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EDITORIAL: W.M.DUDOK

For better or worse, one function of an editorial is to allow an editor to pontificate, in the manner of a Times leader, on whatever he happens to be thinking about at the time of writing. In 1984, George Orwell - even if not his 'Big Brother' - is everywhere seen. But there are other associations too. The year 1984 is the centenary of the birth, and the tenth anniversary of the death, of Willem Marinus Dudok, one of the finest twentieth-century architects to work extensively in brick. By coincidence, it is also the sixtieth anniversary of the start of his best known building - the Town Hall (Raadhuis) at Hilversum, in the province of North Holland, Netherlands. Born in Amsterdam on 6 July 1884, Dudok served as an engineer in the Dutch army before setting up in private practice as an architect at Leiden in 1913, and at Hilversum in 1915. He acted as Director of Municipal Works at the latter from 1915 to 1927, in which year he was appointed Municipal Architect. He died, at Hilversum, in April 1974.

Hilversum owes much of its attractiveness to Dudok (as well as to its pleasant cleanliness). Not only was he responsible for residential development, but he also provided municipal baths, schools, sports buildings, and others, besides the Raadhuis. He designed buildings elsewhere too, notably the De Bijenkorf Department Store in Rotterdam (1929), sadly destroyed in the Second World War air-raids.

Like a number of other Dutch architects, Dudok preferred traditional materials: some of his schools even have sweeping thatched roofs! But for the most part this concentration on traditional

materials meant, in the Netherlands, brick. The earlier Amsterdamse School architects had used large brickwork planes, but had relieved these by various decorative motives - notably different, often unconventional, bonding patterns - as well as by the provision of curved windows and archways and projecting turrets and bartizans. Dudok, however, influenced partly by the simpler style of Hendrik Berlage (1856-1934) and partly by the De Stijl painters such as Piet Mondriaan (1872-1944), preferred a plainer, more strictly 'cubist' approach. His Huize Sevensteijn in Zorgvliet Park, Den Haag (1920) still shows Amsterdamse School traits, but a few years later these had been left behind. By this time, of course, exposed concrete was the fashion. Already in 1924 Gerrit Rietveld (1888-1964) had produced a sort of three-dimensional Mondriaan at his Schröder Huis in Utrecht, and J.P.Oud (1890-1963) and others were to bring Dutch architecture into line with mainstream European concrete architecture. For the most part Dudok eschewed this - one of the few exceptions is the Havengebouw (Harbour Building) at De Ruijterkade 7, Amsterdam (a late building of 1960, with R.M.H. Magnée) - and continued to develop his brick style, massing brickwork planes and blocks together; long ranges of windows and projecting concrete roofs help to 'tie' the various elements together, as do the tall towers where they are present, for example at the Valerius School in Hilversum. These motives combine to perfection at the Hilversum Raadhuis.

Much of the charm of that building comes from its careful use of materials. The bricks are of high quality - typically Dutch in their narrowness - laid in a version of Monk Bond and with the joints deeply raked to cast shadows over the plain surfaces. Remarkably, the building looks as fresh as if it had been built but a few years ago.

Reyner Banham, in an influential book on modern design, manages to include Dudok in one half-sneering sentence, but others have been more appreciative, and I cannot forbear quoting Arnold Whittick's observation, which I have been fortunate enough to confirm from my own experience: 'To sit in the gardens on the south side on a summer afternoon when the sunlight is moving from the south face is to enjoy one of the architectural felicities of modern building.'

At the height of the 'International Modern' movement in architecture there were still architects working, and working well, with more traditional materials, unbeguiled by the promises of reinforced concrete as a finishing material. Dudok and his imitators - in England, principally Reginald Urens with his Hornsey Town Hall of 1934-5 - represent only one strand in the history of brickwork in the 1920s and '30s. Charles Holden (1875-1960) represents another, and Sir Giles Gilbert Scott (1880-1960) yet another. There is certainly scope for much further work on the use of brick during this period. But of that, more on another occasion - perhaps.

* * * * *

Alison Roper has written to say that she is resigning as the Society's bibliographer in mid-April due to the happy fact that she is expecting a baby. I am sure that all members will want to join me in offering congratulations and also in thanking Mrs Roper for the work that she has done and the service that she has rendered to the Society over several years. Relevant bibliographical material should no longer be sent to her at Lucas Industries.

It is with sadness that I have just learned of the death, in February, of Brigadier Arthur Trevor, a keen member of the Society and a contributor to these pages. It is hoped to include a tribute to Brigadier Trevor in the November issue of Information.

Terence Paul Smith
Editor

BRICK KILNS: AN ILLUSTRATED SURVEY - II: CLAMPS

M. D. P. Hammond

In 1977 Martin Hammond published a valuable paper on brick kilns.¹ Since then he has done further work on this topic, and subsequent issues of Information will carry a series of articles intended to supplement the original paper. This is the first in the series and will deal with the subject of brick clamps. It is illustrated by the author. (TPS)

At a time when bricks were made by itinerant brickmakers for a large building like a country house, it was not worth building a permanent kiln which would soon be disused, and so bricks were burnt in clamps. There are two types of clamps, open and close clamps. In the open clamp the setting was similar to that of a scotch kiln, with fire-channels for wood or coal in the base; the whole was covered with turf or with waste bricks plastered with mud. They are extinct in Britain, although the writer believes that they were used, with coal firing, at Rossmore Brickworks, Branksome, Poole, Dorset until 1958. They are still frequently used in developing countries, where they are usually wood-fired. Some excavations of the usually scant remains of such clamps have been carried out, including the medieval examples at Shelley Common near Romsey, Hants,² and at Wijk bij Duurstede, Utrecht, Netherlands.³ The fire-channels were wide, to accommodate the wood and peat used as fuel. These are bulky fuels and they leave a lot of ash. At Wijk bij Duurstede there were four channels each 60cm wide by 4.5m long, with three brick-lengths between each and perhaps two brick-lengths beyond the end channels. The bricks were 300 by 150 by 70 mm ($11\frac{11}{16}$ by $5\frac{7}{8}$ by $2\frac{3}{4}$ inches), and some had been left in position as they were unfired or only partly fired, having been buried by the accumulation of ash in the channels. The bricks at Shelley Common were 254 by 127 by 51 mm (10 by 5 by 2 inches).

Close clamps seem to have originated at the time of the Great Fire of London (1666), and the method of manufacture of 'London Stocks' as we know it is first recorded in 1693.⁴ The massive rebuilding programme, and byelaws requiring the use of fire-resistant materials demanded vast quantities of bricks.⁵ The materials most readily available to London brickmakers were London Clay, chalk (found beneath the clay), and town refuse. London Clay cannot be used without some additive to prevent it from warping and cracking, and so three materials were mixed: the clay and chalk were reduced to a slurry in a wash-mill and allowed to settle in ponds called 'washbacks'; the refuse, consisting of decayed organic matter, ashes, half-burnt coal, bones, and broken glass and pottery - and known as 'spanish' (Houghton), 'soil' (Dobson), or 'town ash' (the current term)⁶ - was sifted, the finer stuff being added to the slurry in the washbacks, the coarser being spread in several thick layers at the bottom of the clamp. These fuel layers were ignited by faggots and coal in a transverse flue called a 'live-hole'. Once the bottom courses were red-hot, the fuel in the bricks themselves started to burn, and the heat permeated the whole clamp of up to a million bricks, taking two to six weeks. Those bricks nearest the outside were lightly burned ('burnovers') and could be refired. The best came from the centre. Bricks from the base of the clamp were overburned, discoloured, and distorted.⁷

Close clamps are now used mostly by the stock brick manufacturers of the Sussex Weald. The Wealden Clay is mixed in proportions of between

1:4 and 1:6 with coke breeze, anthracite dust, or town ash, and formed into bricks by a soft-mud process and thoroughly dried before being set in the clamp by hand. Mechanical setting has been tried but was not successful: apparently, it did not allow the bricks to be packed close enough together. Clay prepared with town ash is unsuitable for hand-moulding because of the amount of broken glass that it contains.

