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BRITISH BRICK SOCIETY

INFORMATION148

SEPTEMBER 2021

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* *The annual subscription to the British Brick Society is £12-00 per annum. There are now no concessionary subscriptions.*

Telephone numbers and e-mail addresses of members would be helpful for contact purposes, but these will **not** *be included in the Membership List.*

British Brick Society web site:

http://britishbricksoc.co.uk

Contents

A letter from the Chairman regarding the decision, agreed at the Annual General Meeting, on the change to the subscription rate for 2022 and going forward.

Firstly, may I take this opportunity to thank you all for your support with the Society's first ever 'virtual AGM', which was a unique experience for everyone involved. The technology worked well, and the business was conducted in the same way as at an "in person" event would have been.

From my letter in *British Brick Society Information,* **147,** March 2021, you will all be aware of the cost challenges that the Society has and the debate around what the various solutions might be to make the society viable in the longer term. It was agreed that to maintain the editorial standard, article quality, and depth of content that *British Brick Society Information* should continue to be in its current format.

Our webmaster has done an excellent job in catching up with back copies on the society's website and whilst fully digital online presence may be desirable in the future, our present paper format remains the most popular option, albeit at a cost.

The question of raising the subscription was fully debated, with the agreed position being, that whilst an increase was essential, it must also be set at a level which would ensure that the Society remains viable for some time and avoiding further and frequent increases which were considered undesirable and to be avoided.

It was agreed by the members present that the subscription therefore will rise from the present £12-00 to £20-00 as at January 2022. This is the first subscription increase since 1 January 2013.

It is fully appreciated that whilst this a significant increase, it will ensure that *British Brick Society Information* can continue, with the amount still being comparable with other similar societies and, importantly, will avoid this issue having to be considered for some time to come. Clearly our continued success and financial wellbeing depends upon our subscription income and the British Brick Society will be very appreciative if members change their bank arrangements to ensure that the correct sum is paid in January 2022 by returning the enclosed Bankers' Order form to the society's Membership Secretary, Dr Anthony Preston at 11 Harcourt Way, SELSEY, West Sussex PO20 0PF by Tuesday 14 December 2021. Thank you.

Best Wishes

Mike Chapman

Chair, British Brick Society

Cover:

The Southern Pumping Establishment at Crossness for the Metropolitan Main Drainage Works. The watercolour on the invitation to the opening of the Crossness Pumping Works at the Southern Outfall of the London Sewer System on 4 April 1865 by His Royal Highness the Prince of Wales (subsequently King Edward VII).

Editorial:
Brick and the Imperial City Revisited

In AD 57, on being arrested, Paul the Apostle (AD 5-64×67) is reputed to have said, '*Civus Romanus sum*': 'I am a Roman citizen' (Acts 22:25). Citizenship entitled the tentmaker to certain privileges, not least as a presumed to be innocent man the right not to be flogged. Citizenship of the first-century imperial power also gave the apostle the right to be tried for any crime he may, or may not, have committed in the imperial capital, Rome. When Saul, as Paul was first known, was born in Tarsus in modern Turkey, the Roman empire was still young. The first emperor, Augustus (63BC-AD14) had taken power in 27BC, barely a generation before the future apostle was born. Augustus had many claims to fame, among which was his boast, 'I found Rome a city of brick, I left it a city [built] of stone'.

That claim is at best dubious, and at worst plain wrong. Apart from the monuments in the Forum, themselves faced in stone but often with hidden brickwork doing the engineering job, the buildings of Rome in the early years of the first century, where they have survived, were mainly of brick. Certainly, Augustus' successors to the imperial title made little pretence, except for grandiose monuments to maintain the tradition of building in stone. Locally-produced locally, brick was easier to manufacture and involved low transport costs. Stone had to be quarried outside of the city, involved higher transport costs, and could be subject to intermittent supply.

So do why those creating prestige buildings, particularly modern government buildings, insist on stone for the street façade and very often for the side and rear frontages also.

There are many parallels between Edwardian London and Imperial Rome, not least the idea, which persisted some decades after the Second World War of '*Civus Britannicus sum*': 'I am a British citizen'. The epithet echoes both the warlike nature of the British Empire, based on military conquest with no small measure of greed and acquisitiveness thrown in, but containing, too, the implicit equality of all citizens, whatsoever their class, whatsoever their ethnicity. Perhaps at first, as with the Romans, it was only men: certainly, the Romans never had much truck with gender equality. Even in the Imperial Age of Edwardian England, it is often forgotten that not all men had the vote, and except at local elections only a very few women who met the property qualifications. All men and less than half the women achieved full citizenship only in 1918; other women over 21 had to wait until 1928.

Another similarity between the two imperial cities was the concept of stone for government buildings. Muscularity and masculinity combined in their assertiveness. In the mid nineteenth century, the idea had been challenged to no less a figure than George Gilbert Scott (1811-1878) in 'the design of the Foreign Office as it should have been', exhibited at the Royal Academy by the architect in 1864 and then placed in the Academy's permanent collection as his 'Diploma Work': he had been made a full Royal Academician in 1860. There is a lot of red in the original, implying a building in brick with stone dressings rather than the stone structure in a classical style which was eventually constructed. The massive watercolour, which measures 838 mm × 1,727 mm, is illustrated Neil Bingham, *Masterworks: Architecture at the Royal Academy,* London: Royal Academy, 2011, pages 70-73, but with a reproduction which shows far less red than the original.

Stone too pervades major Edwardian government buildings, notably at opposite ends of Whitehall, the Old War Office (1898-1907: William Young, then Clyde F. Young with Sir John Taylor) and the Home Office building (1898-1907: J.M. Brydon, then Sir Henry Tanner), the latter on the corner of Broad Sanctuary. The appointing panel, after the limited competition based on examination of previous work, thought they had been sensible in choosing established architects in their mid-fifties with a proven track record in major civic buildings — Glasgow City Chambers, of 1883 to 1889, for William Young (1843-1900), and Chelsea Vestry Hall of 1886 and the Bath Municipal Buildings of 1891 by John Brydon (1840-1901) — and thus more likely to able to see the buildings through to completion, only to have Young and Brydon die at 57 and 61, respectively. Hence, new principals had to be found although Clyde Francis Young (1871-1948) and Brydon's chief draughtsman were put on the government payroll; Sir John Taylor (1833-1912) was the retired Chief Architect to H.M. Office of Works and Sir Henry Tanner (1849-1935) his successor. Away from the monumental architecture of Whitehall, as monumental stone buildings one might also cite the Central Criminal Court, City of London (1900-06: E.W. Mountford) and the Middlesex Guildhall (1908-11: J.G.S. Gibson), facing Westminster Abbey. The era had the work of Aston Webb (1849-1930) in creating the Mall with Admiralty Arch at one end and the new, Portland stone front of Buckingham Palace at the other.

But these architects also designed civic and public buildings in brick. Mountford did the former town hall in Battersea (now after the fire, the restored Battersea Arts Centre) in 1890, following his public library in 1888 in the borough in which he lived and followed by Battersea Polytechnic in 1891. In 1894, he designed the earliest buildings of the Northampton Institute (now City, University of London). All these are in brick. The Northampton Institute was followed by work away from London. In Liverpool, the College of Technology has the street façade is stone, extending the line of prominent stone-faced public buildings on St John's Hill, but the rear elevation is brick as are those of the museum and the Walker Art Gallery.

Aston Webb, of course, created the Brompton Road frontage of the Victoria and Albert Museum, a major London building in brick, begun in 1899 and completed in 1909. Webb's major university building, for the nascent Birmingham University, erected between 1906 and 1909, was also in brick with terracotta on the front. It is a major tragedy the available finance and then the Great War prevented the original scheme from being fully realised: of Webb's seven pavilions only the great hall and three sets of lecture rooms and laboratories were completed, together with the clock tower at the centre of the semi-circle of the other original buildings. In parenthesis, it might be noted that, in contrast, Alban D. Caröe carried on with his father's scheme for Coleg Brifysgol Caerdydd (University College Cardiff) into the late 1950s, omitting only the projected great hall abutting the east wall of the Drapers Library. But, excepting the female hall of residence, Aberdere Hall (1893: H.W. Wills), on the northern edge of Cathays Park, all the Edwardian buildings round the grassy centre were constructed with Portland stone frontages. These were the buildings of the civic centre of a newly-created city: here the American practice was being followed, in that the cathedral of the local diocese was several miles to the north in the village of Llandaff. Cardiff is the principal example in Great Britain of the American ideal of the planned civic centre. Further west Abertawe (Swansea) is a post-1920 example of the same concept. In London, the civic centre at Walthamstow (now used by the London Borough of Waltham Forest) follows the same concept, again in Portland stone (1932, 1937-41: P.D. Heworth).

In the second half of the nineteenth century, the built-up area of London was governed by a hotch-potch of authorities with overlapping responsibilities: parish vestries, district boards, and municipal boroughs with the Metropolitan Board of Works having general oversight of street improvements, mains drainage, and building regulations. Created by the Metropolitan Management Act of 1855, the Metropolitan Board of Works rationalised a medley of nearly 300 different bodies. In created 37 individual districts for the practical application of its responsibilities: twenty-two were existing large and populous parishes, whilst another 56 parishes were amalgamated into 15 new boards. It was the Metropolitan Board of works which, through its Chief Engineer, Joseph Bazalgette, created the London sewer system, the brickwork of which is the subject of a contribution to this issue of *British Brick Society Information,* (pages 10-19 *infra*).

It was the area of the Metropolitan Board of Works which became the geographical area of the London County Council after 1899.

But second tier local government in London was untouched by the Local Government Act of 1888. In 1899, the London Government Act established 28 metropolitan boroughs. Some were recently-created municipal boroughs like Battersea and Finsbury, others were single historic parishes like Chelsea and Fulham, yet a third group were each an amalgamation of historic parishes. Two boroughs are noteworthy in having been created from a multiplicity of parishes: Stepney in the east was four separate parish authorities and the City of Westminster in the west, no fewer than five. A fourth group were where a geographically large but not necessarily densely populated parish was combined with one or more small, densely-populated parishes, such as the Borough of Holborn. In most of the places just noted and others of the 37 authorities existing under the 1855 Act, there was a vestry hall, sometimes combined with the offices of the District Board of Works but sometimes not as at Poplar.

The vestry hall was often a utilitarian building: the demolished Paddington Vestry Hall (fig.1) was built in 1853 to a design by James Lockyer is an example of a typical plan except that the hall was on the ground floor rather than as became more usual on the first floor. At the back is a large public hall for the board to meet with on either side wings providing accommodation for the vestry clerks and the members of the board. It was executed in brick with stone quoins and had a octastyle portico in front of the recessed entrance hall. Such buildings were suitably dignified but relatively cheap to build and furnish: London vestries were notorious for being parsimonious, especially when it came to building. Of the 28 new metropolitan boroughs, eleven made do with an existing vestry hall, often enlarged to accommodate the greater responsibilities of the municipal borough. That for St Martin-in-the Fields sufficed for the City of Westminster until 1965. The building on Charing Cross Road had been constructed in 1890 to a design by Robert Walker and faced in Portland stone.

