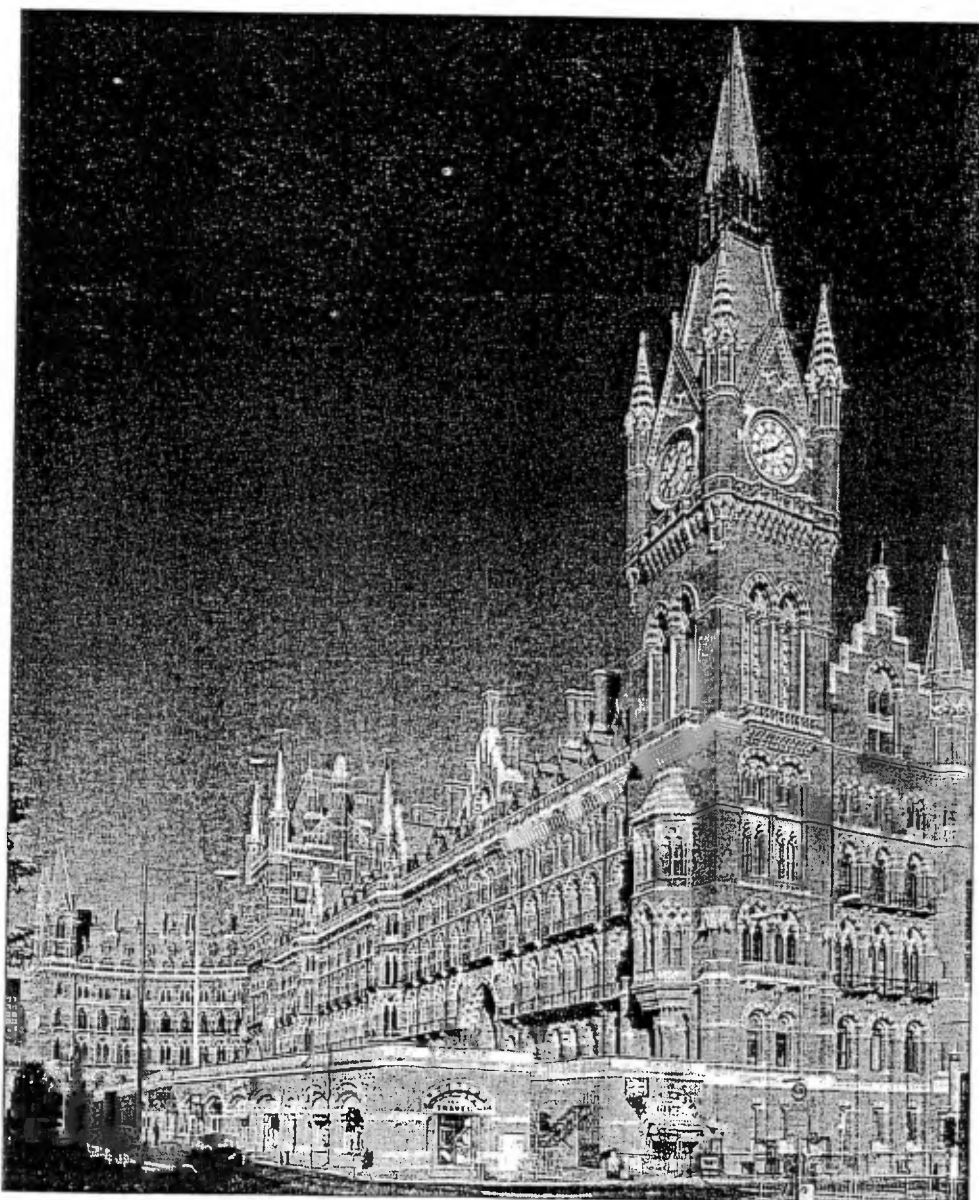


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BRITISH BRICK SOCIETY

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Cover Illustration:

The Midland Grand Hotel, St Pancras, later St Pancras Chambers: view looking west from Pentonville Road, prior to recent engineering works.

Editorial: Brick and Television

Many members will have watched the BBC2 series 'Restoration', transmitted on Tuesday and Friday evenings in August and September and the follow-up programme shown on Friday 2 January 2004. The prize of £3,570,000, from the Heritage Lottery Fund and other sources, was eventually won by a brick building: the Victoria Baths, Manchester.

The support group intend to restore the complex of first-class and second-class swimming baths and Turkish bath to their original splendour and re-open the whole, in stages as finances permit, for the benefit of local people. The 'Restoration' prize fund of over £3,570,000 will allow work to begin on making the building water-tight and the Turkish baths to re-open for the benefit of local people. Total costs of the restoration project, at £15,000,000, are 254 times the final building cost in 1906, which was £59,000, itself one-and-a-half times the original budget of £39,316. But for the City of Manchester, enjoying renewed prosperity in the two decades after the opening of the Manchester Ship Canal (formally by Queen Victoria on 1 May 1894), nothing could be too good. The terracotta in the Victoria Baths is comparable in quality to that used on other contemporary civic buildings, such as the Fire Station of 1905-06, or on the contemporary cotton warehouses on Whitworth Street. At the Victoria Baths, a variety of brick is used: red, presumably Ruabon or Accrington, on the exterior and different sorts of white and yellow brick, glazed and unglazed, in the extremely practical interior.

If the society does ever hold another meeting in Manchester, particularly one in the university quarter, the society's Visits Co-ordinator will include the Victoria Baths and, hopefully, its interior with its green terracotta and yellow and white brick.

Many of the other buildings in the series would interest members of the British Brick Society, not only those among the fourteen brick buildings. Some were new to the editor of *British Brick Society Information*. The importation of good quality yellow bricks from Kilmarnock in Scotland to successive new buildings at Herdmans Mill, Sion Mills, Strabane, County Tyrone, Northern Ireland, opens up avenues for research, not merely as to the reasons behind the choice of imported brick but also as to the effect, if any, of that choice on the local brickmaking industry. The choice of yellow brick was explained by the need to avoid

the dark depressing impression created by most industrial buildings.

The Herdmans had a reputation as relatively enlightened employers. Their choice of material contrasts with the red brick of the mills beside the River Foyle in Derry, of which a photograph is included in Philip Wilkinson's book of the series, *Restoration*. The Herdmans used a good architect, William Lynn of Belfast.

Among the military structures shown in the series, there was one structure which the Visits Co-ordinator of the British Brick Society foresees as a good candidate for a future visit by the society: Coalhouse Fort at East Tilbury, Essex, which may be stone, Kentish Rag, on the exterior but is brick internally. This great fort of the 1870s, part of a defence of the River Thames to safeguard London, is near to the better-known, brick-built Tilbury Fort, of 1670-83. Philip Wilkinson's book provides good descriptions of all of the projects featured in the series, something which is especially valuable for Coalhouse Fort as it is not in Nikolaus Pevsner's *The Buildings of England: Essex*, even in the second edition.

One problem that high level publicity about a restoration project brings is renewed

vandalism. Bethesda Chapel, Hanley, Stoke-on-Trent, had no sooner won through to the final programme than it was broken into and the curving stair to the pulpit wrenched out. It appears that amongst a certain element no building is safe.

Bethesda Chapel is a poignant reminder of the depth of Nonconformist investment in their buildings. The chapel was larger than any of the parish churches of Arnold Bennett's Five Towns (actually six towns but Longton gets left out). The Methodist New Connection had its heyday in the first half of the nineteenth century. Bethesda Chapel was built in 1819-20, with the façade being added in 1856-59 for the convention of the denomination in 1860. Behind the chapel is a whole series of Sunday school buildings, a genre of buildings which themselves are disappearing. the famous ones in Stockport, still a very active institution, were replaced in the late 1980s.

In the final competition, Bethesda Chapel came fourth in the number of votes gained, but will this high placement be sufficient to motivate the grant-giving bodies to come to the aid of an important building, so intimately connected with the towns it served? Bethesda Chapel did not feature in the follow up programme of 2 January 2004 so its fate may still hang in the balance.

Brick has figured in another television programme in a totally different way. Channel 4 has run a series of four programmes called 'The Big Monster Dig', a geological excavation to rescue parts of the fossil of an ancient creature. The final programme came from the Saxon Works, Whittlesey, a Cambridgeshire brick pit of Hanson Brick, where a local geologist working with a team from the University of Portsmouth had found the remains of a *Leedsichthys*, a gigantic fish which lived around 150 million years ago. This specimen is thought to be around 100 feet (30 metres) long.

In the programme, we were able to see the immense size of the brick pit, something I had not appreciated either from being driven past and from going past in a train. Its depth exceeds that of those I knew in mid Bedfordshire. To estimate the organic content of the brick clay a green brick was weighed (2479 grammes) and then a fired brick was also weighed (1887 grammes). The weight loss was 592 grammes or 24.2% of the original. Ten percent of the original weight was lost due to water evaporation, *i.e.* 248 grammes. Thus 13.88% of the original green brick was organic material, mainly the fossilised remains of plankton. It is this organic material which allows the bricks at Whittlesey as with those at Stewartby, Bedfordshire, and elsewhere on the Oxford Clay, to be self-firing.

There was a brief mention of the geological find in *The Times* on 19 September 2003. The remains are scheduled to be exhibited at the Hunterian Museum, Glasgow, where much of the Leeds geological collection now is.

The publishing event of late 2003 for those interested in brick has been the appearance of *Brick: A World History* by James Campbell with photographs by Will Pryce (London: Thames and Hudson, price £39-95). James Campbell is both a qualified architect, in professional practice as a conservation architect, and a teacher of architecture at Cambridge University. He is also a member of the British Brick Society. This sumptuous book is the subject of a review article elsewhere in this issue of *British Brick Society Information*.

The final page of this issue contains two items forwarded to me by members. The society's chairman had been sent the appeal concerning the donkeys who work in the brickworks of India

and Pakistan. I am grateful to BBS member Owen Ward for sending me details of the Bristol Industrial Archaeological Society Brunel Prize, full details of which appear on page 36. There may be members who would wish to submit their researches for the competition for the prize.

It is my sad duty to report the death on Sunday 19 October 2003, at the comparatively early age of fifty-nine, of a long-time stalwart of the British Brick Society, Martin Hammond.

Many members will remember Martin, a very private man whom few knew well but who was a frequent participant at our meetings..

An obituary appears on the pages immediately following. I particularly thank Ron Ireland, Ann Los and Kevin Stubbs for their contributions which have been incorporated into the first draft which was compiled with the aid of information from Michael Hammett and Terence Smith, as well as comments recalled from conversations with Martin Hammond, himself.

To commemorate Martin Hammond and his work, a photograph of the scotch kiln at the Bursledon Brickworks Trust completes the lower half of this page.

DAVID H. KENNETT

Editor, *British Brick Society Information*

Shipston-on-Stour, 3 January 2004

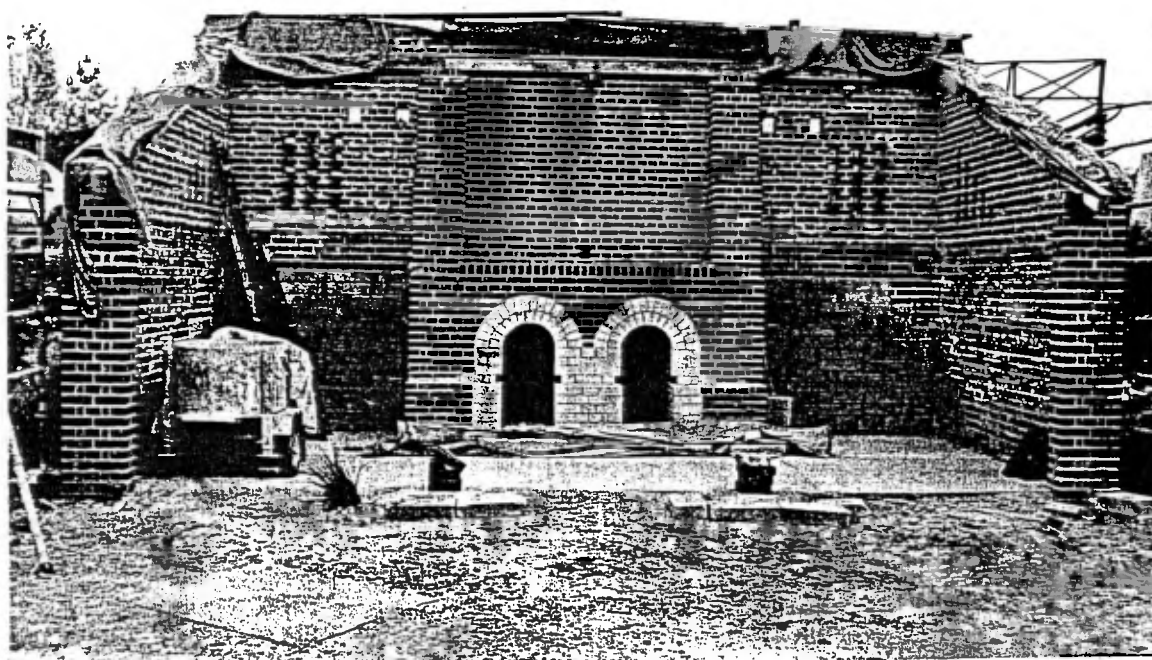


Fig. 1 The scotch kiln at Bursledon Brickworks for which Martin Hammond made the working drawings. A plaque to commemorate Martin is to be included in the first firing of the kiln in late Spring 2004 and will be affixed to the kiln.
[photograph: Kevin Stubbs of Bursledon Brickworks Trust]

Obituary: MARTIN HAMMOND, 1944-2003

Martin Hammond died in hospital on Sunday 19 October 2003: he was fifty-nine. Since 1997, he had been suffering from cancer of the bowel. Happily, for just over five years he was able to live a relatively normal life, which is an unusual length of time to be granted with this grave illness. Unfortunately, the inflammation flared up again in early 2003 and this severely curtailed his activities in the last few months of his life. Uncharacteristically, he was absent from the society's Annual General Meeting in June 2003 which we would have expected him to attend, especially as the afternoon visit was to a brickmaking site.

Martin was very much a brick man. He had joined the British Brick Society when it was newly created and remained a stalwart for over thirty years, rarely missing an Annual General Meeting, attending many of the Spring and Autumn Meetings, and being a frequent contributor to our journal, *British Brick Society Information*. His most recent article, 'The Bricks and Brickmakers of St Osmund's Church, Poole, Dorset', appeared in *BBS Information*, 92, September 2003. This was the church he had attended for many years, although sadly, because of its recent closure due to structural instability, his funeral could not be held there.

