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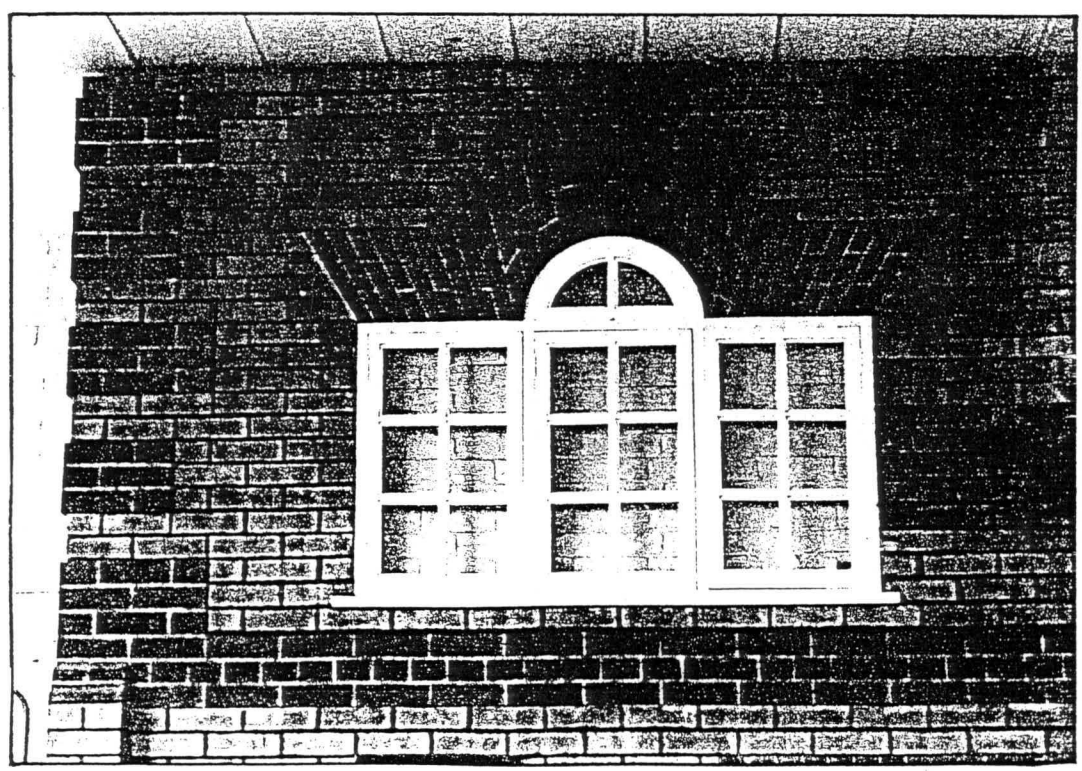
BRITISH BRICK SOCIETY

INFORMATION

52

MARCH 1991



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Members of the BAA may elect to join its Brick Section and, as such, will be eligible for affiliation to the British Brick Society. They should inform the Hon. Secretary of the BBS of their address so that they can be included in the membership list.

CONTENTS

EDITORIAL:

THE MYTH OF THE CHEAP SUBSTITUTE

After considering the geographical distribution of medieval brick buildings in England, R,W. Brunskill goes on to remark:

> The distribution is as confined socially as it is geographically. There are no brick cottages or cowsheds from this period. Grandees built their imposing brick towers as at Tattershall, their partially fortified moated dwellings as at Kirby Muxloe, their episcopal palaces as at Hatfield. Rich towns adorned their walls with brick gatehouses as at Beverley So we have in medieval brickwork a prestigious material used in the richest parts of the country on some of the most important building projects.
>
> (R.W.Brunskill, Brick Building in Britain, 1990, 116)

The examples are not isolated. Dating to before 1485 are the imposing tower at Caister-on-Sea, which is also a partially fortified moated dwelling and withstood a siege, a fortified moated dwelling at Baconsthorpe, episcopal palaces at Bishopsthorpe and Lambeth, Bishop's Waltham and Buckden, even Henry V's royal palace at Sheen. Similarly one has the South Gate at Lynn and the great circuit of brick walls at Kingston-upon-Hull.

How then, one must ask, does the myth arise that brick is the cheap substitute.

The answer lies not in the records contemporary with medieval brick buildings. For the early and mid fifteenth century, the income tax of 1436 shows that those who built in brick were those with at least the taxable income of a baron (£400 per year), and many of the builders in brick had several times this. Of the builders noted, Ralph, Lord Cromwell had a declared income of £1,007 in 1436 and is known in the 1440s to have enjoyed at least £2,500 per annum; Sir John Fastolf reported his income at £600 but other sources suggest a much large sum. From his loans to the crown, and from the diocesan papers, it is clear that Cardinal Beaufort, Bishop of Winchester, had a personal income greater than any earl and even of royal dukes. Of these, both John, Duke of Bedford, at Fulbrooke, Warwickshire, and Richard, Duke of York, at Hunsdon, Hertfordshire, built in brick.

The myth of the cheap substitute has its origins elsewhere. The peculiar decline of stone as a building material was aptly described by P.A. Stone:

> In Britain the brick gradually became the dominant material for structural purposes, replacing the materials indigenous to other parts of the country. For example, Scotland has largely ceased to use its native stone, formerly it principal building material, except for aesthetic purposes where additional costs can be justified, and has imported bricks from England, and sometimes from the Continent. Construction in stone, even in its cheaper forms, is twice as expensive as in brick.
>
> (P.A. Stone, Building Economy, 3rd ed. 1983, 51)

It has become in the twentieth century a matter of economics: the first edition of Stone's book, published in 1966, says broadly the same as the piece quoted.

Scotland, too, plays its part in the myth of the cheap substitute in another way. Aberdeen rightly enjoys the reputation of 'the granite city' and all good buildings in the fish and oil capital of Grampian were built of granite. If they were not, the client was assumed to wish to economise. And this does not merely apply to brick: St Andrew's Episcopal Cathedral used stone from Edinburgh's Craigleith quarry in 1816/17, and this is ascribed to a need to keep down the cost. The architect of the original cathedral was Archibald Simpson, who had a thriving practice in Aberdeen. His masterwork is Bon Accord Crescent and Bon Accord Square of 1823, which would not be out of place in Bath or Clifton.

In Aberdeen, too, Archibald Simpson built a brick spire to the Triple Kirks, a new building of 1843. Aberdeen's original cathedral is St Machar's, the Romanesque and later structure now the Church of Scotland cathedral, truncated to the nave, aisles and west towers. The parish church was separate but outside the medieval burgh. St Nicholas' Kirk is now two churches, as at Glasgow Cathedral one congregation uses the lower church, the other the main floor. But in the mid nineteenth century, even this was insufficient to accomodate all the worshippers. In 1843, another building was provided. The Triple Kirks was the West, South and East Churches. The spire is a brick structure copying the spire of St Elizabeth's church, Marburg, Prussia. The latter, is a brick church.

At the Triple Kirks brick is supposed to have been used for cheapness. In 1843, the choice of material could equally have been to assist in the speed of construction.

But the myth of the cheap substitute has been maintained, even by Ian Shepherd, whose comments in Exploring Scotland's Heritage: Grampian, 1986, have been utilised herein.

In the fifteenth century it was different. Rich men built in brick and in stone: Ralph, Lord Cromwell, adjacent to his house at Tattershall in the collegiate church dedicated to the Holy Trinity and, much further away at South Wingfield Manor, Derbyshire. Sir John Fastolf used flint rubble for the north aisle at the abbey of St Bene't at Holme, Ludham, Norfolk, where he was buried, and timber-framing with wattle-and-daub for his surviving house at Dedham, Essex.

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It is anticipated that Information 53 (July 1991) will be mainly devoted to the use of brick in bridges. Already two sizeable contributions on brickwork in bridges have been received and another is promised. Should members have comments about any brickwork in bridges in any location in the world would they please let the editor know by 30 April 1991.
The final date for submission of contributions for Information 53 (July 1991) is 10 June 1991.

Contributions are also requested for Information 54 (November 1991) and should be sent to David H. Kennett at 27 Lords Lane, Bradwell, Great Yarmouth, Norfolk NR31 8NY by 10 October 1991.

David H. Kennett
Editor

BRICKS WITH SUNKEN MARGINS

Martin Hammond

BRICKS WITH SUNK MARGINS

During the excavation of a mid-seventeenth-century pottery kiln at Horton, near Wimborne Minster, Dorset, in May 1990 I was able to examine closely a 'production run' of special radial bricks which appeared to have been used to line the kiln chamber. While cleaning and looking at them I thought that they must have been specifically made for this particular job and that the total quantity of bricks was unlikely to have been considerable. The question of repairing of repairing a worn mould, as has been suggested by some authors[1], would not have arisen. All the bricks showed signs of sunk margins to some degree on the top (struck) face; they were deepest on the high spots of the surface, which was not very even. The header, stretcher, and bed faces were sanded: the bed was often very rough; this suggests that the bricks had been made in an open-bottom mould laid on a sanded drying area from sanded clots of clay. The mould was lifted off and the brick left to dry. Because of the unevenness of the ground the clay would in places squeeze out under the bottom edge of the mould. Many bricks showed where this excess had been fettled or trimmed off with a knife when the brick was partly dry and 'leather hard'.

