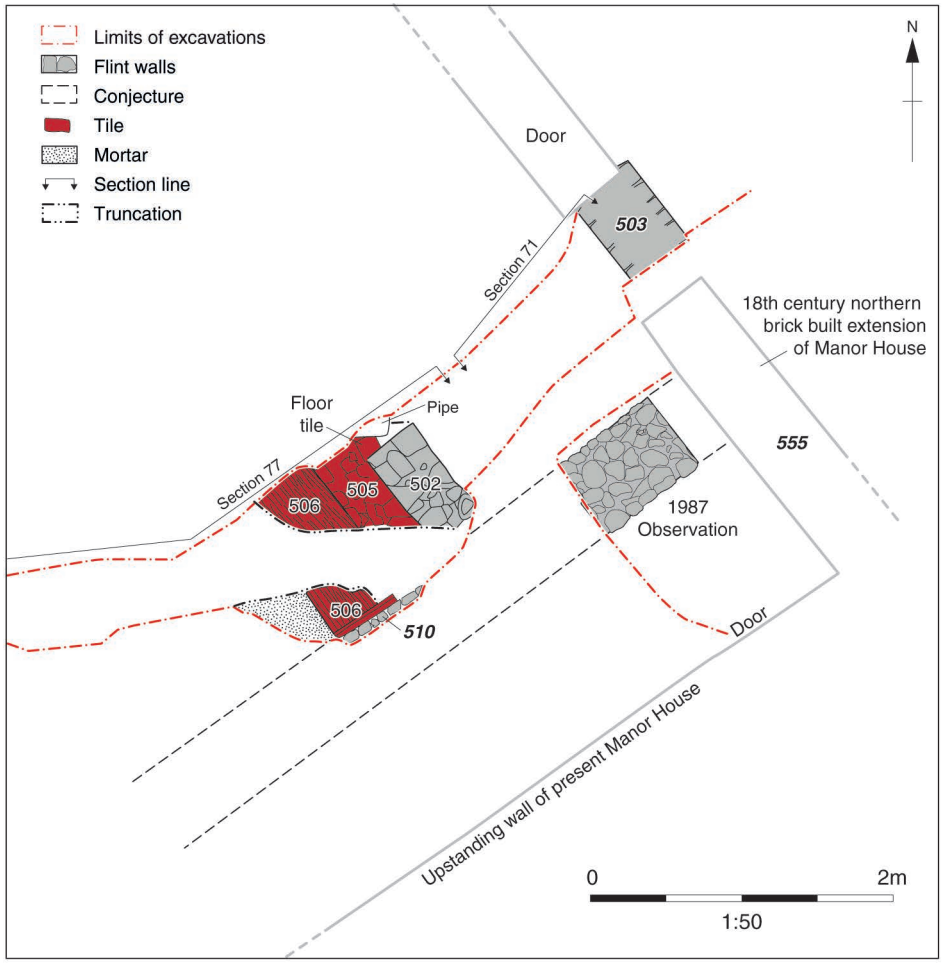



*Fig 11. Detail of hearth [505/506]*

this one tile survived south-west of the later drain. It is unlikely to denote the presence of a doorway due to the close proximity of the hearth, but it may have marked a recess at this side of the fireplace.

### *Occupation Deposits on the Floor of Building 452*

The floor of Building 452 was simply the surface of the clay dumping inside the building (layer [479]), which was burnt [527] adjacent to hearth [505/506] (Fig 4; Fig 8, Sections 71, 77). Similar burnt patches [542] and [561] were seen upon the make-up 2.8m north-west of the fireplace and beyond wall [503] to the north-east (Fig 8, Section 80). Burnt clay surface [527] was overlain by successive layers of thin dark grey, charcoal-rich silt [526] and [514] (Fig 8, Section 77), the latter directly overlying the fireplace, but did not extend as far west as Trenches A, 1 or 2. A similar charcoal-rich silt deposit [560] overlay burnt clay [561] beyond wall [503] (Fig 8, Section 80).

Layers [526] and [514] were both sampled for faunal and botanical remains (samples S5, S4). Both deposits contained assemblages of bird, rodent and amphibian bones (see Broderick below, Table 1); [526] also contained two fish bones (see below Nicholson). A further assemblage of small mammal bones was recovered from a sample (S6) collected while cleaning hearth

[506] itself. Layer [527] was also sampled (S7) and contained two mouse bones and a fishbone. All four of these deposits also contained small quantities of charred plant remains including cereal grains, and some also contained hazelnuts and peas. The charred plant remains were interpreted as floor sweepings that had subsequently been charred. Charcoal from these deposits on and over the hearth indicated that a variety of wood species had been used as fuel, including oak, beech, hazel, ash, field maple and elm. Short-lived, roundwood charcoal from layer [526] was radiocarbon dated to cal AD 1290–1410 at 95% confidence and roundwood charcoal from [514] to cal AD 1430–75 at 95% confidence (see Appendix 1, Table 2). Peg roofing tile fragments of types believed to be manufactured during the 16th–18th century also came from these deposits.

*Later Features*

Wall [502] was overlain by layer [504] (not visible in section), which also extended further north-east and was 0.6m wide. This was a grey silty clay containing frequent tile fragments of 16th-century type, as well as pebbles and chalk flecks, and was probably either robber trench backfill or demolition debris. Occupation deposits [526] and [514] were cut by a drain [511] (Fig 8, Section 77). Most of the drain lining had been robbed out, but a line of bricks along the base suggest it was originally brick-lined. The bricks were of 16th–18th-century date. The backfill from the robbing out of the drain lining contained a fresh-looking rim sherd from a tin-glazed bowl probably manufactured between 1660 and 1725 and residual medieval pottery (see Cotter below, Fig 21, no. 1). Shallow pit [536] also cut the occupation deposits. Its fill contained frequent fragments of peg roofing tiles of 16th- or 17th-century date (Fig 8, Section 77). Adjacent to wall [260=378=492], make-up layer [479=377=531] was overlain by a brown clay [540] deposit containing fragments of charcoal and numerous freshly broken pieces of peg tile of 16th–17th-century type (Fig 8, Section 77). This accumulation of broken tiles may represent both material that fell from the roof after the kitchen became disused and damaged tiles discarded while stripping the roof prior to the demolition of the building. The relationship between this clay and the occupation deposits was removed by a later pit [546].

*The Relationship of Building 452 to the Standing Manor House*

Layer [707] to the south or external side of wall [693] was overlain by a thin layer (probably trample), on which three courses of a mortared flint foundation [711] were constructed (Fig 3; Fig 5, Section 99; Fig 12).

The upper two courses of this flint foundation continued north-eastwards below the standing wall for a further 1.5m. Adjacent to the southern end of this foundation, there was an apparently separate block of vertically sided, mortared flint masonry [706] (Figs 4, 12), which was in line with the mortared flint wall recorded below the west range of the standing Manor House both by the CAS and by OA (Fellows 2001, fig 10; OA 2019a; Fig 3). This masonry may represent the foundations of the later 16th-century 'west' range prior to its late 18th-century brick refacing [705] (Martin & Martin 2001, 12; Fig 4, Phase K).

South-west of [706], four courses of mortared, stretcher bond bricks [703], founded at the same level as flint wall [706], formed the foundations for the refacing (Fig 12). These red unfrogged bricks were 230mm long and 60mm thick, confirming that they were manufactured during either the later 18th or 19th century. The first course of wall [705] above the flint foundation [711] was flush with it, but above this level the wall stepped in by 40mm, forming a string course (Fig 5, Section 99). As wall [706] had been removed to a slightly lower height, a course of floor tiles was used to level up to the string course, and the tiles continued above brick foundation [703].

Abutting [706] was a layer of friable grey clayey silt containing frequent mortar flecks [710] and a large sherd of pottery of later 17th- or 18th-century date. This was truncated by the cut [699] for a brick-lined drain [695], which ran north-east to south-west along the edge of wall [693] and parallel to the brick range (Fig 5, Section 99). The base of the drain was paved with a single layer of tiles or bricks and lined on both sides



*Fig 12. South corner of Building 452 showing stratigraphy below the standing brick range, view looking south-east (1m scale)*

with five courses of bricks of 18th-century manufacture, the uppermost course stepped out from the lower ones. Beyond the corner of Building 452 one side of this drain was visible in section between the recent services.

### *Excavations South-East of the Manor House*

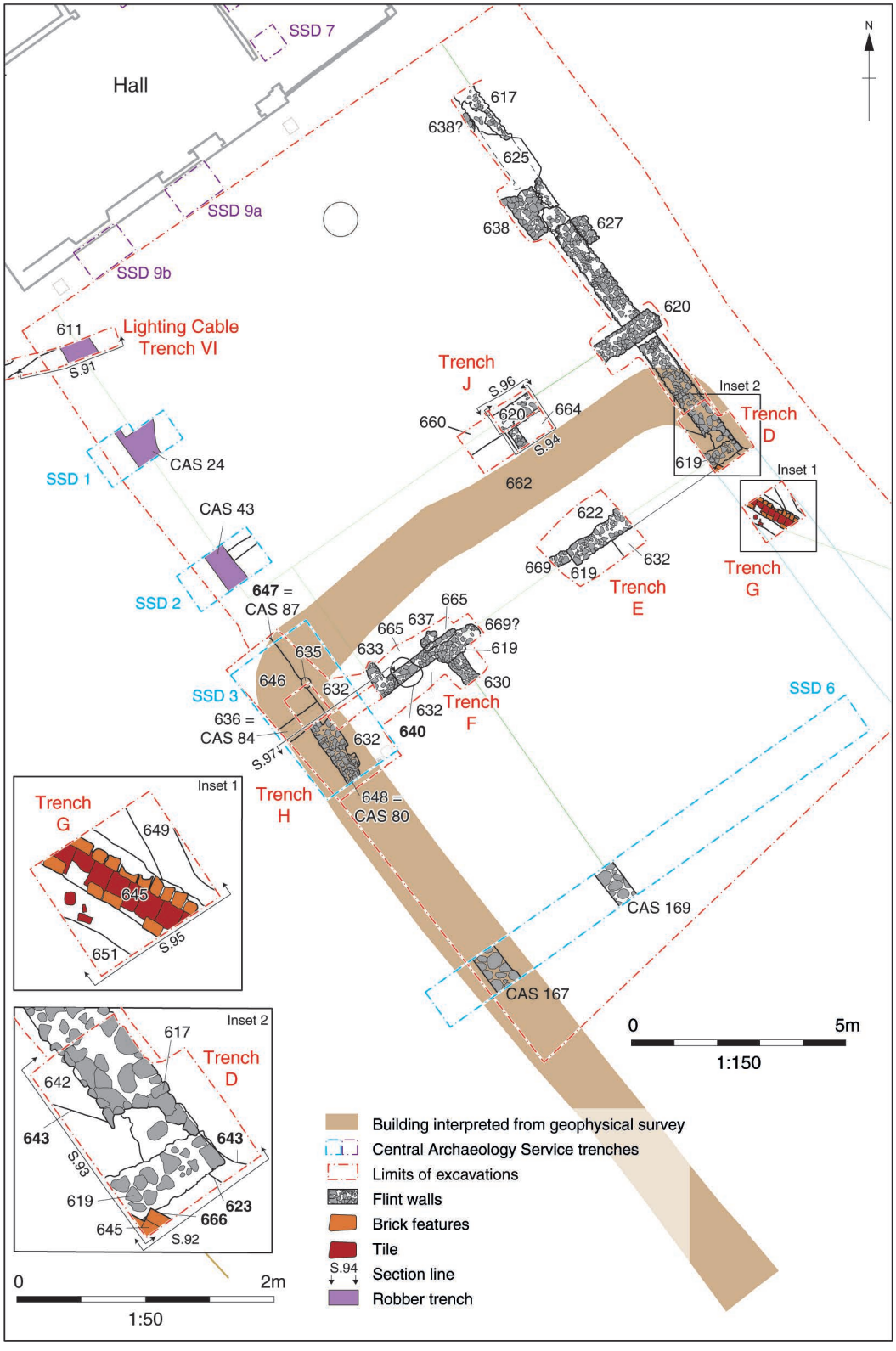
Turf and topsoil were removed by machine to a depth of *c.*0.22m below ground level and the area was then hand-cleaned to reveal the tops of the walls and adjacent deposits. Hand-dug archaeological trenches (Trenches D–J) were then excavated to characterise and reveal the extent of the walls at key points both in plan and in section (Figs 3, 13).

Only two trenches (J and H) were excavated to any great depth. The remainder were dug to investigate gaps in the revealed masonry to help provide a plan, and to look for walls anticipated from previous trenching by the Central Archaeology Service (hereafter CAS). The excavations, therefore, mostly revealed only wall tops, although robber cuts, clay deposits and a drainage ditch were also uncovered.

The walls mostly consisted of an inner core built of randomly coursed, rough-hewn flint nodules with better-dressed flints providing the facing courses. All the walls were bonded with a sandy lime mortar.

#### *Lighting Cable Trench VI*

This trench ended just south of the corner of the standing Manor House, where it revealed a robber trench in line with the south-west wall of the hall (Figs 3, 13). The robber trench [611] was just over 0.6m wide, had steep sides and was not bottomed at 0.2m deep (Fig 16, Section 91). Its fill [610] was a loose sandy silt containing frequent patches


N
Hall
SSD 7
SSD 9a
SSD 9b
SSD 1
SSD 2
SSD 3
SSD 6
611
Lighting Cable Trench VI
S.91
CAS 24
CAS 43
647 = CAS 87
636 = CAS 84
S.97
617
638?
625
638
627
620
Trench J
S.96
660
664
S.94
662
Inset 2
Trench D
619
Inset 1
Trench G
622
669
632
Trench E
665
637
669?
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646
630
Trench F
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Trench H
648 = CAS 80
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645
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643
S.93
623
666
S.92
CAS 169
CAS 167
0
5m
1:150
0
2m
1:50
Building interpreted from geophysical survey
Central Archaeology Service trenches
Limits of excavations
Flint walls
Brick features
Tile
Section line
Robber trench

of coarse sand and lime mortar, occasional flint fragments and numerous fragments of peg roofing tile dated to the 17th–18th century.

*Wall [617]*

The longest wall uncovered was [617], which ran north-west to south-east just outside the line of the wall of the standing Manor House (Figs 13, 14). Modern services outside the south-east wall of the Manor House meant that it was not possible to confirm that this wall actually extended up to the standing walls, but from 2.5m away from the standing building it ran for 11m before returning south-west as wall [619].

Wall [617] varied from 0.5–0.55m wide. Five metres from the standing Manor House, a rectangular flint plinth [638] of larger nodules bonded with clay ran alongside wall [617] on the south-west side (Fig 13). This masonry abutted wall [617] at the south-east end but had been cut into the face of the wall further north. It projected 0.4m from the wall face and survived 1.2m long, but was truncated at the north-west end by a later pit or robber cut [625]. Beyond this, further masonry was just visible in the edge of the cleared area (Fig 13), and if this was also part of structure [638], then it originally extended for at least 3.4m and may have served as an internal stone bench.

The robber cut [625] that had removed part of wall [617] and masonry [638] was 1.8m wide but was not fully excavated (Fig 13). Its loose top fill [626] consisted of mortar and brick and peg roofing tile fragments. The bricks were a mixture of Tudor and later 17th–18th-century types, as were the tiles. In the pit edges, wall [617] was seen to be abutted by layer [629], a compact dumped yellow clay with pinkish patches. Some 6.2m from the standing Manor House, another flint wall or buttress [627] abutted wall [617] on the north-east side (Fig 13). This masonry was 0.65–0.7m wide and was only traced for 0.3m. Approximately 3m further south-east, wall [617] was cut at right angles by wall [620] (Figs 13, 14), ending only 0.3m beyond it, though its ragged end may indicate that it had been robbed beyond this point.



*Fig 14. Wall [617], view looking north-west toward the standing Manor House (1m scale)*

*Trench J*

Trench J was excavated across the line of wall [620] 2.5m further west and was dug to a depth of 0.65m (Fig 13). This wall was aligned south-west to north-east, so it was roughly parallel to the end of the standing hall. It was 0.55–0.6m wide and located 0.35–0.5m below ground (Fig 15; Fig 16, Section 94) and had been partly robbed out by a vertical-sided cut [657] containing three fills: [658], [659] and [660]. Deposits [658] and [660] contained peg roofing tile fragments of 16th–17th-century date, and [660] also contained a potsherd dating from 1480–1600 and a Tudor brick end.

*Fig 13. (opposite) Exposed buildings south-east of the standing Manor House*



*Fig 15. Trench J showing wall [620] in the foreground with garderobe fills and wall [622] beyond, view looking south-east (1m scale)*

A light brownish grey clay layer [654] containing occasional charcoal fragments and tile chips was observed at the base of the sequence on either side of the wall, but its relationship to wall [620] below the robbing was not clearly established (Fig 16, Section 94). Just above the surviving wall on the north-east side a possible cut [655] was recorded in section cutting [654=672], and may have served as its construction trench. This was not, however, further investigated, and alternatively [654] may have abutted the wall. Layer [654] was overlain by layer [656], a mixed sand, flint nodules and gravel deposit 0.5m thick, which was cut by robber trench [657]. No datable finds were recovered from either layer. The sequence of deposits exposed in section to the north-west of the robber trench comprised a greyish-brown stiff clay [672] containing frequent flecks of charcoal and lime mortar (Fig 13, Section 96), overlain by a softer clayey silt [671], containing charcoal flecks but no mortar, and overlain in turn on the north-east side by a stiff brown clay with occasional pebbles [673]. No datable finds were recovered from any of these deposits. Both [671] and [673] were overlain by an orange-brown sandy clay [670] containing frequent mortar flecks, occasional peg roofing tile fragments and a sherd of pottery dated to 1480–1600.

Part of a garderobe was uncovered on the south-east side of wall [620]. The south-west side of the structure was defined by a cut [661] running at right angles to the wall (Fig 16, Section 94). Within cut [661] was a wall [662] constructed of roughly-hewn flint nodules without mortar, which either ended or had been truncated by the robber trench of wall [620] (Fig 13). Although disturbed by tree roots, wall [662] appeared to have a roughly dressed face on its inner (north-east) side, but not against the edge of the cut on the south-west, indicating that this was part of a pit lining (Fig 15). The excavated fills of this feature, [663] and [664], consisted of both greenish-grey and dark grey clayey silts indicative of the presence of cess, suggesting that [661] was a garderobe pit. The full extent of the garderobe was not determined, but it was at least 0.7 x 0.7m in extent and at least 0.5m deep. Freshly broken fragments of peg roofing tiles, probably of 15th–16th-century date, were recovered from the lower fill [663], while the upper fill [664] contained a sherd of pottery dated 1480–1600 and a mixture

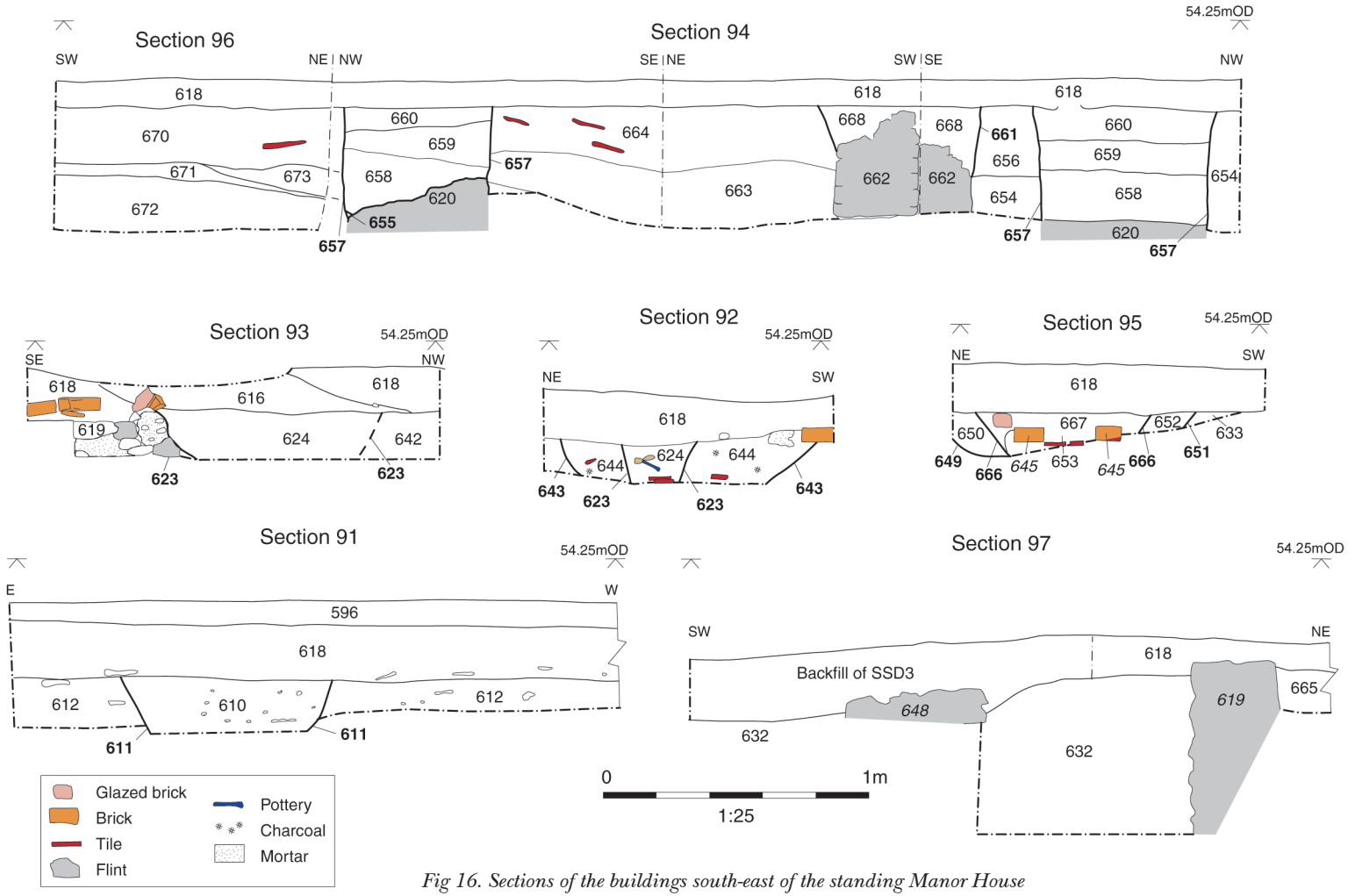


*Fig 16. Sections of the buildings south-east of the standing Manor House*



*Fig 17. Trench D, junction of walls [617] and [619] cut by ditch [643=651] and drain [645], view looking south-west (1m scale)*

of Tudor bricks and peg tile fragments of 16th–17th-century date. As the layers to the north-west of wall [620] were nothing like the garderobe fills, it implies that the garderobe was constructed up against wall [620]. At the junction between walls [620] and [662] robbing extended below the level of excavation, so their relationship could not be determined.

*Trenches D and G*

Wall [617] ended in Trench D, where it returned south-westwards as wall [619] (Figs 13, 17). Here wall [617] was abutted on the inside by layer [642] (Fig 16, Section 93), a dark greyish-brown silt, containing fragments of mortar, ceramic building material, flint pebbles, shells, charcoal and a struck flint. The ceramic building material included Tudor bricks and a fragment of quarry (floor) tile, which indicate a 16th- or 17th-century date for this deposit. The deposit was similar in character to layer [622] in Trench E to the south-west (see below). The north-east side of wall [617] was abutted by a layer of yellowish-brown clay similar to the clay [629] dumped up against [617] further north-west, and to layer [632] observed outside wall [619] to the south-west.

Walls [617]/[619] and layer [642] had been partly truncated by a flat-bottomed drainage ditch [643] aligned north-west to south-east (Figs 13, 17), which was also seen (numbered [651]) in Trench G to the south-east (Fig 13; Fig 16, Sections 92, 93, 95). The fill of this ditch, [644] and [652], consisted of grey silty deposits, mottled with yellowish-olive patches suggestive of faecal material. These fills contained animal bones, oyster shells, fragments of peg roofing tiles and 16th-century Tudor bricks, including some unusually narrow examples (see Cotter below; Fig 22). There was no evidence that the ditch had been covered, so it may have been an open sewer. A narrow ditch [649] ran along the north-east side of Trench D and merged into [651] just before the south-east section (Fig 13; Fig 16, Section 95). It was filled with a dark grey clayey silt [650], which contained pottery dated 1480–1600 (see Cotter below), and a jeton manufactured in the late 16th or early 17th century (see Scott below). Ditch [643=651] was recut as ditch [623], which was filled by a greyish-brown silty clay [624] that was also



*Fig 18. Trench G, detail of ditch [649] and drain [645], with wall [617] beyond, view to north-west (1m scale)*

mottled with yellow-green patches suggestive of faecal material, and contained frequent charcoal fragments, animal bones, oyster shells, fragments of peg tile and 16th-century Tudor bricks, plus a tightly dated group of pottery belonging to the later 16th century (see Cotter below; Fig 21, no. 2). The much narrower profile of [623] in the section just south of the corner of walls [617] and [619] may indicate that this recut terminated just beyond this point.

