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Cover Illustration:

'Sranden', East Grinstead: the garden front, showing tile-hanging on the five gables and other uses of local materials. Designed by Philip Webb in 1891, the house was visited by members of the society during the Spring Meeting in East Sussex

Editorial: Postcard from Kalamazoo

Through the good offices of a bursary from the British Brick Society, the editor of *British Brick Society Information* was able to participate in the 40th International Congress on Medieval Studies organised by the Medieval Institute of the College of Arts and Sciences at Western Michigan University, Kalamazoo, Michigan, U.S.A., between Thursday 5 May 2005 and Sunday 8 May 2005. It was a wonderful experience.

The International Congress on Medieval Studies is an annual forum for the world's scholars concerned with the Middle Ages, rather broadly defined from the end of the western Roman Empire to the early seventeenth century, to meet and listen to presentations on a wide variety of topics from Islamic Spain to Shakespeare, from ecumenicism to feminism. Multiple sessions are held simultaneously: 626 in 2005 and doubtless more in 2006. The congress booklet ran to 40 preliminary pages and 211 pages of programme, plus 64 pages of advertisements, mostly from book publishers, and eight pages of maps.

The specific portion of the congress to which the society's bursary enabled me to contribute was the sessions organised by the Association Villiard d'Honnecourt for the Interdisciplinary Study of Technology, Science and Art (AVISTA). Three sessions were organised by the association on Medieval Brick. The first on Brick Production and Building Technology suffered because several of the advertised speakers failed to appear: this happened also with the second session. In other topics, one session on Islamic Spain had to be completely cancelled.

In the session on Brick Production and Building Technology, Ahmet Caycý of Seljuk University spoke on 'Brick Production in Anatolia'. Professor Caycý outlined the traditional methods of brick manufacture in central Turkey. He began by outlining how earth bricks are made and moved on to fired bricks. In western Anatolia, large clamp kilns are constructed, containing 300,000 bricks in a clamp 20 metres (65 feet) long, 20-25 metres (65-80 metres) deep, and 4 metres (12-13 feet) high; his slides included a photograph of such a kiln with workmen standing in front of it and partly on it. Those at ground level were approximately half the height of the structure. The clamp is coal-fired with thin layers of coal interspersed within the clamp as well as at the base. Once alight, the clamp becomes self combusting. The paper produced a lively discussion from the session's participants. What was especially interesting about Professor Caycý's illustrations was how the traditional methods of brick production in Turkey compared with fifteenth-century brick production techniques in the Netherlands as shown in an illustration in the *Nederlanische Bibel*. For those members of AVISTA who are not brick specialists, this was a useful introduction to how bricks were made in the Middle Ages and still are made, today, in Anatolia.

In opening the second session, on Exploiting the Technical and Decorative Potential of Bricks, Professor Robert G. Ousterhout, of the University of Illinois Urbana-Champaign, spoke on 'The Use and Reuse of Brick in Byzantine Architecture, outlining work done with Turkish colleagues on the restoration and underpinning of the Monastery of Christ in Istanbul, built between 1118 and 1136 under royal patronage of the Emperor John and the Empress Irene. This is actually three buildings: a closed monastic church and an open public church with between them the mausoleum of the imperial family. This prestige structure quite shamelessly reused Roman brick from earlier buildings on the site. Brick stamps were not used after the seventh century; bricks from the site have stamps dating to either the fifth and sixth centuries or the

beginning of the fourth century. Brick here was structural; the walls were originally covered with plaster or faced with marble. The brick laying technique employed was that of recessed brickwork with the brick wall facing a rubble core. It uses thin bricks of many sizes and wide mortar beds. In the manner of tuck pointing, the mortar beds were scored with the point of a trowel. The arches were constructed without formwork.

Contributing next to the second session was BBS member Richard Morris of the University of Warwick whose paper, 'Technical Aspects of Brick Architecture in Late Medieval England', included both brick and terracotta as decorative materials. It covered a wide temporal range, from the bricks of the thirteenth-century Cistercian *capellum ad portas* at Coggershall, Essex, to terracotta at early-sixteenth-century buildings such as Sutton Place, Surrey; Layer Marney Tower, Essex; and Hampton Court Palace. Other decorative features examined included the use of over-fired bricks in diaper work: Kirby Muxloe Castle, Leicestershire, was one example instanced. The speaker drew attention to techniques used in creating shaped bricks. These could be throwing individual bricks in a mould, cutting a green brick to the desired shape, or cutting or chiselling *in situ* once the brick was in place. All three obviously were used in different contexts. He did point out that moulded pieces must be fired in a kiln rather than a clamp. Richard Morris concluded by examining two points: the role of the master mason, noting William Vesey at Eton College, and the development by brick masons of the basic mullioned and transomed window during the late sixteenth century.

The third speaker in the second session was another BBS member, Professor Richard Sundt of the University of Oregon. Professor Sundt spoke on a rather wider subject than his precise title, 'Northern Gothic Southernized and Mendicanized? The Buttresswork of Friars' Churches in Toulouse'. He drew attention to two particular churches, St Severin of 1240 and the early Dominican church of c. 1270. These churches drew their design inspiration from the well-known royal chapel of Saint-Chapelle but were transformed into externally much plainer structures, in keeping with the friars' ideals. Thus the walls were plain and austere and the buttresses were simple wall buttresses rather than elaborate flying buttresses: the friars' churches have no aisles. While the Dominican church in Toulouse has linked buttresses in brick, it lacks the machicolations of the Romanesque stone-built fortified churches of southern France which also have linked buttresses. The brick was a yellow brick.

Three speakers contributed to the third session, which looked at the Ideological, Social, and Economic Dimensions of Medieval Brickwork. The first, Alison C. Poe of Drew University, spoke on 'Brickwork in the Earliest Christian Catacombs: *Crypta* as *Aedes*, *Sepulcrum*, and *Domus*'. These catacombs in Rome utilise a former water supply system including great underground cisterns. The doorcases are elaborate, both in brick and later in marble, sometimes reusing marble panels from internal benches within the individual catacomb.

Barbara Perlich of the Technische Universität in Berlin gave a paper on 'Dependency of Medieval Brick Quality on Social Esteem' which showed how as the patronage of brick moved down the social hierarchy so the brickwork itself became plainer and less elaborate. The increasing plainness of brickwork can be compared to what happens in England in the fifteenth and early sixteenth centuries.

The final speaker in the third session was David H. Kennett, who is subject leader for Sociology on the Higher Education Foundation Programme of the University of Warwick at Stratford-on-Avon College. His topic, 'Patrons and Their Incomes: The Builders of Brick Houses in England Before 1461', looked at the social position of the men who commissioned brick houses to be built in the reigns of Henry V (1413-1422) and Henry VI (1422-1461) and, using the published records from the 1436 Income Tax together with other evidence of individual finances, the level of their incomes. The move to build prestige houses in brick was led by kings, both father and son, at Richmond Palace, and before 1430 was only taken up by the brothers of

Henry V and a very few others, the very richest of the magnates. Only in the 1430s and later do lesser magnates, barons, and gentry commission brick houses. Study of the 1436 Income Tax permits us to suggest that the minimum *declared* annual income to be able to afford to build in brick was £300; many of the builders had much more than this. As a means of saying thank you to the society, a slightly amended version of the editor's contribution is included in this issue of *British Brick Society Information*. It follows this editorial.

The whole conference was a most enjoyable experience and one for which I shall always be grateful to the British Brick Society for assisting in my participation. Abstracts of each speaker's contribution were to be submitted to the *AVISTA Forum Journal* by 15 July 2005 for publication in November 2005. Extended papers from the AVISTA sessions will be published in due course.

The buildings of Western Michigan University at Kalamazoo have external coverings of brick. Buildings of different functions use different bonds. The accommodation used by the congress delegates was that provided for students, twin rooms with a pair of rooms sharing a bathroom. Internally these buildings of the mid 1960s were not of the standard experienced by the writer in a hall of residence of similar date at Cardiff: University Hall was new in 1964. At Kalamazoo, the walls were bare breeze block, not plastered. These concrete frame buildings are faced in long thin bricks laid in raking stretcher bond with offset placing of the next course.

Other buildings were faced in the more usual form of stretcher bond and yet others in English Bond and in English Garden Wall Bond, with three courses of stretchers to every course of headers. Two linked buildings, the Paul Rood Hall and the John T. Everett Tower, were in English Garden Wall Bond with five rows of stretchers to one of headers. Within the stretchers, but seemingly randomly placed, were misshapen and over-fired bricks. This was most attractive walling. Certainly, if the editor returns to Kalamazoo at some point in the next few years, he will take more detailed notes on the buildings of the campus for a more extensive description in a future issue of *British Brick Society Information*.

In the contributions to 'Brick in Print' in this issue of *British Brick Society Information*, the society's chairman, Terence Paul Smith, draws attention to an article on the Buddhist stupas of Sri Lanka. A week before the editor received the text of this notice, the BBC2 television programme by Dan Cruickshank 'Around the World in 80 Treasures' visited Sri Lanka and particularly evident was the dark red brick of the walls of the palace fortress at Soyigira in the centre of the island. As the notice points out, following the tsunami after the sub-sea earthquake on Boxing Day 2004, Sri Lanka has more pressing priorities than the architectural reconstruction or conservation of ancient monuments. Badly hit by the tsunami, Galle has a fine brick fortress, familiar to many as the backdrop to international cricket matches.

Returning to stupas, in his book, *Brick: A World History*, BBS member James Campbell draws attention first to the forgotten temples of Pagan, Myanmar (formerly Burma) where the 2,000 plus monuments include not only temples in brick but also small and large brick stupas, the latter with tiers of walkways. Second, he notes the multiple influences - Khmer, Mon, Srivijayan, as well as Thai - on the architecture of modern Thailand. Illustrated in James Campbell's book is the Wat Chedi Luang at Chiang Mai, as well as other buildings in Chiang Mai and Lamphun. The late Martin Hammond discussed these in *BBS Information*, **85**, October 2001, where he also gave details of the city gates of Chiang Mai.

* * *

British Brick Society Information, 96, April 2005, appears to have been exceptionally well-received by members and the editor is grateful to those who have written to congratulate him on the issue. Several areas have provoked comment. Several members commented on various of the brickmarks for which information was sought and these have been collated in the piece entitled 'Brickmarks Identified' and the editor thanks members for taking the trouble to forward their researches. Similarly Alan Cox has provided additional insights into the sources of bricks used in the buildings of the St Pancras (Somers Town) Goods Station by the Midland Railway in the mid 1880s and more generally by the Great Central Railway in the closing years of the nineteenth century.

Terence Smith kindly edited *British Brick Society Information*, 97, July 2005, which has meant that the society's publication has been able to revert to its more usual pattern of publication in mid Autumn, early Spring and mid Summer. By relieving the editor of the task of preparing an issue of *BBS Information* at a point when his paid employment had become more intensive and when he was expecting to go to the U.S.A., a situation complicated also by an earlier collision between the editor's wrist and a steel stanchion which was rather detrimental to the wrist, Terence Smith's editing has been much appreciated. Having another person as guest editor is to the benefit of the society and also allows the regular editor to step back for a while.

The present issue of *British Brick Society Information* has unfortunately been delayed by problems with the editor's printer, which were not resolved until early November 2005. It is highly probable that there will be four issues of *British Brick Society Information* in 2006; with the first one being dated January 2006. Partly because of the volume of the society's activities - no fewer than six meetings in 2005 - and the constraints of binding each issue restricting it to a viable maximum of 36 pages plus cover, there is sufficient material in hand for an issue early in 2006.

An issue in January 2006 means that *British Brick Society Information* will reach issue 100 in Spring 2006. As the society's chairman said that the Annual General Meeting in King's Lynn in June 2005, this is an opportunity for the society to have a bumper issue, binding constraints notwithstanding, and for as many members as possible to contribute.