The dimensions within the sunk margins were always the same, but their position relative to the edge of the bricks was not, varying by a few millimetres. My conclusion is that the sunk margin was formed by some kind of template laid on top of the brick and used as a guide for the knife during fettling. Previous writers[2] have suggested a mould with an inward-facing flange around the top edge. It would be difficult to pack clay under this to form a square arris to the brick; doing so would slow up moulding considerably. The flange would have had to have been very thin material: sheet metal is the only pactical possibility. Leather would have to be thick to be stiff enough not to bend and to stand the wear and tear of the strike passing over it each time a brick is made. This flange had been assumed to be a repair to the mould. But why in so many cases was the excess width of the repair material not trimmed off flush with the inside of the mould but left projecting, requiring an alteration in the moulding technique? Brickmaking accounts dating to the 1730s from the East Yorkshire Archives[3] mention re-lining moulds after every 30,000 .... or ... 50,000 bricks. Dobson says brass-lined moulds should be re-plated every season (after about 100,000 bricks).

Beside these bricks I have also seen sunk margins on bricks from the Mary Rose and a number of locations in Dorset: Poole, Corfe Castle, Kimmeridge Bay, and Higher Row, Holt, near Wimborne Minster. All of these are sixteenth- to mid-eighteenth-century date. After that time much squarer bricks, bench-moulded, and set in hacks to dry supersede the bricks with sunk margins.

THE HORTON KILN BRICKS

There were two distinct batches of radial bricks. One measuered 235 mm by 125 mm by 70 mm, and had a red body; the other had dimensions of 230 mm by 140-120 mm by 65 mm, and had a red-buff mottled body. Both gave an internal diameter of 2.9 m (9 ft 6 in). The shorter header face was always heavily slagged with wood ash glaze. The kiln remains indicated a diameter much less than this, about 1.8m - 2.0 m (between 6 ft 0 in and 6 ft 8 in). The firing chamber of this type of kiln was an open-topped cylinder, the height being about equal to the diameter. In the kiln 60 bricks form a full circle; with 40 courses (about 3 m) remaining, this would equal 2,400 bricks. This is well within the life of a mould. With a minimum likely diameter of 1.83 m (6 ft 0 in), and 45 bricks to a circle and 24 courses, 1080 bricks would have been required.

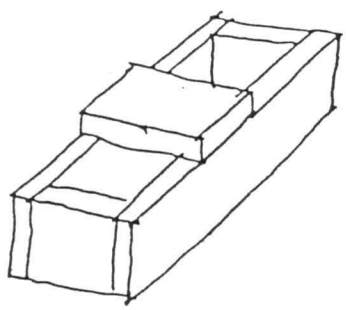


Fig 1

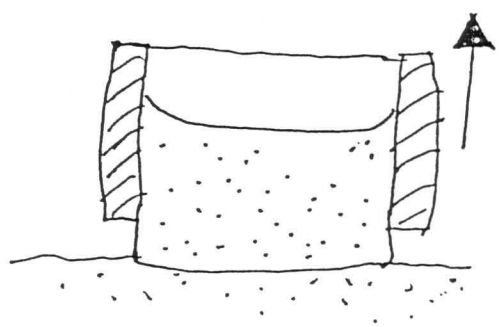


Fig 2

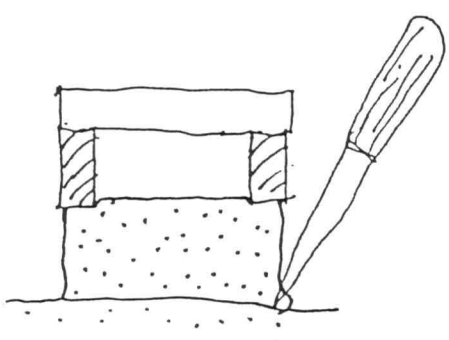


Fig 3

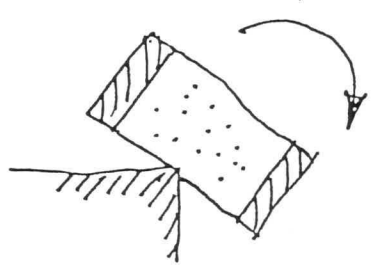


Fig 4

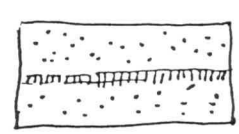


Fig 5

Fig 1 - 5 Stages in working bricks with sunken margins.

BRICKS WITH SUNKEN MARGINS:
AN EXPERIMENT

In June 1990 I conducted an experiment in moulding technique at my workshop at Park Farm Museum, Milton Abbas, in order to test my theory. I used an open-bottom steel-lined mould. This was laid on a floor covered with compacted sand, the surface of which was left uneven so that in places the clay would squeeze out under the bottom edge of the mould. Clay rather softer than now normally used for hand-moulding was rolled in dry sand to form a clot which was pressed down rather than thrown into the mould and struck off. The mould was then lifted off and placed next to the finished brick ready for refilling. Some of the bricks were moulded on a bed of straw. The bed face of the brick

took up the texture of the straw; wisps of straw stuck to the partly dry brick during hacking and were trapped between the stretcher faces, also causing straw marks. Straw previously was used to cover the hacks. [5] The bricks were left for ten days to dry on the flat. If they had been out in the open they might have acquired some rain marks on the top face and if not too badly damaged would have been sent to the kiln.

After the initial drying period the bricks were stiff enough to handle, perhaps a little too stiff for this experiment. They were then fettled. A template as shown in the sketch (fig 1-5). was made up. This was placed on the top of each brick to push down the edges lifted by withdrawing the mould and to act as a guide for trimming off the excess clay which had squeezed out under the mould with a knife. This was only done as required. Some bricks come out of the mould better than others so needed little or no fettling. Therefore not all bricks in a particular batch would have sunk margins and knife-cut header and stretcher faces. The template certainly produced an authentic-looking sunk margin, even though I had to press quite hard on it because the bricks were drier than I would have liked. The bed face was rough and sandy but the header and stretcher faces were smoother than seventeenth-century examples, probably because a steel-lined mould was used. After fettling the bricks were stecked on edge in a hack to finish drying ready for firing. On the whole the results were satisfactory.

Some early slop-moulded bricks from the Midlands and Lincolnshire, moulded on a bench rather than on the ground as described above have a shallow groove along the centre of the bed face (fig 6). As Dobson describes: the brick was made in an open-bottom mould directly on the bench top; no stock-board was used. As each brick was moulded it was slid to the edge of the bench where a boy would take it, still in the mould, to the drying ground. The groove was formed as the boy rotated the mould about the edge of the bench at its point of balance, from the flat to the 'on edge' position; this being done so that the brick would not fall out of the mould in carrying. This was another feature of bricks which had noticed for many years but was unable to explain until tried by practical experiment at Park Farm.

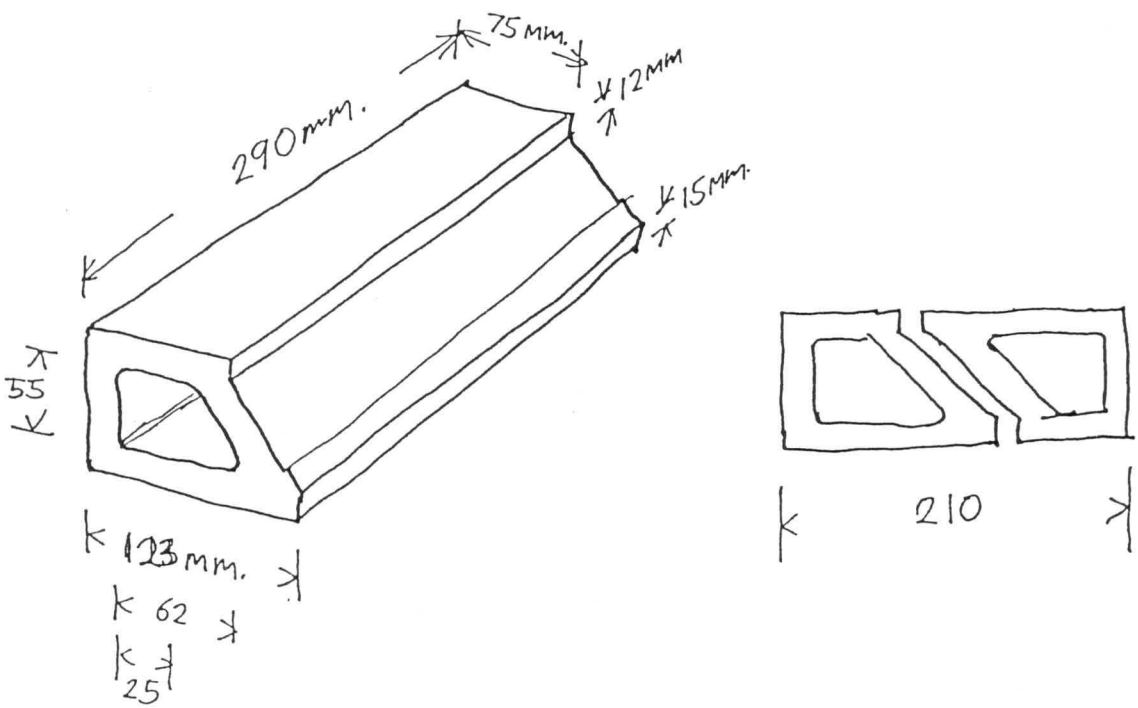


Fig 6 Henry Roberts' brick from Horton
left: single brick with dimensions in millimetres
right: two bricks as walling

