ISSN 0960-7870

BRITISH BRICK SOCIETY

INFORMATION157

OCTOBER 2024

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* *The annual subscription to the British Brick Society is £20-00 per annum. There are now no concessionary subscriptions.*

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British Brick Society web site:

http://britishbricksoc.co.uk

Contents

Editorial:
Brickmaking and Beyond: Essex and Beyond

During 2024, the Editor of *British Brick Society Information* has received no fewer than five papers on different aspects of brickmaking together with notification of four further articles on the same area of the society's interests and also expected are reports on visits to the brickworks at Alne, North Yorkshire, and to Hathern Terra Cotta Factory, Leicestershire, which makes both terracotta and faience, in September 2024 and October 2024, respectively. In total, these pieces appeared likely to probably occupy between 85 and 97 pages of text and illustrations. Given the limits on the number of possible pages in any one issue imposed by postage considerations — 56 pages with 4 pages of cover — this is too many to include in a single issue so a split has been made between those papers which have colour illustrations, to be included in *British Brick Society Information,* **158,** February 2025, but those papers submitted with *only* black-and-white illustrations, are included herein: the two colour illustrations in one of the papers is a concession from the printer.

This issue of *British Brick Society Information* therefore has articles on London Stock bricks; Eastwoods Brickworks at Kempston Hardwick, Bedfordshire; and government policy on brickworks during the Second World War. To come are papers on the development of 'Suffolk kilns' and on multiple pressure marks on Cambridgeshire bricks. Since these words were written, two further papers have been received : on brick roads in Lincolnshire, and on brickmaking a Crayford and Erith. There are also articles in hand for future issues on the Armitage family and brickmaking in Yorkshire — the family are owners of the York Handmade Brick Company at Alne, North Yorkshire — and a review of brickworks at Colchester.

In anticipation of the 2025 Annual General Meeting in Colchester, an article on the brick great gatehouse at Layer Marney Tower, a follow up to the writer's presentation to the 2024 Leeds International Medieval Congress, is included in this issue of *British Brick Society Information.* The late Terence Paul Smith left a substantial article on 'Early Tudor Architectural Terracotta in England: Aspects of Production' complete with endnotes and an indication of the illustrations; this paper is expected to be included in *British Brick Society Information,* **159,** June 2025. As both the great gatehouse at Layer Marney and the builder's commemoration make substantial use of terracotta, it shows that terracotta has a considerable connection to buildings by one member of the power elite in Essex.

Alun Martin, the Enquiries Secretary of the British Brick Society, has received three enquiries recently which have sparked further interest amongst the other officers of the British Brick Society and led to three items on the world wide web being placed in 'Brick in Print' in this issue of *BBS Information* (pages 33-35).

The first was from Jesse Wheeler of Worcestershire Archaeology of Worcestershire County Council about faience on 19 The Foregate, Worcester, which on investigation is the third instigation of the cladding. Behind the probably Georgian front to which the faience tiles have been affixed is a timber-framed building, probably with origins in the sixteenth century or earlier. Research thereon is on-going and will be reported in due course.

The second is an 'L-shaped' brick developed in the 1860s by John Taylor, an architect, to act as permanent shuttering for external concrete walls, leading to Alun's discovery of Kathleen Ann Watt's 1990 thesis presented to the University of York, 'Nineteenth-Century Brickmaking Innovation in Britain: Building and Technological Change', and available on *https://etheses.whiterose.ac.uk,* a joint venture by the seven universities in Yorkshire to publicise the work of their successful postgraduates. A note on these bricks is in preparation.

The third enquiry concerned a brick kiln at Manninglw alongside the Cromford and High Peak Railway, Derbyshire, being a downdraft kiln, not dissimilar to the kiln at Baileys Hard, Beaulieu, Hampshire, and the kiln built by the Gestingthorpe History Group in Suffolk; both with articles online. The British Brick Society visited Gestingthorpe in April 2002, reported *BBS Information,* **88,** July 2002, pages 23-24. An account of the Baileys Hard kiln by Frank Green was included in *BBS Information,* **144,** January 2020, pages 30-33.

As with the disused brickmaking site at Donnisthorpe, Leicestershire, reported in *British Brick Society Information,* **156,** June 2024, it is hoped to include an account of the work being done at Manninglow in a future issue of *BBS Information.*

On page 49, there is a call for papers on 'Brick in Churches' for an issue of *British Brick Society Information* in 2026 or 2027. At present one, as yet unwritten, contribution has been suggested and either of two other possible pieces could be completed. The former involves comparing church building in Oxford, an Anglican town, with Luton, a Nonconformist one, between 1907 and 1960: the dates reflect the omniscience of car manufacturing in the towns; the latter are two mid-twentieth-century churches in north-west London, one for the Roman Catholic Church and the other for the Church of England. An Editorial on the use of brick as a walling material for cathedrals in England is being researched.

A similar request could equally be made for papers on 'Bricks and Brick Buildings in London' defined as within the area enclosed by the M25 motorway, which is roughly co-incident with the boundaries of the area of the modern Greater London Council. The late Terence Paul Smith left an intriguing piece on 'The Progress of Brick in Stuart London' which argues that it was aftermath of the Great Fire in 1666 which transformed London from a 'city of sticks to a city of bricks' rather than as King James VI and I claimed as having happened within his reign (1603-1625). From the layout of the text and the type size used, it seems to have originated as a lecture. Publishing it could provoke further discussion. However, neither illustrations nor a bibliography and endnotes were provided for this paper: the Editor has worked on a potential bibliography and is investigating potential illustrations. Allied to this is that some years ago, the writer investigated the connections and differences between two buildings designed for the American Radiator Company by the architect Raymond Mathewson Hood (1881-1934): the company's headquarters and showroom, the American Radiator Building, 40th Street, New York, opposite Bryant Park, and the building for the same firm on Great Marlborough Street, City of Westminster WC1, on which he worked with J. Gordon Jeeves (1888-1964) as executant architect. Jeeves later extended the building north along Argyle Street.

The Editor of *British Brick Society Information* would welcome further contributions on bricks and brick buildings in London for a future issue. Contributions can be of any length, preferably illustrated with black-and-white photographs, plans, maps, or drawings. When sufficient contributions have been received for to make up at least 48 pages, preferably 52 or 56 pages, work on the issue will be completed and published.

The 52nd Annual General Meeting of the British Brick Society is to be held on Saturday 21 June 2025 in Colchester. Full details to follow with the mailing containing *British Brick Society Information,* **158,** February 2025.

Through the good offices of Ken Redmore, the British Brick Society is proposing to join forces with the Society for Lincolnshire History and Archaeology in holding a 'brick day' in Gainsborough in late September 2025 to include talks and a tour of Gainsborough Old Hall. Further details to follow.

The British Brick Society held its 1999 Annual General Meeting in Gainsborough and visited Gainsborough Old Hall in the afternoon. The town also has important industrial buildings of brick, erected in the quarter century before the Great War. Articles on both the late-fifteenth-century Gainsborough Old Hall and the Edwardian industrial buildings could be written for an issue of *British Brick Society Information* for an issue in 2025 or 2026.

DAVID H. KENNETT
Editor, *British Brick Society Information*

The Brickworks Museum receives The King's Award for Voluntary Service

We are very honoured that the volunteers from The brickworks Museum have been awarded The King's Award for Voluntary Service for 2024.

This is the highest award a local voluntary group can receive in the United Kingdom and is equivalent to an MBE.

MICHAEL CHAPMAN
Chairman, the British Brick Society

Accommodation Fit for a King: The Late Medieval Great Gatehouse at Layer Marney Tower, Essex, in Context

David H. Kennett

LAYER MARNEY TOWER

Layer Marney Tower[1] was built for Sir Henry Marney, the first Lord Marney (*d.*1523)[2] and construction was briefly continued by his son, the second Lord Marney (*d.*1525).[3] With the latter's death, the family line died out and new owners took over the property, building only sufficient accommodation for the more modest needs of a middling gentry family. By 1525, the Marney family had been possession of the property and its landed estate for almost two centuries.[4]

The date of commencement of construction is uncertain but given the height of the gatehouse, a date early in the second decade of the sixteenth century seems certain. A great gatehouse tower 80 feet (24.4 metres) high would have taken at least eight years to erect, allowing time for each year's work to settle.[5]

Also, the firing capacity of a late medieval clamp kiln in England was relatively limited, probably to under 20,000 bricks per firing. With three firings in a year, this would amount to not much more than 50,000 bricks being available in any one year.[6]

THE GREAT GATEHOUSE

The great gatehouse is a substantial, tall structure, intentionally highly-visible on approaching the house. It is usually three or more storeys in height with flanking towers, or turrets, on either side of the entry which usually extend above the height of the main structure to give access to the roof. The roof of the structure was a place for gentle exercise from which one could survey the estate. It is set within a lower range, usually of two storeys, and may be placed in the centre of this range or, less often, somewhat to one side of the centre of the range.[7] The ground floor of the gatehouse provides the courtyard house beyond with a carriage entrance more than 5 feet (1.5 metres) in width. There may be a separate pedestrian entrance either within the central part of the great gatehouse or to one side of the main gateway.[8]

Above the ground floor are sizeable rooms on the first and second floors with large windows both front and back. These rooms, often taller than those in other areas of the house, have individual garderobe provision. The room on the first floor may or may not be accessible from rooms on either side of them.[9] Access can be from a stair within one of the protruding, often semi-octagonal turrets flanking the gatehouse. The turrets are more frequently only on the front face of the gatehouse although examples are known with turrets both at the front and the back. Alternatively, the stair may be placed at the rear of the gatehouse or in a separate stair tower, also at the rear of the gatehouse range.[10]

The gatehouse can have a number of functions. A great gatehouse can be used to proclaim the status, wealth, and privileges of the owner, the building's patron. Equally, by providing rooms with garderobe robe provision, the rooms can be used to house important guests, usually one's social superiors, such as a visiting king, queen, or archbishop.

In relation to Layer Marney Tower, and other great gatehouses (listed in Appendix 1), these will be discussed. The discussion will extend to similar aspects of other towered structures within late medieval brick houses, particularly in regard to two of their social functions.

THE GREAT GATEHOUSE AS A STATEMENT OF THE BUILDING PATRON'S WEALTH

Major brick houses with a great gatehouse were built by very wealthy men, many with court connections. In the late 1510s and early 1520s, Henry, first Baron Marney acted as King Henry VIII's chief minister.[11]

In the fifteenth and early sixteenth centuries, at least fifty brick great gatehouses were erected at 47 major newly-built brick houses (see Appendix 1); three of these houses are known to have had two great gatehouses — Whitehall Palace, Westminster, Middlesex;[12] Hampton Court Palace, Middlesex;[13] and Leez

Hall, Little Leighs, Essex.[14] One gatehouse to a house otherwise constructed of brick was built in stone: the archepiscopal Cawood Castle, Yorks.W.R.[15] Several of these gatehouses, especially those constructed in the early sixteenth century and those at educational buildings, had stone quoins. Nine brick great gatehouses were erected at eight educational establishments: six at individual Cambridge colleges,[16] the two gatehouses at Eton College,[17] and one, now demolished, at the former buildings of the Grammar School, Rotherham, Yorks.W.R.[18] Both Leiston Abbey, Suffolk,[19] and the headquarters of the Order of St John of Jerusalem in Clerkenwell, London,[20] are religious buildings with a great gatehouse. Another London building with a brick great gatehouse is Lincoln's Inn, City of London.[21]

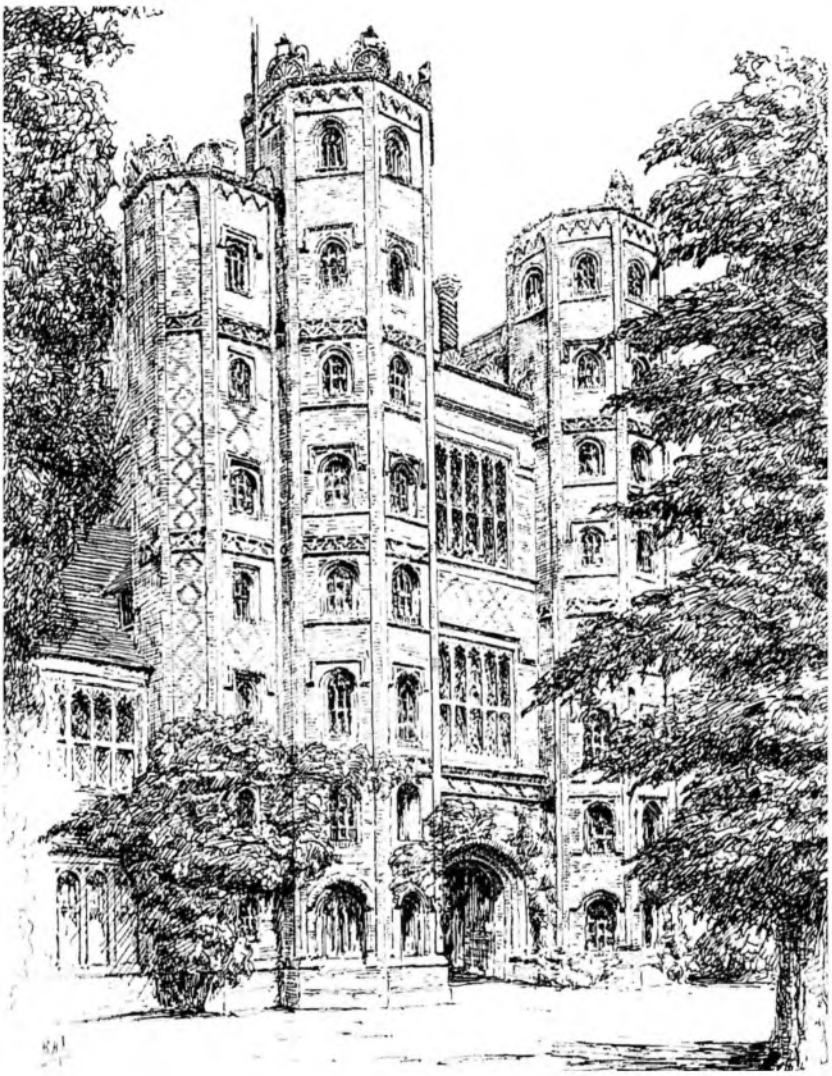

Fig.1 The Great Gatehouse at Layer Marney Tower, Essex.
After drawing by Basil Jackson in T.G. Jackson, *The Renaissance of Roman Architecture Part II England*, Cambridge: Cambridge University Press, 1922, plate 1

Unusually, the gate tower of Thomas Urswick's house at Dagenham was timber-framed within the brick outer wall of a substantial, mainly timber-framed house[22] (not listed in Appendix 1).

One indication of the builder's wealth is his or her other building activities. Marney himself rebuilt the church at Layer Marney where he is buried beneath an ornate terracotta tomb (fig.3).[23]

Among Lord Marney's contemporaries, Sir James Hobart[24] of Hales Hall, Loddon, Norfolk,[25] rebuilt the parish church[26] in the small Norfolk town. Given that it has brick doing the engineering job for the external flint walls, with brick prominent in the voussoirs of the clerestory windows, it is not improbable that these bricks were supplied from the same kiln as that which was erected to produce the bricks for Hales Hall. His wife financed the brick bridge over the River Waveney at Haddiscoe, Norfolk,[27] thereby connecting Loddon and the road from Bury St Edmunds through Harleston, Bungay, and Beccles with Great Yarmouth.

Alternatively, the sparse survival of subsidy returns from the fifteenth and sixteenth centuries and the somewhat fuller records surviving from the 1436 income tax returns[28] will indicate the relative economic position of the builder or his descendants.

The return of the Anticipation of 1523, levied on the seventy richest men and one woman in the county[29] before the subsequent imposition of the subsidy of 1524, lists the highest paying persons in Norfolk, with Sir Edmund Bedingfeld of Oxburgh Hall as paying £200 0*s.* 0*d.* in tax.

A partial subsidy return for Norfolk in 1581, gives the tax paid on landed income by Sir Edmund Bedingfeld of Oxburgh Hall as £200 0*s.* 0*d.*,[30] the same as his grandfather paid six decades earlier. However, the Bedingfelds held to the old faith and had been amerced double.[31] Just to complicate matters, Sir Edmund had been Elizabeth I's keeper (= gaoler) during the reign of Mary Tudor but treated his charge well; even so, at £100 0*s.* 0*d.*, the initial calculation of the tax payment required would far outweigh that assessed on any other taxpayer in the surviving portion of the subsidy returns for Norfolk in 1581.

Surviving returns from the 1436 income tax show that to build a major brick house in the first half of the fifteenth century required a gross *landed* income in England in excess of £400 per annum.[32] Building patrons could manage to lower their tax liabilities by giving annuities which took their assessed income below the £400 threshold for paying one shilling in the pound on one's *total* income, as opposed to 6 pence in the pound on the first £100 of income and 8 pence in the pound on the next £300: an assessed income of £399 meant a tax of £12 9*s.* 4*d.*, a saving of £7 10*s.* 8*d.* for self-assessment at one pound more. The builder of Middleton Tower, Middleton, Norfolk, Thomas Scales, first Baron Scales, was assessed on an income at £394, after paying out annuities to four retainers, worth £12 0*s.* 0*d.*, thus paying tax of only £14 16*s.* 0*d.* and thereby saving himself £5 14*s.* 0*d.*in tax liabilities: his annuities saved him less than he paid out for them but kept him out of the highest tax band:[33] an early example of legitimate tax avoidance.

The annual expected income from English lands of a baron in the mid-fifteenth century was 500 marks (£333 6*s.* 8*d.*), of an earl 1,000 marks (£666 13*s.* 4*d.*), and of a duke 2,000 marks (£1,333 6*s.* 8*d.*).[34] Neither Welsh nor French lands were subject to the 1436 income tax. Many men had the latter and a smaller number the latter.[35]

One may contrast these figures with the daily wage of a bricklayer at 8 pence per day or a building labourer at 5 or 6 pence per day in London.[36] Given a working year of around 200 days, these rates produce an annual wage of around £6 2*s.* 2*d.* for the craftsman between £4 3*s.* 4*d.* and £5 0*s.* 0*d.* for the labourer. Days when a man did not work, whether through religious obligation[37] or sickness or holiday, were not remunerated. Christmas and Easter were periods of limited earnings.[38]

Of the building patrons of great gatehouses in the fifteenth century, Sir Thomas Colt, for whom Nether Hall, Roydon, Essex,[39] was erected, was reckoned to be the richest commoner in England. The building patron of Someries Castle, Stopsley, Luton, Bedfordshire, Sir John Wenlock in 1449 was able to lend the impecunious government of Henry VI the sum of 1550 marks (£1033 6*s.* 8*d.*).[40] It is unclear whether he was reimbursed having asked for the money back in 1456, 1457, and 1459, each time without success.[41]

A prominent location was needed and intended for a brick courtyard house with a great gatehouse. Someries Castle,[42] to the south-east of the small town of Luton but still within the great medieval parish (15,343 acres for its six townships), was one of two brick houses with a great gatehouse in the south of the parish. The other was Luton Hoo, West Hyde,[43] built before 1455 for Baron Hoo and Hastings.[44] Both occupied an elevated site with Luton Hoo to the south-west of the town.[45] The latter occupied part of the site later used for the eighteenth-century stone-built house, visible from the railway line from London St Pancras to Luton and thence to Derby and beyond on the hill above the lake. The demolished Ampthill Castle,[46] built for John Wenlock's mentor, Sir John Cornewall, Baron Fanhope,[47] sat on top of the greensand ridge west of the small town and would have been clearly visible for several miles to the north, east and west, very much as it seventeenth-century successor, Houghton House,[48] is visible today. In Norfolk, Hales Hall, Loddon,[49] south of the town would have figured prominently on the horizon. If the house in in a dip in the road, it and the gatehouse are highly visible. This is particularly true of houses in Norfolk such as East Barsham Manor,[50] or Middleton Tower,[51] or the demolished Beaupré Hall near Wisbech[52] rising out of the surrounding, marshy low ground. The gatehouse at East Barsham has the royal arms in especially-made brick prominently displayed,[53] just to emphasise the status of the building's patron and the quality of the brickmakers and bricklayers he could afford to employ.

THE SOLAR TOWER:
AN ALTERNATIVE STATEMENT OF A MAN'S WEALTH

Earlier, an extremely select group of bishops, holding the destination sees[54] — Winchester, Canterbury, Durham, Ely, York, Lincoln — which enjoyed the highest stipends, had brick-built palaces built for them approximately every 20 miles[55] on the route of their journeys from their diocese to London, to conduct state business. The bishopric was a reward for high government office. Several of their palaces had a great solar tower for the bishop's own use, as at Buckden, Huntingdonshire, for Lincoln;[56] Cawood, Yorkshire, for York;[57] Downham Tower, Cambridgeshire, for Ely;[58] or Esher, Surrey, for Winchester.[59] More often the house was quadrangular with a gatehouse as at Hatfield, Hertfordshire, built by John Morton when Bishop of Ely.[60] An alternative, as at Newark and Sleaford for the Bishop of Lincoln is an updating of one of the bishop's castles: both are approximately a day's ride from Lincoln.