Coke-fired clamps are used by Pycroft's on Hayling Island, Hants.⁸ (NGR: SU 718032) and at W.T.Lamb's Pitsham yard near Midhurst, Sussex (NGR: SU 877197). The ground for any clamp should be well-drained, and

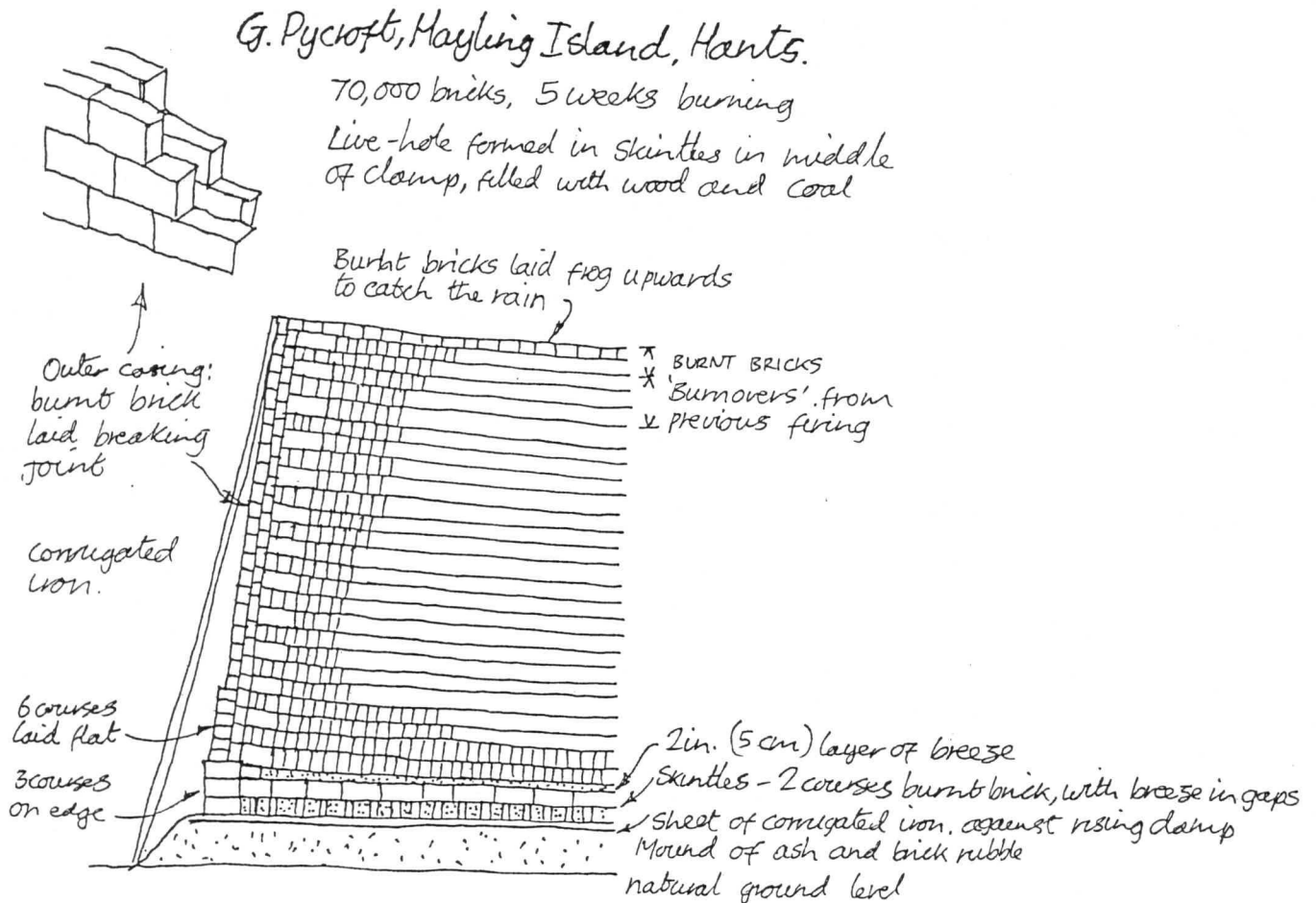


Fig. 1

some protection from inclement weather provided - either loose sheets of corrugated iron or a permanent open-sided building like a Dutch barn. Wind and rain can play havoc with a clamp during firing, even putting it out before it has burned right through. The sides of the clamp are battered and the courses tilted inwards to prevent it collapsing outwards as it settles during firing. Town ash is not now used for igniting clamps, nor is it customary to plaster the outside of the clamp with loam. At one works, aluminium foil sandwiched in the casing (the 'bestowing') of the more exposed parts of the clamp in winter time has been tried. A 15-cm layer of 1.8-cm coke is now considered sufficient. Houghton mentions a 'strowing' (scattering) of slack coal between every second or third course, and between every course at the outside of the clamp. This is similar to Humberside practice, except that in the latter area no fuel was mixed with the clay. The calorific value of coal and coke is about five times that

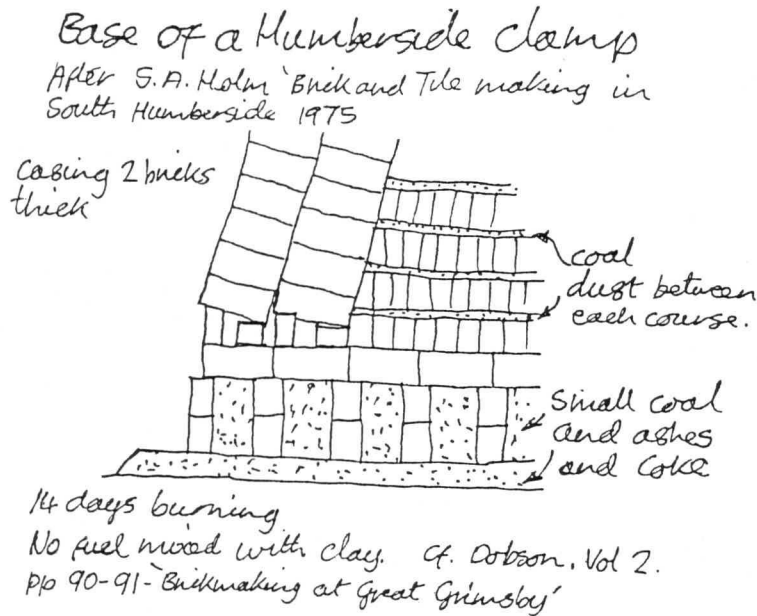


Fig. 2

flection was quite enough for him; nor did he stop till he reached London, being, as he said, "afear'd" they would catch him and put him in prison!'⁹ He had used good Welsh coal in the same proportions as he would have used town ash.