HENRY ROBERTS' BRICKS

Access to the excavation site at Horton was through a back garden. Here weighing down the lid of a coal bunker were two examples of Henry Roberts' patent interlocking hollow bricks of 1849 (fig 6). Allowing for a mortar joint between them, they form a wall about 210 mm ($7\frac{1}{4}$ in) thick (fig 6 right). They were used in the construction of the model cottages erected for the Great Exhibition of 1851. It is not certain where these bricks could have been made, but they match [6] bricks made in the Verwood area of Dorset and bricks from Hampshire.

During a visit to Edmondsham House, near Cranborne, Dorset, I saw another hollow brick which appeared to belong to the same 'kit'. The body of these examples was dark red flashed to purple, with some fire-cracking in the rectangular block; similar to some bricks from the Verwood area, 3 miles south-east of Edmondsham and 5 miles north-east of Horton. The examples seen appeared to be unused; no complete building in the area is known to have been built of them. They why should they be found in rural Dorset?

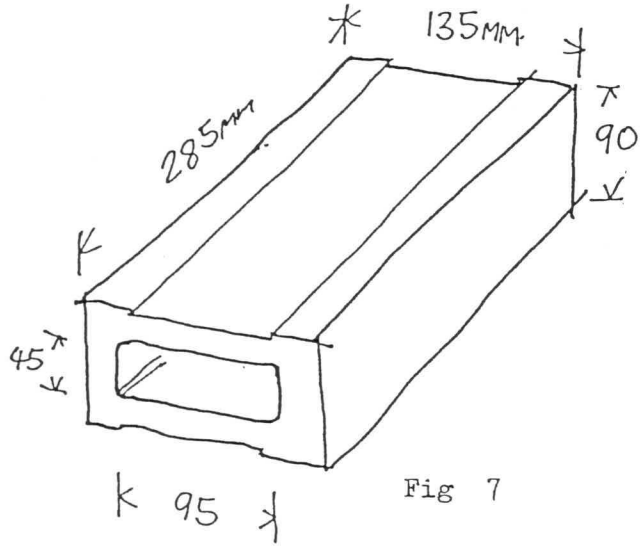
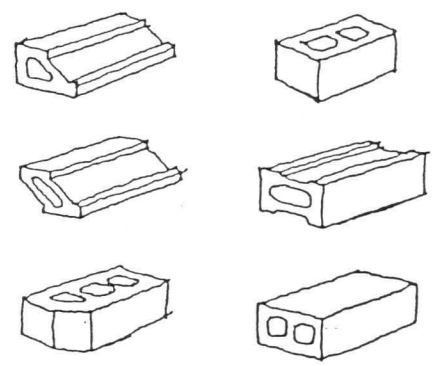


Fig 7



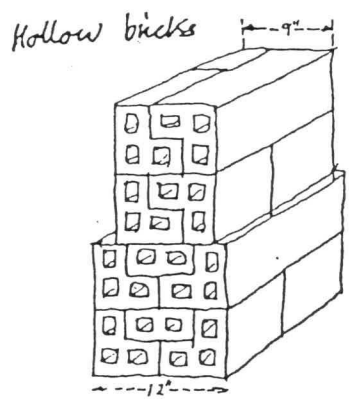


Fig 8

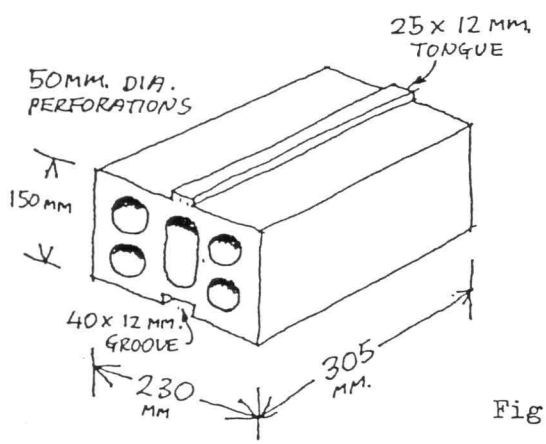


Fig 9

Fig 7 Henry Roberts' brick from Edmondsham House.
Fig 8 Henry Roberts' bricks as shown E. Dobson and A.B. Seale, Bricks and Tiles (1936 edition).
Fig 9 Brick found near the British Waterways Museums, Stoke Bruerne, Northamptonshire, in 1966, and believed to have been made locally.
The type was not popular because vermin could live in the perforations.
Fabric: light red, extruded wire-cut.

Fig 10 Edmondsham House: a multi-period brick house in Dorset

APPENDIX:
COPING BRICKS AND BRICKMAKING AT EDMONDSHAM HOUSE

Besides the Henry Roberts' brick (fig 7) I also found in the kitchen garden of Edmondsham House coping bricks (fig 10 and 11) and edging tiles (fig 12). Most of the vegetable and herb beds were edged with red hand-made briquettes measuring 155 mm by 80 mm by 55 mm, laid diagonally on edge. In and around the sheds was an area of paving consisting of pamments, measuring 190 mm by 190 mm by 50 mm.

The house itself is of Tudor origin, much altered and extended. The 1745 wings are of hand-made pinkish-red bricks measuring 225 mm by 110 mm by 65 mm, with four courses rising 290 mm, still bearing traces of cream colour-wash. In the library lobby are estate maps of November 1840 and 1857 which indicate brickmaking activity quite close to the house. Names include 'Marlpit Hill' at grid ref SU/065119, 'Brick Kiln Piece' at grid ref SU/065114, and 'Brick Closes' at grid ref SU/065113.

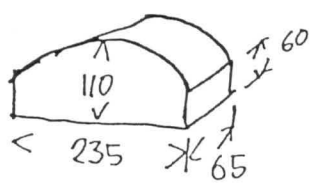


Fig 11

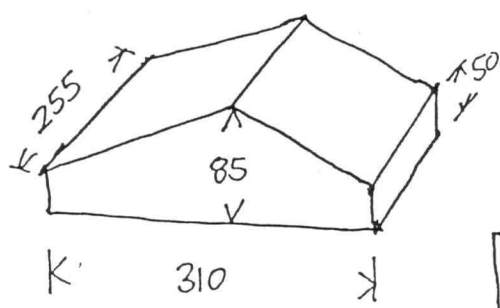


Fig 12

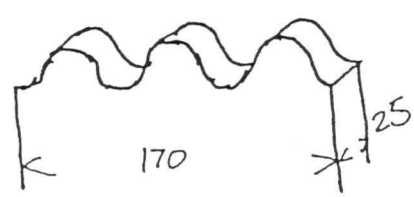


Fig 13

Fig 11 Coping brick from Edmondsham House
Fig 12 Coping brick from Edmondsham House
Fig 13 Edging tile from Edmondsham House

NOTES

1 R.J. Firmin and P.E. Firmin, 'Bricks with Sunken Margins', BBS Information, 31 (November 1983), 3-5; M.G. Reeder, 'Bricks with Sunken Margins', BBS Information, 32 (February 1984), 12-13; N. Lloyd, A History of English Brickwork from Mediaeval Times to the end of the Georgian Period, (London, 1923), 33.

2 See note 1.

3 A. Los, 'Accounts from Archives: East Yarkshire', BBS Information, 31 (November 1983), 22.

4 E. Dobson, A Rudimentary Treatise on the Manufacture of Bricks and Tiles, (London, 1850), I, 70.

5 J. Woodforde, Bricks to Build a House, (1976), illust. on 7.

6 Woodforde,1976, 122-124; E. Dobson and A.B. Seale, Bricks and Tiles, (London, 1936 edition), reproduced as fig 7.

BRICK SLIPS IN SUSSEX

In Hove there are many examples of buildings using a creamy white, smooth facing brick. These were almost certainly made in the Wish Brickworks, in the area between Portland Road and New Church Road. A friend of the writer, Charles Randell, now deceased, remembered the brickworks in his youth in the early years of this century and told me that the terraced houses in Grange Road which are faced with these brick were built to house workers from the adjoining brickworks.