Esher for Winchester and Cawood for York were unusual in having both a brick solar tower and a great gatehouse. However, the stone-built gatehouse at Cawood was erected during the long episcopate of John Kempe (bp.1426-1450), with his arms on the outer wall, but the brick solar tower was most probably work done for Thomas Rotherham who was archbishop between 1480 and his death in 1500: Rotherham was previously responsible for financing the building of the great solar tower at Buckden when Bishop of Lincoln between 1474 and 1480.[61]

Like the great gatehouse, the solar tower was a statement of the builder's wealth. The solar tower was a set of private quarters for the lord, and if married his lady, a completely different function to that of the great gatehouse. Only the very richest men could afford the luxury of building one. Incomes, where known, vary from £1007 in 1436, rising to £2,356 in 1453, for Ralph, third Baron Cromwell, at Tattershall Castle[62] to the annual episcopal stipends of Thomas Rotherham — £1878 at Lincoln, £2077 at York — and William Waynflete, £3,885 at Winchester.[63]

Some men who built a great gatehouse at their new brick house often had a taxable income in 1436 of not much more than £400.[64]

The solar tower was a far less common structure than the great gatehouse. A solar tower is known to have been built at eleven sites in England of which five are in Lincolnshire — Gainsborough Old Hall, which is polygonal;[65] Tattershall Castle;[66] Hussey Tower in Boston;[67] Rochford Tower, Skirkbeck near Borton;[68] and Aysgoughfee Hall, Spalding[69] — with other rectangular examples at Cawood Castle, Yorkshire, now demolished but known from an eighteenth-century drawing;[70] Buckden Palace, Huntingdonshire;[71] Faulkbourne Hall[72] and Maldon Tower,[73] both in Essex; Esher, Surrey, now demolished but known from an archaeological excavation;[74] and the round tower on the outer north-west corner of the inner courtyard at Caister Castle, Norfolk.[75]

A solar tower has three or four storeys and a roof terrace; it may also have a basement. The roof terrace has a similar function to that on the top of a great gatehouse, particularly to view the estate. From the top of Caister Castle there is a good view of the core of Fastolf's estate in both east Norfolk and what were then parishes in northern Suffolk. The landholding in Gorleston and Bradwell, on the south side of Breydon Water, a great tidal expanse behind the sand spit on which Great Yarmouth was built, would be clearly visible. Similarly, from Burgh Road, Bradwell, you can see the top of the tower of Caister Castle above the trees on the north side of the rivers Yare and Waveney, which converge to form Breydon Water.[76]

In his study of one solar tower — Hussey Tower, Boston[77] — the late Terence Paul Smith put thirteen similar structures on his map of 'tower houses' which, strictly speaking, combine the great hall with the kitchen on the ground floor, and the functions of the solar tower on the upper floors. By this definition, the 'tower house' is one without a separate building for the great hall. Of the thirteen examples on the map, three, probably five, were a tower house, without a separate great hall, either attached or adjacent: Drayton Lodge, near Norwich, Norfolk;[78] Hunsdon, Hertfordshire;[79] West Wickham, Kent;[80] the Tower-on-the-Moor, Woodhall Spa, Lincolnshire,[81] and probably both the fragment preserved within Repton School, Derbyshire;[82] and the now demolished brick tower on Deneside, Great Yarmouth, Norfolk, which was built as Sir John Fastolf's house in the town and is depicted on the 1560s town map;[83]

Two buildings not included in Terence's map — the demolished brick tower at West Butterwick, Lincolnshire,[84] and the enigmatic Paull Holme Tower, Yorkshire East Riding[85] — could have been built as either a solar tower or functioned as a tower house.

One of the tower houses on Terence Smith's map, the brick gatehouse at Farnham Castle, Surrey,[86] was designed to accommodate important guests and so should be seen as a great gatehouse. The Bishop of Winchester had his own, designated quarters elsewhere in the castle complex.

Four decades ago, Terence Smith publicised the suggestion that the solar tower was an expression of the presence of a 'great man' (meaning a very wealthy man and/or a politically important figure).[87] One of his examples was Tattershall Castle to which may be added Caister Castle, the builders of which, Ralph, third Baron Cromwell, and Sir John Fastolf, declared *landed* incomes in England in 1436 of £1007 and £600, respectively, at the time when these structures were being built.[88] The comparative size of the solar towers at Tattershall Castle and at Caister Castle are proof of the not inconsiderable difference in income of the builders.

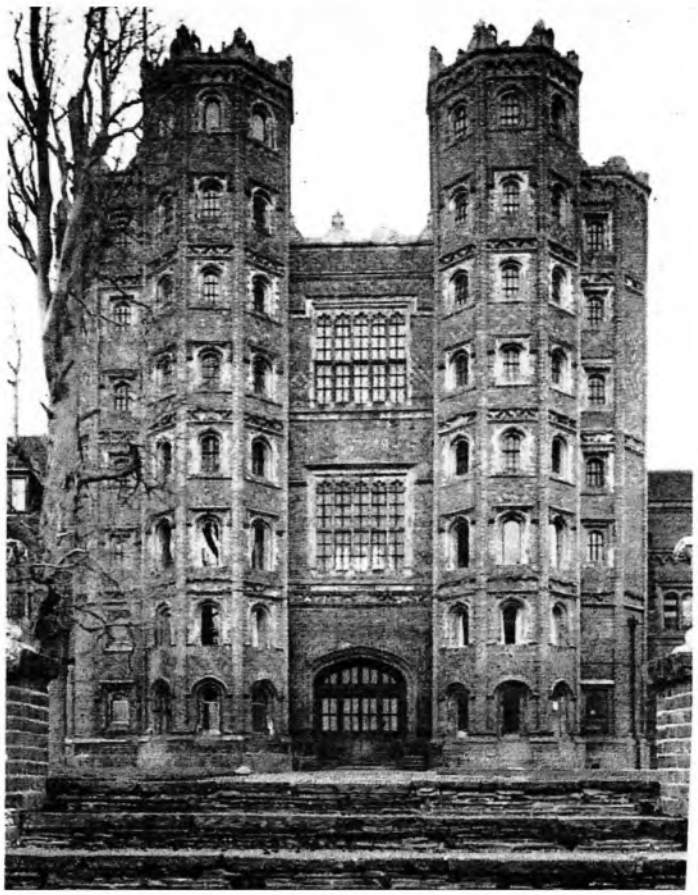

Fig.2 Layer Marney Tower, Essex, the south front.

THE GREAT GATEHOUSE AS LODGING FIT FOR A KING

When the late Queen Elizabeth II (*r.*1951-2022) wished to pay a state visit the Republic of Ireland in 2011, by that year almost the only country in the world which she had not visited in an official capacity, the question was asked 'Where would she sleep?' Various sites were considered but in accordance with Irish state protocol, for the duration of her visit, her majesty and her husband, Prince Philip, Duke of Edinburgh, were accommodated at the Fernleigh State Guest House in Phoenix Park, Dublin.[89]

The same question would have been asked half a millennium earlier in respect of Tudor monarchs from Henry VII to his grandchildren, each of whom went on progress in the summer months.[90] Like their medieval predecessors, they were peripatetic but from the late 1530s onwards without the advantage of being able to be lodged in requisite splendour in the abbot's lodging of a monastery.[91] However, several grandees did open up otherwise little-used former monastic properties which they or an ancestor been granted by Henry VIII as reward for government service: the Earl of Bedford 'opened up' Woburn Abbey for two days in 1572.[92]

By the last four decades of the sixteenth century, those whom Elizabeth I visited or who wished to be visited by her were in no doubt of the answer: they must to build magnificently. Elizabeth had inherited

over forty palaces from her father and so had no need to build new ones.[93] She relied on her courtiers and state officials to construct suitable accommodation for her projected visit, even if the much anticipated visit was not realised. As one unvisited courtier, Sir Christopher Hatton, is reputed to have remarked to the much-visited William Cecil, Lord Burghley, 'we build for she whose favour we implore.'[94]

The great gatehouse was three or more storeys high within the front range of the principal court of the two storeys of a brick courtyard house. It had a carriage entrance on the ground floor and possibly a separate pedestrian entry. On the first and second floors were large rooms of considerable height, each with garderobe provision. Facing the approach to the house, the gate itself is usually set between two protruding towers, one of which could include a spiral stair. There is also the possibility of flanking towers at the rear of the gatehouse, but as at Layer Marney the back wall of the gatehouse is generally flat and plain. However, some gatehouses also have a pair of rear towers, notably those at five Cambridge colleges.[95]

As Henry VIII's principal minister, Henry Marney would have been expected to entertain the king. The monarch would need somewhere suitably palatial in which to sleep. One advantage of the gatehouse was the large room with private garderobe facilities.

Later monarchs were obviously accommodated within gatehouses. On their journey south in 1606, when they got to Luton, James VI and I was accommodated by Sir Robert Napier in the great gatehouse at Luton Hoo, East Hyde, while his queen, Anne of Denmark, was given lodgings in the large room on the first floor of the great gatehouse at Someries Castle,[96] at the southern end of Stopsley,[97] another of Luton's six townships.[98] The latter's sojourn led to the room she had occupied being referred to as 'The Queen's Room' in the inventory of the widowed Lady Rotherham in 1623.[99] The room in the second storey of the gatehouse was called 'the room above the Queen's Room' in the same inventory. In 1606, it was presumably used by female members of her staff. Previously, the visit in 1474 to Someries Castle of Thomas Rotherham, Bishop of Lincoln, who was then Lord Privy Seal, the second most important secular job in Edward IV's government, would have meant that he occupied the same rooms,[100] as surely, the then Archbishop of York would have done in 1491 when he came south to conduct his mother's funeral in Luton parish church, having provided her with a stone tomb chest identical to his own in York Minster.[101]

An early example of monarchs being entertained by their subjects and the rooms bearing designations as 'The King's Room' and the Queen's Room' is when Henry VII and Elizabeth of York were at Oxburgh Hall, Norfolk in 1487.[102] The rooms still have the same names.

THE BRICK PROSPECT TOWER: A SIXTEENTH-CENTURY ALTERNATIVE BUILDING IN WHICH TO HOUSE A MONARCH

A small number of Tudor buildings have a different solution to the problem of providing suitable accommodation for a visiting monarch, the prospect tower. At Kenilworth Castle, Warwickshire, for the visit of Queen Elizabeth I in 1572, Robert Dudley, Earl of Leicester, had erected a great tower of the local red sandstone in the latest post-Renaissance style.[103] It was a suitably prestigious lodging for his childhood playmate who was now his sovereign lady.

Thomas Darcy built a prospect tower in flint at St Osyth Priory, Essex,[104] for the visit of Elizabeth I in 1589. Similarly, Sir Thomas Hoby erected a stone and brick prospect tower at Bisham Priory[105] in the early 1550s although it is not certain that any of the three children of Henry VIII — Edward VI, Mary Tudor, or Elizabeth I — every visited the house.[106]

Like the great gatehouse or the solar tower, the prospect tower could equally be a statement of the building owner's wealth and cultural sophistication.

LAYER MARNEY TOWER: WEALTH, PRESTIGE, AND EXPECTATION

Layer Marney Tower belongs to a select group of not more than about a hundred brick-built structures, not all now extant, which were built between about 1430 and 1550 which were meant to demonstrate the owner's wealth, his prestige, and his expectations and ambition.

APPENDIX 1
GREAT GATEHOUSES AT MAJOR BRICK BUILDINGS

County Building Place Patron	Construction date	Notes
1 DOMESTIC BUILDINGS		
Bedfordshire		
Luton Hoo East Hyde Lord Hoo and Hastings (*d.*1455)	Before 1455	Estate split between daughters, 1455. New building, early C17 by Napier. Illustrated in drawings by Sandys. Accommodated James VI and I, 1606. 60 hearths in 1671. Demolished 1760s.
Someries Castle Stopsley, Luton (now West Hyde) John, Lord Wenlock (*k.*1471)	1440s and 1450s	Leland says 'begun by Lord Wenlock but not finished.' Later owners, the Rotherham and Crawley families, insufficiently wealthy for rebuilding. Accommodated Anne of Denmark, 1606. House had 23 hearths in 1671. Sold 1724; Most demolished 1742,
Cambridgeshire		
Kirtling Tower Kirtling Edward, 1st Baron North (*d.*1544)	1530s	Gatehouse is only surviving part of courtyard house. Red brick, stone quoins. Demolitions, 1752 and 1801.
Essex		
Ingatestone Hall Ingatestone Sir William Petre (*d.*1572)	1539-48	Gateway from west range of base court of triple courtyard house survives.
Layer Marney Tower Layer Marney Henry, 1st Lord Marney (*d.*1523) Henry, 2nd Lord Marney (*d.*1524)	Before 1525	Three storeys with polygonal turrets of eight storeys. Red brick and red terracotta

Leez Hall Little Leighs Sir Richard Rich (*d.*1568)	1537-41	Two gatehouses; smaller one to the world; larger one to demolished inner courtyard
Nether Hall, Roydon Sir Thomas Colt (*d.*1467)	Mid C15	Gatehouse survives, in ruins, from courtyard house, within moat. Diaper on turrets. Much is demolished.
Hampshire		
Warblington Castle Warblington Margaret Pole (*ex.*1541)	1514-26	Part of 3 storey gatehouse with 4-storey turret survives from major house. Rest demolished. No entry in 1665 Hearth Tax.
Hertfordshire		
Hadham Hall Little Hadham William Capel or Henry Capel	either after 1504 or *c.*1575	Complete by 1578 when Henry Capel was visited by Elizabeth I. House much reduced *c.*1668. Three storey gatehouse, wide turrets.
Old Palace Hatfield John Morton, Bp. Ely (*d.*1500)	Before 1485	Hall range from quadrangular house. Rest demolished in early C17.
Hertford Castle Hertford King Edward IV (*r.*1461-1483)	1465	Gatehouse from royal house. Building supervised by John, Lord Wenlock.
The Lordship Standon Sir Richard Sadlier (*d.*1541)	1546	Largely demolished house, known from drawing. Polygonal turrets to gateway.
Kent		
Greenwich Palace Now L.B. Greenwich Humphrey, Duke of Gloucester Henry VII (*r.*1485-1509) Henry VIII (*r.*1509-1547)	Begun *c.*1430 Later work	Palace demolished for Royal Naval College. Wynegarde drawing.
Lullingstone Castle Lullingstone Sir John Peche (*d.*1522)	1530s	Broad, 2 storey outer gatehouse with 3 storey, square turrets.

Shurland Castle Isle of Sheppey Sir Thomas Cheyney (*d.*1558)	1529-32	Gatehouse façade in front range survives.
Leicestershire		
Kirby Muxloe Castle Kirby Muxloe William, Lord Hastings (*ex.*1484)	1480-1484	Unfinished building.
Middlesex		
Hampton Court Palace L.B. Richmond Thomas Wolsey (*d.*1530) King Henry VIII (*d.*1547)	Before 1529	Two gatehouses; outer one was 5 storeys, now reduced to 3 storeys. Inner gatehouse, 3 storeys with clock to first court.
St James Palace City of Westminster King Henry VIII (*r.*1509-41)	1536-40	4 storey gatehouse, 7 storey turrets
Holbein Gate King's Gate Whitehall Palace City of Westminster King Henry VIII (*r.*1509-1547)	1530s	Two gates spanning Whitehall. Holbein Gate designed to give privacy when accessing the recreational area of the palace. Burnt down 1698 and subsequently demolished.
Gatehouse West Drayton Sir William Paget (*d.*1563)	After 1547	Gatehouse and turrets now reduced to 1 storey. Inventory, 1566, lists 50 rooms.
Norfolk		
Beaupré Hall Outwell Nicholas Beaupré (*d.*1512) Edmund Beaupré (*d.*1557)	Early C16	Gatehouse demolished about 1966. Only part of courtyard house extant. Hearth Tax return missing.
East Barsham Hall East Barsham Sir Henry Fermour	1525-35	Outer gatehouse, 2 storeys, in brick wall, Hearth Tax return missing.

East Harling Hall East Harling Sir Thomas Lovell (*d.*1524)	Early C16	Demolished house. Gatehouse had Pietro Torrigiano roundel of Lovell on front. Part demolished before mid-C17. 9 hearths in 1664.
Hales Hall Loddon Sir James Hobart (*d.*1517)	Early C16	Courtyard house within moated platform, now demolished. Base of gatehouse excavated. 20 hearths in 1664. Present farm house from front court with C15 brick barn opposite.
Middleton Towers Middleton Thomas, Lord Scales (*k.*1460) Baroness Scales (*fl.*1460s-1483)	Before 1460	Restored gatehouse from unfinished courtyard house. 11 hearths in 1664.
Oxburgh Hall Oxborough Sir Edmund Bedingfeld (*d.*1496)	1480s	Big gatehouse with front turrets to . quadrangular house. Owner entertained Henry VII and Elizabeth of York in 1487. 37 hearths in 1664.
Shelton Hall Shelton Sir Ralph Shelton (*d.*1497)	1450s	House demolished. Known from C18 drawing, showing double courtyard house.
St Mary's Hall Wiggenhall St Mary the Virgin Kerville	Early C16	Ruinous in 1740. Gatehouse is only surviving part of older house. 32 hearths in 1664. New house built 1864.
Nottinghamshire		
Hodstock Priory Hodstock Clinton	Early C16	Gatehouse only 2 storeys. 25 hearths in 1664.
Holme Pierrepoint Hall Holme Pierpoint Sir Henry Pierrepoint (*d.*1497)	*circa* 1500	Gatehouse incorporated in later development of the house. 63 hearths in 1664.

Oxfordshire		
Hanwell Hall (later Hanwell Castle) Hanwell Sir Anthony Cope	1490 onwards	Square gatehouse within range with corner towers remains from large courtyard house. 27 hearths in 1665.
Rycote House Rycote John, Lord Williams (*d.*1559)	1539-59	House largely destroyed in fire, 1745. Large towers to gatehouse. 41 hearths in 1665.
Shirburn Castle Shirburn Sir Edward Chamberlayne (*d.*1543)	Late C15 origins	Quadrangular house now mainly C18 in appearance. Evidence of older gatehouse with polygonal turrets. 32 hearths in 1665.
Staffordshire		
Pillaton Hall Pentridge Richard Littleton	Late C15	Brick gatehouse range with chapel of stone survives from quadrangular on moated site. Circular turrets.
Suffolk		
Denston Hall Denston John Broughton (*d.*1479)	Before 1479	Re-fronted in C18 when gatehouse . façade was flattened; polygonal turrets removed. Gatehouse demolished between 1676 and 1778. 18 hearths in 1674.
Gedding Hall Gedding Sir Edward Chamberlayne (*d.*1521)	Early C16	Tall, red brick gatehouse
Gifford's Hall, Stoke-by-Neyland William Mannock	1482 onwards	Gatehouse has polygonal turrets to. courtyard house with plan an irregular quadrilateral. 27 heaths in 1674.
Deanery Tower Hadleigh William Pykenham (*d.*1497) Dean of Hadleigh with other offices.	1480s	Stand-alone gatehouse-like structure in brick wall. Builder was rich cleric. 4 hearths in 1674.Gainsborough overmantle shows Deanery Tower in front of timber-framed rectory.

Hengrave Hall Hengrave Sir Thomas Kytson (*d.*1552)	Early C16	House and gatehouse begun in brick but continued in monastic stone. 51 hearths in 1674.
West Stow Hall West Stow Sir John Croftes	1520-33	Tunnel-like structure of 2 storeys, extended in late C16. Most of house demolished in C18. 17 hearths in 1674.
Cockfield Hall Yoxford Sir Owen Hoton	*c.*1540	Gatehouse and north range from larger house survive. 18 hearths in 1674.
Surrey		
Waynflete's Tower, Esher William Waynflete, Bp Winchester (*d.*1482)	1462-72	Converted into a house in 1719. William Kent gave it a Gothick appearance. Square tower with broad polygonal turrets. 34 hearths in 1664.
Waynflete's Tower Farnham Castle Farnham William Waynflete, Bp Winchester (*d.*1486)	1470-75	Square tower with off-centre entry. Red brick with black brick diaper. Given sash windows in C18. 33 hearths in 1664.
Lambeth Palace L.B. Lambeth John Morton, Abp Canterbury (*d.*1500)	1490-95	Broad, 2 storey gatehouse with big, 5 storey, square turrets. 59 hearths in 1664.
Richmond Palace L.B. Richmond-on-Thames King Henry V (*r.*1413-1422) King Henry VI (*r.*1422-1460) King Henry VII (*d.*1509)	1500 onwards	Rebuilding of Henry V's brick-built palace which burnt down in 1498.
Sutton Place Send Sir Richard Weston (*d.*1542)	1521-33	Gatehouse demolished with rest of north range in 1786. 27 hearths in 1664. Post-demolition engraving, 1769.
Sussex		
Bolebrooke Hartsfield - Dayrell	Early C16	Irregular plan, within gabled house.

Hurstmonceux Castle Hurstmonceux Sir Roger Fiennes (*d.*1450)	1441 onwards	Courtyard house with moat. Substantial gatehouse.
Wiltshire		
Littlecote Chilton Foliot - Dayrell	Early C16	Within Elizabethan house.
Yorkshire West Riding		
Cawood Castle Cawood John Kempe, Abp York	1426-51	Gatehouse is stone in brick ranges Other brick buildings demolished, including brick solar tower

2. *EDUCATIONAL BUILDINGS*

Buckinghamshire		
Eton College, Eton Lupton's Tower Roger Lupton (*d.*1540), Provost 1503-35	1517-21	Built as lodging for the provost.
Cambridgeshire		
Christ's College, Cambridge Lady Margaret Beaufort (*d.*1509) John Fisher, Bp Rochester (*ex.*1535)	Before 1509	External Walls of the college faced in stone, including gatehouse, *c.*1772.
Jesus College, Cambridge John Alcock, Bp Ely (*d.*1500)	1496 onwards	On site of nunnery of St Radegund. No flanking semi-octagonal towers on sides of square gatehouse.
King's College, Cambridge (now part of Old Schools) King Henry VI (*r.*1422-1460)	1441	Gatehouse left unfinished in west range of original scholastic building. Gatehouse completed 1890.

Magdalene College, Cambridge Abbot of Crowland in C15 Thomas, Lord Audley (*d.*1544)	1428 onwards	Founded as Buckingham College for education of young monks of four Benedictine abbeys: Crowland, Ely, Ramsey, and Walden. Re-founded 1542 as Magdalene College.
Queens' College, Cambridge Queen Margaret of Anjou Queen Elizabeth Woodville Andrew Doke (*d.*1484)	1448 onwards	Gatehouse has rear towers.
St John's College Cambridge Lady Margaret Beaufort (*d.*1509) John Fisher, Bp Rochester (*ex.*1535)	1511-16	Broad outer gatehouse, polygonal turrets. Prominent Beaufort arms. College enlarged: 1598-1602 second court, and 1669-71, third court.
Trinity College Cambridge King Henry VIII (*r.*1509-47)	1519-35	Originally gatehouse of King's Hall. Henry's foundation in 1546 includes Michaelhouse and Physick Hostel.
Yorkshire West Riding		
The Grammar School Rotherham Thomas Rotherham, Abp York (*d.*1500)	1483	2 storeys, with gatehouse. Part of gatehouse extant in 1960s. Now demolished.

3. MONASTIC BUILDING

Suffolk

Leiston Abbey Leiston	Early C16	Brick gatehouse, now ruin, within west range of demolished stone-built cloister.

4. LEGAL BUILDINGS

City of London

Lovell's Gateway (Old Gateway) Lincoln's Inn Sir Thomas Lovell (*d.*1524)	1518	Broad gatehouse, square turrets at front and back. Red brick.