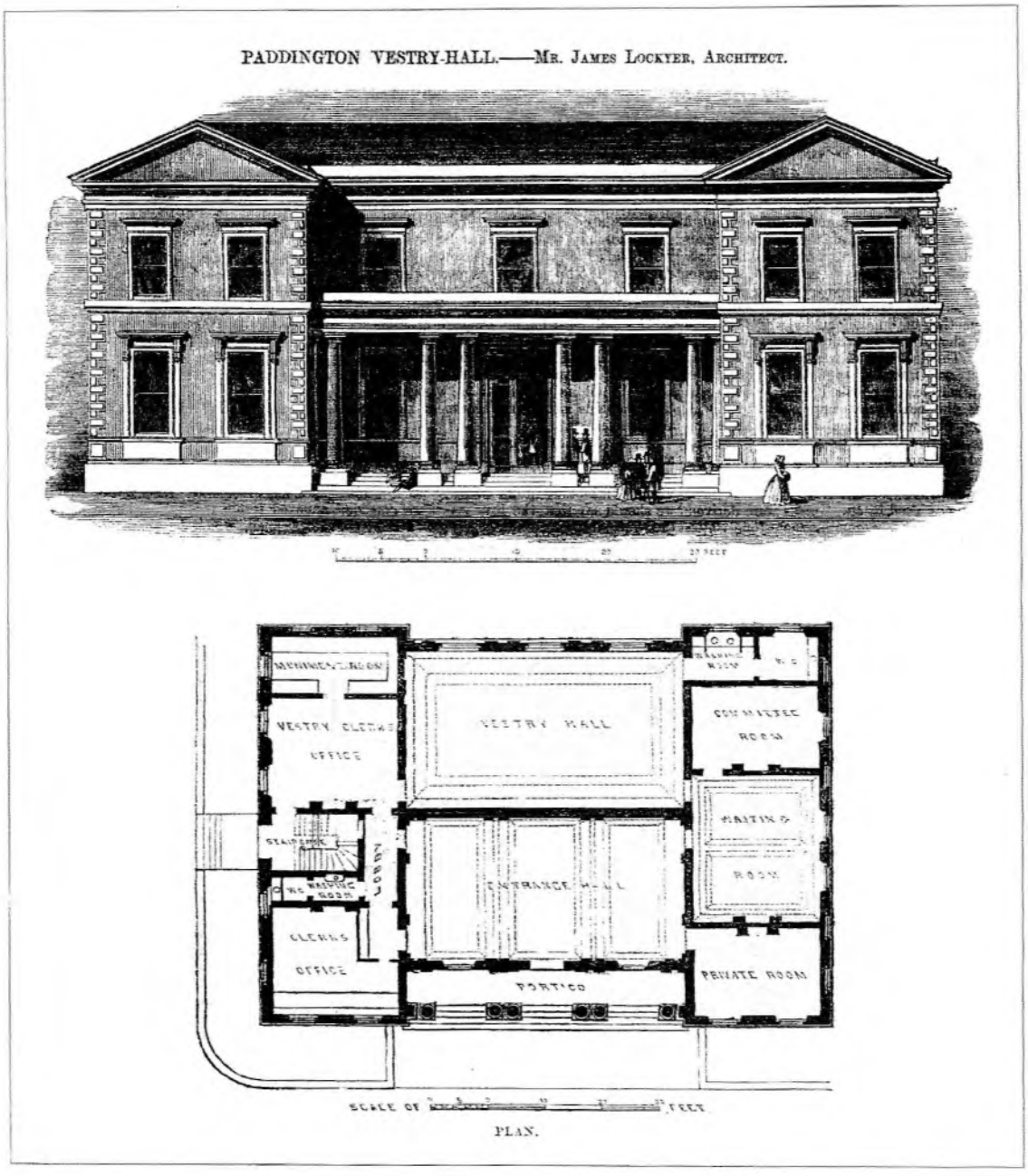

Fig.1 Paddington Vestry Hall (1853: James Lockyer, demolished 1965): elevation and plan.

Mountford's only London town hall has been mentioned as has J.M. Brydon's Chelsea Vestry Hall (fig.2), which was the beginning of the buildings for the borough council. The brick buildings in Chelsea have stone quoins and stone dressings; three buildings, each with a different purpose, were designed in the offices of three different practices but share the same vocabulary. The vestry hall, later town hall, facing Chelsea Manor Gardens was designed by John McKean Brydon as the winner of the competition in 1882-83 and erected 1885-87; it was extended by Leonard Stokes as the result of another competition in 1904. The public library on Mansrea Street was designed by Brydon in 1890. The competition for the public baths was won by the Cardiff firm of Wills & Anderson [H.W. Wills and John Anderson] in 1907. Three of these buildings are in new uses: the former public library has become the library of Chelsea College, now a campus of King's College, University of London, and a public library created in the Stokes wing of the town hall. The former public baths have become a fitness centre, still administered by the borough, now the Royal Borough of Kensington and Chelsea.

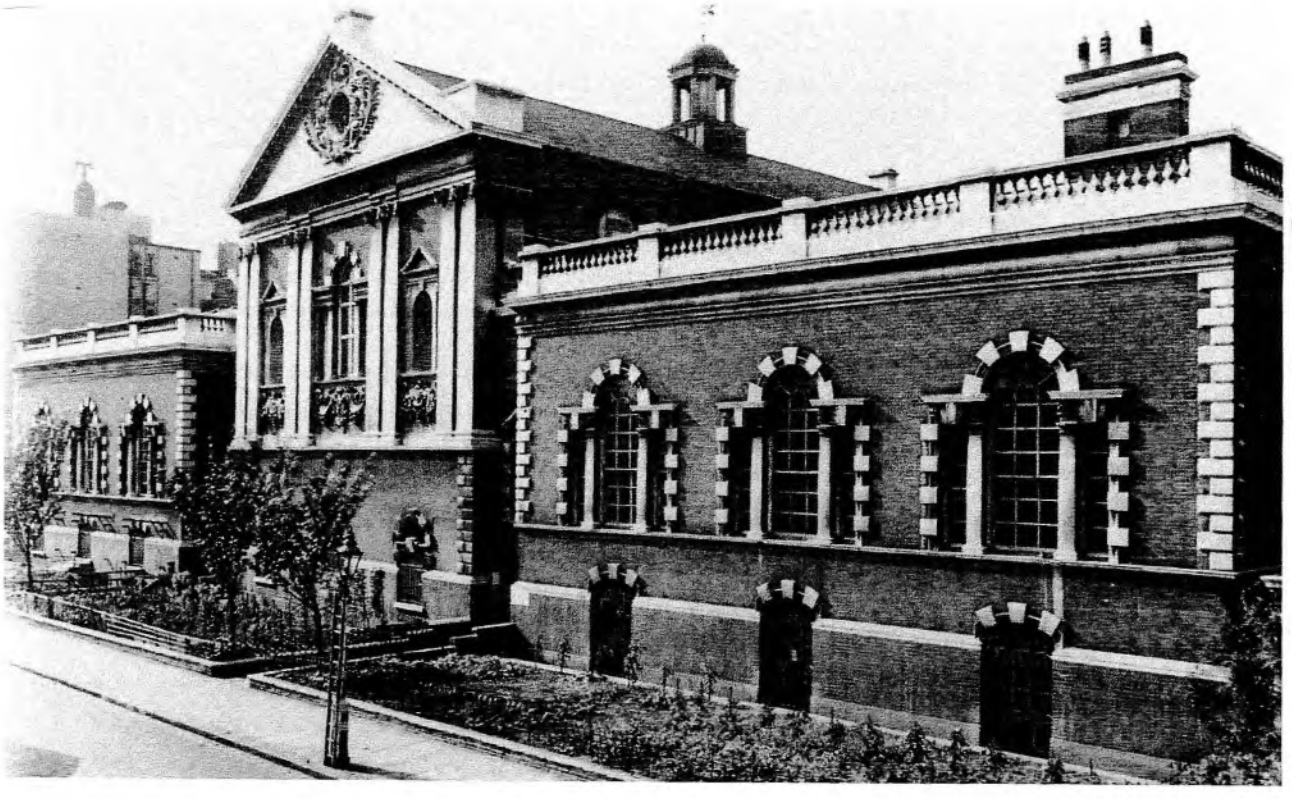

Fig.2 Chelsea Vestry Hall (later Chelsea Town Hall) (1882-83, 1885-87: John McKean Brydon)

Keeping to style of an original building being modified and/or extended was common among town hall designs in Edwardian London. In 1906, the result of a limited competition, the practice led by two relatively young men — Septimus Warwick (1881-1953) and Herbert Austen Hall (1881-1968) — were commissioned to provide the Borough of Holborn with a new town hall on High Holborn: the existing one on Grays Inn Road and Clerkenwell Road had been the office for Holborn District Board of Works (1878-79: Isaacs & Florence) and was being sold to pay for the new building. The site of the new town hall was adjacent to the existing St Giles Library (1894: W. Rushworth), within which was also the offices of the St Giles District Board of Works. The existing building was three bays wide, the two outer ones narrow but the central one broad with oriel windows on the first and second floors of the five floors of a French Renaissance façade beneath a shaped gable with distinctive pilasters. Hall and Warwick's solution was to erect another such gable divided from the existing one by three wide bays. The principal material chosen for the front of the extension was Ancaster stone, just as Rushworth's building had been. The rear elevation was brick.

Across London, there are other town halls built of brick, often with stone dressings or stone quoins, for the new boroughs of the Imperial City: one where stone is minimal is the red brick Finsbury Town Hall (1894-95 and 1899: C. Evans Vaughan). Here, rubbed red bricks as much as Ancaster stone provide the decorative features. After 1900, new town halls of brick with stone dressings were built for the municipal authorities in Woolwich (1903-06: A. Brumwell Thomas) and Lambeth (1906-08: Septimus Warwick and H. Austen Hall). The former seems to have more stone than brick in its public face, with latter is more economical in the use of Portland stone. The site was also tighter, being within a narrow-angled chevron at a major road junction in Brixton.

The original part of the vestry hall for the parish of Hampstead (1877-78: H.F. Kendall and F. Mew) on Haverstock Hill was two-storeyed with the room for the vestry on the ground floor and a large public hall above. It had been added to by Mew in 1885-86, when committee rooms were provided, and extended again in 1910-11 with John Murray was the architect. In 1952 Nikolaus Pevsner called the building, 'Crushingly mean; a disgrace to so prosperous and artistic a borough'. More recent commentators have been more generous.

Fig.3 Lambeth Town Hall (1906-08 and 1935-38: Septimus Warwick and Herbert Austen Hall)

As in Chelsea, many of the public buildings in the first decade and half of the existence of the London boroughs were built in brick: prominently both libraries and public baths and washhouses. In Shoreditch, there was a multi-purpose building at which the parish's refuse was deposited and burnt to heat the water which provided electricity to Shoreditch and heated the water in the public baths and washhouse; in addition, the 1899 building by H.T. Hare (1861-1921) included a large public library. Hare was a specialist in designing public libraries. Apart from the building in Shoreditch in the style of the Metropolitan Police headquarters in New Scotland Yard (188-90: R. Norman Shaw) where bands of stone are interspersed with bands of red brick, Hare's London buildings included central libraries for Fulham, Hammersmith, and Islington, the last-named in stone but the first two and a branch library in Fulham in brick with limited stone dressings.

Another building in brick, usually with stone to a greater or lesser degree on the street frontage, which was prominent among Edwardian public buildings in London was the combined police station and magistrates' court. In 1895, John Dixon Butler (1861-1920) was appointed Architect and Surveyor to the department of the Metropolitan Police responsible for buildings, later the Receiver's Office. In the course of eighteen years between 1900 and 1917, Dixon Butler designed no fewer than 54 police stations of which 25 were in the London County Council area: the Metropolitan Police area extended across Middlesex and far into suburban Essex and Surrey, of which buildings in Barking and Ilford in 1906 and in Sidcup and Wallington four years earlier are witness, respectively.

One other public building in brick should be mentioned: churches. Just to take one architect who has already been mentioned, Edward William Mountford (1855-1908) also designed churches. Several in Battersea and adjacent boroughs for the Church of England used a palette of red brick and brown limestone: St Andrew, Garrett Lane SW18, of 1889-91 and 1902; St Michael, Wimbledon Park Road SW19, of 1902 and 1905; and a chancel and chapels to St Ann, St Anne's Hill SW18, in 1896 and 1901, the latter a memorial to his first wife.

It is difficult to know exactly how many churches of all denominations were built in London in the Imperial decade of Edward VII (*r.*1901-1910) or in the final one of Queen Victoria's six and a half decades on

the throne: she reigned from 20 June 1837 to 22 January 1901. But the great majority, like those designed by E.W. Mountford were constructed of brick, even if there were generous stone dressings at many of them.

Members will find on page 9 of this issue of *British Brick Society Information,* a letter sent to the society's Membership Secretary, Dr Anthony Preston, of Honorary Membership of the City & Guilds Institute in recognition of his work as a technical educator. This is a rare honour, on which the congratulations of the British Brick Society are offered to Dr Preston.