On examining some of the building faced with these "whites" it has become apparent that in some cases the buildings are faced with slip bricks 35 mm (1⅓ in) thick backed up with solid brickwork. Locations of some of these are: Church Road, Denmark Villas, Goldstone Villas, Wilbury Road.

In most cases the "brick" height is 75 mm (3 in) and they are laid in Stretcher Bond, although examples in Flemish Bond have been found. As these buildings date from about the 1880s the use of stretcher bond is itself unusual as this did not beoome normal practice until the use of the cavity wall became general from about the beginning of the twentieth century. The normal bond with solid brickwork is either English or Flemish. The fact that the bricks are slips is not immediately obvious as the ends and returns of walls are normally masked with rendered quoins or rendered architraves around windows. However, one case has been found where slips on one course alternate with solid bricks at external angles. Another case is of a 450 mm (10 in) square pier with slips on the front face with a straight joint visible.

I know that slip bricks have been used and are still used in cases such as where it is necessary to carry brickwork across the face of a concrete beam, as noted by R.W. Brunskill, Brick Building in Britain, page 93; but this is the first time that I have seen the whole of the face of a building so treated.

Do any members know of any similar examples or is this purely a local phenomenon?

Ron Martin

BRICK AND THE PRICE REVOLUTION

Beginning in Information 55 (July 1992) the British Brick Society hopes to start a series of articles looking at the movement of brick prices in western and eastern Europe in the later Middle Ages and the succeeding two centuries. This period (approximately 1300 to 1750) encompasses the price rise of the sixteenth and early seventeenth centuries with both the preceeding and succeeding quiescent centuries.

To set the scene, a general account of the rise in industrial prices between 1400 and 1700 is to be included in Information 55. Articles have already been promised on brick prices in southern England, Italy, the Netherlands, Poland and Spain. Some of these countries will be covered in more than a single article: Spain, for example, will have separate papers on Andalucia and New Castile, and Valencia.

As yet the extensive evidence from the German-speaking countries has yet to find an author. Any member of the British Brick Society who would like to tackle this or knows of a possible person to approach is asked to get in touch with David H. Kennett, 27 Lords Lane, Bradwell, Great Yarmouth, Norfolk NR31 8NY.

David H. Kennett

BRICKS AND A DRAINPIPE FROM ANCIENT CHINA

The exhibition 'The Terracotta Warriors from China' has been open in Bournemouth since May 1990. It includes two bricks and a drainpipe.

One brick is hollow, pierced longitudinally by an oval hole, and measures 70 cm by 39 cm by 17 cm (27½ in by 15¼ in by 6¾ in). It was found in 1974 on the site of the Qin dynasty palace at Xianyang (built 221-206 B.C.) It has a scratched design of a dragon on the face and would have been laid on edge in the wall. The longitudingal hole does not appear to go right through the brick but was scooped out after moulding, and the header faces are left rough. The stretcher faces have been fettled smooth with a palette-knife.

The other brick came from the floor of the underground galleries in which the warriors stood. It measures 42 cm by 18.2 cm by 9.5 cm (16½ in by 7¼ in by 3¾ in). All faces were dressed with a fabric-covered beater when partly dry, and the maker's name stamped on. Qin goods had to carry the maker's name so as to ensure quality, as those who made faulty goods were liable to punishment.

The drainpipe, 72 cm long by 47 cm overall height (28¼ in by 18½ in), was included in the catalogue but not in the exhibition. It appears to have been made up from flat slabs about 7 cm (2¾ in) thick, luted together and finished with a fabric-covered beater. The pipes were used in the drainage system to the burial pits.

M.D.P. Hammond

TRAINING VIDEO ON QUALITY BRICKWORK

Open learning is familiar in many fields. A package has now come to the construction industry. In the autumn of 1990, the Department of Construction and Environmental Health at Bristol Polytechnic with industrial sponsorship from Redland Brick has produced three training packages entitled 'Open Learning Materials for Quality Brickwork' aimed respectively at bricklayers, construction site managers and designers.

AND NOW FOR SOMETHING COMPLETELY DIFFERENT

Alan Hulme

Several days prior to leaving for a holiday in Cornwall I checked through that useful BBS publication 'Index to Information No's 21-40' to find what might interest a brick collector in the West Country, assuming family agreement (or permission).

Thanks to the contribution made by Brian J Muless in Information 20 a mental note was made of the last operating brickworks in Somerset near Wellington at Poole, not indicated on my road map.

It was our intention to break the journey south by an overnight stop convenient to Taunton where we could visit an aunt and this we did, staying at a charming little place called Norton Fitzwarren. During the evening visit to my aunt the inevitable subject of bricks arose. My aunt had never heard of Poole but had an aquaintance, Mr Joy, who had given one of the numerous societies to which she belongs, a talk about his family connections with the brickmaking industry in the area. With his name and address duly noted and an invitation to have tea with my aunt on the return journey everybody was happy.

I don't know of a Patron Saint for brick collectors but he, or she was certainly smiling on us the following morning. En route to the M5 junction near Wellington there was a road sign: Poole ¼m. With minor protestations my chauffeuse turned abruptly in that direction and we shortly arrived at an enormous works with a sign announcing Steetley's prescence. With promises of minimal interuption to our journey I entered the first convenient door in the works and asked two hard working men if I could speak to a foreman or other officer in charge. I was directed outside to some smaller buildings from where a smart young man in blue overalls and hard hat enquired my business. On being told 'Doug' proudly informed me of his brickmaking life and some of the site history. He was sure she could find me a named brick or two from the adjacent building encased in scaffolding;and of course he did. This building, to be demolished that next fortnight, was the last remaining part of what had been the brickmaking plant of Wm Thomas of Wellington. I was shown where the relevant machinery had been housed and the massive oil-soaked timbers, silent witnesses to an era about to pass for ever. The kilns had already gone, not a trace left. Several named bricks were located and a named ridge tile which were deposited behind a distant bush for retreival fourteen days later if plans formulating in my head came to fruition. Fearing I might have to walk the rest of the way to Cornwall I thanked Doug for all his kind help and encouragement and hastily rejoined my family whose amicable temperament was just beginning to change. Thankyou Patron Saint.

Excursions from our holiday accommodation revealed few bricks lying about, certainly thin on the ground, literally, by comparison with the North. I noticed some possibilities supporting shelves for plantpots which towards the end of the holiday turned out to be frogged but nameless as were some others in a dry wall that the owner of the bungalow, in whose garden I had managed to get invited, was keen to dismantle for my benefit.

A 'W' marked frog in a brick on end forming a garden border to a road had to be left, unfortunately, but one perched on a pile of large pebbles outside a cottage window in a small harbour looked promising.

I picked it up and was quizzically rubbing at the feint indents in the frog when I noticed an old lady watching me through the window so when it opened I explained my interest, supported by BBS membership, and asked her if she had any idea where it had come from other than the sea, as indicated by the absence of any arrises. She didn't know and neither did her equally old male companion. I replaced the brick on the pile of pebbles and suggested that I would return and have a closer look with my spectacles.

At that time I had yet to discover the identity of the bricks supporting the plantpots which, hopefully, would negate the wish to aquire the brick in question if they were the same type. Several days later, armed with spectacles and a modern brick from our accommodation (left over from a new chimney stack) as a swap, I descended to the aforesaid harbour but found that the object of the excercise prominent by its absence. I must have looked bewildered because the window opened and Baba Yaga announced "We'em keepin' thaat" and "ain't we"? to the mono-toothed gargoyle, suggesting to me that the brick had been given a prime position in a display case and was possibly guarded by the latest laser, infra-red high-tech security system. It was brought outside and I was allowed to touch it but not given time to decipher the runic symbols!!!! I left my 'swap' and trudged away in disappointment.

Nevertheless, there was a silver lining to the holiday. Adjacent to the house we were renting was a small building site of about six properties. I asked the builders agent if they had a 'yard' where there might be the odd local named brick, but no, they had all materials delivered to site. But being interested in the design and construction of the houses I poked my nose into one where there was a plasterer who knew my home area well and was soon offering to help by seeing what he had at his home in St Day. This was encouraging and as he was expecting to be off site within the next two days he said he would leave whatever he could find at the front door of that particular property. Sure enough, our Patron Saint had been at work and two days later I collected 2 grey unfrogged bricks with St Day impressed in large letters, a red, frogged brick with a 'W' and one of the immortal products of Henry Dennis of Ruabon. Unfortunately he did not return and I was unable to thank him personally.

The only other item I collected in Cornwall was a roof tile made by John Board &Co of Bridgewater and which came from Florence Crescent in Falmouth where lots of roof repairs has been carried out due to the severe winter storms.