NOTES

1. Counties are those applicable in C15-C17, before C19 and C20 changes.

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[in county order]

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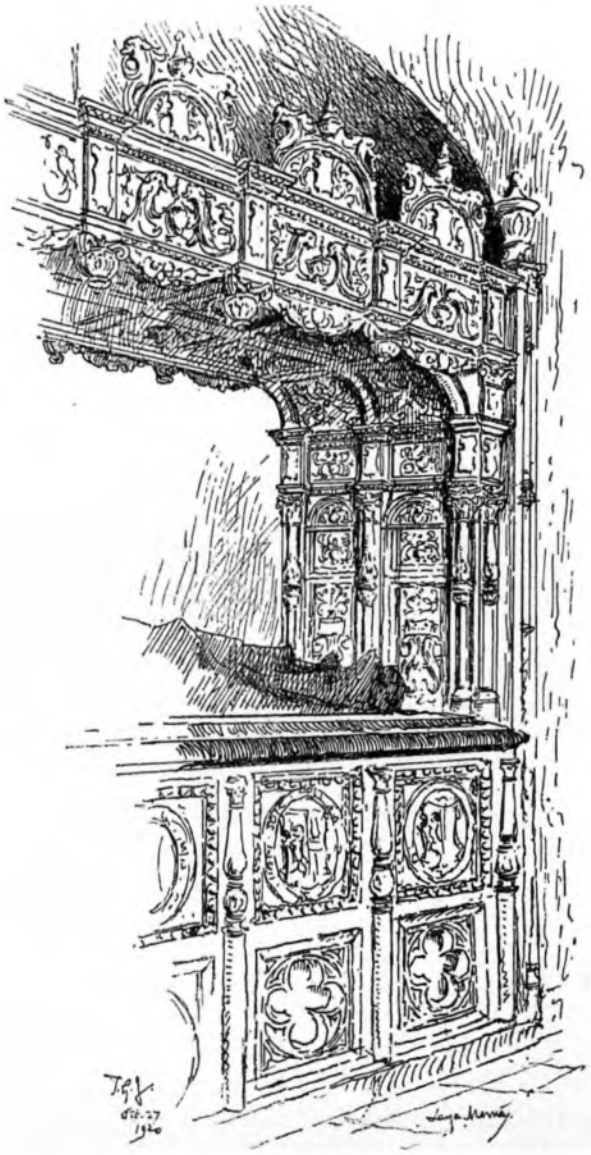
Fig.3 The tomb of Sir Henry Marney
After drawing by Basil Jackson (as Fig.1)

Tomb at
Layer
Marney



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RCHM
Royal Commission on Historical Monuments

RCHM, *Bucks.,*
RCHM, *An Inventory of the Historical Monuments of Buckinghamshire,* London: HMSO, 1912-1913, Two volumes: I North; II South

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AUTHOR'S NOTE TO BIBLIOGRAPHY AND REFERENCES

This paper has been written largely with the aid of books on the author's shelves, including some of the volumes of the Royal Commission on Historical Monuments' volumes; others of this series and those of the *Victoria County History* series have been consulted either online or in Oxford Central Library.

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1. The principal secondary sources for Layer Marney Tower are RCHM, *Essex* **3,** North East, 1922, pp.155-160; *BE: Essex,* pp.526-529 and pl.56; Wight, 1972, pp.256-257.
2. For Sir Henry Marney see J.P. Carley, 'Marney, Henry first Baron Marney (1456/7-1523)', *ODNB,* **36,** 2004, pp.735-736.
3. For the 2nd Lord Marney see a brief note at the end of his father's entry in *ODNB.*
4. Wight, 1972, p.257.

5. Evidence for the practice of allowing buildings to settle see D.H. Kennett, 'How Many Bricks are there at Tattershall Castle?' *BBS Information,* **147,** March 2021, pp.5-25, and the evidence of bequests to the construction of church towers over a couple of decades or more. The complex interaction between economics, the availability of building materials, and the need for each year's work to settle in building process of the erection of brick church towers in the late Middle Ages would repay further investigation.
6. Kennett, 2021: Tattershall Castle was supplied by more than one kiln. Also, H.D. Barnes and W.D. Simpson, 'Building Accounts of Caister Castle, 1433-1436', *Norfolk Archaeology,* **30,** 1952, pp.178-188. The brickmakers at Caister Castle fired both of their kilns up to three times a year.
7. Examples of brick great gatehouses placed off centre include Hales Hall, Loddon, Norfolk, built for Sir James Hobart, and the original, fifteenth-century, east entrance to Kentwell Hall, Long Melford, Suffolk, built for the Clopton family. See n.24, *infra* for Hales Hall and *BE: Suffolk: West,* pp.396-399, no plan, and pl.56, for Kentwell Hall.
8. An example of a separate pedestrian entry beside the great gatehouse include Someries Castle, near Luton, Bedfordshire: see note 40, *infra,* for references. Lambeth Palace has a pedestrian entrance within the main gateway: see *Survey of London,* **23,** *Lambeth: South Bend and Vauxhall,* London: London County Council, 1951, pp.81-83 [part of pp.81-103 with pls.60-83]; RCHM, *London,* **2,** *West London,* London: HMSO, 1925, pp.80-83 [part of pp.80-86 with pls.129-135]; Wight, 1972, p.311 with pls.28 and 29; *BE London: South,* 1983, p.342.
9. A good example of the first floor of the great gatehouse being accessible from at least one room in the adjacent range is at Oxburgh Hall, Norfolk.
10. Someries Castle, Bedfordshire, has a stair tower with a brick newel stair placed west of the gatehouse at the rear of the north range; access is from the courtyard on the ground floor, to the balcony connecting the first-floor rooms, and originally providing direct access to the second-floor room and the roof of the gatehouse.
11. See n.2, *supra.*
12. As demolished buildings, the medieval and early Tudor Whitehall Palace and its two great gatehouses, spanning Whitehall, are not considered RCHM, *London,* **2,** *West London.* Good descriptions S. Thurley, *The Whitehall Palace Plan of 1670,* [being *publications of the London Topographical Society,* **158,** 1998]; S. Thurley, *Whitehall Palace: An Architectural History of the Royal Apartments, 1240-1690,* New Haven and London: Yale University Press in association with Historic Royal Palaces, 1999; S. Thurley, *Whitehall Palace: The OFFICIAL Illustrated History,* London: Merrell, for Historic Royal Palaces, 2008. Brief note, Wight, 1972, p.313.
13. Hampton Court Palace is considered RCHM, *Middlesex,* 32 and pl.74; the most extensive account of the palace occupying pp.30-48 with plans, and pls.72-122 of the RCHM volume. See also M. Robbins, *Middlesex,* London and Glasgow: Collins, 1953, reprinted Chichester: Phillimore & Co, 2003, pp.266-272 with plan.
14. For Leez Hall, Little Leighs see RCHM, *Essex,* **2** *Central and South-West,* 1921, pp.157-167; *BE: Essex,* pp.531-533 with plan; Wight, 1972, pp.258-260 and pls.69-74.
15. Cawood Castle, Yorks W.R., was a quadrangular manor house, of which the gatehouse range survives; D.H. Kennett, "Thomas Rotherham: a Fifteenth-Century Bishop and Builder in Brick: a preliminary note', *BBS Information,* **112,** 2010, pp.6-18.
16. Cambridge colleges with a brick great gatehouse are Christ's College, built 1439-42, see RCHM, *Cambridge,* pp.25-37; Jesus College, built 1496, see RCHM *Cambridge,* pp.81-98; King's College, begun 1441 but not completed until 1890, now part of Old Schools, see RCHM, *Cambridge,* p.17 (within Old Schools, pp.11-18 with plans); Queens' College, built 1448, see RCHM, *Cambridge,* pp.167-178; St John's Collage, built 1507-10, see RCHM, *Cambridge,* pp.187-202; and Trinity College, built 1546, see RCHM, *Cambridge,* pp.209-244. See also *BE: Cambs,*2014, pp.58-66 (Christ's College); *ibid.,* pp. 112-122 and pl.40 (Jesus College); *ibid.,* pp.247-248, (King's College, under Old Schools); *ibid.,* pp.176-184 (Queen's College); *ibid.,* pp.192-208 with drawing of front (St John's College); *ibid.,* pp.215-234 with pl.39; (Trinity College).
17. RCHM, *Bucks.,* **II,** *South,* 1913, pp.142-159.
18 Photograph in author's collection of the surviving half of the arch of the gatehouse, kindly supplied many years ago by Rotherham Public Library. The building had a number of different uses in the final century of its 500-year history, all of which were outside of education.
19. Personal observation in the mid-1980s. T.P. Smith was with me on one of my visits; he made some notes and drew a sketch of the now isolated brick gatehouse and its decorative brickwork, but these notes were not written up nor found in his flat when acting as executor. Briefly noted *BE: Suffolk: East,* 2015, p.393, and Wight, 1972, pp.369-370.
20. P. Temple, ed., 'St John's Church and St John's Gate' in *Survey of London,* **46,** *South and East Clerkenwell,* New Haven and London: Yale University Press for English Heritage, 2006, pp.115-141. The gatehouse is brick-built but faced in stone.
21. RCHM, *London,* **2,** *West London,* pp.43-63 with pls.69-75; pl.69 shows the gatehouse. None of the other Inns of Court has a surviving great gatehouse.

22. Thomas Urswick's demolished house in Dagenham is illustrated by P. Morant, in *History and Antiquities of Essex,* 1768, reprinted 1978. Sir Thomas, his wife and children have a brass in the church of St Peter and St Paul, Dagenham (the parish church of the pre-1920 village). The author's notes on Urswick, made for a paper given at the International Congress of Medieval Studies, Western Michigan University, Kalamazoo, in May 2010, entitled 'Court Fashion and Country Lady: Who was wearing the Butterfly Headdress?', have yet to be located although lists of the wearers of the butterfly headdress and their houses are available. The brass is illustrated *BE: London: 5: East,* 2005, p.151.
23. *BE: Essex,* 2007, p.530. The terracotta tomb is considered in T.P. Smith, 'Early Tudor Architectural Terracottas in England: Aspects of Production', *BBS Information,* **159,** 2025, forthcoming.
24. For Sir John Hobart see E.W. Ives, 'Hobart, Sir James (*d.*1547)', *ODNB,* **27,** 2004, pp.374-375.
25. *BE: Norfolk I,* pp.376-378 with plan (under Hales); Wight, 1972, pp.332-333 for the surviving range and barn.
26. The author's collection includes a large photograph of the exterior of Loddon parish church where the brick voussoirs of the arches over the windows of the clerestory are clearly visible. The plaster of the north aisle fell down during the wedding of two archaeological colleagues in the 1980s revealing the brick interior walls. Information from the couple.
27. Haddiscoe bridge is briefly noted *BE: Suffolk: East,* 2015, p.477 under St Olaves. Before the 1520s there had only been a ferry. The present bridge is the third on the site.
28. H. Gray, 'Incomes from Land in England in 1436', *English Historical Review,* **49,** 1934, pp.609-639. For an analysis see D.H. Kennett, 'Early Brick Houses in England: Patrons and Incomes', *BBS Information,* **98,** 2005, pp.6-13; see also the summary given D.H. Kennett, 'Patrons and Incomes: Builders of Brick Houses in England before 1461', *AVISTA Forum Journal,* **15,** Fall 2005, pp.41-43.
29. D.H. Kennett, 'Taxes and Bricks: Wealthy Men and their Buildings in Early Tudor Norfolk', *BBS Information,* **33,** 1984, pp.5-22, using W. Rye, ed., 'Norfolk Subsidy Roll 15 Henry VIII [1524]', *Norfolk Antiquarian Miscellany,* **2,** 1883, pp.399-410.
30. Kennett, 1984, p.6, using E.D. Stone, ed., 'The Lay Subsidy of 1581', *Norfolk Record Society,* **17,** pp.96-117. For the genealogy of the various branches of the Bedingfeld family see W. Rye, ed., *The Visitation of Norfolk Anno 1563,* [being *Harleian Society Publications,* **32,** 1891], pp.25-32.
31. Elizabeth I is reputed to have said 'I have no wish to enquire into a man's soul' implying that the old faith was acceptable if deviant provided that on any tax raised you would have to pay double and not to commit treason. (The law on treason remains unaltered from the thirteenth century). She had the same attitude to extreme Protestants.
32. Kennett, 2005, 10.
33. For Lord Scales see Helen Castor, 'Scales, Thomas, seventh Baron Scales (1399?-1460), *ODNB,* **49,** 2004, pp.175-176.
34. That for a baron is seen as half that of an earl.
35. Knights who enjoyed 'the profits of war' with France include Sir John Fastolf of Caister Castle, Norfolk, and Sir John Wenlock, of Someries Castle Luton, Bedfordshire; both houses are built of brick and financed by the windfall of their French income. See K.B. Macfarlane, 'The Investment of Sir John Fastolf's profits of war', *Trans. Royal Historical Society,* 5th ser., **7,** 1957, pp.81-116.
36. Much information on building worker's pay in London in V. Harding and L. Wright, *London Bridge: Selected Accounts and Rentals,* [being *London Record Society,* **31,** 1995], pp.195-241. D.H. Kennett has been working on a paper, 'Shared Assumptions or Conflicts of Interest: Patron and Brickworker in late Medieval England', *BBS Information,* forthcoming. The paper was originally prepared as a presentation to a conference on Medieval Brickwork in Belgium in 2011, which the author was unable to attend due to jet lag causing him to feel extremely unwell.
37. See the pay list for two bricklayers in 1537-38 in Harding and Wright eds, 1995, and utilised in T.P. Smith, 'Working for the Bridge Wardens, 1537-1538', *BBS Information,* **142,** 2019, pp.10-20.
38. Two weeks' holiday for building workers was imposed from Christmas Day (25 December) to the Feast of the Epiphany (6 January) inclusive, echoing the agricultural practice of Plough Monday (the first Monday in January) when the plough was drawn round the alehouses of the village for a whole day before the men went back to ploughing on the Tuesday. Easter had five days of religious obligation from Good Friday to Easter Tuesday (inclusive) and the Easter period might also include the Feast of the Annunciation (25 March), or St George's Day (23 April) and St Mark's Day (25 April).
39. RCHM, *Essex,* **2,** *Central and South-West,* 1921, pp.208-209, and pl.91; Wight, 1972, p.265; *BE: Essex,*pp.651-652; definitively, now, D.D. Andrews, 'Nether Hall: A fortified manor of the Wars of the Roses', *Essex Archaeological Transactions,* **35,** 2004, pp.78-97.
40. J.S. Roskell, 'John Lord Wenlock of Someries', *Publications of the Bedfordshire Historical Record Society,* **38,** 1958, p.27.
41. Roskell, 1958, p.32.

42. T.P. Smith, 'Someries Castle', *Bedfordshire Archaeological Journal,* **3,** 1966, pp.35-51; T.P. Smith, 'The Early Brickwork of Someries Castle, Bedfordshire, and its Place in the History of English Brick Building', *JBAA,* **129,** 1976, pp.42-58; A.R. Brondarbit, *Soldier, Rebel, Traitor, John, Lord Wenlock and the Wars of the Roses,* Barnsley and Philadelphia: Pen & Sword, 2022, pp.46-47. The administrative move from Stopsley to Hyde and so outside the modern Borough of Luton is very recent coinciding with the building of the present fence on the southern perimeter of Luton Airport in 1964, when Luton, briefly, became a County Borough (unitary authority): the fence is now the modern borough's southern boundary. Historically, Someries Castle was at the south end of Stopsley and tax returns, e.g. for the Hearth Tax, give assessments under Stopsley.
43. The fifteenth-century house at Luton Hoo was enlarged by Sir Robert Napier, a Turkey merchant, who bought the estate in 1608; for an illustration made prior to its demolition following the building of the present eighteenth-century house, see K. Taylor and R. Peel, *Passion, Plants and Patronage,* London: Artifice, 2012, pp.70-71, reproducing Paul Sandby, 'The Old House at Luton, 1763', a view from the side of the buildings, with the entrance front indicated by the great gatehouse; partial demolition had already taken place. Reproduced therein courtesy of the Mount Stuart Trust, indicating the painting is still in the collection of the Bute family.
44. For details of the life and tomb of Lord Hoo and Hastings (*d.*1455) see various entries on the internet.
45. Brondarbit 2022, p.47 makes the point that the house on the hill, especially one with a tower structure, indicates 'a great man' (= a very wealthy man) was present, see also T.P. Smith, *The Medieval Brickmaking Industry in England 1400-1450,* Oxford: British Archaeological Reports, British Series, **138,** 1985, p.90, for a remark about the solar tower at Tattershall Castle having the same implication, see also text *supra,* and note 64, *infra.* The same point may be made about Caister Castle, note 73, *infra.* Apart from Ampthill Castle, Bedfordshire, n.44 *infra,* and Hales Hall, Loddon, Norfolk, n.47 *infra,* (both now demolished with the exception of the outer courtyard range and the barn facing it at Hales Hall, Loddon), another fifteenth-century brick houses which would have been prominently visible on a hill is the complex of individual brick buildings at Pooley Hall, Polesworth, Warwickshire, for which see Wight, 1972, p.391 and *BE: Warks,* p.509. Pooley Hall would repay further investigation, including documentary research. Houghton House, Bedfordshire, built in the early seventeenth century, n.46 *infra,* is equally extremely prominent on the hill.
46. Personal fieldwork at Ampthill Castle: see *HKW,* **IV,** pp.40-47, with plans, figs.3 and 3A.
47. For Sir John Cornewall, Lord Fanhope, see S.J. Payling, 'Cornewall, John, Baron Fanhope (*d.*1443)', *ODNB.* **13,** 2004, p.446.
48. *BE: Beds,* 2014, pp. 67-69 with drawing of north front.
49. *BE: Norfolk II,* 1999, pp.376-378; Wight, 1972, pp.332-333 for the surviving range and associated barn.
50. *BE: Norfolk: I* 1997, pp.449-451 with pl.61; Wight, 1972, 323.
51. *BE: Norfolk II,* 1999, pp.541-542; Wight, 1972, pp.334-335.
52. Wight, 1972, p.342, briefly records this building. The author saw it once in the late 1950s, prior to the final demolition, when it was already sinking into the surrounding marshy ground; Jane Wight obviously did as well.
53. Illustrated *BE: Norfolk II,* 1997, pl.61 which shows the royal arms on both the gatehouse and the main house.
54. A destination see was one granted to him towards the end of a bishop's career; the man had probably served in other sees beforehand. Appointments early in a career would be to one of the least remunerated sees: the four in Wales — Bangor, Llandaff, St Asaph or St David's — or one with a poor stipend in England like Rochester, Chichester, Hereford or Carlisle. Middle ranking sees include Salisbury, Worcester, Norwich, Exeter, Bath and Wells, Coventry and Lichfield. Fifteenth-century episcopal builders in brick who held more than one bishopric in their career include Thomas Rotherham who held the bishoprics of Rochester, Lincoln, York in succession whilst John Alcock progressed from Rochester to Worcester, and then to Ely. The six destination sees and the middle-ranking sees are listed in descending value of their stipend; poorer bishoprics are grouped in ascending order of stipend.
55. For example, William Waynflete, Bishop of Winchester built at Esher, 20 miles from London, at Farnham Castle, another 20 miles further along the road to Winchester, in Winchester itself, another 20 miles distant, and in the Hampshire countryside at both Wolvesey Palace, outside Winchester, and at Bishop's Waltham, approximately 20 miles south of Winchester.
56. RCHM, *Hunts.,* pp.31-41 with pls.26, 28, and 29; whence *BE: Hunts,* 2014, pp.431-434 and pl.94.
57. Knowledge of the brick solar tower at Cawood comes from an early-eighteenth-century engraving in Francis Drake, *Eboracum: History and Antiquities of the City of York,* London: William Bowyer, 1736, reprinted Wakefield: EP Publishing, 1978, page 542; and illustrated D.H. Kennett, 'Thomas Rotherham, Bishop and Builder in Brick: a preliminary note', *BBS Information,* **112,** page 10, fig.3.
58. Downham Tower is noted *BE: Cambs.,* 2014, p.578, and Wight, 1972, p.243. Its form as a tower house or a solar tower is not recorded.
59. The footings of half of the solar tower at Esher were revealed by an excavation in the garden of the gatehouse, now a private house, by Time Team on BBC Television in the first decade of the twenty-first century. To the best of the writer's knowledge, the excavation remains unpublished.
60. RCHM, *Herts.,* pp.52-62 with pl.13 for the 'Old Palace', the hall range of the original building.