Martin served as honorary treasurer of the society in the mid-1980s. Some years earlier, in 1978, he had organised the society's fifth annual general meeting, held at the works of the Beacon Hill Brick Company at Corfe Mullen, near Poole, Dorset. Martin later organised the Autumn Meeting in Poole in 1998 and wrote an account of the visit for *BBS Information*, 76, February 1999.

Martin's particular enthusiasm was for brickmaking, at which he made himself extremely skilled. He researched and wrote on kilns. Much of his published work on kilns appeared in issues of *British Brick Society Information*. There are contributions to come in future issues of our periodical, particularly on the supply of bricks to the buildings at St Pancras, both the railway station and the Midland Grand Hotel.

Martin was always willing to share his wide knowledge of brickmaking - in person, by phone, by letter or by publishing his knowledge. In the 1970s, he contributed to various issues of the now defunct *British Brick Society North Midlands Bulletin* on a variety of topics: National Coal Board bricks; bricks in the Gladstone Pottery Museum; the Guernsey brick scene; brickmaking in Nottinghamshire, Hampshire, Sussex, and elsewhere. His visit to the Hennuyères brickworks at Wanlin, Belgium, was fully recorded in *BBS Information*, 25, 1981. One of his most valuable works to those interested in brickmaking is 'Brick Kilns: an illustrated survey' in *Industrial Archaeology*, 1, no.2, Spring 1977. The article contains detailed descriptions of the construction and operation of various types of kilns and is illustrated by fine drawings of the kilns, with a floor plan, an elevation and one or more cross-sections of each type. His introductory book for Shire Publications, *Bricks and Brickmaking*, went through four editions from the first in 1978; the fourth edition appeared in 2002.

Martin was involved in the measured drawing and recording of the kilns at Bursledon, Hampshire, when the site was derelict in the 1980s. He was active in work at the restored brickworks there, at first with the restoration work from 1991 onwards. On Open Days, from 1995, he worked side by side with Ron Ireland, with Ron teaching children how to mould bricks and Martin demonstrating a hand-operated beast called a Stupid Machine for the extrusion of clay pipes. Both Martin and Ron kept the public amused, and confused, with their banter: Ron has said that he will miss these happy encounters.

Martin himself was a skilled moulder.. At Bursledon he also demonstrated hand-making of bricks. At the society's Annual General Meeting in 1997, he readily exhibited his ability when,

as we walked round the Avoncroft Museum of Buildings, we came across a man demonstrating moulding. Martin joined the other and showed his skill to the assembled members. It was on this occasion that Martin convincingly demonstrated the truth of Ian Betts' explanation of the formation of sunken margins on many early bricks (*BBS Information*, 68, July 1996). It is a testament to Martin's concern for the truth that this explanation contradicts an earlier suggestion of his own.

The only son of an Anglican clergyman with a parish in Leicestershire, Martin was educated at Denstone College and the Nottingham School of Architecture, which he attended in the 1960s; subsequently he worked for Leslie Jones, a large commercial practice in Bournemouth. His mother, who predeceased Martin by only a few months, also had lived in Bournemouth for many years. More recently Martin had done freelance architectural work which included being the architectural advisor to the steam railway, the Great Central Railway, in his home county of Leicestershire.

Beyond his professional work and his strong interest in bricks, Martin was prominent in surfing circles. For some years, he was the secretary of the Bournemouth Surfing Club. He had a strong interest in ships and shipping, particularly in the restoration project on the paddle steamer, the *Waverley*.

Martin's purposeful travels generated papers and notes for *BBS Information*. Visits to Ibiza at various dates rewarded him and us with observations on kilns; a long-anticipated trip to Thailand in 2000 resulted in a long illustrated account of the brick walls and other monuments of the city of Chiang Mai in *BBS Information*, 85, October 2001. His most recent foreign visit, to Krakow and Auschwitz, has been recorded in a series of articles appearing in *Brickbats*, the newsletter of the Bursledon Brickworks Trust.

Martin left specific instructions about his papers. The *Waverley* Trust will receive his shipping papers; some material will go to English Heritage. His extensive collection of material on bricks and brickmaking is to be housed at Bursledon Brickworks. From 1997 onwards, he had gradually transferred his collection of bricks and clay-based materials to Bursledon, together with copies of their record sheets. More recently, in spite of his developing illness, he had assisted the Bursledon Brickworks Trust in undertaking site recording of brickworks prior to their demolition including those at Downton and Beacon Hill near Poole.

Martin operated his own kiln for a while, putting his vast knowledge to practical use. At Bursledon he devoted much time and effort towards the almost completed scotch kiln on the site. Martin had produced the working drawings for the construction of the kiln. Sadly, he did not live to see its completion; the kiln is to be dedicated to his memory. It is hoped to have the first firing in the late Spring of 2004.

His output included two red bricks, 210 mm x 100 mm x 50 mm, with two eyes and a smiling mouth on the stretcher face of one and "spread a little happiness" inscribed by hand on the stretcher face of the other. They bring a smile to the face of anyone who sees them and are a lasting tribute to his love of life and sense of humour.

Martin was a quiet and very private person, but he was always willing to give advice and encouragement and to share his knowledge of all things brick. At Bursledon, all the volunteers knew him as "Martin the Brick". Kevin Stubbs, the director of Bursledon, has discussed the prospect of a commemorative plaque to be affixed to the scotch kiln. Ron Ireland has written that he would consider it an honour to hand-mould such a plaque for inclusion in the first firing.

MICHAEL HAMMETT

RON IRELAND

DAVID H. KENNETT

ANN LOS

TERENCE SMITH

KEVIN STUBBS

An obituary of Martin Hammond also appears in *Brickbats*, December 2003.

THE NORFOLK SKINTLING SURVEY

Results 1995-2003

Elizabeth M. James and Edwin J. Rose

INTRODUCTION

Research by Elizabeth James in the King's Lynn area up to 1995 suggested that where brick buildings can be assigned a secure date, the skintlings or hack marks cross the bricks diagonally in buildings dating to before *circa* 1780, and in an horizontal direction after 1770, and a preliminary note about this was included in *British Brick Society Information*, 64, February 1995. Where buildings combine both types of skintling they generally date from the 1770s. Skintlings are not found before the mid sixteenth century and generally disappear in the late nineteenth century with the introduction of the Hoffman kiln. This paper outlines the background to the Norfolk Skintling Survey and the results obtained from the rest of Norfolk.

How are Skintlings formed?

Skintlings or hack marks are formed when bricks are set to dry after moulding and before being placed in the kiln. When bricks are stacked on top of each other in a zigzag pattern, two parallel bricks will exert pressure on the bricks beneath; the resulting depression of the clay will leave a ridge of upstanding material equivalent to the gap between the upper bricks, crossing the lower bricks in a diagonal manner. When, however, bricks are stacked in parallel rows, each brick bridging the gap between two bricks on the layer below, the clay is depressed where the upper brick rests on the outer edges of the lower brick; hence the upstanding ridge is horizontal, or parallel to the plane of the brick.

It seems probable that the change in direction of stacking is related to mechanisation or a change of kiln form; the bricks with horizontal skintlings being placed on pallets while they are still soft, for transfer into the kiln. Robin Lucas has noted that the brick trade in Norfolk underwent a period of considerable reorganisation around the mid eighteenth century; that parsonages showed a marked switch to brick construction between 1750 and 1704, by which time Norfolk had "crossed the brick threshold". It would seem unlikely that the change in skintlings at the same period is coincidental. Whether it has anything to do with a change from clamp-burning to kiln-burning is debateable; it could also result from more efficient ways of placing bricks in the kiln.

This explanation has been queried by Terence Paul Smith in *British Brick Society Information*, 72, October 1997, who suggested that bricks were rearranged after an initial period of drying from a zigzag to a parallel position, which would result in both types of skintling appearing on the same brick; he states he has seen this on a building at 115 Lever Street, Islington, London. This building has been demolished and so cannot be checked but no case has been noted by other writers of bricks bearing two types of skintling; certainly one finds buildings with individual bricks of both types, but this results from use of mixed loads of bricks.

The Bulmer Brick Company still skintles in the traditional way; they are stacked in a zigzag pattern, and then later in a parallel pattern. Close examination of the hacks and discussions with the brickmakers showed that only the first, zigzag, stacking resulted in the hack marks; by the time the alignment was changed the bricks had become too hard for impressions to be made.

Another objection was made by Noel Pycroft (in a letter, May 1995) who stated that skintlings were formed in the bottom eleven courses of a Scotch kiln, where the bricks were set in a zigzag manner to allow the heat through. However, by the time the bricks reached the kiln they would have been dry enough not to leave skintlings. Mr Pycroft is probably confusing skintlings with kissmarks, dark lines left across bricks during the kiln firing process.

Skintlings in Other Areas

Other parts of England do not necessarily follow the same date pattern. In Essex, the county council conservation staff say that they usually date the change in skintlings to "around 1800"; indeed the chancel of Greensted-juxta-Ongar church, added in the 1840s, has diagonal skintlings. An examination of brick buildings in Lewes, Sussex, produced only with brick with a diagonal skintling, and that was an insertion during a recent restoration. In Whittlesea, Cambridgeshire, a garden wall was found constructed of mixed bricks, but all other buildings examined had horizontal skintlings - however, they all appeared to date from after the late eighteenth century; and in Wisbech, Peckover House has a garden wall dated 1798, containing mixed bricks. In the Alcester area of Warwickshire, all bricks appear to have thin horizontal skintlings whatever the date, suggesting an earlier adoption of the process. However, elsewhere in Warwickshire, the evidence from Shipston-on-Stour suggests that the use of zigzag stacking producing diagonal skintling may have continued into the nineteenth century; the details will be given by David Kennett in a future issue of *British Brick Society Information*.

In *BBS Information*, 72, October 1997, it is stated that St Benet's Paul's Wharf, rebuilt in the 1670s, has occasional horizontal skintling amongst the diagonals.

Imported and Stockpiled Bricks

It is therefore important, when collecting data, to be aware of cases where bricks have been imported from other regions. In 1764 the west wall of South Lynn church was rebuilt in "best Ely bricks" and King's Lynn assembly rooms were rebuilt in 1766 of "sixty thousand Ely bricks". In both cases the skintlings are diagonal, as one would expect for Norfolk made bricks. However, St Margaret's Vicarage in the same town, supposedly rebuilt in 1811 with a plinth of what Robin Lucas says are Ely bricks, has diagonal skintlings on the bricks of the plinth. The Royal Naval Hospital, Great Yarmouth, was constructed in 1809 of yellow bricks - some with diagonal skintlings, some with horizontals and some with a curved mark.

Another way in which the date of bricks may be misleading is when bricks have been stockpiled at an earlier date. For example, it is known that Stratton Strawless Hall was constructed around 1800, in white bricks, by an owner whose father had prepared the bricks for the job at least twenty years before. At Haveringland, the Hall was rebuilt on a new site in the 1850s and materials from the old hall were reused; new bricks, where required, were fired in clamps. The adjacent parish church was restored at the same time and its round tower was heightened; the added section consisted of a flint skin over red bricks which bear diagonal skintlings. Alan Mackley, from whom the information on Haveringland Hall comes, notes that at Henham, Suffolk, 150,000 bricks were taken from Henham Old Hall, burned down in 1773, for reuse in the new hall of 1790. These bricks dated from between the mid sixteenth century and the eighteenth century: Henham Old Hall was begun in 1545.

Hall Farm on the Mannington estate in Norfolk has diagonal skintlings and is said to have been built in 1790; on such an estate the bricks could easily have been prepared some years earlier.

HORIZONTAL SKINTLINGS IN NORFOLK

The earliest securely-dated building in Norfolk constructed of bricks with horizontal skintlings is the former Union Workhouse at Gressenhall, north-west of Dereham. This was constructed in 1775; the clay for the bricks was dug on the site but no information about kilns or clamps has been traced. It is a very large building; all of the brickwork shows large irregular horizontal skintlings.

Swafeld watermill house has horizontal skintlings; the original insurance documents preserved on the property are dated 1775. The building may therefore be contemporary with Gressenhall workhouse.

The Glebe (a former rectory) at Ashill is stated in the Listed Building Description to be dated to 1772 in glebe terriers. It has both types of skintling; however, it is known that alterations were carried out in the nineteenth century.

Lavender Cottage at Shipdham is a small building; the date 1773 is inscribed on the brick façade and on one of the roof timbers. Such dates must be treated with caution as they may refer to a change of ownership, a marriage or similar event; but in this case, the date occurring twice without any associated initials, it is a strong possibility that it is the date of construction. If so this would become the earliest dated example.

West Bradenham Hall has horizontal skintlings throughout. Basil Cozens-Hardy in *Norfolk Archaeology*, 32, page 170 says that the building dates from between 1752 and 1766; the former date is taken from the sale of the estate, he adds "the house was complete by 1766" but does not give his reason for saying so. A leaflet given away at the building dates it to 1746, which may be a misprint for 1766. The Listed Building Description dates the house as early to mid eighteenth century but states it had important late eighteenth century alterations, to which period it assigns the main entrance. Certainly the external appearance is that of the end of the century. This would not therefore seem at present to be a reliable example.

The tower of St John's church, Hoveton, is of red bricks, some of which bear horizontal skintlings. The tower is said to be date 1765 but the plaque cannot be read from ground level.

A most unusual case is a barn at Hall Farm, Halvergate. This stands amongst other barns of eighteenth- and nineteenth-century date, but its brickwork in appearance would normally be taken to indicate a date around 1700. Some of the bricks in the building have a large projecting horizontal ridge, in some instances of several millimetres. One suspects this is not a skintling at all but due to some completely different process. In a similar way one must beware of marks of board moulds on some early bricks which can, when seen from a distance, give a false impression of a skintling.

DIAGONAL SKINTLINGS IN NORFOLK

Some instances have now been found of diagonal skintlings occurring at dates after 1780. All Saints' church, Hilgay has a tower built of white brick with diagonal skintlings and bears the date 1794; this, however, is early enough for stockpiling to have taken place. Catfield Hall, constructed in the 1840s, is built of white bricks with diagonal skintlings, but has two rearwall stacks of red bricks bearing horizontal skintlings. Crow Hall at Downham Market (formerly in Denver parish) has diagonal skintlings; the centre block is of around 1700, and one wing could be of eighteenth-century date, but the other wing is certainly of the Regency period. Its bricks are of a grey colour.

St Mary the Less, Thetford, has a chancel and north aisle rebuilt in white brick in 1850. The aisle has thin horizontal skintlings as does the north chancel wall; the south chancel wall has diagonal skintlings and the east wall has mixed bricks.