At the Annual General Meeting held by Zoom on Saturday 19 June 2021, the society's Chairman had the sad duty to report the deaths of several members of the British Brick Society: Penny and Roy Berry, Kathleen Kennedy, Peter Los, Pat Ryan, and Paul Sowan. An obituary for Penny and Roy Berry follows this Editorial, and one for Pat Ryan of Essex was printed in *British Brick Society Information,* **147,** March 2021, pages 3-4; a supplement to the latter appears in this issue.

The British Brick Society extends its sympathetic condolences to Ann Los, a former Treasurer of the society and a former editor of *BBS Information,* and to the families and friends of Mrs and Mrs Berry, Mrs Kennedy, Mrs Ryan, and Mr Sowan.

DAVID H. KENNETT
Editor, *British Brick Society Information,*
30 July 2021

Obituary:
Penny and Roy Berry

In 2020 and 2021, the British Brick Society lost two stalwarts of its earliest years, although we had seen less of them in recent years as Penny devoted more of her time to nursing Roy. Penny died of a massive heart attack at Papworth Hospital on 14 March 2021, ten days after her eightieth birthday. Roy had died in 2020 after a long and happy marriage. Both had become increasingly infirm over the last few years.

In the 1980s, when several visits were organised in East Anglia, they were frequent attenders. Unlike the organiser, Penny and Roy always insisted on a proper period for lunch and another sensible period for tea if the visit was going on beyond about 4.00 pm.

In July 2002, they kindly invited us to share their garden, as the setting for eating our sandwiches, between the morning visit to Hill Fram, Gestingthorpe, Essex, a parish where the church has an early-sixteenth-century brick tower, and an afternoon spent at Kentwell Hall, Long Melford, Suffolk, where the first brick building is a fifteenth-century hall, but the principal ranges have their origins in a U-shaped brick house were described as newly built in 1578. They lived outside Sudbury in the village of Middleton, on the Essex side of the Stour, although the postal address was Sudbury, Suffolk.

Penny was a considerable artist. The organiser of the East Anglian visits treasures a postcard with an illustration of the pliosaur from Dogsthorpe and the associated accoutrements of a brickworks. As an artist, Penny used the name Penny Berry Paterson. She compiled a book, *Bricks: A Study of Brick Making and Building in East Anglia,* Pullet Press, 1988 (ISBN 0 9513253 2), in a limited edition of 50 numbered copies. This exemplifies her work as an artist, printmaker, and illustrator. It largely features the Bulmer Brick and Tile Company and E.H. Collier's works at Marks Tey

Penny's main interest was bricks, but Roy specialised in studying mills. They were both staunch supporters of the former Essex Mills Group, of whose newsletter Roy was editor for a number of years. Bricks and mills often overlap and Roy and Penny were a couple who supported one another in their interests, sharing interests in both subjects. (Sadly, due to an ageing membership, the Essex Mills Group became inactive in the early twenty-first century. The then president of the Essex Society for Archaeology and History arranged for it to be absorbed into one of that society's sub-groups, the Essex Industrial Archaeology Group, so that the good work of the Essex Mills Group can be preserved and continue.)

Roy and Penny were last seen by Adrian Corder-Birch in June 2018 on an archaeological visit to Hill Farm, Gestingthorpe, which was one of the venues of the British Brick Society visit in July 2002.

ADRIAN CORDER-BIRCH and DAVID H. KENNETT

A Further Tribute: Pat Ryan

I was very sorry to hear about the death of Pat Ryan, via the obituary in *British Brick Society Information*, **147**, March 2021. I met her once, on the only BBS outing I have ever managed to attend from Ireland, and she made a lasting impression. She was very kind, friendly, and helpful. When I asked how she could identify and accurately date seemingly (to me) bricks that had no identifiable features, she said that she had acquired that skill by simply looking at and examining brick in buildings over a very long period. I was suitable impressed. Twenty years later, and having looked at a lot of brick in Irish buildings, I believe I am beginning to understand what she was talking about. She was one of my brick heroes — may she rest in peace.

SUSAN ROUNDTREE
Dublin

Award of Honorary Membership of the City and Guilds of London Institute to Dr Anthony Preston

Anthony Preston, the Membership Secretary of the British Brick Society, has long been able to write C&GI as one of his many post-nominals. On 23 March 2021, Anthony received an unexpected letter from Sir John Armitt, the Chairman of the City and Guilds of London Institute offering him Honorary Membership of The City and Guilds of London Institute. The letter reads:

> Dear Dr Preston
>
> Honorary Membership of The City and Guilds Institute of London
>
> I am delighted to invite you to accept Honorary Membership of The City and Guilds Institute of London. Honorary Membership is conferred in recognition of personal contribution to vocational education, technical training and assessment. The Council, as the governing body of City & Guilds, has resolved that this invitation should be extended in appreciation of your efforts in supporting the City & Guilds purpose — to help people, organisations and economies develop their skills for growth.
>
> As you will be aware City & Guilds is a registered charity and operates under a Royal Charter. We are Britain's leading vocational awarding body. A certificate of Honorary Membership will be issued to you should you wish to accept the award. For clarity, it should be noted that Honorary membership is not a qualification and does not confer the right to the use of post-nominal letters, Honorary Membership means that you will have, for life, the opportunity to participate in the affairs of the Institute at the Yearly Meeting in the election of members of Council — thus influencing policy.
>
> Naturally, I hope sincerely that you will accept Honorary Membership. When you reply, please complete the attached Institute Membership Record Form to ensure that your certificate is correctly worded and that our records are accurate.
>
> Congratulations once again.

Anthony has subsequently informed members of the committee of the British Brick Society that his former Principal could not think of any other colleague who had gained such an award.

The British Brick Society extends its congratulations to Dr Preston on the award.

Choice or chance? The virtues of London Stock bricks for the construction of the Bazalgette sewer network in London (circa 1860-1880)

Ian Smalley, Arya Assadi-Langroudi, Grenville Lill

The bricks used in the works have been mostly picked stocks and Gault clay bricks, and the inverts were occasionally faced with Staffordshire blue bricks.
J. Bazalgette 1865

Fig.1 Sir Joseph William Bazalgette (1819-1891)

INTRODUCTION

Sir Joseph Bazalgette (1819-1891, fig.1)[1] was appointed as chief engineer of the Metropolitan Board of Works in 1856. He came with recommendations from Isambard Kingdom Brunel and Robert Stephenson and set about improving the capital. He installed the Woolwich Ferry (1889) and he built Battersea Bridge (1890), Hammersmith Bridge (1887) and Charing Cross Road, and Clapham Common and Battersea Park and others, but he is best known for, and his greatest achievement is generally acknowledged to have been, the construction of the London sewer system from about 1860 to 1880. He was faced with the problem of dealing with the waste from four million inhabitants; he designed and built a system that could deal with the waste of eight million inhabitants. A truly impressive piece of engineering genius, and the most significant brick construction in London. Three hundred million plus bricks were used to construct the sewer system. A brick masterpiece in the city of bricks, started in 1860 at a time when the London Stock brick was the default brick and benefitting from the particularly useful properties of the local brickearth and the London Stock bricks manufactured from it. The London Stock was particularly suited to sewer construction; 132 km of enclosed underground brick sewers were constructed (fig.2), and 1800 km of street sewers; and just for once in a civil engineering project the materials were almost ideal for the job in hand.

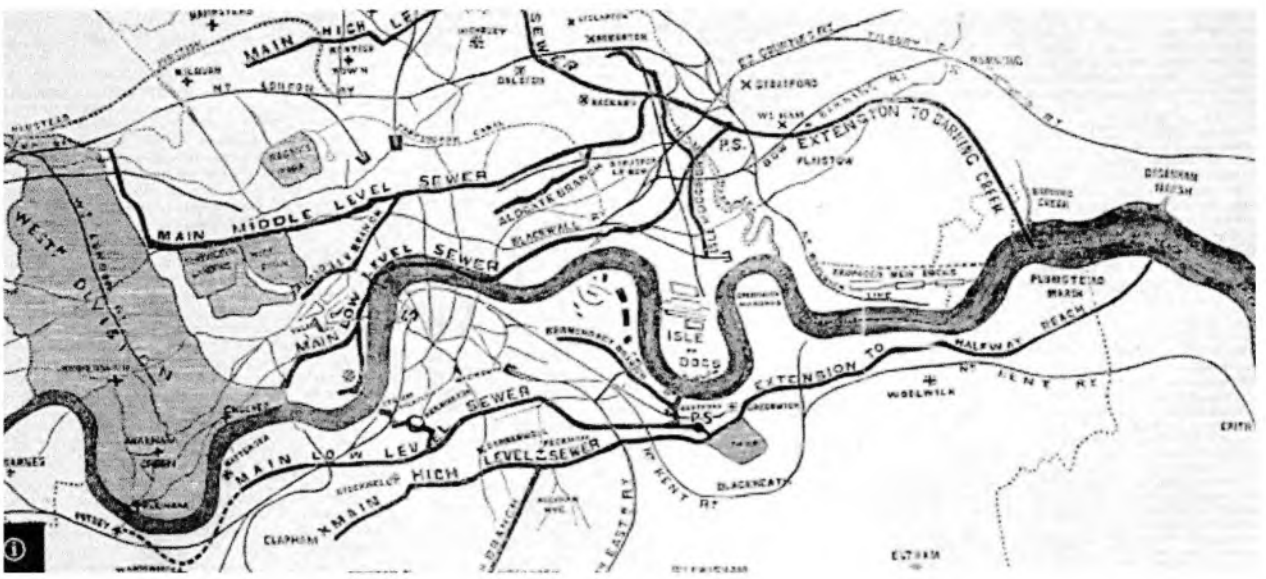

Fig.2 The London sewer network

Various aspects of the London Stock brick can be considered and discussed, with respect to the construction of the Bazalgette sewers. Eight topics are immediately apparent which bear on the making and use of the bricks and these incorporate significant digressions to provide essential background to what can be a complex mineralogical and rheological study. The brickearth/loess[2] in South-East England is an interesting geological material and it differs in many ways from other geomaterials which are used in brick making. A brick is essentially a fired clay block in which the effect of the heat has been to produce irreversible changes which give dimensional stability and strength to the brick unit. Clay is seen as an essential ingredient and in most bricks this is the case; it is a fairly straightforward clay object. For the London brickearths this is not the case and the role and situation of the clay mineral material in the system is quite complex and has given rise to much confusion and lack of understanding and failure of communication. Most brickclays can reasonably be described as clays. In his study of British brick clays Ian Freeman[3] listed ten materials: nine of which were clay based brickclays. The exception was the London Stock Brick mix using Kentish brickearth. Freeman examined Oligocene stoneware clay (specimen 62AQ), London clay (62AK), a highly calcareous Gault clay (62AL), Weald clay (62AJ), Oxford clay (62AD), two samples of Keuper marl (62AS, 62AT), Coal measure shale (60AG) and Devonian shale (62AO); these were the 'true' clays, with a geological range from the Tertiary to the Devonian. He also tested one Stock Brick mix 63AH- mainly Pleistocene Kentish brickearth (75%) with 10% estuarine mud, 10% washed chalk and 5% sifted town refuse (aka Spanish). This is our default Stock brick mixture; an accurate analysis from the Building Research Station, invaluable because there are very little other data. We are forced to focus on this one result, and to emphasize thermogravimetry as a technique. It would be useful if more Stock brick analyses could be located and tabulated; the study of the London Stock brick is not overburdened with mineralogical information. We focus on the work of Freeman and his use of thermogravimetric techniques.

THERMOGRAVIMETRY: TG and DTG

Figure 3 shows the Freeman TG results for samples 63AH, 62AQ and 62AK; that is one brickearth and two default clays. The TG results require some discussion and explanation. TG — thermogravimetric analysis[4] — is an analytical technique which has been used with some success on ground materials.