61. D.H. Kennett, 'Thomas Rotherham: a Fifteenth-Century Bishop and Builder in Brick: a preliminary note', *BBS Information,* **112,** 2010, pp.6-18.
62. Gray, 1934, gives the figure of £1007 in 1436; Kennett, 2005, records £2356 in 1453. Cromwell began building Tattershall Castle in about 1426 and it was completed in either 1446 or 1447. The partial accounts begin when the ground floor and the basement had been erected and end with the building partially roofed: W.D. Simpson, *The Building Accounts of Tattershall Castle 1434-1472,* [being *Lincoln Record Society,* **55,** 1960], *passim.*
63. Episcopal incomes are taken from the *Valor Ecclesiasticus* of 1535, printed Rolls Series, 6 volumes, 1806-1810. That for the Archbishop of York can be checked against the detailed accounts at the end of the reign of Edward IV, in R. Horrox and P.W. Hammond, eds, *British Library Harleian Manuscript 433,* Gloucester: Alan Sutton for the Richard III Society, 1979, 4 volumes, **3,** pp.217-225 (Latin original) and 225-232 (English translation) of the sequestration accounts of Thomas Rotherham's archepiscopal estate in 1482-83. *Harleian MSS 433* gives a gross figure of £2017 (£1512, net) for the year ending Michaelmas (29 September) 1483; the 1535 *Valor Ecclesiasticus* has a gross figure for estate income of £2077. The Tudor inflation had yet to set in during the intervening half century.
64. See the figures given in Kennett, 2005, derived from Gray, 1934.
65. P. Lindley, ed., *Gainsborough Old Hall,* Lincoln: The Society of Lincolnshire History and Archaeology, 1991 [being *Occasional Paper in Lincolnshire History and Archaeology,* **8**], *passim*; Wight, 1972, p.301; *BE: Lincs,* pp.296-298 with plan and pls. 61 and 62. See also D. Stocker, 'Stranger on the Shore: Gainsborough Old Hall — Yorkist 'Merchant Clique' in Lancastrian Lincolnshire', in C.M. Woolgar, ed., *The Elite Household in England, 1100-1550, Proceedings of the 2016 Harlaxton Symposium,* Donnington: Shaun Tyas, 2018, pp.56-74 with pls.16.
66. W.D. Simpson, 'Introduction' *The Building Accounts of Tattershall Castle, 1434-1472,* [being *The Lincon Record Society,* **55,** 1990], pp. xi-xxxii with plan (p. xxxiii), reprinted Woodbridge: Boydell and Brewer, 2010; Wight, 1972, pp.127-132 with pls.21 and 22 and p.304 (Bibliography); *BE Lincs.,* 1989, pp.745-749 with pls.64-66.
67. T.P. Smith, 'Hussey Tower: A Late Medieval Tower-House of Brick', *Lincolnshire History and Archaeology,* **14,** 1979, pp.31-37; Wight, 1972, pp.299-300; *BE Lincs.,*1989, p.169 and pl.63.
68. For Rochford Tower see Wight, 1972, p.300; *BE Lincs.,* 1989, p.278.
69. For Ayscoughfee Hall see Wight, 1972, p.302; *BE Lincs.,* 1989, p.675.
70. The drawing of Cawood, see n.57 *supra.*
71. RCHM, *Hunts.,* pp.31-41 with pl.13; *BE: Hunts,* 2014, pp.431-434 with pl.94.
72. RCHM, *Essex,* **2,** *Central and South-West,* 1921, pp.67-72; Wight, 1972, pp.251-252; *BE: Essex,* 2007, pp.351-352 and pl.57.
73. RCHM, *Essex,* **2,** *Central and South West,* 1921, pp.170-175; Wight, 1972, p.262; *BE: Essex,* 2007, p.581.
74. Revealed by archaeological excavation; see note 57 *supra.*
75. H.D. Barnes and W.D. Simpson, 'Caister Castle', *Antiquaries Journal,* **32,** 1952, pp.35-51.
76. Personal observation during residence in Bradwell, on the south side of the estuary. The author lived in a bungalow on land once within the Gorleston and Bradwell lands of Sir John Fastolf between September 1980 and March 1993. He would often walk up to Burgh Road, an elevated position above the marshes at the southern edge of Breydon Water, to observe the sunset or the *aurora borealis.*
77. Smith, 1979, map on p.34.
78. T.P. Smith, 'Drayton Lodge: a Fifteenth-Century Hunting Lodge near Norwich', *BBS Information,* **127,** 2014, pp.7-17; previously, Wight, 1972, p.323.
79. RCHM, *Herts.,* pp.127-128, dealing mainly with the late-sixteenth-century house.
80. Wight, 1972, p.275;
81. Wight, 1972, p.306, has brief description of Tower-on-the-Moor, Woodall Spa, Lincolnshire, noted extremely cursorily *BE Lincs,* 1989, pp.810-811.
82. Wight, 1972, pp.246-247; *BE: Derbys,* 2026, p.537 and pl.31.
83. The Great Yarmouth picture map is reproduced P.D.A. Harvey, *Maps in Tudor England,* London: The Public Record Office and the British Library, 1993, pp. 18-19; P. Barber and T. Harper, *Magnificent Maps: Power, Propaganda and Art,* London: The British Library, 2020, pp.50-51; and with a partial reproduction of the south end of the walled town, H. Clarke, S. Pearson, M. Mare and K. Parfitt, *Sandwich, The 'completest medieval town in England': A study of the town and port from its origins to 1600,* Oxford and Oakville: Oxbow Books, 2010, fig.11.22. The brick tower house is on the east side of the walled town opposite the riverside crane on the western boundary.
84. Briefly noted Smith, 1979, p.35.
85. W.A. Los, 'Paull Holme Tower', *BBS Information,* **69,** 1996, pp.7-10.
86. *VCH Surrey,* **3,** London: William Constable & Co., 1911, p.448, has a brief note one the manorial descent and a comment on the gatehouse, additionally, Wight, 1972, p.00 and *BE: Surrey,* 2022, pp.299-300 and pl.70.

87. T.P. Smith, *The Medieval Brickmaking Industry 1400-1450,* Oxford: British Archaeological Reports, British Series, **138,** 1985, p.90.
88. Figures from Gray, 1934 and Kennett 2005. The Income Tax *excluded* profits from directly cultivated land, sales of timber and building materials, including bricks, and trading profits. The untaxed income of Sir John Fastolf included all of these activities as well as considerable income from his French lands in the 1420s to late 1440s.
89. The visit of Queen Elizabeth II to Ireland in May 2011 was extensively covered in both English and Irish media.
90. The fullest printed account of multiple royal progresses in the late sixteenth century is found in J.G. Nichols, *The Progresses of Queen Elizabeth,* London: J.G. Nichols, 3 volumes, 1787 and 1805, cited Z. Dovey, *An Elizabethan Progress,* Stroud: Alan Sutton, 1996, p.154. Dovey, 1996, has illustrations of the gatehouses in context of the whole building at Greenwich Palace (p.8), Melford Hall (p.42), Kirtling Tower (p.115), and Hadham Hall (p.121).
91. Monasteries where Lady Margaret Beaufort, mother of Henry VII, stayed when on progress in 1498, include Stratford Langthorne Abbey outside the City of London, the abbey at Bury St Edmunds, Walsingham Abbey, the prior's lodgings at Ely and Peterborough, and possibly Delapré Abbey, Northampton. See S. Powell, 'Lady Margaret Beaufort: a progress through Essex and East Anglia' in C.M Woolgar, ed., *The Elite Household in England, 1100-1550, Proceedings of the 2016 Harlaxton Symposium,* Donnington: Shaun Tyas, 2018, pp.295-316 with pl.1 (map of the progress). Other lodgings were provided by private houses.
92. J. Godber, *History of Bedfordshire 1066-1888,* Bedford: Bedfordshire County Council, 1969, p.176.
93. S. Thurley, *The Royal Palaces of Tudor England: Architecture and Court Life 1460-1547,* New Haven and London: Yale University Press for the Paul Mellon Centre for Studies of British Art, 1993, fig.4 indicates that Elizabeth I had about 47 palaces at the beginning of her reign, reduced to about 30 by 1603; her father, Henry VIII accumulated over 60 palaces during his reign, of which Edward VI and Mary Tudor sold 12 and gave away three. In 1509, Henry VII left his son around 30 castles and palaces in which to reside.
94. Sorry, I have lost the reference to this.
95. Rear towers occur on the gatehouses of Christ's College, the original gatehouse to King's College, The Queens' College, St John's College, Trinity College. For references see note 16 *supra.*
96. See n.99 *infra,* for the room name evidence for the place of the sojourn of Anne of Denmark at Someries Castle.
97. See n.42 *supra,* regarding the attribution of Someries Castle to Stopsley prior to the 1960s.
98. Medieval Luton had six townships: Luton with an actual town and the only parish church in the parish, in the centre and the west; Leagrave, including Lewsey, in the north-west; Limbury-cum-Biscot in the north; Stopsley, in the north-east; East Hyde in the south-east; and West Hyde, with Luton Hoo, in the south-west.
. D.H. Kennett, 'The Building of John Lord Wenlock's Chapel in St Mary the Virgin, Luton, Bedfordshire', *Peringrations,* forthcoming. This paper arises from a presentation to a virtual session on 'Recent Work on the Art and Architecture of the Parish Church' to the 60th International Congress held May 2024 at Western Michigan University, Kalamazoo, MI, USA.
99. Smith, 1966, p.51, quoting F. Davis, *History of Luton,* Luton: W. Stalker, 1855.
100. *Calendar of Patent Rolls, 1471-1477* includes a reference in 1474 to an order following a meeting of the Privy Council at 'Someries'. As the writer was deep into researching another person for an almost unrelated research topic at the time, he omitted to take full notes on the proceedings.
101. The writer has examined the tombs of Thomas Rotherham in York Minster and his mother in Luton parish church on successive days: in York Minster on the Saturday afternoon, in Luton parish church on the Sunday morning.
102. Wight, 1972, pp.342-344; *BE: Norfolk II,* 1999, pp.586 from within pp.584-588 with pl.68.
103. 'Kenilworth' in L.F. Salzman, ed., *VCH Warks,* **6,** London: Victoria County History, 1951, pp.132-143 with plan and accompanying plates; *BE: Warks,* 2016, pp.380-389 with plan and pls. 31, 34, 35. As children, Robert Dudley and Elizabeth Tudor had lived in the same household; Dudley was only a year older than Elizabeth.
104. RCHM, *Essex,* **3,** *North-East,* 1922, pp.195-206. *BE: Essex,* 2007, pp.671-675 with plan.
105. For Bisham Abbey see G. Tyack, S. Bradley and N. Pevsner, *The Buildings of England: Berkshire,* New Haven and London: Yale University Press, 2010, pp.170-172 with plan and pl.16.
106. No reference has been discovered to a visit by any of the Tudor sovereigns to Bisham Abbey.

Crowle Brickworks, Lincolnshire: Notes for the Guidance of Visitors, *circa* 1960

In front of the office are numerous panels made up of the types and colours of facing bricks made at the works. These panels are a real help to customers in choosing the brick they require. Your guide will explain the different types and be able to give some indication of the cost per thousand.

HAND MOULDING DEPARTMENT

At the present time upwards of 10-15,000 hand-made facings are produced each week in various sizes from 6 in. × 3 in. × 1½ in. (152 mm × 76 mm × 38 mm) to brickettes to 12 in. × 5 in × 2 in (305 mm × 127 mm × 51 mm). The demand for hand-made continues to be in excess of capacity and orders have to be continually refused. Delivery at the present time is four/five weeks.

Clay is prepared at the wire-cut machines and deposited near each moulder's bench where it is easily accessible to the moulder. Two men, and a boy wheeling away, make 1,500 bricks per day together.

It will be noticed that the bricks are placed on the drying floors on edge only and one brick deep. This is because they are too soft to stack to a greater depth. A very large area of drying room is required for 10-15,000 bricks per week, especially as they take four days to dry. Each moulder has his own mark on the products he has made to enable faulty goods to be traced back.

The moulders are the most skilled men on the brickmaking side and they make all the special shapes and arches.

WIRE-CUT PRODUCTION PLANT

Two diesel locomotives deliver 8 or 10 wagons of clay each form the clay pit (which is nearly three-quarters of a mile from the works) to a pan stage in the wire-cut production plant. Each wagon is tipped into a clay feeder, which gives a regular stream of clay into the 11ft-diameter wet pan.

The rolls in the pan weigh 5 tons each and are capable of breaking up any large pieces of clay and stone to a size small enough to go forward to the clay rolls via a 24 in. belt conveyor.

MIXERS AND CLAY ROLLS

Two sets of large clay rolls and two 6ft-long mixers further prepare the clay before it reaches the extrusion pugmill. By this stage the clay is of fine texture and in good plastic condition.

PUGMILL

The pugmill is the final point in the production of wire-cut bricks. Any shape can be made by fitting a suitable type of brick die or shaping device at the front or delivery point of the mill. These shapes are then cut to any size, for example 2 in., 2⅝ in., 2⅞ in. or 3 in. (51 mm, 67 mm, 73 mm, 76 mm), on the wire-cutting table. The output of the machine is 28-30,000 bricks per day of eight hours.

After cutting, the shapes are loaded on barrows and taken for stacking (about six bricks high) in the drying sheds. Drying takes about 10-12 days.

DE-AIRING BRICK MACHINE

This is a recent addition to the plant and was installed for the production of hollow goods such as drain tiles and flooring bricks. During the winter we have been producing approximately 3,000 3 in. (76 mm) drain tiles per week. The machine is also used for the production of special shapes etc, which if made on the normal machine would tend to reduce output.

Clay which passes through this machine becomes rubberlike in texture due to all the sir being drawn off, and this makes clay easy to mould into different shapes as well as producing a stronger finished article.

A vertical pipe machine is used for making sizes larger than 3 inches (76 mm).

DRYING SHEDS

In spite of the great area covered by the drying sheds there is always a shortage of room. The floors are hollow and formed of bricks and concrete. Exhaust steam form the main engine is conducted under the floors and the area heated can be regulated by valves.

Waste heat from the cooling bricks in the kilns is also drawn off by two fans and blown down amongst the bricks in the drying sheds. This air can likewise be regulated over any area by dampers.

PRESS BRICK PRODUCTION

A single Bradley and Craven machine is also available for use in the event of a breakdown or for making odd sizes such as 2 in. or 2¼ in. (51 mm or 57 mm) to order and saving loss of time on the main plant. Arch bricks for kiln repairs are also made on this machine.

POWER PLANT

Two Lancashire boilers produce steam for the plant and about 35 tons of coal are used each week. Until recently three separate engines provided the power for driving the three separate brickmaking plants, but these have now been replaced by one large steam generator which drives the whole of the brickmaking plant and in turn saves some 6-8 tons of coal per week.

KILNS

The oldest kiln is the one nearest the presses and is over 75 years old. It formed part of the original plant when RTB bought the works in 1917. At that time the works had one engine, one press and one kiln. Twenty-four men were employed and the output was 60,000 bricks per week. Today, employees – men, boys and women – number 80.

The large kiln is of a transverse arch type and was built in 1926. Since that date it has never been put out and has been used continuously. Due to the slightly longer time the bricks are under full fire, it always burns, from the same clay, a better brick than the old kiln.

STOCK YARDS

Stocks vary according to the demand, but due to the variety of types made, plus the different sizes, some 2-300,000 bricks can be found in the yard at any time of the year.

CANTEEN

In the canteen, recently brought up to date by new equipment and housed in a new wing, approximately forty meals per day are served to our employees as a cost of 2*s.* 6*d.* per meal.

ACKNOWLEDGEMENT

The British Brick Society thanks Ken Redmore and Ann Los for proving a copy of this for inclusion in *British Brick Society Information.* The original is held in the Ann Los collection, and is thought to date to circa 1960.

A hand-made brick: London Stock bricks — made by earth makers, temperers, up-lifters, moulders, off-goers, hack builders, constructors of clamps, and pickers of malms and roughs and grizzles and shuffs

Ian Smalley, John Howarth

ABSTRACT

London Stock bricks were made from brickearth, a silty Pleistocene deposit which had fortuitously been emplaced in the south-east of England. This brickearth was the western fringe of the great European loess deposits, and proved almost ideal for making bricks. It was particularly well suited to hand making. The London Stock brick, the default brick of the nineteenth century, utilised a substantial admixture of ashes and cinders to produce an internal heat source during firing. London rubbish provided London bricks which built more of London. The great construction was the sewer system of Joseph Bazalgette. Three hundred million bricks were deployed to save Londoners from cholera.

The London Stock brick was an outstanding brick. In amongst all other bricks its special nature may be overlooked. It was made from a remarkable geo-material by teams of specialist workers, it required no machinery and because of local geology it could be made on site in many construction projects. South-East England was covered in brickearth, nicely in placed to construct the greatest Victorian city (and the greatest sewer).

KEYWORDS

London Stock bricks, brickearth, loess in South-East England, Bazalgette sewers, Kings Cross station, admixtures of chalk and 'Spanish', hacks and clamps, brick colour and strength.

HIGHLIGHTS

Much of Victorian London was built with London Stock bricks.
Bricks were made from brickearth (loess), not from a clay rich ground. They were handmade; brickearth suits hand making.
25 percent of added ash and cinders allowed the bricks to be self-firing.
Added chalk caused the yellow colour and produced long term strength gain.
The great construction was the Bazalgette sewer system, built 1860-1880, which saved London from cholera. 330 million bricks were used.

INTRODUCTION

Edward Dobson (1850 p.17) wrote in his nineteenth century treatise on brick making that 'the earths used for brickmaking near London are not clays but loams and marls.' The bricks made in and near London were the London Stock bricks (LSB) (fig.1) and they were made from a geological material called brickearth. Fairly substantial deposits of this brickearth were found in south-east England and they proved almost ideal for brick making, and they produced a remarkable brick, which deserves more study and appreciation than it has received. Brickearth (as distinct from brick earth) is defined by the Oxford English Dictionary as 'Brick earth n. Earth or clay suitable for making bricks. Now chiefly in form brickearth, a fine grained silty deposit consisting of or derived from loess, occurring in the Thames basin and other parts of southern England.'

This is a neat and accurate definition; it highlights the location and it identifies the brickearth as loess, that Pleistocene aeolian deposit which was widely distributed in Europe during the Ice Ages (Assadi Langroudi 2016). The exploitable brickearth in the south-east of England was deposited in two phases at around 20,000 BP; it was exploited mostly in the nineteenth century when the London Stock bricks were used

Fig.1 The London Stock brick; yellow colour with displaced traces of combination aiding Spanish.

in the great expansion of London. The LSB, more than any other, provided the bricks of Victorian London (Hounsell 2022).

Most of the bricks made in other parts of Britain were clay-mineral based bricks, these were to be the machine-made bricks which would eventually supersede the stocks bricks as the machine age arrived and the brickearth was used up and social conditions improved. The Building Research Station at Garston carried out some studies on the mineralogy of British brick clays (Freeman 1965). Ten representative 'brick clays' were examined, nine of these were clay mineral dominated systems, one was a brickearth mixture, the mixture used to produce London Stock bricks (LSB). The proper clay samples ranged in age from Carboniferous to Tertiary; the LSB sample was largely composed of Kentish brickearth (75%, plus the necessary chalk 10%; with the required fuel admixture, i.e. ashes, cinders, sometimes called 'Spanish' 5% and some estuarine mud 10%). The clay mineral content of the LSB was low, the LSB are not clay bricks (as Dobson pointed out), although the clay has a critical role to play. The actual content of the stock brick mixtures is nowhere well recorded; Perks (1981 p.25) gave 64% brickearth, 25% Spanish and 11% chalk. This Perks figure is probably realistic; the 25% Spanish would give efficient firing. Judging the amount of Spanish was a key skill of the Victorian brick maker.

The distinctiveness of the LSB should be recognised, there are interesting geological and mineralogical aspects to be explored, but also some interesting chemistry and even perhaps some sociology. The digging was distinctive, so was the wetting, the way that the brickearth behaved in the mould was special and remarkable, some extraordinary rheology was on view. The amazing nature of the brickearth deserves to be emphasized.

The LSB was a 'people' brick rather than a 'machine' brick. The LSB was made by a team, which included many small scale specialists; moulders and clamp builders and others. It was a 'guerrilla' brick making operation; a transient team of skilled people who worked on an essentially transient material. When the job was done the brickmakers disappeared, the deposit was gone, no trace, but several million bricks, several thousand yellow brick homes were produced.

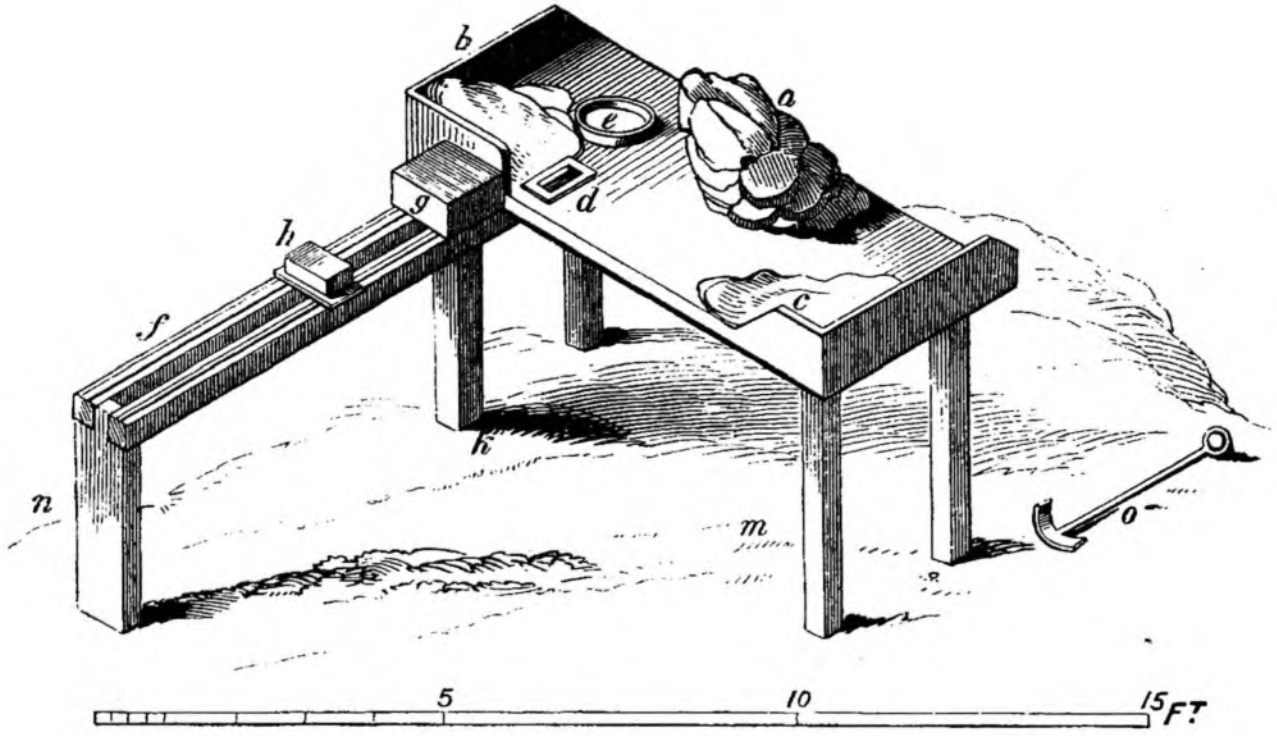

Fig.2 The moulder's stool.

The brick suited the social world of the nineteenth century. A lot of people were available, a system that needed a lot of people could flourish. Many of these people were intelligent, resourceful people, denied advancement by lack of opportunity. There was little education in 1850. A skilled clamp builder possessed remarkable skills; the moulder had special skills, the hack builder also, even the pug-mill operators, the suppliers of chalk and Spanish.

By chance the LSB were in place for the most significant brick construction ever attempted- the Joseph Bazalgette sewer network in London, constructed, largely with LSBs, from about 1860 to 1880 (Smalley *et al* 2021). Bazalgette provided the counterforce to the deadly cholera outbreaks which had been ravaging the capital. No machinery; Bazalgette led his guerrilla/commando force to eventually produce 330 million bricks which allowed the construction of the great underground system of interception sewers which saved the lives of thousands of Londoners.

The window on to the LSB world is via Dobson (1850), there is not much additional literature. The original Dobson work was reprinted by Celoria (1971) who reproduced all of both parts of the first edition and added biographical notes and supporting material.

FIND AND DIG

'We went to search for brickearth': this must be the most famous quotation about brickearth. John Evelyn wrote in 1667 about his ill-fated efforts to become a brickmaker (Smith 2007). Samuel Pepys, in his diary, recorded the failure of Evelyn's attempt to become a brick magnate. Brick making in brickearth country could be relatively casual. Evelyn's partner Sir John Kiviet was a suspicious character whose reputation has ,declined over the years. Pepys records Evelyn losing £500, a considerable sum in 1667.