The firing of clamps with liquefied petroleum gas (LPG) was pioneered in 1973 by Rudgwick Brickworks in association with Esso Petroleum. The layer of coke was dispensed with, and small channels,

of town ash. There is a story told by Dobson about the brickmaker from Islington, London who went to Lampeter, Cardiganshire (Dyfed) in Wales, 'and as he was too conceited to make inquiries, or to receive information, set light to a clamp he had prepared with coal, being 70,700; and in a very short time the whole kiln [sic] was in one general blaze. The man being alarmed, took to his heels, and, unlike Lot's wife, he turned not back, neither looked behind him. Even from the heights leading to Llandovery [about 5 miles away], the re-

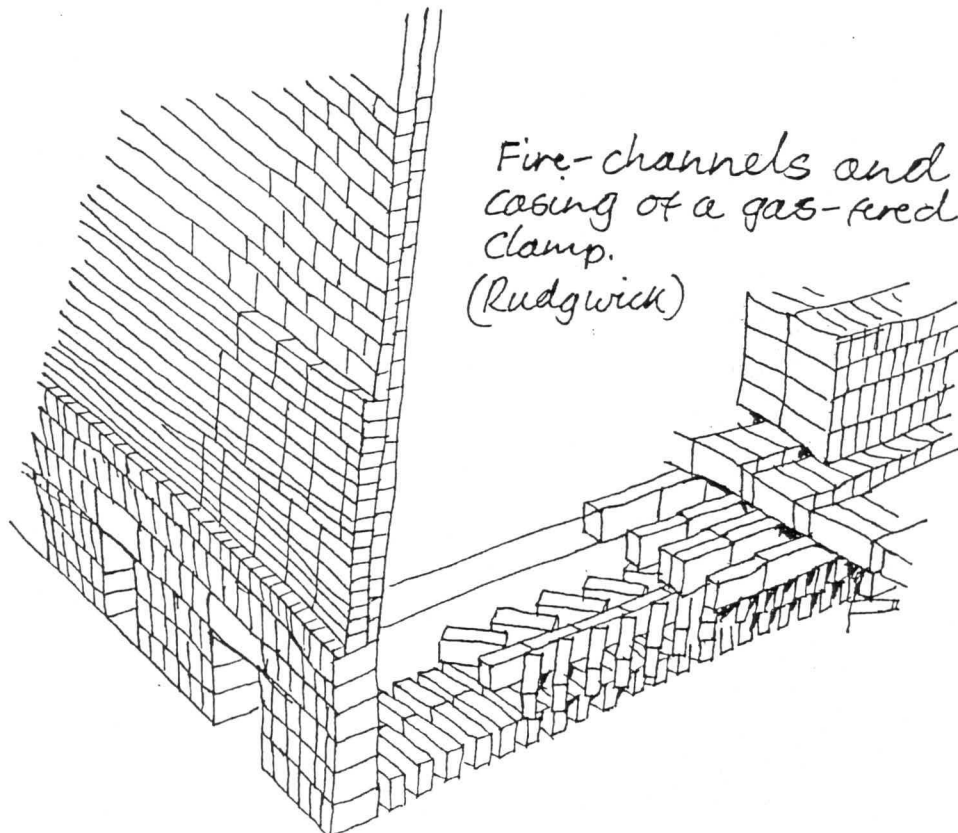


Fig. 3

20cm wide and 45cm apart, formed in the bottom three courses of the setting. Building the clamp began at one end, and gas burners were applied to the first seven channels on each side. These were moved to the next seven channels when the first were hot enough. Meanwhile, building the clamp progressed ahead of the fire, and fired bricks were removed from behind it. The clamps contain a million bricks, and are built on a bed of sand in a large open-sided shed. Underburnt bricks are used for the first three courses. A small experimental clamp with permanent walls, measuring 4.62 by 3.67 by 1.9 metres internally, with a 2.7-m wide wicket at one end, through which the burners were inserted, was built for special shapes in the early 1970s, but was soon converted to a workshop by roofing it over. A clamp set in the same way as for gas firing, but in fact fired with oil, is used by Redland Bricks at their Hamsey (near Lewes), Sussex works.

70,000 bricks is about the minimum practical capacity for a clamp, giving a stack about 50 by 16 by 12 feet high. The larger the clamp, the smaller the surface area, and hence the number of under-fired bricks, in proportion to the volume.

Notes and References

1. (M.D.P.Hammond, 'Brick Kilns: an Illustrated Survey', Industrial Archaeology Review, 1, 2, Spring 1977, 171-92; the number 'II' which appears in the title of the present article indicates that this article is considered to be the second part of a series, of which the paper in IAR is the first part. TPS.)
2. Old Romsey at Work, Lower Test Valley Archaeological Society, 1976, p.10.
3. J.Hollestelle, 'Soil-Marks of Late Medieval Brick Clamps at Wijk bij Duurstede', Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek, 24, 1974, 185-9.
4. J.Houghton, A Collection for the Improvement of Husbandry and Trade, 1693.
5. (The 1667 Building Act for London insisted that the exteriors of new buildings were to be 'Of brick or stone, or brick and stone, except doorcases, window-frames, breastsummers and other parts of the first storey to the front, between the piers, which are to be left to the discretion of the builder to use substantial oaken timber instead of brick or stone for conveniency of shops.' Quoted in D.Cruickshank and P.Wyld, London: the Art of Georgian Building, London, 1975, p.24. 'First storey' presumably means here 'ground-floor storey', where the shop-fronts would be. TPS.)
6. (In Kent, the term 'rough stuff' was often used: F.G.Willmott, Bricks and Brickies, privately published, Rainham, Kent, 1972; re-issued Rainham, 1977, pp.21-2. TPS.)
7. (The distorted, and often fused, bricks could be used for garden walls, as often right across north Kent from Greenwich to Ramsgate, as well as in parts of Surrey. In St John's Road, Faversham they are even used for a small - ?industrial - building. From a distance they look something like rubble stone. TPS.)
8. W.C.F.Whyte, A Gazetteer of Brick and Tile Works in Hampshire, Southampton University Industrial Archaeology Group, 1972.
9. E.Dobson, A Rudimentary Treatise on the Manufacture of Bricks and Tiles, London, 1850; reprinted, ed.F.Celoria, as Journal of Ceramic History, whole no. 5, 1971, with original pagination, vol.2, pp.90-91. The story is quoted from Noble's Professional Practice of Architects, p.153.

EARLY BRICK BUILDINGS: A QUESTION OF SIZE

David H. Kennett

The great majority of taxes raised by central government prior to the introduction of income tax in 1801 were taxes levied on a man's possessions. Inevitably, taxes raised on a man's lands have been the most long-lasting, and for governments the most rewarding. Both the medieval subsidy, levied until 1640, and the land tax, instituted after 1692, are statements of the notional value of a man's lands. As such, they reflect a house-holder's wealth but they do not give any direct information about his house.¹

One tax, however, is more informative to those who study buildings. This is the late seventeenth-century hearth tax, first raised in 1662 but abandoned in 1689. It was bitterly resented since, by its very nature, it enquired into a man's home.²

Hearth tax documents are not infallible sources of information. For example, the author knows of a house which has three chimneys and four fireplaces but which was recorded as possessing just three hearths against the name of William Cobb at Bolnhurst, Bedfordshire. The house is now known as Crowhill Farm, Bolnhurst.³ Similar cases, where chimneys appear to have been counted from the exterior, may be presumed.