On the Saturday of our return journey we called at the Steetley works for the hoard and ably assisted by Clive, another of their charming, civil and enthusiastic staff, carried the goodies to the car, and with a floortile made by Wm. Thomas & Co. donated by Clive, stacked them in the foot space of the front passenger, which is the usual place for transporting such. Long live Clive, long live Steetley.

Since the Cornish holiday I found a 'Seoint Caernarvon' behind the cafe at the top of Snowdon and yes, I carried it down in my rucksack. I think I was due for some penance or was it our Patron Saint's sense of humour? It just shows the lengths, heights and depths brick collectors will go to, (my skin-diving nephew brought me a 'Gartcraig' from off the coast of

Anglesey)

The last bit of luck to come my way was a few weeks ago when I was able to purchase a 1904 legal document regarding the lease of 4 acres of land, adjacent to Whinney Hill Road in Altham, Lancs., to the Accington Brick and Tile Co. It details the royalties on quantities of bricks and tonnage of other items and is very interesting.

Now to more mundane things ... ...

NORMAN BRICKS

St Mary's church, West Somerton, Norfolk
N.G.R. TG/475196

The church has a round tower which in the past has been dated to the eleventh to twelfth century, although it has no visible features of that date, with a thirteenth-century belfry. The north doorway is of circa 1200 and there are two Perpendicular windows.

Stripping of the rendering from the north wall of the nave has revealed a second doorway, to the east of the present opening. It is round-headed but the arch is formed of twelve bricks set on end, each 30 cm by 5 cm (12 in by 2 in). Two blocked Norman windows were also revealed, with fragments of bricks in the jambs. None of this brickwork is obviously reused Roman and it may be a case of contemporary Norman brickwork. It is hoped to arrange Thermoluminescence dating.

It now appears that the church was extended westwards and the tower added around 1200.

Edwin J. Rose
Norfolk Archaeological Unit

St Mary's church, Polstead, Suffolk
N.G.R. TL/989381

Since the article on 'Polstead Church, Suffolk' in Information 50, October 1990, 9-16 was written, another photograph of the clerestory has been published.

Plate 114 of R.W. Brunskill, Brick Building in Britain, 1990, shows the brick chancel arch from the chancel side, the upper parts of the four brick arches of both nave arcades and each of the brick clerestory windows above the arches. This includes the westernmost bay on the south side.

Brunskill's view is a different one to existing photographic coverage of the arcades and clerestory at Polstead church, noted in note 2 of the article in Information 50.

David H. Kennett

NEWS OF INDUSTRIAL BRICKWORK IN SOMERSET

Martin Hammond

BRICKWORKS ENGINE STEAMED 24 HOURS FOR CHARITY

On 12-13 November 1988, the 'Wills' single-cylinder horizontal steam engine at Westonzoyland Pumping Station, near Bridgwater, was run continuously for 24 hours starting at 17.00 on the 12th. The engine was of a type commonly used to drive the machinery at brick and tile works; it was built by W. & F. Wills of Bridgwater in 1886 for H.J. & C. Major's (late Sealy's) tile works in Salmon Parade, Bridgwater, where it worked until the closure of the works in the 1950s. It was preserved in the manufacturer's own museum before removal to Westonzoyland in 1979. The engine was returned to steam in 1983 and now works alongside the main exhibit, the steam drainage engine of 1861, and several smaller engines.

This was probably the longest period, the engine has ever worked continuously; normally it would only be used during the working day. The cylinder is 9 inch bore by 18 inch stroke and turns the 7 ft diameter flywheel at 32 r.p.m. in almost complete silence. The poppet valve gear, patented by Wills, was unique.

Receipts at the pumping station over the weekend went to the 'Children in Need' appeal.

SOMERSET'S OLDEST INDUSTRIAL CHIMNEY REBUILT

At the same time, the pumping station's brick chimney was undergoing reconstruction by Furse Steeplejacks of Bristol at a cost of £40,000. Westonzoyland was the first steam-powered land-drainage pumping station to be built on the Somerset Levels; it dates to 1830. The stock, about 8 ft square at the base and originally nearly 80 ft high, is attached to one side of the pump house. Time and weather have taken their toll, and the top few feet together with the stone capping were taken down some years ago. The present rebuilding starts at the eaves level of the pump house. As it is a listed industrial monument, the chimney has to be rebuilt as it was before. The old bricks were cleaned and reused on the outside face of the chimney and laid in mortar carefully mixed to match the colour of the existing. The inside is lined with red perforated Class B engineering bricks from the Steetley (ex William Thomas) works at Wellington, Somerset. Rusting of the iron tie bars built into the brickwork had contributed to the decay; these were replaced by some of similar design in stainless steel.

Whilst there, I asked how the taper or batter of the chimney sides was maintained. The bricklayers have a table showing the plan dimensions of the chimney at each of a series of levels at equal intervals vertically above the chimney base. The figures are abstracted from the engineer's working drawing. Having completed one level, they build up the corners to the correct plan dimensions for the next level using plumb rules with a tapered piece of wood attached to the side to maintain the correct batter. The angle of batter is also taken off the drawing and will vary from job to job, depending on the height of the chimney and the difference in plan dimensions between the base and the top. The brickwork between the raised corners is then filled in, using a line and pins in the usual way to help the courses straight.

The bricks were made at a brickyard 'a couple of fields away' south-west of the pumping station site, on the bank of the River Parrett. They are hand-made sand stocks, without frogs, and in varying shades of light red, pink, and buff. The yard is shown on tithe maps of the area and closed in the 1860s.

Restoration of the chimnay and the Lancashire boiler it serves is a long-term project. Steam is at present supplied by a separate vertical boiler with its own steel chimney.

GAUGED BRICKWORK PROJECT

Gerard Lynch

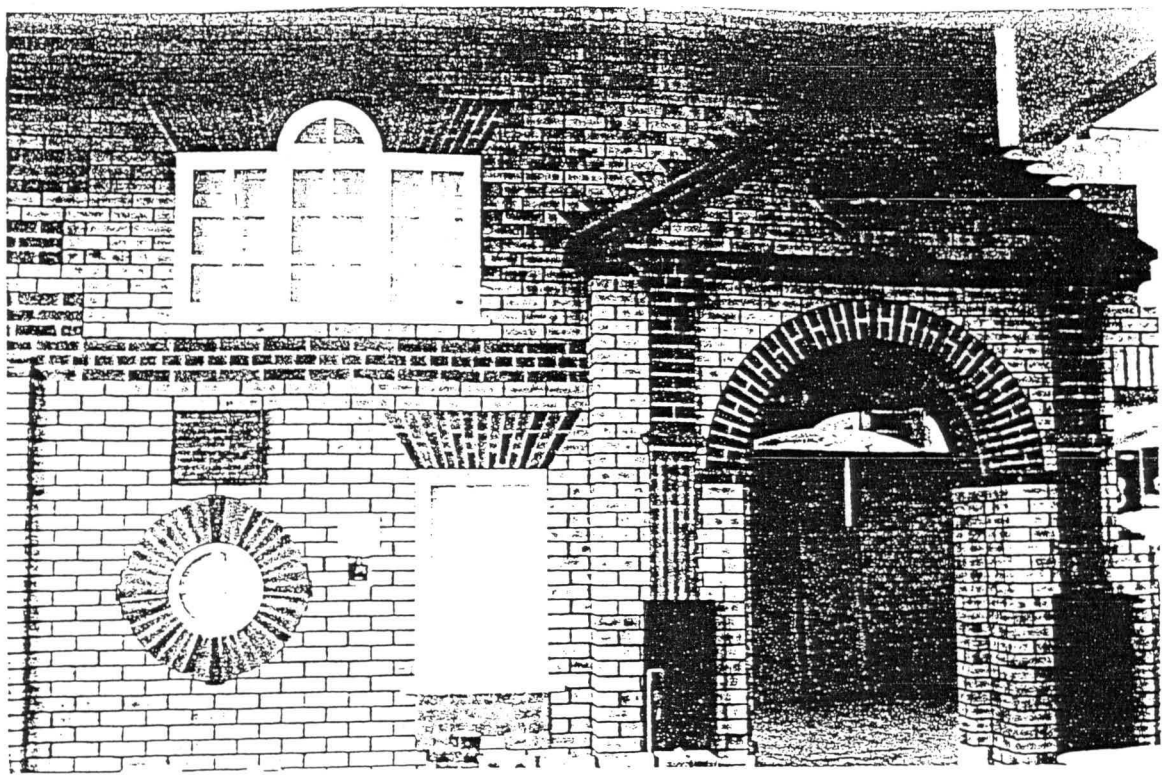
In 1986 a gauged brickwork project was designed at Bedford College of Higher Education, Bedford, by the head of trowel trades, Gerard Lynch. This was prompted by his knowledge that the vast majority of bricklayers are not conversant with this highly skilled area and that serious implications were being felt in the restoration and conservation of historical brickwork.