There was much brick building in London after the Great Fire and the classic LSB appears to have been invented soon after the Fire. The explanation offered is that when bricks were being made from earth that had received ashes from the fire superior bricks were produced, or good bricks could be produced with added ashes and cinders reducing the need for extra fuel. The idea spread rapidly and the essential LSB was made from brickearth, with the addition of ashes and cinders from London's rubbish; this admixture was known as 'Spanish' for reasons unknown (Hounsell 2020). London rubbish at this time largely consisted of

ashes and cinders from domestic fires. Various names and terms were used; it was often referred to as soil, or rough stuff or breeze. There was considerable organisation involved in collecting the material and sorting it and shipping by barge to the brickmakers.

The brickearth, being the uppermost stratum was relatively easy to find, and relatively easy to dig. A few strong men with shovels could generate material for thousands of bricks. And the nature of the brickearth/loess was such that it was widespread; within the London region it was more or less everywhere. Quirks of geology meant that there were concentrations in certain favoured regions; at Crayford and Erith (Kennard 1944), on the fringe of London, on the south bank of the Thames, a very substantial deposit which was worked early in the nineteenth century and exhausted and abandoned well before the end of the century. The best and largest deposit of brickearth was in north Kent, at or near Faversham and Sittingbourne. It was here that George Smeed founded the undertaking which was to become the Smeed Dean brickworks which was at one time the largest brickworks in the world, making London Stock bricks from the local brickearth. A fleet of barges carried the Spanish to the works and returned to London laden with bricks. One barge could transport 40,000 bricks. (Perks 1981).

The brick was made in stages; each can be defined and the team of people required can be identified. The terminology can be confusing as in different brickfields different terms were used, and these changed with time. The earth must be dug, and prepared. The preparation essentially involves adjusting the water content and adding the right amount of chalk and Spanish; the prepared material is then delivered to the moulder at his bench or stool; he makes the bricks and they are then handled to the drying region or hack and thence to the clamp or firing set-up; and then to the important process of picking. The clamp firing system introduced a lot of randomness into the process and a whole range of bricks was produced by one firing. These had to be carefully picked and the best bricks segregated for sale at the best prices. Dobson describes these processes in some detail and some extracts can be shown

USEFUL ADMIXTURES

Chalk and Spanish; locally dug chalk and combustible rubbish from thousands of London households were added to the brick mix to produce the characteristic LSB. The essence of the LSB was the brickearth-geologically the most suitable material for brick making. But also of great importance were the two chief admixtures, which practitioners over the years had learned to add in just the right proportions. It was soon discovered that adding chalk made yellow bricks and that the chalk admixture possibly improved the workability of the wet proto-brick material. It is possible that some simple ion exchange reactions were occurring and that Ca_2+ ions were replacing Na+ ions thus making the mix a little stiffer; some control over mix stiffness was achieved. This is the reaction utilized by farmers when they add lime to clayey soils. What has been recently realised is that the chalk in the mix meant that the brick firing in the clamp modelled the conditions for making Portland cement and that cementing compounds were produced in the brick which could explain the long observed but little explained fact that the LSB grow stronger and harder with age. So the chalk colours and strengthens the LSB. The Spanish aids in the firing. It seems absurd to go on calling this admixture 'Spanish' but there is no readily available short alternative. The Spanish consists of the waste from thousands of domestic fireplaces and hearths, it is largely ashes and cinders; the larger particles are often called breeze. Collecting and utilizing this material was a large business in Victorian times (Hounsell 2020) and the great bulk of it went to the brick makers. In Victorian times most household waste consisted of ash and cinders and it was collected and classified and utilized by teams of operatives and then recycled. The barges carried the

Spanish downstream to the brick fields and came back with bricks. The Smeed Dean brick works accumulated vast deposits of Spanish which supplied its needs throughout the twentieth century.

MOULD ON A STOCK

The moulders environment(around his bench or stool) is shown in figure 2; the actions carried out were described in some detail by Dobson. The annotations have been added to the text; Dobson was not good at connecting illustrations to text.

> Before commencing moulding, the moulding stool is provided with two heaps of dry sand (b, c), a tub of water (e), in which to place the strike [*the strike is a small hand tool for trimming the brick*]. A stock-board (d) and brick-mould, and three sets of pallets (g). Everything being in readiness, and a supply of tempered clay (a) having been placed on the stool by the feeder, whose business it is to carry the tempered clay from the pug-mill to the moulding-stool, the clot-moulder (at m), who is generally a woman, sprinkles the stool with dry sand, and taking a clod, or clot, from the heap of tempered clay, dexterously kneads and moulds it roughly into the shape of a brick, and passes it to the moulder on her left hand. The moulder, having sprinkled sand on the stock-board ,and dashed the mould into the sand-heap (b) on his left hand, places the mould on the stock-board, and dashes the clot into it with force, pressing it with his fingers, so as to force the clay into the angles of the mould. he then, with the strike, which has been well wetted in the water tub, removes the superfluous clay, which he throws back to the clot-moulder to be remoulded. The mould is then lifted off the stock-board, and placed by the moulder against one of the pallets, which he catches dexterously with his fingers, and, turning out the raw brick (h) upon it, slides it along the page (f) to the taking-off boy (at n), and, lifting up the empty mould, dashes it into the sand, and replaces it on the stock-board, preparatory to moulding a second brick; when he has moulded one set of bricks, he scrapes away the sand which has adhered to the mould during the operation with the strike, and then proceeds with the next set. The moulder, and clot-moulder, with the assistance of a feeder, a taking-off boy, and two men to wheel and hack the bricks, will make about 5,000 bricks between 6 am and 6 pm; but this quantity is often exceeded." (Dobson, 1850, p.141).

It was a well-established process; Haynes (2019, p.110) has described the brickmakers in action in the seventeenth century:

> The earth being dug, there are usually employed about a stoole's work four men, and two boys. The first, an earth maker that prepares the earth. The second, a carter, to bring the earth to the stool. The third, an up-striker, a boy that lays the earth upon the table, and cuts it for the moulder. The fourth, the moulder, who makes the bricks in the mould. The fifth, an off-bearer, a boy who carries the same in the mould, and lays them abroad upon the ground. The sixth, an up-ganger, who a day or two after, as they become stiff, takes them up and sets them in wind-rows, to be dried, and when they are enough dried, they are into the bargain, to lay them in the kiln for burning.

The quotation is from John Houghton, a letter dated 24 November 1693. Haynes has made extensive use of the writings of Houghton (1728) to give a view of brick making in the seventeenth century. When the London Stock bricks began to be made, soon after the Great Fire, the processes did not change significantly. The operations described by Houghton were essentially the same as those described by Dobson.

DRYING

The newly made bricks must be dried. This is a critical process because any excess moisture will cause the bricks to disintegrate when they encounter the high temperatures in the clamp. The LSB has unique advantages at this point since the water is only lightly bound into the system. The water associates with the clay minerals in the system and since the LSB mixture is low on clay minerals it is less attractive to water. The soft new bricks are assembled into a 'hack' on the hacking ground (between the moulder and the clamp). Building the hack requires some skill. It is always a low structure because the soft new bricks will deform if they are loaded with more than a very modest load. Also, air must circulate so the build geometry is critical. When they are judged to be sufficiently dry the bricks are moved to the clamp and prepared for firing.

FIRING AND PICKING

The clamp was a temporary work of art (fig.3). Built to an intricate pattern and assembled with great skill and artistry and designed to burn at just the right temperature for just the right time- the clamp was a remarkable construction. Containing just the right amount of Spanish the bricks would ignite and fire themselves. A careful disposition of cinder breeze in the lower part of the clamp allowed initial ignition and

burning (see fig.3) and as the temperature rose the bricks ignited. The clamp firing method is still used in many parts of the world, it is an efficient way of producing local bricks. It has a long history in brickearth regions. Stock brick making had existed in Kent since 1740 (Perks, 1981, p.11) when it is mentioned that brickearth was mixed with ashes and chalk to be ground in horse pugmills and fired in clamps. It was this LSB product that Regency England demanded. *The Kentish Gazette* reported in 1825 that clamps of 173,000 bricks were firing and that at Faversham a clamp was being built of nearly two million bricks.

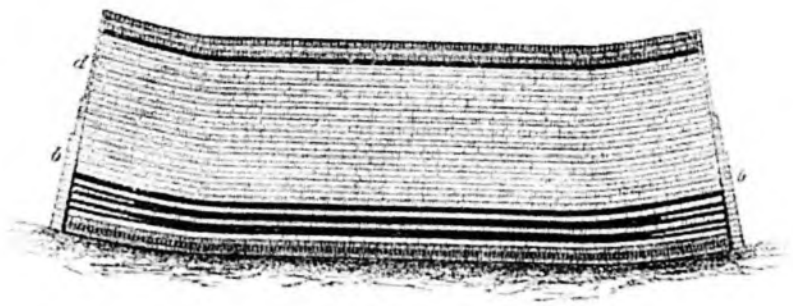

Fig.3 The clamp, from Dobson, 1850, figure 3.

Figure 3 is from Dobson (1850 p.146); the annotations: a is the Upright, defining the structure of the clamp; b the Close Bolts, also having structural purposes; c the Live hole, where initial ignition occurred; d the Bestowing, a roofing or upper covering. The scale is in feet; the clamp is about 40 feet long. The black layers at the bottom of the structure are the cinders and ash, the breeze, additional Spanish which will provide the thermal energy to fire the bricks. A temperature of about 1100° C is required.

There was a high degree of calorific randomness in even the best constructed clamp so that it was necessary, after firing, for the brick load to be carefully picked over and the bricks classified in terms of use and worth. Perks (1981, p.55) described brick types and values for the relatively late time of LSB production. The best bricks were hand-made and clamp fired, evenly burnt to a golden yellow colour and with straight arrises. The grades of brick and the prices they were sold at per thousand in the late 1920s and early 1930s are remembered as:

First Hard Stocks at 71/6d (20 shillings = £1); evenly coloured with good stretchers and headers
Second Hard Stocks at 69/6d; possibly a colour defect on one face
Mild Stocks at 50/-; softer brick with a glimmer of pink on one face
Commons at 37/-; soft pink or yellow faced
Picked Roughs at 40/-; very hard, deep golden yellow, hand-picked for special work
Roughs at 38/-; taken from the bottom of the clamp and used for foundations
Shuffs; underburnt bricks used for lining clamps.

Dobson 1850 issued a similar list and it is interesting to compare 1930 prices with 1850 prices, and also to observe the changing (and not changing) terminology. Dobson had the best bricks as 'malms' which is a curious word which requires some investigation.

OED: Malm, n. A soft friable rock containing a high proportion of chalky material. 1850 E. Dobson *Rudimentary Treatise.* The brick-earth may be malmed. Dobson appears to use malm to refer to top quality brickearth, and also to the top quality bricks it produced. Websters Dictionary defines malm as: An artificial mixture of chalk, clay and sand, from which bricks are made. The resulting bricks have a light brown or yellowish colour.

The *Builders and Constructors Price Book* for 1868 gave prices as follows, price per thousand bricks: 'Malm cutters £5.5.0; Malm seconds £3.12.0; Malm stocks £2.7.0; Common stocks £2.2.0; Common roughs £1.16.0;' it is noticeable that the 1868 prices are roughly comparable with the 1930 prices, the Malm cutters were obviously very choice items. Dobson (1850 p.155) offered some explanatory terms:

Cutters: These are the softest, and are used for gauged arches and other rubbed work.

Malms: These are the best building bricks, and are used only in the best descriptions of brickwork; colour yellow.
Rough stocks: These are, as their name implies, very rough as regards shape and colour, and are not suited for good work, although hard and sound.
Grizzles: These are somewhat tender, and only fit for inside work.
Shuffs: These are unsound and shuffy: that is, full of shakes.

Fig.4 Kings Cross Station, the London terminus of the Great Northern Railway (later and at present the London and North Eastern Railway)

BUILDING AND AFTER

Kings Cross Station (fig.4), the London terminus of the Great Northern Railway was built in 1851-52. It is one of the classic constructions made from London Stock bricks (according to Perks 1981). The bricks were supplied by the Smeed Dean brickworks. This mid-century time was the apogee of usage for the LSB. By 1850 it is estimated that Great Britain was using around 1.8 billion bricks a year (Haynes, 2019, p.187). Brick production within a five mile radius of London had reached 500 million by the 1850s. The majority of bricks at this time were still being made by hand.

The most impressive construction from LSB was the sewer system built by Joseph Bazalgette in 1860-1880 (Smalley et al., 2021). By the late 1850s it had become apparent that London had a very serious sewage problem. The Government was forced to act when the stench of the river became so overpowering that business could not be conducted in the Houses of Parliament. Bazalgette produced a plan for a system of intercepting sewers which could carry the sewage to downstream pumping stations and thence to discharge into the estuary. This involved the construction of an elaborate network of brick built sewers, largely

constructed from LSB. Bazalgette described the bricks used as 'picked stocks'. The stock brick was the ideal brick for the construction of sewers. It grew stronger with age and developed a protective surface, resisting the action of the sewage material; and of course it was to hand. The sewers required millions of bricks and the local brick works were able to supply them.

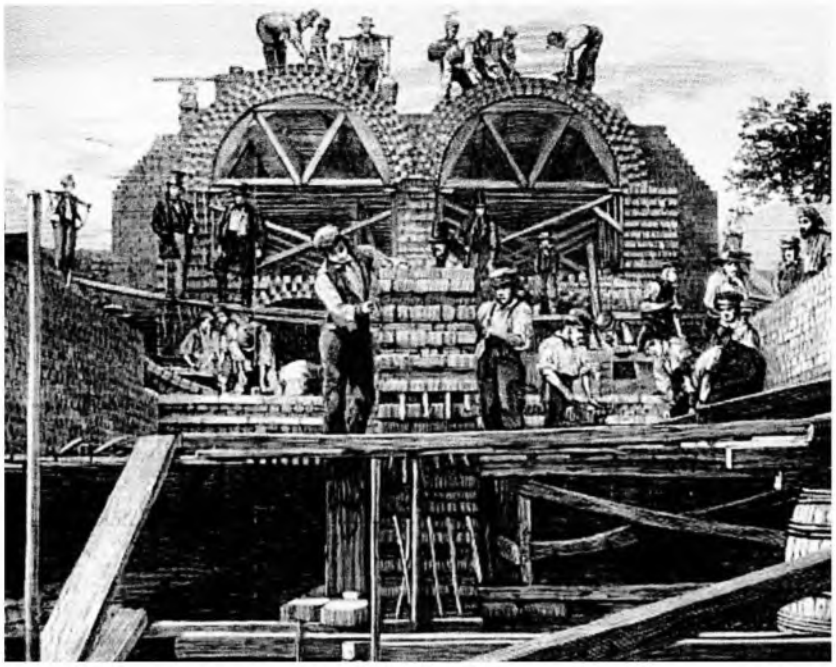

Fig.5 Building the great sewer.

COMMENTARY

The London Stock brick was a transient phenomenon. The deposits of brickearth have been used up and built over and the teams of brick makers have become students at UEL or commuters to London offices. But in some ways the LSB remains; the great sewer under London is still working although it has had to be enlarged and modified as London has grown. Portland cement concrete has enormously augmented the original brick tunnels but these still function as they were designed to. The bricks remain strong and durable. The houses are still there (some lost to the Luftwaffe), the everlasting brick may prove to be just that. There were claims in the literature that the LSB was everlasting (Perks 1981) — what will destroy it? Christopher Wren was a great admirer; he wrote: 'The earth about London, rightly managed, will yield as good a brick as were the Roman bricks. and will endure, in our Air, beyond any stone our Island affords.'

OBSERVATIONS AND CONCLUSIONS

The science of the LSB involves many disciplines. The geology is of great interest- the brickearth is loess, one of the most interesting, and for a long time one of the most controversial, of the Quaternary deposits (Smalley, 1967, 2021). The brickearth is the western fringe of a great European loess sheet. The mineralogical studies are rather inadequate; there is not much analytical data on the brickearth. The Freeman (1965) results are especially important; the major problem is that the materials of the brickearth do not deliver a strong analytical signal, which makes the thermogravimetrical studies of Freeman (1965) and Lill (1978) especially valuable.

The addition of chalk meant that the firing brick modelled the situation of a cement making system and complex calcium silicates were produced. These cementing compounds, some of which reacted over very

long times, were the cause of the strength development with time of the LSB. The chalk, through the formation of pyroxene minerals on firing, caused the yellow colour of the LSBs but it also gave them the apparently mysterious capacity to grow harder and stronger after they had been laid. Good bricks became better bricks. The other interesting post build phenomenon was the capacity of the LSB to react with the atmosphere, particularly the polluted London atmosphere. The SO2 in the atmosphere tended to react with rainwater to produce acids which attacked building materials. The limestone blocks used in the construction of many London buildings were very vulnerable. Some reaction was produced with the LSBs- but essentially benign as a protective film develops as the complex components react (see Pearce & Long 1987 p.33).

The greatest monument to the London Stock brick is out of sight, the great Bazalgette sewer; but there are above ground memorials to admire (listed by Perks 1981): Kings Cross Station (the most stylish of the London stations), Tower Bridge (the most iconic of the London Bridges, Westminster Cathedral, Buckingham Palace and Crossness sewage pumping station- all available, built from the everlasting brick.

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BRICK IN PRINT

Between January and September 2024, the Editor of the British Brick Society has received notice of a number of publications on brick and its uses of interest to members of the British Brick Society. 'Brick in Print' has become a regular feature of *BBS Information*, with surveys usually two or three times a year. Members who are involved in publication or who come across books and articles of interest are invited to submit notice of them to the editor of *BBS Information*. Websites and television programmes may also be included. Unsigned contributions in this section are by the editor.

D.H. KENNETT

Abandoned Railways from Above: Scarborough to Whitby,
Channel 4, Saturday 5 October 2024

The railway system of Great Britain was slaughtered unnecessarily in 1966. Two lines around the North Yorkshire Coast were casualties of cost cutting and penny pinching. One was from Middlesborough to Whitby now terminating just beyond Saltburn-on-Sea, the other from Scarborough to Whitby. The latter, built in the 1880s, was the subject of the programme.

Beginning with an account of how Scarborough changed from an elite resort to one as reliant on day trippers, the programme featured several brick buildings. The hoi polloi were to be accommodated at a special platform, not in the main body of the station. For their convenience a building was erected on the side of the platform. Externally of stone, the interior was lined with bright yellow bricks.

The mainly single track line from Scarborough to Whitby closed in 1965, an early casualty before the Beeching Report. In 1990, the route was reopened as 'The Cinder Track' for walkers, cyclists, and horse riders, although the programme featured only the first-named.

Just north of Scarborough station a modern park has been built on the marshalling yard where day excursion trains were parked while their passengers were enjoying the seaside. First stop was Hyndburn Wyke where the surviving station platform was originally a wooden one, now with the front replaced with red bricks in Stretcher Bond.

North of Hyndburn is Ravenscar, 'the town that never was' where the brickworks established on the site of the former alum works supplied not the unbuilt houses and shops planned for the town but a geographically wider range of places. The railway helped distribute the bricks across Yorkshire.

Tales of smuggling in the small resort and former fishing village of Robin Hood's Bay were regaled by a former fisherman together with shots of the village buildings.

Approaching Whitby was at a high level, crossing the River Esk by the Ladypool Viaduct. This brick viaduct with thirteen arches is 915 feet (279 metres) long and reaches a height of 120 feet (37 metres). Crossing a tidal river, three of the central piers were skewed so as not to impede the tidal flow. The bricks of the piers were laid seven deep on all four sides with the centre filled with slag-based cement. Four piers are arched at the water level.

The Scarborough to Whitby railway entered the town at a high level and a complicated curve led from the viaduct to the surviving Middlesborough to Whitby railway line along the side of the Esk valley which gave trains from Scarborough access to Whitby Town station. Through trains ran from Middlesborough to Scarborough, especially in the Summer season.

The previous programme in the series, broadcast on Saturday 28 September 2024, featured the line between Cambridge and Oxford, kept open from Bedford to Bletchley for the trains carrying bricks from Bedfordshire to all parts of England. Now re-opened between Oxford and Bicester to provide an alternative route from Oxford to London, work is in hand to open the part between Bicester and Bletchley for passenger trains from Bedford and Milton Keynes to Oxford and ultimately from Cambridge to Oxford.

'The Building of a Medieval Updraft Kiln'
The Gestingthorpe Blog, 20 February 2020 online at
https://gestingthorpehg.co.uk/blog/the-buildiing-of-a-medieval-updraft-kiln
53 pp., numerous illustrations

A well-illustrated account of the construction of a medieval updraft kiln between April 2012 and 21 June 2013 and its subsequent first firing; when posted there had been a further 15 firings, approximately two a year. The

only modern tool used was a mechanical digger to clear the site and provide an excavated hole for a suitably sheltered environment for the kiln which is built into a small bank.

Each stage of the construction process is described. Noteworthy were the provision of a former for the arch to the firing hole and the strength of the dome above the chamber.

The first firing, described in detail. The load was a mixture of bricks and pots; the group secured a secondhand potter's wheel for the latter and had professional advice for moulding the former. The firing was successful and pictures are provided of the finished vessels and bricks.

The kiln would have been typical of the estate brickworks of the eighteenth and nineteenth centuries such as that which was left half full but unfired on the Blickling estate in Norfolk on 4 September 1939.

Thanks are due to Alun Martin for drawing my attention to this blog.

Molly Makin, 'Beaulieu Brick Kiln -Baileys Hard'
Undated but *circa* 2021; available online at
https://nfknowledge.org/contribution/beulieu-brick-kiln/#map=10/-1.44/50.81/0/24.0.0.6/39.1.1/40.1.1/

An account of the restoration of the downdraft kiln at Baileys Hard on the Beulieu estate by a pupil studying 'A level' History and doing work experience with the New Forest National Park archaeology team. The illustrations comprise a section drawing of a downdraft kiln by Eric Rowden and four photographs of the kiln. The kiln was built in 1790 and was operational until 1935. The kiln was reported by Frank J. Green, 'Baileys Hard Brick Kiln, Beulieu Estate, New Forest' *British Brick Society Information,* **144,** 2020, pages 30-33.

There is a useful comment from Ian Loveridge about the restoration of shops on Old Northam Road, Southampton which used Beaulieu Buff bricks for accents on the buildings' corners and around the windows.

Again, thanks are due to Alun Marin for drawing my attention to this blog.

Ken Pit, 'Crosby Place, a 15th-century mansion: excavations at Crosby Square,
City of London, EC2',
Transactions of the London and Middlesex Archaeological Society, **23,** 2022, pages 157-181.

Crosby Place was a brick house erected for Sir John Crosby, Citizen and Mercer of the City of London, in the mid-fifteenth century; in 1908 subsequently transported to be re-erected on Chelsea Embankment under the direction of the late Walter Godfrey.

Fieldwork and excavation on Crosby Square between 2005 and 2009 have revealed a plan of the site as originally constructed and the use of imported Netherlands floor tiles.