Overlying wall [619] and the edge of ditch [643] was a cut [666] containing a brick-lined drain [645] (Fig 13; Fig 16, Sections 92, 95), which then followed the line of the silted up ditch [643/623] south-eastwards (Figs 17, 18). The drain lining was constructed of unfrogged ash-glazed bricks of 15th–16th-century type bonded with yellow sandy lime mortar. The top of the drain did not survive, but the fill [653] between the two lining walls was different to the overlying fill [667] (Fig 16, Section 95), which also sealed the lining walls, so the drain may have originally possessed a wooden cover. No artefacts were recovered from silt [653], but fill [667] contained a potsherd, fragments of peg roofing tiles and Tudor bricks of late 15th–16th-century type. No direct stratigraphic relationship between ditch recut [623] and drain [645] was observed, but it is probable that the drain was later. Brick drain [645] is probably equivalent to a line of bricks set end to end found at the very end of CAS trench SSD 6a (Busby & Griffin 1997, 10–11, fig 2).

### *Trenches E, F and H*

The survival of wall [619] was variable, and for much of its length only one clear edge was established at the level to which it was cleared (Fig 13). At the junction with wall [617], however, both probable edges were seen, suggesting that the wall was 0.5m wide. In Trench E, the intact southern side of the wall was abutted by a yellow clay with pink mottles [632], also seen in Trench H further south-west. In contrast, the north-west side of the wall was ragged, probably due to robbing. The layer within this robbing north-west of the wall [622=641] contained many fragments of peg roofing tiles, chalk blocks and flint blocks, together with struck flint chips, suggesting that some of the robbed flint blocks had been trimmed immediately after their removal. The fragments of roofing tiles included both ridge and peg tiles of late medieval or 16th-century date, suggesting that the wall went out of use at this time. Here, wall [619] had a squared end, abutted by a much narrower rough flint wall [699] that continued south-westwards (Fig 19). Only the top of wall [669] was exposed, but it appeared to have a roughly dressed face on the south-east side, while the north-west side, like that of wall [619], was uneven, and had possibly also been robbed. Wall [699] may have blocked an earlier entrance through wall [619].

In Trench F the probable continuation of wall [619] met contemporary wall [630], which extended at right-angles toward the south-east. Further to the south-west, [619] returned north-westwards as wall [633], which continued beyond the limits of the excavation (Fig 13). The final part of wall [619] (beyond wall [630]) was considerably



*Fig 19. Trench E, south-west end of wall [619] and its continuation as narrower wall [669], view to north (1m scale)*

narrower than the rest of it, being only 0.25m wide, as was return wall [633]. The narrow part of wall [619] was cut by a circular pit [640], which contained no finds, but was probably a late post-medieval garden feature. Two to three courses of flintwork were exposed inside wall [619] in Trench F, but only two on the outer side and along wall [630]. The top of the north-west face of wall [619] here was mostly squared off, but further flint blocks [637] were keyed into it below this (Fig 13). Structure [637] did not continue into the north edge of the trench, so may represent survival of a wider part of wall [619] lower down. Layer 665, on the north-west side of the wall, was a brownish grey and green clayey silt containing charcoal flecks, two sherds of pottery dated 1480–1600 and fragments of peg roofing tiles of 16th- or 17th-century date, consistent with the finds from layer [622] on the same side of wall [619] in Trench E, which was interpreted as part of the robbing out of the wall.

North-east of the junction with wall [630] the wider part of wall [619] in Trench F was without clearly defined edges on either side and had no evidence of mortar bonding. One possibility is that the rough flintwork was a continuation of the narrow wall [669] from Trench E, but the exposed flintwork here was wider, more comparable to wall [619], and there was no clearly defined end marked by larger flint blocks at the change in wall width here, unlike the squared end that marked the change in width in Trench E. Pending further investigation, all of this flintwork may instead have been part of wall [619].

Wall [630], running south-east, was 0.35m wide and was constructed in the same materials as the adjoining walls (Fig 13). Only one or possibly two courses were exposed. Either side of the wall was the extensive layer of dumped clay [632], which may have abutted the lower course of the wall. Wall [630] widened at its junction with wall [619] and appeared to be keyed into it. Wall [630] was in line with a flint wall 0.52m wide that had been discovered in CAS Trench SSD 6 (Busby & Griffin 1997, wall [CAS169]).

Trench H was dug to look for a continuation of wall [619], which was initially expected to continue south-westwards to meet the robber trench of the south-west wall of the hall identified in CAS Trenches SDD1–3 (Busby & Griffin 1997, figs 2, 5). It was also hoped to clarify the relationship between wall [619] and CAS wall [80], which continued south-eastwards. The main deposits previously



*Fig 20. Trench H, section through redeposited clay [632] between wall [619/633] and wall [648], view looking north-west (1m scale)*

found by the CAS in Trench SSD3 were duly identified in Trench H. The end of a north-west to south-east aligned flint wall 0.5m wide was found ([648]=[CAS80]), which continued south-east beyond the excavation (Fig 13; Fig 16, Section 97). The flints were bonded with a coarse white sandy lime mortar and the edges of the wall were roughly dressed (Fig 20). This lay 1.3m from the corner of walls [619] and [633].

A shallow sondage at the north-west end of wall [648] and another, deeper trench between walls [619]/[633] and [648] were excavated to investigate deposits in this area previously identified by CAS. These deposits included a soil division [647] that extended toward the north-west on the same alignment as wall [648]. The deeper investigation proved that wall [619] ended at the corner with wall [633], and that both walls were at least 0.65m deep. The depth of these foundations considering their narrowness was unusual, strongly suggesting that both had been robbed out on their inner sides. A mottled brown clay layer [632] abutted wall [633] to the full depth exposed (Fig 16, Section 97; Fig 20) and was seen adjacent to the south-east face of wall [619], although it was not excavated here. This deposit is very similar to make-up deposits found against the walls under the standing hall and cross-wing and abutting the walls of Building 452 to the north-west of the Manor House (Fig 4). At the base of the trench, a possible horseshoe fragment was found within [632] (see Scott below), but there were no datable finds. Wall [648] proved to overlie layer [632] and was only two courses deep (Fig 20).

In the shallower sondage, layer [632] was cut by feature [647], contrary to the CAS interpretation. The feature had a vertical side only 0.2m deep and a flat base and was filled with a brown clay deposit [646]. Cut [647] may possibly represent either a construction trench or a robber trench for wall [648], but cut [647] was deeper than [648], and there was no robbing debris in its fill [646], so its purpose remains uncertain. Fill [646] was cut by circular posthole [635=CAS92], which was 0.15m deep with a dark grey clay and charcoal fill [634] that contained half of a peg roofing tile of 15th–17th-century date. At the south end of these deposits, adjacent to the north end of wall [648], band of brown and red clay [636] was only 0.1m deep and contained fragments of worn peg tile of 14th–16th-century date. Although the relationship was not recorded,

[636] presumably overlay fill [646], which did not produce any finds.

All the walls and features were sealed either by garden soil horizon [618] or by one of a network of gravel paths [616] below the topsoil (visible on Figs 18 and 19). The paths were part of a formal layout recorded on the Sale Maps of 1845 and 1860, plus the OS map of 1864, and were also recorded in the trenches dug by the CAS in 1995 (Busby & Griffin 1997, fig 1).

## FINDS REPORTS

### *Post-Roman Pottery*

*John Cotter*

The investigations produced a total of 134 sherds weighing 3.35kg. Only 21 sherds weighing 394g came from the Outer Court; the Moated Island produced 113 sherds weighing 2.95kg. The total estimated number of vessels (ENV) was 93 (76 from the Moated Island and 17 from the Outer Court). A range of medieval and post-medieval pottery is present, although post-medieval pottery (after *c.*1480) is much more common. The pottery was recorded using the MOLA pottery codes (MOLA 2014a). A detailed breakdown of the fabrics from the Moated Island, with which the following summary is concerned, is available in the full report (OA 2019b, 75–9). The assemblage comprises medieval and post-medieval pottery fabrics and vessel forms common to the London area and beyond. The condition is generally fragmentary, becoming less so over time. Ordinary domestic pottery is represented.

The earliest material comprises seven sherds (4 ENV) of South Hertfordshire greyware (Fabric code SHER) manufactured between *c.*1170 and 1350, although a 13th–14th-century date seems more likely for the material here. Identifiable, though very fragmentary, forms were jugs and cooking pots. The nearest known sources of this ware are in north-west Middlesex, at Pinner and Uxbridge. The only other medieval fabric present is Coarse Surrey-Hampshire Border ware (CBW, *c.*1270–1500), present as three sherds derived from three separate bowls with an internal green glaze. This fabric is commonest in the London area after *c.*1350. Two of the sherds occur in early post-medieval contexts (*c.*1480–1600) and may be either residual or late examples of this fabric type, the third, a typical flanged bowl rim, is residual in drain [511] (Fig 21, no. 1).

Early post-medieval redware (PMRE, *c.*1480–1600) was the commonest fabric (54 sherds, 34 ENV). Groups of seven to 12 fairly large, unabraded sherds occurred in ditches [623] and [649] and layer [622=641], the fill of the robbing of wall [619]. Several production centres for this fabric tradition

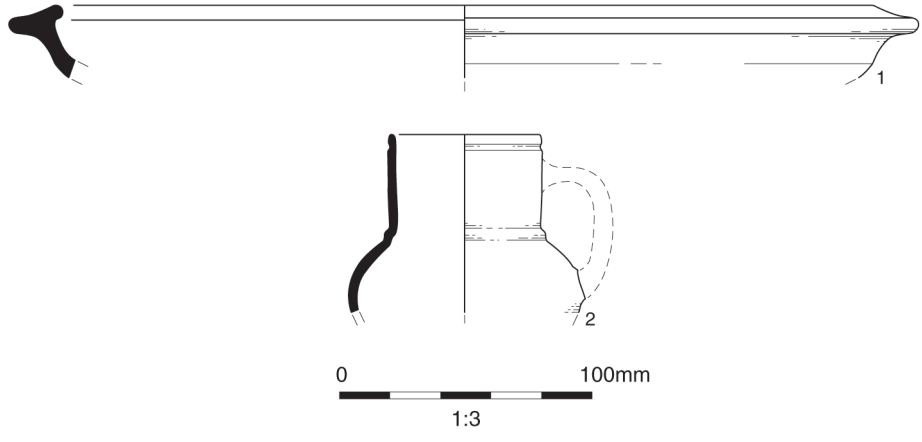


*Fig 21. Pottery. Key: 1. Coarse Border ware (CBW) flanged bowl from fill [515] of drain [511]; 2. Cistercian ware (CSTN) jug copying German stoneware drinking jug from fill [624] of ditch [623]*

are known from London; the closest was at Lambeth. While some vessels from Headstone Manor have the typical oxidised medium–coarse sandy fabric found there, a few have a coarser fabric, possibly from a more local source. The PMRE assemblage includes rims and sagging bases from common utilitarian forms such as wide bowls, medium and large jugs, jars/cooking pots and a very small pipkin (saucepan), sooted and worn from use (not illustrated). Unlike sites closer to London, no PMRE vessels here have white slip decoration or green or yellow glazes; some vessels have a clear (brown) glaze or small patches of glaze, but otherwise the PMRE assemblage here is very plain.

On its own, plain PMRE is not closely datable. A few sherds of regional imports (CSTN, BORDY) in ditch [623] and robbing fill [622=641], however, date these two contexts to *c.*1550–1600, possibly mid-16th century rather than later. The regional import from ditch [623] is in black-glazed Cistercian ware (CSTN) and from the rim and globular body of a small jug copying the form of German Cologne/Frechen stoneware drinking jugs of *c.*1550–1625 (Fig 21, no. 2). A yellow-glazed Border ware (BORDY) sherd from the robbing fill, although very small, is probably from a handled cup or drinking jug and might be an early example of this ware (*c.*1550–1700). A few sherds of German stoneware including a jug sherd in Siegburg stoneware (SIEG) were recovered from ditch [649] and a frilled mug base in Raeren stoneware (RAER, *c.*1480–1550) from garden soil [618]. Siegburg stoneware is much less common than Raeren stoneware on English sites, particularly inland. These German stonewares are the only hints of luxury in the ceramic assemblage. After the 16th century the volume of pottery recovered tailed off quite sharply until the 19th century.

### *Ceramic Building Materials*

*John Cotter*

The Moated Island produced 374 pieces of brick and tile weighing 55.11kg. The assemblage mainly comprises post-medieval peg roof tiles and bricks, plus some floor tiles and miscellaneous fragments including ridge tiles. The material was catalogued using the Museum of London fabric codes (MOLA 2014b). The assemblage is mostly fragmentary but includes some complete bricks and large tile fragments. Most of the assemblage is post-medieval (after *c.*1480), but some pieces of flat roof tiles and ridge tiles have a rougher surface and have proven by association to be medieval. Bricks from layer [636] were spot-dated as 14th–16th century, and more bricks to the 15th–16th century or 16th century, though most material is dated from the 17th–19th century. A complete breakdown of the range of materials present is provided in the full report (OA 2019b, 79–84).

#### *Flat Roof Tiles*

These are rectangular peg tiles with a pair of circular nail holes at their upper end and occur in a limited number of fabrics, mostly oxidised orange-red or orange-brown. The differences between the fabrics, firing colour, texture and manufacturing technique at this site are not very marked and probably indicate closely related fabrics produced from fairly local sources. The commonest is Fabric 2276 (F2276), which comprises 54% by fragment count of the assemblage. F2276 has a fairly smooth brightly oxidised and hard-fired fabric, similar to the standard post-medieval roof tile fabric of most of Greater London. It was used from the late 15th–16th century, but was most common during the 17th and 18th centuries and production possibly continued into the 19th century.

Radiocarbon dating of context [514] overlying hearth [505/506] lined with peg tiles in F2276 shows that this fabric was in production by the early 15th century or perhaps earlier (see Appendix 1, Table 2). The earlier than expected dating for the tile-lined hearth indicates that late medieval and early post-medieval peg tiles cannot easily be distinguished in this part of Greater London on the basis of fabric alone.

The fabrics of the tiles from the hearth lining may also have been altered by the heat of the fire, thus appearing more like post-medieval examples in this fabric. At Hampton Court Palace, Surrey, 14th-century walls underlying the early 16th-century Base Court incorporated numerous complete peg tiles in a smooth reddish 'post-medieval

looking' tile fabric, almost identical to the Tudor examples (Cotter 2009). Only the large sample size and completeness of the tiles, supported by OSL dating, allowed a subtle chronological distinction to be made in some examples. At Headstone Manor, the emphasis on preservation *in situ* did not allow the excavation of a larger sample of stratigraphically early tiles. Most tiles in this fabric have fine sanding on the underside; a few with a grittier sanding may be of late medieval or early post-medieval date. F2276 peg tiles are fairly well made but occasionally dented or slightly warped; a few have patches of accidental greyish ash glaze on the edges. There are no complete peg tiles or complete lengths in fabric F2276 (or any others), but two tiles preserve complete widths of 180mm with standard circular nail holes.

The second commonest peg tile fabric is F2816 (*c.*1200–1800), a browner sandier version of F2276 commoner in early post-medieval contexts than F2276. There are five complete tile widths, all between 154mm and 162mm wide and three 157–158mm wide. These come from posthole [635] and ditch [649], and others also come from the Outer Court.

Another common peg tile fabric is F2586 (*c.*1180–1800), a fairly smooth brown to orange-brown fabric typically with a grey core. Some tiles in this fabric are unusually thin (8–10mm thick), although most are of normal (*c.*13–14mm) thickness. Four complete widths are present (175–185mm wide). F2586 tiles occur in some contexts spot-dated to the 14th–16th century, although they also occur in later contexts. The remaining three fabrics only have one or two examples each (F2272, F2587, F3276).

*Floor Tiles (9 Pieces)*

These are mostly edge or corner fragments of 'quarry tile' worn by use and further abraded by redeposition in late post-medieval contexts. All are probably post-medieval. Details of the fabrics can be found in the full report (OA 2019b, 79–84), but all were most similar to medieval Penn fabrics, although none of the examples here was decorated, and they are probably derived from more local mixed clay beds in the west or north-west of Middlesex.

*Bricks (48 Pieces)*

Bricks comprised 57% of the assemblage by weight; most examples were unfrogged, fairly crude, handmade red bricks dating from the 17th to the early 19th century. The earliest examples were a few `Tudor' bricks, probably of 15th–16th-century date. Almost all of these bricks occurred in just two equally common brick fabrics: F3033 is a soft orange-red brick fabric found throughout the Greater London area (broadly datable to *c.*1450–1700, also known as 'local Tudor red'); F3032 is harder and typically purplish-brown, and appears after the Great Fire of London in 1666 (broadly datable to *c.*1666–1900). Both fabrics contain some flint fragments or pebbles. At Headstone Manor, the usage of the softer F3033 brick fabric probably continued into the 19th century. A local or fairly local production source for both fabrics seems highly likely.

There is a small group of unusually narrow 'Tudor' bricks of probable 15th–16th-century date as typified by broken bricks recovered from fill [644] of ditch [643] (Fig 22). These are in a fabric related to F3032, but with a much finer and better-sorted texture (similar to the quarry tile fabric F1811). They are handmade, but fairly neat. The surviving brick ends in this fabric, from [644], are typically 90–95mm wide (compared to *c.*100–120mm for most later bricks), and only 45–50mm thick. Some examples have a fairly extensive covering of greyish ash glaze, particularly on the header-end (also in [667]). One example of this type, from [675], occurs in orange F3033 rather than purplish-brown F3032.

Most of the other bricks are of fairly standard post-medieval length and width, but gradually increasing in thickness and neatness over time. A group of bricks up to 80mm thick in F3032 probably date to the 18th and early 19th centuries (*eg* [453]). These are very crudely made and have warped or bloated during firing suggesting they are 'seconds'. They probably come from a local production site. One or two bricks in F3033 with a very worn surface were used as paving bricks, and one from [495] was narrowed in width by filing or sawing, possibly for use as a threshold or step.

There were also 16 pieces (1861g) of ridge




*Fig 22. Tudor bricks from fill [644] of ditch [643]. Key: 1 & 2. Ash-glazed bricks; 3. Brick with ash glaze on end*

tile (or pan-tile), most in the same (unglazed) fabrics as the flat roof tiles (mainly F2276 and F2816). Two large fragments from a single curved apex are in a brown sandy fabric (F2272) of 14th–16th-century date, and came from [622], which was spot-dated to the 15th–16th century. The other pieces are all post-medieval.

### *Metal Objects*

*Ian R Scott*

There are 12 metal objects (14 fragments), mostly iron nails and a possible horseshoe fragment from [632]. There are also two copper-alloy tokens. The earlier one is a worn, Nuremberg 'Rose & Orb' jeton from [650], which dates to the late 16th or early 17th century. The second is a Victorian gaming token bearing the date 1837 from a later 19th-century deposit sealing the western corner of Building 452. Further details concerning these items can be found in the full report (OA 2019b, 88–9).

### *Animal Bones*

*Lee G Broderick*

Only 409 animal bones were recovered, and 341 of these were micromammal, bird and amphibian bones obtained from environmental samples. Only the latter are reported upon here. Details of the methodology and the rest of the assemblage are available in the full report (OA 2019b, 90–3).

Environmental samples S4–S7 contained a diverse range of micromammals, small birds and amphibians (Table 1). The samples came from four contexts within Building 452: S7 from the top of burnt floor [527], S5 from the overlying occupation deposit [526], S4 from charcoal spread [514] over tile-lined hearth [505/506] and S6 from cleaning the hearth itself. One fragment from the hearth and 18 from layer [514] (eight micromammals including a mouse metacarpal and ten frog/toad bones) were burnt, though most were not.

The remains of wild mammals and birds represent a hedgerow and waterside environment close to human habitation, with two highly commensal species (house mouse (*Mus musculus*) and house sparrow (*Passer domesticus*). Charcoal spread [514] and occupation layer [526], where not sealed by [514], lay directly below a layer of roofing tiles indicating either partial collapse or demolition of the building. Given this background, it is possible that the fauna could represent early colonists of a derelict site or the prey thereof – the micromammals, in particular, could have been the prey of a raptor. Barn owls are known to take up residence in abandoned buildings and prey on voles, mice and shrews (O'Connor 2004). In considering this interpretation, however, it is worth noting that there are no traces of digestion on the micromammal

*Table 1. Quantification of animal bone from Building 452 by species, Numbers of Identified Specimens (NISP) and Numbers of Specimens (NSP)*

| Species | No. of Bones |
|---|---|
| Small rodent | 12 |
| Mouse | 3 |
| House mouse | 8 |
| House mouse? | 3 |
| Bank vole | 8 |
| Bank vole? | 10 |
| Pygmy shrew | 3 |
| Micromammal | 75 |
| Small mammal | 2 |
| **Total Mammal** | **124** |
| Bird | 8 |
| Blackbird/starling | 2 |
| Tit? | 4 |
| House sparrow | 4 |
| **Total Bird** | **18** |
| Amphibian | 98 |
| Frog/toad | 51 |
| Common frog | 16 |
| Common toad | 1 |
| **Total Amphibian** | **166** |
| Plaice | 1 |
| Herring | 1 |
| **Total Fish** | **2** |
| **Total NISP** | **310** |
| **Total NSP** | **341** |

bones – indeed, several of them are in very good condition (Behrensmeyer 1978, stages 1–3) and there is no patterning to the remains (axial, limb and cranial elements are all present), although neither were there complete skeletons present.

Most curious are the burned amphibian bones. Coming from a hearth, it might be supposed that they have been burned deliberately, but the far larger number of unburned frog and toad bones recovered from the same layer suggests that this process cannot have been very thorough. As with the micromammals, there is no clear patterning to the distribution of body parts, with hind and fore limb, cranial and axial bones all being present from at least six individuals (five frogs and one toad). Given that these bones are present, it may be fairly supposed that they have not been cooked for human consumption.

### *Fish Bones*

*Rebecca Nicholson*

A small number of fish bones were found in sieved samples S5 and S7, recovered respectively from occupation deposit [526] within Building 452 and from the burnt clay floor [527] that underlay it. All the bones were in fair to good condition. Sample S5 produced a small plaice (*Pleuronectes platessa*) left premaxilla, from a fish of *c.*0.20m total length, and a small cyprinid (Cyprinidae) precaudal vertebra from a fish of about 0.15–0.20m. Sample S7 contained a herring (*Clupea harengus*) caudal vertebra. None of these bones are burnt, suggesting that they are derived either from kitchen preparation or from table waste, and demonstrate that both marine and freshwater fish were eaten on the site during the 14th–15th century. Further details concerning this assemblage are available in the full report (OA 2019b, 93).

## DISCUSSION

*Tim Allen*

### *Building 452 North-West of the Manor House*

The medieval origins of Building 452 are confirmed by the two radiocarbon dates obtained from short-lived roundwood charcoal from occupation deposit [526] and from charcoal [514] upon the tile-lined hearth [505/506] (Figs 4, 8; Table 2). These clearly demonstrate that this building was in use by the very early 15th century, and probably in the 14th century.

Two of its walls survived at least 1.1m deep and the base of the south-west wall was reached 1.4m below the current ground level. This level is similar to that observed at the base of the walls found supporting the cross-wing and hall (Fellows 1999; 2001), and the character and method of construction of the walls there was the same, the foundations being mainly of chalk blocks, overlain by walls of dressed flint (*ibid*). Also very similar was the sequence of abutting deposits: a thick dumped clay deposit, overlain by a thin construction horizon containing numerous flint chips derived from dressing the masonry, which was sealed by an even thicker layer of clay intended to raise the floor level. Although no artefactual dating evidence was recovered from Fellows' below-ground excavations, the walls are those on which the timber-framing of the hall and cross-wing stand, which have been dated by dendrochronological sampling to the first half of the 14th century (Martin & Martin 2001, Period A; see Munby above).

Artefactual evidence from the dumped make-up and construction layers within and around Building 452 was limited and mostly consisted of fragments of peg roofing tiles. Inside the building three sherds of pottery also came from the dumped clay above the wall-dressing layer. Outside the building on the south-west, the only finds were fragments of roof tile. While the potsherds were medieval, all the tile was provisionally dated to the post-medieval period. The single tile scrap from inside the building may have been intrusive, in which case the pottery and radiocarbon dates jointly support the interpretation that construction of this building and the internal build-up of deposits both took place in the medieval period.