Gauged, or cut and rubbed, work was lost nationally from the apprentices' training due to the reduction of the number of years of apprenticeship: it was last taught at Bedford College nearly thirty years ago. However, it was felt that room could be made within the brickwork curriculum to accommodate this skill without affecting the basic training.

First- and second-year students were given the opportunity to become familiar with gauged work by rubbing and cutting bricks, in readiness for the more experienced third-year students to lay and finish.

Consequently over four years, and as the skill has become more familiar, an extremely fine Georgian facade has been built as a permanent feature and showpiece of the brick workshop. This is not only a testament to the skills learnt but has already been the focal point of much architectural interest and 'in workshop' training for outside visitors. The construction of the Venetian Wave arch by third-year students was the subject of a commissioned video for the Research and Technical Advisory Service of English Heritage, who will employ this in their quest to build up a library of the more highly skilled operations, now sadly neglected skills, required in today's conservation and restoration environment.

It is hoped that Bedford College of Higher Education could become a nationally recognised centre for the skill, and that the college will tailor courses for the clients' demands: from 'hands on' practical experience for designers, surveyors, and craftsmen to lectures on any aspect of guaged work as required.



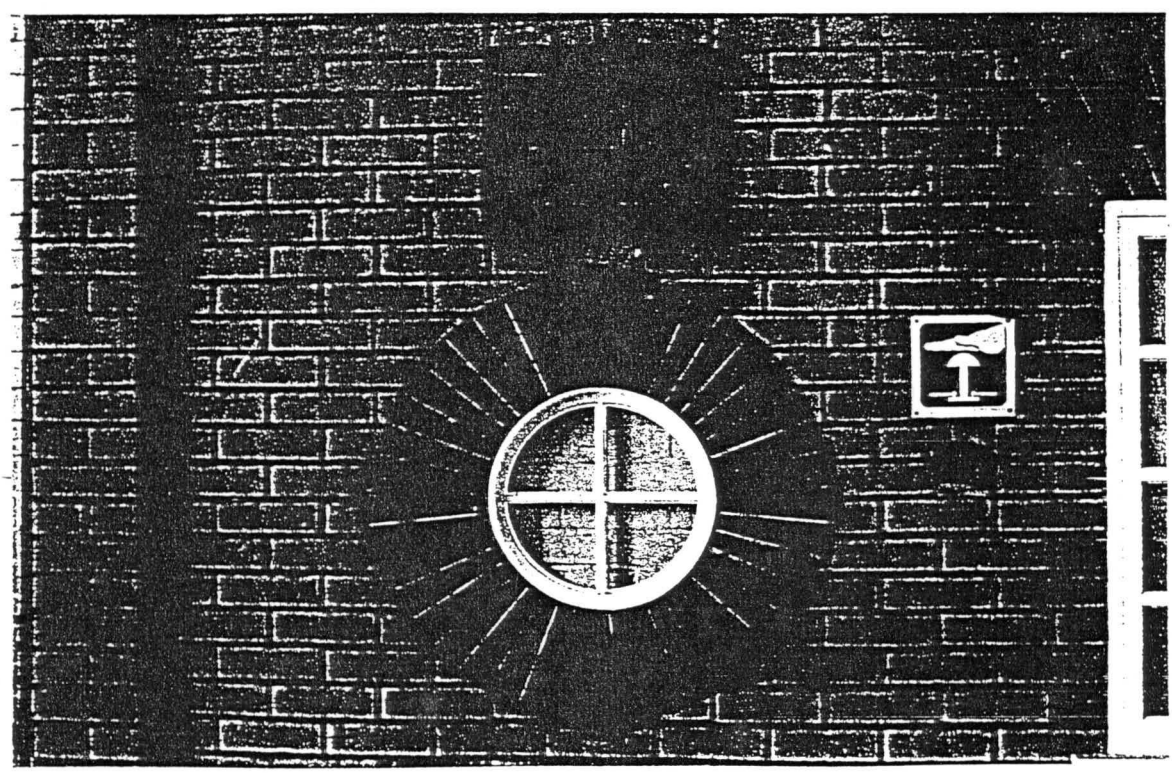
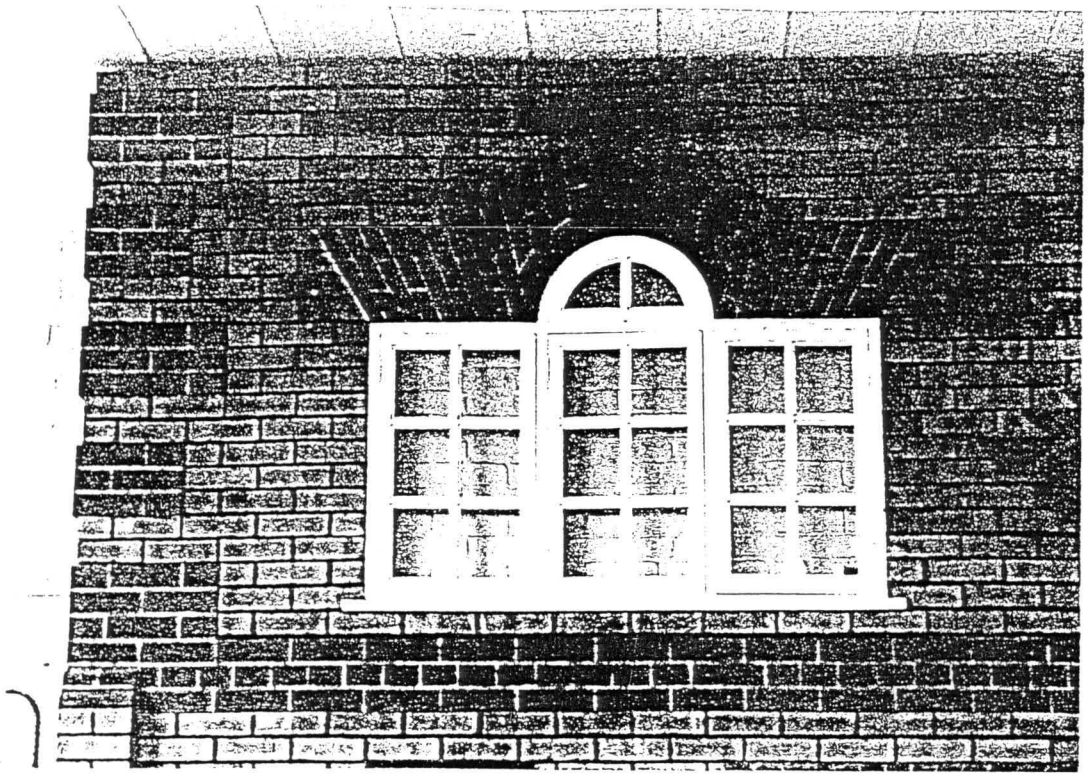


Fig 1 General view of wall with gauged brickwork at Bedford College of Higher Education, Bedford.
Lighter colour is grey brick; darker colour is red brick, including the gauged brickwork.

Fig 2 Detail of round window outlined in gauged brickwork.



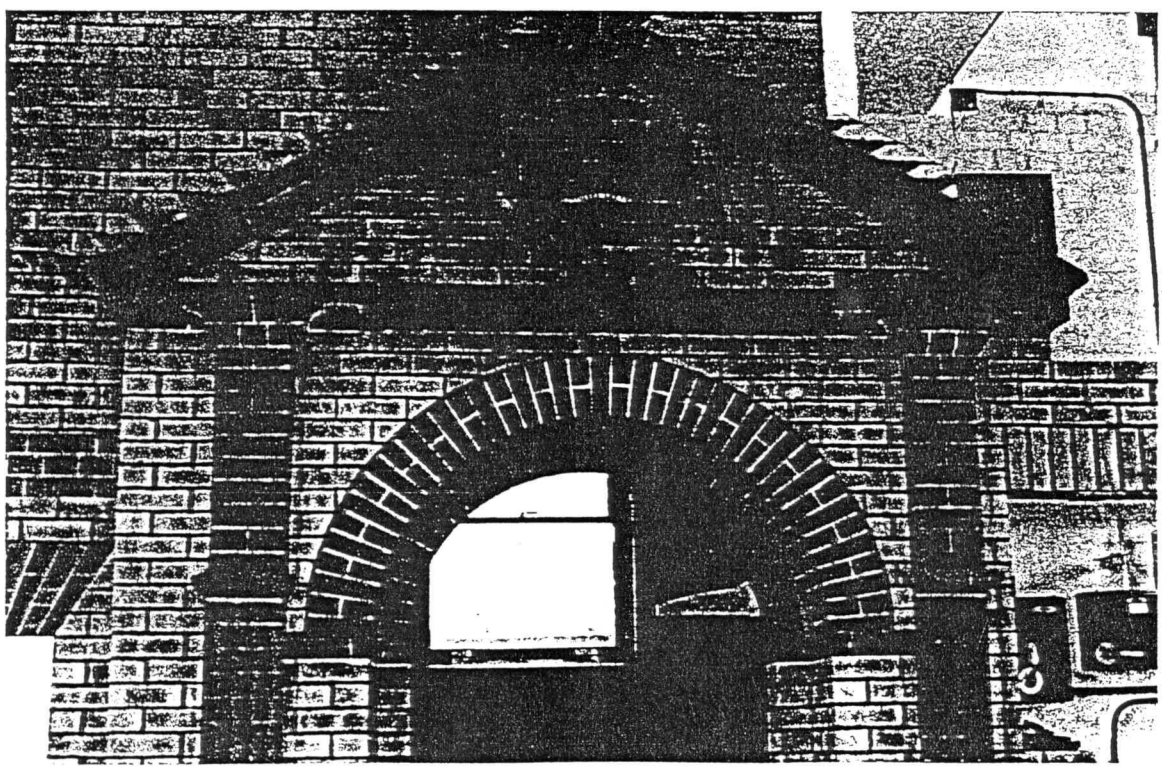


Fig 3 Gauged brickwork above Venetian window, in the wall at Bedford College of Higher Education, Bedford.