In the 1470s and 1480s, the house was rented by Richard, Duke of Gloucester (*k.*1485), later King Richard III, and in the eighteenth century it served as the headquarters of the East India Company.

AUTHOR'S SUMMARY

Darren Quick, 'Mobile factory makes Lego-style mortarless bricks from rubble' available online at
https://newatlas.com/technology/mobile-factory-convert-into-bricks/

Contained in two 20 feet-long shipping containers, one with a hammer mill to crush the available rubble, the other with the machinery to turn the rubble into useable bricks and intended for use in the reconstruction of war zones, the initial machine developed by Mobile Crisis Construction, a firm in Perth, Western Australia, is already on its way to a site near Kiev, Ukraine. The bricks are designed to interlock, like Lego, with the upper part of the three handholds protruding on the upper edge and the bedface having equivalent depressions. The protruding projections and the equivalent sockets are square with chamfered corners. Bricks are made in three sizes: 100 mm square, 200 × 100 mm, and 300 × 100 mm. The upper face can be made flat for window sills and the tops of walls. The bricks which include some cement and water take seven days to dry and reach full strength after 28 days. Production rate is around 8,000 blocks per day, enough for a school or three terraced houses.

Mobile Crisis Construction is a registered charity.

The article has three photographs: of bricks stacked and awaiting shrink-wrapping; of the containers with the machinery inside; and of the bricks themselves.

The article also mentions the 'world's fastest brick-laying construction robot,' with a link to the description of the machine by another Perth-based firm, PBR.

Andrew Skelton and James Bettley, 'Honouring the past and observing the future; Henshaw Halsey's chapel in the church of St John the Baptist, Great Gaddesden (Hertfordshire)',
Church Monuments, **37,** for 2022-23, pages 117-130.

The brick-built Halsey Chapel at Great Gaddesden, Hertfordshire, is full of family monuments from the seventeenth to the twenty-first centuries. It is typical of a landed gentry mausoleum attached to a parish church near to where the family resided. Recent research has shown that he Victorian rearrangement of the monuments has disrupted the deliberate disposition of four near identical monuments erected after 1739., which looked forward to the future of the family whilst mirroring the burial plan in the vault below. The four monuments are now ascribed to Michael Rysbrack (1694-1770).

Construction of the chapel has been re-dated to soon after 2 July 1715 when a 'Licence for Dormitory' was issued by the bishop of Lincoln to the vestry (equivalent to the modern parochial church council) so that a portion of the churchyard could be enclosed and built upon to create the chapel and associated vault. The applicant was Henshaw Halsey. A document from a dispute over burial fees in 1788 is quoted as further support of the 1715 date for the erection of the chapel. There is also a late-eighteenth-century plan of the vault indicating the location of the tombs, including the first four burials at the west end, corresponding to the monuments on the walls above: illustrated on page 127.

The rearrangement of the monuments was part of the refurbishment of the church by George Gilbert Scott in 1877.

AUTHORS' SUMMARY (EXTENDED)

Kathleen Ann Watt. 'Nineteenth-Century Brickmaking Innovation in Britain: Building and Technological Change', Thesis submitted for the degree of Doctor of Philosophy, the University of York, Institute of Advanced Architectural Studies, September 1990, available online at
https://etheses.whiterose.ac.uk/4248/1/DX094368.pdf

A major contribution to the history of brickmaking, now online at the address above. After an introduction, Dr Watt covers mechanization of the brickmaking industry, the changing attitudes towards brick in the architectural profession, moulding and pressing machines from 1741 to 1850, new machines of the 1840s, expanding markets for machinery, machinery after mid-century, the use by architects of machine-made products, and ends with three chapters on hollow bricks and their uses.

Received for Review

Anne McCormack, editor,
Account Book of John Yeomans, Bricklayer, 1696-1711,
being *Surrey Record Society,* **XLIX,**
Price £20-00

Available from Surrey History Centre, 130 Goldsworth Road, WOKING, Surrey GU21 6ND

It is hoped to have a review of this volume in *British Brick Society Information,* **158,** February 2025.

Kempston Hardwick Brickworks, Bedfordshire

Alan Cox

Kempston Hardwick brickworks was built by Eastwood Flettons Ltd in 1927-28. It was considerably smaller than London Brick Company's Stewartby works and Marston Valley Brick Company's Ridgmont works, in terms of output, number of chimneys and extent of site. Nevertheless, the original works was in production for just under 55 years before being 'mothballed' in 1982. From 1962 it had been operated by Redland Bricks until it was acquired by London Brick Company in 1971. The latter was taken over by Hanson plc in 1984, who, having demolished most of the existing works, opened a new works in 1987. This had a very short life being closed in 1999 and in its turn has also been demolished.

THE BEDFORDSHIRE FLETTON BRICK INDUSTRY

Kempston Hardwick Works manufactured what are known as 'Fletton' bricks. It was at Fletton, a village on the edge of Peterborough, where it was first discovered, in 1881, that below the brownish top callow of the Oxford Clay, which can be anything from 20 to 50 feet in depth, there is a shale-like, grey-green clay deposit known as the Knotts. This could be anything from 20 to 100 feet in depth, although it is usually about 45 to 50 feet in depth. One of the largest exposures of Oxford Clay lies in the Marston Vale of Bedfordshire.

The discovery of the Knotts was so important because they had four properties which made them ideal for making bricks:

1. The moisture content is constant, allowing the clay to be crushed into a powdered form, which can then be pressed into a brick. The raw or green brick can then be fired without having to wait for it to be dried, other than the preheating it receives in the kiln.
2. The lime content is also constant and provides precisely the correct amount required to prevent the bricks cracking during firing.
3. The clay contains very few impurities and those there are can be easily removed during processing.
4. Most importantly, the Knotts contain sufficient combustible material to assist during firing, to the extent that the bricks are thoroughly burnt and fuel consumption is reduced by about two-thirds.

The first two Fletton brickworks in the Marston Vale, at Wootton Pillinge (now Stewartby) and Elstow, were both opened in 1897 by B. J. H. Forder. In 1923 Forders merged with the London Brick Company and several other firms. The new company was at first called London Brick Company and Forders until 1936, being known thereafter simply as London Brick Company.[1]

The unique combination of properties in the Knotts, plus large continuous-firing kilns and mechanised production methods, meant that Fletton bricks could be made in their millions. In addition, there were existing railway lines running through the Vale which facilitated distribution to all parts of the country. Also, as motor lorries came into use, Bedfordshire stood at the heart of the road network and remained so as the motorway system developed from the 1950s.

All these advantages contributed to Flettons being cheaper than any other type of brick. In 1931, for instance, Flettons at £3 1*s*. 6*d*. per thousand were the cheapest bricks on the market. At the time, second quality stock bricks cost £4 12*s*. 6*d*. per thousand, while red sand-faced facing bricks at £7 11*s*. 0*d*. were over twice as much as Flettons.[2]

In 1973 the five main Fletton works in the county produced an annual total of one billion, four-hundred-and-fifty-eight million bricks. By 1976 Bedfordshire was producing about 50 percent of the whole national Fletton output, equating to about 20 percent of all bricks made in this country.[3]

THE EASTWOODS ERA I: ORIGINS AND PRE-SECOND WORLD WAR

Eastwoods was a very old company founded early in the nineteenth century by John Francis Eastwood, originally as sand, lime and builders' merchants in London, at Wellington Wharf, 47 Belvedere Road, Lambeth.[4] The firm had diversified into brickmaking by at least 1828[5] and went on to operate a whole range

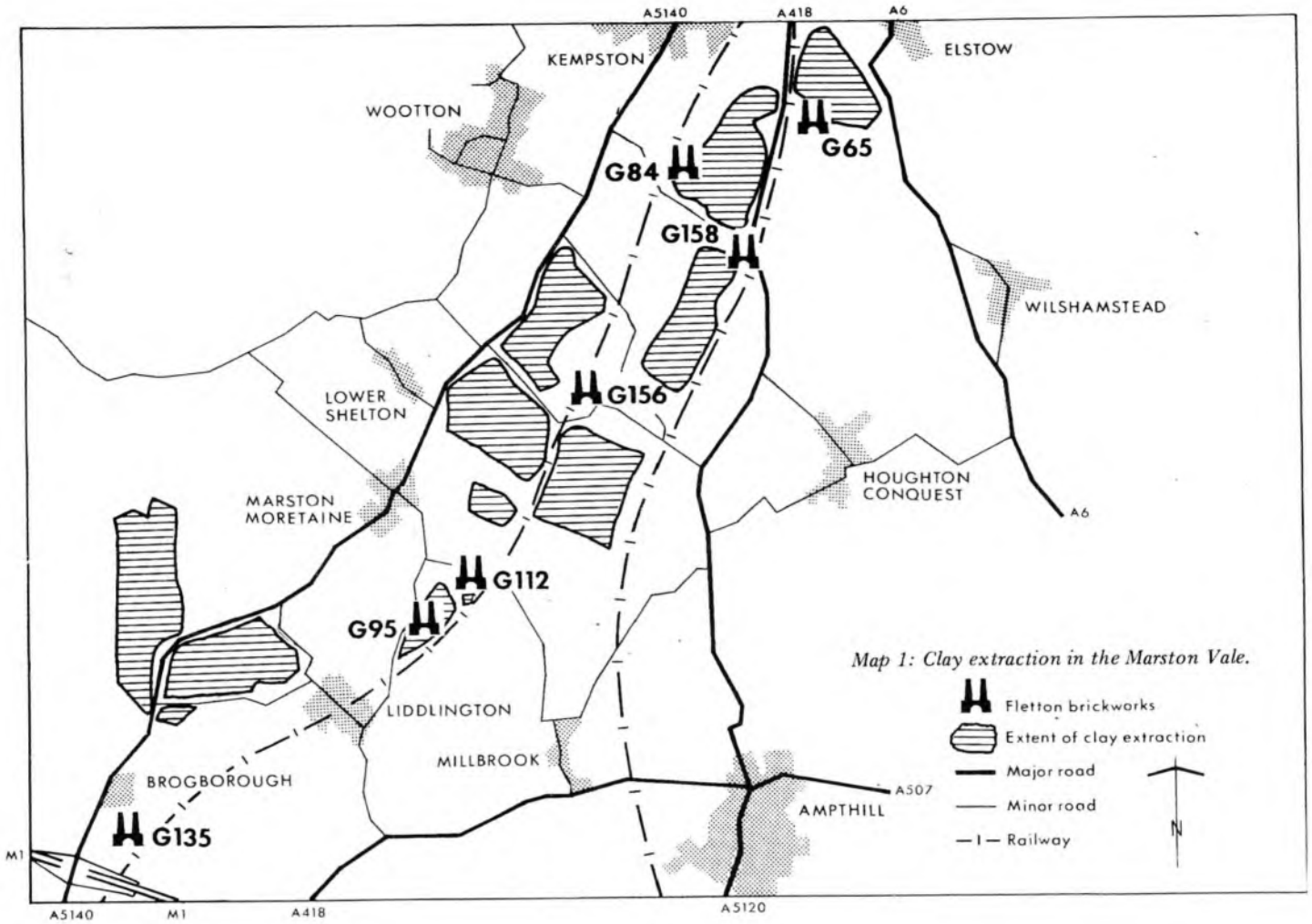

Fig.1 Map of Fletton brickworks in the Marston Vale, Bedfordshire.
Key: G65 Elstow; G84 Kempston Hardwick; G95 Lidlington; G112 Millbrook; G135 Ridgmont; G156 main Stewartby works; G158 Coronation Works, Chimney Corner, Stewartby.
Figure 1 is reproduced from A. Cox, *Survey of Bedfordshire: Brickmaking, A History and Gazetteer,* 1979, p.58.

of brickworks, mainly in the South-East. In particular, it produced stock bricks at works in North Kent, Essex and West Drayton (north-west London, now the London Borough of Hillingdon).[6] In the 1890s it first entered the Fletton brick industry in the Peterborough area, and in 1910 was a founding member of the Pressed Brick Makers Association, formed by firms producing Flettons.[7]

As far as Bedfordshire is concerned, Eastwoods acquired the Arlesey Station Gault Brickworks, on the eastern edge of the county, operating it from about 1890 until 1907.[8] Just over the county border, in Buckinghamshire, they had a brickworks at Woburn Sands from about 1900.[9]

In 1920 Eastwoods became a public company with a capital of £300,000,[10] increased to £450,000 in 1925.[11] By the 1920s they also owned cement works in Cambridgeshire, Sussex and Lincolnshire, as well as tile works at Leighton Buzzard (Bedfordshire) and Sussex, plus sand and ballast pits in Surrey. At the same time, they had 23 depots throughout the country and about 24 subsidiary companies.[12]

One of these was Eastwoods Flettons Ltd formed in 1927 to build a Fletton brickworks just outside Bedford at Kempston Hardwick (often simply referred to as Kempston works). The chairman of this company was Horace Boot, a member of the Institutions of Civil Engineers and of Mechanical Engineers, who was the head of a firm of consulting engineers. At the time he was the driving force of the whole Eastwoods group.[13]

The Kempston Hardwick works was on the east side of Manor Road (NGR: TL 027 448),[14] on what until then had been open fields. The 200-acre site was said to include a 'rich clay ideal for brickmaking'.[15] Having acquired at about the same time the earlier Bedford Brickworks at Kempston Hardwick, on the west side of the Bedford to Ampthill road (NGR: TL 038 454), Eastwoods used it to make the bricks for their new works and then closed the older works.[16] Over 7½ million bricks were needed just to construct the first two

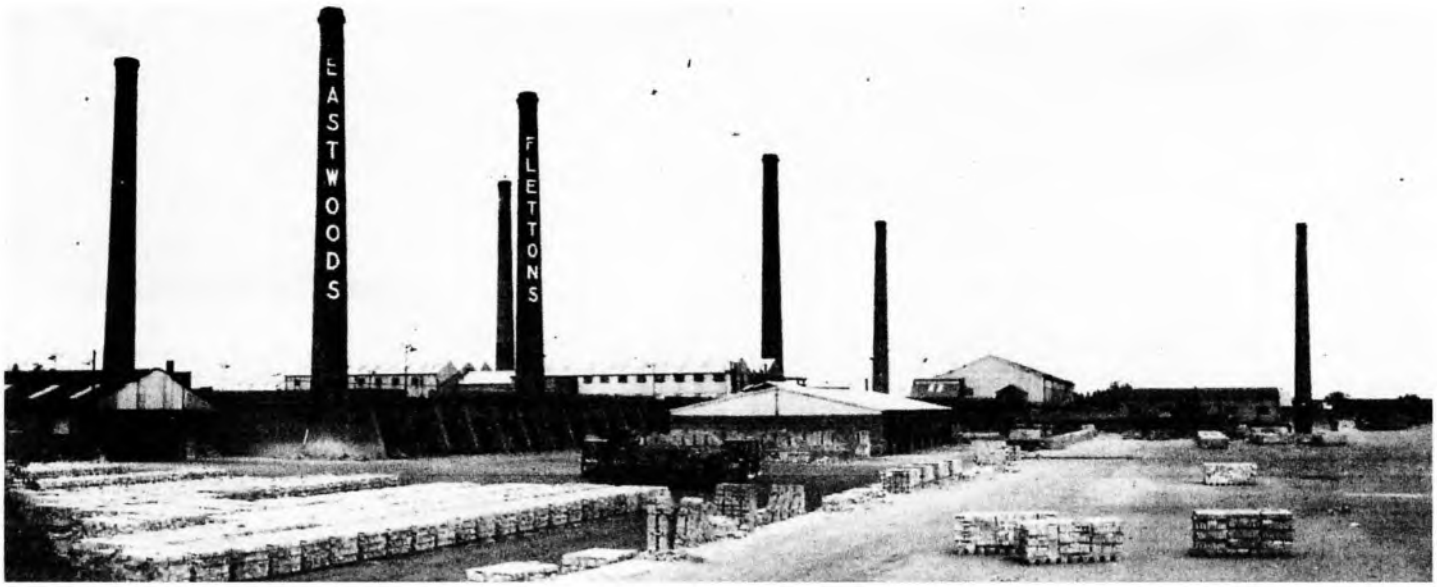

Fig.2 The seven chimneys of Kempston Hardwick works, one of which prominently displays the Eastwoods name and continued to do so under subsequent owners.
Figure 2 is reproduced from *LBC Review*, vol. 6, no. 3, May/June 1976, p.22.

kilns.[17] The new works opened in 1928,[18] with just No. 1 Kiln and in the first week made 100,000 bricks.[19] In 1929 Kilns Nos 2 and 3 were added giving the ability to produce a million bricks a week. No. 4 Kiln followed in 1935.[20]

The clay was dug by a mechanical dragline caterpillar-excavator. This dropped the clay into trucks that were hauled up an incline by a continuously moving chain to the top of an adjacent building. It was conveyed by an automatic feed to the grinding pans, which were 9ft in diameter, while the weight of the rollers in the pans was 22 tons. The ground clay was then screened to ensure it was of the correct fineness and fed into hoppers over the brick presses. In the presses a pressure of 80 tons was applied four times to form the green bricks, which were turned out at great speed. However, by at least the 1940s there was a small wheel which could be used to control the pressure of the presses. The pressed bricks were conveyed to the kiln chambers by specially constructed trucks running on a 2ft-gauge Decauville light railway. Decauville was a French company manufacturing ready-made sections of narrow gauge track, fastened to steel sleepers. It was much used during the First World War by both France and Britain, to transport men and munitions on the Western Front. The track was easy to lay and take up, so that the it could be relaid in a different layout.

The original three kilns were each 264ft long and 125ft wide. They were of the Hoffman continuously firing type, with 30 chambers, each capable of holding just over 30,000 bricks. Kiln No. 4 had 32 chambers with a capacity of 34,000 bricks each. Firing of the bricks took nearly a fortnight and, remarkably, the fires in No. 1 Kiln were never extinguished for almost 50 years. The works had its own power station, containing two large crude-oil engines, each of which drove one half of the works via a rope drive. One of the engines also drove a dynamo, which provided electric power for lighting and pumping purposes.[21] The four were capable of holding a million and a quarter bricks. Coal for firing was conveyed to the top of each kiln by a portable elevator.[22] The fired bricks would be drawn (unloaded) out of the chambers 90 at a time, on a single-steel-wheeled 'cockney' barrow that would require careful balancing.[23]

In 1934 it was reported that

> New types [of brick] are being continuously evolved through successful experiments and the surmounting of difficulties by chemists and technical workers. The Fletton brick itself is being transformed by Eastwoods into a medium priced facing brick, which has already received the warm approval of leading architects. This improvement has been secured by means of machines acquired by the group on monopoly terms, for the treatment of Flettons by a mechanized process. A complete manufacturing unit is already in operation and is meeting with a rapidly increasing demand for the new product [multicoloured facing bricks].[24]

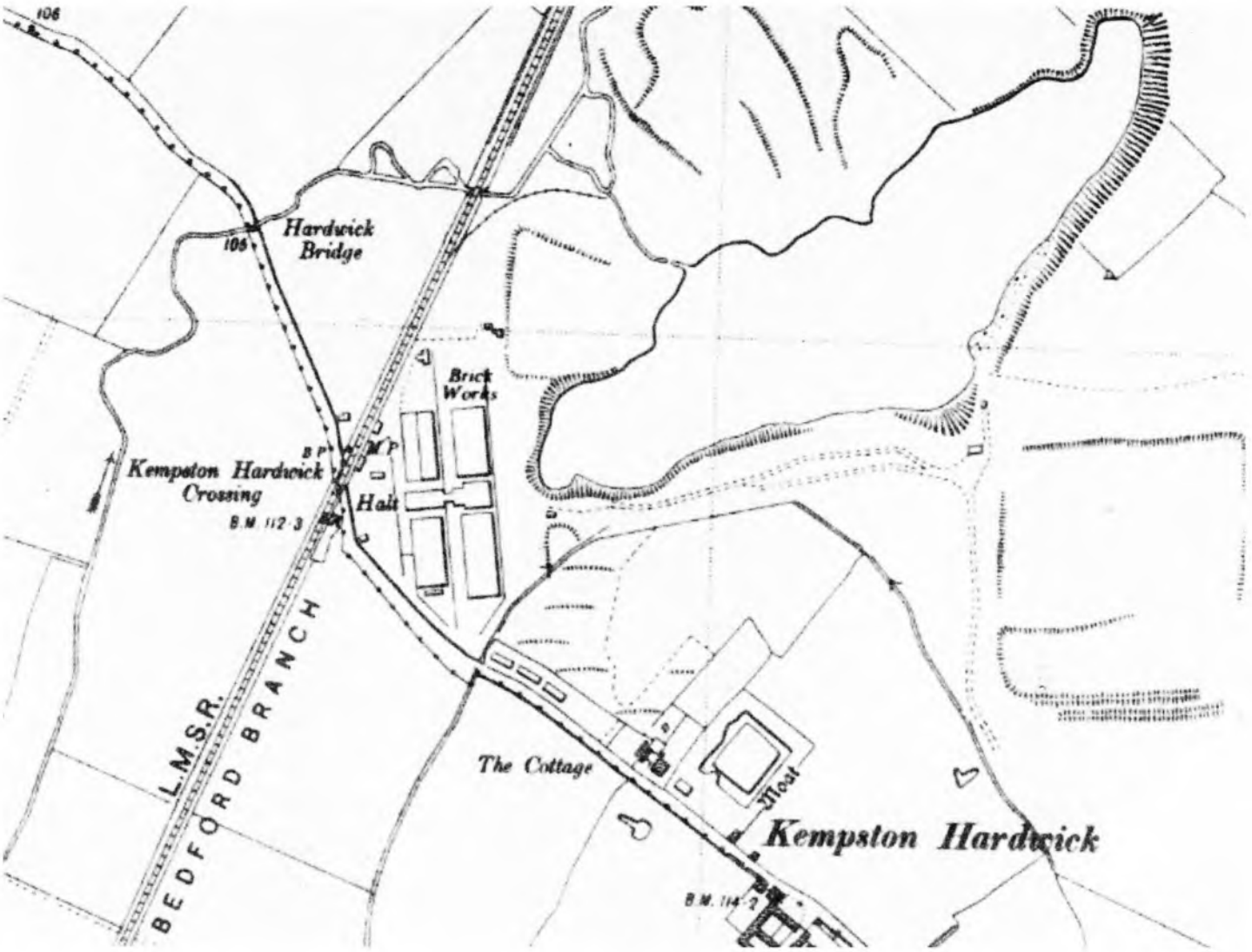

Fig.3 Extract from Ordnance Survey map Sheet XVI. SE, revised 1952.
Figure 3 is downloaded from the National Library of Scotland's on-line Ordnance Survey maps.