In figure 3, 62AQ is the Oligocene Stoneware clay which Freeman indicates as containing abundant (>30%) quartz and abundant kaolin. 62AK is a London Clay sample with subsidiary (30-15%) quartz and subsidiary kaolin but also subsidiary montmorillonite- which substantially increases the clayeyness. Clay mineral content is indicated by the dehydroxylation reaction at around 600°C. The steepness of the TG curve indicates the presence of appreciable amounts of clay mineral material. Note the absence of a 600°C reaction in 63AH- the London Stock mixture is low on clay minerals.

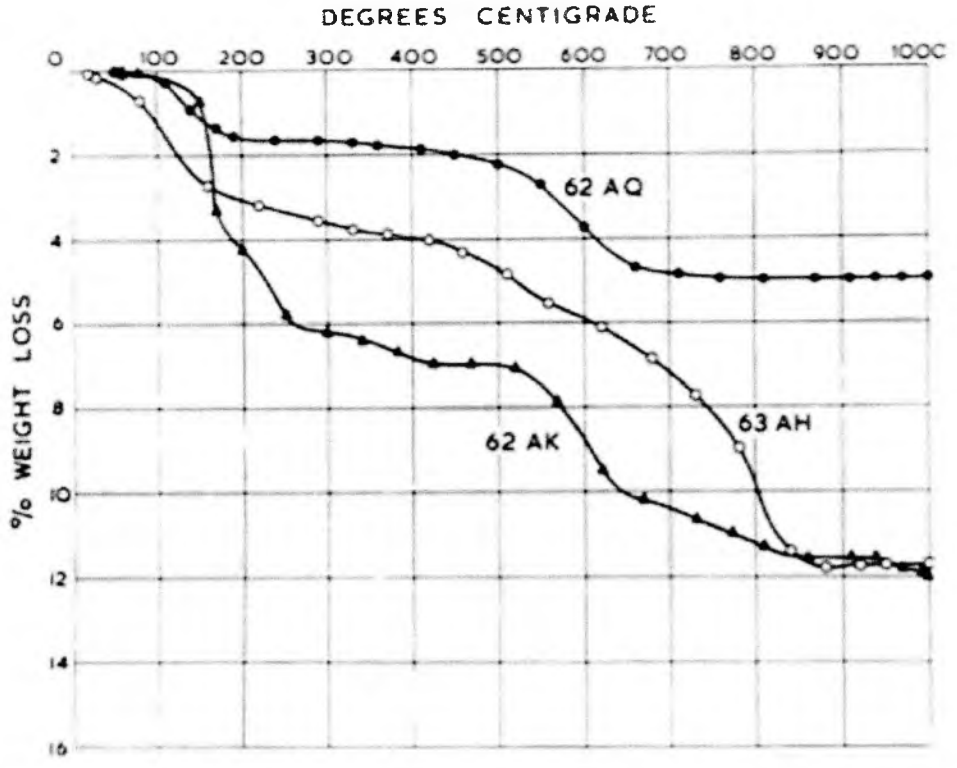

Fig.3 Thermogravimetric curves for clays 63AH (London Stock Brick), 62AQ (Oliogecene stoneware clay), and 62AK (London clay), after I.L. Freeman, as note 3, *infra*.

The conventional TG curve indicates weight loss vs. temperature but as figure 3 shows the analytical signal is muted. The derivative curve DTG plots rate of weight loss vs. temperature and is very effective in locating weight loss reactions.[5] Figure 4 shows a brickearth sample from Essex (the Star Lane brickworks) where the weight loss results are plotted as a DTG histogram. Four events are indicated, a loss of water at around 100C, a small amount of organic material detected, usually around 300°C, the dihydroxylation reaction in the clay minerals at around 500-600°C and the carbonate reaction at perhaps 900°C.

The loss of hydroxyl ions at the dihydroxylation reaction allows a modest amount of quantitative analysis to be attempted.[6] Large OH loss indicates the presence of substantial amounts of clay mineral material. The type of clay mineral is not indicated; kaolin with a higher proportion of hydroxyl ions performs better than illite or montmorillonite. The presence of montmorillonite tends to be indicated by a large weight loss event at low temperatures as adsorbed and loosely bound structural water is released. TG tests allow adsorbed and structural water to be distinguished.[7]

DIGGING: THE SPADE AND THE EARTH

The earth must be dug, and the peculiar nature of loess/brickearth allows it to be dug relatively easily. It is not a 'sticky' material- there is some clay mineral bonding, but not too much; enough to make the material cohesive but not enough to make it properly plastic. The ease with which it can be dug makes loess an ideal material for the excavation of living spaces- for humans and for birds. In the great loess deposits of China intricate cave houses were excavated and for many years thousands of people lived in loess houses in the region of the loess plateau. Birds live in loess;[8] the bird which favours loess above all is the bee-eater (*genus Merops*) which chooses loess as the favourite ground for nesting tunnel construction. The ground must be soft enough to dig in, it must have excavateability, but it must also be strong enough for the tunnels to be stable. The 'Heneberg compromise'[9] applies; there has to be a trade-off between strength and diggability.

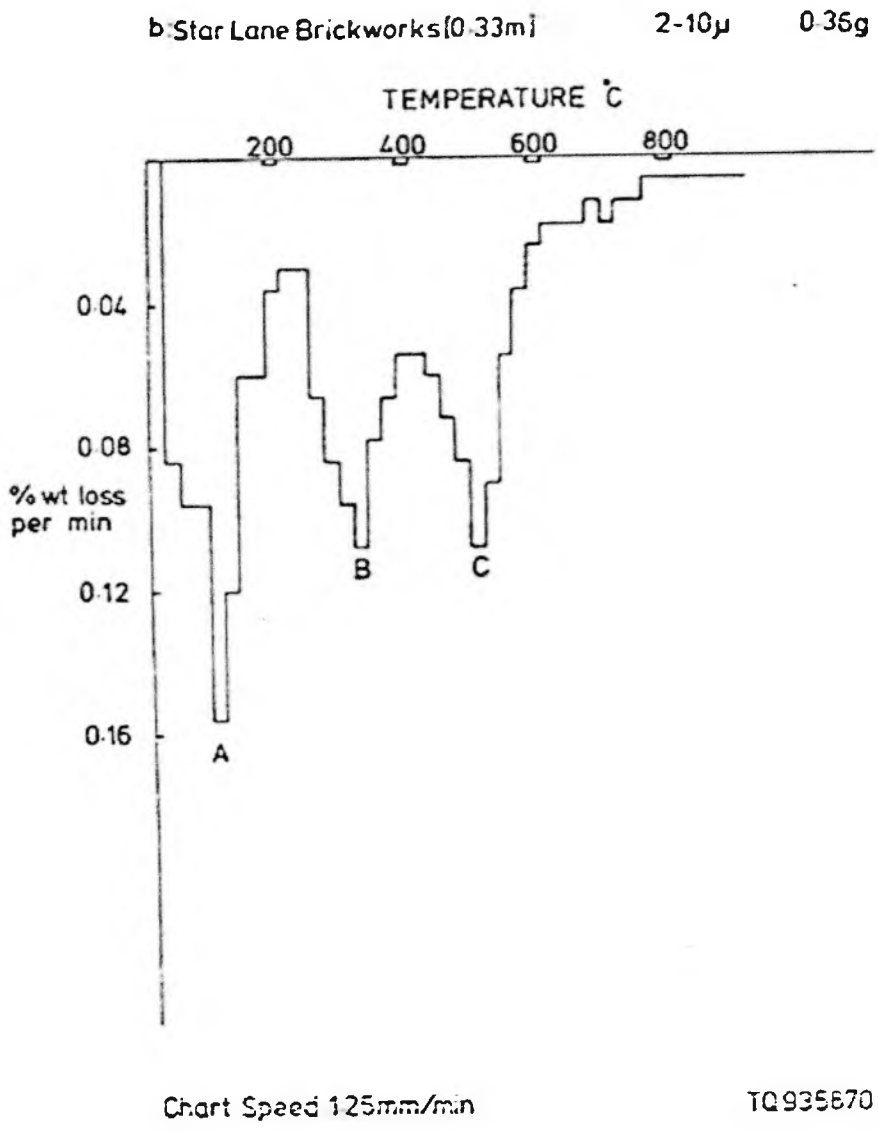

Fig.4 Derivative thermogravimetric curve from Star Lane brickworks in Essex.

The properties that allow loess to be lived in facilitate the digging of brickearth for the construction of the London Stock bricks. The brickearth is the westernmost extension of the great European loess sheets[10] which blanketed parts of the continent during the Pleistocene era. The loess properties extend to London and beyond. A brickpit in the loess beside the Thames is very like a brickpit in the loess beside the Danube.

WETTING

Water is critical; a ground material is turned into a wetter ground material and then a drier ground material when the water is totally expelled. Loess/brickearth has an interesting relationship to water. This is usually demonstrated to groups of students in Pleistocene geology or ground engineering by the dropping of a piece of loess into a beaker of water, and observing the sudden disintegration (fig.5). The loess fragment responds very quickly and dramatically to the ingress of water and totally disintegrates. The weak clay bonds are quickly affected and the rising capillary pressure drives the material apart. This is the 'Horner effect' named after Leonard Horner[11] who first described it in his paper (on the loess at Bonn) in 1833. This means that brickearth is very easy to wet. Easy to dig by hand, easy to wet, easy to shape by hand: an ideal material for handmade bricks.

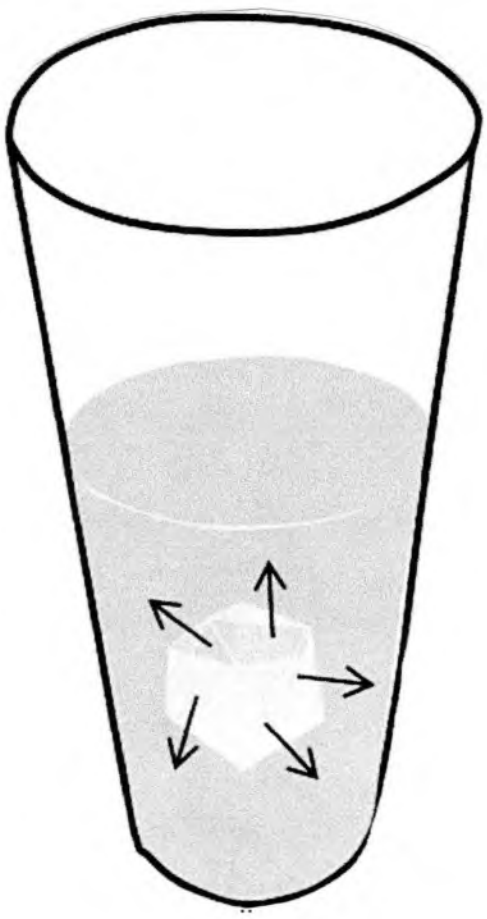

Fig.5 The Horner effect.

ADDING SPANISH

It was discovered, apparently by accident,[12] that adding ash and cinders to the brickearth allowed more profit to accrue to the brickmaker. By introducing combustible material into the brick itself, firing efficiency was substantially increased. In the Fletton bricks the combustible admixture is provided by nature, hence the great success of these bricks, but in the London Stocks the brickmakers were required to supply the combustible admixture. There were problems, no real standards for type and amount of admixture were specified and the adding of 'Spanish' could be a haphazard business. The reliability and reputation of the brickmaker were very important when stock bricks were being produced.

Spanish action is shown very diagrammatically in figure 6 where each carbonaceous particle contributes thermal energy to the firing process but also produces some CO_2 as a combustion gas. Overuse of Spanish could produce a very unsatisfactory brick and this practice led to some very derogatory remarks and observations about the practices of dishonest brickmakers.

SHAPING

The handmade brick is made in a mould. Each single brick is formed from brick material which is pressed into the mould by the moulder. He (invariably he) pushes the material into the mould using the adequate and learned amount of force. This to some extent compacts the material and establishes the initial particle structure- a modest tensile strength develops- the brick can now be handled and moved to the drying region. The brickearth material is easily moulded, it is well suited to hand moulding. The silty structure which gives so much fired strength is in no way immediately apparent in the wet proto-brick, but it us formed at the moment of mouldling, and then locked into position by subsequent firing.