Despite this caveat, the hearth tax returns give a good comparative standing of the size of houses in England between 1662 and 1689. From it a rough indication of the housing at various levels of society may be judged. The poor were exempt, but were recorded. Farm labourers and many town dwellers lived in houses with a single hearth. John Bunyan's house on St Cuthbert's Street, Bedford had one hearth. Crowhill, Bolnhurst, Bedfordshire has been mentioned. Three or four hearths is the number regularly recorded for the farmhouses of Bedfordshire and Suffolk. In these counties, five or six hearths can represent either a large farmhouse or the rectory. Mr Rising, the rector of Bradwell, Suffolk, lived in a house of six hearths; Richard Woolsye at Wheatcroft Farm was levied on five hearths. There are parishes in Suffolk where the largest house had only five hearths. These twenty-three parishes are almost 5% of the 480 parishes of Suffolk; and 241 of the Suffolk parishes do not contain a house with more than nine hearths.⁴ More substantial squires lived in slightly larger houses. In Bolnhurst, Mavourn Manor - former home of the Francklin family - had been rented to a farmer, Richard Parker. The house is noted as having eleven hearths in 1671. There are twenty-seven rooms recorded in an inventory of 1633, but not all rooms were heated.⁵ John Bunyan was arraigned before Francis Wingate at Harlington Manor. The house, still standing, had thirteen hearths. The house at Holton, Oxfordshire, where Henry Ireton married Bridget Cromwell was owned by Browne Wharwood: it is recorded as having seventeen hearths.⁶

Houses with fifteen or more hearths are rare. Excluding towns where inns may represent the largest number of hearths recorded - as at Luton, Biggleswade, and Dunstable, all in Bedfordshire - we may tabulate the data as in Table I (overleaf). It is against this background that the statistics collected about early brick buildings need to be viewed.

In the Appendix, the published hearth tax returns for Bedfordshire in 1671, Oxfordshire in 1665, Suffolk in 1674, and Surrey in 1664 have been correlated to known early brick buildings.⁷ The basis of the listing of houses is the gazetteer by Jane Wight,⁸ but with additions known to the author.

In Bedfordshire, the now demolished Willington Manor where Sir John

TABLE I

Classification of houses by numbers of recorded hearths*

	<u>Bedfordshire</u>	<u>Oxfordshire</u>	<u>Suffolk</u>
>50	4	0	1
40-49	1	3	5
30-39	3	6	13
20-29	9	15	33
15-19	13	18	66
	<hr/> 30	<hr/> 42	<hr/> 118

*For omissions see accompanying text.

Gostwick entertained King Henry VIII in 1541 has been included. The surviving farm buildings - a dovecote and stables - are of stone; the house was of brick. In fact none of the Bedfordshire houses survive except as isolated fragments. In Suffolk, the terminal date is rather nearer to 1570 than to 1550.

There are some cases where it has not been possible to identify the house in the hearth tax. At Cardington, Bedfordshire, the Old Manor House was an isolated building over two miles south of the village.⁹ It was never a large building and may be either of the two houses, both of nine hearths, recorded in the parish as being occupied by Sir George Blundell. The lack of identifications in Suffolk include areas where the manuscript was defective or illegible, as with Kenton Hall, and, one might add, the predecessor of the present eighteenth-century house at Benacre Hall. Bevills at Bures is now a very large house but has been extended more than once; like Smallbridge Hall it may have been let in 1674. The largest house in Gedding has only five hearths, and there are two houses each with four fireplaces. It may suggest that the gatehouse of Gedding Hall was already standing proud and its supporting house had been demolished in the sixteenth or seventeenth century.¹⁰ The Deanery Tower at Hadleigh fronts a timber-framed house, as Thomas Gainsborough's painting of 1748 makes clear;¹¹ the first entry in the parish may refer to this property, with the house and the gatehouse - together having fourteen hearths - being occupied by a Mr Buddall. However, this is based on the assumption that the collectors began at the principal door to the parish church. None of the royal palaces in Surrey appear to have been entered in the return. Certainly there is no reference to the monarch (King Charles II) as the occupier of any house in either Surrey¹² or Suffolk.¹³

A summary of the numbers of hearths of early brick houses in the four counties is offered in Table II:

TABLE II

Classification of early brick houses by numbers of hearths

	<u>Bedfordshire</u>	<u>Oxfordshire</u>	<u>Suffolk</u>	<u>Surrey</u>
>50	0	0	1	2
40-49	0	1	4	1
30-39	0	2	3	2
20-29	2	1	18	2
15-19	1	2	14	0
10-14	0	0	17	0
not identified	1	0	5	2

In Suffolk, the only house of the six largest in the county not noted in the summary is Euston Hall, built by Lord Arlington specifically as a house at which to entertain King Charles II when he came to Newmarket for the racing. In Oxfordshire, the other two houses over forty hearths were Henry, Viscount Falkland's house at Great Tew, and Cornbury, outside Charlbury, the home of Edward Hyde, Earl of Clarendon, the Lord Chancellor of King Charles II's government.

Some comparisons may be offered for the Bedfordshire houses in the Appendix. Francis Crawley at Someries Castle was the son of the judge who pronounced that it was legal for inland counties to be taxed to provide for coastal defence in the celebrated case when John Hampden of Great Hampden, Buckinghamshire, refused to pay ship money. Sir Stephen Anderson at Eyeworth Manor, a house of twenty-five hearths, was the great grandson of Elizabeth I's Lord Chief Justice, Sir Edmund Anderson. The house was demolished in the eighteenth century; fieldwork in 1977 confirmed that the house was brick-built. Other largish houses in Bedfordshire included some of stone, like Chicksands Priory, inhabited by John Osborne and rated at twenty-three hearths.

Only in Bedfordshire are the earliest brick houses not amongst the very largest in the county. These are Woburn Abbey (82 hearths), Luton Hoo (60), Houghton House (55), Wrest Park (52), Toddington Manor (45), Bletsoe Castle (38), Melchbourne Park (33), and an unknown house at Eaton Bray (32 hearths). The three first-named are seventeenth-century houses, as is Melchbourne Park. Toddington Manor is Elizabethan in origin; the other two recognisable houses are late medieval. Wrest Park was rebuilt in 1711; the house standing thirty years earlier had been remodelled at the beginning of the seventeenth century but still incorporated part of the brick house known to have been constructed for the Earl of Kent in the fifteenth century.¹⁴ He, like his rival Sir John Cornwall, Lord Fanhope, at nearby Ampthill Castle, was indulging in conspicuous consumption. Brick was still the expensive material of the rich; it is not surprising that early brick houses are among the largest in the land, even two centuries after many of them were built.¹⁵

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Suffolk: S.H.A.Hervey, Suffolk in 1674, being Suffolk Green Books no. 11, volume 13, 1905.

Surrey: C.A.F.Meekings, The Surrey Hearth Tax, 1664, being Surrey Record Society, 17, 1940.