As this issue of *British Brick Society Information* was being put to bed, the chairman of the British Brick Society received the sad news that Dr Ronald Firman died on 18 August 2005 at the Queen's Medical Centre, Nottingham, after a short illness. Ron, who was 76, was a geologist with an especial interest in building materials, particularly bricks, who was among the instigators of the British Brick Society. We anticipate including a fuller obituary in the next issue of *British Brick Society Information*. The society extends its deep sympathy to his widow, Pat.

DAVID H. KENNETT

Editor, *British Brick Society Information*

20 May 2005, 29 August 2005 and 8 November 2005

EARLY BRICK HOUSES IN ENGLAND: Patrons and Incomes

David H. Kennett

The surviving major brick houses of early-fifteenth-century England and their builders will be familiar to the majority of readers of *British Brick Society Information*. Even if members have not visited them, at a minimum they are likely to know illustrations of houses such as Caister Castle, Norfolk, built by Sir John Fastolf, from 1432 onwards, or Tattershall Castle, Lincolnshire, built by Ralf, Lord Cromwell in the 1430s and 1440s.

The contribution given by the present writer in the third and last of the sessions on 'Brick and Brickwork in the Middle Ages' arranged by the Association Villiard d'Honnecourt for the Interdisciplinary Study of Technology, Science and Art (AVISTA) at the 40th International Medieval Congress at Western Michigan University, Kalamazoo, MI, U.S.A., in May 2005, sought to examine the social position of those who commissioned the building of brick houses in England during the reigns of King Henry V (1413-1422) and his son, King Henry VI (1422-1461), and to relate this building activity to the known incomes of the builders using as a starting point the published record of the Income Tax of 1436 (Gray, 1934).

Although primarily concerned with the period before 1461, the statistical information presented in the conference paper and reproduced here as Table 1 covers the majority of the "long" fifteenth century from the accession of Henry IV in 1399 to the death of Henry VII in 1509: as no major brick building activity is known, the reign of Henry IV (1399-1413) is omitted. Four broad periods of investment in brick houses are discerned with each period roughly corresponding both to a generation (approximately 28 years) and to one of the longer reigns within the century.

THE PATRONS

Before the early 1430s, those who commissioned new brick houses were men at the very highest levels of society. They include two kings, Henry V and Henry VI, at Richmond Palace at Sheen; a cardinal, Henry Beaufort, who was also half-brother to Henry IV, at Bishop's Waltham Palace, Hants., and the now demolished Manor of the More, Herts. (Biddle *et al.*, 1959); two full brothers of Henry V, John Duke of Bedford at Fulbrooke Castle, a demolished quadrangular house between Warwick and Stratford-upon-Avon, and Humphrey Duke of Gloucester at Greenwich Palace; and finally two men deeply implicated in the affairs of government, William de la Pole, Earl of Suffolk at Ewelme Palace, Oxon., and Thomas Langley, Bishop of Durham, who virtually ran northern England, at the partly stone-built Howden Palace, Yorks.E.R., where a wall and a simple gate of brick remain. It is highly noteworthy that in its earliest use for house building, brick is the choice of building material for external walls for only seven men.

Of these seven houses, none is fully extant. ¹Part of one wing of Ewelme Palace survives as an occupied house (Airs, 1978) and two others, Bishop's Waltham Palace and Howden Palace, are preserved ruins. Richmond Palace was burnt down in the 1480s and rebuilt by Henry VII. The three others are demolished. The rarity of brick as a building material throughout the fifteenth century is evident from the treatment given to Fulbrooke Castle by its lessee, Sir William Compton, in the 1480s when he was building a new brick house ten miles to the south at Compton Wynnyates. Much of the brick and some of the stone framing for the fenestration was taken away and re-used at Compton Wynnyates.

TABLE 1

Period	King	Magnate	Baron	Gentry	Bishop Eccl' tic	Unknown	Total
1413-1430s	2	5					7
1430s-1461	1	4	7	19	1bp 1ecc		33
1461-1485	1	4	3	9	4bp 1ecc		22
1485-1509	1	3	1	29	6bp 1ecc	10	51

BRICK HOUSES

The Status of the Builders

In the period including the personal rule of Henry VI (1437-1461), men of similar standing to those who had been the patrons of brick in earlier decades are there. The king, Henry VI, continues to build at Richmond Palace and begins his great benefaction at Eton, both the college and the almshouse, (Goodhall, 2002) as does William de la Pole at Ewelme, both his house and his benefactions of the almshouses and school (Airs, 1978): the church at Ewelme is stone. Men of similar standing to de la Pole built in brick in Hertfordshire: Richard Duke of York at Hunsdon Tower and Richard Neville, Earl of Salisbury, at Salisbury Hall, Shenley.

After about 1430, the full range of patrons of building your house in brick becomes much wider. Some are magnates with major government responsibilities, such as Ralf Lord Cromwell at Tattershall Castle (Thompson, 1981) and elsewhere in Lincolnshire. Others are old soldiers, grown rich on the profits of war, such as Sir John Fastolf at Caister Castle and elsewhere in Norfolk (Barnes and Simpson, 1952a; Barnes and Simpson, 1952b; McFarlane, 1957). While several builders in brick are magnates like Sir Roger Fiennes at Herstmontceaux Castle, Sussex, (Simpson, 1942) there is another substantial group who begin to build in brick, namely the richer members of the gentry. Some are associates of magnates. In Lincolnshire these include Richard Benyngton at Hussey Tower, Boston, (Smith, 1979) and the brickmaker Baldwin Dutchman at Halstead Hall, Stixwold, setting himself up as a first-generation member of the gentry, who, like Lord Beaumont, the builder of Rochford Tower, Skirkbeck, near Boston, were part of the client group of Lord Cromwell. Between about 1430 and the early 1460s, a group of the richer gentry in Essex built brick houses: Sir Thomas Colt at Nether Hall, Roydon, probably the last to build; Robert D'Arcy at Moot Hall, Maldon, and elsewhere; Lewis Johan at Old Thorndon Hall; Sir John Montgomery and his son, Sir Thomas, at Faulkebourne Hall; Sir Ralph Rochford at Rochford Hall near Southend; and Sir John Tyrell at Herons in East Horndon, where there is also a brick barn and a brick-built church (Ryan, 1996). Just beyond Essex's county boundaries those who commissioned early brick houses include Sir John Howard at the demolished Tendring Hall, Stoke-by-Nayland, Suffolk, and Sir Andrew Ogard at Rye House, Herts. (Smith, 1975) In one county further north-west, Bedfordshire, two men built early brick houses in different parts of the vast medieval parish of Luton: Sir Thomas Hoo at Luton Hoo due south of the market town and Sir John Wenlock at Someries Castle to the south-east. (Smith, 1966; Smith, 1976).

In some ways the career Sir John Wenlock is typical of these men (Roskell, 1957).

TABLE 2

**PATRONS AND THEIR INCOMES:
THE BUILDERS OF BRICK HOUSES IN ENGLAND BEFORE
1461**

Builder	Status	Income
<i>Brick House</i>		
<i>Other Brick Building</i>		
Other Building		
* extant building or ruin		
1. Building before 1437		
Henry V (d. 1422) <i>Sheen Palace, Richmond</i> Chapel at Westminster Abbey* (burial place)	King (as Duke of Lancaster in 1419)	£80,000 + (as king) £13,000
Henry VI (a minor 1422-1437; dep. 1461) <i>Sheen Palace, Richmond</i> <i>Eton College*</i> Eton College Chapel* (intended burial place) <i>King's College, Cambridge*</i> King's College Chapel, Cambridge*	King	£64815 (gross), £35431 (net) (as king in 1433) £4744 (gross), £2848 (net) (as Duke of Lancaster in 1436)
Henry Beaufort, Bp of Winchester (1377-1447) <i>Bishop's Waltham Palace, Hants.*</i> <i>Manor of the More, Herts.</i> Chantry chapel in Winchester Cathedral* (burial place)	Cardinal royal sibling	£3885 (see); plus other
John, Duke of Bedford (d. 1435) <i>Fulbrooke Castle, Warwick</i>	royal sibling	£2733 (min in 1434), £4000 (probable)
Humphrey, Duke of Gloucester <i>Greenwich Palace</i> Duke Humphrey's Library, Oxford*	royal sibling	£2243 (tax in 1436), plus other income
Thomas Langley, BP. Durham <i>Manor of the More, Herts.</i> (jointly with Beaufort) <i>Howden Palace, Yorks. E.R.*</i>	prince-bishop	£2788 (see in 1464)
William de la Pole, Earl of Suffolk (murdered in 1450) <i>Ewelme Palace, Oxon.*</i> (20 hearths) Ewelme church* (intended burial place and burial place of wife) <i>Almshouses and School at Ewelme*</i>	government	£1667 (tax in 1436)
2. Building 1430s to 1461		
Richard, Duke of York (d. 1455) <i>Hudson Tower, Herts.</i> Sandall Castle, Wakefield, Yorks.W.R.* Fotheringhay Castle, Northants.* and Fotheringhay church* (burial place)	royal relation	£3230 (tax in 1436) iadditionally £3430 (from Welsh lands 1443-44)
Richard Neville, Earl of Salisbury <i>Salisbury Hall, Shenley, Herts.</i>	government	£1238 (tax in 1436)
Ralph, Lord Cromwell <i>Tattershall Castle, Lincs.*</i> <i>Almshouses and School at Tattershall*</i> <i>Tower-on-the-Moor, Woodhall Spa, Lincs.*</i> Holy Trinity Church, Tattershall* (Burial place) South Wingfield Manor, Derbys.* Colleyweston Manor, Northants.* Ranby Hall, Lincs.; house at Depham, Middlessex	government	£1007 (tax in 1436); £1020 (net in 1429) £1100 (gross in 1436); £2263 (gross in 1455)
John, Lord Beaumont <i>Rochford Tower, Skirkbeck, Boston, Lincs.*</i>	magnate	£733 (tax in 1436)

Sir John Fastolf <i>Caister Castle, Norfolk*</i> <i>Hellesdon Hall, Norfolk</i> <i>Drayton Lodge, Norfolk*</i> Houses in Norwich, Great Yarmouth (<i>brick cellars*</i>), Cotton in Norfolk, Southwark in Surrey, Dedham in Essex (timber-framed)* North aisle of St Ben'et's Abbey, Ludham* (burial place) (<i>structural brick, flint walls</i>)	magnate	£600 (tax in 1436); £711 (min in 1436) £1061 (min in 1445)
Sir John Howard <i>Tendring Hall, Stoke-by-Nayland, Suffolk</i> <i>North Porch of Stoke-by-Nayland church*</i> (dated 1457)	gentry	£400 (min in 1422)
Sir John Tyrell <i>Herons Hall at East Horndon, Essex</i> (29 hearths) <i>Barn at Herons*</i> <i>All Saints church, East Horndon*</i> (burial place of later members of the family)	gentry	£396 (tax in 1436)
Sir Ralph Rochford <i>Rochford Hall, Essex</i>	gentry	£394 (tax in 1436)
Thomas, Lord Scales <i>Middleton Towers, Norfolk*</i>	peer	£376 (tax in 1436); £400 (gross in 1436)
Robert D'Arcy <i>Moot Hall, Maldon, Essex</i>	gentry	£366 (tax in 1436)
Lewis Johan <i>Old Thorndon Hall, West Horndon, Essex</i> (72 hearths for extended house)	gentry	£350 (tax in 1436)
Sir John Montgomery <i>Faulkebourne Hall, Essex*</i> (12 hearths)	gentry	£310 (tax in 1436 plus wife's income, £233 (tax in 1436)
Sir William Oldhall (d. 1460) <i>Hunsdon Tower, Herts.,</i> (as York's chamberlain)	gentry	£215 (tax in 1436)