Outside, however, the dating using tile fabrics might suggest that the external land surface was exposed until the post-medieval period. The tiles recovered from the lowest dump layer on the south-east side might also

have been intrusive from a later brick drain and a modern service trench, so that the lowest external deposit of post-medieval date was the dressing layer, but this would still mean that the medieval ground level outside the building was nearly 1m lower than the floor inside.

A report on the western chimney stack (Bond 2001) suggested that the medieval chalk-and-flint walls below the hall and cross-wing represented a plinth more than 1m high, on which the Manor House was constructed (*ibid*, figs 7–9). In theory Building 452 could have been the same, but this would mean that there were separate buildings on plinths, an awkward arrangement unless they were linked by elevated walkways. Even if so, the area between these buildings must have been infilled in the late medieval period, as the later 16th-century building only 1m from Building 452 was built directly upon dumped clay, yet relied on only shallow foundations.

As already discussed, however, the internal tile-lined hearth, constructed of peg tiles previously dated by their fabrics to either the 15th–16th or 16th–17th century, was shown by radiocarbon dating of the charcoal upon it to date to the early 15th century or perhaps earlier (see Appendix 1, Table 2). Describing similar hearths in the early 14th-century kitchen complex and hall at Northolt Manor, not far from Headstone, Hurst (1961, 242) stated that this type of hearth was 'extremely common on all types of site' in the 13th and 14th centuries. The tiled hearth adjacent to the kitchen there also had a band of horizontal tiles laid between the tiles on edge and the wall (*ibid*). Another local example of a tiled hearth was found at 'le Longrewe', Kings Langley Palace, Hertfordshire, dating to the mid- to late 14th century (Neal 1977, 134). The usage of ceramic tiles or bricks for lining hearths or the backs of fireplaces in high-status buildings is also documented by the late 14th century (Salzman 1952, 99).

At Headstone, the dating of peg roofing tile fragments on the basis of fabric alone is clearly unreliable and the tile fragments in the external dump layers are probably medieval. Ceramic roofing tiles were occasionally used on high-status buildings from the late 12th century, as at Mount House, Witney, Oxon (Duncan & Allen 2002, 137), and became common by the end of the 13th century (Salzman 1952, 229), so its occurrence here would not be surprising, particularly in a kitchen, where the fire risk was highest. Tiles for repairs to the house are mentioned in documents of 1466–7 and 1486–7 (Clarke 2000, 163), showing that there were certainly tiled roofs at Headstone by the mid-15th century. A similar problem in distinguishing medieval from early post-medieval roofing tiles was encountered at Hampton Court (see above; Cotter 2009). These examples show that manufacture of roofing tiles of high quality was occurring in some areas west of London from the 14th century onwards.

### *The Function of the Building*

Building 452 was free-standing and contained at least two rooms, separated by wall [503] (Fig 4), which was not as wide as the three outer walls, so it was probably an internal cross-wall, despite a slight change in alignment evident in the north-west wall beyond it. This building is located where Martin and Martin (2001, figs 376/2, 376/3a, b) suggest that the medieval kitchen stood. Internally, the south-west room contained at least two walls *c.*1m long around its edges, with the tiled hearth or fireplace in the angle of one of these. An open plan divided like this is common to many medieval kitchens. Although only one fireplace was identified in Building 452, the floor, which was simply the surface of the internal clay build-up, had several other widely separated burnt areas with dark occupation layers over them, suggesting further hearths. This may indicate a situation comparable to that recorded at Northolt Manor, where fires were evidently lit directly on the clay floor of the kitchen (Hurst 1961, 241). A quarter of the kitchen floor at Northolt was covered by a 'tile floor', but this was simply an area of 'roofing tiles laid at random' (*ibid*, 241), perhaps similar to the small patch of tiles [519] within Building 452 at Headstone Manor.

Very little of the internal area of Building 452 was examined. By contrast, at Northolt Manor almost all of the kitchen was excavated, and various hearths, fireplaces and ovens were identified. Two of the hearths and an oven lay towards the centre of the 14th-century kitchen, with only one

tiled hearth against the wall (Hurst 1961, 241). The central part of Building 452 was only examined by the narrow cross-section recorded in the edge of an existing service trench. The depth of occupation within Building 452 appears slight for a kitchen with a long life. At Northolt, however, the floor sequence was also shallow, and much of the cooking was apparently carried out in lean-to structures on a cobbled surface outside the building, where nine hearths and an oven were found, including a tile-lined hearth like the one at Headstone. Little of the exterior of Building 452 was examined to any depth, so whether a similar arrangement of external hearths under lean-tos existed at Headstone is unclear.

While the roughly horizontal tiles seen in the top of the occupation deposits in Building 452 could have been rough flooring as interpreted at Northolt, it is more likely that the Headstone kitchen was cleaned regularly, so that occupation deposits were not allowed to accumulate to any depth until the very end of its life. This is consistent with the sequence of deposits observed in Building 452, layer [526] from the 14th (or very early 15th) century, being only a single thin deposit, and layer [514] perhaps representing the final use of the fireplace (Fig 8, Section 77).

One further factor may be relevant. In the medieval period, use of Headstone Manor by the archbishops of Canterbury was only occasional and, if the documentary evidence is any guide, Headstone was only very rarely visited after the mid-15th century, although the sums documented for repairs to the main buildings in the later 15th century show that the house was periodically maintained (Clarke 2000, 160–3). The Manor was leased out from the end of the 14th century, but the tenant may not have lived in the main buildings, as this was only stipulated in the lease of 1514 (*ibid*, 162), so the kitchen may not have experienced a high level of use during its long life, unlike a monastic or college kitchen.

Building 452 had at least two rooms, the second of which may well have been a bakehouse or brew-house, as a burnt area and a charcoal-rich occupation deposit were also seen on the floor here. At the moated manor of Low Hall, Walthamstow, the 14th-century kitchen, which was also set apart from the other buildings, was a rectangular building with two rooms, and the second room contained a central oven (Blair 2002, 194–5, fig 2). At Northolt in the later 14th century a bakehouse and other rooms interpreted as for storage were added to the kitchen, transforming it into one end of a range nearly 35m long (Hurst 1961, 243–9). Building 452 was at least 17m long, but its full length was not established. No north-east continuations of the walls were picked up by the 1996 geophysical survey (Hale & Grove 1996, figs 2, 4), but as only intermittent faint traces of wall [617] were evident at shallow depth south-east of the Manor House, this is not conclusive. Excavation of a soakaway some 3.5m further to the north-west did not encounter any clear occupation deposits, but at Northolt Manor virtually no internal features were found in the storage rooms beyond the bakehouse (Hurst 1961, figs 56, 62). It is therefore also possible that Building 452 was much longer.

The kitchen may either have had dwarf walls with timber-framing above, like the contemporary kitchens at Low Hall and at the nearby Northolt Manor (Blair 2002, 195; Hurst 1961), or have been built in masonry to roof level. The massive depth and character of the surviving foundations and walls do not provide conclusive evidence, as the hall and cross-wing are both timber-framed, the depth of the foundations/walls being due to the raising of the ground level within the moat. There are a few medieval kitchens built entirely in masonry surviving from the 14th century, but they only become common in the late medieval period (Wood 1965, 247–56). Among the examples of the latter is the kitchen at Mayfield in East Sussex, another of the archbishop of Canterbury's manors (now the Convent of the Holy Child), where the surviving masonry is of 13th–16th-century date (Wood 1965, 52, fig 20). Here the kitchen was attached to the buttery and cellars, rather than being free-standing.

### *Duration of Use and Date of Demolition*

When Building 452 went out of use and was demolished is uncertain, as the dating evidence consists almost entirely of fragments of peg roofing tiles. The charcoal over

the tile-lined hearth was of mid- to late 15th-century date, although other parts of the room may have continued in use much later. West and north-west of the hearth there were frequent fragments of peg tiles dated to either the 16th–17th or 17th–18th century on the basis of their fabrics (see above). These tile spreads may relate to a period of dereliction or represent broken examples discarded when the roof was stripped prior to the demolition of the building.

The building and its tile spreads are cut across by two drains that cut the occupation deposits. The robbing of the earlier drain contains pottery of the later 17th or early 18th century, providing a reasonably firm *terminus ante quem* for the demolition of the building. In the north-west the backfill of the robbing cut of wall [715] was overlain by layer [242] (not illustrated) containing peg tile fragments of 16th–17th-century type and a sherd of 16th-century pottery. The building had certainly been demolished before the north-east extension of the Manor House was built, which is dated on architectural grounds to the 18th century (Martin & Martin 2001, 22–3; Clarke 2000, 170, fig 6). Historic maps show that this range was certainly present by 1819, and the offset shape of the house on Messener's map of 1759 suggests that it was already built in the mid-18th century.

The large number of unburnt small mammal bones found in samples from the same occupation deposits are also unlikely to have accumulated during active use of the building, and more probably derive either from a time when the building was not being used or from owl pellets dropped from the rafters once the roof had begun to collapse (see above). This suggests a period of disuse after the last use, perhaps in the first half of the 16th century, and before demolition. However, a small number of amphibian bones had been burnt, and these presumably represent either animals retrieved from the moat while fishing and subsequently discarded onto the fire or toads that had crept into the kitchen for warmth and had been killed and disposed of in the fire.

A plausible date and context for the demolition of Building 452 would be the later 16th century (1558–85 according to the tree-ring dating), when the adjacent west range was constructed (Martin & Martin 2001, 12). The passage within this range suggested that it was built to link the cross-wing to the medieval kitchen, but the fact that the new range stopped 1m short of it may instead suggest that it was decided during its construction to demolish Building 452, or that Building 452 had already been demolished. As kitchens were prone to fires, a gap may have been left deliberately, but a 1m gap would not have been an effective firebreak and might have hindered construction of the new building, so Building 452 may have been demolished before construction of the west range started. However, the absence of evidence for a chimney stack in the later 16th-century phase of the west range could imply that Building 452 was retained until the early 17th century, when the surviving fireplace was added to the west range (Bond 2001, 7, 8), and only after this date was Building 452 demolished (Martin & Martin 2001, 12). Alternatively, the 17th-century fireplace may have replaced a smaller one, obliterating any evidence of the earlier structure.

### *Raising of the Ground Level Within the Moated Enclosure and the Date of the Moat*

The excavations within the moated enclosure have also provided further evidence that the ground level within the enclosure was raised and that this occurred within the medieval hall and cross-wing and throughout the other areas examined (Figs 1, 3). It is therefore probable that the dumped clay represents the London Clay derived from the excavation of the moat and since its dumping was associated with the construction of the hall, cross-wing and Building 452, that this occurred during the first half of the 14th century. According to documentary evidence, the most common period of moat construction in England was during the late 13th and early 14th centuries (Le Patourel 1978, fig 8). A local parallel is Northolt Manor where the first phase of moat was constructed during *c.*1300–55, then in *c.*1355–70 the moat was enlarged and the London Clay extracted was spread across the interior of the moat, raising the ground level by between 0.15m and 0.6m (Hurst 1961, 243). At Low Hall in Walthamstow, excavation of the moat revealed the basal

remains of a wooden bridge, and tree-ring dating established that several of the bridge timbers were felled in 1344, providing a precise date for the digging of the moat (Blair 2002, 196). There are a number of medieval manors and various aristocratic or mercantile residences in Greater London and Essex that were 'equipped with moats probably for reasons of fashion rather than defence' (Blair 2002, 193).

The area encompassed by the moat at Headstone is just under 70m square (4,840m$^2$), and the depth of dumped clay encountered within Building 452 and in the trenches excavated inside the cross-wing was around 1.1m (Fellows 2001). The level of the surface of the dumped clay around Building 452 and around the building revealed south of the standing manor was fairly consistent, and if the whole of the Moated Island had been raised by a similar depth at one go, this would have required 5,400m$^3$ of clay. However, the pre-existing land surface beneath this dumping may not have been of a uniform height right across the moated enclosure, as the ground outside was sloping down from east to west and from north to south. Bearing this in mind, an average depth for the dumping of nearly 1m, equating to a volume of 4,800–5,000m$^3$ seems reasonable.

According to the monitoring of the dredging of the south-west side of the moat, its base is 2.5m lower than the present ground level on the island (Ashworth 2010, fig 4). Subtracting the depth of deposits over the dumped clay, which averages around 0.35m, and allowing approximately 1.1m for the depth of the dumped clay, the depth of the moat cut into natural deposits on the south-west would have been just over 1m. If the depth of dumped clay was less on the east, the cut into natural may have been deeper here, and as the outfall from the moat appears always to have been on the south, the moat may have been deeper there as well, but documents show that the moat has been cleaned out in 1466 (Clarke 2000, 163), and presumably also in the 17th century, when the existing bridge was built. Some deduction must therefore be made for the possibility that these cleanings of the moat resulted in some deepening or widening. It is unfortunate that no data concerning the cores taken around the moat in 2010 was provided in the Heritage Network report (Ashworth 2010).

The surface area covered by the moat (excluding the southern outfall extension) is of the order of 4,000m$^2$**.** At an average of just over 1m deep, this would have provided *c.*4,400m$^3$ of clay, but may have cut deeper into the natural around parts of its circuit. If needed, further clay could have been obtained locally by quarrying, and may perhaps explain some of the 'ponds' seen on later historic maps around the south-east and south-west sides of the Outer Court.

An alternative hypothesis suggested by Bond (2001) was that only the Manor House itself was originally raised, sitting on a plinth enclosed by the chalk-and-flint walls on which the timber-framing sits. As argued above, the fact that Building 452 had exactly the same type of walls and is also of 14th-century construction makes this hypothesis less likely. If correct, then further and more extensive clay dumping would have been needed to raise the ground level of the rest of the surrounding moat platform. Additional clay could have been obtained locally, possibly when the moat was cleaned out or by quarrying around the Outer Court.

The limited scale of archaeological investigation to date and the scarcity of dating evidence does not allow a definitive resolution of these alternatives, but the widespread similarity of the dumped clays observed suggests that these deposits are all derived from the same geological source and probably represent a single medieval phase of activity and this is the interpretation followed below.

### *Structures Between the Moat Bridge and the Manor House (Figs 3, 23)*

No structures that could be part of an early bridge were uncovered during the watching brief on Heating Duct Trench II to either side of the moat bridge (Figs 1, 3). The wall fragments found west of the standing manor in narrow service trenches do not produce a coherent plan, but are consistent with a structure broadly at right angles to and parallel with the moat. They also span the width of the current bridge. They were all abutted by the same deposit of yellow clay containing pink mottles and as this clay is like

that abutting the remains of Building 452, it is possible that they are of medieval origin. The only dating evidence was fragments of peg roofing tiles of fabrics that may be medieval or post-medieval at this site.

It is tempting to suggest that these walls are the remains of the gatehouse mentioned in records from 1487 until 1533 (Clarke 2000, 164; Fig 23), but they do not specify where the gatehouse (or gatehouses) were, except that the old gatehouse stood next to houses at 'the end of a long stable towards the west'. If this gatehouse was on the Moated Island, then the most likely location for it would have been just inside the moat at the end of the bridge, and there is certainly room for further houses and a stable along the west side of the island either to the south or north, in areas that have not yet been excavated.

### *Structures South-East of the Manor House*

#### *Concordance of the Results with the Previous Geophysical Survey*

A resistivity survey of the interior of the moated enclosure was carried out in 1996 by GeoQuest Associates (Hale & Grove 1996, fig 1). The survey revealed a rectangular anomaly some 10m south-east of the Manor House, which was aligned with it (*ibid*, figs 2–5; Fig 3). The south-west side was investigated by the Central Archaeology Service in 1997, and proved to correspond to a wall ([648]=[CAS80] and [CAS167]; Fig 13). The north-western side of the rectangle probably represents wall [619], and intermittent traces of wall [617] may also be evident in the greyscale plots (*ibid*, fig 4). Beyond the corner of walls [617] and [619], the north-east side of the rectangular anomaly was tested in Trench G but did not correspond to a wall, though a drain was found in the same position (Fig 13).

#### *Dating of the Exposed Walls*

More pottery and other finds were found in this area than at Building 452, but it remains true that peg roofing tiles still formed a substantial part of the assemblage and some contexts could only be approximately dated using this material. Given the discrepancy between received dating of the tile fabrics and the radiocarbon dates from Building 452 (see above), therefore, some of the dating that follows may be later than was actually the case. This, if anything, enhances the significance of the discoveries, but it should be borne in mind in the following discussion.

Robber trench [611], just beyond the south corner of the Manor House, was 0.6m wide, and probably represents the robbing of the demolished part of the hall (Fig 13). A continuation of this robber trench also appeared in CAS trenches SDD1 and 2 (Busby & Griffin 1997, figs 1, 3, 4). The robbed wall was believed by the excavators to continue into their trench SDD3 (*ibid*, fig 5, cut [87]), but excavation of Trench H, which included most of trench SDD3, showed that this cut was shallow, and the robber trench clearly did not continue this far. Instead, the corner formed by walls [633] and [619], which was at least 0.65m deep and abutted by dumped clay [632] that underlay cut [647=CAS87], was found 1.2m further north-east. Shallow cut [647=CAS87] contained a worn peg roofing tile fragment of 14th–16th-century type, and was cut by a posthole [635] containing half of a peg tile of 15th–17th-century type, suggesting that both were of early post-medieval date, but do not provide reliable *termini ante quem* for the deposition of clay [632]. A similar clay was, however, seen abutting the outer edge of wall [619] to the north-east, and similar clays were found abutting wall [617]. This clay was very similar to that observed below the standing Manor House and abutting Building 452, suggesting that it was deposited as part of the same build-up, and that walls [617], [619] and [633] are of medieval date.

Over 10m of wall [617] was uncovered, with a return [619] at the south-east end that was clearly of the same build. Only the tops of these walls were uncovered, and few stratigraphic relationships with adjacent deposits were investigated. Finds were, however, recovered from soils adjacent to the inner edges of both walls, and these ([642], [622=641] and [665]) contained finds of 16th- or 17th-century date (Fig 16, Section 93). Layer [622] abutted the robbed inner edge of wall [619] and contained flint chips interpreted as the by-product of the cleaning up of flint blocks recovered from

the robbing, providing a probable date for the demolition of this wall. Layer [665] represents either the latest fill of a garderobe or a similar accumulation to layer [622].

In addition, the corner of walls [617] and [619], and layer [642] abutting [617], were cut through by a ditch, which was subsequently recut and then replaced by a brick-lined drain (Fig 13; Fig 16, Section 95). The width of the ditch cut, and its position across the corner of the building, makes it clear that the walls and the ditch cannot have been contemporary, so the walls must predate them. Sizeable groups of later 16th-century pottery were recovered from both phases of the ditch, and a late 16th- or early 17th-century jeton was also recovered from a gully draining into the ditch recut. This ditch was replaced by a drain [645], constructed of late medieval or Tudor bricks. The date at which this part of the structure went out of use is therefore likely to have been mid- to late 16th century, indicating that it was built either in the medieval or very early post-medieval period.

Wall [617] was cut across by wall [620] two-thirds of the way along (Fig 13). No direct dating evidence was recovered from wall [620] itself, but in Trench J its construction trench was believed to cut the dumped clay deposits on either side, while the upper fills of the stone-lined garderobe pit [661] abutting its south-east side contained a sherd of late 15th–16th-century pottery and ceramic building materials probably of 16th- or 17th-century date. The uppermost of the deposits found to the north-west of wall [620] (layer [470]) also contained a sherd of late 15th- or 16th-century pottery, together with fragments of peg roofing tiles and frequent mortar fragments, suggesting that it related either to construction or demolition of the wall and provides further evidence for dating the construction of wall [620] to the later 16th century.

The backfills of the robber trench of wall [620] contained a Tudor brick end, pottery of 15th–16th-century manufacture and fragments of peg roofing tiles, possibly of 17th-century date, which might suggest final use and infilling of the garderobe took place in the 16th century and that robbing of the wall happened during the 17th century, though the finds only provide *termini post quem* for these events. Whether the garderobe pit was self-contained or emptied into a ditch or drain was not established, but the orientation of the ditch and drain crossing the corner of walls [617/619] makes it possible that these features represent an overflow channel for this garderobe (Fig 13). If the garderobe and ditch were connected, then wall [620] and garderobe [662] were in use by the later 16th century, and the robbing of wall [620] might have occurred during the 17th century or possibly later.

Wall [648] overlay the clay dumping which is believed to be part of the raising of the ground level of the interior of the Moated Island, probably in the 14th century. This wall is therefore likely to be of 15th-century or later date; the only investigated building within the standing Manor House with similar footings, the 'west range', is of later 16th-century date. A flat-bottomed shallow cut [647] began at the wall's end, and its north-east edge continued the same line as that of the wall. Although the purpose of cut [647] is not clear, an association between this cut and wall [648] seems plausible and the fill of the cut included a worn peg roofing tile fragment of 14th–16th-century type, and was itself cut by a posthole [635] containing half of a peg tile of probable 15th–17th-century date. As the tile from [635] was not worn, it may have been reused not long after it was made, which could indicate that the building was constructed prior to the 17th century. These finds only provide *termini post quem* for the sequence, but the evidence is compatible with construction during the later 16th century. All trace of this building had disappeared by the early 19th century according to cartographic evidence.

### *Interpretation of the Structural Sequence*

The robber trench following the line of the south-west side of the hall did not extend into Trench H, so the known southern limit of this trench is therefore SDD2. The existence of a four-bay hall, which was proposed from the CAS trenches (Busby & Griffin 1997, figs 8, 15), can therefore be discounted. If the robber trench found in SDD1 and SDD2 is the robbing of the wall of the medieval hall alone, then this would suggest a three-bay hall. Trench J was, however, excavated to look

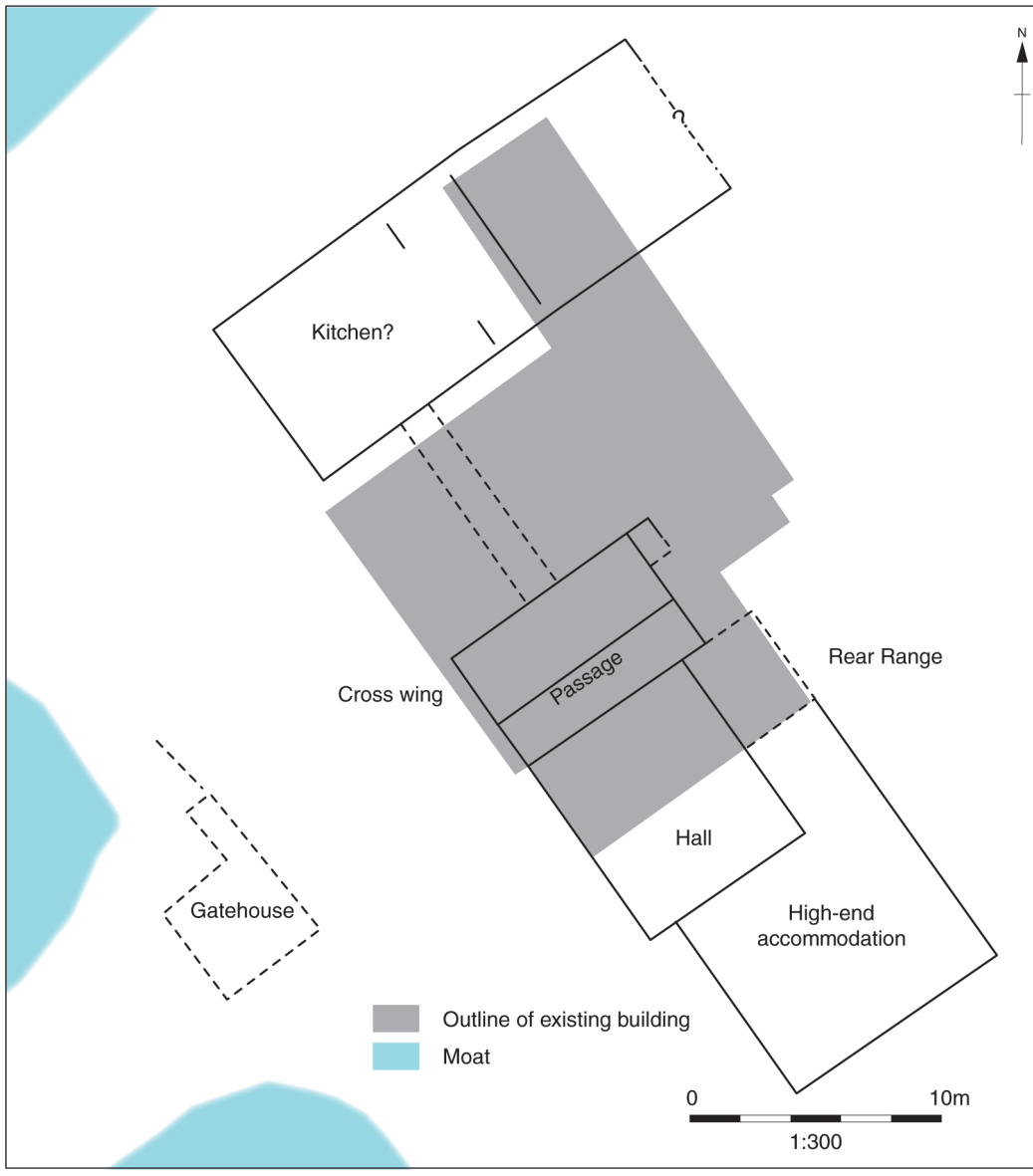


*Fig 23. Interpretation of the layout of the medieval manor house in the light of the new discoveries*

both for a continuation of wall [620] and across the projected line of the north-east wall of the hall to establish whether it continued this far. The north side of the trench was cut back to ensure that the deposits observed lay beyond the robber trench of wall [620], but no trace of the north-east wall of the hall or its robber trench was found. Therefore, the evidence strongly suggests that the hall only consisted of two bays. This is in accord with the views of both Martin and Martin (2001, 28) and Clarke (2000, 160, fig 2).