A barn in Eastgate Street, North Elmham, has quoins of red brick with diagonal skintling as has a date plaque 1857. However, the main walls are constructed of flint and brick rubble, so reuse of materials is a possibility.

Paradise Farmhouse at Stradsett is an Elizabethan building but at the rear is a stable or garage block dating to around 1900; it is constructed of pale yellow bricks with very narrow diagonal skintlings.

CONCLUSIONS

If one ignores examples where bricks have been imported, where it is possible that bricks have been stockpiled, and cases without firm dating evidence, it is still the fact that there is no confirmed example of horizontal skintlings occurring in Norfolk before 1770. This is interesting in view of the claimed example from London a century earlier, and the fact that so many bricks could be made for Gressenhall Workhouse by a technique not previously seen on a large scale in the county.

As for diagonal skintlings, it is still generally true that they die out around 1780; the exception appears to be in the case of white bricks (in the broadest sense of the term, including light yellows). Here they seem to continue up until the end of the nineteenth century, suggesting an older technique to manufacture this variety.

POSTSCRIPT

Since the above was written, it has been discovered that Hales Hospital, formerly the Heckingham Workhouse, has horizontal skintlings of a crude and early type; it dates from 1764. The building has many similarities to Gressenhall Workhouse and there may be some connection with the way the bricks were constructed. Research will have to take place to investigate this, but this discovery may mean that the dates mentioned above for West Bradenham Hall and Hoveton church may be more probable than previously thought.

THE "WHEATSHEAF" INN, HEACHAM, NORFOLK

The "Wheatsheaf" Inn, on Hunstanton Road, Heacham, Norfolk, gives the appearance of being a typical 1930s public house, both externally and internally. Its origins are, however, older.

The lower part of the walls of the gentlemen's toilets are covered in brown tiles. The upper part of these walls are left unplastered. The bricks here have horizontal skintling. Given that the public house is older than its present appearance, these may be re-used internally, having once been on the external walls of an earlier building.

DAVID H. KENNETT

UP THE CUT TO PADDINGTON:

The West Middlesex brick industry and the Grand Junction Canal

Peter Hounsell

It is perhaps timely, some two hundred years after the opening of the Paddington branch of the Grand Junction Canal, to recognise its importance for the brick industry in West Middlesex, for it is possible to argue that this part of the brick industry would not have existed without the presence of the canal.²

To understand why the area near Uxbridge became attractive to brickmakers requires some background to London's demand for and production of bricks. As is well known the London area lacks good building stone but much of the flood plain of the River Thames is overlaid by a geological formation known generally as brickearth, and it is this material, rather than the intractable London clay, which provided the basis for the ubiquitous stock brick from which much of Georgian and Victorian London was built.³

Bricks are difficult to move; they are a bulky, low value commodity but one that requires careful handling to prevent damage. Before the advent of economic mechanised transport there was a clear incentive to make bricks as close to the building site as possible. Because much of the area near the Thames contained a suitable clay this was quite easy to achieve, and in some major residential developments the bricks were made by the builder, using the clay dug out for foundations and cellars.⁴ The same approach was used in some civil engineering projects, such as the docks and railways.⁵ Where this was not possible bricks were brought by cart from brickfields on the edge of the built-up area.

However by the early part of the nineteenth century there were constraints on this method of production. The expansion of the built-up area eventually reached the edge of the brickearth zone, and in the process absorbed some of the older brickfields. Land values near the centre of the city were high and this had a considerable impact on the profitability of brickmaking, since the brickearth existed in shallow seams, no more than five or six feet in depth; this meant that brickfields were "used up" quite quickly. Urban brickfields were also increasingly unpopular in urban areas, because of the nuisance of the smoke produced by the slow burning clamps.

As a result of these pressures there was an incentive to site brickfields in places some distance from the centre of town, but in areas which had good transport connections. Here land values were cheaper, brickfields would not be overtaken by the encroaching building line for some decades, and smouldering clamps would be less objectionable to a dispersed rural community.

London's brick needs were increasingly met by the output of fields in Kent and Essex, whose products were carried by Thames sailing barges to wharves in the city, or by those of the Cowley district in Middlesex, and the adjacent parts of Buckinghamshire, whose output largely went by canal boat to Paddington Basin and other wharves on the Grand Junction and Regent's Canal. But although these and the remaining London yards supplied the bulk of the demand for general building bricks, there had existed a longer distance trade in bricks, at least from the eighteenth century, first carried by coastal shipping and later by railway. Usually these were high quality facing bricks with particular decorative qualities, such as the Suffolk Whites which became fashionable from the 1770s.⁶ In the 1850s Robert Beart was able to establish his patent perforated gault bricks in the London market, transporting them from the brickworks beside the Great Northern Railway at Arlesey in Bedfordshire to Kings Cross goods yard.⁷ Such bricks sold

at a premium price and this enabled them to absorb the higher transport costs; to transport cheaper grades of brick would have been uneconomic.

Until now the operations of the Kent brickmakers have been better documented than those of their Middlesex colleagues.⁸ The study of the manufacturers of "Cowley Stocks" - the generic name given to the output of the West Middlesex brickfield - is made difficult because the business records of the many small producers have not survived.

Although the Great Western Railway ran roughly parallel and very close to the Grand Junction Canal between Southall and West Drayton carriage by rail never seems to have been widely adopted.⁹ A number of factors may have contributed to this: the cost of rail transport; the relatively short distance involved in relation to the time taken to load and unload wagons; and an unwillingness by the GWR to install the number of sidings required for the many small brickfields that dotted the area.

So the West Middlesex brickfield became largely dependent on the canal. Indeed without the presence of the canal the industry might not have existed or would not have operated on the scale it was to achieve. There was no large scale brickworking in the area before the canal was built and we may speculate that it was the construction of the canal itself that both revealed the existence of suitable clay and provided the means to exploit it.¹⁰ Road transport for bricks was expensive, and a journey of about fifteen miles from this part of Middlesex to central London would have added significantly to the selling price; these fields were also some distance from the Thames, ruling out that form of water transport.

The decision to build that portion of the Grand Junction Canal between Uxbridge and Paddington without locks, which of course contributed in large part to its economic viability, meant that its course followed a natural contour, in this case the 100ft line. This, presumably by coincidence, helped determine the geological strata through which the canal passed, and ensured that there was workable brickearth on both sides for several miles. The earliest canalside brickmaking was prompted by the needs of the canal builders themselves; as early as 1798 bricks from North Hyde, Heston, were being carried north to construct a stretch of the canal between Berkhamsted and Tring.¹¹

Brickfields seem to have developed quickly in the early years of the canal, although the documentary evidence for this is very limited. One history of the area, written in 1818, claimed that "several hundred people were employed in brickmaking in the vicinity of Uxbridge, and that land, as a result, is changing hands at high prices".¹² Thereafter the Cowley district was an active producer of bricks until the slump in demand which occurred in the first decade of the twentieth century. Some brickmaking continued after the First World War, despite the competition provided by the Fletton yards, and the last brickfield only closed in the 1960s. The canal remained the main means of transport and was not replaced by the railways; in the twentieth century mechanised road transport was also used.

Most of the output of these brickfields, estimated to be about 100 million bricks per annum in the 1890s, was taken by canal boats to Paddington, where a number of the manufacturers and builders' merchants had depôts and offices. The boats that carried the bricks had a ready-made return cargo in the form of domestic refuse. The high percentage of ash and breeze from coal fires in the dustbins of the metropolis was crucial to the character and economics of stock brickmaking in the London area, and Thames barges returned with similar unsavoury cargoes. Having been sifted to remove the decaying vegetable matter, the finer ash was mixed with the brickearth in a process known as *soiling*, whilst the breeze was used as a fuel in the clamps. Brickmaking thus formed a symbiotic relationship with London's rubbish trade, and some brickmakers, like Henry Dodd and the Strouds, were also rubbish contractors.

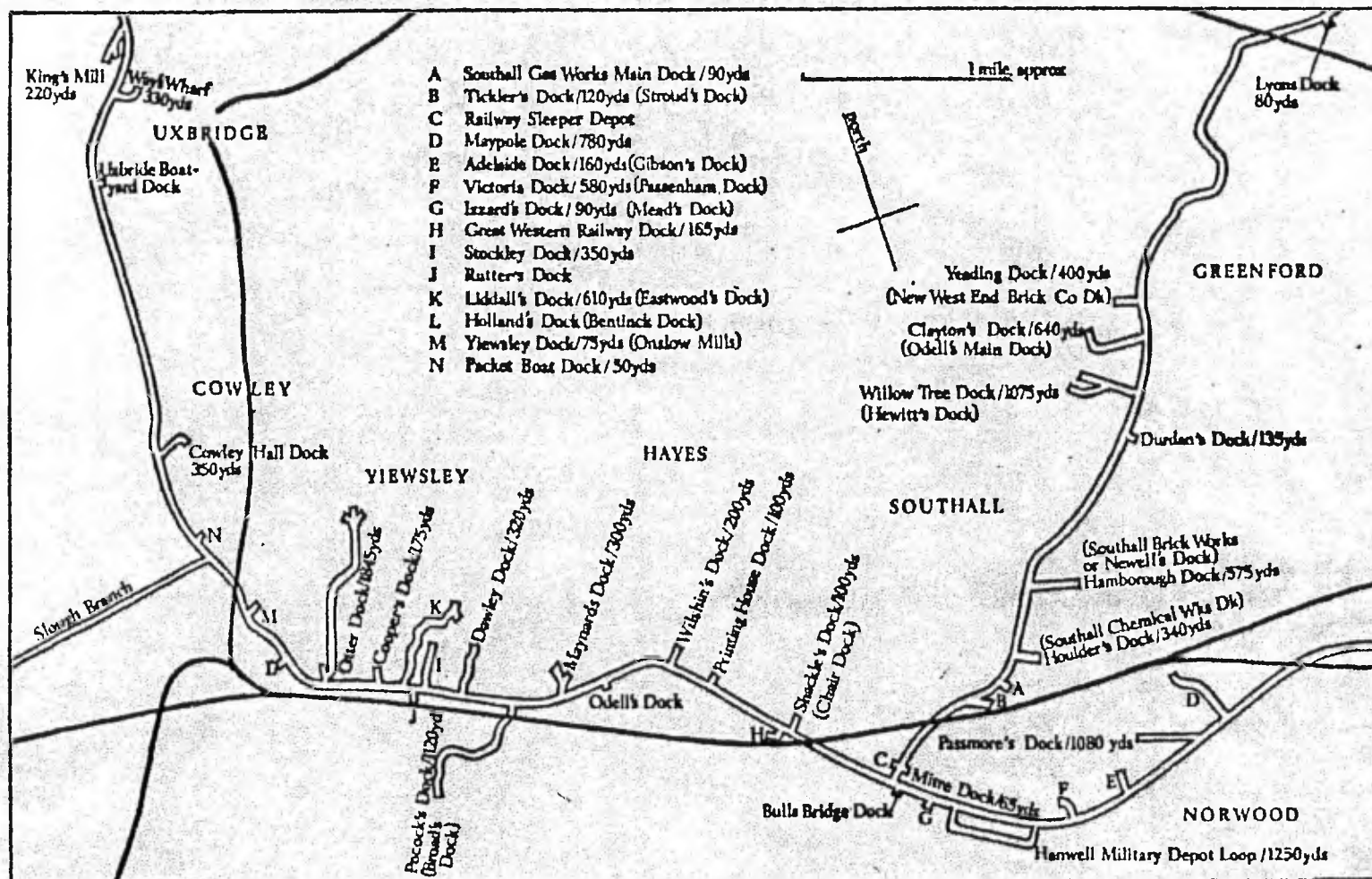
Stock brickmaking required some other ingredients as well as clay and ashes. Chalk was added to the clay mix in order to prevent cracking in the finished brick, and to provide the

characteristic yellow coloration; sand was used to dust the brick moulds and was also added to the clay mix. The proportions of these materials were in the order of 65 per cent clay, 20 per cent breeze and 15 per cent chalk, and sometimes 2 to 5 per cent sand.¹³ In some parts of the country the chalk and sand could be found in close proximity to the brickfields; in west Middlesex these commodities had to be bought from further away. Boats belonging to the brickmaking firms were also used for this purpose; in 1897 for example boats belonging to Broad & Co were carrying sand up the canal from Brentford to the brickfield at Dawley (Hayes).¹⁴

Although it was possible to load brick boats from the canal bank this method was not very practical especially when it obstructed the towpath. If the brickfield was on the bank that did not carry the towpath it was possible to construct a wharf on the canal itself, and where the brickfield was a large one, there could be the benefit of a long frontage. Because the canal was a wide one boats tied up at wharves would not have interfered with other traffic. Many firms, however, chose to construct docks off the canal onto the brickfields, and during the course of the nineteenth century a great many such docks were built.¹⁵ Brickmakers tended to work the land nearest the canal first, and as the clay in this was exhausted the active area moved further away from the canal and the original dock. To accommodate this process a number of docks were extended, some of them several times; by 1893 Pocock's Dock was 1,120 yards long and the Otter Dock, at 1,845 yards, even longer and complicated by a number of side branches. There were other means of coping with this problem: some brickfields had tramroads connecting with the dock, and there is one example of clay, mixed with chalk into a slurry, being pumped from distant parts of the brickfield.¹⁶

The boats that carried the bricks came from different sources. There were privately owned and crewed boats - the so-called *number ones* - and general carriers, like Homer or Pickfords in the early years, but many brickmakers chose to operate their own fleet. Generally the Middlesex brickmakers did not operate fleets of the size that some of their larger contemporaries in Kent and Essex owned; companies like Eastwoods and Smeed Dean were as well known for the boats they built and used as for the bricks their fleets carried. Many of their boats can be traced through the canal company's records. In the early years of the canal the gauging registers¹⁷ indicate the trade in which the boat was principally used; later the use of the boats in the brick trade can only be assumed because the owner is known to have been a brickmaker. So, for example, the Islington firm of J. & A. Stroud, which had a brickfield at Southall, registered two 38-ton boats *Express* and *Lightning* in 1860. Henry Barlee, a brickmaker at Cowley, registered *Gipsy* and *Minna* in the mid-1870s.¹⁸ These would have been narrow boats, but much larger vessels were possible on this stretch of the Grand Junction Canal, with a 12-foot beam rather than the 6-foot beam usual with a narrow boat. John Minter of Southall registered a 75-tonner, the *Lark* in 1888.¹⁹ Some of the larger manufacturers had a fleet of boats; for example the assets of Odell & Co. in 1893 included "barges, boats and a steam tug".²⁰

There is evidence that the Grand Junction Canal encouraged the transport of bricks and offered discounts on the tolls on bricks and the usual return cargoes of ashes and breeze. The rates authorised by law - the Parliamentary rates - in the late 1790s translated into a charge of about 1s 3d per ton for the 15 mile journey from Uxbridge to Paddington, the equivalent of 3s 9d per thousand bricks (about 10% of the final selling price). In 1815, however, the canal company offered a flat rate of 1s per ton for this journey for bricks, ashes and breeze. In the face of railway competition rates fell still further and in 1851 that on bricks was only 10d per ton, the equivalent of 2s 6d per thousand bricks, but in later years the price rose again. In addition to these tolls the carriers of bricks had to pay the running costs of operating the boats, paying the crews and providing and the feeding their horses. All these added to final selling price of the bricks, but in the absence of a set of business records for one of the West Middlesex firms it is difficult to calculate the full impact.