3. Builders with unknown incomes Men who built between 1430s and early 1460s

Name	Status	Brick Building Other Building
Richard Benyngton	gentry	<i>Hussey Tower, Boston, Lincs.*</i>
Sir Thoms Colt	gentry	<i>Nether Hall, Roydon, Essex*</i>
Sir John de Dandelyon	gentry	<i>Dent-de-Lyon, Margate, Kent*</i> Burial (brass) in Margate church
Baldwin Dutchman	gentry	<i>Halstead Hall, Stixwold, Lincs.</i>
Sir Roger Fiennes	magnate	<i>Knole, near Sevenoaks, Kent*</i>
Sir John Fiennes	magnate	<i>Hertsmontceaux Castle, Sussex*</i> <i>Chapel, Hertsmontceaux church*</i> (intended burial place)
Sir Thomas Hoo	gentry	<i>Luton Hoo, West Hyde, Luton, Beds.</i>
Sir Andrew Ogard	gentry	<i>Rye House, Hoddesdon, Herts.*</i> <i>Emneth Hall, Emneth, Norfolk</i>
Sir Thomas Sherborne	gentry	<i>Sherborne Hall, Norfolk*</i> Burial (brass) in Sherborne church
John, Lord Wenlock	magnate	<i>Somerles Castle, near Luton, Beds.*</i> Chapel, Luton church* (burial place: large screen monument)
Sir William Yelverton	gentry	<i>Rougham Hall, Rougham, Norfolk</i> Burial (brass) in Rougham church

Wenlock was a member of the middle ranking gentry of his county with lands in other counties, in his case his family's native Shropshire. He was Member of Parliament for Bedfordshire six times between 1433 and 1455-56, being Speaker of the House of Commons on the last occasion. He had been part of royal service since before 1422 and continued here in various different capacities until the 1460s. As Chamberlain to Margaret of Anjou, the wife of Henry VI, Wenlock laid the foundation stone of the brick-built Queens' College, Cambridge, in 1448, the year in which he began Someries Castle. In the 1460s, when an adherent to the cause of Edward IV, the new Yorkist king, Wenlock was Constable of Hertford Castle in 1465, another brick building. Having changed allegiance in the political disputes of 1460-61, Wenlock is rewarded with a peerage and becomes a Knight of the Garter, both in 1461. During the 1460s, Wenlock built as his burial place a large chapel east of the north transept of Luton parish church with an elaborate double tomb between it and the chancel for himself and his first wife. Documentary evidence records stained glass showing Wenlock wearing the Yorkist collar of suns and roses.

THE INCOMES OF THE PATRONS

As noted above, it is possible to examine the level of the incomes of those who built in brick in the early fifteenth century. The period from 1413 to 1461 has almost at its mid point the year 1436 when an income tax was levied in England on all persons with an income from lands or wages of over £5 per annum (Gray, 1934). The tax was graduated. Those with an income of between £5 and £100 paid at 6 *d.* in the pound; those with an income of over £100 but below £400 paid at 6 *d.* in the pound on the first £100 but at 8 *d.* in the pound on the remaining sum. Those with incomes above £400 paid at 2 *s.* in the pound on their total income.

The act provided that persons "of the estate of Baron or Baroness and of every estate above" should render assessment of their income before "the Chancellor and Treasurer". This roll survives and was published by H.L. Gray in 1934, together with the surviving rolls for London, Middlesex, Essex, Hertfordshire, Cambridgeshire, Huntingdonshire, Lincolnshire, Derbyshire, Warwickshire. There are some unpublished rolls. There is also a roll with county totals and a breakdown of the money paid by level of tax payer. This may contain snippets of supplementary information: Sir John Fastolf is named as the only man in Norfolk to pay at the highest rate (Gray, 1934).

The income tax does not give a fully accurate picture. If a man paid out annuities, these were claimable against his tax return. Thus Thomas, Lord Scales of Middleton Tower, Norfolk, paid annuities to four men to the value of £24 per annum, hence reducing his taxable income from £400 to £376 and his income tax liability to £11 14*s.* 0*d.* from £40 0*s.* 0*d.* (Pugh, 1972).

A list in descending order of incomes of those who paid the income tax of 1436 has been correlated with other published data from valors of magnate estates and chance modern references. This longer list of incomes has been compared with known, even if on occasion totally demolished, brick houses and for non-brick builders with buildings in stone. The results of this, but only for those who built in brick, are summarised in Table 2.

Thus men like William Lord Lovell who built part of Minster Lovell Hall, Oxon., and rebuilt the adjacent church and Walter Lord Hungerford whose building included Farleigh Hungerford Castle and St Leonard's church there are not listed. Similarly, those about whom doubts persist as to whether the person in the tax record is the same man or his son or grandson who built in brick have been excluded from the list in table 2. Equally, a demolished building may have had brick in the fabric, as at Ampthill Castle, Beds., whether the use of brick is due to the original builder, John Cornwall, Baron Fanhope, or whether this is the result of repairs for a later owner, King Henry VIII, in the 1530s is not clear and Fanhope with a taxed income of £800 has been omitted from Table 2. The builders in stone are recorded in Table 3.

TABLE 3

Income	Total	Built in Brick	Built in Stone only	Not known to have built in Brick	Percent who built in Brick
King	2	2			100%
Above £1600	8	6	1	2	75%
£1000-£1599	9	2	1	7	22%
£800-£999	5	0	2 (?3)	5	0%
£600-£799	13	4	2	9	31%
£400-£599	11	1	2	10	9%
£300-£399	15	6	0	9	40%
£200-£299	15	1	0	14	7%
unknown income		13			

BRICK HOUSES 1411-1461

Relationship of brick house building by males to level of income
[Queens, Queens Dowager and Countesses Dowager are omitted]

There are at least thirteen men who built in brick before 1461 about whom we have no information concerning their income. These include Sir John Wenlock, who was sufficiently wealthy to make loans to Henry VI's government of £200 repaid in 1451 and of 1550 marks (£1033 6s 8d.) not repaid in 1456, 1457 or 1459 (Roskell, 1957). Non-payment of this debt may be the reason why there is a change of building quality at Someries Castle where the surviving fragment shows two distinct phases of activity (Smith, 1966; Smith, 1976). Wenlock was simply unable to pay the workmen and they left his service to work elsewhere.

THE SIZE OF HOUSES

As part of the earlier research of the present writer was on correlating the records of the hearth tax to known, if demolished, ruined, and habitable buildings, some results from this for those houses built before 1461 were included (Kennett, 1984).

The brick houses built in the fifteenth century for which a hearth tax record is available are not many but they are not dissimilar to stone houses built by men of similar standing. Both brick-built and stone-built houses have between seventeen and twenty-nine hearths, assuming that they have not been altered or extended. Surprisingly, Faulkebourne Hall, Essex, is less, only twelve hearths (Ryan, 1996).

CONCLUSIONS

Brick houses were built only by the very richest men. The lead in choosing brick as the visible building material for a new house came from the king. The first builder of a great brick house

was King Henry V at Richmond Palace, where construction was continued by his son, King Henry VI. The builders have strong social connections: as members of the king's court and between themselves. The builders could also build in stone, especially their burial places, but the known benefactions of the very richest men who built in brick are themselves brick-built.

The houses they built were large and far above the average size of the contemporary house. The houses reflect their status as members of what C. Wright Mills famously termed "the power elite" (Mills, 1956).

NOTE

1. Buildings not individually referenced can be traced through Lloyd, 1925, Wight, 1972, or via N. Pevsner *et al.*, *The Buildings of England: ...*, Harmondsworth: Penguin Books, 1952-1974; London: Penguin Books, 1974-2001; New Haven CT and London: Yale University Press, 2002 onwards. One or two buildings are not recorded in published sources.

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Contribution Requested

In connection with full publication of the 2005 AVISTA sessions at the 40th International Congress on Medieval Studies, the organisers are looking for an article on medieval use of mortar. If any member would like to research and write such an article, would they please contact David Kennett who will put them in touch with Professor Richard Sundt.

If a member, his/herself, feels unable to write on this topic but could suggest another person, not necessarily a member of the society, who might be approached to write an article on medieval mortar again would they contact David Kennett. (address, telephone, e-mail on the inside front cover). Telephone or e-mail is probably the best way to get in touch.

Heritage Open Days, 2005

Should any member have visited an interesting brick building this September in the course of the Heritage Open Day on Saturday 10 September 2005 or London Open House on Saturday 17 September, they are invited to contribute a short account, with or without an illustration, for inclusion in a future issue of *BBS Information*.

Cakemore Blue Bricks, Trademarks and Advertisements, and the Building of St Pancras (Somers Town) Goods Station

Alan Cox

In his splendid and highly informative article on the St Pancras (Somers Town) Goods Station, in the London Borough of Camden, and its bricks,¹ Terence Smith illustrates a blue engineering brick with a monogram stamped in the frog (fig. 1). He suggests that the monogram is 'BBC' with the second 'B' reversed and therefore conjectures that the brick may have been made by the Butterley Brick Company in Derbyshire, who had earlier supplied the ironwork for the passenger station at St Pancras.

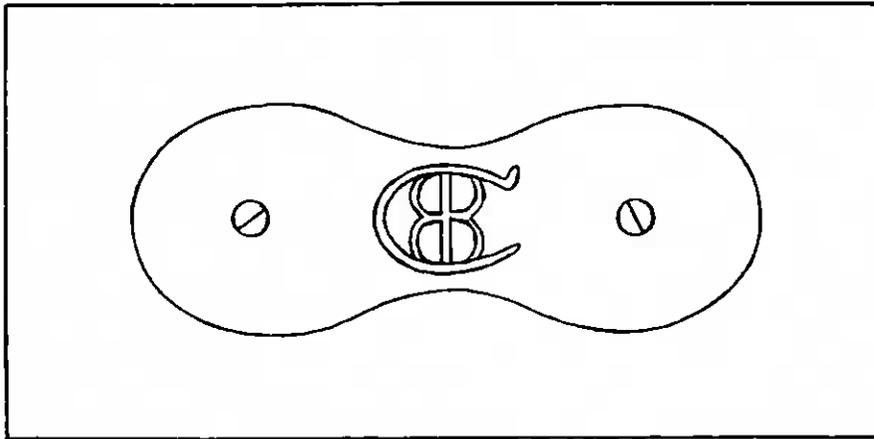


Fig. 1 Blue engineering brick with monogram 'CBB' with the second 'B' reversed.: measured sketch (scale $\frac{1}{2}$), reproduced from *BBS Information*, 96, page 24. Drawn by T.P. Smith.

However, the monogram represents the trademark of the Cakemore brickworks at Rowley Regis, Worcestershire, near Dudley. The monogram 'CBB' with the second 'B' reversed appears in their advertisements of 1892 both in *The Builder* for 26 March 1892 (fig. 2) and in the London Advertisements of Kelly's *Post Office Directory* for the same year (fig. 3). The firm's trademark is shown and is identical to that given in the sketch of the blue brick from the St Pancras (Somers Town) Goods Station.

It is therefore reasonable to conclude that the blue brick is a product of the Cakemore Blue Brick Company, later the South Staffordshire Blue Brick Company. It would have been the former at the time of the building of the St Pancras (Somers Town) Goods Station, which was built between 1883 and 1887.

The firm that operated the works went through a variety of names. In 1880, it was the Cakemore Brickworks and Colliery Company.² Seven years later, in 1887, the firm had become the Cakemore Blue-Brick Company (fig. 4),³ but in 1892, the firm is called the South Staffordshire Blue Brick Company Ltd., which described itself as 'Manufacturers of the Celebrated "Cakemore" Brand of Blue Bricks' (fig. 2).⁴ Apart from its works in the west Midlands, the firm maintained an office in London at Royal Bank Buildings, 123 Bishopsgate Street Within, in the City of London (fig. 2; fig. 3; fig. 4). It had two telegraphic addresses, the first, appropriately, "Blue-Bricks London" and for the works, initially "Cakemore, Rowley Regis"

but later "Cakemore, Blackheath, Staffordshire".

The advertisement in Kelly's *Post Office Directory for London for 1892* (fig. 4) also goes on at some length about this mark:

Buyers should be careful — when ordering SOUTH STAFFORDSHIRE "BLUE BRICKS" — to see that they get the "CAKEMORE" brand, as that brand of Blue goods is UNDOUBTEDLY THE BEST: in fact, finding that other Bricks - not blued right through, like those made at the Cakemore works, and inferior in other respects - have been put on the market with a "frog" in them similar to that so long used by the Company, the South Staffordshire Company have now registered as its "trade-mark" the above device, which "trade-mark" will be found in the centre of the "frog" on all their pressed bricks, paving etc.