It is possible that the absence of the north-east wall of the hall in Trench J is because the layers seen north of wall [620] were deposited after the demolition and robbing of the second and third bays of the hall, and that this involved the excavation of an area much wider than the wall itself, and at least 0.5m deep. The date of the latest deposit

found north-west of wall [620] was 16th century or a little later, so this would suggest that the southern part of the hall had been demolished by the end of that century. However, demolition of the hall this early is contrary to the above-ground evidence (Martin & Martin 2001, 21; see also Fig 2, Phases F and G).

Interpretation of the building represented by walls [617/619/633] is hindered by the very variable survival of wall [619] (Fig 13). While the north-eastern part was fairly clearly defined, and the south and east corners identified, for much of its length only one edge is certain, and in some places neither edge is clearly defined, producing a plan in which the wall appears to change thickness several times. Due to the limited scope of investigation allowed by the restoration programme, these issues were not resolved. The depth of walls [619] and [633] exposed at the south corner is not, however, consistent with the narrow width exposed at the top, suggesting that these walls had been robbed internally in Trench F, as was also clearly evident in Trench E.

In Trench F, it is likely that masonry [637], which protruded from the north side of robbed wall [619], represents the fragmentary survival of the earlier and wider wall, which would have been 0.5–0.6m wide, like the other medieval walls. Above this, the north-western edge of the surviving narrower wall was squared off (Fig 13), indicating that the partial robbing was deliberate and that the narrower wall surviving above had a further purpose. This narrower wall was in line with the end of wall [648]. Extending at right angles to the south of [619] at the north-east end of the squared-off edge was wall [630], which with the narrowed portion of [619] may have formed two sides of a post-medieval building, whose other long side was wall [648]. Internally this structure was 3m wide and at least 7m long (to CAS trench SSD 6), and possibly 16m long if the geophysical survey is correct (Fig 13). The gap between walls [619] and [648] was probably a doorway giving access to a passageway connecting to the hall and other buildings further north, flanked by wall [633] on the north-east. The narrowness of these walls, and the shallowness of wall [648], suggests that they served as the foundation plinth for a timber-framed structure. The long building extending south-eastwards may have included a gallery (Fig 24b).

It is alternatively possible that wall [633] belonged to a garderobe block incorporated into the corner of the building, since this is the only type of medieval structure that might have such narrow and deep walls, and fill [665], which abutted the inner side of walls [633] and [619], was described as brownish grey and green, the latter colour often associated with cesspit fills. However, the wall was well-finished on the outside, but not on the inside except at the very top, which is not the usual construction method for a garderobe. The peculiar form of medieval construction evident in the cross-wing and in Building 452 at Headstone, in which the wall faces were dressed even though they were then covered by further dumping of clay, could explain the external finishing of the walls, but not the absence of finish on the exposed inner side. The geophysical survey (Hale & Grove 1996) did not reveal any drainage channels at a shallow depth that might have been associated, and the natural slope of the ground level around the Manor House does not provide a sufficient fall for an opening at the base of the garderobe to have emptied via a drain or ditch into the moat more than 15m away. If this structure was a privy or garderobe, it must therefore have been a simple pit from which the accumulated cess or faeces were cleared out periodically by hand. Whatever the arrangements might have been, if there had been a medieval garderobe here it would indicate that there was domestic accommodation adjacent, presumably to the north-west and north-east, which again supports the idea that the hall was only of two bays.

### *A Medieval High-End Accommodation Block?*

Wall [633] represents the end wall of a rectangular block that is offset by over 0.5m from the line of the hall (Fig 13), but as these walls were abutted by the same clay dumping as the proven medieval buildings, they are likely to be either contemporary with the hall and cross-wing, or of earlier date. In the absence of any artefactual evidence, there seems no good reason to attribute them to

an earlier building. These walls could be interpreted as an accommodation block (Fig 23). Medieval high-status accommodation blocks incorporating a great chamber are generally 4.8m–8m internally, as at Old Soar, Plaxtol, Kent or Amberley Court, Marden, Herefordshire (Wood 1965, 43, fig 18, 69, fig 26). A two-bay hall at Headstone would make the solar block up to 7.5m wide internally (possibly including a garderobe, see above), a substantial example perhaps appropriate for the favourite Middlesex manor of the archbishops of Canterbury (Clarke 2000, 160; Martin & Martin 2001, 6).

At Mayfield, another of the archbishop's manors, the dais was at the service end of the hall, and the high-end accommodation was over the service rooms (Wood 1965, 52, fig 20). A combined service wing with great chamber above was quite a common arrangement in the 13th and early 14th centuries (*ibid*, 71–3), and alternatively the jettied room over the service cross-wing at Headstone Manor could have provided the private chamber and sleeping area for the Archbishop. Martin and Martin (2001, 6), however, commented that 'the quality of finish within the cross-wing is inferior to that within the hall', implying that the principal accommodation was within a now lost high-status range located at the southern end of the hall. They also state (*ibid*, 6) that 'although high-end accommodation should not automatically be assumed at this date, the lack of such accommodation would be unusual in an early 14th-century house of this size'. On balance, high-status accommodation appears the most likely use of the building represented by walls [633/619/617] (Figs 13, 23).

The function and interpretation of wall [617], which was traced almost up to the corner of the standing building, has implications for the structural development of the manor house. The adjacent corner of the manor house is part of the north-east rear range (Period B), which was added during the mid- to late 16th century (Fig 2). As wall [617] was cut through by a later 16th-century ditch and was of similar width to the medieval walls that were subsequently embanked with clay, it was almost certainly part of an earlier phase. Due to modern service trenches it was not possible to establish a stratigraphic relationship between [617] and the external wall of the rear range, but this timber-framed range is founded on a masonry-lined shallow basement and it is possible that the masonry of this basement incorporates the northern continuation of [617]. Possibly before the construction of the rear range, wall [617] supported a single-storey medieval pentice connecting the service and accommodation blocks.

Martin and Martin (2001, 10–11) argued that the enlargement of the western surviving window in the hall in the later 16th century was to compensate for the loss of light caused by the addition of the Period B rear range to the north-east side of the hall. However, if there was already a medieval rear range in the same location, this argument does not work. The hall at Headstone Manor has unusual dormer lights (Martin & Martin 2001, 27–8, figs 9, 10). It is therefore conceivable that the windows on the eastern side had never extended down to first floor level due to the presence of an adjoining narrow medieval rear range.

### *The Later 16th-Century Layout*

Wall [620] cut across wall [617], confirming that it was later (Fig 13). The presence of a probable garderobe pit against its south-east side strongly suggests that wall [620] formed the south-eastern limit of a domestic building. The presence of an open ditch containing cess to the south-east may indicate that it served as an overflow from the cesspit, whose south-east and north-east limits were not established, in which case the construction of wall [620] may also have occurred in the later 16th century. The demolition of the south-east end of the medieval accommodation block therefore took place during or before the later 16th century, when a garderobe was constructed within it and the ditch crossed its south-east corner. The most likely period for significant alteration to the property would probably have been in the later 16th century, when additions were made to the north-west side of the manor (Phase B; Fig 2).

If the second bay of the hall remained open to the roof, then the width of the solar block would have been reduced to 5m (Fig 24b). Ten rooms are mentioned in the




*Fig 24. Alternative interpretations of the layout of the early post-medieval manor house in the light of new discoveries*

schedule of goods (dated 1601) of Thomas Malby, who left them to his wife Lettice on his death in 1599 (Clarke 2000, 164–5): the parlour, the little parlour, the great chamber over the parlour, the little chamber over the great parlour, the chamber over the little parlour, the gallery, the chamber at the furthest end of the gallery, the middle chamber in the gallery, and the chamber in the higher end of the gallery. Clarke argues that the names of these rooms suggest that they were all located beyond the high end of the hall, indicating that by 1601 the high-end accommodation was extensive.

The parlour and the little parlour were probably adjoining rooms. The great parlour is not listed except in relation to the little chamber over it, and may have been synonymous with the parlour. These rooms would normally have occupied the ground floor beyond the end of the hall, which (including the width of the rear range) was by now an area 10.7m by 5m, with three chambers above. In the medieval and early post-medieval periods, corridors were very rare, rooms being accessed from one to another (Wood 1965, 335–7), and the three chambers over the parlours were probably accessed in this manner, but the chambers mentioned 'in the gallery' at Headstone are likely to have been accessed from the gallery, which would have been continuous.

Galleries have their origins in the later medieval period as utilitarian passages usually connecting domestic buildings and a chapel. The location of the chapel at Headstone is unclear, though it may lie further east than the area investigated. A single-storey gallery survives at Christ Church Priory, Canterbury (Coope 1986, 44). In the late 15th and 16th centuries, however, galleries developed as places for conversation, for exercise and for their views. Long galleries, some reaching 65m in length and 8m in width, became very popular in country houses of the later 16th and 17th centuries, when they were also decorated and used as places to hang portraits (*ibid*, 63–6). Such galleries are almost invariably at first- or second-floor level, as at Hardwick Hall, Derbyshire, or at Barrington Hall, Somerset. Nothing on this scale would be expected at a relatively modest manor such as Headstone, but the reference to chambers within (or adjoining) the gallery at Headstone suggests that this was an upper storey gallery (Clarke 2001, 165).

It is possible that the accommodation block at Headstone had a gallery above the first-floor chambers, thus incorporating all ten rooms within it (Fig 24a). This suggestion might be supported by the tall thin connecting rear range of Period E (Fig 2), which was argued to reflect a similarly tall accommodation block (Martin & Martin 2001, 19). Without this, it is difficult to accommodate three chambers and a gallery into the block beyond the hall. It is possible that masonry [627] and wall [620] formed a passageway leading to accommodation further north-east (Figs 13, 24b), but the date of wall [627] is unknown and the continuation of wall [620] uncertain. It is alternatively possible that the second bay of the hall had a first floor inserted for use as private rooms at this time (Fig 24a). If so, the whole first-floor area between the standing manor and wall [620] would have provided space for domestic accommodation 10.5m long and 7m wide (externally) and the gallery could have occupied the south-east side. However, at under 11m long, the high-end accommodation block was rather short for promenading during wet weather, which was one of the main functions of a gallery (Coope 1986, 52).

The function of the building found by the Central Archaeology Service (CAS [167] and [169]; Fig 13) to the south of the hall remains uncertain, but it was 3m wide internally (the same width as the rear range), and according to the geophysical survey it might have been 15m long or more. The relatively slight foundations do not exclude a two-storey timber-framed range, as is evident from the west range, and such a long building might conceivably also have contained the gallery (Fig 24b). The mention of a chamber at the high end of the gallery and another at the far end of the gallery suggests that the gallery was within or adjacent to the high end accommodation at one end, but ran beyond it, which would fit this suggestion. While this building is narrow to have incorporated chambers and a promenade, the description of chambers 'within the gallery' may have been used loosely, the gallery being the name for the whole building, and the chambers possibly

at ground level or at the ends with a narrow room in the middle.

## CONCLUSIONS

The integration of various phases of small-scale archaeological intervention surrounding a historic standing building with its own complex history of extensions, alterations and partial demolition into a site-wide structural sequence is not easy. Therefore, some of the interpretations discussed here are tentative. As a result of the scarcity of ceramics or other closely datable artefacts much of the dating evidence relied on the date ranges assigned to the manufacture of certain types of ceramic building material fabric. The date ranges currently assigned to Greater London's medieval and early post-medieval ceramic buildings are approximate and do not take into account local variations or the life span of the materials, let alone their reuse.

However, despite these limitations this fieldwork demonstrates that it was possible to add a great deal of new information to the structural history of Headstone Manor House, including identifying its medieval kitchen. The new interpretations of the layout of the early post-medieval manor house provide ideas that could be tested by further fieldwork and further archaeological investigation of the standing building.

## APPENDIX ONE: RADIOCARBON DATING

*Rebecca Nicholson*

Two samples were submitted for AMS radiocarbon determination to The Centre for Isotope Research (CIO) at the University of Groningen, and were measured using the high precision facility MICADAS accelerator mass spectrometer (AMS). The samples comprised a single fragment of charred hazel (*Corylus avellana*) nutshell weighing 26mg from sample S4, layer [514], and two small indeterminate charred twig fragments with pith, one or two rings and bark, weighing 10mg, from sample S5, layer [526]. The selected material was the shortest-lived wood identified in the sample flots.

The samples were prepared using standard techniques and the results are provided in Table 2. Further details of pre-treatment and of recorded uncertainties can be found in the grey literature report. The resulting dates are conventional radiocarbon ages (Stuiver & Polach 1977), quoted in accordance with the international standard known as the Trondheim convention (Stuiver & Kra 1986). The measured $\delta^{13}C$ values used in the calculation of the result are within the typical range for seeds and wood from terrestrial plants (Bowman 1990, 23). The calibrated dates have been calculated using the datasets published by Reimer *et al* (2013) and the computer program OxCal v4.3.2 (Bronk Ramsey 1995; 1998; 2001; 2009; 2017). The calibrated date ranges cited are quoted as recommended by Mook (1986), with the end points rounded outward to five years where the error is <25 years and 10 years where the error is >25 years. The date range has been calculated according to the maximum intercept method (Stuiver & Reimer 1986).

*Interpretation of Results*

Samples S5 and S4 came from successive layers of grey charcoal-rich silt [526] and

*Table 2. Radiocarbon results from Headstone Manor Building 452*

| Lab No. | Sample name (context) | Material | F14C Fraction modern | 14C Age (yr BP) ± 1σ | % Carbon | δ13C (‰; IRMS) | Calibrated date (at 95.4%) |
|---|---|---|---|---|---|---|---|
| GrM18110 | HEM14 S4 (514) | Charcoal (ABA) | 0.9477 | 431±19 | 63.9 | -24.67 | AD 1430–1475 |
| GrM18184 | HEM14 S5 (526) | Charcoal (A) | 0.9283 | 595±30 | 61.7 | -23.56 | AD 1290–1410 |

ABA=acid-base-acid wash, A=acid wash

[514] overlying burnt clay floor [527]; layer [514] also directly overlay hearth [505/506]. The radiocarbon date from sample S4 therefore provides a *terminus ante quem* for the construction and use of the fireplace of cal AD 1430–75, in addition to a probable date for the last use of the fireplace, while the radiocarbon date from sample S5 indicates earlier medieval occupation upon the floor, as there is no overlap between the two determinations at 95.4% probability. There is a 69.7% probability that the date from sample S5 falls between cal AD 1290–1370, so the earlier medieval occupation is more likely to be 14th than early 15th century.

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The archaeological work was managed for OA by Tim Allen and was supervised on site by Gary Evans assisted by Bob McIntosh. Survey work was carried out by Ashley Strutt and Ben Brown. The excavation team comprised Robin Bashford, Christof Heistermann, Tom Lawrence, Elizabeth Kennard, Bob McIntosh and Ashley Strutt. Gary Evans drafted the archaeological description, and Tim Allen revised this and wrote the discussion. Tim Allen is grateful to Bruce Watson for his comments on an earlier draft of this article.

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# REVIEWS

*London in the Roman World*. By Dominic Perring. Oxford University Press, 2022. Pp xvi + 573, 88 figs, 6 tables. ISBN 978 0 19 878900. Price £40 hbk.

Many aspects of Roman London remain unclear, such as origins, status, functions, changes through time and the 'end'. In this book Dominic Perring aims to set these and other topics within a 'historically framed narrative' (p 4). The overall approach 'offers a different take on the relationship between colonial forces and the colonised, one sympathetic to David Mattingly's description of an oppressive imperial presence' (p 30). This is particularly visible when emphasis is placed on an official and military role for London driven by 'Rome', an emphasis not always supported by the evidence.

Perring provides a thorough discussion of the gaining and use of archaeological evidence in London and Southwark but might have mentioned the early role of this Society and the Surrey Archaeological Society in the rescue crisis, and the role of the Association of County Archaeological Officers in the development of planning control. Although there is a great deal of archaeological evidence, we should remember that it represents only a small percentage, exemplified by the suggestion that we have only between 1.6 and 3.2% of all likely burials (p 323), and the limited body of surviving inscriptions. There are inevitably dangers in arguing from partial evidence.

A useful survey of the later prehistoric background shows a pattern of dispersed settlement before the beginning of a major centre at London, which the author places as early as AD 43. He suggests that Plautius halted near the tidal pool immediately after crossing the Thames on a newly-built pontoon bridge, and constructed a fortress for two legions or more. Claudius then sailed up to a landing place in Southwark, offloaded reinforcements, led them across the bridge to join the others and proceeded to Camulodunum. Both fortress and bridge were dismantled at this stage.

The author insists that this is 'consistent with both historical sources and topographic context' but the argument relies on a particular reading of Dio and three widely separated scraps of ditches (pp 51–6). Lacey Wallace offers a convincing rebuttal concerning the latter (*The Origin of Roman London* (2014), 38, 50–1, 53–5), while rather than 'halting' after crossing the Thames, Plautius' brief was to 'guard what he had won'. He had widespread new allies and needed to focus on controlling peoples and British-sourced supplies, probably across much of southern England as far afield as around Cirencester, while preparing for a show march on Camulodunum.

Perring suggests that London proper then started in AD 48 as 'an operational base for Britain's colonial government', which means that we are asked to accept that it took the Romans some five years to realise that the site of their former fortress, already shown to be accessible by water, was just the place they needed. He argues 'that London was designed to meet the needs of army supply rather than the convenience of traders', as part of imperial policy pursued by the governor and procurator (p 95). It was then 'remodelled into a fully-fledged town in AD 52', when 'expansion … is likely to have been planned' (p 76). It is clear, however, that the settlement expanded very rapidly and without full overall control (see Fig 1 here and contrast fig 6.1 in the book). Initial 'signs of haste' are apparent, and while the central




*Fig 1. A proposed reconstruction of London* c.*AD 52; fig 7.1 from* London in the Roman World *(© Dominic Perring; artwork by Justin Russell)*

gridded core may have 'owed everything to Roman ideas of town planning', we can also see activity way out into Southwark and ribbon development west of Poultry, well beyond the supposed boundaries. We would not expect such apparently organic growth, especially with evidence for high quality buildings, to occur in a controlled, planned foundation (an 'operational base') after only four years. Even in reconstruction after Boudica the plan is less than regular (fig 10.3).

Frenetic rapid development accords better with Tacitus' well-known description of a settlement famed for 'large numbers of merchants and great quantities of merchandise' and his evident *surprise* at London's lack of status. Perring's suggestion that 'the provincial authorities may have found advantage in arrangements that did not require the surrender of political control' (p 91) does not convince. Indeed, the author himself recognises that 'the needs of army

supply …' and 'the convenience of traders … were so closely aligned that the distinction is largely academic'. Traders eagerly followed the army: all those soldiers with money to spend in need of goodies to buy. There was also a rapidly burgeoning civilian market, fostered by loans from the likes of Seneca.

Nevertheless, throughout the book the evidence is constantly viewed from the official and military aspect. For instance, special burials 'command' the main routes into London, 'embedding it within a landscape of Roman power'; we find the supposed *mansio* and the amphitheatre 'controlling the opposite borders of the town'; the *mansio* helped to administer 'a controlled network of roads and quays' (p 133). Yet interpretation of the *mansio* is by no means certain and some of its supposedly important features were only 'eventually provided'. Were the amphitheatres at Chichester, Silchester and Richborough also 'controlling'?

Evidence for the 'operational base' as such is limited. For instance, none of the evidence on pp 75–6 need relate to military supply other than in London itself. Claudian coins 'characteristic of early supply-bases' fuelled trading (*cf* Wallace 2014, 17). It seems wrong to say that Ptolemy described 'Richborough and London in identical terms'; they simply feature either side of Canterbury in his list (see A L F Rivet & C Smith, *The Place-Names of Roman Britain* (1979), 144). Reference to *De Bello Gallico* 6.32 (p 69 n38) does not support the operational base argument, as the rest of Caesar's story demonstrates. Regular troop movements via London are postulated but unproven; Watling Street is '*likely* to have included convoys of military supplies and troops', 'craft production ... *may* have helped equip troops in transit'. Neither 'high-status kitchen waste of the sort produced by army supply trains', nor an amphitheatre perhaps 'also designed for troops in transit' seem convincing. Reference to individuals does not necessarily imply presence of whole units (p 97).

London's marginal location is seen as significant (pp 30–1), but it is more likely that the position at the head of the estuary is key. Parallels are drawn with Lyon, Cologne, Mainz and York but London's status is different (probably only much later a *colonia*). The great Gallic river ports might be better models, set on Strabo's major trading routes (*Geographica* 4.5.2). These ports are only becoming better known recently, but Bordeaux on the Garonne has direct evidence of traders with links to York (Roger Tomlin, *Britannia Romana* (2018), 307–8). Nantes on the Loire had settlement on both sides of the river with similarities of development history akin to London-Southwark at a later period (James Bromwich, *The Roman Remains of Brittany, Normandy and the Loire Valley* (2014), 246–8); from this region the Veneti had controlled trade to Britain according to Caesar (*De Bello Gallico* 3.1). Rouen on the Seine has signs of expansion of port facilities in the reign of Claudius (Bromwich 2014, 159); later Rouen *negotiatores* had British links including via the Rhine trading axis (Tomlin 2018, 304–6). Traders like these had the background, experience and probably senatorial backing to find an appropriate location and plan a new town.

Perring presents Roman London as an alien city, even, in later years, a defended administrative enclave, with no role for the British elite. This concept is central to the book's overall theme. It arises in part from the lack of villas nearby (pp 179, 270), but that lack arises from the generally poor soils (the contrast with the Darent valley is instructive). The story allows no agency for the *allied* Britons, although a good case could be made for their involvement from early on. Togidubnus was *rex magnus*, set to rule over 'certain *civitates*' according to Tacitus (*Agricola* 14). His predecessors and allies surely profited from pre-Roman cross-Channel trade, even Roman army food supply, bringing them important contacts. Like Roman merchants (and their senatorial backers) they would have seen the new business opportunities. Stane Street is cut through very difficult terrain; it is not well dated but its essential purpose is the Chichester–London link, effectively marrying the two main trading axes into Britain. London proper (the planned core?) was north of the 'formidable barrier and likely frontier' of the Thames (p 5), so surely *not* in 'territory carved from Kentish lands'; Ptolemy's attribution is simply a mistake (Rivet & Smith 1979, 398, and in general 105–47). The client kingdom could well

have reached the south bank, including Southwark. Might this explain the latter's rapid development? Could the same be true for those in power in Verulamium and the early development west of Poultry?

Early London needed a great deal from the surrounding countryside and to get it must have interacted with the local elite. It could not all be imposed on *allies*. Supplies of food, fuel and timber could all come from the client kingdom: stone, tiles and pottery certainly did, and before AD 60. Again, the area south from Verulamium was closely involved in similar supplies. There were even possibly vineyards established near London by *c.*AD 60. It may be relevant that 'the City's first-ever financial document', pre-Boudica, includes 'something found in British Latin' (Tomlin 2018, 32–3). The process would of course have been two-way, to fuel the rapid uptake of the Roman way of life evidenced by the early villas. This would have grown over time; for example, 2nd-century London society showed more elements of an insular tradition and there were Romano-British fashions for women (pp 227–9).