NOTES AND REFERENCES

1. J.West, Village Records, 1962, re-issued 1983, pp.42-9, 144-57 respectively.
2. West, op.cit., pp.131-5, with fuller bibliography. For introductions to hearth tax levy see Surrey (in Bibliography) and C.A.F.Meekings, Dorset Hearth Tax Returns, 1951.
3. D.H.Kennett and T.P.Smith, 'Crowhill Farm, Bolnhurst, Bedfordshire: a Timber-Framed Building and its History', Bedfordshire Archaeological Journal, 12, 1977, 57-84, esp. 64 with fig.3b.
4. See returns for individual parishes in Bedfordshire and Suffolk.
5. Bedfordshire County Record Office, document FN 1063, eighteenth-century copy idem FN 1248.

Continued on p.12/

Appendix: Early Brick Buildings in Hearth Tax Lists

(1) Bedfordshire 1671

<u>House and Date</u>	<u>Builder</u>	<u>Occupier</u>	<u>Hearths</u>
Old Manor House, Cardington Early Tudor	Sir William Gascoigne	Not identified	?
The Abbey, Old Warden 1537 onwards		Sir William Palmer	20
Somerley Castle, Hyde, nr Luton 1448-71	John Lord Wenlock	Francis Crawley Esq ^r .	23
Willington Manor Before 1541	Sir John Gostwick	Sir William Gostwick	18

(2) Oxfordshire 1665

<u>House and Date</u>	<u>Builder</u>	<u>Occupier</u>	<u>Hearths</u>
Hanwell Castle c.1490	Anthony Cope	Sir Anthony Cope	27
Greys Court, Rotherfield Greys 1348 and later	Sir John de Grey	William Knollys Esq ^r .	39
Aycote House 1539-59	John Lord Williams of Thame	Montague, Earl of Lindsey	41
Shirburn Castle 1377 and later		Lord Abergavenny	32
Stonor Park Cl5 and later	Stonor family, various	Thomas Stonor	29
Hardwick House, Whitechurch		Anthony Cobb	16
Old Manor House, Mapledurham Gurney		William Blount	19

(3) Suffolk 1674

<u>House and Date</u>	<u>Builder</u>	<u>Occupier</u>	<u>Hearths</u>
Shrubland Old Hall, Barham 1525 (disused c.1770)	? - Littel	Sir Nicholas Bacon	25

<u>House and Date</u>	<u>Builder</u>	<u>Occupier</u>	<u>Hearths</u>
Barham Hall, Barham Unknown (demolished; Cl6 gateway survives)		Mr Lamb	14
Barton Hall, Great Barton Cl6 (demolished)	Thomas Folkes	Lady Audley	15
Baylham Hall Cl6		John Acton	22
Seckford Hall, Great Bealings 1553-85		Sir Henry North	20
Flemings Hall, Bedingfield c.1550	- Bedingfield	Mr Warren	14
Belstead Hall Cl6, with additions		Mr Bloyse	14
Boxted Hall Cl6 (demolished; largely timber-framed)	- Poley	Sir John Poley	22
Brettenham Park Cl6		Sir George Winneive	14
Brightwell Hall Cl6	- Bardnardiston	Sir Samuel Bardnardiston	26
Brome Hall Unknown (demolished)	- Cornwallis	Charles, Lord Cornwallis	45
Bevills, Bures 1500 and later (Timber-framed with brick nogging)	- Waldegrave		?
Smallbridge Hall, Bures Before 1561	- Waldegrave	Thomas Musgrave	44
Chediston Hall Cl6		Sir John Pettus	18
Chilton Hall Early Cl6	- Crane	Thomas Deansley	19
Culford Hall Mid-Cl6, much altered	Sir Nathaniel Bacon	Duke of York (later James II)	29
Crows Hall, Debenham 1508 (partly demolished)		Lady Gawdy	19

cont./

<u>House and Date</u>	<u>Builder</u>	<u>Occupier</u>	<u>Hearths</u>
Denston Hall Early C16		Mr Robinson	18
Erwarton Hall 1549/c.1575		Sir Philip Barker	20
Gedding Hall Early C16			?
Gipping Hall Late C15 (demolished)	Sir James Tyrell	Thomas Tyrell	14
Glenham Hall, Little Glenham C16, remodelled		Lady Glenham	22
Grundisburgh Hall C16, remodelled (Begun 1500)	- Blois	Sir William Bloyse	14
Helmingham Hall c.1500. remodelled	- Tollemache	Lady Huntingtower	20
Hengrave Hall 1525-38	Sir Thomas Kytson	Sir Edward Gage	51
Henham Hall Unknown (demolished)	- Rous	Sir John Rous, bart.	31
Brickhouse Farmhouse, Hitcham Early C16			?
Chrichchurch Mansion, Ipswich 1548-50	Edmund Withipoll	Viscount Hereford	32
Kenton Hall C16	- Garneys		? (MS defective)
Lawshall Hall C16		George Myrells	14
Melford Hall, Long Melford 1545-54	Sir William Cordell	Sir Robert Cordell	49
Kentwell Hall, Long Melford 1563	Francis Clopton	Sir Thomas D'Arcey	24
Melford Place, Long Melford Unknown (remodelled C18)	- Martin	Sir Roger Martin	19
Mettingham Hall C16, refaced c.1700		William Gooch	11
Brooke House, Hacton Early C16, remodelled	- Brooke	Sir Robert Brooke	16
Moat Hall, Farham Early C16	Sir Christopher Willoughby	Sir Phillip Meadowe	19

<u>House and Date</u>	<u>Builder</u>	<u>Occupier</u>	<u>Hearths</u>
Playford Hall 1589 and before, re- modelled C18 (Partly demolished)		Sir Henry Fenton	25
Redgrave Hall 1540s, remodelled C18 (Demolished)	Sir Nicholas Bacon	Sir Edmund Bacon	41
Rougham Hall Rebuilt 1830s		Sir Jeffrey Burwell	24
Rushbrooke Hall 1550s (Demolished)	- Jermy	Earl of St Albans (- Jermy)	33
Shelley Hall Before 1533 (partly demolished)	Sir Philip Tylney	Samuel Kerridge	18
Shotley Hall Early C16, remodelled 1885, with additions		Henry Filton	12
Coldham Hall, Stanningfield 1574	Robert Rookwood	Sir Robert Rookwood	12
Giffords Hall, Stoke-by-Nayland Early C16, altered early C18 and C19	- Mannock	Sir Francis Mannock	27
West Stow Hall 1520-33	Sir John Crofts	Mr White	17
Stutton Hall 1553 (Timber-framed, later brick-cased)	Sir Edward Jermey	Madam Jermin	20
Thorpe Morieux Hall C16 (Timber-framed with brick porch)	- Risby	John Risby	11
Wantisden Hall 1550		George Webb	10
Wattisfield Hall C16 (Timber-framed, brick chimneys)		Samuel Barker	21
Wenham Place, Great Wenham Early C16		Sir Philip Parker	12
Little Wenham Hall 1270-80, with C16 addition now de- molished	Sir John de Vallibus; Petronilla of Nerford	William Brewse	21
Wenhaston Grange C16; C18 front		John Leman	10
Westhall Hall 1570 and 1870		Mr Bohun	14

cont./

NOTES AND REFERENCES (continued)

6. Returns for individual parishes in Bedfordshire and Oxfordshire.
7. Surrey is included for reference only.
8. J.A.Wight, Brick Building in England from the Middle Ages to 1550, 1972, pp.222 sqq.
9. The sixteenth-century portion was demolished before 1971; personal fieldwork.
10. Returns in Suffolk, combined with individual fieldwork.
11. On loan to Gainsborough's Birthplace, Sudbury; illustrated J. Hayes, Thomas Gainsborough, Tate Gallery, 1980, catalogue no.82.
12. The Surrey return has been printed sorted into alphabetical order of payers.
13. It may be that in 1674 Charles II had not rented a house at Newmarket as he is known to have done in other years.
14. Returns for Suffolk, Oxfordshire, Bedfordshire; combined with fieldwork.
15. Note completed 17 January 1984.