SOUTH STAFFORDSHIRE BLUE BRICK CO., LIMITED.
MANUFACTURERS OF THE
Celebrated "CAKEMORE"  Brand of BLUE BRICKS.
REGISTERED TRADE MARK.
LONDON OFFICE: 123, BISHOPSGATE STREET WITHIN, E.C.
Manufactory: Cakemore Works, Rowley-Regis, near Dudley, South Staffordshire.

Best Quality Blue Bricks, Plinths, Tiles, and Quarries; Pavings and Copings; also Channels, Kerbs, Gutterings, Street and Stable Pavings; Steps, Mangers for Stables, Garden Tiles, Ridges, and Copings; Window-Sills, String-Courses and Cornices; Fenders, Kitchen Sinks and Gratings; Air Bricks, Pillar Caps, &c. &c.

THE "CAKEMORE" BLUE WARES,
Being TOTALLY IMPERVIOUS TO DAMP OR ACIDS, and of ENORMOUS RESISTING STRENGTH (in fact, double that of granite), are literally IMPERISHABLE and INDESTRUCTIBLE, and can be made any desired Size, Pattern, or Description, and thoroughly Vitrified throughout.

BRINDLED BRICKS AND RED BRICKS, QUARRIES, TILES, AND OTHER SORTS OF RED STUFF OF ALL SIZES AND PATTERNS.

Fig. 2 Advertisement for the South Staffordshire Blue Brick Co Limited from *The Builder* for 26 March 1892, clearly showing the monogram 'CBB' with the second 'B' reversed.

Both in *Kelly's Directory* in 1887 (fig. 3) and in the advertisement in *The Builder* on 26 March 1892 (fig. 2), the company also claimed that

The "CAKEMORE BLUE WARES" being *TOTALLY IMPERVIOUS TO DAMP OR ACIDS* and of ENORMOUS RESISTING STRENGTH (in fact, double that of granite) are literally IMPERISHABLE and INDESTRUCTIBLE, and can be made of any desired size, pattern or description, and *THOROUGHLY VITRIFIED* throughout.

That Cakemore blue bricks were undoubtedly very strong is proved by gradually increasing thrusting stress tests carried out on them in 1880. These tests showed that the bricks only started to crack slightly at a stress of 385.6 tons per square foot, that they cracked generally at 589.1 tons per square foot, and were finally crushed at 722.7 tons per square foot.⁶

The company made, in fact, a very wide range of products. Their advertisement for 1887 (fig. 3) records:

This Company manufactures - *of the best quality ever produced in the trade* - Blue

Bricks, Tiles, Quarries:- Pavings and Copings for Railway Platforms, Bridges and Tunnels, and for Canal and Dock Wharves and Sea Walls &c.; also Tramway-Blocks, Channels, Gutterings, Street and Stable Pavings, Mangers for Stables, Garden-edging tiles, Kerbs, Steps, Copings, Window-sills, String-courses, Cornices, Fenders, Kitchen-sinks, and Gratings, Air-bricks, Pillar-caps, &c., &c.

The "CAKEMORE BLUE-BRICK Compy. Limtd."

Registered Offices:—

ROYAL BANK BUILDINGS,
123, Bishopsgate Street Within, London.

Works:—

ROWLEY REGIS, near DUDLEY,
South Staffordshire.

This Company manufactures—*of the best quality ever produced in the trade*—Blue Bricks, Tiles, Quarries:—Pavings and Copings for Railway Platforms, Bridges and Tunnels, and for Canal and Dock Wharves and Sea-Walls, &c.; also Tramway-Blocks, Channels, Gutterings, Street and Stable Pavings, Mangers for Stables, Garden-edging tiles, Kerbs, Steps, Copings, Window-sills, String-courses, Cornices, Fenders, Kitchen-sinks, and Gratings, Air-bricks, Pillar-caps, &c., &c.

The "CAKEMORE" BLUE WARES being *TOTALLY IMPERVIOUS TO DAMP OR ACIDS*, and of *ENORMOUS RESISTING STRENGTH* (in fact, double that of granite), are literally *IMPERISHABLE* and *INDESTRUCTIBLE*, and can be made of any desired size, pattern or description, and *THOROUGHLY VITRIFIED* throughout.

All orders executed promptly, even to the extent of millions; the works being now in the course of extension to an out-turn capacity of 400,000 a week *all the year through*, not merely in summer.

Buyers should be careful, when ordering South Staffordshire "Blue Bricks," to see that they get the "CAKEMORE" Brand, as their BLUE goods are undoubtedly the best.

Telegraphic Addresses:

[133]

"Blue-Bricks, London."

Works:—"Cakemore, Rowley-Regis."

Fig. 3 Advertisement for the Cakemore Blue-Brick Company in the London Advertisements of Kelly's Post Office Directory for London for 1887.

A similar list appears in the advertisement in Kelly's Post Office Directory for London for 1892 (fig. 4). The same advertisement also states:

Altho' the SOUTH STAFFORDSHIRE BLUE BRICK CO'S great speciality is the manufacture of BLUE WARES, they also make Brindle Bricks, Red Bricks, Quarries, Tiles, and other sorts of Red stuff of all sizes and patterns, and of unexceptional quality.

This is repeated in the advertisement in *The Builder* for 26 March 1892 (fig. 2).

Fig. 4 (opposite) Advertisement for the South Staffordshire Blue Brick Co. Ltd., from the London Advertisements in Kelly's Post Office Directory for London for 1892.

THE

SOUTH STAFFORDSHIRE BLUE BRICK CO. LD.

LONDON REGISTERED OFFICES:

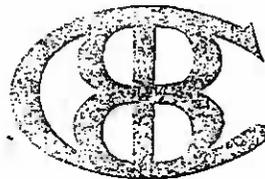
ROYAL BANK BUILDINGS, 123, Bishopsgate Street Within, E.C.

MANUFACTORY:

CAKEMORE BRICK WORKS, ROWLEY-REGIS, near DUDLEY.



STABLE-BRICK.



REGISTERED TRADE-MARK.



GARDEN-TILE.

The Company manufactures—OF THE BEST QUALITY EVER PRODUCED IN THE TRADE—BLUE Bricks, Plinths, Tiles, and Quarries; Pavings and Copings for Railway Platforms, for Bridges and Tunnels, for Canal and Dock Wharves, and for Sea Walls, etc.; also Channels, Kerbs, Gutterings, and Street and Stable Pavings; Steps, Manholes for Stables, Garden-edging Tiles, Ridges, and Copings; Window-Sills, String Courses and Cornices; Fenders, Kitchen-Sinks and Gratings; Air Bricks, Pillar-Caps, &c. &c.

THE "CAKEMORE" BLUE WARES,

Being ENTIRELY IMPREGNABLE TO DAMP OR ACIDS, and of ENDORMOUS RESISTING STRENGTH (in fact double that of common), are literally IMPERISHABLE, and INDESTRUCTIBLE, and can be made OF ANY DESIRED SIZE, PATTERN, OR DESCRIPTION, and THOROUGHLY VITRIFIED THROUGHOUT.

THE MATERIAL IS ALSO ADMIRABLY ADAPTED FOR BUILDING

STRONG ROOMS AND SAFES,

Being far more impregnable to burglars' tools than either STEEL or IRON PLATES.

All orders executed promptly, even to the extent of millions.

ALTHOUGH SOUTH STAFFORDSHIRE BLUE BRICK CO.'S great speciality is the manufacture of BLUE WARES, they also make Brindle Bricks, and Red Bricks, Quarries, Tiles, and other sorts of Red stuff of all sizes and patterns, and of unexceptional quality.

Buyers should be careful—when ordering South Staffordshire "Blue Bricks"—to see that they get the "CAKEMORE" brand, as that brand of Blue goods is UNDOUBTEDLY THE BEST: in fact, finding that other Bricks—not blued right through, like those made at the Cakemore Works, and inferior in other respects—have been put into the market with a "frog" in them similar to that so long used by the Company, the South Staffordshire Company has now registered as its "trade-mark" the above device, which "trade-mark" will be found in the centre of the "frog" on all their *pressed* bricks, pavings, &c.

Telegraphic } London Registered Offices - "BLUE BRICKS, LONDON."
Addresses } Manufacturing Works - "CAKEMORE, BLACKHEATH, STAFFORDSHIRE."

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APPENDIX

Moving the Bricks to London

Terence Paul Smith

The recognition of the monogram and thus of the source of these bricks - for which I am most grateful to Alan Cox - confirms F.S. Williams' contemporary statement that the engineering blue bricks for the St Pancras Goods Station were 'Staffordshire blue bricks'.⁷ But how did they reach the St Pancras Goods Station site? The station for Rowley Regis, where the Cakemore Blue-Brick Company had its works, was Rowley Regis & Blackheath (now Rowley Regis), which lay not on a Midland track but on a Great Western line; indeed it is still served by passenger trains from Snow Hill, formerly the Birmingham station of the Great Western Railway. The latter's lines connected with the Midland's at several points, most conveniently, perhaps, at Wolverhampton. From there to St Pancras there were several routes, but all were circuitous, and the most direct involved running for some 11 miles (18 km) on track owned by the London and North Western Railway between South Leicester Junction and Glen Parva, Leics.⁸ Alternatively, the bricks may have been carried entirely on Great Western track direct to the goods station at London Paddington and thence along the Paddington Canal and the Regent's Canal. The bricks could be unloaded from the canal just north of the St Pancras Goods Station.

It is difficult to adjudicate between these two possibilities. But the former had the advantage of using railway transport only, most of it relatively cheap because involving the Midland's own lines: the bricks, moreover, could be carried direct to the St Pancras Goods Station site. The alternative route, though more direct, involved two transshipments - one at either end of the stretch of the Paddington/Regent's Canal - and a short carriage by road to the St Pancras Goods Station site. Moreover, transport costs would have to be paid for the entire journey, increasing the cost of the bricks. It would be possible to transport the bricks entirely on the canal system, but it seems highly unlikely that a railway company would have followed this course.⁹

Notes and References

1. T.P. Smith, 'The St Pancras (Somers Town) Goods Station and its Bricks', *BBS Information*. 96, April 2005, 21-26.
2. *The Builder*, 3 July 1880, page 27.
3. Advertisement in *Kelly's Post Office Directory for London*, 1887, London Advertisements, page 125.
4. *The Builder*, 26 March 1892, page xxix.
5. *Kelly's Post Office Directory for London*, 1892, London Advertisements, page 94.
6. *The Builder*, 3 July 1880, page 27.
7. F.S. Williams, *Williams' Midland Railway: its Rise and Progress: a Narrative of Modern Enterprise*, 7th edn, 1888, re-issued: Newton Abbot: David & Charles, 1968, p. 468.
8. W.P. Conolly, *British Railway Pre-Grouping Atlas and Gazetteer*, 5th edn, Shepperton: Ian Allen Publishing, 1998, pp. 13, 15-16, 39.
9. Note submitted 19 May 2005; T.P. Smith's appendix submitted 1 June 2005.

Sources of Bricks used in Building the Great Central Railway

Alan Cox

One of the late Martin Hammond's final contributions to *British Brick Society Information* was his article on 'Brickwork of the Great Central Railway'.¹ It is possible to point to sources for the bricks used in building the last major railway in England other than those mentioned by Martin Hammond.