Since carriage costs were charged on the weight of the goods rather than on their value, the better grades of bricks were able to bear the transport costs more easily than the cheaper ones. There was the added problem of the volatility of brick prices which fluctuated considerably in line with the movement of the building cycle.²¹ There was an obvious advantage for brickmakers to own and operate their own boats as this provided the means to lower the transaction costs between the different parts of their operation.²²

There was an obvious difficulty in transporting bricks the relatively short distance between the Cowley area and Paddington. Boats spent a much greater time tied up at wharves loading and unloading than they did undertaking the journey between brickfield and brick merchant. Bricks had to be loaded and unloaded by hand because they were brittle and needed to be stacked carefully to optimise the use of hold space.

The brick trade on the lower reaches of the Grand Junction Canal together with the return cargoes of London rubbish and excavations from building sites provided a dependable, albeit not very glamorous, business for the canal company. The brick business contributed significantly to the continued profitability of the Grand Junction Canal in the closing decades of the nineteenth century when other canals were suffering from the effects of rail competition. In 1904, just before the catastrophic decline in local brick production 104,467 tons of bricks were carried south from the Cowley district and 100,249 tons of ashes and roughdust were carried from Paddington.²³ Whilst the importance of the canal to the brickmakers is evident, further work needs to be done to estimate the value of the brick industry to the profitability of the canal.

Fig. 1. (opposite) The Grand Junction Canal showing docks and wharfs in West Middlesex connected with the brick industry.

Notes and References

- 1 This paper is based on this author's unpublished doctoral thesis, *Cowley stocks: brickmaking in West Middlesex from 1800* (Thames Valley University, 2000)
- 2 For a general history of the canal see Alan H. Faulkner, *The Grand Junction Canal*. 2nd edition, Rickmansworth, 1993.
- 3 For a concise introduction to the supply of bricks to London see A. Cox, "Bricks to build a capital" in H. Hobhouse and A. Sanders (ed.), *Good and proper materials: the fabric of London since the Great Fire*. London, 1989.
- 4 See for example L. Clarke, *Building capitalism: historical change and the labour process in the production of the built environment*. London, 1992, p. 129f
- 5 J. Woodforde, *Bricks to build a house*. London, 1976. p. 131.
- 6 Cox, 1989, 11
- 7 A. Cox, *Brickmaking: a history and gazetteer*. (Survey of Bedfordshire) Bedford, 1979, pp. 44-45.
- 8 See, inter alia, R.-H. Perks., *George Bargebrick Esq.: the story of George Smeed, the brick and cement king*. 1981; F.G. Willmot, *Bricks and brickies* [Eastwoods]. 1972, both published Rainham, Kent; J.M. Preston, *Industrial Medway: an historical survey*. Maidstone, 1977.
- 9 Map evidence appears to indicate that some brickfields had railway sidings in addition to canal access, but no other information has been found to confirm actual use of the railway to distribute bricks. See Hounsell, 2000, 35 and map 8.1

- 10 This was the period c.1800 when the foundations of the new science of geology were being laid. The construction of canals, and later railways, required deep excavations that revealed the underlying strata. One of the pioneers of the new science was William Smith, who was the surveyor of the Somerset Coal Canal. See S. Winchester, *The map that changed the world: the tale of William Smith and the birth of a science*. London, 2001.
- 11 Faulkner, 1993, 14-15.
- 12 S. Redford and T.H. Riches, *The history of the ancient town and borough of Uxbridge*. Uxbridge, 1818; reprinted 1885, 75.
- 13 Figures from Joseph Lockwood in an article "Bricks and brickmaking" in *The Builder*, 1845, 182
- 14 British Waterways Archive, Gloucester. BW/50/79/58. Grand Junction Canal Toll Book, Brentford 1897.
- 15 The clay which was dug out to form the dock provided the raw material for bricks; the underlying gravel could be sold. Samuel Pocock was able to supply a contract for Paddington Vestry from the extension to his dock in 1859-1860. PRO RAIL 830, 93-95
- 16 Faulkner, 1993, p 202; Hounsell, 2000, p.240-248.
- 17 The gauging registers recorded the size and capacity of boats and their height above the waterline when loaded with different tonnages; copies were held at points on the canal where tolls were exacted. The depth of the boat in the water indicated the weight of the cargo.
- 18 BWA. Grand Junction Canal Gauging Registers: No. 91, 1857-61, entries 9091, 9095; No.101, 1869-75, entry 10097.
- 19 *Ibid*, No. 106, 1882-92, entry 10565.
- 20 PRO, BT31/ 5649/ 39405
- 21 For a more detailed discussion of the building cycle and brick prices see this author's *Cowley stocks*, chapter 4
- 22 This may also have prompted vertical integration in the West Middlesex industry towards the end of the nineteenth century.
- 23 Faulkner, 1993, p.195

Estate Brickmaking at Brockhall, Northamptonshire

John M. Smith

Brockhall, 8 miles west of Northampton and 4 miles east of Daventry, is one of the smallest parishes in Northamptonshire, both in area (874 acres; 354 hectares) and population (about 50 in the nineteenth century, falling to about 12 but with the recent development of The Hall is now about 35). The western part of the parish is crossed by the Grand Union Canal, the West Coast main railway line and the M1 motorway, all heading up to Watford Gap. Watling Street (the modern A5) forms the western boundary of the parish.

The prosperity of farming during the Napoleonic Wars (1792-1815) and a good marriage enabled Thomas Reeve Thornton, who in 1790 at the age of fifteen had become squire of Brockhall, to embark on redevelopment and rebuilding. Having reconstructed The Hall (grid ref. SP 633626) and reorganised the park in the first few years of the nineteenth century, he built or improved agricultural buildings. To the west of The Hall he put a high brick wall round a kitchen garden of over 2 acres (0.9 hectare) with an icehouse (grid ref. SP630630) with walls three bricks thick nearby in the adjoining Norton parish. Comparison of estate maps of 1787 and 1821 show that the Woodyard (also in Norton parish, and now the Heart of England shopping complex; grid ref. SP 620627) was built in this period. It is first mentioned selling sawn timber in 1815. Buildings were added at The Dial House (grid ref. SP 624621) adjacent to the west side of Watling Street, Ivy House Farm (grid ref SP 618624) and Gazewell Farm (grid ref. SP 633634), all in Norton parish. Most of these farms were altered later in the century, for between 1860 and 1890 William Orland of Flore was employed to add extra buildings, using a distinctive pattern of blue bricks.

To provide bricks for T.R. Thornton's buildings a brickyard was started at Landing Spinney, Brockhall, with Thomas Marson in charge. He came from Brinklow in Warwickshire, a village to the east of Coventry, where there was a brickworks which had supplied the bricks for the Civil Officer's houses at Weedon Depot between 1804 and 1806.

Beryl Williams has checked parish registers, census returns and other records for information concerning Thomas Marson and his family. Thomas Marson had married Mary Morris at Brinklow in 1801. They appear to have moved to Brockhall in 1806. Thomas and Mary Marson had three children baptised at Brockhall between 1809 and 1813. When the first of these was recorded in the register, the rector noted that his father "was working at a brick kiln in the parish but belongs to Brinklowe, Warwicks". They had an older son, Thomas, born in Brinklow in about 1804. In January 1814 father and son were paid between 1s. 0d. and 2s. 0d. per day for clearing snow. By 1816, the family had left Brockhall; they had a son, William, baptised at Foleshill, then a separate village north-east of Coventry and now within the city boundaries, in 1816, suggesting that they had moved there. No burials of Thomas Marson or Mary Marson have been traced.

Thomas Marson, junior, carried on his father's trade as a brickmaker and is recorded as such in the 1851 census living at Courthouse Green, Foleshill. His wife, Elizabeth, had been born in Foleshill, possibly in 1805. In 1851, the couple had four children living: William aged 17, a coal dealer; Caroline aged 14, a silk weaver; Henry aged 10 and George aged 5. All were born in Foleshill as had been a daughter, Elizabeth, born in 1828, who died young.

The account book of James Payne, bailiff to T.R. Thornton, starts in 1803 and first mentions bricks in 1807 when the Rev Philip Thornton, Rector of Brockhall and brother of T.R. Thornton, had a small quantity. Payments to Marson were recorded in Payne's accounts from

September 1809 by which time the brickworks was well established, for the stock was noted: 217,000 bricks, 8,920 flooring bricks, 186 small copings, 50 large copings, and 1,400 curved bricks.

Payne's accounts do not often specify the buildings on the estate where the bricks were used, but clearly most of the early output was used on the estate. In 1810 the building of a new farmhouse at Weedon was noted. This could be either Weedon Lodge Farm or Wood Farm, both on land which had been awarded to Thomas Thornton under the enclosure of 1777. Also in 1810, James Payne was given a gratuity of £60 (equal to his annual salary) for the erection of farm and other buildings on the estate. The same year, Beriah Botfield of Norton Hall (grid ref. SP 604638) bought 20,000 bricks for £43 15s. 0d. This was the first of sales totalling £1681 up to the middle of 1817.

James Payne's account book also records purchases of coal and other items needed at the brickworks and excise duty paid on the bricks. No separate details of labour costs are shown and it is not clear whether Marson paid these out of his money or whether the general labour costs of the estate included these. Payments ceased in the autumn of 1816 so it is likely that production stopped then although stocks were sold until the middle of 1817. Excise duty totalled £445 between September 1809 and October 1816. Coal purchases were noted from September 1809 until November 1816, with an additional half ton for "Meacock at the brickworks on 31 March 1817". The total cost of coal was £745, prices varying from 19s. 0d. to £1 2s. 6d. per ton, so this represents about 700 tons. Some consignments were noted as boat loads (between 23 and 25 tons) for coal came by canal. Payments "on account" to Marson totalled £1128 and were generally fortnightly, ending on 19 October 1816.

Brockhall brickworks probably closed because the needs of the estate had been met. James Payne's accounts showed that there were often difficulties in obtaining payment and in 1816 and 1817 Mr Linnell was paid to send out bills. However, stocks may have been kept for in 1836 T.R. Thornton supplied 35,000 bricks to build a bridge. The bridge is on New Road, over the brook which forms the boundary between the parishes of Flore and Brockhall (at grid ref SP 631618), 400 metres north-east of Landing Spinney. The bridge is still in use.

The last reference to the brickyard was in a later account book, the wood account of William Payne, where an entry dated 23 February 1869 states "Poles and Willows at the old Brickyard" £5 10s. 0d. This amount indicates a site of rather more than one acre and mention of willows suggests that the site was near the brook but possibly not near Watling Street. This clue enabled a search to be made of several of the many spinneys on the Brockhall estate, on the assumption that the works could have been in any of them. It was clear from James Payne's account book that the site must have been near both the canal and a road.

The site of the brickworks has been located in Landing Spinney (grid ref SP 626615), a small piece of woodland between the canal and Watling Street. There is a pit up to 5 metres deep fading out towards the canal. On a large-scale Ordnance Survey map an oval pond about 20 by 12 metres at the deepest part of the old brick pit. It is dry at present. The geology is Boulder Clay over Middle Lias silty clay. The pit floods in winter. No bricks were found but searching for them is difficult as the site is overgrown with nettles and other forms of undergrowth.

The largest customer for bricks was the Rev K.M.R. Tarpley of Flore, who paid £108 for them in 1815 and 1816. He rebuilt Flore Vicarage about this time, but stone was the main material. It is probable that most of the bricks were used to rebuild the wall of the churchyard. This has much old stone on the outer side but the inner side is brick. The north wall, 5 metres high, is part of the enclosure of the kitchen garden of Flore House and does not belong to the church. The other three walls round the acre of old churchyard had a length of 205 metres up to 1902. On the top of the wall were coping bricks, 16 inches (400 mm) long, 2¾ inches (70 mm) wide and 6 inches (150 mm) to the top of the curve. A total of 2,460 copings would have been

required. At 4d. each (1809 price) these would account for £41 of the £108 Tarpley spent. At 33s. 0d. per thousand, the remaining £67 would have bought 43,000 bricks. The walls vary from 1.5 to 2.2 metres high but as the amount of stone cannot be checked it is not possible to assess how many bricks were used. The longest wall was on the south side. When the churchyard was extended in 1902 the eastern half of this wall was demolished and the materials used to extend the east wall. This happened again in 1953, when a further extension of the churchyard led to the rest of the south wall being demolished and the west wall extended. Iron fences now form the south boundary, so the length of wall has been reduced.

Another customer from Flore was John Marriott who paid £32 10s. 0d. for bricks in 1811 and 1813. Marriott lived at the lower end of Sutton Street and some of the land he farmed was on the opposite side of Nether Lane. The frontage of 2 Nether Lane is an old brick wall, 40 metres long and varying in height from 1.0 to 1.5 metres. The copings are 10 inches (200 mm) long, 2¾ inches (70 mm) wide and 4¾ inches (120 mm) to the top of the curve. These could have been the small copings made at Brockhall and priced at 2d. each in 1809.

A similar wall bounds Weedon churchyard on the east along Puddle Bank, where a footpath runs along the toe of the canal embankment, built in 1796. Though no sales of bricks to Weedon church were recorded the bricks used in this wall may have been bought by the builder. Part of this wall at Weedon and both those mentioned above at Flore are alongside the Nene Way long distance footpath.

Brockhall brickworks supplied customers almost entirely to the south, as far as The Dirt House (now Mount Farm) 5 miles south along Watling Street in Bugbrooke parish, and also to Church Stowe, Kislingbury, Heyford Mill, and Dodford. Weedon was the village with the largest number of customers, although some of the purchases were very small. One sale which did go north was a purchase of bricks to the value of £6 12s. 0d. As there were other brickworks in the area served it is probable that the specialised coping and flooring bricks which Marson produced gave him extra trade. Other works in the area include the Althorp estate brickworks in Great Brington (at grid ref SP 663655) and one at Buckby Wharf (grid ref SP 613652), close to the Grand Union Canal.