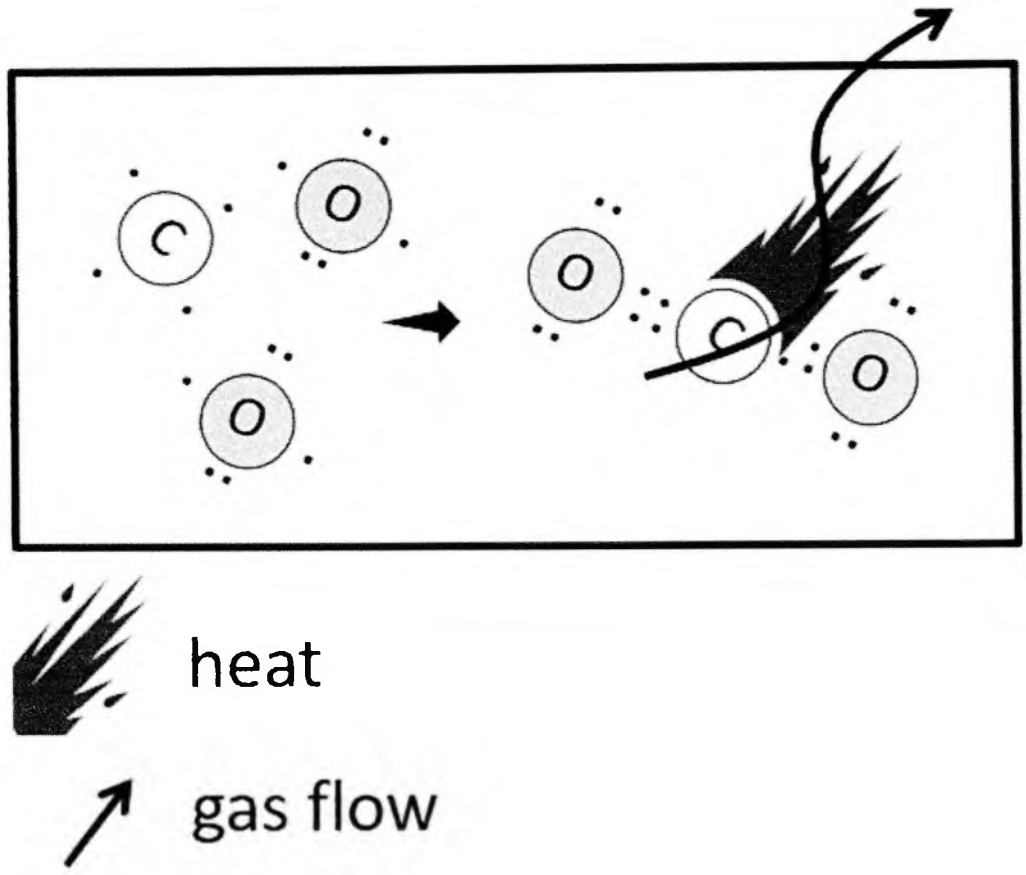

Fig.6 The effect of adding Spanish; carbon dioxide is expelled.

A rheological transition from Non-Newtonian liquid to plastic solid takes place before the moulding box is reached. The early system is at what, in soil mechanics terminology, would be called the liquid limit (LL). The water content at this point is used as an important indicator of clayeyness. The very clayey clays (eg montmorollonite, nontronite etc) have very high LL values compared to the clays with low clayeyness (eg kaolinite, illite etc). As the clayey material progresses from wet storage to moulders bench, into the mould box, on to the drying rack it travels from LL to somewhere just past PL- the plastic limit which separates plastic solid from brittle solid. A lot is going on at or near the moulders bench- in physical-chemical terms the progression through LL and PL is complex, particularly in the brickearth system where two distinct particulate organisations (silt + clay) interact.

DRYING

Brickearth dries well; the water is attached to the clay minerals in the system and since brickearth has less clay it retains the water with a reduced efficiency and hence drying is easier. And there is the nature of the clay mineral to consider; water attaches readily to the smectites, the montmorillonite type minerals and the presence of these gives a very 'clayey' material. The property of clayeyness is essentially a measure of the attachment of the water in the system to the clay minerals. So the brickearth, with modest content of kaolinite or illite, is not firmly attached to a lot of water; the clayeyness is low and the water can be easily detached.

FIRING AND PICKING

The stock bricks were fired in clamps, which was convenient in many ways but introduced a certain thermal randomness into the process. In every clamp firing there would be a range of bricks produced, from excellent well-burnt bricks to underfired and over-burnt bricks. Careful selection or 'picking' was required. Bazalgette

did note the use of picked stocks for the sewer constructions. A problem with clamp firing was that prolonged bad weather could seriously delay brick production and Bazalgette did record problems with brick supply due to weather problems. Gault brick production would have been less exposed to weather problems experienced in the capital.

HARDENING

Alan Cox, writing about the London Stock brick:[13]

> It is made from superficial deposits of brickearth overlying the London Clay, which are easily worked and produce a durable, generally well burnt brick. This durability actually increases, since the London Stock brick has the fortuitous advantage of *hardening with age* [our emphasis] and in reaction to the polluted London atmosphere.

This post-installation hardening may be due to a form of pozzolanic reaction occurring within the brick. This pozzolanic reaction is a low-order chemical reaction which occurs between lime and siliceous materials- typically between by-product lime and added fly-ash in a Portland cement system. The fly-ash is the pozzolanic admixture- traditionally it was volcanic ash, perhaps from Pozzuoli (hence the name). The by-product lime is produced as the cement hydration reaction proceeds and may continue to be produced long after installation. Pozzolanic cements used in coastal defence works can gain strength for years after the construction is finished.

The London Stock brick contains available lime because chalk is added to the raw mix; the siliceous material is available because the brickearth consists essentially of silica (quartz) particles- some very fine and reactive. Firing the brick to some extent mimics the processes occurring in a cement making kiln. Cement is made by heating together clay and limestone (chalk); this produces complex cementing compounds. In cement chemistry terms the most useful compounds are tri-calcium silicate (C3S) and di-calcium silicate (C2S); these hydrate to form calcium silicate hydrate (which is difficult to define) which supplies cementing strength, and by-product lime is also produced. In the brick useful reactions may occur on firing, and subsequently after placement. Water is needed for this reaction so it would be a surficial reaction, hence hardening (and over time, strengthening). Some expansion on hydration so internal stresses developed, and this provides the strengthening effect- as in classic dispersed phase materials.

The reacting package is available in an adobe brick. These develop their strength via the adobe reaction[14] which is a form of pozzolanic reaction. Adobe continues to develop strength after placement, it is not simply a drying transition. The pozzolanic reaction would not be expected in a normal clay brick; the nine clay bricks listed by Freeman[15] would not be expected to produce relevant reactions.

THE BRICK

The particulate nature of loess/brickearth underpins all considerations of the development of properties in London Stock bricks. The ground nature is relatively complex but some chancy generalisations can be attempted. Brickearth is a silty material; assume a mode size of around 30μm: and most of these particles can be quartz.

The mode shape of the mode size Q particle can be calculated (with a few necessary assumptions [eg quartz is isotropic]). There is a probability approach to this problem, or it can be tackled via a very simple Monte Carlo method.[16] If the particle shape is defined by the simple orthogonal box into which it just fits; the mode shape can be calculated to be about 8-5-2: these are the side ratios. It is a remarkably flat particle — it will essentially determine and dominate the internal structure of the brick — and provide its great strength when the particle contacts are emphasized and reinforced

The London Stock is a silty quartz brick, and quartz is a material which tends to resist chemical attack, a good brick for sewers which carry all sorts of corrosive and damaging fluids.

The brickearth has a packing density P of perhaps 0.5, which is a voids ratio e of 1.0. Half of the space is taken up with solid material, half of the space is space. If brickearth is compacted the P value rises to perhaps 0.6-0.7, and this P value stays relatively high even after firing. The actual density of a typical London Stock brick is around 1845 kg/m^3. The density of quartz is about 2650 kg/m^3: with a few assumptions (always a few assumptions) this gives a P value of around 0.7, still quite a lot of porosity in a fired brick. This allows combustion gases (from the dispersed Spanish) to escape and gives the brick good drainage characteristics. A

typical blue brick could have a density of 2405 kg/m^3, significantly greater than Stock bricks and close to impermeable.

Fig.7 The New Zealander; Gustave Dore, 1872.

COMMENTARY

A brick: a strong brick: a precise brick: an exact brick: a brick that resists chemical attack: a brick that resists abrasion: a local brick: an abundant brick: a reliable brick: a long-lasting brick: a brick that grows harder with time: a relatively inexpensive brick; and within the parameters of supply and installation and subsequent behaviour, the best brick. We celebrate the London Stock brick: the brick made from brickearth.

The results in figure 3 are classic TG results produced in a Stanton-Redcroft TR01 thermobalance. The DTG result in figure 4 was produced in a slightly modified TR02 thermobalance. The TR02 represented a peak of electro-mechanical thermobalance construction. Widespread usage could have produced remarkable results in soil and clay mineralogy but the machines ceased to be available. The TR balances were large sample, slow heating and slow cooling machines; test rate say one sample per day. The TG needs in the latter half of the 20th century were perceived to be for small sample (mg size) fast heating and fast cooling balances for

routine analysis and the manufacturers focussed on these. Thermobalance sales were never large, and the loss of the large sample (1-2g) machines severely curtailed soil/clay investigations. The Freeman TG results were probably the most useful produced with respect to brick clay. It seems likely that that the 'picked stocks' were the bricks used to construct most of the Bazalgette sewer network.

The Gault bricks (like Freeman 62AL), coming from not much further away we see as support materials, to cover stock brick shortfalls, particularly the problems caused by bad weather. The Staffordshire blues (essentially Freeman 60AG type bricks) were used in small quantities in places where heavy wear and erosion were anticipated; at the lower parts of the system where flow was concentrated and more or less constant. The blues cost around 84 *shillings* (£4-20) per thousand, more than twice the cost of the stocks at 35 *shillings* (£1-75) per thousand. The choices were made but chance played a large part; the fact that London was located in brickearth country was a huge positive factor and helped to make the Bazalgette sewer system a great success.

This was surely the acme of the London Stock brick story; the peak of achievement for the hand-made brick. After the sewer project the machine-made brick became dominant, the brickearth deposits were being used up, and the railways were providing efficient ways of transporting bricks over increasing distances. The monument, the memorial of the London Stock brick is the widespread, but invisible, network of Bazalgette sewers- and all the people who survived the cholera epidemics which did not occur. In the famous *Times* obituary for Bazalgette the New Zealander of the future, visiting the ancient city, sits over the great buried tunnels built of the everlasting bricks.

> When the New Zealander comes to London, a thousand years hence, to sketch the ruins of St. Pauls, the magnificent solidity and faultless symmetry of the great granite blocks which form the wall of the Thames embankment will remain... *Of the great sewer that runs beneath* Londoners know, as a rule, nothing, though the Registrar-General could tell them that its existence has added some twenty years to their chance of life.[17]

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ACKNOWLEDGEMENTS

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3. I.L. Freeman, 'Mineralogy of ten British brick clays', *Clay Minerals Bulletin.* **5**, 1964, pp.474-486. It would be useful if more mineralogical information were available; Freeman sample 63AH carries a lot of responsibility in London Stock brick studies.

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Bee-eaters appeared in *Quaternary International* in 2012-2019; the first is probably the most informative. I.J. Smalley, K. O'Hara-Dhand, S. McLaren, Z. Svircev, H. Nugent, 'Loess and bee-eaters I: Ground properties affecting the nesting of European bee-eaters (*Merops apiaster* L1758) in loess deposits', *Quaternary International*, **296,** 2012, pp.220-226.

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14. C.D.F. Rogers, I.J. Smalley, 'The adobe reaction and the use of loess mud in construction', *Engineering Geology,* **40,** 1995, pp.137-138.

15. See note 3 *supra.*

16. C.D.F. Rogers, I.J. Smalley, 'The shape of loess particles', *Naturwissenschaften* **80,** 1993, pp.461-462. I.J. Smalley, 'The expected shapes of blocks and grains', *Journal of Sedimentary Petrology,* **38,** 1966, pp.626-629.