Referring to the imminent construction of the Great Central Railway's new line in 1894, *The British Clayworker* states:

Altogether orders for some eighty millions of blue bricks and facings have been placed in Staffordshire and Warwickshire.²

This, of course, is compatible with Martin Hammond's belief that most of the blue bricks came from the Nuneaton, Warwickshire, and Tamworth, Staffordshire, areas. However, the same piece in *The British Clayworker* suggests that quite a number of yards across Staffordshire received "large orders" to supply blue bricks for the Great Central. It specifically mentions that P. & S. Wood of West Bromwich had been asked to supply 10 million blues and brindles for the project, while other Staffordshire firms had been "equally fortunate". Another "equally fortunate" firm was that of Wood & Ivery Ltd, who had works at West Bromwich and Oldbury and who received an order for 10 million bricks for the Great Central Railway in 1894 or 1895.³

As to the common bricks, these were obtained for the Great Central from various more local sources along the line. One of the contractors, Walter Scott & Company, established a large brickmaking plant at Great Covert Wood, near Sulgrave, Northamptonshire, which covered seven acres and where 12 million bricks were made in a period of 36 months during the construction of the line.⁴ In Leicestershire, on the south-western outskirts of Leicester, a branch line was constructed for another contractor from Whetstone to Narborough brickworks.⁵

Notes and References

1. M. Hammond, 'Brickwork of the Great Central Railway', *BBS Information*, 96, April 2005, pages 26-28.

2. *The British Clayworker*, vol. III, no. 32, November 1894, p. 162. Details in the remainder of the paragraph derive from this short article.

3. *The British Clayworker*, vol. IV, no. 37,

April 1895, p. 271.

4. L.T.C. Rolt, *The Making of a Railway: The Building of the Great Central Railway*, (Stroud: Sutton Publishing Ltd., paperback edn., 1996), page 29 with illustration of the brickworks near Sulgrave page 30.

5. Rolt, 1996, illustration, page 30.

Book Review

Andrew Connolly, *Life in the Victorian brickyards of Flintshire and Denbighshire*, Llanrwst, Wales: Gwasg Gwalch, 2003, 286 pages, 8 pages of coloured plates, numerous black and white photographs and line drawings.

ISBN 0-86381-892-7, price £15-00, € 24-30.

Available from Gwasg Carreg Gwalch, 12 Lard yr Orsaf, Llanrwst, Wales LL26 0EH or Buckland Books, 18 Woodlands Road, Littlehampton, West Sussex

Sometime before June 1866, the Chancellor of the Exchequer, William Ewart Gladstone had asserted that "100,000 tons of earthenware goods could be made out of a single acre of Buckley clay". Buckley lies halfway between Connah's Quay and Wrexham, and before brickmaking was established there had a high reputation for the raw material for ceramics. Brick clay was also an economically by-product in an area with many collieries.

This book falls into two parts: pages 11 to 84 comprise an introduction to brickmaking in Clwyd, the counties of Denbighshire and Flintshire in north-east Wales. The remaining two hundred pages are a gazetteer of the brickyards of these two counties. The latter brings out the close connection between brickyards and collieries, something found also in Lancashire.

The introductory section given the overall title, 'An Introduction to Brickmaking', has sections on 'The Geology of Clay', 'The Development of the Brickmaking Industry', 'Manufacturing Processes', 'Other Aspects of Brickworks Life', 'Pay and Employment Conditions', and 'The Transport of Materials'. On the first page of 'The Geology of Clay', the author has a short table contrasting the substantial quantities of brickearth dug out in Denbighshire and Flintshire in 1895-96 in contrast to the tonnages produced in Gwynedd, north-west Wales. Tiny Flintshire produced 116,526 tons and the larger Denbighshire just over 180,000 tons in contrast to one-fifth of that tonnage in the two mainland counties to the west. The figures leave us in no doubt as to the importance of the industry to local building with additionally, because of the terracotta industry of Ruabon and Wrexham, its wider importance to the British economy.

Throughout the book are quotations, printed in italics, derived from a wide range of sources. including many from *The Wrexham Advertiser* and *The Chester Chronicle* as well as a good number of others from issues of *The British Clayworker*. It makes for an attractive read.

Throughout the introduction, one is struck by the strong evidence which Andrew Connolly compiles for the hard life which brickmakers and other brickyard workers led in the nineteenth and early twentieth centuries. The pay was poor, undoubtedly a factor in the decline of small and medium-sized brickyards. The pay was also on piece rates, thus interruptions to the supply of clay reduced workmen's pay. There were frequent accidents and injuries. In a five-year period, Dr William Jones of the Ruabon Hospital treated twenty serious cases of industrial injury, fifteen requiring amputation. There were brick press accidents: seventeen in 1899 at Ruabon alone. Even as late as 1965, deaths at brickyards were recorded: an unfortunate workman died through dust inhalation when a colleague re-started the elevator he had gone to clean.

Child labour, prevalent today in brickfields in Bangladesh, for example, was frequently employed in the north Wales brickyards. In 1900, twelve was regarded as "rather early" to send boys underground in coal mining but many families needed the wages of the eldest child(ren). From English brickyards, Andrew Connolly reproduces two accounts of child labour in brickfields, one of 1871 and the other looking back on the 1850s. That of 1871 notes how ineffective legislation was in controlling child labour in brickworks because it applied only to establishments employing over fifty persons. Most brickfields had far smaller workforces than

this. The 1861 census records two eight-year-old boys at work in the Ruabon district and a nine-year-old is noted a decade later. Children of twelve had been expected to work a fifteen-hour day in 1843 but hours and under-age working were restricted by the Factories and Workshops Act operative from 1 January 1879. Boys could work at an early age provided that they had a requisite level of literacy and numeracy. Six years later, Ernest Harry Kennett left school at twelve for a seafaring career which took him round Cape Horn at least four times, including twice on the same voyage when he signed on in Montevideo on a guano boat so as to get back to England: he was among the best-educated men this reviewer has ever met.

The section on 'The Transport of Materials' considers roads, railways and the Connah's Quay Docks, the latter a significant means of arranging bulk transport of bricks. In one week in October 1895, eight shiploads of bricks departed for six destinations: Fleetwood, Newquay and London in England; Point of Ayr and Bangor, along the Welsh coast; and Newry in Northern Ireland. Even in the 1930s, 55,000 tons of bricks were shipped from Connah's Quay.

The remaining brickyards found it difficult to recruit workers after 1945. In the new world of cleaner assembly line work coming into Wrexham after 1945, the brickyards were less attractive places to work and paid less, and less than coalmining. By 1951, many brickyard workers were from foreign lands. As in the brickworks around Bedford, Italian prisoners of war found work, initially as directed labour but then staying on after 1945. In north Wales, Irish labourers also worked in the brickworks. Two Poles were among the forty-nine workers made redundant from the Castle Works, Buckley, Flintshire, in 1957; the group also included twenty-seven Italians.

<h1>DENNIS, RUABON.</h1>				
P A N T	BUFF TERRA-COTTA, WHITE AND COLOURED GLAZED BRICKS, ENCAUSTIC, PLAIN, TESSELATED, & MAJOLICA TILES, BUFF FACING BRICKS, GLAZED SOCKET PIPES, ETC.	W O R K S	H A F O D	W O R K S
	RED AND PINK TERRA-COTTA RED PRESSED, WIRE CUT, & MOULDED BRICKS, BLUE VITRIFIED RIDGE & ROOFING TILES, FINIALS. TERMINALS, QUARRIES, ETC.			
ADDRESS ALL LETTERS—		TELEGRAMS—		
HENRY DENNIS, RUABON.		DENNIS, RUABON.		

Fig. 1 Advertisement for Dennis of Ruabon, terra cotta manufacturers, from *The Builder*, 26 March 1892.

The gazetteer, linked to three area maps gives a general account of each of 128 sites. Each written in continuous prose rather than tabulated as has been the case in several earlier county brickworks gazetteers. Again many entries are enlivened by quotations from Victorian newspapers. The method works very well and gives a good feel of the history of each works and problems encountered. Illustrations include many photographs of brickworks and their workers. Particularly useful are the seven pages of black-and-white and two pages of colour illustrations of brickmarks; the colour plates also include some individual brickmarks of sites from which other features are shown, for example a works calendar or a letterhead. In the account of the Connah's Quay brickworks of Joseph Prince and his family are quotations from letters to architects and collieries in 1901 suggesting that new machinery had been installed and

newspaper reports of young employees causing malicious damage to brickmaking machinery in 1961. That only a fraction of the available brick clay was ever used is shown by another report in *The Chester Chronicle* recording the depth of clay remaining: enough for more than a century.

The last and ante-penultimate entries in the gazetteer concern the Penybont Brickworks of James Coster Edwards and his Trefynant Brickworks respectively, with the main account of Mr Edwards' career in the former and beneficent activities given as part of the latter. J.C. Edwards is best-known for dragons, but this book includes a magnificent colour photograph of a terracotta horse's head on the 'Nags Head' at Rhos.

There are a number of small points which a second edition should bear in mind. The gazetteer has three local maps and a number of reproductions of detailed plans of areas with several kilns but the volume lacks an overall map of Clwyd. While roads and railways are marked, the county boundary is omitted. There is a group of Flintshire sites on Map 2, the Wrexham area, rather than on Map 1 which covers the majority of Flintshire. Map 3 covers the Ruabon area. There is no index, which means that the reader needs to know the locality or have frequent recourse to maps. The section on strikes and trade slumps points to the industrial expansion of the 1860s and 1870s not being sustained but recognition of the crash of 1873 would have set the suffering that cut-throat competition and the undercutting of prices and ultimately wage rates produced in a wider global context.

As an aside, because it is not the book's main focus, the beginnings of the brick industry in the two counties would repay further investigation. Using only local evidence, Andrew Connolly is right to point to "the mid-16th century" as the period when "the use of brick seems to have resurfaced" but in this respect north Wales is somewhat of a cultural backwater. Brick has been a not unusual choice of building materials among the richest men in eastern England for at least a century before the first brick houses were built in Wales. The associations of the first man to build a brick house in the area are significant. Sir Richard Clough was Sir Thomas Gresham's agent in Antwerp. Bach-y-graig, at Tremeirchon, Flintshire, was built in 1567-69 and Plas Clough, near Denbigh, at about the same time. Andrew Connolly is stronger in his assertions about the import of Dutch bricks to north Wales than was Edward Hubbard in *The Buildings of Wales: Clwyd*. Mr Connolly is undoubtedly right to affirm that Sir Richard's two houses led to the re-introduction of the brickmaking industry in north-east Wales. The Roman legionary tileries at Holt, Denbighshire, had flourished in the first and second centuries AD. The importing of bricks at Plas Clough and Bach-y-graig, while perhaps not in doubt, would repay further investigation.

This is a highly competent work which adds considerably to our knowledge of both brickmaking in general and the industry in north-east Wales in particular. It is highly recommended.

DAVID H. KENNETT

BRICK IN PRINT

Between Summer 2004 and Spring 2005, 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 usually twice in 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*. Web sites are also included. Unsigned contributions in this section are by the editor.

DAVID H. KENNETT

1. Roger Bowdler, 'Cobham Hall, Kent',
Country Life, 7 April 2005, pages 100-105.

Those who watched the first series of the BBC television series 'Restoration' will possibly remember the Darnley Mausoleum built in the 1780s for John Bligh, third Earl of Darnley. His successor as the fourth earl, another John Bligh, transformed the interiors of the family house at Cobham Hall, the principal subject of Roger Bowdler's article.

Cobham Hall, however, is a fascinating red brick house. The crosswing of the house was originally built in the early sixteenth century but the whole was extended with long red brick ranges in the 1580s and 1590s by William Brooke, the tenth Lord Cobham. It was unfinished at his death in 1597 and the Brooke family ceased to have a connection when the eleventh earl was imprisoned for treason in 1603 by the new king, James VI and I. The house was then given to the Duke of Lennox who elsewhere possibly continued to build a large brick house at Leighton Bromswold, Hunts., continuing the work of his father-in-law Sir Gervase Clifton. Lennox is known to have rebuilt the church tower at Leighton Bromswold in 1634 during the ministry of the priest-poet George Herbert.