> manufacturing unit is already in operation and is meeting with a rapidly increasing demand for the new product [multicoloured facing bricks].[25]

It has so far not been possible to discover whether this machinery was installed at Kempston Hardwick or at one of the firm's Peterborough works.

Loading platforms were alongside all the kilns. Lorries drew up on specially constructed concrete roads and railway wagons on sidings, east of the Bletchley to Cambridge line.[26] Over the years, Eastwoods owned three standard-gauge locomotives for shunting wagons. Two were saddle-tank 0-4-0 steam locomotives dating from 1902 and brought from other works owned by Eastwoods. One was by Peckett of Bristol, the other by Andrew Barclay of Kilmarnock. The third was a four-wheel diesel locomotive manufactured in 1929 by Kerr Stuart of Stoke-on-Trent and purchased for the Kempston Hardwick works in 1932. It is now preserved at the Buckinghamshire Railway Centre, Quainton Road, where it has been named 'Redland', after the firm that donated it. Standard-gauge rail traffic at Kempston Hardwick works had ceased in the mid-1960s.[27]

As well as the Decauville system there were two other 2ft-gauge lines in the works. One transported clay from the working face in the pit to an aerial ropeway which supplied clay to the works. On this line locomotives pulled trains of six flat wagons, each carrying a ropeway bucket. A second line hauled conventional 'V'-skips, carrying clay to a conveyor serving the works. The first narrow-gauge locomotive

Fig.4 Front view of 1:50 scale die-cast model by Corgi of *c.*1950 Foden FG 8-wheel platform lorry of Eastwoods Fletton Bricks (Kempston Hardwick). The model is 180mm long, 45 mm wide, and 50mm to the top of the cab.
Author's collection.

was a four-wheel petrol loco by J. & F. Howard of Britannia Works, Bedford, acquired new in 1930. A four-wheel diesel by F. C. Hibberd of Park Royal, London, was purchased new in 1937. Otherwise, four-wheel diesels by Motor Rail, Simplex Works, Bedford, were used, manufactured between 1931 and 1971.[28] The 1931 example went to the preserved Leighton Buzzard Railway in 1970 but has subsequently been dismantled.[29]

Almost inevitably, workers could suffer serious accidents, particularly in the era before strict health and safety legislation. The presses were a particular area of potential danger. In the 1930s a man lost the fingers of one hand when working on a press at Kempston Hardwick, and by way of compensation Eastwoods gave him a job for life. Remarkably, he was not only able to set bricks in the kiln chambers but then became a burner.[30]

THE EASTWOODS ERA II: WARTIME AND POST-WAR

During the Second World War, at a time when bricks were urgently wanted to build airfields and other military installations, some of the employees who were in the Forces were released to resume working at Kempston

Fig.5 Side view of 1:50 scale die-cast model by Corgi of *c.*1950 Foden FG 8-wheel platform lorry of Eastwoods Fletton Bricks (Kempston Hardwick)
Author's Collection.

Hardwick. At the same time approximately 30 soldiers would arrive at the works about two in the afternoon and work until midnight.[31]

It seems likely that in the 1930s the giant six-wheel Armstrong-Saurer lorries of Mechand Transport Ltd were hired to deliver some of the bricks, since the firm was also based in Kempston Hardwick.[32] Like Marston Valley Brick Company, every vehicle of Eastwoods less than two years old was requisitioned during the Second World War and never returned.[33] By 1947 Eastwoods had 8-ton Dennis lorries and 12-ton and 15-ton Fodens. These all had double-driven bogies allowing them, on undeveloped building sites, to take heavy loads over thick mud, hillocks, ridges, ditches and rubble.[34] In November 1951, G. W. A. Miller, chairman and managing director of Eastwoods, reported that the group as a whole was adding to its fleet of lorries and eventually totalled about 50.[35] At least one Eastwood Flettons lorry has been preserved, a Foden FG flatbed, registration number KYH 381, fleet number 13, first registered 1949-50.[36] A 1:50-scale die-cast model of a Foden FG platform-lorry, registration number LLY 322, dating from the about the same period has been produced by Corgi (product number 12302). It is in a pale primrose yellow livery with black lettering which reads: 'Eastwoods Fletton Bricks' and 'Works/ Kempston Hardwick/Bedford/phone Kempston 2104', together with the fleet number 541.

One former employee talked about his time at Kempston Hardwick immediately after the Second World War. He worked from 7am to 5pm, with a half-hour break for breakfast, usually 8.30-9.00am, and half-an-hour at midday for lunch. He sometimes also worked on Saturdays from 7am to 12 noon. One week in 1946-7, he worked 54 hours and was paid a total of £7. At this period, Kempston Hardwick did not have much of a canteen: there was no hot food, only a cup of tea, and sometimes cakes. He, like other workers, brought his own food, usually sandwiches and perhaps a piece of cake.[37]

During the 1940s a man might find himself having to do many different tasks from day-to-day. The same worker recalled:

> I took off a single press; I took off two single presses, running them both at the same time: I took off a double press; I was up the hopper room, that's putting the clay down at the presses after its been cleared up. I did pan feeding, that's crushing the coarse clay from the knott hole. I worked down the

knott hole, clearing up along the rails. They let a kiln go out, so they relit the fires eventually. It wanted a lot of structural work, because the heat and everything in these kilns, in these chambers, it affected the kilns: they moved, they cracked, they split open. So then, I had that all one night. I should think I moved about, I don't know, a couple or three tons of coal. I was an electrician's mate. I did setting. I did 'smudging'. I did burning. All these jobs. Shunting.[38]

'Smudging' involved wheelbarrowing about three or four tons of smudge, that is small bits of coal, up to the top of the kiln. As a labourer he earned less than the specialist workers, an hourly rate of 1s 9d.[39] One day he set 38,000 bricks, the next day about 40,000, and another 50,000. Another man checked that the bricks were OK before they went into the kiln. The bricks were impressed 'Eastwoods Flettons' and also with the number of the press that had produced them. He finished the week as an extra shunter and received about £2 9s for the whole week.[40]

As well as common bricks, sand-faced multi-Flettons were made. As the bricks came out of a press they would be put on a small conveyor belt which ran it through a machine known as a scratcher, situated near a couple of presses. This had wire brushes each side and another wire brush at the top. These would scratch three sides of the brick, but not the flat face. A little trickle of 'beautiful orange sand' from a small hopper was ingrained on the bricks to produce the correct golden tint. They ran over an oiled roller and slid down to another worker, who took them off. Some ten or twelve thousand sand-faced bricks were made a day. Specials were cut by hand and tinted by hand, using a wire brush and then rubbing sand in. After firing, the sand-faced bricks were protected by straw when loaded on to lorries or railway trucks.[41]

At the 1946 AGM of the parent company, Eastwoods Ltd, it was stated that output was being adversely affected by a shortage of labour, delay in the delivery of new plant and, most recently, problems with the supply of coal. As a result, the whole of the brickworks of the group were producing about 50% of the prewar figure of one and three-quarter million bricks weekly. Nevertheless, this was much better than the 15% output during the war.[42]

In early August 1946, it was reported that, as with the local works of London Brick Company and Marston Valley, Eastwoods were using German prisoners-of-war at Kempston Hardwick. Indeed, they allowed the works to keep operating, while there was an unofficial strike by the British employees. The works manager said a hundred more prisoners would be required within in a few weeks. Furthermore, there was no other source of labour available and this was likely to be the case for some time to come. However, prisoners were not ideal and the works manager voiced the general complaint that 'They are more expensive and more difficult to work than any type of workman I know'. One problem was getting the commandants of the prison camps to agree to send inmates to work at the same hour as other brickworkers.[43]

In November 1951, Miller reported that in the past few months the company had flown a deputation to Italy to recruit workers from there.[44] About 100 Italians were employed at Kempston Hardwick and huts were erected to provide a hostel at 'Chimney Corner'.[45] John Paisley, the works manager, announced in November 1952 that Dutch labour, available through the Ministry of Labour, was being employed, and, he said that 'they were really good workmen'. They also were accommodated at Chimney Corner.[46] On the other hand, a Polish employee, would cycle every day from Marston to Kempston, leaving at 4am.[47] By 1953 there were men of 14 nationalities employed at the Kempston works, with Italians and Dutch being the most numerous, having been brought over at the company's expense.[48] In 1969 there was a total workforce of 400, consisting of 190 English, 79 Italians, 32 from other European countries, 90 Asians (including about 12 Indians) and 15 West Indians. Yet there was still a great need for labour.[49]

Eastwoods did build a few cottages in Manor Road for employees, but nowhere on the same scale as London Brick or Marston Valley, both of which had far more workers.[50] One of the Manor Road cottages had, downstairs, a big living room, kitchen, bathroom and pantry, while upstairs were two decent-sized bedrooms, plus a much smaller one. A garage was provided and there were front and back gardens.[51]

During the Second World War, Eastwoods made plans to modernise Kempston Hardwick to meet the fierce competition expected after hostilities ceased.[52] By November 1946, the company's three Fletton works were already undergoing modernisation.[53] This post-war extension and rebuilding of the works, meant scrapping the old plant.[54] By 1949 parts of Kempston Hardwick were being slowly rebuilt, which when completed were expected to increase weekly output by as much as a quarter of a million bricks a week. Much more up-to-date processing plant was being installed, although it was basically much the same as the old machinery. There was enough clay on land already owned by the company to last another 25-30 years.[55] In 1953 clay was being excavated at the rate of 8,500 tons a year. A surface acre provided enough clay for 25

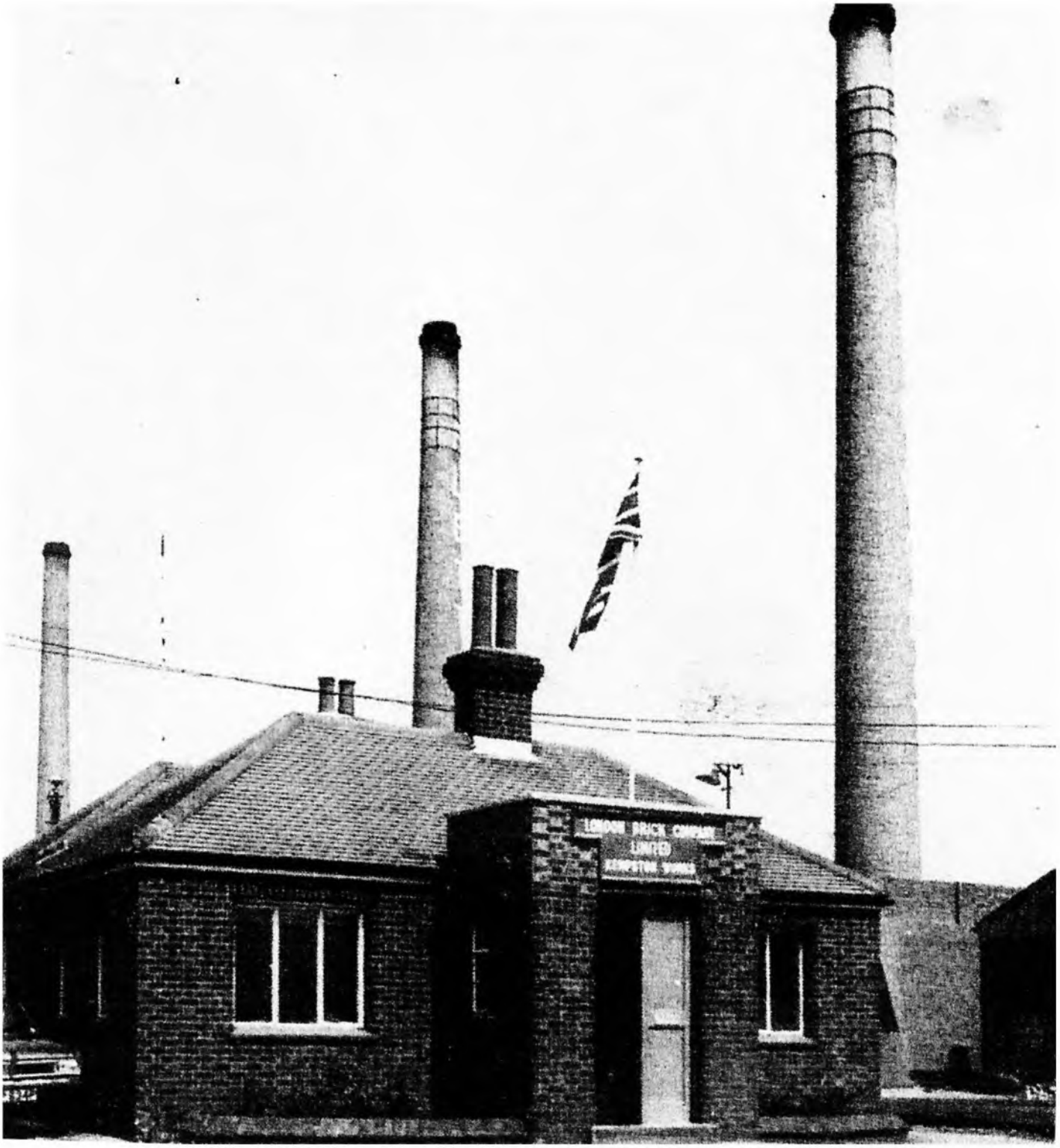

Fig.6 The Works Office at Kempston Hardwick when owned by London Brick Company.
Figure 6 reproduced from *LBC Review*, vol. 6, no. 3, May/June 1976, p.22.

million bricks, meaning that each year about four acres was worked.[56] In July 1953 a chimney and the foundations had been completed of No. 6 Kiln, designed by John Paisley, who was an engineer and became Eastwoods' production manager. Designed for mechanical handling, it was originally intended to be an 'Open Top 16 Chamber Clamp'. However, when completed in 1954, arches had been added making the more normal Hoffman type. This kiln was completed by 1954. It was later extended to 32 chambers, each adapted to allow access to fork-lift trucks. Paisley also patented a setting machine built and used at the Kempston Works and set something like 40 million bricks over a four-year period.[57]

By 1953 weekly production had risen to 2,250,000 bricks, amounting to a yearly figure of well over 100 million.[58] In fact by then output was 25 percent above the pre-war figure,[59] and by the next year it was 125 percent above.[60]

THE FINAL YEARS

In 1962 the entire Eastwoods group was bought by Rugby Portland Cement which, in the same year, after only six months, sold the brickmaking part to Redland, including the Fletton brickworks at Kempston Hardwick, Orton and Yaxley (the latter two in the Peterborough area).[61] In many ways Redland was similar to Eastwoods. It originated in Reigate, Surrey, as the Redhill Tile Company (it did not adopt the name Redland until 1946). Although known predominantly as a manufacturer of concrete roof tiles, making its first in 1919, it was involved in the production of a wide range of other building materials. These included sand and gravel, stone quarrying, road-surfacing material, other concrete products and clay bricks (they owned the Bursledon Brick Company in Hampshire). Redland were, however, a much more global company than Eastwoods. It acquired tile works in South Africa, Australia and Germany, as well as holdings in various Middle and Far Eastern enterprises.[62]

In the 1960s, office workers in the transport office at Kempston Hardwick despatched the Eastwoods fleet of four-wheeled Bedford lorries, with a capacity of 4,000 bricks, and eight-wheeled Fodens (7,000 bricks) to builders' merchants and construction sites all over south-east England. The north and most of East Anglia were supplied from the company's Peterborough yards. However, Kempston drivers looked forward to the occasional trip into East Anglia where traffic was much lighter. After a lorry was despatched, an office worker prepared an invoice to be sent to the customer, based on the number and type of bricks, plus the distance of the delivery, based on a map with Kempston Hardwick at the centre and concentric circles radiating around southern England. When the economy was going well and bricks were scarce, builders would often telephone the transport office to plead for a delivery. At other times, when a building site had too many bricks, drivers would phone back to the office which then had to persuade another site or builder's yard to accept the lorryload. Otherwise, very occasionally the load had to be brought back to Kempston. Once Eastwoods became part of the Redland 'empire', private hauliers from brickyards in Kent and Sussex began calling into Kempston Hardwick works to ask for a return load to their home territory. Owner-drivers could make a small profit with a one-way load but were eager, where possible, to return loaded as well. Some drivers came from the area of Sittingbourne, Kent, and others from Ashdown Brickworks in Bexhill, Sussex (owned by Sussex & Dorking Bricks, then Redland and now owned by Ibstock).

An office worker at Kempston Hardwick in the 1960s had to send out single sample bricks by post in strong cardboard wrapping, when requested by prospective customers, both builders and architects. He often wondered what the postman thought of such mysteriously heavy packages. One of the popular Kempston Hardwick bricks at the time was a 'grey ridgefaced' intended to compete with a similar London Brick product. There was a great effort to make facing bricks look more attractive so they could be used to give largely concrete-structured buildings a better appearance. Also in the 1960s, Kempston Hardwick produced a 'calculon block', a double-sized brick which was an attempt to keep bricks relevant in an age of increasingly high-rise buildings. The block was designed to be used for load-bearing walls. Although used on some building sites, the calculon block was not successful and did not survive for long.[63]

Kempston Hardwick was operated by Redland Bricks Ltd until in 1971 the directors approached London Brick Company to see if it wished to purchase their Fletton brickworks. The clay reserves owned by Redlands were almost exhausted and, given the dominance in the Fletton market of London Brick Company, it was not worthwhile purchasing further claylands. London Brick responded very quickly and the three works were in its possession from May 1971.[64] In 1973 Kempston Hardwick produced 167 million bricks.[65] Under London Brick the prices of Fletton bricks charged by Redlands were reduced.[66]

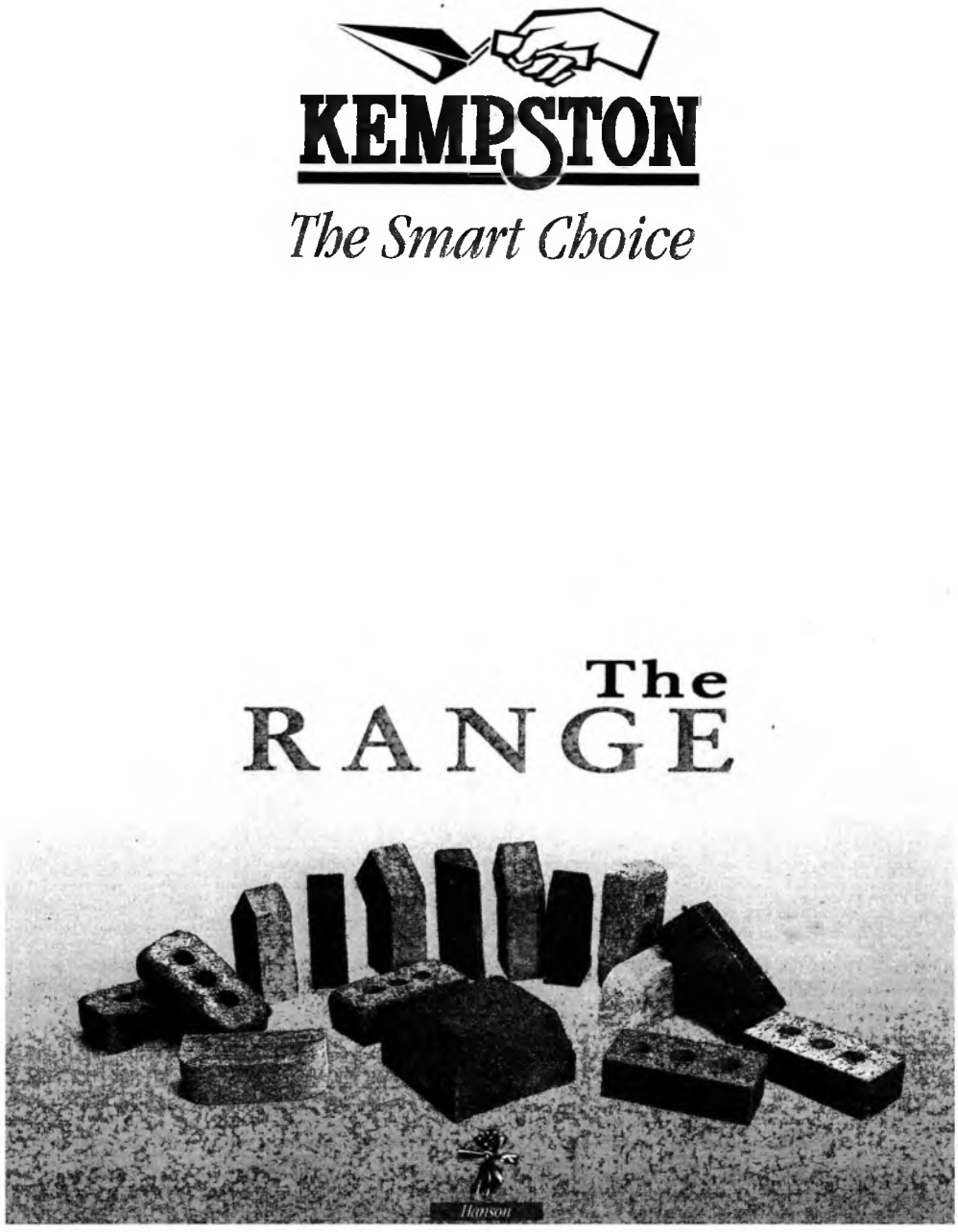

Fig.7 Front of Hanson Brick sales brochure for their 'Kempston' range of bricks (undated but probably 1990s).
Author's Collection.

The *LBC Review*, vol. 6, no. 3, for May/June 1976, pages 23-24, gives details of improvements carried out at Kempston after the takeover. Clay had to be hauled by conveyors nearly a mile from the face of the knothole to the works. It was dug by three navvy machines, one of which removed the callow or overburden, while the other two excavated the knotts. On arrival at the works the clay was ground and screened in 14 grinding pans. Forty brickmaking presses, which had been speeded up, were producing 3.7 million bricks per week and it was hoped to reach four million later in that year. Two LBC facing machines, with their usual conveyor handling system, were introduced, improving the quantity and quality of facing

brick production. In fact, just over half of the total output was faced. Kempston specialised in 'Dapple Lights', 'Cotswolds' and 'Milton Buffs'. The last of these had been developed at Kempston by Redland and incorporated a diagonal ridge face. It was the only one to be continued by LBC of the ten types of bricks previously produced at Kempston by Redland. All six kilns were in use in 1976 and were of the standard two-fire Hoffman type, fully instrumented and equipped with George Kent recorders. Kilns Nos 4, 5, and 6 had 34 chambers, each with an average capacity of 34,000 bricks. Finished bricks were delivered by a mixture of LBC's own lorries and private hauliers, loading of which was by fork-lift trucks, using three types of 'block': 'standard, 'self-stak' and the recently introduced 'strapak'.