The bricks probably went south, rather than in any other direction, primarily because the construction of the Royal Ordnance Depot at Weedon between 1803 and 1810 and associated developments created a shortage of bricks. A kinsman, Thomas Smith, who was my great-grandfather's uncle, built a works nearby to supply the bulk of the bricks for the Royal Ordnance Depot. In 1816, after the government had bought his brickworks, Thomas Smith purchased a small quantity of bricks from Brockhall.

ACKNOWLEDGEMENTS

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SOURCES

Thornton archive in Northamptonshire Record Office: Th 2490: Account Book of James Payne, 1803-17; Th 2832 (map 3682): Brockhall Estate in 1787; Th 2833 (map 3684): Brockhall Estate in 1821; Th 2908 and 2910: bricks for new bridge 1836; Th 3665: Wood Account of William Payne, 1862-78
Brockhall Tithe Map (NRO, document T31)
Beryl Williams, *Captain Pilkington's Project ...*, (Weedon, 2003), page 42, bricks from Brinklow.
J.M. Smith, *Brockhall Church Registers*, (2001)
J.M. Smith, 'Brockhall', *Weedon Deanery Parish Magazines*, December 1956, quoting Churchwarden's Account Book for 1813.
J.S. Brodie and Sons (farmers and owners of Landing Spinney, the site of the brickworks).

A PUZZLING TOWER STRUCTURE AT FAVERSHAM, KENT

Terence Paul Smith
with Arthur Percival

The accompanying photograph (fig. 1) is taken from a lantern slide about a century old, which accounts for its poor quality, especially in reproduction. It is of a site immediately south of the railway line (originally of the London Chatham and Dover Railway) and west of Forbes Road at Faversham, Kent (NGR TR/013609), an area once occupied by the Kingsfield brickyard. The railway bridge at centre right was opened in 1897, thus providing a *terminus post quem* for the photograph, which was probably taken at or soon after that date. Arthur Percival, who sent me the photograph, reports that "there are rumours that there was a windmill which existed for a short time in this area though it's not shown on any O[rdnance] S[urvey] plan".¹

To me the tower looks like a structure connected with some industrial, possibly extractive, process - chalk or flint crushing perhaps? I have been unable to find similar structures in old photographs of Kent brickyards; nor am I aware of any purpose such a structure would serve in traditional Kent brickmaking, the methods of which are well documented.² Arthur Percival wonders whether the structure might have been connected in some way with the construction of the underpass (Forbes Road). Much "brickearth and then underlying chalk must have been removed by train for some purpose elsewhere".³

The somewhat amorphous feature behind the buildings and in front of the railway line looks - especially in the original print - very much like a traditional Kent brick clamp which was built but never fired, the green bricks then crumbling somewhat due to wind and rain. Alternatively, it is just possible that it is a clamp that was fired but never dismantled, though I think this less likely. Either way, it would seem to imply that by the time of the photograph the brickyard - or at least part of it - had been abandoned and the land was being used for some other purpose. Certainly the photograph shows no other indications of brickmaking activity. The tower would thus have been erected only after the brickmaking activity had been given up.

It may be that other members of the British Brick Society will be able to throw further light on this puzzling tower, confirming - or otherwise - that it was not connected with brickmaking and perhaps even suggesting what it *was* used for. Communications may be sent direct to the authors (addresses in the latest list of members) or, preferably, as contributions to *BBS Information*.

References

1. Personal letter, 25 July 2003
2. See e.g. E. Dobson, *A Rudimentary Treatise on the Manufacture of Bricks and Tiles*, London, 1850, re-issued in slightly reduced facsimile, ed., F. Celoria as *J. Ceramic Hist.*, 5, 1971, vol. 2, pp.1-50; F.G. Willmott, *Bricks and 'Brickies'*, privately published, Rainham, Kent, 1972, pp.18-43; R.-H. Perks, *George Bargebrick Esquire*, Rainham, Kent: Meresborough Books, 1981, pp.25-30; A. Cox, 'Bricks to Build a Capital', in H. Hobhouse and A. Saunders eds., *Good and Proper Materials: the Fabric of London since the Great Fire*, being *London Topographical Soc. Publ.*, 40, London: RCHM, 1989, pp.3-10
3. Personal letter, 31 July 2003.

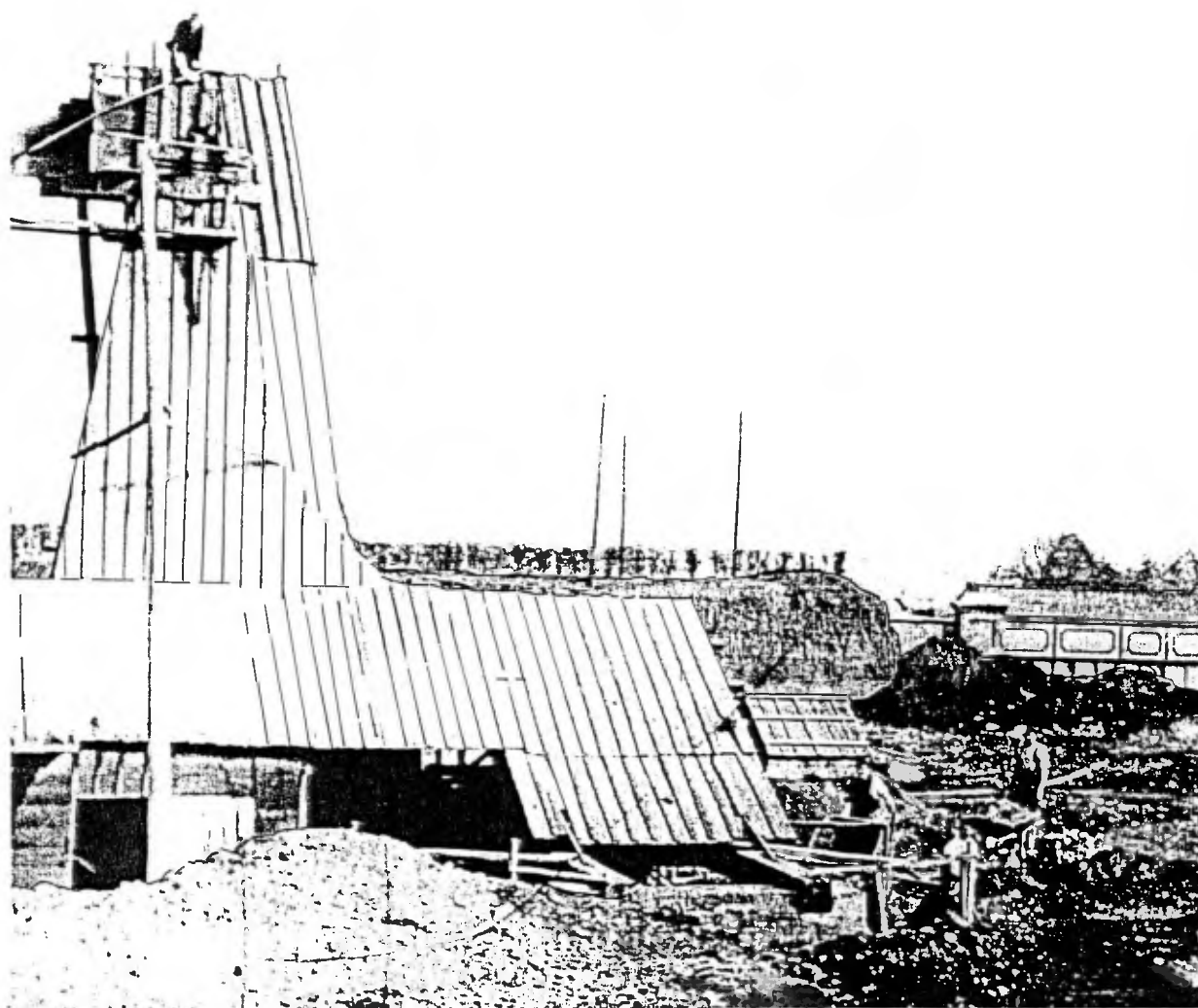


Fig. 1 Photograph (from a lantern slide) of the tower south of the railway and west of Forbes Road, Faversham, Kent. The man at the top of the tower, it should be noted, is not holding a long pole: this is a crack in the glass of the original lantern slide; there is another crack curving upwards from the left foreground across the lower right of the shed roof and across the probable brick clamp.

FROM SCOTLAND TO SURREY: Glenboig radial firebricks at South Nutfield

Paul W. Sowan

John Collett, of South Nutfield, Surrey, has reported a stretch of wall (now demolished) built of Glenboig radial firebricks along the rear of gardens on the west side of Trindles Road (grid ref. TQ/304493). Local information is that the several hundred apparently unused firebricks came from the former hydrofluoric acid works on the south side of the railway line at South Nutfield, (grid ref. TQ/301490) which was operated by the Nutfield Manufacturing Company Ltd and successors from 1925 to 1984. Malcolm Tadd¹ suggests that the firm manufactured hydrofluoric

acid until the 1950s by reacting fluorspar (calcium fluoride) with concentrated sulphuric acid. In more recent years, it simply diluted hydrofluoric acid bought in from other manufacturers. The company also had dealings in other chemical products, including sodium fluoride and ammonium thioglycollate.²

Kilns of whatever kind, and for whatever process, require re-lining from time to time, making it likely that any company operating them would keep a stock of new refractory bricks. The unused bricks in the South Nutfield back garden wall were therefore probably surplus to requirements, either on the cessation of a particularly process, or on the closure of the works.

One intact sample brick has been retained and has impressed on one surface:

KA3
GLENBOIG A1
S 693

The retained sample brick has an external circumferential length of 12³/₈ inches (310 mm), a radial dimension of 6 inches (152 mm), and a height of 6⁵/₈ inches (169 mm). It is composed of a granular dirty material. These dimensions suggest, if the brick was for use in a vertical cylindrical kiln, an internal diameter of about 15 ft 8 in (4.78 m).

Glenboig (grid ref. NS/7268) is in the former Lanarkshire, a short distance to the north of Coatbridge and well-known for its brickworks and fireclays mines and works. Peter and Mark Hurl Ltd. who worked mines at Glenboig, cited a composition of 56.70% silica, 38.52% alumina, and 2.15% oxide of iron in their 1897 firebricks catalogue. The Glenboig Union Fireclay Company (incorporated in 1882) grew in time to become the world's largest fireclay company.³

David Cole, formerly of the South Nutfield acid works, and author of the published history,⁴ was associated with the firm from 1956, and has consulted Austin Howick whose connection goes back to about 1937 or 1938, and reports that they feel sure they had no structure there calling for a kiln lining of the diameter implied by the radial brick's dimensions. They suggest that the brick may have been derived from the British Wax Refining Corporation, or from the brickworks, occupying the site before the acid works was established in 1924. Alternatively they suggest it may have originated at Laporte's fullers' earth treatment works on the north side of the A25, east of 'Top Nutfield (the original village on the ridge). Several fullers' earth workers are thought to have lived in Trindles Road.⁵

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4. See note 2 above.
5. Note submitted December 2002.

Review Article:

Brick: The Best Material in Time and Space

It is a brave man who takes on twelve thousand years of the use of our material and tries to do so across the cultures of the globe from Neolithic Jericho and ancient Egypt to the 1990s in England as represented by architects as different as Eric Christian Sørensen in Cambridge; Michael and Patty Hopkins at Glyndebourne; and Rick Mather in Oxford. Indeed, I did think of entitling this review article 'From Keble to Keble': William Butterfield, Keble College's original architect gains an interesting section and the ante-penultimate picture essay for the twentieth century considers the earlier of Rick Mather's two buildings for Keble College, Oxford, the Arco Building of 1995, winner of the Brick Development Award as Building of the Year in 1997; a later building by the same architect for the same client won the same award in November 2003, the Sloane Robinson Building of 2002.

James Campbell's method in *Brick: A World History* is select individual brick buildings around which to structure picture essays within a framework of seven chapters. These cover decreasing periods of time. Thus 'Ancient Civilizations' is nine and a half thousand years but 'The Classical World' is fifteen hundred years. For 'The Medieval World' the time span is 1000 to 1450; 'The Birth of the Modern World' covers 1450 to 1650; while 'Enlightenment Ideals' takes in 1650 to 1800. Both the nineteenth century and the twentieth century each rate a chapter.

He disarms criticism of his specific selection by admitting that others would have chosen differently. Also, both author and photographer went *together* to every building included. No building is included that they have not seen at the same time. This leads, however, to some skewering of the buildings chosen. Thus for the Roman Empire, Rome, Ostia, Ravenna and Byzantium (modern Istanbul) are rightly included. But the Roman Empire extended west and north: the brick aqueducts of Merida, Spain, and the audience hall and ruined baths of Trier, Germany, remain fixed in my mind from travels over thirty years ago. In Italy there are the walls of Rome and those of Rimini, where the road from Parma and Bologna enters by a very fine brick gate. Both the walls, as may be seen in the painting by Bernardino Bellotto, and the two surviving Roman gates of Turin are also of brick.

In Britain, the choices are geographically confined to England: London, Oxford, Cambridge, Holkham Hall on the north Norfolk coast, Bristol, and a few sites within easy reach of London. Why, I ask myself, do others copy the late Sir James Richards in not visiting Manchester. Thus Digswell Viaduct at Welwyn, Hertfordshire, and the Wharncliffe Viaduct just west of London Paddington are preferred to the Stockport Viaduct, which, however, is mentioned in the text, and the three miles of viaduct in Salford leading into Manchester Victoria. The tobacco warehouses of Bristol get Campbell's vote over Albert Dock or the great tobacco warehouses of Liverpool and no space is given to the cotton mill, surely the *brick* industrial building par excellence. James Campbell, rightly, says that the mundane industrial building is often ignored in the writing of building history.

The section on 'The terracotta revival' is likewise structured around buildings in London: the Prudential Assurance Building, High Holborn, and the Natural History Museum, South Kensington, were both the work of Alfred Waterhouse while the Royal Albert Hall was designed by Francis Fowke and the Howard de Walden Nurses' Home of 1901, now the Langham Court Hotel is by Arthur E. Thompson. One would like to know how many more of the nurses' homes of 1897-1901, built to celebrate the Diamond Jubilee of Queen Victoria, were constructed, like that in Langham Place, of glazed bricks and terracotta, rather than as at Salford of red brick with a terracotta plaque to record the use of the building.