17. Bazalgette obituary; *The Times*, Monday 16 March 1891. We have to mention the New Zealander, sitting on the ruins of London Bridge, holding his tablet computer and electronic drawing stick, admiring the wreckage of St Pauls while possibly unaware of the great marvels below ground. The New Zealander who was mentioned in the obituary was an image that had been conjured up by Thomas Babington Macaulay in 1840, commenting on the transience of empires and things. It was a very common metaphor in the nineteenth century; so common in fact that *Punch* in 1865 issued a call for it to be banned. *The Times* obituarist did not heed the call and deployed to New Zealander to memorialise the great sewer builder.

THE GREAT YARMOUTH ICE HOUSE AND BURGH CASTLE WHITES

THE ICE HOUSE

Ice played a major role in the craning of herrings in the economy of nineteenth-century Great Yarmouth. It is not surprising that the town had several ice houses. One of these survives on the south bank of the River Yare at the Southtown, or western, end of the Haven Bridge.

As with the vats for ice at the London Canal Museum, the ice almost certainly came from Norway, although Scotland may be a possibility with the herring boats transporting ice in barrels as they came south.

The single surviving ice house, one of a pair, probably built between 1859 and 1862, although its derelict companion was finally demolished in 1968. The construction date of 1859-62 would tie in with railway activity and patronage, as the Eastern Counties Railway from Ipswich to Great Yarmouth, with branch to Lowestoft reached Great Yarmouth in 1859 and the terminus, Southtown Station, was built in that year. Bill Wilson gives 1990 for the repair and reconstruction of the surviving ice house by local architects Olley & Haward (job architect, T.R. Bird). This ties in with my recollection of the reconstruction. The remaining ice house was derelict in 1977 when I first started visiting in Great Yarmouth again. It remained derelict for much of the time I lived in a village outside the town (1980-1993) but had been repaired by the time I left the area.

Some sources have given 1840 as the date of construction but this seems to refer to a building shown on the Southtown side of the river in prints of the Haven Bridge collapse in 1845. This building may have been an icehouse. A building in a similar position beside the wooden Haven Bridge is shown on the late-sixteenth-century Great Yarmouth Picture Map now in the British Library (Cotton MS, Augustus I.i.74) which again could have been an early example of an ice house.

No architect for is recorded for the original building of the surviving ice house. Two possibilities are A.W. Morant (1828-1811), the Borough Engineer of Great Yarmouth, 1856-1865, or the engineers and/or architects working for the Eastern Counties Railway.

BURGH CASTLE WHITES

The bricks used in original construction of the ice house are Burgh Castle whites. A distinctive white brick, in reality a brick which is light yellowish grey in colour, was made at the brickworks at Burgh Castle, visited by members of the British Brick Society at the end of the tour of Lothingland Hundred, Suffolk, in Spring 1990. The bricks for ice house would have been transported by wherry to the site of the ice house from the now, sadly derelict, wooden jetty on Breydon Water adjacent to the remains of the brickworks.

It is possible to identify a number of other buildings constructed of Burgh Castle whites, including the exterior of Burgh Hall on the small part of Lord's Lane in Burgh Castle parish; the interior walls, including the inner skin of the outside walls, are in a red brick. In the early 1980s, it had been a restaurant but later suffered a fire and was derelict by mid-1980s.

A number of mid-nineteenth-century buildings in Great Yarmouth were constructed using Burgh Castle whites. They include two new churches — St Mary's church, Southtown (1830-31, J.J. Scoles) and St Peter's church, Deneside, now the Greek Orthodox church dedicated to St Spiridon, (1831-33, J.J. Scoles) — and an extension to a third: the south aisle of St John's church, York Road (1859, A.W. Morant). Before the clientele of the seaside resort became predominantly working class in the late nineteenth-century, the town council at Great Yarmouth in the 1840s and later sought to market the place as a superior resort. One building from this attempt is Shadingfield Lodge, on Yarmouth front (1860-65, A.W. Morant), has exterior walls of Burgh Castle whites. In the same area, possible buildings and structures of Burgh Castle whites are the Wellington Arch (1846, John Brown), and houses of the 1840s in the vicinity of the Wellington Arch, such as those on Camperdown, Wellington Road, Devonshire Road, and Duncan Road, but no.29 Duncan Road, built in 1845, was red brick in the cellars. In the same general area, individual houses and buildings on Regent Road and St Peter's Road, again dating from the 1840s and the 1850s, were built using Burgh Castle whites.

Two civic buildings of Burgh Castle whites on the seafront, Marine Parade, were the Sailors' Home, now the Maritime Museum, (1858, A.W. Morant) and the demolished Coastguard Station (1859, A.W. Morant), designed as part of his duties as borough engineer.

Buildings which are less probably constructed from Burgh Castle whites but are of a white brick possibly from the Burgh Castle brickworks include the terrace of three-bay, three-storey buildings on south side of Regent Street (1812-13: John Green) and the rear wall of the original but now demolished Arnolds store, later Debenhams, on the north side of Regent Street. The white brick buildings on Yarmouth front, such as the Gem cinema, now the Windmill Theatre (1908, A.S. Hewitt) could be Burgh Castle whites.

A white-brick building in Great Yarmouth known not to have been built of Burgh Castle whites is the Naval Hospital, South Denes (1800-1811, William Pilkington for the Navy Board), the bricks for which came from the brickyard serving the Holkham estate in north Norfolk. The same brickworks also supplied the bricks for the inner skin of the Nelson Monument. These bricks would have come using a coastal vessel and would either have been off-loaded from the ship on to the South Beach or trans-shipped to a cart standing on the area which later became Fisherman's Quay.

The ice house is noted N. Pevsner and B. Wilson, *The Buildings of England: Norfolk 1: Norwich and North-East Norfolk,* London: Penguin Books, 1997, page 508. The same volume gives details of the other Great Yarmouth buildings mentioned on pages 507-529.

DAVID H. KENNETT

The Brick Kilns at Great Linford, Buckinghamshire

Michael Chapman

Fig.1 The two beehive kilns at Great Linford showing the entry point for loading and unloading.

On Saturday 25 July 2015, the Society held a "walking tour" meeting which commenced in Bletchley, Buckinghamshire. The tour, arranged by our editor, David Kennett was designed to look at eighteenth-century village churches on the southern, western, and northern fringes of the City of Milton Keynes, with the visit being reported in *BBS Information* **131**, September 2015, under the title 'The Fringes of Milton Keynes'.

Whilst Milton Keynes itself is a new town creation it encompasses several original settlements principally the former towns of Bletchley, Fenny Stratford, Wolverton, and Stony Stratford, together with another fifteen villages, with the visit giving an insight into just some of the architecture and building history that still exists.

The last village area to be visited was Great Linford, which contains two gems: firstly, the parish church and associated ecclesiastical buildings, and the second being two preserved and listed Beehive kilns, that are on the site of a long defunct small rural brickyard, with the site being a Scheduled Ancient Monument.

With little immediate information available and with such kilns being a rarity in the UK it was decided to research the history of the site, with an accompanying history and operation of a beehive kiln.

Buckinghamshire in the eighteenth century had a rural and agricultural economy, with the movement of people and goods, particularly heavy building materials such as brick restricted by poor or non-existent roads, all leading to building materials usually being sourced locally.

The county is fortunate to have an abundance of clay suitable for brick making, which led to many small brickyards being established, of which the site at Great Linford would have been a good example and as such supplying bricks for building works in and around the area. The last years of the eighteenth century witnessed the changes brought about by the early Industrial Revolution in the country, with this part of Buckinghamshire fundamentally changed by the building of the Grand Junction Canal. Permission for its construction was enacted by Parliament in 1793, with the objective being to build a waterway between the English Midlands and London, creating a shorter route enabling costs and time to be much reduced.

The overall canal scheme was extraordinarily successful and with its various branches and connections to other canals enabled vast quantities of goods to flow into and out of London. Amalgamations with other canal companies and competition from the railways, eventually resulted, in 1929, with the formation of the Grand Union Canal, and all now managed by the Canal and River Trust.

The canal reached Great Linford around 1800, albeit despite opposition from local landowners, for example, the Uthwatt family, who lived at Great Linford Manor, and whose estate was effectively cut in half by the canal.

Canal construction required large quantities of bricks and very often these would be produced locally either by existing yards, or more often from suitable clays exposed by the excavation of the cut.

Here the origins and history of Great Linford yard are uncertain: there is certainly suitable clay that would have been excavated by the canal navvies, but the records do not appear to show if the canal contractors made use of it for brickmaking, with conclusive evidence for brickmaking not recorded until the 1830s.

The solid geology map (fig.2), shows the approximate location of the brickyard. The pink colour denotes Jurassic Mudstone, a suitable brickmaking material.

Fig 2 Geological map of the area around the great Linford kilns.

The earliest written reference found to date is an entry for 1830 in Pigot & Co, *National and Commercial Directory*, recording that the yard was operated by Keeps, Labrum and Taylor, with Great Linford Wharf shown as the business address. This partnership was dissolved in 1840 and the Tithe Map of that year, which not only confirms the location of the yard but also that Mary Ann Taylor is both owner and occupier, suggesting that the Taylor family still controlled the business, but then sold it in 1841 to a Richard Sheppard who is listed in the Pigot *Directory* of 1842 as 'Brickmaker and Limeburner'.

The 1841 Census records three village men employed as brickmakers and again in the 1851 Census which records two brickmakers and one tile maker, so it is clear from these records that the yard was still active

However, by 1861 no brick makers were recorded, although four bricklayers are shown. This suggests that by that date the yard had closed, but bricks were still readily available in the village, possibly from nearby works, with the canal used for transportation.

There is now a gap from then to around 1895 when brickmaking was restored to Great Linford, with the legacy of that enterprise being the two surviving kilns.

This new brickworks was established by George Osborn Price, a corn merchant from Newport Pagnell, who is listed in the 1899 Kelly's Trade Directory as a 'Corn, cake, coal and lime merchant and brickmaker'.

The construction of the actual kiln, required the skills of an accomplished bricklayer to ensure that the overall radius of the round supporting walls was correct, and the dome securely fitted onto the supporting walls, with suitable allowance made for the expansion and contraction of the structure during the firing cycle.

Mr Price, who died in 1905, was sufficiently prominent in the community to have a memorial placed inside St Peter and St. Paul's church in Newport Pagnell.

The 1901 Census lists John Thornton Read as foreman of the brickyards and again in the 1911 Census as living in the "Brickyard Cottage". John was the son of an Oxfordshire brickmaking family, who had arrived at Great Linford in early 1895 to help establish the yard and bring it into operation.

The works employed several local men and boys, amongst them a Joe Malshar who is recorded as a 'gas engine attendant'. This engine would have been used to power the brickmaking machinery and together with records of a "Steam Navvy" being used to dig the clay, all of which suggests that for its time the works

Fig. 4
The chimney usually built square or rectangular on plan, with standard bricks laid in a hydraulic lime-based mortar, in English bond: and is relatively straightforward brickwork. Built to height to suit the size of the kiln, and either built with the outer face vertical, or 'plumb', or else inclined, termed 'battered'. Like the main kiln, the chimney is usually fitted with steel banding.

Fig. 3 Photograph showing the construction of the chimney and newly completed kiln which clearly show the iron "buckstays" on each side of the wicket entrance and the hoops that kept the kiln together during the expansion and contraction of intermittent firing.

Fig. 5 (left) Ordnance Survey, Map 1898, shows Brickworks
Fig.6 (right) Ordnance Survey, Map 1925, shows old kilns

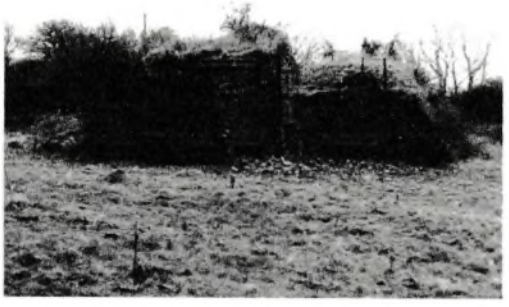

Fig 7 Derelict state of the kilns long after closure.

was relatively mechanised. The siting of the works adjacent to the canal would have ensured loads of up to 20,000 bricks could be transported to market, with coal for firing the kilns brought in by the same method.