One of the author's more controversial arguments is that the well-known Hadrianic fire (or fires) could be linked to rebellion affecting London, drawing in some of the burial evidence to support this theory. However, a great deal of special pleading is required, both as regards the dating and the human remains. Imagining 'a host', including highlanders, 'that met its end on the banks of the Walbrook', bringing standard cavalry tombstones and Trajan's column into an argument that 'headhunting practices' were 'normalized within the early second-century Roman army', suggesting that reprisals might have 'continued over several decades' and that it all '*hints* [my italics] at a major Hadrianic slaughter' (pp 253–5), seems to be several steps too far.

Perring cannot muster evidence that other parts of southern Britain, or significantly even Southwark, were affected at this time. After a thorough review of the very limited historical evidence, Nick Hodgson (*Britannia* 52 (2021), 97–118) argues convincingly for a probable war in northern Britain, dated AD 117–19. This is earlier than our author's dating and it must remain likely that London's Hadrianic fires were part of the normal hazards of close-packed ancient cities; we might note Verulamium in AD 155 and even Rome itself (Nero!).

The book has references to the religious aspect of Roman London throughout. It is interesting that neither London nor the Thames feature specifically in the overall list of evidence for worship (p 230). The Tabard Square temples receive rather more attention than two relatively small Romano-Celtic temples in a rather scruffy precinct should warrant. They are described as an 'important landmark for those approaching London from the south' and 'ideally sited to protect London'. The last builds on the supposed dedication to Mars, but that is not certain (the inscription was carefully buried and could have come from elsewhere); the refence to Vitruvius (correctly 1.7.1) is not appropriate and offerings to one's own god could be made at another temple (note 'these precincts, home to several gods in inter-related worship': p 270). Although there were no doubt processions to temples on appropriate occasions, the proposed city-wide route from Tabard Square taking in any available religious site en route and ending at the amphitheatre is also unconvincing. The suggested monumental porticoes are standard for major towns but 'imperial patronage' is rather undermined by the evidence suggestive of piecemeal development commissioned from different builders (pp 244–5).

London's later changes of fortune through time are carefully reviewed and the case for a link between apparent periods of decline and pandemics of the 160s and 250s seems convincing. Revival can be demonstrated after earlier low points with several sites showing signs of activity, but we may simply lack the evidence to show the same for the latest occupation. Note that fig 22.1 uses information where 'the dates are those of the context in which the pottery was found' which thus makes no allowance for the loss of late archaeological levels. The discussion of 'endings' (pp 379–88) can be read to show activity across a wide enough area to imply that it may be a mistake to think in terms of late decline into a 'defended administrative enclave'. Even for the later 3rd century note the contrast between 'problems of survival make it impossible to

estimate building densities' (pp 346) and 'London wasn't densely occupied' (p 348). The evidence always seems inadequate to support statements such as that the city wall 'confidently enclosed a larger area than necessary' (p 310). This was a 5km long circuit needing many defenders. If the late city had a reduced occupation why was the opportunity never taken to reduce the circuit? The supply system may have changed in this period but it continued to involve considerable distance, such as provision of Oxfordshire and Portchester D wares or tiles from Harrold (pp 375, 379).

The author's discussion of London after the early 5th century appears rather dated. The 'dearth of early Saxon finds from within the walled city' cannot be fairly compared to the 'less thoroughly explored hinterland' (p 391) since early Saxon pottery and objects like silver siliquae are much less likely to survive in later urban conditions. The supposed 'movement of people up the Thames and its tributaries from *c* AD 450 onwards' (p 397) may well be much later than the arrival of Germanic peoples, especially in the areas south of the Thames.

The discussion above has inevitably concentrated on some of the more controversial aspects but this should not be allowed to detract from what is a very interesting book. It is well laid out and illustrated, and provides complex arguments based on wide-ranging research. The author plays fair in presenting evidence and consistently recognises that other points of view are possible. The inevitable comparison with Richard Hingley's recent book (*Londinium a Biography*, (2018)) finds the latter more pedestrian (apart from some excursions into the wilder shores of theory), but it does provide an opportunity to cross-check evidence. Perring's book is a more stimulating read because it invites reaction. The book successfully aims to provide 'an architecture against which new ideas can be tested' (p 404), but it is important to remember that the ideas in the book should themselves be tested and not accepted wholesale.

*David Bird*

*The Register of the Goldsmiths' Company: Deeds and Documents c. 1190 to c. 1666*. Edited and translated by Lisa Jefferson, 3 vols. The Boydell Press, 2022. Pp. ix–xxxviii + 1717, 30 figs. ISBN 978 1 78327 624 0 price £450 hb; available as individual ebooks, vol 1 (Introduction and Supplementary Material); vol 2 (Original Text); vol 3 (Translation), all ISBN 978 1 8054304. Price £50 each.

Dr Lisa Jefferson has already put historians of medieval London in her debt with her editions of the Wardens' Accounts of the Goldsmiths' Company (2003) and of the Mercers' Company (2009). For the last decade she has been engaged on the monumental task of editing and translating the complete text (Latin, Anglo-Norman and English) of the great register of the Goldsmiths' Company. This is a volume of 400 folios containing copies of deeds, wills and other documents in the possession of the Company begun in 1417 and maintained, fitfully, up to 1666, although the main bulk of the material dates from before the mid-16th century. Dr Jefferson has chosen to transcribe and translate (not the English documents) every entry in full. There is no calendaring which means that the published volumes are much bulkier than really necessary. Moreover, unlike her two earlier editions in which the text and translation are on facing pages, Dr Jefferson has elected to provide two separate volumes, one of the text and the other of the translation which does make the volumes much harder to use. In the first of the three volumes Dr Jefferson has provided an introduction in which she helpfully describes (pp xvi–xxx) property holding and conveyancing, seven appendices of 'stray' documents inserted into the register, several illustrations including 14 19th-century plans of properties bequeathed to the company in the medieval period, and two indexes, one of names and the other of subjects and places. In addition to the page numbers, the folio references are provided consistently so that it is possible to track refences in all three volumes. The labour in producing such an edition must have been prodigious.

The bulk of the material relates to properties which were owned by the Goldsmiths' Company, many of which funded chantries

in London parish churches which were administered by the company. Many of the documents come from the 'back history' of the properties and date back to the 13th century. Interspersed among the deeds are about 60 pre-Reformation wills or testaments: the earliest is that of Andrew le Cornour which was read and enrolled in the Husting court in 1279 (fol 75v) and the latest, in 1543, that of Alice Lupsett, the widow of the goldsmith, Thomas Lupsett (fol 314r). Many of these wills can also be found in the records of the Husting court or, later, the Prerogative Court of Canterbury, but there are at least 20 wills in this register which are not found elsewhere. One of these is the will of the alderman and goldsmith John Pattesley (fol 215r), who died in 1450, and left property in West Cheap to the company to fund his chantry in the church of St Michael, Crooked Lane. In the will he mentions his wife Joanna, whom he appoints as one of his executors. The register provides further information about Joanna: she had been married to the goldsmith Robert Hall, who had died in 1417 (fol 204r), leaving his widow with three underage sons. Within two years Joanna had married John Pattesley (fol 178v). This earlier marriage explains why Pattesley left property to Matthew Hall (his stepson) and included Robert Hall among those to be prayed for by his chantry priest.

Few people, except reviewers, will read these volumes from cover to cover. Of most use to researchers will be the extensive indexes. The name index runs to 138 pages and contains some 6000 entries. This is a remarkable resource and contains the names of many Londoners who were not goldsmiths: for example Mathilda Penne, the redoubtable woman skinner, appears in 1392–3 in a tenement in Wood Street (fol 44r). The inclusion of the details of abutting properties provides a rich source of individuals and of institutions. But the register also offers other insights. As Jefferson points out (p x) these include evidence for the participation of women in the economy of medieval London as landowners and businesswomen. For example, in 1344 Joanna of Beverly came before the mayor and aldermen at the Husting court 'in her own person' and laid claim to an annual fee due to her from a tenement in Bread Street (fol 87r). In 1440 the goldsmith Robert Bradcock bequeathed his anvils to his five apprentices but only if his wife did not wish to practise (*occupare*) his craft after his death (fol 240r). The register also provides some information about the ways in which documents were used and kept. Following the proving of the will of John Fraunceys in June 1405, the property deeds together with his testament, after being entered in the register, were handed back to his wife Elizabeth who was one of his executors 'for her whole life time'. After her death they were to be returned to the goldsmiths to keep in perpetuity in their treasury (fol 115r). It is clear from this case and other examples (*eg* fol 207r) that being an executor was a task that could last a lifetime.

Scattered among the testaments and deeds are several records of the proceedings of the views and judgements of the masons and carpenters sworn to determine matters concerning disputed boundaries and common nuisances. None of these assizes is recorded in the rolls surviving at Guildhall and, among other matters of interest, provide more names of the master masons and carpenters who were sworn to act in these matters. These include John Croxton the mason who oversaw the building of Guildhall in the 1420s (fol 92r), and Edward Stone the mason who in 1478 was appointed as the city's first 'master of the works of the city' (fols 24r, 44v, 230v).

These are just a few examples of the historical information to be extracted from this register. It is an edition provided by a language scholar and the notes relate almost exclusively to textual quirks or problems. The historical or biographical possibilities are rarely explored in the footnotes, for example the various documents relating to the Goldsmiths' administration of John Hiltoft's chantry founded in St Paul's Cathedral in 1370 could have been placed in the context of the work of Marie-Helene Rousseau on the chantries in the Cathedral (2011). In the case of wills, Jefferson provides references to Sharpe's *Calendar of the Husting Wills* (1889–90) but does not indicate whether the will in the register is the same as that enrolled in the Husting. In several cases (*eg* Robert Hall, fol 204r) the will in the register is clearly different from that proved

in the Husting court (Sharpe, ii, 414). And it would have been helpful if the existence of copies of wills which were enrolled in the PCC had also been indicated. There are some inconsistencies in translation: it is not clear why the word 'cissor' is sometimes translated as 'tailor' as one would expect but, on other occasions, as 'cloth cutter'. But these are quibbles: it is for historians to read and make use of the remarkable source of information that Dr Jefferson has made available by her prodigious labour. The three volumes come at a considerable price: in printed form £450 and it is not clear how many copies have been printed. Even well-funded libraries may be reluctant to purchase such an expensive publication, although there is a less expensive ebook version available for £150. But it is certainly the case that London historians who can gain access to these volumes will find much of interest in them.

*Caroline Barron*

*The Worshipful Company of Fletchers of London: The Early Centuries, c 1371–c 1571*. By Hannes Kleineke. The Worshipful Company of Fletchers, 2021. Pp xiii + 88, 5 figs. ISBN 987 1 3999 0 166 6. Price £10 pb, available from The Clerk, Worshipful Company of Fletchers, Farmers' and Fletchers' Hall, 3, Cloth Street, Barbican, London EC1A 7LD, clerk@fletchers.org.uk

Though perhaps less well documented than the guilds that became the Great Twelve, the lesser craftsmen of medieval and Tudor London played a significant part in the capital's civic, military and religious life: they owned property, formed fraternities, safeguarded their members, held liveried processions, were involved in politics and supplied goods and services to the larger companies and the Crown. Recent papers have included studies of medieval carters, brewers, metalworkers, farriers, glovers and others. Now come the fletchers, whose early history is recorded by Dr Hannes Kleineke, one of their liverymen, to mark the Worshipful Company's 650th anniversary.

He starts in 1371, in or by which year the bowyers and fletchers had separated as companies. The split was contentious and four reluctant bowyer-fletchers had to be hauled before the mayor and aldermen to decide which weapon they would make. The spur for the fletchers' bid for independence was probably the King's demand for London to provide an unprecedented 2,000 sheaves of arrows (24 to a sheaf) for the fighting in France. Such urgent bulk orders led to poor workmanship and thus the need for more focused regulation. It was not, however, until 1403 that the fletchers presented their ordinances to the mayor and aldermen, specifying how their wardens, who inspected both arrows and crossbow bolts, should be chosen and laying out their powers of search; and not until 1432 that the issue of poor workmanship was formally addressed and night work was banned.

In 1484 the rules were tightened again. Quarter days were set, livery was specified, and bad language and Sunday working were prohibited. Rates of pay were set: a fletcher might charge as much as 16d for 100 shafts 'cross-nocked after the best manner, skinned and seared'. Even in this period of continual warfare that was not enough to take most of them above the breadline, though a few did well, supplying the English garrison at Calais. By 1500 the Fletchers' main concern, like that of other crafts, was the prevalence of foreign (non-citizen) workers in their midst.

The 15th-century fletchers were clustered on the western outskirts of the City, perhaps finding a market among the aristocratic residents there, and, later, on London Bridge. They were responsible for the wood and flights of the arrows; the arrowhead makers were a separate company. Fletchers' timber, including birch and ash, became a speciality among wood merchants, who sometimes failed to season it: green wood was a long-standing problem. Most feathers were goose or swan but for richer clients there were peacock feathers (as carried, for example, by Chaucer's yeoman), sometimes bound with gold.

Like other craftsmen the fletchers came from all over the country. In London their spiritual centre was the Austin friary in Broad Street, where they kept a light and held their feasts on 29 August, commemorating the decollation (beheading) of St John the Baptist. Dr Kleineke speculates that some

might have formed a connexion with the fraternity of St Sebastian, martyred by arrows, who also met there. By 1518 the Fletchers had a hall in St Mary Axe parish in the north of the City and after the Reformation they moved to that church, where recreations in memory of deceased members continued to be held until late in the century.

Archery practice was compulsory for laymen from 1512 but gunpowder weapons were already taking over and, despite a resurgence of archery as a recreation in the 1540s, the demand for arrows declined. Membership, however, recovered and by the last quarter of the 16th century the company's livery status was attracting men from other crafts, diluting but also preserving it.

This history is slightly weighted towards the Tudor period by its best evidence: two near-complete company quarterage lists dating from 1519 and covering most of that century. These give wardens' election dates, members' names and defaulters' fines, and suggest that fletchers' widows played an unusually large part in the company's life, supplying arrows to the Tower, paying fees and training apprentices.

Despite the comparative thinness of the medieval records Dr Kleineke provides an impressively thorough account of the early years, drawing on mayoral and aldermanic court books, legal cases, wills and Crown archives. From this dry material he fleshes out some vivid narratives – for example that of Elizabeth, widow of the fletcher John Jones, who in the late 15th century made the mistake of remarrying. Her new spouse was a skinner, who beat not only Oliver, her apprentice, but Elizabeth as well. The appendices give us a list of known wardens from 1385 to 1603 and a transliteration and translation of the fletchers' ordinances from 1371 to 1592.

London was often the starting point for military ventures and it is easy to forget how important to its people were weapons and their technicalities. Modern archers (not to mention darts players) will find much of interest in this account, as will any historian. Dr Kleineke has done the fletchers proud.

*Peter Guy Brown*

*Records of the Jesus Guild in St Paul's Cathedral c. 1450–1550. An Edition of Oxford Bodleian MS Tanner 221, and Associated Material.* Edited by Elizabeth A New. London Record Society 56, 2022 for 2021. Pp x + 311, 6 illustrations. ISBN 978 0 900952 62 3. Price £40 hb.

This well-presented transcription of the records of the Jesus Guild is testimony to the extent to which late medieval Christianity was both big business and a well-integrated aspect of urban life, embracing clergy and laity. The guild, founded in 1450 and then re-founded or re-established in 1506, operated in the crypt ('the crowdes') of the great cathedral. Each year the guild's activities involved an impressive number of people (mostly male, of course) and it recorded annual revenues – income and expenditures – that ran to hundreds of pounds. Centring around St Paul's, it was a prominent feature in the urban landscape: a regular run of prayers and services, an annual election and a celebratory dinner, musicians sent out to play in the streets, the distribution of liveried badges, regular public sermons 'at Paules Crosse & 3 dayes in Ester Weke at Saynt Marie Spitella' (p 95), to name some of its more visible (and audible) activities.

The volume falls into several sections: the editor's introduction, the guild's licences and ordinances, the yearly accounts, and two appendices. The licences and related documents put the guild on its feet and they bespeak a high level of very detailed regulation. It began with royal endorsement from Henry VI, confirmed by Henry VII, and the documents go on to cover or prescribe many aspects of the guild year, from the election of the warden down to instructions about the annual bonfire, to be held 'in the vigille of the fest *de Nomine Jhu*' (p 60). Such regulations were fairly routine for a prominent spiritual institution and a window into the interweaving of spiritual concerns with the practicalities that helped keep the guild going regarding governance, personnel, finances, physical structure.

The annual accounts, year by year, from 1514/15 to 1534/35, are routine or formulaic, as such statements tend to be. But in their countless details of names and sums and physical objects they illuminate that mesh of the worldly and the spiritual. Each year's

accounts opened with a statement about the collection of arrears and then a listing of the revenues turned in by the men who farmed the guild's far-flung properties. Against these sums came the expenses incurred that year: wages of widely varying amounts, alms, money for repairs, replacing items no longer up to standards, the post-election dinner, and some occasional special expenditures like the costs of renting a boat to go to Westminster.

The sums involved, when added up, could be quite considerable, as were the number of people, named or unnamed, who passed through each year's accounts. By the 1530s the totals in both categories, incoming and outgoing, were appreciably greater than they had been some 20 years earlier, either a reflection of inflation or of the appreciation of the guild's holdings. We go from a total income of £144 6s 8d in 1514/15 to one of £406 11s 1/2d in 1534/35. The farming of holdings in virtually every English diocese, plus two in Wales and, in some years, those of Dublin and Armagh in Ireland, provided the basic income, topped up by a bit more coming in from small holdings in London, Middlesex, and Buckinghamshire.

The categories of expenses provide some variety and the personnel officer must have been a busy man. With 1514/15 as a typical year, wages or *per diem* cash went to a virtual regiment of recipients: 12 petty canons, 8 vicars, 2 chantry priests, 4 vergers, 10 choristers, plus proctors, auditors, bell ringers (who also were charged with the 'openynge, closynge, & shotynge of dores' (p 94), the four poor men who, each year, were 'appoyntyde to the almes ... [and] keeping the crowdes and helping prestes to masse', for which they received 40s apiece. We have the two women (always unnamed) who helps serve bread and ale for an annual return of 2s 4d. And for a mere 2d the guild was able to hire 'the bedille of the beggers to kepe pour people out of Jhus Chappelle' (p 207). And beyond the crypt, each year six musicians who were to go through 'alle stretes & suburbs of London' to announce the guild's business (to solicit prayers for its men and *women*). In addition to these regulars, there were people brought in for specific tasks: structural repairs, doing laundry, repairing candlesticks, binding books, etc. The fee of 'carriage of 5 lodes of robishe' was 23d, while a 'plastorer and his laborer' worked for three days for 3s 4d, and in 1522 alone, and fairly typically, the guild had to recruit the temporary services of a 'glasyer', a 'masone', and a 'joyner'.

In an appendix Elizabeth New has gathered up the biographical information on 25 of the wardens, all men of some substance and mostly serving as a guild official for some years. Londoners, of course, and mostly with a significant role in a London company: the Drapers or the Goldsmiths, among others. Only a few of the wardens left a (small) bequest to the Guild, though many of their wills are missing. And while their bequests are not of great moment, that many of them continued to hold office year after year indicates that a leading role in the Jesus Guild in St Paul's was of value in terms of one's prestige among the city's prominent citizens.

Having the records of the Guild now so accessible in a London Record Society publication is a welcome addition to the tale of urban life and the role and activities of ecclesiastical institutions in the years before the coming (or the imposition) of the Reformation. Though the record-keepers of the early 16th century were terrible spellers, their penchant for so much detail is of great value to the historian. We learn, among much else, that the arrears and the farms were sometimes not paid in full, that the theft of a chalice from the 'crewes' might be an issue that had to be addressed, and that a man with a Cambridge address was the one who was accountable for the Guild's revenues coming in from Durham and Carlisle (p 80). But in this mix of the mundane and the spiritual, the basic purpose of the Guild was not forgotten: the 'kepyng divine service there, of and in the festes of Transfiguracione and Name of Jhu, and masse of Requiem in like wise on the morow than next after'. The sacred and the profane, the ephemeral and the perennial, the miniscule and the monumental: for all this, thanks to our diligent editor who has given us access to a 16th-century story of compelling interest.

*J T Rosenthal (Stony Brook University, emeritus)*

*The Margins of Late Medieval London, 1430–1540*. By Charlotte Berry. University of London Press, 2022. Pp xl + 244. ISBN 978 1 914477 01 0 (hb); ISBN 978 1 914477 02 01 (pb); ISBN 978 1 914477 04 1 (epub); ISBN 978 1 914477 03 4 (pdf). Price £40 hb, £25 pb.

*The Margins of Late Medieval London* grows out of Charlotte Berry's PhD dissertation (University of London, 2018), with revisions. It offers several graphs and maps, which are impressively done. If they appear to be a bit small in the print version, such as the modularity spheres (pp 59–61), the open access ebook allows for their enlargement.

The introduction lays out the topic, sources, theory, historiography, and thesis of the book. Berry explores the meaning of marginality for late medieval London (pp xvii–xxiv). Given the tradition of urban history focusing on institutional structures of governance and economic production, she migrates to peripheral areas, where medieval London placed its lepers, prostitutes, and many of the poor and destitute.

This is a theme further developed in Ch 1, where Berry acknowledges that the periphery of the city tended to be poorer than the centre (a long-standing model) while concurrently arguing that the marginal location allowed space for 'economic activity difficult to carry out within the more cramped city centre'. This was also the location of the city's religious houses, which functioned economically to the benefit of these locations. Information from tax records and rent payments brings detail and complexity into specific zones, demonstrating not only how people with greater wealth and power lived close by those with less, but how most people participated in networks that ranged from the parish, to the city, and beyond.

Trying to measure social relationships in a 15th-century city is exceedingly difficult, but this is a focus of the book, and especially Ch 2. The sources here are last wills and testaments, meaning that the social group possessed some wealth and social standing (pp xxxiv–vi, 5–6); the records also provide access to the names of witnesses and beneficiaries; thus, there is potential to map social-spatial networks. Family, proximity, occupation or craft, and nostalgia (places once lived) have traditionally been identified as influences for bequests, but this chapter features a quantitative method for mapping called SNA (social network analysis) that allows identification of significant points of interaction in the social network. The result does not overturn the traditional paradigm, but it does add complexity and specificity. The technology makes the task possible, and the visuals aid in conveying the evidence in a comprehensible manner. We are, therefore, introduced to people who appear often in such networks, as well as those who appear but once.

By using GIS technology to locate people and their legal footprint, the author demonstrates an influence 'by network and actor-network theory' (p xix) and the concept of 'social capital'. To be asked to witness a late medieval will, the testators had to have some sense of confidence in or admiration for their candidates. This means that these (almost always) men had to have developed good reputations in their communities over the years; they mattered. Berry's methodology also allows her to reconstruct a network that both expressed and was founded on the social and cultural significance of those men. This approach allows measurement of not just social status but also social movement over time and a general sense of reputation.

In Ch 3, attention moves to issues of social and geographic mobility, and this includes movement into and out of the city. Using evidence from the Bishop's Consistory Court, Berry also seeks to measure the movement of what might be called 'dayworkers' who were required to service the economic systems in these areas. Mobility could be influenced by life changes such as widowhood or the end of an apprenticeship. In fact, 'migration was usually not a single journey to a London parish but' something more incremental, and it 'might consist of several steps'. Furthermore, people might be forced out of a ward or parish because of their behaviour, and Berry identifies that phenomenon, too (Ch 4).

Given the cultural importance of building and maintaining social capital, Ch 5 explores 'how people engaged in the defence or rehabilitation of their reputations' (p 171),

which was influenced by social significance. The evidence in this chapter originates from London's Consistory Court records and Wardmote records. We are introduced to people such as Robert Gustard, brewer, who downplayed mention of violence in his Aldersgate establishment even though he stopped a customer from throwing a ball at a priest. Those who owned alehouses in the peripheral areas were already at risk of being seen as suspicious characters. But here we see that Gustard managed his reputation both in the heat of the moment by attempting to control the behaviour of his customers and in his deposition. The negotiation of 'reputation could mean instrumentalising spatial as well as legal knowledge of London' (p 188).

The author cites scholars such as Ian Archer, Sandy Bardsley, Justin Colson, Ian Forrest, Katherine French, Barbara Hanawalt, Shannon McSheffrey, Steve Rappaport, and others. The list helps to locate the book in the historiography. Berry presents both a social history and a cultural one with a concern for gender. She approaches space as cultural construction. Inhabitants could form or join numerous associations, or networks, to seek security, protection, potential opportunities, and to express and develop their sense of self. There is a concern about concepts of masculinity, honour, and power. The use of technology transforms the analysis and the presentation of evidence, and allows her approach to move beyond institutions and structures. Therefore, at the heart of the book is the technological methodology, which should now be among the methodological tools of the profession. Berry's work builds on established theories in the historiography, but she refines them with her methodology and adds her own conclusions. *The Margins of Late Medieval London* presents an original and impressive study, but it will be most welcomed by a specialised readership.