The last Duke of Lennox preferred Kent. Having won the heart of Frances Stuart against his monarch's wishes, Lennox was deprived of his courtier's place by Charles II. Between 1661 and his death from drowning in 1672, he engaged Peter Mills, the City bricklayer, to remodel the central range. The result is a new front in the latest style to the central part of the open great court. Later owners, as already noted, concentrated on remodelling the interiors. In the early twenty-first century, the brickwork of Cobham Hall has been repointed and restored; the conservation bricklayer was Emma Simpson, (see 'How it was dung!', *The Guardian* G2, 22 February 2003).

Cobham Hall is now a girls school; it is open on certain days during the school holidays. The visits co-ordinator of the British Brick Society is making enquiries about a possible visit to this remarkable Elizabethan brick house.

2. Adrian Fisher, *Mazes and Labyrinths*,
Princes Risborough: Shire Publications, 2004; 56 pages, numerous unnumbered
illustrations in black-and-white and colour.
ISBN 0-7478-0561-X; price £5.99 paperback.

To most of us the word 'maze' probably conjures up images of hedge constructions like that at Hampton Court Palace. But as this well illustrated short history of (mostly British) mazes makes clear, they - and the related labyrinths - take many different forms, some temporary, like maize mazes in cornfields (a concept now familiar to listeners to *The Archers*), others more permanent. The latter include various brick structures. Some involve brick-built water channels, like the Beatles Maze in Liverpool, with a large Yellow Submarine at its centre (pp. 23, 33-34; this maze is no longer extant although the submarine has been preserved) or that in Victoria Park, Bristol (p. 35). Other mazes adapt the traditional turf maze type by providing a brick path, as in several instances, including the Archbishop's Maze at Greys Court, Oxon., (pp. 39-40, 55). More common are pavement mazes (strictly *labyrinths*) - flat patterns laid out in coloured bricks. The book illustrates nine examples of such mazes (pp. 36-39), including the Tudor Rose maze at Kentwell Hall, Suffolk, which the British Brick Society visited in April 2002. This and many of the other recent examples referred to are the work of Adrian Fisher himself, who has created numerous brick and other mazes throughout this country and abroad. This book - which replaces Shire Album no. 264, *Mazes* by Adrian Fisher and Diana Kingham (1991) - includes a list of mazes open to the public, lists of books and of relevant organisations, and an index.

T.P. SMITH

3. John A.A. Goodall, 'Henry VI's Court and the Construction of Eton College', in Sarah Brown (editor), *Windsor: Medieval Archaeology, Art and Architecture of the Thames Valley*, (being *The British Archaeological Association Conference Transactions*, XXV, 2002), pages 247-263.

John Goodall discusses the early history and architecture of the Royal College of St Mary at Eton. The first section presents a concise narrative of the architectural and institutional development of Eton College from its foundation in 1440 to c.1520. The account challenges some established views about the college's development in the 1440s. Institutional affinities with other contemporary religious foundations are described together with a reconsideration of the remarkable series of architectural plans drawn up for the buildings. The second section of the article is an analysis of the brick buildings and attempts to place these in their architectural context. Using previously unpublished material from the fifteenth-century accounts, and the evidence from the buildings themselves, the paper argues that Eton profoundly influenced the subsequent tradition of brick architecture in England. In particular it shows how the Eton project may have stimulated the rapid development of diaper decoration and cusplless window tracery: two stock-in-trade features of brick architecture into the Tudor period. The importance of William de la Pole and William Wayneflete as architectural patrons is briefly discussed.

JOHN GOODALL (author's summary)

4. Jonathan Goodwin, 'Piecing Together the Potteries', *British Archaeology*, 82, May/June 2005, pages 46-51.

In this article, Jonathan Goodwin, an archaeologist with Stoke-on-Trent Archaeology, outlines recent archaeological investigations within the 'Six Towns' which make up The Potteries, and the City of Stoke-on-Trent. It is largely concerned with the *ovens* - the North Staffordshire term for high temperature (1000°C+) kilns - large numbers of which have disappeared over recent decades. The ovens were brick-built, using buff-coloured refractory bricks (firebricks) for those parts subjected to the fiercest heat. The bricks were often stamped with the name of the manufacturer or factory, and so far more than ten manufacturers have been identified, most based in Stourbridge, Worcs., 40 miles to the south and an important centre of firebrick manufacture. The names are not given in this brief article, although one brick is illustrated (p.50) bearing the stamp, in bold sans serif capitals, **HARPER & MOORES / STOURBRIDGE**. (As often, one may add, Harper & Moores were primarily coalmine operators, with firebrick manufacture as a subsidiary concern, utilising the fireclay which occurs within the coal seams: their mine was at Lower Delph, Cradley.) Factory accounts 'suggest that firms kept bricks in stock' for repairs, 'although it is unclear whether these refer to locally sourced red bricks or [to] imported refractory examples' (p.50). There are also several photographs of the oven structures. In some cases it appears that an earlier up-draught oven was subsequently converted to a more efficient down-draught oven. On this matter, as on some others, the article usefully demonstrates how far archaeology can provide more than just illustration of knowledge garnered from elsewhere, even with respect to an industry as recent as one of the nineteenth and twentieth centuries: rather, it can augment and even correct the picture obtained from other sources.

T.P. SMITH

5. Louna Lahti, *Alvar Aalto, 1898-1976: Paradise for the Man in the Street*, English edition. Köln, London etc.: Taschen, 2004; 96 pages, numerous unnumbered illustrations in black-and-white and colour.
ISBN 3-8228-3527-7, price £4-99, paperback.

(Hugo) Alvar (Henrik) Aalto (1898-1976) is one of the best known, and arguably one of the most approachable, of modern architects. He was friendly with other eminent architects and his own work (which embraced many aspects of design) is of international significance, his buildings appearing not only in his native Finland but also in various other European countries and in the U.S.A. This small book is one of Taschen's series on individual architects and is beautifully illustrated throughout. An introduction outlines Aalto's life and architectural development. He began with a classical style but soon became an enthusiastic exponent of the Modern Movement. But he was never doctrinaire. After World War II, he made much use of traditional materials, notably timber and red brick. The book examines nineteen of his buildings. Readers with a primary interest in brick are likely to find particular pleasure in the following in Finland: the cellulose factory at Sunila, Kotka; the town hall at Säynätsalo, Jyväskylä; the Institute of Technology at Espoo; the Pedagogical University of Jyväskylä; the experimental summer house at Muuratsalo, which combines patches of brickwork using different brick types; the House of Culture at Sturenkatu, Helsinki, for which Aalto designed some special wedge-shaped bricks. Elsewhere, the Baker House students' accommodation at MIT, Cambridge, Mass., U.S.A., effectively uses overfired and distorted bricks in its exterior walls; and at the Maison Carré at Bazoches-sur-Guyonne, France, the brick is whitewashed. There is a chronological list, a map of the European buildings discussed, and a bibliography. The translated text shows several infelicities in the English and would have benefited from scrutiny by a native speaker. But the quality of the illustrations is an ample compensation and at only £4-99 the book is remarkable value.

TERENCE PAUL SMITH

6. Munidasa P. Ranaweera, 'Ancient Stupas in Sri Lanka - Largest Brick Structures in the World', *Construction History Society Newsletter*, 70, December 2004, pages 1-7.

Buddhism came to Sri Lanka (formerly Ceylon) from India in the third century BCE, and with it came the distinctive structures known as *stupas*. These large domical and spired buildings are not tombs but memorials, either housing relics of the Buddha or marking sacred locations associated with the religion. In this absorbing article, Prof. Ranaweera discusses the Sri Lankan stupas, the principal building material of which is fired brick. Bricks of different sizes are used, the larger for the basal rings and dome and the smaller for the spire. The tallest stupa, at Ruwanveli, is 91.4 m (300 ft) tall - the largest in the entire Buddhist world. It was once surpassed by two others in Sri Lanka, that at Jetavana reaching a full 121.9 m (400 ft), although this has now lost part of its spire. Even so, its "volume of 233,00 cubic metres [8,200,000 feet³] still makes it the largest brick structure in the world".

Prof. Ranaweera charts the development of distinctive Sri Lankan forms from their Indian prototypes and details the various shapes which occur. He notes that laboratory tests have shown that the ancient bricks are stronger than modern Sri Lankan factory-made bricks, possibly because of the smaller sand content in the latter. The brickwork itself is stronger because of the thin mortar slurry used in place of the thicker mortar used today. The article also considers the stresses within the structures.

A section on construction emphasises the care with which the stupas were built: a fascinating detail is the use of elephants, their feet bound with leather, to stamp down the foundation layers of crushed stones. Brickbats and earth were sometimes used for the inner portions of the domes. The great stupa at Jetavana took 27 years to build and "required a total of around 62 million bricks".

Over the centuries, the stupas have suffered serious decay. The Central Cultural Fund, set up in 1980, is responsible for them and faces a massive task, as well as having to decide - as

with ruined monuments everywhere - between complete reconstruction and conservation of what remains. The latter is now the favoured course. (Since Prof. Ranaweera's article was written, other priorities have, of course, arisen within Sri Lanka, following the tsunami of 26 December 2004).

The article is fully illustrated with drawings and photographs and there is a bibliography of works in English.

TERENCE PAUL SMITH

7. Harland Walshaw, 'Earth to Earth',
Resurgence, no. 230, May/June 2005, pages 26-28.

This article is mainly devoted to the late-twentieth-century revival of cob construction in Devon by architect Kevin McCabe. The author includes comment on unfired, sun-dried earth bricks, a building material also known as *adobe*. Adobe is commonly used in the pueblos of North America, but is also known from around the Mediterranean and in the Middle East. Illustrated is the Imam's Palace of Rocks at Dar al-Hajar, in Oman. Built on the top of a series of rocks, the palace is constructed from sun-dried earthen bricks and cob.

8. Giles Worsley, 'Sudbury Hall, Derbyshire',
Country Life, 17 June 2004, pages 138-143.

Sudbury Hall presents a puzzle: an apparently Jacobean exterior with diapered brickwork to a symmetrical façade: yet this is a house with a hipped roof and an interior which is clearly of the 1660s despite incorporating a long gallery.

The builder was a young squire, George Vernon, sufficiently in touch with up-to-date fashion to have his portrait painted by the stylish London painter, John Michael Wright, and sufficiently well-connected to be able in 1678 to commission Grinling Gibbons to produce carvings for the drawing room. Thus, not a member of the backwoods gentry who knew little of the new world after the Restoration, he could have built in the style of Sir Roger Pratt, as for example at Coleshill, Berkshire.

Giles Worsley, persuasively, suggests that George Vernon deliberately chose to give his house both old and new aspects. The Jacobean front, with its mullioned and transomed windows echoing the work of the Smythsons, was deliberately intended to impress. To hark back is to proclaim an ancient lineage in the area. Vernon was returning to Derbyshire, the family's traditional county; his anti-Royalist father had lived in Cheshire.

Parallels for deliberately using older forms in England are the rebuilding in the 1660s of bishops' palaces, as at Lambeth, following Civil War damage, and the building of the destroyed Hampstead Marshall, Berkshire, by Sir Balthazar Gerbier for the first Earl of Craven. But in the Netherlands, the idea of expressing ancient lineage through a new house designed in an older style rather than a newly-fashionable one is more common.

Worsley omits comment on the hearth tax record for Sudbury Hall. At 19 hearths, the house was still in construction when the record was made in 1664. It would make an ideal place to include in a Derbyshire visit by the society.

Brick for a Day

In Spring and early Summer 2005, the British Brick Society held several meetings. In May the society visited the Ibstock Brickworks at West Hoathly, Sussex, in the morning and Balcombe Viaduct and 'Standen' in the afternoon; in June the Annual General Meeting was held in Norfolk with an afternoon visit to East Barsham Manor and Great Snoring Rectory; in July there was a return midweek visit to Lambeth Palace. The visits of these meetings were arranged by David Kennett and the Annual General Meeting by Michael Hammett. The society's thanks are due to them for the work they put into making these meetings a success.

Reports on the July meeting at Lambeth Palace and the meeting in August when the society ventured to Scotland to visit the Errol Brick Company, Perthshire, will appear in the next issue of *British Brick Society Information*.