It is recorded that large numbers of bricks supplied building projects in Wolverton and New Bardwell.

After 1911, nothing more was recorded for the works and it is highly likely that, along with most brickworks it was abruptly closed upon the outbreak of World War1, with Great Linford not reopening and ending the era of brickmaking on the site. Fortunately, the site was felt worthy of restoration, with the results of this work giving a valuable record of the history of brickmaking in the area.

As the demand for clay building products rose dramatically from the early nineteenth century, demands to increase both output and quality were satisfied by great strides in mechanisation. Whilst the Hoffman continuous kiln was the first to achieve 'mass production', many intermittent type kilns were still in use.

Intermittent kilns were cheaper and quicker to construct, they provided more versatility essential to meet specific demands of products such as salt glazed sanitary pipes and engineering bricks, both red and blue, requiring high temperature firing with a more exacting kiln atmosphere conditions, all of which the early continuous kilns were less efficient in achieving. So, whilst a larger works would have had a mix of kiln types, for smaller yards, an intermittent kiln sufficed giving both flexibility and acceptable quality whilst remaining competitive. Early intermittent kilns were all based around the "updraught" principal, the term used to describe a system of firing utilising the physics of hot air rising. The Scotch kiln was a typical example, usually rectangular in shape, and as such easy to identify on old maps of brickyards. These types of kilns used a lot of fuel and had little control over the actual firing process resulting in very variable colours and lower yields of best product.

The beehive kiln was a "downdraught kiln" so called because via a system of low-level flues, dampers and a specifically designed chimney, the products of fuel combustion could be directed and circulated around the whole kiln before being exhausted via the chimney. This resulted in a much more evenly distributed firing of the kiln, and if required for pipes or blue bricks the ability to change the kiln atmosphere at the critical times over the firing curve.

The late Martin Hammond attributes the design of the beehive kiln to a derivation of Thomas Minton's patent kiln of 1873 developed for the porcelain industry. This kiln employed both an updraught and downdraught 'chamber', with the specification stating that only the downdraught chamber alone should be used for bricks.

A problem associated with any type of kiln design is that of flame impingement, arising where the flames from the burning fuel go into the setting causing localised and very uneven temperatures which result in a variety of undesirable quality problems; with, in extreme cases, allowing the clay to soften and melt, resulting in a collapse of the setting.

This problem was largely overcome by the development of a 'bag wall' withing the kiln itself, which effectively separated the flame and ashes from the burning fuel allowing only hot air and general products of combustion to flow through the setting achieving a much more even burn. The diagram (fig.8, opposite) illustrates via a cross section of a typical beehive kiln the various terminology used.

The floor of the kiln would be constructed with large, perforated refractory slabs, known as "Holey Boys" which allowed the gases to go into the smoke flue. The height of the chimney was designed on the principal of hot air rising to ensure a balance between it and the kiln chamber

Many beehive installations at larger works were arranged so that several kilns had just one chimney, with a skilled kiln burner controlling the operation. Kiln capacity varied considerably, depending on the output required with a range of between 20 to 60 thousand bricks.

From the rather worn-out information board at Great Linford, the operation describes the firing schedule as

> 20,000 to 25,000 bricks hand set into the kiln. Coal fires were lit in the furnace holes, with some 122 tonnes of coal required overall. The kiln was built using circular iron bands to support the structure, with two vertical railway lines, one each side of the wicket entrance supporting an iron door to seal the kiln when firing commenced.

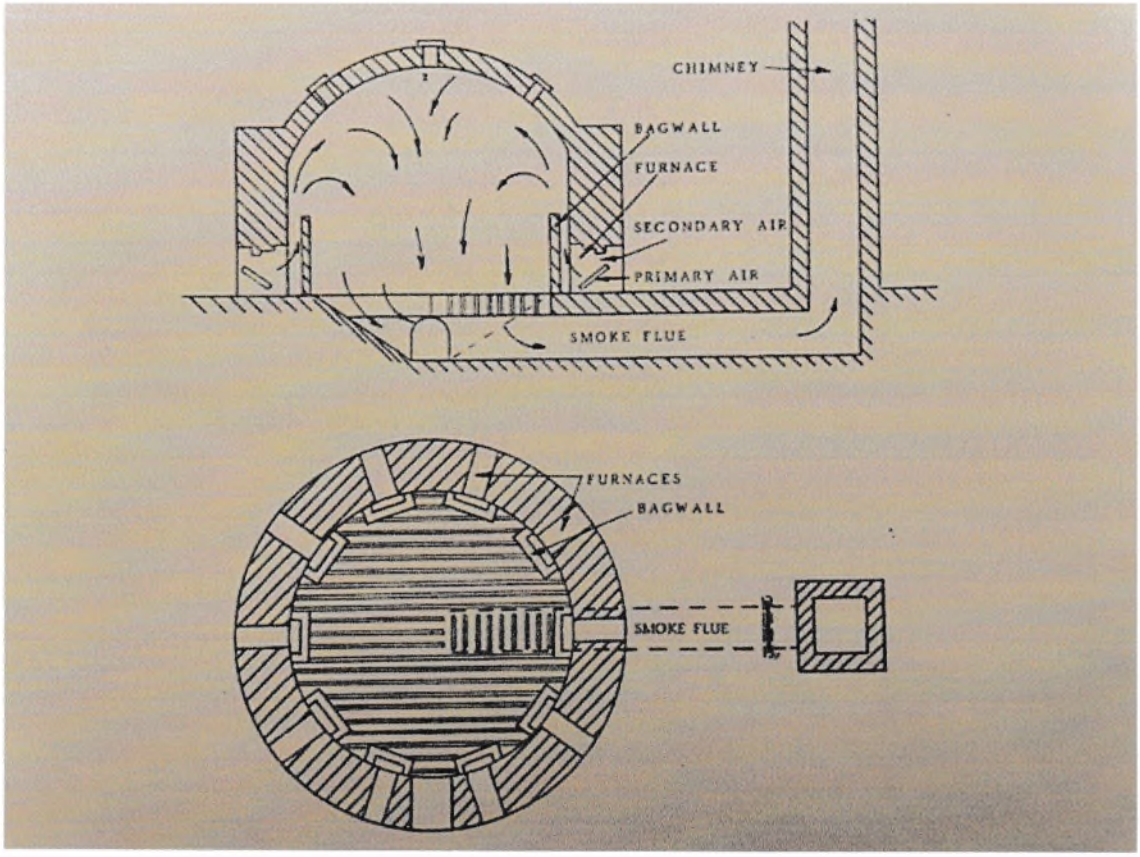

Fig.8 Diagram to illustrate the various terminology used in discussing the beehive kiln at Great Linford.

A typical setting pattern (fig.9, below) used to both stabilise the set during the movements taking place during firing and to encourage the correct flow of gases throughout the chamber.

The overall 'Firing Curve' consisted of 3 days raising the temperature to a "glowing" red heat (about 600 degrees C), followed by another 4 days increasing to 900 degrees. Finally, the temperature was raised to 1150 degrees C and held or "soaked" at this top temperature for 24 hours. The kiln then took a week to cool before being unloaded with the process then repeated. This cycle of firing up and cooling down gives this type of kiln it name-Intermittent.

With the kiln cooled and empty, it was then crucial that all the flues and fire grates were cleaned, a process called 'ashing out' which ensured that the flow of gases in the next firing were not impeded. If not done properly, then extra fuel and poor quality would be the result.

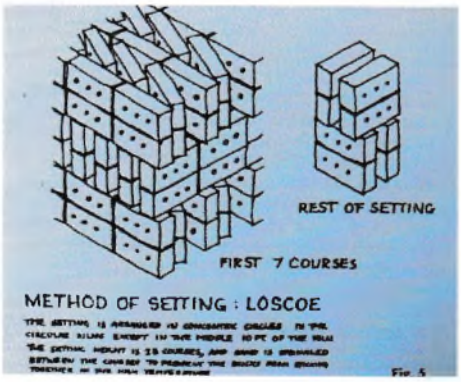

Fig.9 Method of setting bricks within a beehive kiln.

Fig.10 A large sanitary pipe works located in West Yorkshire, showing a multiplicity of beehive kilns, several sharing a single chimney.

Beehive type kilns were still commonly in use until the mid-twentieth century, as seen by the aerial photograph of a large sanitary pipe works in West Yorkshire (fig.10).

The clay products industry of today, is typified by high volume tunnel kiln plants, but there are still a few beehive kilns still being used, both coal and gas fired where the product range and volumes remain suited to this type of kiln, with examples such as the one at Bulmer Brick and the larger installation at a pipe works in West Yorkshire.

As a footnote on Great Linford Kilns, the site is presently undergoing further restoration that will ensure that this fine example of beehive kilns is preserved for future generations. Works are being carried out by the Buckinghamshire Gardens Trust on behalf of Historic England.

Fig.11 The two beehive kilns at Great Linford undergoing restoration.

ACKNOWLEDGEMENTS AND REFERENCES

All photographs Mike Chapman Collection, except as below:
Fig 2, British Geological Survey;
Figs 3 and 7, photographs, Buckinghamshire Archive Service;
Fig. 4, Information kindly supplied by Dr Gerard Lynch;
Figs 5 and 6, Maps from the National Library Service of Scotland, enhanced by Martyn Fretwell;
Fig. 8, Plan and cross-section of a beehive kiln from A.E. Rowden, *The Firing of Bricks*, Winkfield Row, Brick Development Association, 1964, page 23;
Fig. 10, The late Martyn Hammond, in *Industrial Archaeology Review* Volume 1, No.2 Spring 1977;
Fig. 11, Buckinghamshire Gardens Trust.org.uk.
Information regarding Mr George Price researched by Martyn Fretwell.

Underneath the Arches: St Peter the Apostle, Gorleston-on-Sea, Norfolk, and Inept Analogies

Terence Paul Smith

INTRODUCTION

This note derives from a much longer piece concerning several disquieting thoughts arising from reading *100 Churches: 100 Years*, reviewed by David Kennett in *British Brick Society Information*, **147**.[1] Within a wider context of misgivings, to be aired in a future issue,[2] I here draw attention to a particular group of brick-built churches which are subject to incorrect remarks and inept analogies for the arches in the interior of the brick-built church of St Peter the Apostle, Gorleston-on-Sea, Norfolk (1938-39: Eric Gill).[3] Alan Powers compares them to those in the church at Quarr Abbey, Isle of Wight (1911-12: Dom Paul Bellot),[4] while Timothy Brittain-Catlin compares those at St Faith, Lee-on-the-Solent, Hants. (1933: Seely & Paget)[5] to St Peter's, Gorleston. Comparison will be made of St Faith's to the church of St Leonard at St Leonards-on-Sea, East Sussex (1953-61: Sir Giles & Adrian Gilbert Scott).[6] St Peter's and Quarr Abbey were for the Roman Catholic Church and the two other churches for the Church of England.

Fig.1 St Peter the Apostle, Gorleston-on-Sea: exterior from the south-west.
Creative Commons: John Roston, 3 February 2010

ST PETER THE APOSTLE, GORLESTON-ON-SEA AND INEPT ANALOGIES: 'Fro' first to last, a muddle'[7]

The book as a whole suffers from what can only be described as writing which is unacceptably lax, possibly because composition of the individual pieces was hurried and therefore insufficiently attentive.