Fig 4 Door arch and pediment in brickwork wall at Bedford College of Higher Education, Bedford.

It is particularly noticeable that along with the need for skills such as this to be resurrected for work in restoration and conservation that brick is once again being used imaginatively. Particularly apposite is that a number of major building projects have had gauged brickwork detailing.

With more knowledgeable brickwork designers and craftsmen there is no reason why gauged work should not enjoy a revival with Bedford College of Higher Education playing a part in this development.

Further details are available from:

Gerard Lynch
Brickwork Course Co-ordinator
Faculty of Science and Technology
Bedford College of Higher Education
Mander Site
Cauldwell Street
Bedford
Bedfordshire
MK42 9AH

Telephone: 0234 345151 extn 5503

or Mr B. Marsh 0234 345151 extn 5505

DAY SCHOOL AT A 'RED BRICK' UNIVERSITY

The London Road site of Reading University was the venue for a Day School entitled 'Bricks and brick patterns' held on Saturday 20 October 1990. BBS member Jane Wight was the Tutor; seventeen people attended including three BBS members. A wide range of interests was represented.

A comprehensive collection of slides showed the usage of brick from the narrow brick/tiles of the Roman fort at Burgh Castle, near Great Yarmouth, Norfolk, through to early-twentieth-century buildings in Reading. Early brickworks, irregularity in size and surface texture of bricks, and the effect of wood as fuel were among the many topics discussed. Local examples of the use of brick led to information on the production in Reading of bricks, tiles, and terracotta work, first by Poultons (until 1908) and later by Colliers who continued until more recent times.

The day ended with a walk through parts of the University, studying bricks, tiles, air vents, and chimney pots. The London Road site is the earliest part of Reading University and was first occupied in 1906 fol following a move from elsewhere in the town by the then Reading University Extension College which had been opened under the auspices of Christ Church, Oxford, in 1892. In 1926, it was granted a royal charter as an independent institution and became the University of Reading. This site will be sold in the near future and all activities transfered to the larger Whiteknights Park campus.

Unfortunately, shortage of time prevented further exploration in search of brick buildings outside the University.

Mary Bentley

Review Article

BRICK IN THE COLONIAL CULTURES OF AMERICA

David H. Kennett

Between 1629 and 1775, four distinct regional cultures were transplanted from England to the eastern seaboard of the future United States of America. First in time, and best-known, were the Puritans of East Anglia who settled in the Commonwealth of Massachusetts and its New England neighbours between 1629 and 1640. Of very different hue were the Royalist gentry and their indentured servants from southern England who went to the Chesapeake between 1640 and 1675. The Delaware Valley was the destination of the members of the Society of Friends (the Quakers) who emigrated from the north midlands between 1675 and 1725. In 1717, a new group began to appear in the city of Philadelphia: the former inhabitants of Cumbria and adjacent parts of Northumberland, the North Riding and Lancashire north of the Ribble settled from then until the American Revolution in the Backcountry of the Appalachian Mountains and the Allegheny Mountains.

To the Thirteen Colonies, these regional cultures contributed distinct ideas about birth, marriage and death, about dress, sport, work, and the use of time, about the concept of liberty and that of order, about the worship and its setting, about schooling and literacy, and about architecture, both in style and materials. To sum these diverse traits, David Hackett Fischer has coined the useful word "folkways": its meaning is akin to both the French mentalité and the German Weltenschuung, without being confined to the implication of thought processes implicit in both of these.[1]

These four cultures used different materials for their buildings. Unashamedly the men from the Stour valley of Suffolk and Essex who sailed with John Winthrop on the Arbella gave their settlements names which are easily recognised: Groton, Hadleigh, Ipswich, and Sudbury. These occur in Suffolk, England, and in Massachusetts, both in Suffolk County and elsewhere. Or from Essex, Chelmsford, Springfield and Toppesfield, with in the expansion westwards of New England culture in the early nineteenth century, a Springfield in Ohio and another in Illinois. Unashamedly, too, the Puritans who left England for the freedom to worship as they saw right took with them the building style of their homeland. That was to use timber-framing and clapboarding. For the men of the middling sort who paid their own passage in the years of "King Charles' eleven year tyranny" brick except for chimney stack and perhaps end wall was unknown.

The lack of brick houses in early colonial New England should not surprise members of the British Brick Society. Contemporary society in East Anglia used brick only for the greater manor house: few Suffolk houses with a hearth tax assessment of under fourteen hearths were built solely of brick. Even the well-known Fleming's Hall, Bedingfield, Suffolk, has only the gable walls of brick: here the range is timber-framed[2] Those who formed the elect of "vexed and troubled Englishmen"[3] between 1629 and 1640 could afford brick chimneys, but only that. This was before the pargetting of Saffron Walden and Hadleigh and the brick fronts of older timber-framed houses. The facade of Sherman's House, Dedham, Essex,[4] is dated 1732; the grammar school attended by John Constable has a brick front which is contemporary.

The Puritans then did not take brick to New England. Partly it is because their numbers deliberately excluded the very richest stratum of society, those

who in England could afford to build in brick. Equally the concept of ordered liberty, allied to a lack of display in dress and moderation both in social deference and male dominance, did not permit ostentation in private housing. What it did encourage, however, was a high respect for both literacy and learning.

It is surely no accident that the only seventeenth-century brick building in Massachusetts of which the writer can instantly conjure a picture is the Quadrangle round Harvard Yard. The leaders of the Puritans were its ministers, men nutured in English Cambridge: at Emmanuel, Magdalene, and Trinity especially. Here there was much brick building in the fifty years before the departure of the Arbella. Emmanuel has the Brick Building of 1633 in a college founded to nuture Puritan ministers in 1584. The Great Court of Trinity was virtually laid out between 1597 and 1602 and Nevile's Court of 1612. New building began at Magdalene in the 1580s and further work in brick was done around 1629. But there was much else also in Cambridge, England, to complement the intellectual ferment of the Elizabethan and Jacobean eras: the founding of Sidney Sussex in 1594 on the site of the former Franciscan Friary, and its brick buildings, extended south-eastwards by Sir Francis Clarke's range in 1628. A little earlier is the library of Trinity Hall, dating to the 1560s, while contemporary with the work at Sidney is the Second Court of St John's (dated 1598–1602) [5] and the extension westwards of its north range for the Library of 1624.[5]

All these would have been known to the men who by 1638 had established not merely Harvard but also Yale, Brown and Dartmouth.

The colonies had more universities than England, but in Virginia there was no place of higher education until the founding of William and Mary College at Williamsburg, almost at the end of the seventeenth century. Here, in the Chesapeake, the royalist gentry feared literacy and learning among the general population.

But both in their churches[6] and in their great houses, the gentry did build in brick. But in Virginia brick was the great house. The gentry from Dorset and Warwickshire and the counties between had tried the local sandstone of quarries in the land between the Potomac and the James River but it crumbled easily. Some used wood and sand-washed the building: George Washington's Mount Vernon is an example of this illusion when seen through the haze of nostalgia and a bottle or two of medeira.

But the illusion had not the substance of a stone-built house. As early as 1646, Sir William Berkeley built Green Spring as the Governor's residence. The mansion was demolished in 1797, but it had been built with the aid of a special appropriation voted by the colony's assembly. As an aside we may note that in the Commonwealth of Massachusetts every family was asked to contribute a peck of grain for the college at Cambridge (sc. Harvard); many, however illiterate or poor, did so.

When viewed by Benjamin Latrobe, Green Spring was described as[7]

> a brick building of great solidity, but no attempt at grandeur. ... ... The lower story was covered with an arcade which is fallen down. The porch has some clumsy ornamental brickwork about it of the style of James the 1st.