The unsigned accounts in this section of *British Brick Society Information* are by the society's editor.

DHK

THE IBSTOCK WORKS AT WEST HOATHLY, SUSSEX

Thirty members and guests of the British Brick Society were shown round the Ibstock Works at West Hoathly, Sussex, in three smaller groups by the works manager, Ray Austin, and two of his staff. The society wishes to express its appreciation to Mr Austin and his colleagues for their time and a most interesting visit. It is hoped to include a longer account of the visit to this brickworks in a future issue of *British Brick Society Information*.

BALCOMBE VIADUCT, SUSSEX

Half a lifetime ago, for two and a half years in the early 1970s to be exact, on average about once a month, a train would take me from London Victoria to Worthing. I knew little of the track or the terrain it crossed. The Sussex Ouse at Balcombe and the magnificent viaduct passed me by as rarely did I glance out of the window. I had heard of the viaduct all those years ago, but although I had crossed it many times, before 14 May 2005, I had never actually seen it. Whilst I had seen photographs of the piers arched above and below, I never seen the brickwork.

From a minor road, this wonder of Victorian engineering, this masterpiece of brickmaking, this tribute to bricklaying skills is easily accessible. Designed by David Mocatta and built for the London, Brighton and South Coast Railway between 1838 and 1842, with thirty-seven arched brick piers, the Balcombe Viaduct is 1475 feet (450 metres) in length. To construct the viaduct took 11 million bricks. The twin piers are arched both at the top and the bottom, thus deflecting the load to the verticals but at the base redistributing it to the maximum ground area.

This technique for ensuring stability is unusual. The Valebridge Viaduct, on the same railway line but south of Haywards Heath, has two arches per upright but is much lower than the Balcombe Viaduct.

The Balcombe Viaduct is one of the longest brick-built railway viaducts in England. For comparison, the Wharncliffe Viaduct, of 1835-38, taking the Great Western Railway over the River Brent, is 551 feet (168 metres) long. The celebrated Stockport Viaduct of the London and North Western Railway has twenty-six arches. The Digswell Viaduct in Hertfordshire, built in

1848-50 to cross the flood plain of the River Hiz at Welwyn, has forty-one arches. Fourteen million bricks were used in its construction. All of these differ from the Balcombe Viaduct in having straightforward solid brick piers.

The quantity of bricks involved in the construction of these great viaducts, at a time when the Brick Tax was still being levied, strongly suggests that the tax was fiscally neutral and not a serious impediment to brickmakers or their customers. The Brick Tax was obviously something which the railway companies factored into their construction budgets.

The Balcombe Viaduct and the Balcombe Tunnel used bricks from a variety of sources. Many were made on site from material excavated for the Balcombe Tunnel to the north of the village from which the viaduct takes its name, but many of these bricks and those made from clay dug from pits above the tunnel were used to line the tunnel. Some local brickmakers had the chance to supply bricks for the viaduct. Most of the bricks, however, were brought up the Ouse Navigation by barge to wharves close to the viaduct and then taken there by horse-drawn cart.

'STANDEN', EAST GRINSTEAD, SUSSEX

In February 2004, members of the British Brick Society paid a series of visits to Red House, Bexleyheath, designed by the architect Philip Webb (1831-1915). In 1859, Red House was the architect's first house. 'Standen', designed in 1891 and built during the next three years, is not quite the architect's last house in the country: that is 'Hurlands', Puttenham, Surrey, of 1897. One says "house in the country" rather than country house because so many of Webb's houses, including both Red House and Standen, are without the substantial landholding implied by the term "country house".

'Standen' was built for a successful London solicitor, James Samuel Beale and his wife, Margaret, as their weekend house which could become their principal residence once the solicitor retired from commercial practice: his clients included the Midland Railway. James Beale was the man who handled the parliamentary and commercial side of the construction of St Pancras, both the station and the hotel, the latter visited by the society in November 2001 and February 2002. The Beales had married in 1870 and over the next fifteen years produced seven children, all of whom lived to adulthood. Two daughters were unmarried, the younger of whom, Helen Beale, by a variant of Borough English (the form of unogeniture whereby the youngest son inherits the family property) lived there until her death in 1972. Helen Beale bequeathed the house to the National Trust, who open it and the accompanying grounds to the public.

'Standen' is a modest house, with only three principal reception rooms together with a small business room and two rooms for recreations, a billiard room and a conservatory, on the ground floor. Because the Beales had many children, the first floor had twelve bedrooms, four with dressing rooms: not all of the bedrooms are included in the rooms open to the public. On the ground floor, some servants' rooms were visible and there is a splendid kitchen.

Red House is red brick and reddish-brown clay tiles. 'Standen' has a wider palette of external materials. Philip Webb was a man true to materials and in the Sussex Weald he had many from which to choose. A good local stone, more than one yard for both bricks and tiles and even a small quarry within the house's own grounds all provided possibilities for the architect and his client to exploit.

The bricks were hand-made red Keymer and stock bricks from Horsham in pinks and greys. The architect preferred the latter, the client possibly the former, considering Horsham bricks as undistinguished. The principal area of brickwork is on the south-east corner (fig. 1) and the great stacks both use Keymer bricks for dressings but are largely of Horsham stocks.



Fig. 1 A portion of the east front of 'Standen'. This is the maximum use of brick on the exterior but the two left-hand windows of the first floor are set within a tile-hung portion of the wall. The big chimney stacks are brick but the water tower is rendered.

The other principal wall to use brick is the north, or entrance, front. The porch with the stair window above and the bay to the hall, inserted by Webb in 1898 to give space for a grand piano, are in local stone. Beside these are substantial areas of Horsham bricks with red Keymer bricks round the windows.

Other materials are more commonly associated with 'Standen'. The familiar image of the house is that captured in the 1896 watercolour by Arthur Melville of the south front. The ground floor is of local stone, the first floor is hung with red tiles, with above a row of five overhanging gables faced with oak boarding, designed to provide the south-facing bedrooms with shade. Brick is used here as recessed arches in the five-bay arcade of the conservatory. A similar recessed red brick arch greets one above the principal entrance. Where other materials, both tile-hanging and stone are prominent, red Keymer bricks were used as window surrounds.

The central tower, although with a belvedere, is essentially a tank tower: it punctures the skyline of the house and at ground level accentuates the right angle between the family wing and the ground floor service rooms. It is off-white roughcast, another local tradition.

'Standen': a select bibliography

Accounts Contemporary with use as a Family Home

- H. Ricardo, 'The House in the Country', *Magazine of Art*, **23**, pp.105-111.
L. Weaver, 'Standen', *Country Life*, **27**, 7 May 1910, pp. 666-672.
L. Weaver, (ed.), *The House and its Equipment*. London: Country Life, 1911.

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- O. Garnett, *Standen, West Sussex*, [guidebook], London: National Trust, 1993, revised 2003.
(with extended bibliography)
M. Girouard, 'Standen, Sussex: the home of Miss Helen Beale', *Country Life*, **147**, 26 February and 5 March 1970, pp.494-497 and 554-557.
M. Girouard, *The Victorian Country House*, New Haven and London: Yale University Press, 1971, pp.381-389, with photographs of the interior before acquisition by the National Trust.
S. Kirk, *Philip Webb Pioneer of Arts and Crafts Architecture*, Chichester: Wiley-Academy, 2005, pp.150-160.
(with extensive notes and bibliography).

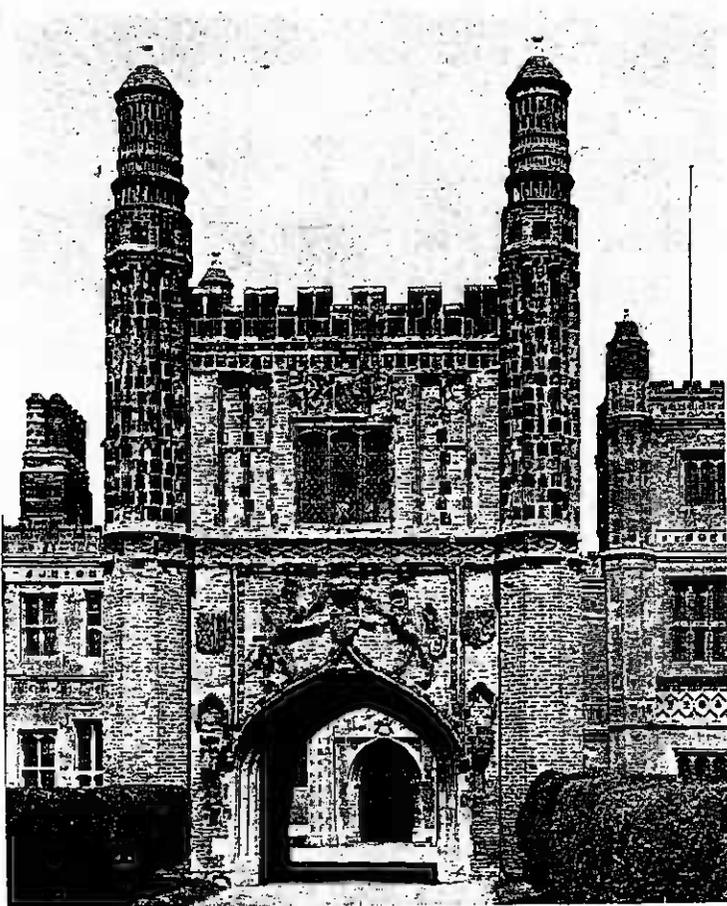


Fig. 2 East Barsham Manor, Norfolk: the gatehouse with arms of Henry VIII of after 1525.

EAST BARSHAM MANOR AND GREAT SNORING RECTORY, NORFOLK

The 2005 Annual General Meeting on Saturday 18 June was held (as in 2001) in the impressive hall of Thoresby College, King's Lynn. Following the AGM members were able to visit East Barsham Manor and the nearby Great Snoring Rectory, both of the early sixteenth century and both exhibiting exuberant brickwork and terracotta detailing.

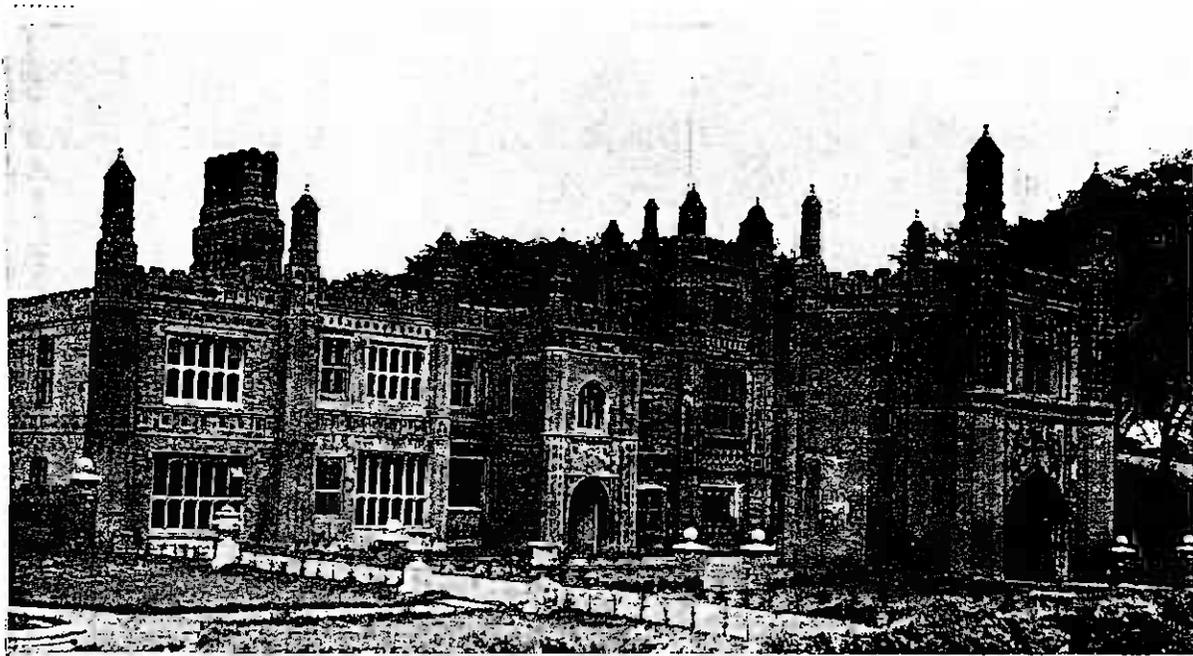


Fig. 3 East Barsham Manor, Norfolk: general view. Much has been rebuilt of the bays behind the left of the entrance bay.