But one could name a selection of buildings from Manchester with terracotta façades:

the buildings for insurance companies on Parsonage Green; the offices, of which only the façade survives, on Oxford Street by I.R.B. Birkett; the cotton warehouses of Whitworth Street; and the Refuge Assurance Building (now the Charterhouse Hotel) by Alfred Waterhouse and his son, Paul Waterhouse, on the corner of Oxford Road and Whitworth Street. At the other end of the Whitworth Street canyon, is that splendid late example of terracotta facing the brick skin of a steel-framed structure, the first addition to UMIST, designed by Robert Mackissoon McNaught of Bradshaw Gass and Hope of Bolton in 1927 but not built until 1950-57. This building suffers from having been condemned by the late Sir Nikolaus Pevsner in *The Buildings of England: Lancashire 1 The Industrial South* with the phrase "a gross anachronism" for the year of its completion, and the phrase is repeated by Clare Hartwell in *Pevsner Architectural Guides: Manchester* in 2001. True, one may agree with her that the building is "enormous". However, the brief given to the architects who took part in the competition required a large number of spaces. Within an envelope of gables echoing the gables of the 1895 building by Spalding and Cross is a giant tower. It is akin to but not, I think, imitating the McGraw-Hill Building by Raymond Hood in New York which was not completed until 1931; it was only commissioned in 1928: the competition for the UMIST extension was held in 1927. Looking at James Campbell's photograph of it, the black brick American Radiator Building, of 1924-25, also in New York, and also by Raymond Hood, might be a potential source for some of the thinking that went into the design of one of the few attempts in Britain in the 1920s and the 1930s to construct an American skyscraper. The best-known are the two by Charles Holden in London: No. 55 Broadway for the London Passenger Transport Board and Senate House for the University of London. Neither of these, of course, is a brick-faced or terracotta-clad building. The other built attempt at a New York skyscraper known to this writer was again in Manchester: Lee House, of 1928-31, by Fairhurst and Son with J.H. Sellers. Designed as a seventeen-storey building, if it had been completed to its full height, it would have been the tallest building in Europe at this date. Unfortunately only eight storeys were built, the same height as Tootal House by J. Gibbons Sankey of 1896-98, to which it is now attached. Tootal House is a magnificent piece of neo-classicism clad in orange terracotta and red brick.

To one who is not a product of an ancient university, it seems a little odd that the choice of university buildings is confined to the nineteenth-century buildings of one of the three brick colleges in Oxford and various of the better-known, late medieval, brick-built colleges in Cambridge. For the late nineteenth century Sever Hall, Harvard, in Cambridge, Massachusetts, appears but is no real substitute for possible English examples. There is the derogatory term "redbrick". As representative of brick for education in the late nineteenth century, it would have been pleasing to have seen something like the original building of the University of Liverpool of 1887 or the Royal Technical Institution, Salford, of 1896 (now the Peel Building of the University of Salford) or the buildings of the University of Birmingham of 1909.

The other choice in England with which issue can be taken is Herstmonceux Castle, Sussex, as the sole representative of a fifteenth-century brick building. Herstmonceux is probably the most complete example of a fifteenth-century brick building in England but although it incorporates a great gatehouse within a brick quadrangular house rather than a great brick tower as at Caister Castle, Norfolk, or Tattershall Castle, Lincolnshire, its crenellations were not for defence although James Campbell does say that the castle form and embellishments are for show. Comparing Herstmonceux to the castle of the Teutonic Knights at Malbork, Poland, seems to be a little far-fetched, almost misleading.

One further point is that to leave out anything from England between Hampton Court of the 1530s/1540s and Groombridge Place in the 1650s might induce in some purchasers one of two feelings. Either that England has no brick structures of between 1540 and 1650 worth recording in a global history or that there is a terrible omission. The Reformation put a virtual

stop to church building but not to church maintenance and refurbishment, although brick churches in England get little attention from James Campbell. Then for this period of just over a hundred years, the best-known houses are built of stone. A representative county, Northamptonshire has Burghley, Kirby Hall, the demolished Holdenby, just among the largest houses. The word "demolished" begs immense questions. Thinking of Bedfordshire brick houses or substantial additions built of brick from the period between 1540 and 1650, Luton Hoo and Wrest Park have completely gone, swept away in eighteenth- or nineteenth-century rebuilding. The list of demolitions with no replacement includes Stratton Hall and Eyeworth Manor. Indeed the only surviving late-sixteenth-century brick building of any status is the 1582 wing of Bletsoe Castle, and the earlier parts of that building are stone. Yet brick was important as a building material in the century between Henry VIII's death and the Civil War. It is just that the demolitions are so numerous. Of the many houses built for the leading men of the court in London and Middlesex, almost none survive. In Warwickshire, New House, Coventry, of 1586 was pulled down in 1778 and Weston House, Long Compton, of 1588-89, survived in an increasingly dilapidated state until 1827 when it was replaced by a house built of the local limestone. Of the latter there are three lodges on the east side of the main road between Barcheston and Long Compton but not the great house. Research, still in a very preliminary stage, suggests that in the counties of western England between the Bristol Avon and the Mersey there is probably one hundred brick houses known to have been built in the second half of the sixteenth century, even though many have been demolished.

The best-known Elizabethan brick houses may be demolished ones, such as Wimbledon House, but this does not apply to those of the first quarter of the seventeenth century, the reign of James I. Warwickshire has Aston Hall of 1618 to 1635 and Hatfield House in Hertfordshire was begun in 1607 for Robert Cecil. When, in 1612, Robert Lyninge had finished work at Hatfield, he went on to build Blickling Hall, Norfolk, for Sir Henry Hobart, dying in service in 1627 and being buried in St Andrew's church.

To consider brick across the world means to examine in some depth the brickwork of the Near East and that of the Middle East: the division is the Tigris/Euphrates waterways of Mesopotamia (modern Iraq). It is also to consider everything from ziggurats to Islamic tombs and mosques. From Babylon and its glazed brick to the Safavids and the Persian Renaissance with the amazing brick vaults of Isfahan; these essays are informative to the non-specialist and the pictures are stunning.

They also make one realise that in more ways than a practising member of a Christian church might like to admit, the modern world has succumbed to what Max Weber described when he wrote:

Specialists with spirit, sensualists with heart; this nullity imagines that it has attained a level of civilization never before achieved.

[Max Weber, (Talcott Parsons (trans.)), *The Protestant Ethic and the Spirit of Capitalism*, reprinted London: Routledge, 2001 edn., page 124.]

The continuity of the world of brick, adopted by so many of those who rose to power in the Middle East and the Near East, asks questions about building materials choice which many are not willing to face.

Brick in China is not a topic often considered in *British Brick, Society Information*. James Campbell considers the rise of the pagoda. Sir William Chambers' pagoda in Kew Gardens, London, recently appeared on television in a programme about 'Royal Gardeners'. The walls of this, I had not previously realised, are actually of brick, like those of the pagodas shown in Will Pryce's photographs. Other sections examine the Great Wall of China and housing in Shanghai,

the latter as an example of urban overcrowding to be compared with 'Over London - By Rail', a familiar print by Gustave Doré. My Chinese students are sometimes amazed at this view of England but our discussions often centre on the fact that Shenzhen in the last twenty years has experienced the same problems as London or Manchester experienced in the first forty years of the nineteenth century.

This reviewer is not qualified to comment on the choices from those parts of Asia east of the River Indus. The essay on the stupas of Thailand and South-East Asia includes photographs of buildings at Chiang Mai and Lamphun, both places Martin Hammond visited and wrote about in *BBS Information*, 85, October 2001. Will Pryce's photographs demonstrate the attraction of these places to anyone interested in brick. The preceding essay considers the Buddhist temples and stupas of Pagan, Myanmar (Burma), a site also known as Arimaddana.

Throughout the book there are picture essays on brickmaking and kilns, as appropriate to the period under consideration. Indeed, the volume ends with a picture essay on brick as an appropriate technology in the Indian sub-continent in the twenty-first century. This is an area of especial expertise for James Campbell whose research has covered printed materials on seventeenth- and eighteenth-century manuals and treatises on brickmaking and bricklaying.

The two last picture essays on the nineteenth century consider the U.S.A. at the end of the century: first Henry Hobson Richardson (1838-1886) and second the early work of Frank Lloyd Wright (1867-1959) with in the second of these a brief comment about Wright's early association with Louis Henry Sullivan (1856-1924). In so doing the reader might think Sullivan was either a less important architect or a less significant innovator in the use of brick than either Richardson or Wright. In 1991, James O'Gorman, reviewing the early careers of all three men put forward the view that Sullivan had importance only as a bridge between Richardson and Wright. *Three American Architects Richardson, Sullivan and Wright, 1865-1915* has produced an influence that almost seeks to belittle Sullivan and his contribution both to the development of the use of brick and as an architect. Sullivan clad steel-framed skyscrapers in brick as with the Wainwright Building in St Louis, of 1890-91, and the Guaranty (now Prudential) Building in Buffalo of 1894-96. Sullivan went on to design "the jewel boxes" of the banks in small Mid West towns and the store at Clinton, Ohio. Like so many of those who at one stage had worked for Sullivan, Wright also designed a brick-built bank, in Mason City, Iowa.

I think it depends on how you see the effects of the 1893-94 and 1907 recessions on the business fortunes of the architectural firms of Chicago. The first claimed the Adler and Sullivan partnership as a late casualty in 1895 which was about the time when Wright left; the second, by 1909, had caused Sullivan to allow his chief assistant, George Grant Elmslie, to finally depart simply because Sullivan could no longer afford to keep paying his salary. When Elmslie left Sullivan, he went on to design other banks in the Mid West, to complete the Methodist church at Cedar Rapids, Iowa, whose initial, competition, design was Sullivan's, and to re-design Woodbury County Courthouse in Sioux City, Iowa, in 1915-18. Wright, on the other hand, spent much of the 1910s and early 1920s, first in Europe and then in Japan. Thus, to some extent, Wright is a peripheral figure in the Prairie School, an instigator for its domestic architecture but not a main figure in the development of the idea of *an* American architecture created within the country itself. Opposed to this is the idea of an Imperial American architecture, current among the practices in New York which rarely used brick as the external cladding material. It may use terracotta as with the Flatiron Building on Times Square, New York, but the concept derived from the classical column is repeated on both the Conway Building and the People's Gas Building in Chicago, likewise both from the office of Daniel Burnham. It is an intriguing question, clearly outside James Campbell's remit, as to why American architects rejected the home-grown Prairie Style and brick in favour of an imported, if modified, Beaux Arts classicism and stone. While the reasons for the rejection lie in patronage, this is not the whole answer; the

developing, if delayed, road to imperial power has much to do with it. The design and initial construction of the Flatiron Building is contemporary with Theodore Roosevelt's comment:

The Mediterranean era died with the discovery of America. The Atlantic era is now at the height of its development and must soon exhaust the resources at its command. The Pacific era, destined to be the greatest of them all, is just at its dawn

[Quoted in Simon Winchester, *The Pacific*.]

If it is a brave man who attempts the world over twelve thousand years of brick, it is an even braver man who tries to encapsulate the twentieth century in sixteen, relatively short essays, split into two groups. The first group of seven essays considers developments prior to the Second World War. The subjects consider the high art end of architecture. Even the mundane workplace is represented by the Monadnock in Chicago and the Chrysler Building in New York. The former is one of the tallest buildings with load-bearing brick external walls: it is sixteen storeys high. The one structure similarly with load-bearing brick external walls of comparable height, which is known to this reviewer, is that which houses the Sistine Chapel in Rome. The famous chapel is in the middle of a building with a very thick base, represented by an external batter less steep in its angle than the Monadnock, and underneath the original barrack rooms of the Swiss Guard. The brick is deep red as opposed to the dark brown of the Monadnock.

For the inter-war years, apart from the Art Deco skyscraper, the focus is on Europe: the Grundtvigskirk, Denmark, the housing of the Amsterdam School, and, likewise from the Netherlands, Hilversum Town Hall by Willem Marinus Dudok.

The second group uses a specific work by each of nine architects to illustrate the latest developments. For the first forty years after 1945, the choices are Baker House at MIT of 1946-49 by Alvar Aalto; St Peter's church, Klippan, Sweden, of 1963-66, by Sigurd Lewrentz; the Byker Wall, of 1968-80, by Ralph Erskine, and also as a representative of post war social housing; and the Phillips-Exeter Library, of 1969-71, by Louis Kahn. The church is new to this writer but the choices suggest the range of building types for which brick was used in the third quarter of the twentieth century. But like the buildings chosen for the last quarter of the century, with the possible exception of the Byker Wall, these are all prestige commissions. Even with Byker, one has something different from the average housing estate, either large in a town or small in a village, of semi-detached family houses.

To represent the last fifteen years we have the IRCAM extension in Paris, of 1988-89, by Renzo Piano; the Cambridge Crystallographic Data Centre, of 1990-92, by Eric Sørensen; the Glyndebourne Opera House, of 1991-93, by Michael Hopkins and Partners, a building visited by the British Brick Society in November 2000; the Arco Building at Keble College, Oxford, of 1991-95, by Rick Mather; and Evry Cathedral, near Paris, by Mario Botta, taking him four years to design and built between 1992 and 1995.

All of these emphasise the environmental advantages of brick. It may be that to comment on them only as prestige projects is to miss the point. Brick for all its everyday use in mundane projects like mass housing and factories *is* just as suitable for the cathedral and the opera house or buildings for a university or a school as in the twentieth century, no less than in its predecessors, it has been triumphantly shown..

James W.P. Campbell with photographs by Will Pryce, *Brick: A World History*, London: Thames and Hudson, 2003, 320 pages, 570 colour illustrations, 30 other illustrations ISBN 0-500-34195-8, price £39-95, hardback

Review Article by DAVID H. KENNETT

Book Review

Jack Simmons, *St Pancras Station*, revised with a new chapter by Robert Thorne
London: Historical Publications (distributed by Phillimore & Co., Chichester), 184 pp., 51 black and white illustrations, 15 colour plates,
ISBN 0-948667-68-0, price £15-95, hardback.