*Gary G Gibbs, Roanoke College*

*In the Shadow of St Paul's Cathedral: The Churchyard that Shaped London*. By Margaret Willes. Yale University Press, 2022. Pp. xi + 299, 51 illustrations, 3 maps. ISBN 978 0 300 24983 5. Price £25 hb.

Ever since the publication more than 20 years ago of Peter Ackroyd's by now classic *London*, there has been a fashion for the 'biographical' treatment of particular institutions or locales, and Margaret Willes's new book is just such an account of a central space within the City of London, the Churchyard of St Paul's – here rather loosely defined to include at times the cathedral itself, as well as surrounding streets connected with it by particular activities. Less spacious than some provincial cathedral closes, the capital's cathedral churchyard nevertheless fulfilled an important public function as one of the few substantial open spaces within the walls available for public gatherings. It is this premise that provides Willes with her starting point: her 'scene-setting' opening chapter places considerable emphasis on the busy character of the early cathedral's surrounds, and the quasi-institutionalised character of its churchyard as the meeting place of the City's folk-moot.

Over the centuries, the churchyard was to remain an important site for public ceremony, display, performance and debate: here sermons were given, promoting both orthodoxy and new ideas. Here, texts deviating from that orthodoxy, and sometimes their authors were burned, and here also was a site for theatrical performances, some sponsored by the cathedral itself. The destruction of medieval St Paul's in the Great Fire of 1666 might have provided an opportunity to shape this space in accordance with the uses to which it had been, and would long continue to be, put, but ultimately pragmatism prevailed, and the recreated City had a footprint not dissimilar to that which it replaced.

In the fullness of time, this space once again became a gathering place for fashionable society which, as Britain's overseas empire grew, increasingly became a focal point for public events associated with the state ceremonies of the established Church within the cathedral. By the 19th century the cathedral thus increasingly became

the nation's, rather than just the capital's, principal church, and such was its iconic symbolism that, as is well known, in 1940 Winston Churchill was prepared to sacrifice many of the buildings that surrounded it as long as the cathedral alone could be saved from German incendiary bombs.

But unlike many continental capitals, London owed its place as London's first city to its role as a pre-eminent centre of commerce, rather than to a monarchical residence within its walls. From an early date, the numerous individual crafts and trades exercised in London began to group together in particular streets and districts of the city, and one trade in particular became intimately associated with the churchyard and its surroundings. Long before the advent of the printing press, Paternoster Row had provided a home for the scriveners' trade, and by the 16th century the area around St. Paul's was synonymous with the sale of books. Even the ravages of the Great Fire did not change this.

Before long, the booksellers returned to their reconstructed premises and as the Churchyard once again became the centre of the London book trade, it was only natural that the taverns and coffee houses in the vicinity should become a focal point for literary society, where readers, writers and publishers could mingle. But the booksellers were no longer alone. Other tradespeople, too, were patronised by fashionable society and set up their establishments in the area around the cathedral, which thus became, as the author suggests in the title of one of her chapters, 'a place to be seen'. Already, however, London's affluent population had begun to move westward out of the confines of the medieval city. What remained were men of commerce, many of them living 'above the shop'. One peculiar characteristic of the large-scale businesses that developed around the cathedral in the 19th century was the purpose-built staff accommodation that some of them provided. To all of this the Second World War put an end, as the cathedral's surroundings had to be sacrificed to preserve the great church itself.

This is a well-written and highly readable book, leavened by generous amounts of quotations from the familiar, such as the 17th-century diarist Samuel Pepys, and less familiar, such as the 18th-century German physicist and Anglophile George Christoph Lichtenberg (now little read even in his adopted home town of Göttingen). It is beautifully illustrated with some 21 colour plates, and a larger number of black and white images interspersed in the text. Several maps and plans are helpful to the reader trying to locate particular sites and scenes: Willes's 'virtual perambulation' of the 19th-century churchyard, based on John Tallis's *London Street View* of 1839 is a particular highlight.

If there is a slight rub, it is perhaps that Willes is, of necessity, more at home in some periods and subject areas than others. At the heart of this study is a vibrant account of the history of the London book trade that could on its own have made for a fascinating book, and it seems a shame that the author decided to embed her wealth of knowledge on this subject in a longer discussion which of necessity took her into territory where her account is far less sure-footed. In particular, the treatment of the period before the advent of the printing press (which at times reads somewhat like a list of 'memorable' occurrences in the vein of Sellars' and Yeatman's *1066 and All That*), leaves something to be desired. Thus, for example, the reader familiar with medieval London may be surprised only to hear of the famous 'Dance of Death' mural with its accompanying verses by John Lydgate in the Pardon Churchyard at the time of its removal in 1549, and surely some discussion of the community of scriveners based in the cathedral's hinterland long before it became a market place for printed books would have provided welcome background to the later chapters. But these are ultimately minor quibbles which should not distract from the undoubted qualities of this informative and very enjoyable book, that is bound to appeal to a broad readership.

*Hannes Kleineke*

*Medieval Morden: Landscape and Landholding*. By Peter Hopkins. Merton Historical Society, 2021. Pp viii + 352, 68 figs. ISBN 978 1 903899 81 6. Price £12.50 pb + £3.35 p&p: publications@mertonhistoricalsociety.org.uk.

Morden today may appear as a small and unremarkable parish caught up in suburban London, but Peter Hopkins has shown that rigorous and imaginative examination of its records can do much to illuminate its medieval landscape, echoes of which can be detected in the landscape of today. This is the second of three projected volumes, the first of which has examined the manorial economy and the third will cover Morden's neighbourhood and community.

Much of the book is based on the manorial records of Westminster Abbey, which held a large part of the parish. At Domesday its manor was held at farm, but by 1225 it was cultivated directly, with the first surviving account roll dating from 1280. In 1359 the manor was once again leased. The book starts with 'a stroll through medieval Morden', based on an 'extent' (valuation) of the abbey's lands in 1312. A picture emerges of scattered holdings, of varying sizes and tenure. The types of landholding are explained in the following chapter, together with an elaboration of the variety of source documents used, including royal as well as manorial records. Other chapters explore the Morden lands of the manor of Ravensbury, which extends into neighbouring Mitcham, and the lands in Morden held by Merton Priory.

The abbey's manorial centre was on the fringe of the parish in the Wandle valley, at the closest point to London, whereas the church was in the centre of the parish. Hopkins suggests that the abbey's estate underwent a rationalisation of the demesne land in the years following Domesday, accompanied by the creation of new holdings on the 'waste' in the west of the parish (where a large area of common pasture extended into neighbouring parishes) which in stages came together to form the hamlet of Lower Morden. There is also discussion of the evidence for whether there was a park in Morden, reaching the tentative conclusion that a small early park may have been abandoned but later revived. A park's usual curving boundaries may explain why the winding course of the main road deviates from its Roman predecessor.

The Black Death was inevitably devastating for Morden, but the records concentrate on the economic consequences. The abbey's first concern was for the cultivation of the demesne, but attempts to find tenants on the old terms were unsuccessful. Short-term leases without labour requirements were granted, but the decision to lease the whole of the abbey's Morden estate on a permanent basis in 1359 moved the labour problem on to others.

Much of the evidence for the transfer of property dates to the period after the Black Death, and Hopkins examines both transfers within families (by inheritance or gift) and on the property market, following detailed histories where the evidence permits. Morden's inheritance custom was by 'Borough English', whereby customary tenements were passed to the youngest son although freehold properties passed to the eldest son. In practice, family circumstances led to inheritance by a wide variety of relations, and sometimes complicated trust arrangements were used to ensure property remained within a family. One example, reconstructed here is of how this was achieved by the non-resident Playstowe family. There were some market transactions for property in the 13th and early 14th centuries, but the dying out of families at the time of the Black Death or in subsequent visitations of the plague led to more land coming on the market, with an active property market persisting through the 15th century. Much of the trade in land that Hopkins has traced was among local families, but he also identifies a significant number of newcomers, especially those with links to Westminster Abbey. Another trend through the second half of the 15th century was for both large and small properties to be accumulated by a handful of tenants. Longstanding local families such as the Hegges and the Holts are prominent examples, together with outsiders like the Playstowes. Hopkins' reconstruction of the Hegges' holdings is particularly remarkable.

The penultimate chapter takes a 'walk' through the abbey's manor in 1553, the year in which it was sold by the Crown following

the Dissolution, identifying those areas where the greatest changes had occurred since the 1312 'stroll'. The detailed evidence for the location of properties is presented in a final chapter. Identification is assisted by use of the tithe map and apportionment of 1838, as well as early Ordnance Survey maps and various 18th- and 19th-century documents. Before suburban development, there were many clear continuities in locations of properties, although some can only be identified with lesser degrees of certainty.

This is inevitably a very detailed book, containing a large amount of material that has absorbed years of dedicated and skilful research, to present a story that has taken a lot of unravelling. Many original documents are transcribed (or occasionally reproduced). Much information is presented in tabulated form and, where possible, in maps, which are helpful in bringing clarity to the complexities of the narrative. The outcome is an important study of medieval landholding, the significance of which goes beyond Morden's local context.

*Peter Balmer*

*The Wood that Built London: A Human History of the Great North Wood*. By C J Schuler. Sandstone Press, 2022. Pp xi + 321, many figs. ISBSN 9 781913 20749 6. Price £19.99 hb.

This book provides a detailed view of the development of a block of historic wooded areas now lying within south-eastern London. It provides descriptions of some of the surviving patches of these once much larger wooded areas, in places like Sydenham Hill and Dulwich, but starts with setting a geological and chronological background.

There are ecological, social, cultural and political aspects to the woodland's history (p 8); one substantial aspect being a detailed appreciation of the flora, fauna, and ecology of the surviving pockets of ancient woodland that were once lumped together as the 'Great North Wood'. The author's detailed knowledge of the natural history still extant is clearly informed by his experience as a volunteer at the London Wildlife's Trust Sydenham Hill Wood Reserve since 2011. This experience of what is left of life in these historic woods is colourfully recounted though aspects of natural life are sometimes glossed over, such as the evisceration of a wood mouse on an oak branch by a kestrel! As a travel writer he clearly thinks encouraging local safaris in parts of Greater London's culturally sculpted landscape is on a par with more exotic far flung travel.

Apart from existing indicator species for ancient woodlands, the writer also draws on documentary sources such as the Dulwich Estate papers and a variety of early cartographic evidence. But he is frank about some of the gaps in that form of evidence. There is also some use of archaeological and geological evidence but the use of the former is very limited and generalised; local minor rivers such as the Peck are covered as geological points of reference. A snapshot overview of the landscape development of the area from *c*.8000 BC to 1485 is provided, and the changing dominance of different tree communities and extinct woodland fauna like the aurochs in prehistory are very briefly summarised. The main uses to which products of the woodlands were historically put are also mentioned: various forms of roundwood for fuel, timber for fencing, building construction and shipbuilding, oak bark for tanning and the use of some woods for controlled grazing.

One of the most interesting sections of the book is a short section of Ch 1 entitled 'Working The Woods' (pp 24–31). Here the author describes how trees can produce many different sizes and forms of woody material from thin regular rods after coppicing or pollarding to larger timber trees and how different sizes and qualities of material were used for different purposes, such as varied distinct forms of domestic and craft fuels, charcoal making or house building. Examples of wetland archaeological evidence are very briefly referred to here but oddly they derive from prehistoric wood and timber studies from Somerset, Cambridgeshire and Dartmoor. The published evidence of similar kind from prehistoric wetland sites only a short distance from the Great North Wood has not been drawn on (*eg* E Stafford, D Goodburn & M Bates, *Landscape and Prehistory of the East London Wetlands; Investigations Along the A13*

*DBFO Road Scheme, Tower Hamlets, Newham and Barking and Dagenham* (2012), Oxford Archaeology 17). Schuler does acknowledge that sites from Roman London have produced structural timbers from managed woodlands, along with charcoal that probably originated as coppice poles, but the reference cited is obscure considering the number of detailed published studies available.

However, it is clear that the historically rich, post-medieval and relatively recent past of these woods is the key focus of the book; some individual trees in the area, such as ancient pollards in Dulwich Wood painted by J A Poulter in 1914 (a reference would be useful), survive as living evidence of post-medieval management. So, arguably, the tangible link with the main concerns of modern conservation bodies is strongest for these periods. It is probably also the case that the unnecessary schism between environmentally connected archaeology and woodland conservation groups is not helped by often rather inaccessible forms of archaeological publication in this area, for which this reviewer is perhaps partially responsible.

The last sections of the book cover the woodland's principal role in supplying fuel to the growing City of London well into the industrial age, followed by suburban expansion and the consequent reduction of the woods by building housing, roads, railways and even a short lived canal. The effects of the two World Wars are covered as well as much more recent community efforts to save the last fragments of woodland from development-led destruction; the work is topped off with a tour of the surviving sections of ancient woodland and discussions on modern uses for woodland for various therapies, particularly after the Covid pandemic.

It is clear that the writer is not very well informed about prehistoric and early historic archaeology in general as he cites the late Iron Age as 2500 years ago, a point early in that period (p 15). Neither is he apparently aware of the contribution that many published archaeological studies have made to reconstructing early Greater London woodlands and various management. Even for the Tudor period onward, archaeological evidence from sites adjacent to his study zone is not used. A key example would be the results of the MOLA excavations at Deptford Royal Dockyard and study of raw, minimally trimmed oak timbers found in the yard. Perhaps if a new edition of the work is produced a short additional chapter summarising some of that evidence might be useful?

I recommend this informative book with the hope that in future more archaeological evidence may be drawn upon in such studies, although the drawing together of historical documentary sources already makes it valuable for an archaeological reader.

*Damian M Goodburn*

*The Mercenary River. Private Greed, Public Good: A History of London's Water.* By Nick Higham. Headline Publishing, London, 2022. Pp 470, 20 figs (mostly photos) and 1 map of central London. ISBN 978 1 4722 8383 2. Price £22.00 hb.

Water is one of the essentials of life, so access to a constant and clean supply is something we expect in our homes. Walking to a standpipe at the end of the street to fetch buckets of water on a daily basis is not acceptable in our society. How London's water supply developed between 1500 and 2020 is the subject of this book. It is a thought-provoking account of the personalities, pestilence, politics, problems and profits involved in the capital's water supply.

By the post-medieval period London's growth had outstripped the water supply that could be obtained from conduits, rivers (principally the Lea and the Thames), springs and wells. In 1581 water was first extracted commercially from the Thames at London Bridge and supplied to customers via wooden pipes. In 1619 the New River Company was established to channel water from Ware in Hertfordshire to Clerkenwell, from where it was distributed by bored elm log pipes to customers. These wooden pipes were notoriously leaky. By the late 18th century steam powered pumping engines operated by various water companies were extracting an increasing volume of water from the Thames, which was becoming progressively more polluted. This water

without any filtration or treatment was simply piped to customers. The production of relatively cheap cast iron water pipes by 1800 reduced leakage and allowed the rapid installation of a comprehensive network of pipes. However, most customers still did not receive a constant supply; instead most households relied on a cistern being refilled intermittently. Poorer people often put up with an intermittent water supply obtained from either a communal pump or a dirty barrel. Water supply was the responsibility of the landlord, who provided it. In 1849 some of the poorer inhabitants of Bermondsey still extracted water from grossly polluted water channels as their miserly landlords refused to install piped supplies.

By the Victorian period the rapid expansion of London was causing serious problems with drainage, sanitation and the supply of contaminated water was spreading cholera and other waterborne diseases. However, the author explains that stopping private companies profitably supplying polluted and untreated water extracted from the Thames was not easy. First, proving that the bacterial content of contaminated water was killing people was a long struggle, partly because of the technical difficulties of scientifically analysing water samples and the widespread belief that airborne contagion was the problem. Secondly, the legal regulation of free enterprise was widely seen as interfering with personal freedom. The concept that the regulation of public health should be a government responsibility had to gain both public and political acceptance before parliament would intervene. Thirdly, the Public Health Act 1848 gave local municipalities the right to run their own water supply, which many subsequently did. However, London had no metropolitan authority so was powerless to respond. Fourthly, the concept of the public ownership of utilities was not universally popular. However, the failure of many water companies to act responsibly resulted in the Metropolis Water Act 1852, which compelled them to only extract supplies from the Thames above its tidal reach at Teddington Lock to avoid sewage pollution and to undertake filtration of the water they extracted. Finally in the summer of 1858, the appalling stench from the grossly polluted Thames compelled parliament to act. Money was granted to the Metropolitan Board of Works to construct a new network of brick sewers designed by Joseph Bazalgette, which is still functioning today. Subsequently, the board started to treat raw sewage before discharging it into the Thames estuary. In 1866 a serious outbreak of cholera in east London was blamed on contaminated water supplies. In response parliament passed the Metropolis Water Act 1871 which resulted in the creation of two new government posts: a water examiner (to monitor quality) and an auditor to scrutinise the accounts of the water companies. In theory the 1852 and 1871 acts were supposed to ensure that all customers received a constant water supply. However, despite more investment and technical improvements, such as fitting ballcocks in lavatories, achieving this goal was a slow process. By 1891 98% of the East London Waterworks Company's customers received a constant water supply, compared with only 77% of the Southwark & Vauxhall Company's customers. By the 1890s the average Londoner probably used about 16 gallons (73 litres) of water per day. A modern Londoner consumes 146 litres of water per day, twice as much as a Victorian.

In 1889 the Metropolitan Board of Works was abolished and replaced by a new municipal body, London County Council (LCC). The LCC already controlled the capital's waste water disposal system and they sought to take control of its water supply too. In 1904 the LCC nationalised the various private water companies and established the Metropolitan Water Board, which in 1974 became the Thames Water Authority. In 1989 Thames Water was partly privatised, becoming Thames Water PLC. Subsequently, Thames Water has been accused of under investing, paying out over generous dividends, giving extortionate salaries to its senior managers, avoiding corporation tax, not fixing leaking pipes and repeatedly discharging raw sewage into the Thames. In 2020 Thames Water lost 543 million litres of water per day from leaking pipes, many of which are Victorian cast iron mains that are now in urgent need of replacement. This wastage represents nearly a fifth of the total water supply entering the network. Sadly, the regulator Ofwat seems to be powerless

to deal with these problems. The author's argument is that this corporate behaviour is reminiscent of the mismanagement and the financial scandals involving the Victorian water companies, which eventually prompted public control of this vital utility.

This book concludes that the situation regarding London's future water supply is worrying as climate change means that rainfall is becoming more erratic and droughts longer. The author predicts that by 2050 London will have a daily shortfall of 1 billion litres in its water supply. In 2012 Thames Water built a desalination plant at Beckton to try and cope with future seasonal fluctuations in supply and they also plan to construct a huge new reservoir near Abingdon to supplement the flow of the Thames and facilitate downstream extraction.

There are a few sections of this book such as the establishment of the Metropolitan Fire Brigade in 1865 that are irrelevant (Ch 17), and the author does have a tendency to include a lot of incidental information which sometimes disrupts the narrative. Despite the author being a journalist rather than a historian it is disappointing that the title is so dull and the cover drab. Also, the text is seriously under illustrated (there should be five times as many figures) and the few figures provided are not linked to the text, so appear to be an afterthought.

*Bruce Watson*

*London's 'Golden Mile': The Great Houses of the Strand 1550–1650*. By Manolo Guerci. Paul Mellon Centre for Studies in British Art, Yale University Press, 2021. Pp xiii + 262, 231 figs. ISBN 978 1 913107 23 9. Price £50 hb.

This book is a fine read, but you do have to concentrate. Manolo Guerci presents a history of 11 palatial residences along the Strand, mostly bordering the Thames, focussing on the century after 1550. They formed a district of 'power houses of the clergy, then ... the headquarters of the greatest Tudor and Jacobean magnates' (p vii). They are all now disappeared, except for the York House watergate in the small park next to Charing Cross station. The book is splendidly illustrated, with maps and plans coming from American and Swedish libraries. There is much use made of the Agas map; normally this is so crude that one cannot count doorways along a street, but the Strand palaces stand out individually, so that can be allowed. The houses are notable for the large number of inventories of their furnishings and contents: there are 14 surviving for Essex House when known as Leicester House (several houses changed their names according to their owners).

The houses have particular histories of varied lengths, and little cohesion as a meaningful group. They are presented from east to west along the Strand. First, immediately west of the Temple, was Essex House; several tapestries from it survive in museum collections. Robert Dudley, earl of Leicester, had a more magnificent residence at Kenilworth, but his most modern garden was here at London. At Arundel House, the well-known paintings by Daniel Mytens and details of gateways and windows by Inigo Jones are analysed. The plan of the house in 1676 as proposed by Mike Hammerson after his excavations in *Transactions* 26 (1975) is reproduced, but that is the only scrap of archaeology in the book; there was a little more for that site. Some timbers from Essex House have been noted in the basements of nos 32 and 34 Essex Street, the Barbon development of the 1670s which replaced it (F Kelsall & T Walker, *Nicholas Barbon Developing London, 1667–1698*, London Topographical Society 186 (2022), 35).

Somerset House was a royal residence and architecturally the most influential of the group. Here there are many projects for rebuilding, some not carried out, and the elevation of the Strand frontage by John Thorpe, now redated to 1610–11 by Simon Thurley, which continues to cause debate. The Savoy is next; and its treatment is the prime example of a deficiency of the book, very few plans of the development of a site over the centuries such as an archaeologist would have produced. The Savoy would be ideal for this purpose. The author does not seem to have been aware of the publication in 2015 of building accounts of 1515 to 1520 for the hospital into which the palace was being turned, Charlotte A Stanford (ed) *The Building Accounts of the Savoy Hospital,*

*London, 1512–1520*, Westminster Abbey Record Series 8.

So on to Burghley House and then Bedford House. Guerci presents a new analysis of a detailed inventory of Worcester House in 1643, including the furnishings and pictures of a gallery; here was an organ perhaps used by William Byrd, who lived at the House. Salisbury House was rebuilt by Robert Cecil, and he may have been the first to build a Roman loggia in the riverside garden 'as part of James I's neo-Augustan project to transform the capital' into something classical. A profusion of plans of individual storeys allows reconstructions of elevations in 1600–2. After York House, this guided walk down the Strand finishes appropriately at Northumberland House, one of the last to be erected and the last to disappear. Here Guerci presents his own detailed research.

A concluding chapter surveys the group: their impact on London (marginal) and their relation to their rural counterparts, which have survived in great numbers and which have been more studied. The London houses were generally smaller versions of country seats, but not different. Perhaps more could have been said about them as a collective wave of conspicuous consumption, in their furnishings, art collections and fashion-conscious gardens, before the more general rise in consumption by everybody else a century later. There is little discussion of continental parallels or influences from abroad, though the Via Giulia in Rome is mentioned in the context of an Inigo Jones balcony window at Burghley House. I would have valued comparisons with similar residences in Paris. But this has been a valuable collection of all the available scholarship on this important, if very varied, group of houses.

*John Schofield*

*Survey of London 54 and 55: Whitechapel*. Edited by Peter Guillery. Published for the Bartlett School of Architecture (UCL) by the Paul Mellon Centre for Studies in British Art, London; distributed by Yale University Press (2022). Pp xxxiv + 966, 835 figs. ISBN 978 1 913107 25 3. Price £150 hb.

These two magnificent volumes are the Survey of London's first venture into the East End since it covered Poplar, Blackwall and the Isle of Dogs in 1994. They deal with the post-1694 parish of Whitechapel, an L-shaped area centred on Whitechapel High Street and part of Whitechapel Road, extending southwards at the City end as far as East Smithfield. This small area, only about a mile from east to west, is described in immense and absorbing detail across 966 pages; even the index requires 65 pages. The volumes are sumptuously produced, as we have come to expect since the involvement of the Paul Mellon Centre and Yale University Press, with colour photos integrated with the text and many specially-drawn maps and plans. The research has, as usual with the Survey, been extraordinarily thorough. An innovation for these volumes has been a map-based website to which members of the public were invited to contribute texts and images. About 300 people did so, providing some of the photos used and some illuminating reminiscences.