<u>House and Date</u>	<u>Builder</u>	<u>Occupier</u>	<u>Hearths</u>
Westhope Hall C16, rebuilt C18	Charles Brandon; Mary Tudor	Mr Rainbird	16
Wingfield Castle 1384 (flint); 1544 and later	Charles Brandon (C16 part)	Mr Catchpole	25
Witnessham Hall C16, remodelled C19	Mynter; - Meadowe	Daniel Meadowe	12
Wrentham Hall 1576 (Demolished 1810)	- Brewster	Francis Brewster	18
Yaxley Hall C16, altered later; fire 1920s (Partly de- molished)		Mr Yaxley	18
Cockfield Hall, Yoxford Mid-C16; later addi- tions and alterations	Sir Owen Hoton	Lady Brooke	18

(4) Surrey 1664

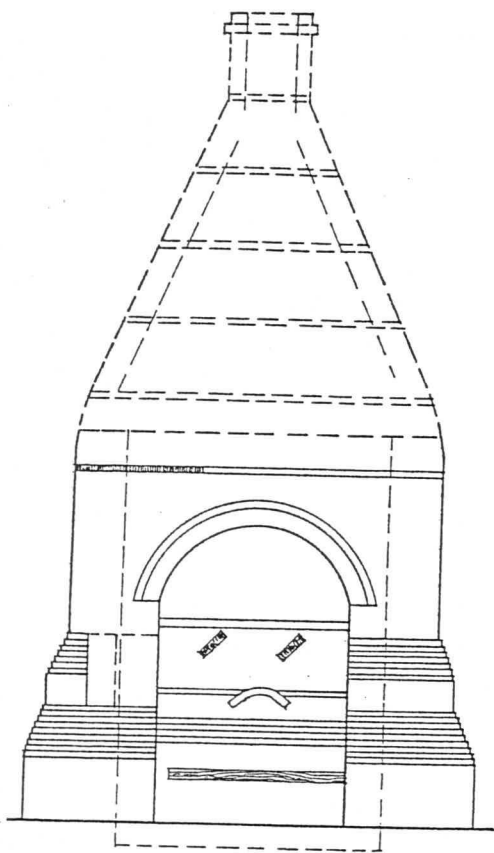
<u>House and Date</u>	<u>Builder</u>	<u>Occupier</u>	<u>Hearths</u>
Beddington Place 1530s, rebuilt 1740	Sir Nicholas Carew	Sir Nicholas Carew	50
The Old Palace Croydon C15; remodelled C17 (Partly demolished)	Archbp Bouchier; Archbp Morton	Archbp Canterbury	44
Wainflete's Tower, Esner 1470s; remodelled C18	Bp Wainfleet	Captain Colborne	34
Farnham Castle 1470s	Bp Wainfleet	Bp Winchester (in the castle)	33
Lambeth Palace 1490s	Archbp Morton	Archbp Canterbury	59
Richmond Palace (Shene) 1499-1509	King Henry VII		?
Sutton Place, Sutton-by-Woking	Sir Richard Weston	Lady Weston	27
Oatlands Palace, Weybridge 1538 onwards (De- molished)	King Henry VIII		?
West Horsley Place 1530s; remodelled C18	Sir Anthony Browne	Carew Raleigh	21

BRICK AND TILE KILN, 'THE KILN', STANMORE, MIDDX.

M. D. P. Hammond

This kiln was probably built in 1795 by John Bodimeade to replace a wood-fired kiln built a century or more earlier. There are bricks in the side walls of the adjacent house which are partly coated with a grey glaze which indicates wood-firing. The present kiln has almost certainly always been coal-fired, and is of a type that was common in the London area for burning tiles of all descriptions. Only one other similar kiln is known to survive in London and that is in Hippodrome Mews, Walmer Road, Notting Hill, W10.

The kiln has a chamber measuring 3.5 by 3.45 m. in plan, and would normally be filled to about 2.8 m. above the present floor. This gives a capacity of 13,500 bricks, though in practice it would have been set with a mixture of bricks and tiles as required: bricks in the bottom and tiles in the top. In its time the kiln's products have included red bricks, pantiles, peg tiles, 9 by 9 by 2 inch and 12 by 12 by 2 inch nominal size paving and bakers' oven tiles, drain-pipes, and pottery. It was surmounted by a conical stack which has now been taken down. The original height has been estimated at about 11.2 m. above the chamber floor, from measurement of the small amounts of sloping brickwork remaining and from examination of the Goodall painting. It was encircled with six iron bands, of which part of one - measuring about 75 by 10 mm. in section - still remains at the south corner. The stack was carried on four arches of 2.5 m. span and 1 m. rise, springing from just above the top of the chamber walls. The shape of the stack can be imagined as a cone with slices removed to form a base 4.9 m. square. Its weight was thrown onto the corner buttresses, so that the chamber walls could be taken down and repaired, as was frequently necessary, without affecting its stability. Control of the draught during firing was done by adjusting the gaps between the old bricks laid flat over the top of the setting. Observation of the shrinkage of the setting, indicating



SOUTH-EAST-ELEVATION

BRICK AND TILE KILN,
'THE KILN', COMMON ROAD, STANMORE, MIDDLESEX

Surveyed and drawn by M.D.P. Hammond,

Fig. 1

that the goods had been well fired, was done by sighting through across the top of the setting. The arch of the wicket in the north-east wall was above the top of the setting, and other holes could be made as required in the infill of the arches. The north-west arch has now been opened out completely and a 'servery' formed for the barbecue constructed inside the chamber.