It is a pleasure to greet this long-awaited new edition of *St Pancras Station* by the late Professor Jack Simmons (1915-2000), originally published by George Allen & Unwin in 1968. At that time, the future of the station, built in 1866-1876 to trumpet the Midland Railway's belated entry into the metropolis, was far from certain. For the most part Prof. Simmons approaches his subject with scholarly detachment, in chapters covering 'The Midland Railway', 'Site and Plan', 'Construction', and 'The Station at Work', the last, incidentally, desperately in need of a map. In 'Controversy' (pp.134-153) Prof. Simmons enters into lively - if at times slightly tetchy - dispute with critics such as Robert Furneaux Jordan who have emphasised the clash between the functional engineering of W.H. Barlow's train shed and the exuberant and eclectic Gothic of Sir George Gilbert Scott's 'Midland Grand Hotel' (now renamed 'St Pancras Chambers'). In 'A Final Comment' (pp.154-158) he makes clear his enthusiasm for the building and vigorously argues the case for preservation. With the development of the Channel Tunnel Rail Link (CTRL), which is to enter St Pancras via East London, that preservation is now assured. Even those of us who do not greatly admire Scott's hotel for its architectural character, and deplore the societal values that it reflects, must welcome this development, for there is no denying the building's significance both in the architectural and in the social history of mid-Victorian Britain. It is also, of course, a major monument in the history of British brickwork, its brick craftsmanship always of the highest quality. The CTRL project also ensures the future of Barlow's magnificent iron and glass train shed. Post-1968 developments are described in a new chapter, 'St Pancras Revived' (pp.159-177), by Robert Thorne, himself a noted transport and engineering historian, who worked closely with Prof. Simmons before the latter's death in September 2000. As a prelude to the whole, at page 9, there is a warm tribute to Jack Simmons.

Revision of the original text has been kept to a minimum. The "footnotes" - in fact, *endnotes* to each chapter - have been revised by Robert Thorne at Prof. Simmons' insistence. The book has been entirely reset on better quality paper with the black and white illustrations integrated into the text and with the addition of colour plates at pp.81-88. This makes for a more attractive publication, although the omission of full stops from people's initials is, to me at least, an irritant, whilst there are a few typographical slips which simple application of spell-check should have picked up: "buidling" for *building* (p.10) and a couple of split words at the ends of lines but with no connecting hyphens (pp.10, 159). Other slips might have been avoided by more careful proof-reading: "an dirt" for *and dirt* (p.62), "thngs" for *things* (p.91), "knows" for *known* (p.100), "of" for *or* (p.101), "was little more serious" for *was a little more serious*, "as a speed" for *at a speed* (both p.103), "let" for *led* (p.161) and "insertions for *insertion* (p.169). The name of the first hotel manager appears both as Etzensberger and as Etzenberger. These are not major errors, to be sure, but they are frequent enough to be niggling.

The supply of bricks from Edward Gripper's Patent Brick Company at Mapperley, Nottingham - conveniently located on the Midland Railway's own line - is considered at pp.54 and 63-64 (with note 90 at p.95). Gripper's found it impossible to keep up with the huge demand from the contractors, and other bricks, from Leicestershire, were also used (p.65). The assertion that the adjoining Somers Town Good Station (John Underwood, Engineer for New Works to

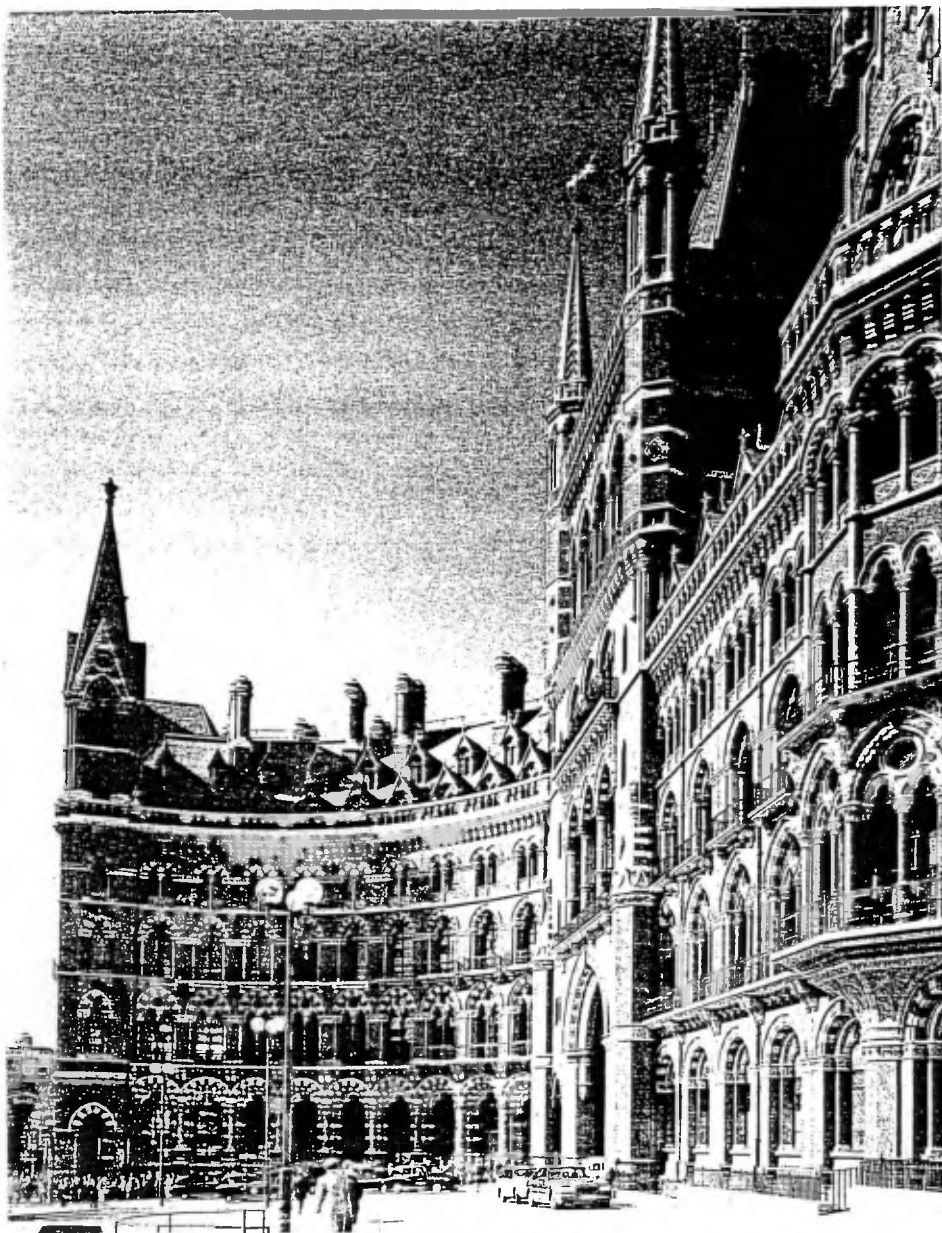


Fig. 1 The Midland Grand Hotel, later St Pancras Chambers: western half of the façade showing the curving section on the west side with the coffee room on the ground floor and the dining room on the first floor. The ladies' smoking room overlooked the portecochère, extreme left.

the Midland Railway, 1883-87, extended 1896) was "faced with Leicestershire bricks of *an unusually small size*, with Staffordshire blue bricks on the inside" (p.91, *my italics*) has been allowed to stand (from p.62 of the first edition). There may be contemporary sources for this - there is a related assertion in, for example, an essay by John Betjeman reprinted in his *First and Last Loves* of 1952 - but my own examination of what remained of the building in August 2002 failed to confirm it: red bricks on the south side of Phoenix Road and Brill Place measure $9 \times 4\frac{3}{8} \times 2\frac{1}{2}$ inches ($229 \times 111 \times 63$ mm) whilst those in Purchase Street are slightly thicker at $9 \times 4\frac{3}{8} \times 2\frac{3}{4}$ inches ($229 \times 111 \times 70$ mm), both being fairly standard at the time: the Gripper's Patent Bricks used in St Pancras Station itself, for instance, measure $9 \times 4\frac{1}{2} \times 2\frac{3}{4}$ inches ($229 \times 114 \times$

70 mm). The blue engineering bricks that Prof. Simmons mentions are equal in size to the *thicker* red bricks. This examination did confirm the Leicestershire source of the red bricks, for some are stamped in a shallow, flat-bottomed frog with the words WAIN'S/HEATHER - that is the village of Heather, twenty or so miles west of Leicester. It is, perhaps, a pity that the reviser of the book did not take the opportunity to investigate this matter, which actually cost me little effort: all observations were made in public spaces within a few minutes walk of St Pancras Station.

It is not easy to revise the work of another, especially after that other's death, without yielding to the temptation to *rewrite* it. Robert Thorne has avoided that temptation, his work consisting largely of updating the text as necessary. Even so, it might have been useful and interesting to have been offered an extended version of the chapter on 'Controversy', bringing it up to date with reference to more recent discussions. The issue of the clash between Barlow's and Scott's work, for example, did not end with Prof. Simmons' dismissal of it. Later writers who have considered the matter, on the side of Furneaux Jordan (where, I admit, my own sympathies lie), include the engineering and railway historian L.T.C. Rolt, the historian Donald J. Olson, and the architectural historian Kenneth Frampton, though with Jonathan Glancey and other recent critics tending to side with Prof. Simmons in denying that there is any such clash.

Whilst this new edition was in the press, incidentally, there appeared yet another discussion, that by Dan Cruickshank on pages 172-201 of his *The Story of Britain's Best Buildings*, (London: BBC Worldwide, 2002; 256 pages, numerous illustrations, mostly in colour; ISBN 0-563-48823-9; price £25-00 hardback). One of the most intelligent discussions of the hotel building, it is, - as far as I am aware - the first to note that the "Gothic detail is cast upon a frame that is, in many respects, classical" (page 180).

Jack Simmons' book - originally described by Sir John Betjeman as "readable, learned and inspiring" - remains one of the best histories of a British railway station, with particular relevance to those of us interested in bricks and brickwork. This attractively produced and reasonably priced new edition is warmly recommended.

TERENCE PAUL SMITH

BRICK IN PRINT

Between Spring and late November 2003, the Editor and the Chairman of the British Brick Society received notice of a number of publications of interest to members of the society. This is a now regular feature of *BBS Information*, with surveys appearing usually twice a year. Members who are involved in publication and members who come across books and articles of interest are invited to submit notice of them to the editor of *BBS Information*. Unsigned contributions in this section are by the editor.

DAVID H. KENNETT

1. Marcus Binney, 'Archbishop's House, Westminster',
Country Life, 4 September 2003, pp. 104-109

Behind the Roman Catholic Cathedral is the archbishop's house, like the cathedral designed by John Francis Bentley. The house is recently re-decorated and restored to its original colours. Brick enthusiasts will be most taken with the article's figure 1, a colour photograph of the street frontage of the house and the north side of the cathedral giving an interesting view of its tower.

2. James W.P. Campbell, 'The Study of Bricks and Brickwork since Nathaniel Lloyd', *Construction History Newsletter*, 66, June 2003, pp.31-38

In this article - reprinted from S. Huerta, (ed.), *Proceedings of the First International Congress on Construction History*, (Madrid: Instituto Jaun de Herrera, 2003, pp.479-489), though *CHS Newsletter* does not mention the fact - James Campbell offers a survey of the literature on (mostly) English bricks and brickwork "since Nathaniel Lloyd" - that is to say, since the publication of the first edition of Lloyd's *A History of English Brickwork ... from Mediaeval Times to the End of the Georgian Period*, (London: H.G. Montgomery, 1925; re-issued in facsimile Woodbridge: The Antique Collectors' Club, 1983).

An introductory section outlines the career of Nathaniel Lloyd (1867-1933) and his turning to architecture and architectural history at the age of forty-two. Lloyd's *History*, Campbell observes, "remains one of the most authoritative and useful works on the subject today" (p. 32). The survey proper begins with a consideration of 'Books and General Works on the History of Building Construction', noting particularly those which include worthwhile material on bricks and/or brickwork. The following section, 'General Books on Bricks and Brickwork', complains that there "have been disappointingly few books devoted entirely to the history of English brickworks [*sic*] since Lloyd" (p. 32). (The complaint, though, seems misplaced: just how many books on the topic would one want? Not *so* very many, surely?) Those which have appeared are briefly assessed. Mention is also made of one book which purports to be a global survey and of two American books which "have a direct bearing on English brickwork" (p. 33). A section on 'Dictionaries and Encyclopaedias' sensibly observes that it would be pointless to list every such work which mentions bricks or brickwork. Special reference is made to the multi-volume *The Dictionary of Art* (London: Macmillan; New York: Grove, 1996), volume 4 of which includes valuable articles on the topic - though relatively little on England.

In 'Detailed Studies of Bricks and Brickwork since Lloyd', Campbell includes an appreciation of the British Brick Society and of the important contribution of its members to study of the subject. "From the beginning", he observes, "the group produced a regular newssheet which was simply called *Information*. The newssheet (now a full-blown journal) ... has become one of the most important outlets for research on the subject, intermixed with more general queries and observations" (p. 33). The following (and longest) section considers 'Brickmaking though the ages', and includes references to surveys of brickmaking techniques, innovations at various times, the development of kilns, and some of the 'patent bricks' introduced in the nineteenth century. A section on 'Bricklayers and brickmakers socio-economic studies' (thus punctuated) includes much of the work - a meagre amount in total - on this important aspect and stresses the role of trade guilds. 'Geology and Analysis of Bricks' laments that little has been done on this topic - though a consideration of the Roman period would have shown rather more. A section on 'Brickwork' outlines work on the medieval period, the introduction of regular bonding, diaper work, gauged brickwork, and the introduction of the cavity wall. A final section identifies various gaps in the literature and urges further work in those directions.

The paper includes a three-page bibliography. This - and to a lesser extent the main text - includes some typographical errors, principally mis-spelled surnames and in one case a wrong initial. But it provides a quite extensive list of works and forms a valuable starting point for anyone wishing to pursue particular aspects of the subject in detail. It is gratifying to see the work of so many members of the British Brick Society included.

Campbell's survey is to be welcomed, for the lucidity of its outlines and for providing a useful and well-organised guide to the literature.

TERENCE PAUL SMITH

3. James W.P. Campbell and Andrew Saint, 'A Bibliography of Works on Brick published in England before 1750',
Construction History, 17, 2001, pages 17-30.

The bibliography of sixty-eight works, many available in several editions, published between 1589 and 1750 has as its focus those books available at the time which throw light on construction methods in the period from the late sixteenth century to the mid eighteenth century. Works are given in chronological order of first publication. The authors' aim is to understand more fully the building trade of these seven generations.