The achievement of presenting a coherent account of Whitechapel's development is all the greater because of the ceaseless change to which the area has been subjected. Development began in earnest in the 16th century and accelerated in the 17th. Parts were densely built up by 1680. Much of this early development is described in detail. The population rose from 18,000 in 1710 to almost 24,000 in 1801 and a peak of 80,000 in 1851. There was then a slight decline, becoming a rapid decline after 1901. In 2011 the population density was less than half that of a century earlier. Hardly anything has survived from before about 1750, though a house probably substantially of about 1642 is identified at 187 Whitechapel Road, one of about 1700 at 68 Leman Street and several of the 1720s in Alie Street. Much was destroyed in the Second World War and in comprehensive development subsequently,

including some buildings that would now be treasured, such as the houses of Wellclose Square.

The pace of change has become even faster in recent decades, and was one of the reasons for the Survey choosing to study Whitechapel before more was destroyed. Many late 20th-century buildings have lasted less than 40 years, and two sites in Leman Street have been redeveloped three times since the Second World War. Ken Livingstone's London Plan of 2004 opened up the area to high-rise development. There is some good modern architecture, such as David Adjaye's Whitechapel Idea Store of 2003–5, but much recent development is execrable, and duly criticised here, especially the Summit Centre of 1982–5 in Aldgate Place – 'odd, gimcrack and ungainly', even 'ludicrous' (and already demolished) (p 82). Whitechapel's buildings have often had to change their role to survive, and this is an important theme in the volumes – for example from distillery to bank to temperance cafe to girls' refuge to wholesale clothing store, or from mission house to anarchist school to synagogue to garment making to anarchist and direct action resource centre.

Changes in population through overseas migration have been as dramatic as changes in physical fabric, and have contributed to the latter, as each wave set up places of worship, schools and other community organisations. The first major influx was Germans from northern Hanover, mainly to establish and operate sugar refineries. Their contribution to the townscape was the numerous tall sugar houses, often nine storeys high, and several churches. The last recognisable remains of a sugar house were demolished in 1981, but two churches survive. Of these, St George's German Lutheran Church of 1763 (since 1996 in the care of the Historic Chapels Trust) is regarded as having retained its 18th-century character in a way that few English churches do.

Jews began to arrive in the 18th century, and there was a major influx from Russian territories between 1881 and 1914. Many Whitechapel streets became 95% Jewish or more. Jewish life forms a major part of these volumes, and numerous aspects are covered, including synagogues, schools, orphanages, hospitals, youth clubs, friendly societies, theatres, restaurants and clothing businesses. The Jewish community of Whitechapel had largely gone by the 1960s, and the last active synagogue stopped regular services in 2009.

The most recent influx has been Bangladeshis from the Sylhet area, mainly since the 1940s. By 2001 Whitechapel Ward was 52% Bangladeshi. The south Asians' most important contribution to the townscape is the East London Mosque, opened in 1985. The site of the medieval 'white chapel' has been known since 1994 as the Altab Ali Park, named after the victim of a racist murder in 1978. The Halal Restaurant of 1939 in St Mark Street is claimed to be east London's oldest continuing Indian restaurant.

The introduction explains that the Survey is 'topographical and architectural history informed by social history'; it is 'history … approached through built fabric' (p 1). For this reason the Survey is never simply architectural, and the volumes under review are a major contribution to social history. Poverty was of course pervasive in Whitechapel, though sometimes alongside pockets of wealth, and the area was famous for its poverty and crime, not entirely fairly. Crime is not part of the Survey's remit, though Jack the Ripper and the Kray twins are mentioned in passing, but poverty is. In fact the courts and alleys are the least thoroughly explored aspect in the volumes, with hardly any images and not much detail in the text, whereas it would have been interesting to learn more about who owned the slums and how they were able to make money out of them. Booth's poverty map is also curiously absent. But what is covered in great detail is philanthropy and its successes and failures. It forms one of the main themes of the volumes. It has left its mark on the townscape in many forms, of which the best known are Toynbee Hall of 1885 and Whitechapel Art Gallery of 1901. Others, which sometimes had greater impact, included schools, refuges, orphanages, almshouses, hospitals and dispensaries, bathhouses and youth clubs, in some cases provided for a particular ethnic group. One organisation provided 'Homes for the Weary and the Drooping' (enabling short holidays for married women). The philanthropists themselves, with one exception, do not appear here, as the Survey seems to have

a ban on pictures of individuals, however significant, unless they are part of a group or doing something, or both, so the Rev Thomas Jackson does appear as one of a group handing out free meals. (In another context, Sir William Goschen gets in as the unveiler of a memorial door at the London Hospital, but no other named individuals do.)

The most difficult problem both for philanthropists and local government was housing. The poorest families could not afford the rents necessary to give a 5% return to investors in new dwellings. An Act of 1875 allowed compulsory purchase of unhealthy areas by the Metropolitan Board of Works, but when the Board cleared slums in the Royal Mint Street area in the 1870s, it recouped only a fifth of its outlay by selling the land to the Peabody Trust, and once the new tenement blocks were built hardly any were occupied by those displaced, as Peabody policy was to seek 'respectable' tenants and the rents were too high for the poorest. One remedy attempted by Toynbee Hall was to improve existing slum property, but this did not solve the problem of overcrowding, and rents payable in advance were not really suited to people in casual employment. Another strategy was to build tenement blocks in which single-room accommodation for the very poor was mixed with flats for skilled artisans. By 1900 a fifth of Whitechapel's inhabitants lived in tenement blocks, often private speculations, and many of these survive, including one from as early as 1873–4 in Commercial Road. The largest such development was Brunswick Buildings, 280 flats in Goulston Street, built in 1885/6 and demolished by 1981.

Purpose-built hostels for single working men, a distinctive feature of Whitechapel, were less of a challenge in economic terms, as the men could be housed in small cubicles. The model here was the Sailors' Home of 1830–5 in Well Street, eventually accommodating 502 men and operating until 1974. The account of the home given here is a particularly fine example of the way the Survey combines architectural and social history. Other hostels built or converted from 1888 onwards also accommodated 500 men, and the massive Rowton House of 1902 provided lodgings in cubicles for 816 men. The latter closed in 1989 and is now flats. Several hostels also housed women, and there was Sir George's Home for Respectable Girls of 1886, again with cubicles (it survives as flats). Whitechapel had relatively little council housing.

The two volumes make a significant contribution to London's industrial history. Major industrial enterprises such as breweries, distilleries, clothing firms and the many sugar houses are covered at length. So is the Whitechapel Bell Foundry, which moved to its site in Whitechapel Road in the mid-1740s and sadly closed in 2017 – Whitechapel's most spectacular example of industrial continuity. But great effort has also been put into tracing the histories of many minor industries. Examples include a feather mill (for feather beds; 1856–1950s), a wallpaper factory (1838–69), gun-barrel makers (1779–1893), floorcloth and carpet makers (1780s–1882), toolmakers (1861–1974) and hat and cap makers (employing 2000; *c.*1880–1966). There were many warehouses, including massive ones belonging to Brooke Bond Tea and the Co-operative Wholesale Society. As for commerce, the Venables' department store lasted from the 1850s to 1928. Montague Gluckstein, a Jew of Whitechapel Road, diversified out of tobacco trading into catering, and opened the first Lyons teashop in 1894. Many famous songs were recorded at the studio in Osborn Street between 1959 and 2015, including Queen's *Bohemian Rhapsody*. On a humbler scale, Sam and Fay Prevezer from 1930 collected stocking rejects thrown out by the factories, matched them up into pairs and sold them from a barrow, eventually earning enough to buy a shop in Whitechapel High Street, which remained Prevezers until the 1970s.

As for individual buildings or institutions, the best-known of these have their own chapter and are covered in detail, including the Royal London Hospital (on its present site from 1757), Toynbee Hall (1885), the Whitechapel Gallery (1901) and the East London Mosque (1985). Many others deserve to be better known, including St George's German Lutheran Church, mentioned above. There is a fine five-bay baroque mansion of 1719–20 in Mansell Street, bizarrely next door to a horse-polish warehouse built to look exactly like it in

1887. The Gunmakers' Company's proof house and hall are in Commercial Road, on a site obtained in 1676 and now containing buildings from the 1820s onwards. Wilton's Music Hall is a unique survival, built in 1853, rebuilt in 1858/9 and 1878, closed in 1881 and, after a period as a mission hall and a rag-sorting warehouse, eventually restored in 1997–2015. It narrowly escaped demolition in 1964. There were also many interesting buildings that no longer exist, such as Johnson's bagnio (or bathhouse), a commercial venture of 1724 (closed in 1779) and the bathhouse in Goulston Square, a philanthropic venture of 1845–51, which provided a model for many others in London and abroad; the latter was rebuilt after bombing but closed in 1990. The history of Wellclose Square is thoroughly examined, including its final destruction in the 1960s.

Other subjects are churches, railways (with their own chapter), theatres (surprisingly numerous, including several 16th-century ones) and markets, especially the Whitechapel haymarket and Petticoat Lane. There is hardly a building type not covered. One of the Survey's great strengths is that it deals with humble buildings such as council depots and individual shops as well as major buildings, and that quality is very much in evidence here.

Even people who know Whitechapel well are likely to find much here that they were unaware of. Thoroughly researched from original sources, clearly written, meticulously referenced and including a superb range of illustrations and plans – one could hardly ask for more. The two volumes are a magnificent achievement by Peter Guillery and his team of researchers and writers (Sarah Dowding, Rebecca Preston, Aileen Reid, Amy Spencer, Sharman Kadish and Shahed Saleem) and all the others who contributed in various ways. They have succeeded brilliantly in uncovering and explaining the development and townscape of one of London's most complex areas, and have more than maintained the high standards set previously by the Survey of London.

*Dorian Gerhold*

*Tales from the Vaults, and Other Newington Horror Stories: An Archaeological and Historical Study of Elephant and Castle's Underworld*. By Alexis Haslam. Pre-Construct Archaeology Monograph 23, 2022. Pp xii + 207, 88 figs, 46 tables. ISBN 978 1 9996155 9 8. Price £18.50 pb.

With such an engaging title, who could fail to be intrigued and want to open this book, albeit with a degree of trepidation?

The volume has arisen from an excavation at the churchyard of St Mary Newington, Southwark conducted in 2011–13, prior to redevelopment,. As with many developments adjacent to churches in London, the inevitable disturbance of a burial ground led to the removal of the interred human remains, and whilst this is never desirable, it gives rise to an opportunity for careful study of a distinct population.

The volume brings together the detailed osteological examination of the human remains with a study of the history of the church, the surrounding area and the people. This is in the best tradition of post-medieval burial ground excavation that has really been pioneered in London over the last 20 years or so, and the volume is a very good addition to the canon. The osteological detail contained within the volume will satisfy serious scientists (who will find more data with the site archive), whilst the historic detail will fascinate students of local history too. Great care has been taken to provide a wide range of illustrations, from early maps of the area and engravings of the church and parsonage, through to the charts of osteological data.

The work is introduced by laying out the fieldwork campaign, precipitated by a planning application to redevelop the leisure centre at the Elephant and Castle, part of a large-scale transformation of the area. During the evaluation phase of the work, it became clear that a wide range of funerary archaeology survived on the site, with inhumations, disarticulated bone, surviving lead coffins and burial vaults containing deliberately arranged disarticulated human remains. This latter form is extremely unusual in post-medieval cemeteries, being more akin to the medieval tradition associated with ossuaries or charnel houses.

The book then follows a chronological path, laying out the evidence from the phases excavated on site. Prehistory and Roman deposits are largely absent from the site and indeed knowledge of these periods from the immediate area is scant. The site is south of the main Roman zone of Southwark, and whilst Southwark does have exceptionally interesting prehistoric sites, these tend to be isolated.

The known history of the area of Newington, Newington Butts and Walworth is outlined from the documentary data from Domesday onwards and suggests an initial entirely average area of manors, churches, and farmland which gradually intensified, with the archery butts which gave the name probably appearing in the Tudor period, which also saw the introduction of an early playhouse. Newington also figured in the Civil War defences of central London, and there is a possibility that the Lines of Communication, linking the fortifications, crossed the site of the excavation. The excavation revealed a large ditch which is considered likely to form part of the defences, although firm dating was not possible, as the ditch seems to have remained open and used or respected for some centuries. Following the Civil War and Restoration, the area became significantly more industrialised, with a range of industries springing up, including ceramic production and metal smelting.

The volume then provides a history of the church of St Mary, which has seen five iterations and the construction of an additional chapel. A biography of Christopher Edmonds who designed the vaults is also included, and gives an interesting and rare insight into one of the key figures associated with the design of the church and its structures, along with his other associations with Southwark. It is relatively unusual to find this degree of personal detail in an archaeological volume, and very welcome, giving colour to the people associated with the site.

The stratigraphic narrative includes a degree of the later industrialisation of the site, but really the key archaeological findings after the possible Civil War defences are the churchyard and vaults, and a good portion of the text is given over to describing these. The text provides a detailed description of the design and construction of 25 somewhat unusual vaults from 1834, along with conjectured illustrations and photographs of the excavation. This is then complemented by a detailed piece of documentary information which looks at the vaults, their cost, and use and gives invaluable context for their construction. This reduced available land for burial, rather than increasing it, at a time when the pressure on churchyards was great. The volume indeed notes that St Mary's was more pressured than most with overcrowding and a noxious stench.

The discussion of the vaults, church records and burial practices suggest that the vaults were in part built to raise revenue, as burial in such vaults would be significantly more costly than the more usual burial in the open churchyard. The authors suggest that a further reason for the construction of the crypts was to provide greater security against grave robbing which was becoming significantly more common in London in the 1830s. No evidence was found for graverobbing on site, but the data from the time does make a desire for security a likely reason for the construction. Relatively little in the way of primary use was found, in the main the vaults were filled with disarticulated human remains from the latter clearance of the site. A highly unusual feature was that some of the displaced bones were carefully arranged when redeposited, with skulls carefully laid out separately from long bones, in a very pre-reformed church fashion. The authors touch on this point in some detail and conclude it is likely to have been a clear personal decision by the clearance workers, undertaking a deeply unpleasant task and very unlikely to have been something specified by the authorities overseeing the work.

The volume continues with details of the archaeology of the churchyard, with a series of inhumations recovered from alongside the vaults, some individual and some stacked, as is not unknown from urban burial grounds of this date. The spatial layout of the graves is unpicked and shows no particular pattern separating male from female, youth from adult. What is unusual is the relatively large proportion of inhumations showing evidence for dissection or craniotomy, and this may reflect the nearby hospitals and the relatively deprived population of the area.

The chapter on the human remains focusses on 118 very well-preserved individuals, from 316 inhumations that were excavated. It considers the demography, the make-up of the excavated assemblage and looks at characteristics such as disease and traumas suffered. This all seems to have been relatively similar to other reported populations from the poorer end of the social scale in London, regrettably telling the tale of hard life, subject to disease and deformity, pollution and often insufficient food. The high incidence of post-mortem intervention is a further example of the unequal treatment meted out to the poorer in society at the time. Stable isotope analysis was undertaken and concludes in the main that the individuals were likely to have lived and died locally.

A series of specialist reports support the volume, with an interesting array of finds, including some grave goods, but a reasonable amount of the material doesn't particularly advance the story of the churchyard and the local population. However, a series of coffin plates were recovered, and identification of the individuals so commemorated has been undertaken through documentary research leading to some fascinating accounts of people buried here, or associated with the parish, once again, bringing their lives back into our focus. Several small essays also support the stratigraphic narrative, further colouring our impression of an edgy, dangerous and threatening area of London. And finally, in a splendid piece of serendipity, the lead author, Alexis Haslam has been able to dedicate the volume to his great-great-great grandparents Jonathan and Emma, who were married at St Mary Newington in 1833. A remarkably pleasing example of the continued presence of a family in the same district of London.

The volume is packed with information and is a fine melding of historic research and narrative, with the archaeological findings. It has shone a light onto a corner of London, less well known than other districts, but with a very distinct character, and the volume unpacks this remarkably well. It is a superb addition to both our knowledge of human osteology and local history.

*Jane Sidell*

*The Hornsey Enclosure Act 1813*. By David Frith. Hornsey Historical Society, 2021. Pp 92, numerous maps and illustrations. ISBN 978 0 906794 57 9. Winner of the LAMAS Local History Publications Book Award 2022. Price £12 pb. Obtainable from Hornsey Historical Society: www.hornseyhistorical.org.uk.

The Hornsey Enclosure Act 1813 ('The Act'), is one of around 5300 Enclosure Acts enacted by Parliament, mostly during the period 1750–1815, which changed the way many people lived, increasing the amount of land in the hands of the upper and wealthy classes and presumably reflected in the rising levels of poor relief. David Frith refers to a variety of original documents, *inter alia*: the Act itself, The Commissioners' Report setting out the Parish Boundary of 25 Sept 1813, The Enclosure Map 1815, The Commissioners' Award sealed on 14 July 1816 and a partial index of property owners setting out the land holdings prior to the enclosures and allotments made under 'The Act'.

David Frith discusses the land covered by 'The Act', the role of the three Commissioners who administered 'The Act' in Hornsey and describes its provisions. He looks at the steps the Commissioners took in listing and assessing the roads, public footpaths and the division and allotment of the common and waste land to the persons or bodies subject to the loss of common rights.

Frith explores the substantial cost of 'The Act' and the ways that 'The Act' could pay for itself. Where no documentation for Hornsey survives, he demonstrates the cost of enclosure elsewhere in England to provide some comparison. He considers the objective of enclosure which was to 'improve' the land. He determines that the Award in Hornsey created a large number of small allotments which were often difficult to access or too small to operate separately as agricultural holdings and where the costs of fencing would have been prohibitive. It appears that some of the plots were not even taken up. The majority of the larger allotments, however, were used mainly as pasture. Since only 8% of the area of Hornsey still remained to be enclosed in 1813, the number of persons needing to rely on the common land for subsistence was relatively

small. The effect of 'The Act' was essentially to 'tidy up' the area by allotting whatever waste and common land still remained to the largest landowners.

David Frith's book is well referenced and he succeeds in bringing 'The Act' to life with his descriptions of the beneficiaries. The book contains a good range of supporting illustrations, maps, photos and transcripts of lists taken from the original documents.

*Lorraine Woodleigh*

Also received:

*The London Journal of John Mackay, 1837–38*. By David E Coke. London Topographical Society Publication 175, 2022. Pp x + 121, 87 figs. ISBN 978 0 902087 72 9. Price from £20 hb. Obtainable from www.londontopsoc.org.

A snapshot of London in 1837–8 in the diary of John Mackay, an 18-year-old Scot starting on his career as a pharmacist. It is an unsparkling personal diary: 'nothing happened today' occurs several times. He avoids (or omits mention of) all the temptations of the capital except some of its music. He observes the streets, a passing Queen Victoria, and dips into the social life. His view of London is 'from the moral high ground of his Presbyterian upbringing and Edinburgh pride.' The rather dry account is delightfully illustrated by a number of cartoons by Cruikshank and views of London buildings and parks in the *Illustrated London News*. David Coke provides short biographies of Mackay's friends and the people he met or saw. A highlight is an etching of 1842, an interior view of the laboratory behind a pharmacy in Oxford Street, full of equipment and artefacts which would interest the archaeologist.

# INDEX

*Susan Vaughan*

Illustrations are denoted by pages numbers in *italics* or by *illus* where figures are scattered throughout the text. The letter 'n' following a page number indicates the reference will be found in a note.


abbeys/religious houses, closure 223; *see also* Bermondsey; Boxley; Canterbury; Ely; Fondi; Holy Trinity Minories; Holywell Priory; Jumièges; Peterborough; St Bartholomew's Priory; St Helen Bishopsgate; St John's Priory; St Mary's Clerkenwell; St Thomas of Acre Hospital; Waltham Abbey; Westminster; Worcester
Abbot Inn 126, 132
Abingdon (Oxon), pottery 14
Acharius, Abbot of Peterborough 125
Aelsinus, Abbot of Peterborough 152
Aleyn, Sir John 230
All Hallows Bread Street church 226
All Hallows the Great church 147
All Hallows the Less church 147
Allen, Tim, w Evans, Gary, 'Headstone Manor, Pinner, Harrow: archaeological investigations 2016–17' 247–93
Alwin Child 154 n12
Amberley Court (Herefs) 288
Anagni (Italy), cathedral 151, 152
animal bones
  Neolithic, Principal Place 25, 26
  Roman
    Crosby Square 63, 73, 74–5
    Faraday Buildings 122, 123, 125
  medieval
    Benjamin Street 188, 203–5
    Crosby Place 163
    Faraday Buildings 129
  medieval–post-medieval, Headstone Manor 278–9
  post-medieval, Faraday Buildings 135
  *see also* antler; fish bones
antler, Roman 73
architectural fragments
  Roman 65
  post-medieval 174
armlets *see* bracelets/armlets
Atheling Street (Addle Hill) 113, 115, 126, 133–4
axe fragment, Neolithic 25

baling pin, antler 208, *209*
Balmer, Peter, book review by 307–8
Barlow, William, Bishop of St Davids 226
Barnes, – 235
barns, Headstone Manor 247, 250
Barron, Caroline, book review by 299–301
Barrow, Henry 241
basin, Roman, *opus signinum* 45, *45*
bath house/suite, Roman *see* plunge pool
Baynard's Castle 113
Beauchamp, Sir John 115
Beauchamp's Inn 115
bed bugs, medieval 214
Bell Inn 115, 133, 134, 142
Bell Yard (Court)
  documentary evidence 115, 133, 134, *138*, *140*
  excavation evidence 136–8, *137*, *138*, *139*, 142
Benedetti-Whitton, Isa *see* Hogg, Ian, & Benedetti-Whitton, Isa
Benjamin Street, Farringdon, excavations
  animal and fish bones 203–8
  archaeological and historical background 185–7, *185*
  background and location 183–4, *184*
  discussion 215–17
  excavation evidence
    period 1 (pre-priory) 187
    period 2 (*c.*1200–1380) 187–9, *188*
    period 3 (*c.*1470–1540) 189–91, *190*
    period 4 (*c.*1540–1900) 191–2, *191*
  geology and topography 187
  insect remains 213–15
  plant remains 210–13
  registered finds 208–10, *209*
  'Westminster' tiles 192–202, *196–7*, *198–9*, *200–1*
Bermondsey Priory 147, 149, 154 n12
Berne (Switz), iconoclasm 243 n6
Berry, Charlotte, *The Margins of Late Medieval London, 1430–1540*, reviewed 304–5
Bertram, Prior of Bermondsey 153 n3
Bessingby with Ulrome (E Yorks), church 153
Betts, Ian M, & Pitt, Ken, 'Roman wall plaster from Crosby Square, City of London EC2' 79–106
Bilney, Thomas 224
Bird, David, book review by 295–9
Birmingham (W Mids), St Chad's Catholic Cathedral 239
Bishopsgate
  gate 161
  mosaic 64–5
  origins 160–1
  *see also* Crosby Place; Crosby Square
Blanche of Lancaster 243 n15
bone working waste, medieval 189, 210
Bonner, Edmund, Bishop of London 224–5, 226, 236
Bonvisi, Antonio 170
Botolph Wharf 147
Bowling Street 199
Boxley Abbey (Kent), Rood of Grace 224
bracelets/armlets, Roman
  glass 74, *75*
  shale 74, *75*
Bricet, Jordan de 186
bricks
  Roman *see* ceramic building material
  medieval
    Crosby Place 168, 174
    Faraday Buildings 132
    Headstone Manor 271, 275, 276, *277*

bricks (cont.)
post-medieval
Benjamin Street 192
Crosby Place 171, 172, 174, 175, 176
Faraday Buildings 134, 136
Headstone Manor 264–5, 267, 270, 271, 275, 276
bridge, Headstone Manor 254; *see also* London Bridge
Bridge Ward 148, 154 n10
brooches
Roman
Crosby Square 45, 68, *68*
Faraday Buildings 122, *123*
medieval, Crosby Place 173, *173*
Brown, Peter Guy, book review by 301–2
brushes, post-medieval 177, *178*
buckle, medieval 163
Bucknall, Sir William 250
burials *see* inhumations
butchery
Roman 63, 73
medieval 188, 204, 205
Butler, Thomas, Earl of Ormond 230–1