Yet eleven years later, in 1982, the works was 'mothballed',[67] and London Brick Company was acquired by Hanson plc in 1984. Much of the existing Kempston Hardwick works was demolished, although the seven chimneys were still standing in 2001, one having in large letters 'Eastwoods'. Hansons opened a new works on the site in 1987.[68] Unlike previous Fletton operations in Bedfordshire, a new extruding plant was installed, where the clay came out in a continuation mass with the profile of a brick. This was then cut into 24 bricks at a time by wires.[69] The brickworking was carried out by just 12 men, including two providing clay, two operating the extrusion plant and six stacking bricks as they arrived on a conveyor belt, after having left the extruder. Yet in 1996 they were said to be producing the incredible figure of a million bricks a week.[70] The bricks themselves were marketed as the 'Kempston' range, consisting of over 30 finishes and colours, mostly very different from the traditional Fletton bricks but still made from the Lower Oxford Clay.[71] Yet, after only 12 years the Hanson works closed in April 1999 and was subsequently demolished.[72]

ACKNOWLEDGEMENTS

Dan McAndrew was kindly responsible for producing the images for publication. Figure 1 is reproduced from Alan Cox, *Survey of Bedfordshire: Brickmaking*, London: HMSO, and Bedford: Bedfordshire County Council, 1979. A copy of *LBC Review* volume **6,** number 3, May/June 1976, used for figures 2 and 6, was king supplied by Andrew Mortlock, Archivist, London Brick History. Figure 3 is download from the national Library of Scotland's online Ordnance Survey maps.

NOTES AND REFERENCES

This account makes use of the oral history project 'Changing Landscapes: Changing Lives' about the Marston Vale brick industry. Between 2001 and 2004 Carmelo Semeraro taped some 263 interviews with men, women and children, who were born from 1901 to 1995. Many of the interviews are an hour long or more. Select transcripts were then written up and I am grateful to Stuart Antrobus for giving me a copy of these. All references in the endnotes prefixed ST relate to these transcripts. For those that do not have page numbers, the nominal page number is given in square brackets. A complete set of the transcripts, available for public consultation, is held at the Bedfordshire Archives and Records Service, Borough Hall, Bedford.

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BRICK IN THE NEWS:
STEWARTBY AND KEMPSTON HARDWICK BRICKWORKS SITES SOLD

The sites of the brickworks at Stewartby and Kempston Hardwick have been sold by Heidelberg Materials, formerly Hanson UK, to a developer, Harworth, who proposes to build 1,000 new homes, a school and unspecified community facilities on the sites. In total the brickworks' sites comprise 130 acres (*circa* 52.6 hectares) of development land some 6 miles (10 km) from Bedford town centre. It has been suggested as a significant boost for the regeneration of the area. Previous use of the sites in the afterlife of the claypits has been to accommodate London's rubbish in the years prior to large-scale recycling.

The redevelopment plans were reported on BBC TELETEXT on 4 November 2024.

D.H. KENNETT

BRICK IN THE NEWS:
SHIRE HALL, CASTLE STREET, CAMBRIDGE

From the Assize of Clarendon of 1166, it was the duty of the Sherrif of each county to provide a gaol and a courthouse for the administration of justice. If one was available, the royal castle in the county town was regarded as a suitable site for the trial, incarceration, and, if necessary, the execution of felons. Cambridge Castle, across the river from most of the town served in this role until the late 1920s. To facilitate the administration of justice, there was a courthouse of 1841-43 designed by Thomas Henry Wyatt and David Brandon and the older County Gaol of 1802-07 designed by George Byfield *c.*1756-1813). The latter was an established architect of prisons, being also responsible for replacement gaols in Bury St Edmunds and Canterbury. Courthouse and county gaol were joined in 1879 by the county police station.

In 1931-32, Shire Hall was built across the north-east part of the outer bailey of Cambridge Castle. This was of yellow gault bricks, mostly those retrieved from the demolished County Gaol, an early example of large-scale recycling of building materials. The new Shire Hall was designed by the County Architect, H.H. Dunn, who in 1913-14 had designed County Hall on Hobson Street, on the edge of the city centre. The latter was purchased by Christ's College and renamed the Todd Building. The two county administrative buildings more or less bracket Dunn's tenure of the office of County Architect.

His successor, R.H. Crompton, added in 1939 an extra storey to the two-storeyed building placing the offices there beneath a mansard roof. Another, octagonal addition was made in 1974; the concreate structure has not been regarded as a successful. Also in 1939, the County Polic Station was repurposed as the County Cline, again an early example of recycling of useful buildings.

In 2022. A new County Hall was completed at Alconbury Weston, a central location for the enlarged Cambridgeshire created from the local government reorganisation of 1974 which subsumed within a much enlarged Cambridgeshire the historic county of Huntingdonshire to which had been added the Soke of Peterborough in 1964, the last named originally part of Northamptonshire.

The 1932 Shire Hall has attracted fifteen bids from prospective purchasers. It is intended that the building will be redeveloped as an hotel.

D.H. KENNETT

British Brick Society Information: 'Brick in Churches' issue in 2026 or 2027

Terence Smith left a number of papers on brick and its uses; one of which, 'Practice Profile: Nugent Francis Cachemaille-Day FRIBA (1896-1976): A Response to Clare Price', was included in *British Brick Society Information,* **152,** February 2023. In a tribute to his long-standing friend, the Editor will complete 'Car-Manufacturing Towns in Contrast: Brick and the Building of New Churches in Oxford and Luton, 1907-1945'.

There are also several items, all less than a page in length, which includes potential contributions to a 'Brick in Print: Churches' section. To make an issue of 52 or 56 pages, the currently available material needs fleshing out with at least two more pieces, which need not be long articles but one could be. Members who feel that they could contribute to the issue are invited to contact the Editor, *British Brick Society Information,* by post or by email at *davidkennett510@gmail.com,* preferably the latter, by Tuesday 24 August 2025, and to submit completed articles and notes on or before Wednesday 15 December 2025; this information will also be given in *BBS Information*, **158,** February 2025 and subsequent issues.

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Brickmaking in the Second World War: The *First Report of the Committee on Brick Production*: Extracts and Evaluation

Richard Newman

THE DOCUMENT

The *First Report of the Committee on the Brick Industry* is the title of a document dated 8 December 1941 and was published in 1942.[1] It cost sixpence (2.5 new pence).The objective of the report was the 'concentration' of brickworks. To achieve this several brickworks were earmarked for closure on a temporary, or permanent, basis. The workforce, not required to enlist, from the closed works would be transferred to other, local brickworks.

The report stemmed from the Minister of Works and Buildings appointing a committee, whose remit was:

> To consider and report to the Minister of Works and Buildings on the action to be taken on increased efficiency and economy in the manufacture of bricks, and to ensure the necessary supplies of bricks for both wartime and post war probable demands, with special reference to the introduction of more scientific methods; the saving of fuel; the possibilities of the greater pooling of resources; the concentration of industry; labour and transport problems; and generally to take under review any matters that affect, or may effect, the efficiency and proper functions of the Brick Industry, but not to deal with the questions of wages; and to advise on any immediate steps that should be taken to assist the war effort.

This request was made by the Minister on 15 September 1941; the committee reported on 8 December 1941.

> In concluding their deliberations, the committee noted the number of undertakings and works producing bricks in December 1938, May 1941, and November 1941, as shown in Table 1.

Labour force totals for these three points and October 1942 are also shown on Table 1.

TABLE 1
BRICKMAKING UNDERTAKINGS, BRICKWORKS, LABOUR FORCE

Category	Dec. 1938	May 1941	Nov. 1941	Oct. 1942
No. Undertakings	907	634	604	
No. Works Operating	1,147	821	781	
Labour Force total	52,800	34,290	33,074	22,998
Total: Men	51,390	31,731		20,703
Total: Women	1,410	2,559		2,295

Source: *First Report of the Committee on Brick Production,* London: HMSO, 1942.
Notes: Data Source: Ministry of Labour

As Table 1 shows, it can already be seen that the Brick Industry had been contracting over the previous two years. The labour force had reduced from 52,800 in 1938 to 34,290 in May 1941 and had further declined to 33,074 by October 1941. Of the May 1941 total of 32,290, only 2,559 were women, approximately 7.5 percent of the total labour force.

The objectives defined in the December 1941 report were:

1. To secure the maximum degree of concentration of the Brick Industry.
2. Not to ask for the transfer of men below the age of 35 on registration of women from the conscribed classes.
3. To assist by arranging for the transfer of older men from closing works as substitutes for men under 35 in continuing works.

In short, by concentrating the production of bricks in fewer works and, the substitution of men by women, they were aiming to release more adult males for the forces. Women had previously been employed in brickmaking in the Great War (the First World War).

The figures in Table 1 show that nearly 31,000 men were released under this scheme from the brick industry despite brickmaking being a 'reserved' occupation. From the Government paper on reserved occupations, January 1939, we learn,

> Brick, Tile, and Fireclay Goods Manufacture: All workers in productive processes other than labourers. Age limit, 30.[2]

The Technical Committee considered the types of operation in brickmaking which could be performed by women. Information was also obtained from the industry showing their current view on the replacement of men by women. It appeared that a proportion of approximately 20 percent women would be the maximum which would be immediately practicable without serious loss of efficiency.

It was agreed by the committee that three women could achieve the equivalent of two men with regards to brick output. The man equivalent of the maximum number of women employable in the industry is approximately 14 percent of the total manpower. They calculated that 2,349 women would replace 1,566 men to then be available to be conscripted.

> As a result of a general survey of current opinion in the brickmaking industry, it is considered that the employment of women in brickworks is practicable only in conjunction with operations in the following schedule (see Table 2).

The fifteen tasks that women were expected to perform were listed in terms of operation, classification, and remarks in Table 2.

In conclusion:

> The committee recommend that to maintain efficient production the numbers required are 24,110 men, i.e. 29,539 employed as of October 1941 less 5,429 to be released under the concentration proposals, and 3,535 women.

There was concern relating to the number of vacancies in the brickmaking industry. Table 3 (on page 49) gives data from labour exchanges throughout the United Kingdom on 30 June 1942. The total vacancies outstanding of 699 jobs included 222 positions for women; at 31.76 percent of the vacancies, this was just under one-third of the total.

STANDARDISATION OF BRICK SIZE

Tudor bricks were shallow in gauge (height) with rounded arises (the right-angled edges). Sizes are typically found to range from 210-250 mm × 100-120 mm × 40-50 mm (8¾-10 × 4-4¾ × 1½-2 inches). In the eighteenth century, parliament specified 8½ × 4 × 2½ inches, which is equivalent to the modern metric brick of 215 mm × 102.5 mm × 65 mm.

In 1942 much of the brickmaking industry had yet to be fully mechanised. The consequence of this was that some bricks were made at diverse sizes to other. The committee recommended the adoption of a standard brick size. This was referred to as *Type II of British Standard Specification No. 657-1941.* The dimensions of a standard common brick were to be 8¾ inches long, $4^{3}/_{16}$ inches wide, 2⅝ inches deep. Tolerances of ± ⅛ inch on length and $^{1}/_{16}$ inch on the other dimensions.

The dimensions of the contemporary standard facing brick (215 mm × 102.5 mm × 65 mm) in imperial measurements would be 8.46 × 4.04 × 2.56 inches.

TABLE 2
BRICKMAKING OPERATIONS WHICH COULD BE UNDERTAKEN BY WOMEN

	Operation	Classification	Remarks
1.	Driving petrol, diesel, or light electric vehicles or conveyors.	Light.	
2.	Hooking-on, etc (clay pit).	Heavy to impossible	Depends on design of system
3.	Pan0mill feeding (clay pit).	Light to impossible.	Dependent on size of truck and extent of physical handling.
4.	Attending Mixer or Tempering.	Light to heavy.	High degree of skill required.
5.	Wirecut machine: Cutting off.	Light to impossible.	Dependent on speed and degree Of physical handling.
6.	Taking-off (press).	Light.	
7.	Taking-off (wire cut).	Light to heavy.	
8.	Taking-off (pallet boards).	Heavy.	
9.	Wheeling to drying floor.	Light to impossible.	Dependent on design of truck.
10.	Putting down on drying floor.	Light.	
11.	Taking-up from Drying floor.	Light.	
12.	Wheeling to kiln.	Light to impossible.	Dependent on design of truck and type of roadway.
13.	Setting (including kiln-car setting).	Heavy to impossible.	
14.	Wicket building.	Light to heavy.	Dependent on height of wicket.
15.	Cleaning, storekeeping.	Light.	

Source: First Report of the Committee on the Brick Industry, London: HMSO, 1942

TABLE 3
VACANCIES IN THE BRICK INDUSTRY ON 30 JUNE 1942

Region		Vacancies Notified	Vacancies Filled	Vacancies Outstanding
London	Men	21	17	2
	Women	8	6	0
Eastern	Men	21	1	33
	Women	12	3	21
Southern	Men	5	5	5
	Women	1	0	11
South Western	Men	88	10	78
	Women	12	6	6
Midlands	Men	152	60	91
	Women	93	28	69
North Midlands	Men	9	9	57
	Women	3	4	26
North Eastern	Men	38	6	73
	Women	25	16	23
North Western	Men	31	20	68
	Women	4	3	13
Northern	Men	27	18	8
	Women	11	1	10
Scotland	Men	38	20	54
	Women	27	30	39
Wales	Men	13	13	8
	Woman	5	4	4
Totals	Men	443	179	477
	Women	199	101	222
Grand Totals		642	280	699

Source: *First Report of the Committee on the Brick Industry, London: HMSO, 1942*
Notes: 1. The total vacancies outstanding would have contained those carried forward from the previous month. These figures were collected monthly by the labour exchanges. In June1422, there were vacancies for 222 women throughout England, Scotland, and Wales. This is 31.76% of the total vacancies.

GENERAL RECOMMENDATIONS OF THE COMMITTEE

The committee recommended that the size of the brick industry's output

> should be decreased by 12.5% and that 4% of that should be achieved by the closing under compulsory order of specific brickworks or in the case of large works by the reduction of productivity.

The committee further recommended that

TABLE 4
HAMPSHIRE BRICKWORKS IN 1942 AND 1943

Brickworks Name	Location	1942 Status	1942 Employees Men	1942 Employees Women	1943 Status
Bailey & Whites	Hilsea Brickworks, Portsmouth	Trading	38		Closed; under care and maintenance
G. Billett & Sons	Old Yard, Sandleheath	Trading	14		Closed: sold in 1944
Bursledon Brick Co. Ltd.	Lower Swanwick	Trading	33	3	Trading
Daneshill Brick & Tile Co. Ltd	Basingstoke	Trading	Not known		Closed under care and maintenance
Dean Brickworks Co.	Bambridge, IoW	Trading	1		Closed
Dibben & Sons Limited	Fair Oak	Trading	14	3	Trading
Albert E. Flux	Werrar Brickworks, Newport, IoW	Trading	5		Trading
Island Bricks Limited	Rookley Brickworks, Newport, IoW	Trading	30		Trading
Island Bricks Limited	Gunville Brickworks, Carisbrooke, IoW	Trading	11		
Michelmersh Brick & Tile Co. Limited	Romsey	Trading	9		Trading
Rowlands Castle Brickworks Limited	Rowlands Castle	Trading	27	1	Trading
Build-o-Bricks Limited	Clamp Kiln Farm, Newton, near Farnham	Status not known	Not known		Closed?
The Down End Brick Manufacturing Co. Ltd	Downend Brickworks Downend. near Newport, IoW	Trading	3		Trading
Mussellwhite & Son Ltd	Newnham Brickyard, Nateley Scures, near Basingstoke	Trading	1		Closed
Pool & Sons	Hazeley Heath, Hartley Witney	Trading	3	1	Closed under maintenance
Stroud Brick & Tile Co.	The Stroud. Petersfield	Status not known	Not known		Closed under maintenance
Total employees, Summer 1942			189	8	

Source: See text and endnotes

Notes: 1. *Brickworks in italics* were scheduled for concentration in 1942.

2. Less than 5% of the workforce in Hampshire brickworks listed in 1942 were women. The government target was 20%

3. Further information on selected works is available from the author; *utilities@thebrickworksmuseum.org*

> A scheme should be established for contribution towards care and maintenance of works closed under compulsory order of with the approval of the Minister.

In 1942, the committee noted that

> the Government does not contemplate the use of public funds to provide compensation.

The committee had

> given consideration to a scheme whereby the undertakings continuing in production would maintain, by means of a levy on sales, a fund which would contribute to the cost of care and maintenance of works closed under compulsory order or with the approval of the Minister.
>
> This scheme visualises progressive decline of output and therefore successive stages for the closure of the works to keep a balance between supply and demand. On this basis, due to the reduction of demand it is unlikely that any works remaining in operation will earn increased profits on account of the closing of other works ...

As the war progressed, there were moves to reduce the number of women employed in the brickmaking industry. As late as 20 October 1943, the Ministry of Labour and National Service replied to the Ministry of Works, responsible for the brickmaking industry, that

> It had been agreed that the withdrawl of women employed in the brickmaking industry on Scotland should continue to be suspended until 30 April 1944. We shall have to ask you to review the matter again shortly before that date.

HAMPSHIRE BRICKWORKS IN THE SECOND WORK WAR

The Hampshire Brickworks mentioned in the 1942 document are listed in Table 4 which also lists staff numbers together with comments from an unpublished 1943 Ministry of Works report [3] made in relation to the then current state of brickmaking in the United Kingdom.

There were only fifteen Hampshire brickworks listed in the 1942 document yet there are 52 listed in the 1943 document. Of the latter, 29 were listed as either closed or closed under care and maintenance. The entry of the United Kingdom into the Second World War, and the actions of the Ministry of Works, clearly had a damaging effect on the brickmaking industry throughout Hampshire.

In 1971. W.C.F. White of the Southampton Industrial Archaeology Group reported on 41 brickworks of which only six were operative. Currently, only Michelmersh remains producing clay bricks, pavers, special shaped bricks, bespoke architectural terracotta, and prefabricated brick components or systems.

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2. Schedule of Reserved occupations (Provisional), 1939. The document is reproduced under Open Government Licence http://www.nationalarchives.gov.*uk/doc/open-government-licence/version/2/*
3. This directory id an unpublished document prepared by the Ministry of Works in 1943. It is assumed to have been initiated to record the extent and the size of the brick manufacturing industry and the potential for its re-establishment when hostilities ceased. Reproduced by kind assistance of the British brick Society.

NOTES ON CONTRIBUTORS

ALAN COX is an architectural and building historian and a former assistant editor of the Survey of London. He is the author of *Survey of Bedfordshire: Brickmaking, A History and Gazetteer* (1979). He has written about various aspects of bricks and brickmaking for a range of publications, including several articles in *British Brick Society Information,* as well as giving various lectures and talks on the subject. Wider interests are industrial archaeology, transport history, and the history of housing, especially working class and social history.

JOHN HOWARTH obtained his first degree in Mathematics at Peterhouse, Cambridge, and went on to gain an MSc in Statistics at London University. His career has involved mathematical modelling, first with the UK government and subsequently in the avionics industry. He developed a long-standing interest in modelling and hydroconsolidation of loess when he joined Ian Smalley and Hugh Nugent in the Brambledown Research Project. He is a native of north-west Kent.

DAVID H. KENNETT is the Editor of *British Brick Society Information.* A retired lecturer in Sociology, he holds degrees in Archaeology, in Construction Management and Economics, and in Technology and Society from Prifysgol Cymru, Bristol Polytechnic, and Salford University, respectively. His brick interests centre on the relationships between building patronage, the building patron's wealth, and the resulting buildings; applying construction management skills to the documentary evidence about buildings; and on the use of brick in religious buildings.

RICHARD JOHN NEWMAN is the Utilities Manager at The Brickworks Museum, Lower Swanwick, Hampshire, where he conducts brick-related research on bricks, brickworks, and brickmakers. He worked as an investigator for a government department and later formed an investigation and security agency. He has a degree in Systems Analysis and was heavily involved in the education, training, and examination of people wishing to gain Security Industry Authority licences.

IAN SMALLEY was born in Crayford in north-west Kent, close to the fringes of the Crayford Brickearths. He studied at Battersea Polytechnic and City University, London, and has been investigating the nature and properties of loess ground since 1964. He was President of the INGUA Loess Commission, 1999-2003, and is currently an honorary professor at Leicester University. At Leicester, he worked with the Experimental Firing Group of Ann Woods and the Centre for Loess Research and Documentation. Contact: *ijsmalley@gmail.com* and *loessground.blogspot.com*

Submission dates for future issues of *British Brick Society Information*

BBS Information, **158,** February 2025: please submit items for inclusion by Wednesday 18 December 2024.
BBS Information, **159,** June 2025, please submit items by Tuesday 31 March 2025.
BBS Information, **160,** October 2025, please submit contributions by Wednesday 27 August 2025.
BBS Information, **161,** February 2026, please submit by Wednesday 10 December 2025.
BBS Information, **162,** June 2026, please submit by Wednesday 25 March 2026.
Please contact the Editor, *British Brick Society Information,* if you have any queries regarding these dates and would like a possible *short* extension thereto.

Thank you,
DAVID H. KENNETT
Editor, *British Brick Society Information*

BRITISH BRICK SOCIETY
MEETINGS in 2025

Saturday 21 June 2025
Annual General Meeting
Colchester, Essex
Tour of the Roman circus in the afternoon.
The 52nd Annual General Meeting of the British Brick Society
Contact: Mike Chapman: *Chapman481@btunternet.com*

A Saturday in September 2025
Autumn Meeting
Derbyshire: East along the A52
Visiting the Moravian Settlement at Ockbrook and the buildings of the Willoughby family in Risley, including their brick-built chapel at the church at Church Wilne
Contact: David Kennett: *davidkennett510@gmail.com*

Midweek Meeting in late September 2025
Joint Meeting with the Society for Lincolnshire History and Archaeology
Gainsborough, Lincolnshire
To include talks and tour of Gainsborough Old Hall
Contact: Mike Chapman: *Chapman481@btinternet.com*

Visits to Alcester, Warwickshire; Cardiff Bay; and Tewkesbury, Gloucestershire, are being planned for future years.

All meetings are subject to attendance at the *participant's own risk*. Whilst every effort is made to hold announced meetings, the British Brick Society is not responsible for unavoidable cancellation or change.

Full details of future meetings will be in the subsequent BBS Mailings
The British Brick Society is always looking for new ideas for future meetings.
Suggestions of brickworks to visit are particularly welcome.
Offers to organize a meeting are equally welcome.
Suggestions please to Michael Chapman or David Kennett.