Thus the manuscript diaries of figures like Robert Hooke and Roger Pratt, published more recently are excluded as are governmental works including statutes, proclamations, proceedings of committees, bye-laws and other legislation. The latter is a subject of considerable complexity which awaits separate treatment, although the unpublished M.Phil. thesis of Patrick Youngblood, 'The Legislation of Building Style and Material in London under James I and Charles I', (University of London: Courtauld Institute, 1979) shows what can be done to disentangle the theory and the practice.

The discussion examines the differences and similarities between military architecture and civil architecture. In the contemporary works on the former, few make direct allusion to brick and unfortunately in Thomas Savery's translation in 1705 from the Dutch of Baron Coehoom's *Nieuwe Vestingbouw "baksteen"*, the Dutch word for brick, literally meaning baked stone, is mistaken for stone.

English treatises on architecture outside of fortifications begin with Sir Henry Wotton's *The Elements of Architecture* of 1624 and continue with Balthazar Gerbier's *A Brief Discourse concerning the three chief principles of Magnificent Building* of 1662 and the same author's *Counsel and Advice to all Builders: for the choice of their Surveyors, Clerks of their works, Bricklayers, Masons, Carpenters and other Work-men therein concerned* of 1663. In writing the books, both men wanted a highly-placed job: Wotton desired to be Provost of Eton College and Gerbier sought to ascend to the Surveyorship of the King's Works.

Some works were practical aids for surveyors of brickwork or on the price of materials. There are instances of scientific enquiry and the history of various trades connected with bricks. These precede eighteenth-century building dictionaries. The same century saw books on drawing, techniques of which improved considerably during the period 1700 to 1750. There were books for the speculative builder and it is important to realise how many of the brick terraces of the elegant squares which a church at their centre in Birmingham and Manchester were built as speculative ventures. Works by craftsmen such as Venturus Mandey and Robert Tatersal, have been the subject of articles in *BBS Information*, 90, February 2003. R. Campbell in *The London Tradesman* of 1747 advised parents against allowing their sons to become either bricklayers or, even worse, brickmakers.

4. James W.P. Campbell and Andrew Saint, 'The Manufacture and Dating of English Brickwork 1600-1720',
Archaeological Journal, 159, 2002, pages 170-193.

The article explores the various problems associated with dating brickwork. It does so by combining information gathered from measuring surviving buildings with a survey of recent literature on the subject. Focusing on the seventeenth century, it seeks to show how the various techniques used in making and laying bricks might have changed in the period and to what extent these can be used to provide a tentative dating surviving fabric. It also outlines the limitations of any such analysis, calling into question various existing recording methods.

JAMES CAMPBELL and ANDREW SAINT (author's summary to published paper)

5. Robert Coates-Stephens, 'The Walls have Years',
Country Life, 3 July 2003, pp.84-89.

The studio and art school of the artist Francesco Randone (1864-1935) dates from the 1890s but was fashioned within three early-fifth-century towers of the walls of Rome. When the brick towers were built they were an addition to walls already more than two centuries old. The Emperor Aurelian had this brick circuit built between A.D. 270 and 276 and this remained functioning as Rome's defences until 1870. When the Kingdom of Italy besieged the city, cannon balls became embedded in the walls; when the new state took over the Eternal City, the towers and the walls found new uses as studios for artists. *Turris Omnium Perfectissima*, as it has been called, one tower owned by Randone, is the only one of the original 383 to survive intact, complete with a piece of Roman wood from the shuttering.

Randone's dwelling and studio occupied three towers and the stretches of wall between them: a covered rampart walk became a sculpture gallery as interesting for the brickwork of the wall as for the replicas. The bricks are particularly long. A studio was created in an upper room, where brick walls and brick arches standing on stone corbels form the base of a fifth-century octagonal concrete dome. Again the bricks are long and thin.

Randone had an eclectic breadth of interests and contacts, from the free art education of poor children to Futurism, from ceramics to primitivism, all of which are on display in the house, which can be visited.

6. John Cooksey, *Brickyards of the Black Country: a forgotten industry: Refractories*, 120 pages, numerous black and white illustrations + 8 unnumbered colour plates, privately published, Cradley; available from John Cooksey, 4 West Road, Cradley, Halesowen, West Midlands B63 2US, price £9-99 + p&p £2-62 (second class) or £3-19 (first class).

In this magazine-format publication, BBS member John Cooksey - who himself worked for many years in the refractory brick industry - draws together personal reminiscences, interviews with others, and background information to present an account of a now defunct, but once important, industry. Fireclay, the author explains was exploited in the Black Country from the early eighteenth century down to the mid-1950s. The numerous chapters cover a wide variety of manufacturing methods, products, and applications - essential to the success of several other industries, including the manufacture of steam locomotives whose boilers were lined with firebricks. The author's enthusiasm for his subject shines throughout the book and the numerous old photographs, including reproductions of advertisements, are of particular value and of absorbing interest.

T.P SMITH

7. John Cornforth, 'The Vyne, Hampshire',
Country Life, 10 April 2003, pp.76-81; 17 April 2003, pp.66-69.

The article is primarily an examination of the internal changes made in the eighteenth and nineteenth centuries by successive members of the Chute family to this once much larger late medieval brick courtyard house. The north front of the house has a mid-seventeenth-century portico by John Webb and Edward Marshall, the first in England. An important survival is the Oak Gallery on the first floor, installed by William Sandys in 1520-21; an eighteenth-century reinterpretation of the earlier lower gallery is the Stone Gallery on the ground floor.

In the same issue as the first article is a note on the restoration of Millgate Park, Kent, a mid-sixteenth-century house with an early-eighteenth-century front range. Hodstock Priory, Notts., with its diapered brickwork, appears in soft focus on the cover of the second issue, to illustrate an article on bee-keeping.

8. Michael Hall, 'Red House, Bexleyheath, London',
Country Life, 10 July 2003, pp.66-71 and cover.

A house that many will be aware of, Red House, the first home of the then newly married William Morris, was designed by Philip Webb in 1859; the house was purchased by the National Trust after the death of its last private owner, the architect Ted Hollamby, in 1999. Ted Hollamby had bought Red House in 1952 and wrote an extensive and lavishly illustrated account of its design and history: Edward Hollamby, *Philip Webb Red House, Bexleyheath, Kent 1859*, (London: Phaidon, 1991); re-issued within *Arts & Crafts Houses I*, (London: Phaidon, 1998).

It is interesting to note the owners in the eighty-seven years after Morris sold the house in 1865. They include Charles Holme, founder and first editor of *The Studio*, an influential design magazine of the three decades before the Great War, and after him, from 1903 onwards, Henry Muff, the businessman father of the architect Edward Maufe. The influence of Red House can be seen in the work of many later designers, not least those mentioned in this paragraph.

Two things are specifically emphasised in Michael Hall's article. He examines the influences on Webb as architect and Morris as client in the conception of Red House. Webb had worked in Street's office for five years but Red House shows influences from both A.W.N. Pugin's own house, The Grange at Ramsgate, Kent, and William Butterfield's small houses and the red-brick estate at Baldersby, Yorkshire North Riding, of the mid-1850s. Street remains the major influence, as is seen in the "bold handling of geometrical forms in hard, machine-made bricks", something illustrated by the photographs of the stables and of the exposed brickwork over the first-floor landing.

Secondly, Hall examines the extent of the influence of Red House, pointing out that it was virtually ignored at the time of its building. William Morris died in 1896 but already the house was becoming a place to visit: the article opens with the delightful tale of the pilgrimage of Mrs Madeline Wyndham and Walburga, Lady Paget in 1903, as re-called by Lady Paget in her memoirs, *In My Tower*, published in 1924. As the re-publication of Ted Hollamby's memoir within *Arts & Crafts Houses I* made clear, Red House was the seminal influence on the young, and not so young, architects who designed small country houses between the recovery from the crash of 1893 and the crash of 1907, after which the market for such houses was much less buoyant and public mood changed.

Red House is open by pre-booked guided tour only; the Visits Co-ordinator of BBS has arranged a series of such visits in February 2004.

9. Tim Richardson, 'Guided by a plantsman's spirit',
Country Life, 4 September 2003, pp. 84-89 with photograph on p. 74.

The "Autumn Gardens" issue of *Country Life* records the work of Jane Cordingley, head gardener at Eltham Palace, a major brick palace of King Edward IV (reigned 1460-70 and 1471-85) which was restored by Stephen and Virginia Courtauld between 1933 and 1945. The Courtaulds were art patrons and gardeners but employed a professional firm, Thomas Mawson of Bradford, to provide plans, subsequently altered. Mawson was a leading Arts and Crafts garden and landscape architect. Structural use of brick can be seen in the complex terrace overlooking the rockery at the east end of the house.

The gardens of Eltham Palace are open Wednesdays, Thursdays, Fridays and Sundays from 10.00 a.m. onwards; closing times vary with the seasons.

Brick Queries

From time to time, the British Brick Society receives enquiries about bricks, brickmaking, other ceramic building materials, and brick buildings. These are printed when space is available in *British Brick Society Information*. Responses are also included when these are forthcoming.

DHK

BRICKS FROM DIDDLINGTON HALL, NORFOLK

Didlington Hall, Norfolk, was first constructed around 1630 and was enlarged several times in the nineteenth century, latterly by Lord Amherst. This culminated in the addition of a wing designed by R. Norman Shaw RA around 1900. Didlington Hall was demolished in 1950.

New owners have cleared the site in advance of construction work for a new house. This has revealed one wall of the 1630 building. Bricks from the twentieth-century extensions are obvious; amongst the nineteenth-century examples, some are embossed WATA, for William A. T. Amherst, and others HFS, for Henry Francis Smith, a later owner. Both sets of bricks are believed to have been made at Colveston, on the Amherst estate. However, other bricks apparently of this date are stamped:

TLD; WESTBRICK; HUBBARD; MC.

Both the owners and my self would welcome any information on the origins of these.

EDWIN J. ROSE
Norfolk Landscape Archaeology
Union House, Gressenhall, Dereham, Norfolk NR20 4DR
e-mail: edwin.rose@norfolk.gov.uk

WORKING CONDITIONS AT BRICKWORKS

There is a growing literature on the working conditions at brickworks, not merely in Britain but also elsewhere in the world. Has any member ever systematically collected these accounts of working conditions or other references to working conditions at brickworks either in Britain or elsewhere in the world with a view to comparing them one to another or to note change through time.

And inspired by the appeal on the next page, does any member know of any published study of the use of animals - horse, donkey or oxen - in brickworks.

DAVID H. KENNETT
7 Watery Lane, Shipston-on-Stour, Warwickshire CV37 4BE
e-mail: davidkennett@stratford.ac.uk

THE BIAS BRUNEL PRIZE

The Bristol Industrial Archaeological Society (BIAS) has established a prize, known as the BIAS Brunel Prize, to encourage archaeological and other research into, and the publication of work on, the industrial archaeology of the Bristol/Bath region. The society has chosen to devote the income from the residual funds of the former Brunel Society to the foundation of this prize. The revenue will be subsidised, if necessary, so that an amount of £150-00 will be made available every two years, having been awarded for the first time in 1997.

The competition is open to BIAS members and other persons or groups with an interest in the industrial archaeology of the Bristol region. Entries should consist of a written report of record which should

- ♦ conform to the guidance notes for *BIAS Journal*, and should not have been published elsewhere, either privately or otherwise, in whole or in part, nor submitted for another prize competition.
- ♦ reflect original research into and/or recording of Industrial Archaeology sites in the region with source references.
- ♦ be submitted by 31 August in the preceding year (e.g. 31 August 2004 for the 2005 competition. Entries will be considered for publication in *BIAS Journal*.

A panel normally consisting of the BIAS president, chairman and journal editor, together with up to two co-opted members, one of whom should if possible be from outside the society, will decide on the awards. The decision of the panel, who reserve the right to vary or withhold the award, will be final. Further details can be obtained from Mike Bone, "Sunnyside", Avon Close, Keynsham, Bristol BS18 1LQ.

BRICK KILN DONKEYS – AN APPEAL

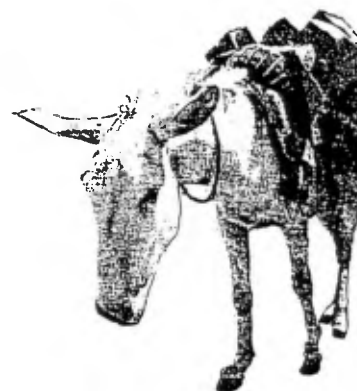
In my capacity as Chairman of the British Brick Society, I have been sent – anonymously, but presumably by a member – a cutting of a magazine appeal by the Brooke Hospital for Animals (Charity no. 1085760). It concerns the plight of “the little brick kiln donkeys of India and Pakistan”. “Weighed down by back-breaking loads, exhausted by the heat and often in agony,” they have to work “in temperatures up to 128°F [53°C] ... suffering and collapsing for want of a drink”. A donation of £25, we are informed, “could help provide two portable water troughs” for the donkeys. For any BBS member wishing to make a donation, or requiring further information, the contact address is:

Brooke Hospital for Animals,
FREEPOST LON22002,
MELKSHAM
SN12 6BR

And the telephone number is:

020 7930 0210.

Terence Paul Smith
Chairman



BRITISH BRICK SOCIETY MEETINGS IN 2004

Saturdays 14, 21 and 28 February 2004

February Meeting

Red House, Bexleyheath: the house built for William Morris

Saturday 19 June 2004

Annual General Meeting

Gloucester Docks

Please note the change of date to that previously advertised.

Saturday 10 July 2004

July Meeting

The Mausoleum at Castle Howard, Yorkshire,
with lecture on the history and restoration of the mausoleum.
We hope also to see the interior of the burnt out wing of the house.

Thursday 12 August 2004

London Meeting

Lambeth Palace

tour of the state apartments and great hall, the latter of brick built in the 1660s, and with an opportunity to view the inside face of the gatehouse built by Archbishop John Morton in the 1490s.

Saturday 2 October 2004

Autumn Meeting

Oxford, including tour of Keble College, with the original buildings in polychrome brick by William Butterfield and two more recent brick buildings with interesting bonding by Rick Mather.

Notice concerning the London Meeting is included in this mailing.

*Notices concerning the Annual General Meeting and the July Meeting
will be included in the next mailing in May 2004.*

Unfortunately, it was not possible to arrange the Northern Spring Meeting in Boston for a Saturday in May 2004. This will be included in the society's 2005 programme. The Visits Co-ordinator is already working on ideas for meetings in Spring 2005 to include at least one brickworks visit.

The British Brick Society is always looking for new ideas for future meetings.

Suggestions of brickworks are particularly welcome.

Suggestions please to Michael Hammett, David Kennett or Terence Smith.