cont./

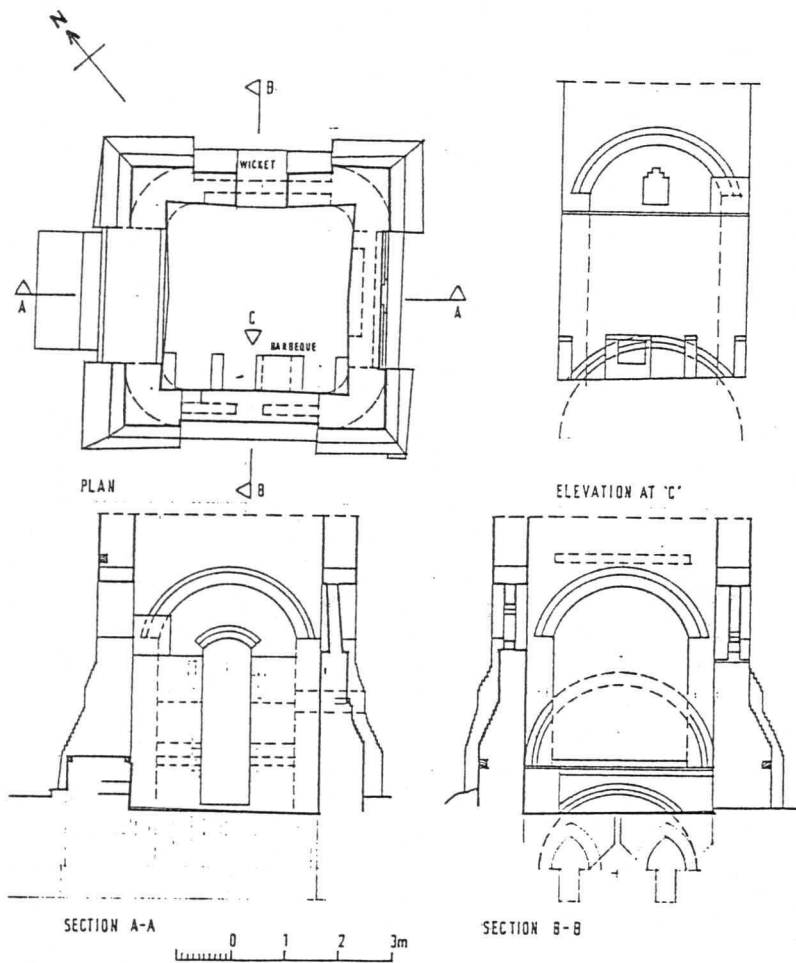


Fig. 2

south-west side. The evidence would suggest two fire-tunnels, and a stoking pit on the north-west side with a floor level about 1.7 m. below the chamber floor as being most likely.

The kiln is built of soft red bricks, many of which have decayed, in lime mortar. The chamber lining is of the same bricks but laid in loam which has been burnt hard. By way of reinforcement there are iron ties built into the brickwork, and several baulks of timber, measuring about 160 by 160 mm., built in flush with the outside face of the brickwork. One of these is over the north-west arch, the others at low level on the other three sides, with iron strapping to retain them. Much of the plant growth which once covered the kiln has been removed recently, but the top and south-west side are still festooned with creeper. The chamber walls bulge inwards by about 100 mm., but this is usual in an old kiln. During firing the wicket would have been sealed with bricks laid dry, plastered over with loam.

Bricklaying Record! (Alan Hulme has kindly sent in the following item from a recent issue of the BDA's Bulletin):
 '...the final of the BDA National Bricklaying Championship, held on 15th September [1982], produced some remarkable performances from the six contestants. Winner for the second year running was Ralph Charnock, who laid 783 bricks in 60 minutes - 72 more than his total of 711 in 1981. Alas, the latter figure still stands for the Guinness Book of Records, because his 1982 wall just failed to meet the quality requirements of The Guild of Bricklayers.'

The arched fire-tunnels would have been below ground, with the flames rising into the chamber through slots in the floor. The present floor is of solid brick and tile, and is not the original. There are relieving arches visible at low level in the south-west and north-west walls of the chamber. These would have allowed the fire-tunnel arches to be rebuilt without disturbing the rest of the structure. The intense heat, and the weight of the setting, made this a fairly frequent operation. Sometimes the brickwork would melt away. The pointed arches indicated are less likely to distort under these conditions than any other shape, and are almost invariably used in surviving examples of this type of kiln in East Anglia. They are also present at Walmer Road and in Dobson's illustration of a London tile kiln. Goodall's picture shows lean-to's against the south-east and north-west sides of the kiln, but the ground falls away most steeply outside the

DECORATIVE BRICKWORK IN HIGH STREET, WINSLOW, BUCKINGHAMSHIRE: A PRELIMINARY SURVEY

David H. Kennett

Throughout England much work remains to be done in recording the façades of ordinary houses built in brick in the nineteenth and early twentieth centuries.¹ Even as late as the 1930s, houses built by public authorities were often given decorative treatment in the quite simple way of using bricks of more than one colour.² Such work would need to record, systematically, every house of interest, either in the form of a rapid survey as is done herein for High Street, Winslow, Bucks., or as a full-scale study backed by reference to the available documentation as can be done for (e.g.) an early twentieth-century development in the High Town area of Luton, Beds.³

The present survey seeks to record, briefly, the use of different coloured bricks on the houses of the main street of Winslow. With the exception of the building now used as Winslow Branch Library, all the houses recorded are situated on High Street, the main street of the town, which runs just south of the church to the railway bridge at the northern end of the town. The survey seeks to list no more than the use of different coloured bricks. All the buildings listed are in Flemish Bond; the few irregularities in this have been noted.

The survey was prompted by the large number of houses built using red bricks for the stretchers but white bricks for the headers. The same treatment of the façade to the road has been observed on houses in the Buckinghamshire village of North Marston and in the mid-Bedfordshire town of Ampthill. In the latter the houses are to be found on Dunstable Street and Park Road. Both houses in North Marston are large; those at Ampthill are Victorian terraces.

The buildings in Winslow with red stretchers and white headers total twelve houses plus the building now used as the branch library. One group is a terrace of five houses; there are three pairs and one single cottage forming parts of longer terraces.

Another decorative scheme is the use of red stretchers with black headers. Twelve houses were originally seen as this: some have been painted over. One, Staniford House, may be presumed to be the house of Richard Staniford, lime-burner and brickmaker, of High Street, Winslow, recorded in a directory of 1842;⁴ the house is detached and appears to be of appropriate date and to belong (originally) to a prosperous member of the community. The other houses are a terrace of eight and a row of three.

There are houses with red, white, and black bricks used to form a pattern and also a pair of houses, within a terrace, which use two different shades of red brick for headers and stretchers.

Also noted in the rapid survey are houses where a different colour brick has been used to pick out the detail of the fenestration.⁵

NOTES AND REFERENCES

1. (There is a useful initial discussion of this topic, using examples from various parts of the country, in S. Muthesius, The English Terraced House, New Haven (USA) and London, 1982, pp.204-15 and colour plates 25-32. Stefan Muthesius also draws attention to the 'tremendous brick colours of Luton...' (mentioned by Mr Kennett) in his article 'Progress Terrace: a Re-appraisal of Late Victorian

- and Edwardian Housing', Architectural Review, 990, August 1979, 93-7; this ref.: 96. For bricks available in the area see: A. Cox, Survey of Bedfordshire: Brickmaking: a History and Gazetteer, Bedford, 1979, pp.33-4. TPS.)
2. Local authority housing of the 1920s in Barton, Beds. has bands of black bricks set within a red brick building; similar housing in Brandon, Suffolk in white brick has the fenestration picked out in a column, alternately 1 and 1½ bricks wide of red brick.
 3. The streets covered are Hitchin Road, High Town Road, and Ridgeway Road. The present author hopes to gather together notes made intermittently in the 1970s for a future study. (The editor has made a preliminary study of the nineteenth-century brickwork in the same area; there is a good illustration of brickwork in North Street in Muthesius, op.cit. (1982), colour plate 31; colour plate 32 shows fine brickwork in another part - Albert Road - of Luton; there is also a relevant illustration in T.P.Smith, 'House-Types Connected with the Luton Hat Industry: a Preliminary Survey', Industrial Archaeology, 9, 1, February 1972, plate p.105. TPS.)
 4. Pigot and Co's ... Directory of ... Buckinghamshire, London, 1842, cited in Buckinghamshire County Museum, Gazetteer of Buckinghamshire Brickyards 1800-1980, 1980, p.38.
 5. Note written 3 February 1984 following a survey of 27 January 1984. The survey was completed in failing light and isolated buildings may have been missed.