The house was a symmetrical brick structure of two storeys and a double-storeyed attic, with the principal rooms on the first floor. The main rooms included a long central hall to catch the summer breezes by being open at either end. The rooms were high-ceilinged to keep cool in summer, but the fireplaces were large and the chimney stacks massive to provide sufficient warmth in the Virginian winter. The origins of the plan are in the small to medium-sized manor houses of southern and south central England. An analogy is drawn by Fischer with houses in the totality of Thomas Hardy's Wessex.

Somewhat later is Stratford Hall, [8] birthplace of the Confederate general Robert E. Lee; the house was built by his ancestor, Thomas Lee, around 1725, who went on to organise the Ohio Company to exploit the rich lands of the Ohio valley. Stratford Hall has an H-plan,

with on the first floor a large central hall, flanked by public rooms, equally of a large scale. The ground floor has bedrooms of much less height, designed to remain cool in summer. The exterior is dominated by two massive clusters of brick chimneys, where the stacks are externally linked by brick arches.

Such houses were few at first, but after 1690 more Virginian country houses were built. These houses use brick: in the 1630s, Flemish Bond, but later both English Bond and English Garden Wall Bond are employed. These are bonds popular in southern England.[9] Yorkshire Bond and Monk Bond are rare in the Chesapeake colonies. In the eighteenth century the rich Virginian continued to use brick, at a time when stucco was popular in England. Red brick was preferred, in combination with grey slates and painted wooden trim.

Preservation of the great house was ensured by primogeniture, not the partible inheritance of New England which gave the eldest son a double share to that granted to his siblings, or the straight-forward partible inheritance of Pennsylvania, where all children inherited equal amounts.

In Philadelphia, but not in the rural hinterland, brick was used to create a great city. The Avon and the Liffey were reproduced on the Delaware in houses with raised entries, accessible cellars. The details were designed to be refined: simplicity, dignity, serenity and grace are all adjectives used to convey the feel of eighteenth-century Philadelphia. It was a city like Liverpool or Preston where the merchant's house was also the counting house. Many Quakers sailed from the former; others hailed from the latter.

As with the Pennsylvania countryside, the Backcountry is wood rather than brick. The Appalachians are the land of the log cabin. A minor culture in the American make-up is that of the Dutch of New Netherland, later New York State. Here brick stepped gables were common in town houses, although this author is unaware of any surviving in modern day New York; just as the great square at Munich has been rebuilt, none survive in either Hamburg or Berlin although both German cities had examples of stepped gables surviving as late as the middle of the last century. Dutch names remain strong in New York: the obvious example is Harlem, but then the Imperial City was originally called Nieuw Amsterdam.

The Dutch around the Hudson formed a tightly-knit culture, tolerant of their English neighbours but socially distant from them, both the Yankees of New England to the north and the Quakers and the very different Confederates to the west and the south, respectively.

With each of these three groups, brick was used differently in the colonial era: for education in New England, for the town house in Philadelphia, and for the great house and the Anglican Church in Tidewater Virginia. These differences can be traced back to the specific regional origins[10] of the immigrants and the time of their emigration from England.

NOTES

1. D.Hackett Fischer, Albion's Seed Four British Folkways in America, (New York/Oxford, Oxford University Press, 1989), xxi + 946 pp., numerous, unnumbered, maps, line drawings and tables. ISBN 0-19-503794-4, price £35-00. See ibid., 7-11 for a definition of "folkways".
   Information derived from Hackett has generally not been individually referenced.

2. D.H.Kennett, 'Suffolk Houses in 1674', BBS Information 37 (Nov 1985), 4-11, utilising S.H.A.Harvey, Suffolk in 1674, (being Suffolk Green Book, no.11, vol. 13, Woodbridge, 1905). Fleming's Hall is illustrated N.Scarfe, Suffolk: a Shell Guide (1960, third ed., 1976/1982), 34. Even more dramatic in its preponderance of timber-frame construction is Gifford's Hall, Stoke-by-Neyland, a house with 27 hearths, as opposed

to the 14 recorded at Fleming's Hall. Gifford's is illustrated N. Pevsner, The buildings of England: Suffolk, (1961, second ed., revised E. Radcliffe, 1974), pl. 46, a view of the courtyard which shows how much of the house was timber-framed.

3. C. Bridenbaugh, Vexed and Troubled Englishmen, (1967), brings out the religious background to the Puritan emigration.

4. For an excellent colour photograph of Sherman's House see R.W.Brunskill, Brick Building in Britain, (London, Gollancz, 1990), pl.130.

5. Accessibly N.Pevsner, The Buildings of England: Cambridgeshire, (1954, second edition 1970), 49-182 passim. In more detail, R.C.H.M., An Inventory .... The City of Cambridge, (1966), passim.

6. D. Upton, Holy Things and Profane: Anglican Parish Churches in Colonial Virginia, (Cambridge, Mass., M.I.T. Press, 1988), clearly appeared after Hackett Fischer went to press. Upton's work is noticed BBS Information 48 (July 1989), 15-16.

7. Hackett Fischer, 1990, 266 caption to illustration of Green Spring, quoting E.C.Carter (ed.), The Virginia Journals of Benjamin Henry Latrobe, (1977).

8. W.Andrews, Architecture, Ambition and the Americans, (1978), 10, with photograph on 11 and plan of main floor, xxvii top.

9. Andrews, 1978, photograph on 11 shows the ruinous Rosewell, Gloucester County, Va., which is three storeys of fine Flemish Bond of 1726. Hackett Fischer, 1990, 269, n.15, includes in the citation H.A.Claiborne, Comments on Virginia Brickwork before 1800,(Portlain, Maine, 1957)

10. Review article completed 28 October 1990.

SHORTER NOTICE

J.S. Jensen, 'Later Medieval Mints and Mintmasters in Scandinavia' in N.J. Mayhew and P. Spufford (eds.), Later Medieval Mints: Organisation, Administration and Techniques The Eighth Oxford Symposium on Coinage and Monetary History, 1988, pages 202-221.
The volume is British Archaeological Reports International Series 389 published Oxford, 1988.
ISBN 0-86054-503-2

Monetary history may not be the first place to look for background on the brick houses of the late medieval Kingdom of Denmark, which in the fifteenth and early sixteenth centuries included Norway and southern Sweden. Jensen draws attention to the survival in Copenhagen of the house with the mint of Jørgen Drewes, working 1532, and possibly Bernt Buske, attested 1523, at 6, Vingaardsstraede. It is one of the few late medieval brick houses in the Danish capital. In Malmo, two late medieval brick houses are illustrated. Henrik Dringenberg was the mintmaster in Malmo from c.1455 until c.1491; he died about ten years later. His house is preserved, although much changed. On a corner by the river, the house has a nineteenth-century stucco facade but the inner, courtyard, walls preserve the brickwork, alternating two courses of stretchers with a single wide course of a white stone. The house is stall called 'Dringehergska garden': Jensen provides photographs of the exterior and the courtyard. A later mintmaster in Malmo was Jørgen Kock who was mintmaster in Malmo from 1518 to 1528 and again from 1531 to 1534 and was mayor of the city 1523-1536 and from 1540 until his death in 1556. He acquired his splendid house in 1522; it was restored in 1970. The gabled facade has seven bays culminating in an elaborate crow-step gable with corner finials. There is a very tall ground floor, with street level access to a basement. The principal rooms are on the first and second floors. The gable has fenestration in three layers; the final section is a setting for a male statue, one presumes of Kock himself. The building is five very wide bays deep.

DHK

BRICK THROWING

These notes were made from an Austrailian television series called 'Sports Crazy' about various off-beat sporting events. The series was shown on BBC 1 in August 1990.

Stroud in northern New South Wales is "a magical place where time stands still"; it retains its nineteenth-century character.

The occasion is the annual brick- and rolling-pin-throwing match between Stroud, Oklahoma, U.S.A., 14,000 km away, Stroud, Gloucestershire, England, 17,000 km away, Stroud, Ontario, Canada, 16,000 km away, and Stroud, New South Wales, Australia. In Stroud, N.S.W., it is the biggest event in the local calendar. Up to a thousand people attend and there is a carnival procession. The brick-throwing is for the men; the rolling pins for the ladies.

Heats take place in the morning, and the six best in each event go forward to the finals in the afternoon. Afterwards the four Strouds link up by telephone and exchange details of their individual results so that an overall winner can be declared. In 1988, England won the brick-throwing with a distance of 114 ft 9 in (34.976 m). Barry Guest of Australia was second with 112 ft 4 in (34.238 m). The bricks appeared to be reddish brindle solid wirecuts, and the throwing action is the same as that for the discus.

The event started in 1960 between England and the U.S.A. when it was discovered that both towns had brickworks nearby. The two other nations joined in 1962. Stroud, Australia, provides all the rolling pins used. Presumably one of the two other towns provides the bricks: certainly not Stroud, England. I have in my collection one stamped:

S.J. & SONS
STROUD

S.J. & SONS
STONEHOUSE

On the third Saturday in July, you should go along to your local Stroud and watch this silly event.

Martin Hammond