East Barsham Manor - formerly known as Wolterton Manor - may be glimpsed only beyond its surrounding wall and trees, but our Visits Co-ordinator, David Kennett, had obtained permission from the owner Sir John Guinness, for members to enter the grounds and to inspect the exterior at close quarters. It was a most rewarding experience. What remains is a single east-west range with a central porch together with a free-standing gatehouse to the south (fig. 2 and fig. 3). It was built by Sir Henry Fermor and heraldic evidence allows a fairly precise dating for the gatehouse within a short period after 1527. The building (fig. 3) was intended to impress, and it certainly did this on our visit: the elaborate brickwork is an unmistakable announcement of the owner's wealth and status. Of particular interest are the moulded brick and terracotta panels used to create ornamental friezes across the façades, the decorative chimneys and finials, and the royal arms, with supporters, carved *in situ* from brickwork on the south face of the gatehouse. Also noteworthy are the very large bricks used in various places, particularly in the archways of the gatehouse, where they are cut to form mouldings.

Great Snoring Rectory, only 2 miles from East Barsham, displays similar exuberant brickwork (fig. 4). It was built as a manor house by Sir Ralph Shelton *c.* 1525. The obtuse angle at the south-east suggests that the building was, unusually, erected around a polygonal courtyard: only one wing survives. The façade friezes include terracotta panels, some of them mass-produced blank heraldic shields on which any coat of arms could be painted; beneath each shield is a scroll for a motto. Iconography was clearly important, for there is also, in moulded brick, a running motif of the repeated letters M IHS. The final element, IHS, comprises the first three



Fig. 4. The Manor House at Great Snoring, Norfolk: the main front.

letters of the name 'Jesus' in Greek but with Latin S in place of Σ , though here perhaps standing for the Latin genitive *IESU*, with the M standing for *MATER*, the whole device thus representing *Mother of Jesus*; alternatively the M may stand for *MARIA* and IHS for *JESUS*, the whole thus representing the repeated names *Mary* and *Jesus*. Either way, the inscription reflects the dedication of the adjacent St Mary's Church.

The latter, which we were able to enter, is of stone and includes only a little fairly recent brickwork, although the nave floor is of large plain red tiles; the chancel floor is of marble. Of particular interest are the paintings on some of the rood screen panels.

The British Brick Society is grateful to Sir John Guinness for allowing us to view the outside of his house at East Barsham and to David Kennett for organising the afternoon visits and for providing comprehensive notes on the two buildings with a shorter note on the nearby, and related, Thorpland Hall. Of East Barsham, David's notes observe that "the wow factor is immense"; the same is true of Great Snoring Rectory, and the chance to visit both buildings was, despite the oppressive heat, most welcome.

T.P. SMITH

Brick Marks Identified

Mike Chapman, Terence Smith, Paul W. Sowan

In the section of *British Brick Society Information*, 96, April 2005, devoted to 'Brick Queries', possible identification was sought for a number of brickmarks found on a variety of bricks. This brought responses from several members and these are included here.

Brickmark LUCAS

This mark was used by a maker of firebricks, John Lucas, who died in 1900 and whose death was reported under the headline 'Death of a famous fire-brick maker' in *The British Clayworker*, August 1900, page 173.

John Lucas had his works at Gateshead, County Durham [later Tyne and Wear].

Paul Sowan has found firebricks stamped LUCAS in the fabric of the Dietzsch kilns of the Dorking Greystone Lime Co. Ltd. at Betchworth, between Dorking and Reigate, Surrey. These were reconstructions of earlier lime kilns, done in 1887 and 1897.

Terence Smith reports firebricks stamped LUCAS from the Woolwich Arsenal, recovered during archaeological excavations by the Oxford Archaeological Unit.

Brickmarks Middleton, Leeds, England and SL40% (impressed mark)

Both of these are on firebricks.

Mike Chapman reports associations with coal mines and fireclay, giving two possible manufacturers of firebricks: the Leeds Fireclay Co. and the Middleton Fireclay Co. The 40% is a reference to the amount of the particular refractory material, possibly Silica or Alumina. There are references to both in A.B. Searle, *Refractory Materials*, of which the third edition was published in 1953. Both Silica and Alumina were used in limeburning.

Alternatively, Paul Sowan suggests that Middleton could be connected with the brickworks noted in an anonymous contribution, 'The Middleton Owners' Railway' which appeared in *Industrial Heritage*, 11, 4, 1994, pages 2-5. There is a further article by R. Kitching in 1994, 'The Middleton Owners' Railway from North Ormsby to Linthorpe', for which bibliographical details have not been ascertained.

Brickmark 'S, B & T, Co Ltd'

The brickmark, 'S, B & T, Co Ltd' on a brick from Bournemouth for which details were initially requested in *BBS Information*, 95, November 2004, was tentatively identified by Alan Cox in *British Brick Society Information*, 96, April 2005, as being from the Stonehouse Brick & Tile Company, which was operational between 1891 and 1968.

Paul Sowan has supplied further bibliographical references for this firm. An early account of the Stonehouse Brick & Tile Co. Ltd., is given in an anonymous contribution, 'A Model Brickyard', *The British Clayworker*, 1, August 1892, page 99. More recently, Ray Wilson has contributed 'The Stonehouse Brick and Tile Co. Ltd', to *Journal of the Gloucestershire Society for Industrial Archaeology*, 1997, pages 2-5.

Brickmark 'Woodwards Patent Pending'

This brickmark on Victorian grey-blue pavers was identified by Alan Cox as being Tees Scoria Brick Company of Middlesbrough, active c.1873 to 1966. Its pavers were made from cast molten blast furnace slag. Paul Sowen has supplied further bibliographical references for these.

Middlesbrough slag bricks were noted by Henry Reid, in *A Practical Treatise on Natural and Artificial Concrete*, 1879, contemporary with the early phase of Woodward's works, which the 'Patent Pending' on the brick suggests. There are two more recent references. Brickmaking in the town is noted in William Lillie, *The History of Middlesbrough* ..., County Borough of Middlesbrough, 1968, and discussed in detail by D.W. Pattenden, 'Bricks and early Middlesbrough brickmakers', *Cleveland Industrial Archaeologist*, 16, 1984, pages 1-12.

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. Further information about a brickyard in Anglesey is been reported separately and some replies to queries about brickmarks have been grouped together in a short article which precedes this section.

DHK

PERROTT'S FOLLY, BIRMINGHAM

'Perrot's Folly' is the colloquial name given to the Monument, Monument Road, Edgbaston, Birmingham. It dominates views across the southern edge of the city.

Built in 1758, it was the folly of one John Perrot. Six storeys high and built of red brick, Perrot's Folly is an octagonal structure with pointed windows. The top storey with battlements and stone dressings makes the building distinctive.

Perrot's Folly has two other claims to fame. A century and a quarter after its construction, a proper use was found for it. Since 1884, Birmingham Observatory has been sited there. Perrot's Folly is one of two brick towers in south Birmingham - the other is a local water tower - thought to be part of the inspiration, with Sarehole Mill, Cole Bank Road, on the edge of Sparkhill, for the fantasy landscape of *The Lord of the Rings* trilogy by J.R.L. Tolkein. Tolkein grew up in south Birmingham.

Can any member of the British Brick Society help with identifying the bricks and other details of the construction of Perrot's Folly?

JESSICA TAYLOR

e-mail redred319@yahoo.co.uk

THOMASTOWN BRICKWORKS, MERTHYR TYDFIL

In the latter part of the nineteenth century, my great-grandfather, John Jenkins, owned the Thomastown Brickworks in Merthyr Tydfil and after he died aged 51, in an industrial accident, the family carried on the business. His accident was in a foundry and rendering business which



Fig. 1 Thomastown: the chimney of the brickworks is visible in the centre at the back of the photograph.

he also owned. John Jenkins was elected to the first Glamorgan County Council as the representative for Merthyr Town.

It would appear that the business either closed or failed in the 1930s, but I have no proof of this, only hearsay. The site was, I believe, sold to Merthyr Town Council in the late 1940s when a prefab estate (still there) was built on it, supposedly in 1947.

The brickworks was dominated by a large chimney, seen in the distance on figure 1. This photograph appears to be the only available evidence for the brickworks. Otherwise, I have found no mention of the Thomastown Brickworks anywhere.

Does any member of the British Brick Society have any information or suggest possible sources which might be investigated.

NICHOLAS JENKINS

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Wiltshire Brickworks

In *British Brick Society Information*, 96, Mrs Eileen Kemp asked for information about the Hart Hill Brickworks, near Redlynch, south of Salisbury, and the Cocketron brickworks, near Warminster, both in Wiltshire.

Robert Hunt, *Mineral Statistics for 1858*, (1860), lists Crockerton under brickfields or kilns, near Warminster, making bricks from Gault, but gives no further details. Hunt does not list Hart Hill or Redlynch but notes that 'bricks are largely made around Salisbury'.

PAUL SOWAN

AN ANGLESEY BRICKYARD

An enquiry from Marrian Tattersall in *BBS Information*, 95, November 2004, sought information on the Porth Wen brickworks on the north coast of the island.

The Porth Wen brickworks operated from c. 1850 to the outbreak of the First World War in 1914. It is situated on a spectacularly located site on the north coast of Ynys Môn, the island of Anglesey. Three beehive kilns and a chimney stack are still on the site in a stable, but deteriorating, condition. The raw material used had a high silica content and produced bricks of great resistance to high temperature. The works produced a great quantity of building bricks for use in the construction of Liverpool docks.

The Anglesey County Museum at Llangefni has an aerial photograph of the works in a display about the north coast of the island and mentions that the remains of the works are scheduled for preservation. There is a very informative website on the Internet with a map and fifteen photographs of the site and the structures and equipment which remain. The address is

<http://www.penmorfa.com/porthwen/>

and there is a link to it from the BBS website on the 'Trawling the Net' page.

MICHAEL HAMMETTT

Changes of Address

If you move house, please inform the society through its Membership Secretary, Anthony A. Preston at 11 Harcourt Way, Selsey, West Sussex PO20 0PF.

The society has recently been embarrassed by material being returned to various officers from the house of someone who has moved but not told the society of his/her new address.

BRITISH BRICK SOCIETY MEETINGS IN 2006

The programme for 2006 is not yet complete.
In the first part of the year we hope to include:

A Saturday in late March or early April

Spring Meeting

Venue to be announced.

Provisionally a Saturday in mid May

Northern Spring Meeting

Boston, Lincolnshire

This is one which was postponed from a previous year. Buildings here include Hussey Tower and Boston Guildhall, both built in the fifteenth century.

Saturday 17 June 2006

Annual General Meeting

Bursledon, Hampshire

One meeting in active preparation is:

A Saturday in late September or October 2006

London Autumn Meeting

London north of the City.

A walk beginning at Angel and then looking at buildings south of this: the new Lilian Baylis Theatre, the buildings of the former Metropolitan Water Board, the buildings of City University on Northampton Square, the former Finsbury Town Hall, buildings on Exmouth Market including the church of the Holy Redeemer. In the afternoon we hope to see the Finsbury Health Centre, buildings on Clerkenwell Green including St James' church, the former Holborn Town Hall before going east to Old Street and the Leysian Mission, Moorfields Eye Hospital and the Wesley Chapel.

Further details and dates for meetings in Spring 2006

will be given in the first mailing of 2006.

At least one other meeting will be arranged in Summer 2006.

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

Suggestions of brickworks are particularly welcome.

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