SCHEDULE

High Street, Winslow, Buckinghamshire

West side: from south to north

Staniford House (32)	Gable end (on Greyhound Lane). Red stretchers, black headers. Front is black with fenestration picked out in red.
38/40	Pair of 3-storey houses with shop-fronts on ground floor. Diaper pattern of black headers on first and second floors. Bond is irregular to accomodate pattern and includes a row of headers.
46/48/50/52/54	Terrace of five houses. Red stretchers, white headers. Flat arches over windows and doorways on ground floor are in alternate headers and stretchers; upper brick of pair of headers is white; all other bricks in arches are red.
70/72	Two houses of white brick (ground floor of 72 with shop-front, and painted white). Ornamentation confined to rows of red brick as follows: Single row at base of ground-floor window Four rows with central two rows in header bond alternating two rows vertical white, two rows vertical red Single row at base of first-floor window Double dentil course in red brick (alternating white and red on lower course) at top of first-floor window.
74/76	Red stretchers, white headers. Gable end is plain brick.
112	Single cottage joined to 114/116 forming part of terrace. Red stretchers, white headers.
114/116	Red stretchers, white headers.
130/132	Pair of cottages within terrace. Red stretchers, white headers.
154/156/158	Terrace of three houses. Red stretchers, black headers; below window of ground floor some stretchers are white.

East side: from south to north

Lime Cottage	Irregular bond, red and black bricks; headers are black only; stretchers are red.
31	Irregular appearance. Red, black, and white used for both headers and stretchers to form pattern.

cont./

65/67/69/71	Terrace of four houses in white brick. Band of two rows of red brick at base of ground-floor window Band of four rows red, with white headers on two central rows, at top of ground-floor window Row of red brick at base of first-floor window Band of three rows of red brick at top of first-floor window (white headers are included). Dentil course above this.
73/75	Pair of cottages, end of terrace. Two shades of red brick with deeper shade used for headers.
89/91/93/95/97/99	Terrace of six houses in black brick; red used for surrounds to fenestration. Dentil course.
101/103/105/107/109 (with 111/113/115)	Terrace of eight joined to 89-99. Red stretchers, black headers. (111/113/115 are painted but part of same terrace.)
* *	* * * *
Winslow Branch Library	Red stretchers, white headers. Dentils, and in gable end forming a cornice.

Bricks from the Sea - 2. Further to a previous item in these pages ('Bricks from the Sea', Information, 29, February 1983, 5; see also 'Bricks from the "Mary Rose"', Information, 31, November 1983, 25), I have visited the Mary Rose Trust's headquarters in Warblington Street, Portsmouth, on behalf of the Society to examine the bricks from the galley in the hold. Over 4,000 bricks and brick fragments were found, but I saw a representative sample of about twenty. Most of them are various shades of red, but a few purpose-made specials were in a yellow fabric. Both fabrics are similar in colour and texture to the red and yellow bricks found widely in Hampshire and the Isle of Wight. There is documentary evidence of brickmaking in the Portsmouth area in the sixteenth century. The standard size is about 225 by 103 by 45 mm. The special shapes included a 45° squint, plinth headers and stretchers, and single cants. Some of these shapes had been cut by the bricklayer rather than being moulded. They were, of course, all handmade, using a mould placed on a sanded floor.

Martin Hammond

Ibstock - Brick Seminar. On Friday 3 February 1984 I attended a lunchtime seminar on 'Conservation' at the new Ibstock Brickwork Design Centre in Manchester. After signing in and meeting the area representative, John Carney, I talked to other guests in the reception area where some thirty different brick types are tastefully displayed in panels or as constructive decor, some with coloured mortar and raked joints, enabling the viewer to evaluate the relative subtleties of colour and texture.

With wine glasses topped up by charming lady Sales Co-ordinators we were ushered into a small film studio where Alf Dooley, Design Advisor, told us about the role of the Brickwork Design Centres in Manchester, Birmingham, and London, and their facilities for free consultation and design with architects, builders, and the general public.

The slide show, with live commentary by Mr Dooley, had as a theme 'Walls have Tongues', attributable to Jonathan Swift. I knew that walls have ears, but the presentation of some fifty slides certainly illustrated that walls can say anything by careful choice from some of the 120 brick types manufactured by Ibstock in their nine factories. The aspect of conservation was shown by many instances of blending-in new brickwork or repairs to match existing buildings, brick or stone. With clays from different parts of the country and even clamp-firing in Sussex most colours and types are

ex-stock.

Where sometimes it was necessary to make specials, such as the coping for an old bridge damaged in a road accident, Ibstock expertise came to the rescue, making special moulds and drying and firing arrangements to produce identical replacements which, after the building work was completed, were treated with farmyard manure to hasten the growth of lichen.

After the film-show and question-time, a buffet lunch was provided and further discussion took place. Technical literature was made available and I had a look in the storeroom where there are over a hundred panels of brick slips for inspection. The seminar ended when the last guest departed.

The friendly and helpful staff in Manchester certainly are a credit to their company. I am sure that BBS members would find a warm welcome and I recommend a visit.

Alan Hulme

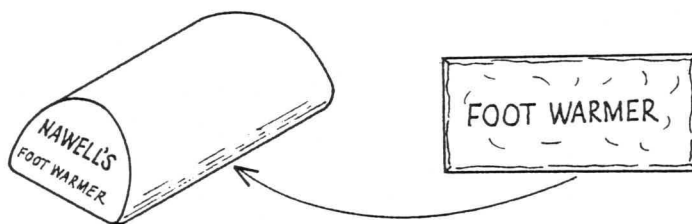
Tudor Inflation? - an Apology. Our last issue contained a paper by D.H.Kennett on 'Taxes and Bricks: Wealthy Men and their Buildings in Early Tudor Norfolk' (Information, 32, February 1984, 5-12). In preparing this for publication I converted the monetary mark to 13s. 4d. or '£0.33': this latter figure is, of course, incorrect and should read '£0.67 (approx.)'. I apologise to Mr Kennett for this foolish slip.

T.P.Smith

'SEIONT' Solved. Fellow members may wish to share Martin Hammond's prompt reply to my enquiry (Information, 32, February 1984, 18) regarding the provenance of the brick imprinted with the frog-mark 'SEIONT', found in Anglesey last year. He writes: 'Until 1979 at least and possibly still, Butterley Building Materials operated a fairly modern brickworks - The Seiont Works - at Caernarvon where they made red, rustic wirecut, facing bricks. Your "find" is an earlier product and was stiff-plastic pressed. Your account of the two 15mm diameter indentations was incorrect. These mark the pressure-release vents whereby air and excess clay is expelled in the process of pressing.' I can but add, in awe, 'What it is to know!'

Geoffrey Hines

Brick Foot Warmers. With reference to E.Marsh's inquiry (Information, 32, February 1984, 18), there is in Scalpen's Court Museum in Poole, Dorset a footwarmer by the same manufacturer:



It is about 9 by 4 by 3 inches, roughly semi-circular in cross-section, covered with a thick brown salt glaze, probably on a stoneware or fireclay body. The lettering is clearly impressed on the underside, but less clear on the one end, partly because of the curved surface and the thickness of the glaze. Age and provenance are unknown.

In the days before carriage heating was introduced, some railway companies had foot warmers for hire at principal stations, to be returned on reaching the destination.

Martin Hammond