Canterbury (Kent)
archbishops of *see* Cranmer, Thomas; Lanfranc; Langham, Simon; Stratford, John
Christ Church 151, 154 n13, 231, 290
Carter Street (Carter Lane) 113, 115, 133, 134
cemetery, medieval, St Helen Bishopsgate 164–5
ceramic building material, Roman
Crosby Square 49, 50, 52, 53–4, 55, 56, 58–9, 60
Faraday Buildings 124
cesspits
medieval, Benjamin Street 187–9, *188*, 190, *190*, 215–16
post-medieval
Benjamin Street 191, 217
Crosby Place 172, 176
chantries
abolition of 223–4, 227
London Bridge 224, 234, 236, *237*
St Paul's Cathedral 243 n15
charcoal
Neolithic 25, 26
Roman 125
medieval 264
cinnabar 80, 103
Citadel telephone exchange 138, 143
Clare, Osbert de 149
clay extraction, medieval 189, 215; *see also* quarrying
clay tobacco pipes
Benjamin Street 192
Crosby Place 172, 175
Faraday Buildings 138
Clerkenwell manor 186
Cliff (servant) 224
Clifford Hall 193
Cnut, King 153
coins
Roman
Crosby Square 46, 51, 59, 74
Faraday Buildings 124
medieval
Crosby Place 174
Faraday Buildings 132
*see also* jettons; token
collars, waterpipe, Roman
Crosby Square 49, 50
Faraday Buildings 118, 124
combs, post-medieval 177
Cooper, Michael *see* Payne, Matthew, & Cooper, Michael
cornice moulding, Roman 65
Cotton, Jonathan, Daykin, Andy, Dunne, Julie, & Quinn, Patrick, 'Early Neolithic pits at Principal Place, Shoreditch, London Borough of Hackney' 1–38
Cowcross Street 186
Cranmer, Thomas, Archbishop of Canterbury 250
Crome, Dr 241
Cromwell, Thomas 234
Crosby, Sir John 161, 165–6
Crosby Place (City of London), excavations
background and location 157–9, *158*, *159*
discussion 177–9
excavation evidence (*illus*)
period 5 (late Saxon–medieval) 160–5, 167–70
period 6 (post-*c.*1500) 171–7
historical and antiquarian summary
period 5 165–7, *166*, *167*
period 6 170–1, *170*
Crosby Square (City of London), excavations
background and location 39–42, *40*, *41*
discussion
pre-Flavian development 63
Flavian–Antonine occupation 64–73
Late Roman 73–5
road network 63–4
environmental finds 63, 72–3, 74–5
excavation evidence
period 1 (natural topography) 42
period 2 (*c.*AD 50–70) 42–4, *43*
period 3 (*c.* AD 70–?200) 45–58, *46*, *48*, *51*, *54*
period 4 (*c.* AD 250–400) 58–62, *60*
period 5 (*c.* AD 900–1500) 62, *62*
finds (*illus*) 65–72, 73–4; *see also* wall plaster, Roman, Crosby Square
*see also* Crosby Place
cucumber 211, 212–13

Darvell Gadarn 224, 243 n7
daub, Roman 124
Daykin, Andy *see* Cotton, Jonathan, Daykin, Andy, Dunne, Julie, & Quinn, Patrick
dendrochronology, Headstone Manor 251
Derfel, St 224
diet
Roman 73
medieval 205
disc
Roman, ceramic 122–3, *123*
post-medieval, bone 210
dividers, post-medieval 172
dog burial, Roman 74–5
double-spiked loop, Roman 61
dovecote 249
drain, Roman 55–6, *56*
Dudley, Arthur 239
Dudley, Sir Edward 250
Dunne, Julie *see* Cotton, Jonathan, Daykin, Andy, Dunne, Julie, & Quinn, Patrick

Eadui Basan 151
earring, post-medieval 210
East India Company 170, 172, 179
Easter Sepulchres 230–1
Edgar, King 152
Edward the Confessor 149
Edward I 151
Edward III 115
Edward VI 241
Egilsay (Orkney), church 149, 150
Egyptian blue pigment 79–80, 103
Elderton, William 226
Elizabeth I 227–8, 238
Ellis, Mr 134
Eltham Palace 177
Ely Abbey (Cambs) 149
Emma, Queen 152
Ermine Street 63–4
Eton Rowing Course (Berks) 14–15, 16, 23, 29, 30
Etton (Cambs) 15
Evans, Gary *see* Allen, Tim, w Evans, Gary
Exeter (Devon)
bishop of *see* Leofric
cathedral 152

Falconer's Alley (Faulker's Alley) 186, 191, 192
Faraday Buildings North (City of London), excavations
  archaeological and historical background
    Roman 111–12
    Saxon–medieval 112–15, *114*, 125–6
    post-medieval (*illus*) 115–17, 133–4
  background and location 107–10, *108*, *109*
  discussion 140–3
    Roman period 123–5, *125*
    medieval period 132–3
    post-medieval period 140
  excavation evidence (*illus*)
    natural geology and topography 117
    Roman 117–23
    medieval 125, 126–32
    post-medieval 133, 134–8
  topography and geology 110–11, *111*
Faulker's Alley (Falconer's Alley) 186, 191, 192
fire, Hadrianic 64, 84–5
fish bones
  Neolithic 25
  medieval 188, 205–8
  medieval–post-medieval 279
Fishmongers' Company 151
Fleet Prison 226
Flete, John 152
flint, Neolithic 23–5, *24*, 30, 32–3
floor tiles
  medieval, Crosby Place 163–4, 168, 174, 175, 177
  medieval ('Westminster'), Benjamin Street
    assemblage 192–3
    catalogue 195–7, *196–7*, *198–9*, *200–1*
    description 194–5
    discussion 216–17
    distribution 197–9
    location of lost kiln 199– 202
    methodology 193–4
  post-medieval
    Benjamin Street 192
    Crosby Place 172, *173*, 174, 175, 177
    Headstone Manor 261–3, *262*, 264, 270, 275, 276
Flower, William 240, 243 n8
Fondi (Italy), monastery 151
Forest, John 224
forum, Roman 63
Fraunkeleyn, Roger 126
Frith, David, *The Hornsey Enclosure Act 1813*, reviewed 317–18
funerary monuments
  brass 227
  iconoclasm 227
furniture mount, Roman 43, *44*, 63, 72

gaming pieces
  Roman
    ceramic 59, 71
    glass 71
  post-medieval, bone 210
gaming token, Victorian 278
garden features, Headstone Manor 274
garderobes, Headstone Manor 268–70, *268*, 285, 287, 288
Gardiner, Stephen, Bishop of Winchester 235
gatehouse, Headstone Manor 249, 250, 284
Gerhold, Dorian, book review by 312–15
Gibbs, Gary G, book review by 304–5
Gilbert Fastigurt 113, 115, 125
glass vessels
  Roman
    Crosby Square (*illus*) 53, 66–8, 72, 73
    Faraday Buildings 122
  post-medieval
    Crosby Place 172, 176, *177*
    Faraday Buildings 134, 135, 140
Godliman Street 113, 133, 134
Goodburn, Damian M, book review by 308–9
graffito, Roman 59, 98, *100*, 103
granary, Headstone Manor 247
Grant, William 155 n53
Great Fire 115, 133, 134, 140, 142
Great St Helens (City of London) 40
Grove, William 155 n53
Guerci, Manolo, *London's 'Golden Mile': The Great Houses of the Strand 1550–1650*, reviewed 311–12
Guildhall 226
Guildhall Chapel 193
Guillery, Peter (ed), *Survey of London 54 and 55: Whitechapel*, reviewed 312–15

Haakon 149
Haggen Lane 113
hairpins, Roman
  bone 52, 59, 61, 68, *68*, 74, *75*
  copper-alloy 45, 68
Hambledon Hill (Dorset) 23, 29
Hancocke, Mathew 133
handles
  Roman, obsidian 53, 71, *71*, 72
  post-medieval, ivory 172, 177
Harold Godwinson 125
Haslam, Alexis, *Tales from the Vaults, and Other Newington Horror Stories: An Archaeological and Historical Study of Elephant and Castle's Underworld*, reviewed 315–17
Headstone Manor, Pinner (Harrow), excavations
  background and location 247–9, *248*
  description of extant manor house buildings 250–3, *252*
  discussion 279–91, *286*, *289*
  environmental evidence 278–9
  excavation evidence *255*
    heating duct trench II 254, *257*, *260*
    lightning cable trench VI 254, 265–7
    north-west of manor house (*illus*) 254–65
    south-east of manor house (*illus*) 265–74
  finds 274–8, *274*, *277*
  historical background 249–50
  previous work 253–4
  radiocarbon dating 291–2
  topography and geology 249
Headstone Manor Farm 250
Heathrow Terminal 5 15
*Hegton* 249
hemp (*Cannabis sativa*) 211, 213
Hendrie, Robert 176
Henry I 149
Henry II 234, 244 n20
Henry VIII 223, 224, 231, 241, 244 n20, 250
heresy 224
Higham, Nick, *The Mercenary River. Private Greed, Public Good: A History of London's Water*, reviewed 309–11
Hilsey, John, Bishop of Rochester 224
hinge, medieval 131–2, *132*
Hogg, Ian, & Benedetti-Whitton, Isa, 'Excavations at 1–5 Benjamin Street, Farringdon, Islington, EC1: activity within the outer precinct of the Hospitaller Priory of St John of Jerusalem and evidence for 'Westminster' tile production' 183–221
Holy Trinity Minories church, Aldgate 237–8, *239*
Holywell Priory, Shoreditch 193
Hopkins, Peter, *Medieval Morden: Landscape and Landholding*, reviewed 307–8
horseshoe fragment 273, 278
Hugh Candidus 155 n50
human bones, Roman 122, 123
Hunt, Guy, & Rowsome, Peter, 'A Roman watercourse, medieval and Tudor development and Bell Yard after the Great Fire:

excavations at Faraday Buildings North, City of London EC4' 107–45
hunting, Roman 73
Hurst Fen (Suffolk), pottery 15, 27

iconoclasm
background 223–4
discussion 240–2
history of
pre 1547 224–5
post 1547 225–7
Marian Catholic revival and afterwards 227–8
Mercers' sculpture of Christ 228–36, *228*
*see also* religious goods, concealment of
Incent, Dean John 241
inhumations, medieval, Crosby Place 164–5
inscription, Greek 53, *53*, 67, 72
insect remains, medieval 188, 213–15
ironworking evidence, late Saxon/medieval 161

Jefferson, Lisa (ed), *The Register of the Goldsmiths' Company: Deeds and Documents c.1190 to c.1666*, reviewed 299–301
jetons, post-medieval
Crosby Place 174–5
Headstone Manor 270, 278
John of Gaunt, tomb of 227
Jumièges (France), abbey 150

Kew Bridge Road, Brentford 15
Kilverstone (Norfolk) 16, 27–8
King's Great Wardrobe 115
Kings Langley Place (Herts) 280
Kingsborough (Kent) 14, 15
Kirkwall (Orkney), St Magnus Cathedral 150
Kleineke, Hannes
*The Worshipful Company of Fletchers of London: The Early Centuries, c 1371–c 1571*, reviewed 301–2
book review by 305–6
Knightrider Street 113, 133, 134
knives, post-medieval
Crosby Place 172
Faraday Buildings 135

ladle, Roman 51, 70, *70*
Lambeth Palace Chapel 193
lamps, Roman, ceramic 45, 48, 50, 52, 69–70, *69*
Lanfranc, Archbishop of Canterbury 154 n13
Langham, Simon, Archbishop of Canterbury 249
lantern, post-medieval 136, *137*
Lany, Benjamin, Bishop of Peterborough 133
Latimer, Hugh, Bishop of Worcester 224
Launders Lane, Rainham 30
lentils (*Lens culinaris*), Roman 49, 72
Leofric, Bishop of Exeter 151, 152
Lichfield (Staffs), cathedral 239
ligulae, Roman 59, 69, *69*
ligula/spatula 45
Livincgus (Lyfing) 148
Llanderfel (Merioneth), St Derfel's Church 243 n7
lock bolt, Roman 61, 71, *71*
lock plate, Roman 59, 71, *71*
London, bishops of *see* Bonner, Edmund; Ridley, Nicholas; Robert of Jumièges; Sandes, Edwin
London Bridge
chantry chapel 224, 234, 236, *237*
church of St Magnus 147–8, *148*
iconoclasm 224, 234, 236, *237*
louver, medieval 163, *165*
Low Hall (Walthamstow) 281, 282–3
Lud, King 226
Ludgate 226, 235
Lynne, Thomas 155 n53

Machyn, Henry 227, 235
Magnus of Anagni, St 151, 153
Magnus of Orkney, St, Earl of Orkney
dedications 147, 152–3
feast of 150–1
history 149–50
relics 151–2
Maidenhead Inn 115, 134, 136, 138, 140, 142
Mainz (Germany), entombment of Christ 233, *233*
Malby, Lettice 290
Malby, Thomas 290
Mark Lane, City of London, sculpture 236, *238*
Mary I 186, 227, 235, 238
Mayfield (E Sussex) 281, 288
melon 211, 212–13
Mercers' Hall
location *225*
sculpture of Christ
composition and parallels 232–4, *232*, *234*
date and context of concealment 231–2
discovery and description 228–30, *229*
discussion 241
documentary evidence 230–1, 234–6
Mermaid Inn 115, 134
Mildmay, Thomas 231
Mills, Peter 133
moated site *see* Headstone Manor
molluscs, Neolithic 26
moneyer's hammer die, medieval 162–3, *163*
Montfichet's Tower 113
More, Sir Thomas 170, 224
Moreton (Dorset), church 153
mosaics, Roman
Bishopsgate 64–5
Crosby Square 49, 64, 65, *66*
St Helen's Place 64
mount, medieval 163, *164*; *see also* furniture mount

nails, medieval–post-medieval 278
Nash, Frederick 165, 171
needles
Roman, bone 50, 59, *68*, 69
medieval, antler 189, 208, *209*
Netherlands, iconoclasm 224, 243 n6
Nevers (France), mourning tableau *232*, 233
New, Elizabeth A (ed), *Records of the Jesus Guild in St Paul's Cathedral c.1450–1550. An Edition of Oxford Bodleian MS Tanner 221, and Associated Material*, reviewed 302–3
Newgate Prison 237
Noell, James 133
Nonsuch Palace 177
North, Sir Edward 250, 251
Northolt Manor (Ealing) 280, 281, 282

Olaf Haraldsson 153, 153 n5
Old Soar (Kent) 288
Oliver, John 133
*opus sectile* 52, 60, 65, *65*
*opus signinum* 45, *45*, 49, 52, 54, 55, 56–7, 62
*opus spicatum* 59
Ormond, earl of *see* Butler, Thomas
Orsett (Essex), pottery 15
oven, Roman 54

Packington, Robert 241
Page, Johan 126
Paules Chaine 133
Paul's Bakehouse Court 133, 134, 138, *141*, 142–3
Payne, Matthew, & Cooper, Michael, 'On the origin and dedication of the Church of St Magnus the Martyr, London' 147–56
Peasant's Revolt 186, 189, 217
Perier, George 133
Perring, Dominic, *London in the Roman World*, reviewed 295–9, *296*
Peryn, William 226
Peter Street 199–201

Peterborough (Cambs)
abbey 113–15, 125–6, 132, 152
bishopric of 115; *see also* Lany, Benjamin
Philip of Spain 235
pigments, Roman 56, 64, 79–80
Pilgrimage of Grace 241
Pinelli, Caetano 165
pins
Roman, bone 50
post-medieval, copper-alloy 135
*see also* hairpins
pits, Neolithic *see* Principal Place, Shoreditch
Pitt, Ken
'Crosby Place, a 15th-century mansion: excavations at Crosby Square, city of London EC2' 57–81
'Roman domestic development to the north of the Forum: excavations at Crosby Square, City of London EC2' 39–77
*see also* Betts, Ian M, & Pitt, Ken
plant remains
Neolithic, Principal Place 25–7
Roman
Crosby Square 49, 52, 72–3
Faraday Buildings 123, 124–5
medieval
Benjamin Street 188, 210–13
Crosby Place 163
Faraday Buildings 127, 129
plaques, medieval, bone 189, 210
plunge pool, Roman, Crosby Square 56–7, *57*, 59, 64
Post Office Savings Bank 115, 138, 143
pottery
Neolithic, Principal Place assemblage 4
catalogue 31–2
condition 13
discussion 14–16, 20–3, 27–30
distribution 13
fabric 5–9, *8*, *9*
form 9–13, *10*, *11–12*
organic residue analysis 6–7, 16–20, *17*, *18*
radiocarbon analyses 19–20, *21–2*
surface treatment and decoration 13
Roman
Crosby Square
Period 2 42–3
Period 3 45, 46, 48, 49, 50, 52, *52*, 66
Period 4 59, *59*, 61, 73
Faraday Buildings 120–2, *121–2*, 124
Saxo-Norman–medieval, Crosby Place 161–2
medieval
Benjamin Street 189, 190–1, *209*
Faraday Buildings 127, *128*
Headstone Manor 274, *274*
post-medieval
Benjamin Street 192
Faraday Buildings 134, 135, 136, *137*, 140
Headstone Manor 274–5, *274*
Price, John Edward 192
Principal Place, Shoreditch (Hackney), excavations
background and location 1–2, *1*
discussion 27–31, *28*, *31*
environmental material 25–7
excavation evidence 2–4, *3*
flint 23–5, *24*, 32–3
pottery (*illus*) 4–23, 31–2
pumice stone, Roman 59
pyxes 226

quarrying, Roman 42, *43*, 45, 63; *see also* clay extraction
querns
Roman 70
Saxo-Norman 126
Quinn, Patrick *see* Cotton, Jonathan, Daykin, Andy, Dunne, Julie, & Quinn, Patrick
Quyney, Richard 115

radiocarbon analyses
Headstone Manor 264, 279, 291–2
Principal Place 19–20
Ralph the Divine, Master 113, 125
Randoll, Robert, drawing by *141*
Reading, Richard 251
Reading, Thomas 251
Red Lion public house 186
Reed, Bartholomew 170
Reformation *see* iconoclasm
relics
St Chad 239
St Magnus 151–2, 153
St Stephen Walbrook church 227
veneration of 239
religious goods, concealment of
discussion 240–2
history and chronology 223, 226, 227, 228, 238
Mercers' sculpture of Christ 228–36, *228*
motivation 238–40, *240*
other examples 236–8, *237*, *238*, *239*
Rest, Sir John 170
Rewse family
Anne 250, 251
Francis 250
Simon 250, 251
Richard III 166–7
Richard of the Queen's Wardrobe 115
Richmond Palace 177
Ridley, Nicholas, Bishop of London 227, 231, 244 n26
rings, Roman, copper-alloy 71
Ripon (N Yorks), minster 239
roads, Roman
Crosby Square *43*, 44, 47–8, 52, 58, 62, 63–4
Faraday Buildings area 111, *111*
Robert of Jumièges, Bishop of London 150
Rochester, bishop of *see* Hilsey, John
Roger Rameseyes 249
roofing tiles
Roman *see* ceramic building material
medieval
Benjamin Street 189, 192, 194, 195, 197, 199, 201–2
Crosby Place 163, 168
Headstone Manor 275–6, 278, 280
post-medieval
Benjamin Street 192
Crosby Place 171, 172, 174
Headstone Manor 275–6, 278
Rosenthal, J T, book review by 302–3
Roskilde (Denmark), St Magnus cult 154 n21
Rowsome, Peter *see* Hunt, Guy, & Rowsome, Peter
Runnymede Bridge, Staines 15, 30

St Alphege's church 228
St Andrew Holborn church 227
St Andrew Undershaft church 226, 227
St Bartholomew the Great church 202
St Bartholomew's Priory 202
St Benet's church 243 n11
St Botolph Billingsgate church 147
St Botolph-without-Bishopsgate church 161
St Helen Bishopsgate church 160, 164–5
St Helen Bishopsgate Priory 161, 164–5, 166, 170
St Helen's Place, mosaic 64
St John Clerkenwell church 202
St John Hackney church 231
St John's Priory, excavations *see* Benjamin Street, Farringdon
St Leonard Eastcheap church 236
St Magnus the Martyr church
origin and dedication 147
early references 148–9
feast of St Magnus 150–1
location 147–8, *148*
St Magnus of Anagni 151

St Magnus the Martyr church (cont.)
St Magnus of Orkney 149–50 summary 153
rood screen figures 224
St Magnus parish 148
St Margaret by London Bridge church 153 n3
St Margaret Pattens church 224
St Margaret Westminster church 240
St Martin Pomary church 225
St Mary Aldermary church 154 n13
St Mary Axe church 166
St Mary le Bow church 154 n13
St Mary Clerkenwell nunnery 186, 201, 216
St Mary Overie minster 154 n13
St Olave's church 236
St Paul's bakehouse and brewhouse 113, 125–6, 132, 133
St Paul's Bakehouse Court 115
St Paul's Cathedral 112, 113, 223, 227
St Paul's Cross 224, 226, 227, 236
St Stephen Walbrook church 227, 234
St Thomas of Acre Hospital, church of *225*, 228, 230–6, 241
St Thomas the Apostle church 227
Salisbury (Wilts), cathedral 152
Sandes, Edwin, Bishop of London 241–2
Scarlett, Edward 177
Schofield, John, book review by 311–12
Schuler, C J, *The Wood that Built London: A Human History of the Great North Wood*, reviewed 308–9
sculpture, iconoclasm and concealment 236–8; *see also* Mercers' Hall
Shakespeare, William 115
shale vessel, Roman 52, 70, *70*
shoe fragments, medieval 189, 210
Sidell, Jane, book review by 315–17
skates, bone
Benjamin Street 210
Faraday Buildings 127, 129–30, *130*, 132, 142
Smith, Walter 134
Somerset House 186
spade sheath, Roman 59, 71, *71*
spatula *see* ligula/spatula
spectacles 177, *178*
Spencer, Sir John 170, 171, 179
Spong Hill (Norfolk) 15, 27
Springfield Lyons (Essex) 15
stables, Headstone Manor 249–50
staple, medieval 210
Stephen (King) 149
stove tile 171, 177
Stow, John 151, 226, 227
Stow, William 154 n24
strap, leather, medieval 189, 210
Stratford, John, Archbishop of Canterbury 249
studs/nails, medieval 163, *164*
Sudeley Castle (Glos)
plan 177
sculpture *237*
Synagoga 237–8, 239

tessellated floors, Roman, Crosby Square
discussion 64, 65
excavation evidence 47, *47*, 49, 52, 54, 55, *55*
tesserae, Roman, Crosby Square
discussion 65
excavation evidence 49, 51, 52, 55, 57, 58, 59, 61
Thomas Becket, St 230, 231, 234–6
Thomas de Husseburne, Canon 125
tile kiln, Farringdon Road area 192, 199–202, 216
tile making, medieval 186
tiles *see* ceramic building material; floor tiles; roofing tiles; stove tile
timber-framed building *see* Headstone Manor
token, post-medieval 172
Trani (Italy), bishop of 151
Turnmill Street 186, 191, 192
tweezers, Roman 45, 69, *69*

Urswyk, Christopher 231
Utrecht (Neths), sculpture 232

Valentius, Master 233
Vandale, Walter 230
Vauxhall 30
Venus figurine, Roman 59, 71–2, *72*

Walbrook stream 2, 27
wall plaster, Roman, Crosby Square
background and assemblage 79–81, *80*, *82*
concordance 103–6
description (*illus*)
period 3, phase 1 81–3
period 3, phase 2 83
period 3, phase 3 83–8
period 3, phase 4 88–91
period 3, phase 5 91–8
period 4 98–9
period 5 99–103, *101*, *102*
discussion 64, 103
Walter de la Hegge 249
Waltham Abbey (Essex), statue 239–40, *240*
Ward, Robert 234
wards 154 n10
water pipes, wooden, Roman 49, 50
Watson, Bruce
'Some examples of iconoclasm and the concealment of religious goods in London during the Reformation reconsidered' 223–46
book review by 309–11
Webbenham, Pieres de 126
wedge, woodworking, medieval 163, *165*
Wells (Som)
cathedral 151
St Cuthbert's church 233
wells
Roman 59–60
post-medieval 135–6, 138, 140, 142
western stream 113, 117–18, 124, *125*, 141–2
Westminster Abbey
church of St Magnus, links with 147, 148–9, 151, 152, 153
floor tiles 193
Whitney (Oxon), Mount House 280
Whittlesford (Cambs), SS Mary and Andrew 245 n31
Willes, Margaret, *In the Shadow of St Paul's Cathedral: The Churchyard that Shaped London*, reviewed 305–6
William I 148, 149
William, Bishop of Orkney 149
William Fitz Stephen 129
William the Tiler 216
William of Worcester 150
Williams, William 250
Wilshin, Daniel jnr 253
Wilshin, John 253
Winchester, bishop of *see* Gardiner, Stephen
Wingfield Manor (Derbys) 177
Wodehouse, Robert de 249
Woerden (Neths), sculpture 232
wooden bowl, medieval 189, 208, *209*
Woodleigh, Lorraine, book review by 317–18
Woolwich Manor Way, East Ham 30
Worcester (Worcs)
bishop of *see* Latimer, Hugh
cathedral priory 151
Worsaae, Jens Jacob Asmussen 150
Wulfstan, St 151
Wyatt, Sir Thomas, rebellion 235

Yabsley Street, Blackwall 30
Yeoveney Lodge, Staines 14, 15