Perhaps the most crass example of inattention concerns remarks on the church of St Peter the Apostle, Lowestoft Road, Gorleston-on-Sea, Norfolk (1938-39) by Eric Gill (1882-1940),[8] his only architectural work although he had received an architectural training. Externally, the building (fig.1) is red brick in Flemish Bond,

Fig.2 St Peter the Apostle, Gorleston-Sea: interior looking east in 2018, showing the sharply pointed arches separating the nave from the aisles and under the tower. The outline painting is by Denis Tegetmair, Eric Gill's son-in-law.

though this is neither mentioned nor illustrated. Alan Powers, the author of the piece on St Peter's, refers to the internal 'simple brick arches' and compares them to the brick arches at Quarr Abbey, Isle of Wight (1911-12),[9] designed by Dom Paul Bellot (1876-1943).[10] Readers looking at the photograph of the interior of St Peter's on page 55 of *100 Churches: 100 Years* may well be puzzled, therefore, by the smooth white arches, which, though built of brick, are plastered and lime-washed (fig.2), unlike those at Quarr, where the brickwork, of deliberately chosen rough-looking rejects, is exposed (fig.3); the Quarr arches, with their pierced spandrels, are also far more dramatic and on a vastly grander scale than those at Gorleston. The arches at Quarr, all of which have pierced spandrels, become more complex as one moves from the congregational nave to the monks' choir to the sanctuary:[11] Powers does not make clear which set of arches he has in mind. In fine, there is no resemblance *whatever* between the two buildings.

Elsewhere in the book (page 40), there is consideration of St Faith at Lee-on-the-Solent, Hants. (1933) by Seely & Paget, in which Timothy Brittain-Catlin writes of the internal 'series of in-situ concrete catenary arches well before Eric Gill used similar forms for his church in Gorleston'.[12] Quite apart from the fact that 1933 is scarcely *well* before 1938-39, the arches at Gorleston are not catenaries but sharply pointed, a difference easily seen by comparing the photographs of the two interiors. On the other hand, the catenary arches at Lee-on-the-Solent *are* similar to, and well before, those at St Leonard, St Leonard's-on-Sea, East Sussex (1953-61), a rare collaboration by the brothers Sir Giles and Adrian Gilbert Scott, as is shown by the photograph on page 86; but this *real* similarity goes unmentioned by Claire Price, who writes on the Sussex church.[13]

Also unmentioned is the fact that both St Faith and St Leonard are, like St Peter at Gorleston, externally of red brick. Nor does Alan Powers mention the use of brick pointed arches both at the entrance to St Peter's and in the cloister (or loggia) which connects the church to its presbytery or consider the way in which the windows of St Peter's are enclosed in pointed arches, which although wider at the base echo the internal, entrance, and cloister arches. Powers also remarks 'that an architect from High Wycombe was involved' without naming him; he was Edmund Farrell,[14] a man whom Eric Gill described as 'well acquainted with the

whole business of labour and materials of today',[15] a recognition from the sculptor that building practice had moved on from the time of his architectural training more than a generation earlier.

It is with no sense of *schadenfreude* that I make these critical comments; but the errors and generally lax approach, from contributors and editors alike, should not go unchallenged: there is 'a time to keep silence, and a time to speak'.[16]

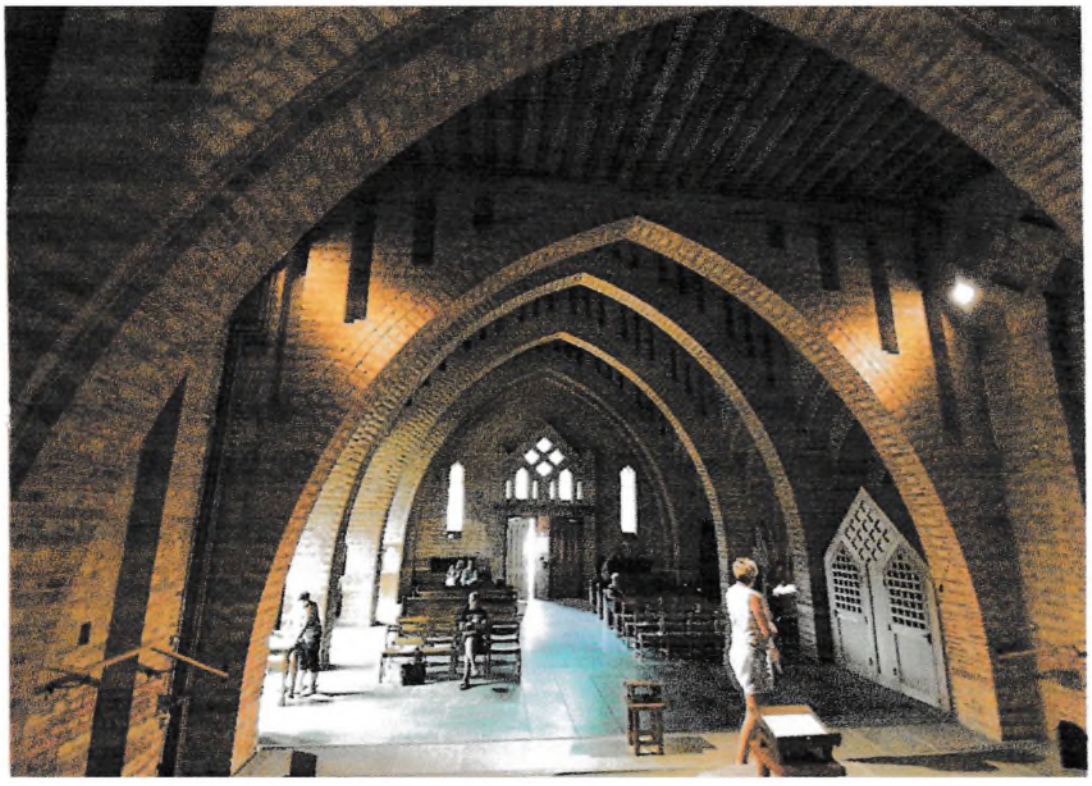

Fig.3 Quarr Abbey, Isle of Wight: arches of the congregational nave looking west, with broad, pointed arches with spandrels.

NOTES AND REFERENCES

1. D.H. Kennett, 'Book Review: Twentieth-Century Meeting Places for the Christian God', *BBS Information,* **146,** October 220, pp.40-53, a review of S. Charlton, E. Harwood, and C. Price, eds, *100 Churches: 100 Years,* London: Batsford for the Twentieth Century Society, 2020. Page references in the text are to Charlton *et al,* eds, 2020.

2. [T.P. Smith, 'London Churches in *100 Churches: 100 Years*: A Further Assessment', *BBS Information,* forthcoming. A 'London' issue of *BBS Information* is being planned for when enough future contributions on brick and its uses in London have been received. The Appendix of Mr Smith's original contribution will appear in a projected 'Brick Churches' issue of *BBS Information*: T.P. Smith, 'Practice Profile: Nugent Francis Cachemaille-Day FRIBA (1896-1976)'. The issue will be put together when sufficient contributions have been accrued. (Ed.)]

3. Previous descriptions of the church may be found N. Pevsner, *The Buildings of England: North-East Norfolk and Norwich,* Harmondsworth: Penguin Books, 1st edn, 1962, reprint issued 1976, p.390, (in the addenda; the church was omitted in the original printing in 1962); N. Pevsner and B. Wilson, *The Buildings of England: Norfolk 1: Norwich and North-East,* London: Penguin Books, 2nd edn, 1997, p.477, a rather fuller account; Historic England, listing document at *https://historicengland.org.uk/listing/the-list/first-entry/1246581*; and other web references. For a brief account of the circumstances of the commission see F. MacCarthy, *Eric Gill,* London: Faber and Faber, 1989, pp.279-281. MacCarthy, 1989, has three illustrations of the church: pl.120, architect's drawing of the exterior from the south-west with the entrance at the west end, the area used for the baptistry; pl.121, sketch showing the idea of a central altar; pl.122, taken *circa* 1970, when the altar was at the east end. The altar is now under the central tower as Gill intended.

4. D.W. Lloyd and N. Pevsner, *The Buildings of England: The Isle of Wight,* New Haven and London: Yale University Press, 2007, pp.213-218, with plan on p.216, and pls. 77 (the exterior) and 78 (the arches of the eastern tower above the sanctuary). See also N. Pevsner and D.W. Lloyd, *The Buildings of England: Hampshire and the Isle of Wight,* Harmondsworth: Penguin Books, 1967, pp.760-761, the final paragraph on p.761 is repeated verbatim in Lloyd and Pevsner, 2006, pp.216-217. The plate, black-and-white in Pevsner and Lloyd, 1967, and in colour in Lloyd and Pevsner, 2007, is of the complex arches of the sanctuary.

5. C. O'Brien, B. Bailey, N. Pevsner and D.W. Lloyd, *The Buildings of England: Hampshire: South,* New Haven and London: Yale University Press, 2018, p.361. Earlier, Pevsner and Lloyd, 1967, p.318.

6. N. Antram and N. Pevsner, *The Buildings of England: Sussex: East,* New Haven and London: Yale University Press, 2013, p.454. Earlier, N. Pevsner and I. Nairn, *The Buildings of England: Sussex,* Harmondsworth: Pengiun Books, 1961, p.521.

7. Stephen Blackpool in Charles Dickens, *Hard Times,* 1854; numerous subsequent editions, Book 3, Chapter 6.

8. See note 3 for references to St Peter's church. There is a good quality, though small, photograph by Alex Ramsay of the exterior in C. Martin, *A Glimpse of Heaven: Catholic Churches of England and Wales,* revised edition, Swindon: English Heritage, 2009, pp.187. For Eric Gill's life, see MacCarthy, 1989, which includes discussion of the opprobrious, and indeed indictable, aspects of Gill's personal life. Presumably he found a way to reconcile them with his Roman Catholic faith.

9. There are some excellent colour photographs of St Mary's Abbey, Quarr, in Martin, 2009, pp.162-163.

10. The son of an architect, Paul Bellot had trained as an architect at the Ecole des Beaux Arts, Paris, receiving his diploma in 1900 before becoming a novice and professing his vows in 1904 at Solemnes, France, from where the monks fled in 1907. The Benedictine order was keen to use his talents. Apart from Quarr Abbey, he designed and supervised the construction of churches and conventual buildings for the order in the Netherlands and Canada, where he died.

11. Photographs of the complex intersecting arches above the sanctuary are to be found in black-and-white in Pevsner and Lloyd, 1967, pl.95; and in colour in Lloyd and Pevsner, 2006, pl.78 and in Martin, 2009, p.163 top left.

12. See note 5 *supra* for other references to St Faith, Lee-on-the-Solent, Hants.

13. Nor does she record the sad circumstance that the church was closed in July 2018 and was, at the time of her writing, threatened with demolition. See also note 5 *supra.*

14. [Edmund Farrell is noted as associate architect, Architectural History Practice, *Twentieth-Century Roman Catholic Church Architecture in England,* London: Architectural History Practice for English Heritage, July 2014, available on-line at *http://www.hralliance.org.uk/wp-content/uploads/2018/12/RC-C20-Characterisation-Final-July-2014.pdf,* p.93, with comment on St Peter's, *ibid.,* pp.21-22; the latter has extensive quotations from Gill's published works on liturgy and architecture. (DHK)]

15. [A. Hamilton, *Arts & Crafts Churches,* London: Lund Humphries, 2020, pp.214-215; quotation on p.214. The source of the quotation is not given. Farrell is not mentioned in MacCarthy, 1989, pp.279-281. (DHK)]

16. Ecclesiastes 3.7 (AV, RSV, NRSV).

BRICK IN THE NEWS:
IBSTOCK CLOSES WEST HOATHLY WORKS

A year after the Bluebell Railway's 'Road Meets Rail' event, the brickworks at West Hoathly were closed by Ibstock. In March 2020, the company announced that it would be closing all its UK brickworks as the economy stalled due to the Covid-19 lockdown.

Only the West Hoathly works had continued to produce traditional clamp-fired stock bricks in coke-fuelled kilns, accounting for their superior appearance and rich variation in colour which has contributed to many buildings in Sussex and beyond for well over a century. Regrettably, the combination of a labour-intensive process and pressure from government and the environmental lobby to reduce carbon emissions are understood to be the principal reasons for the closure of West Hoathly brickworks.

During 2020, lorries have been removing bricks from the West Hoathly brickworks.

BRIAN KIDMAN (from *Bluebell News,* Autumn 2020)

Bricks to Bluebell

James Hamilton

On Friday 14 June 2019, prior to the Bluebell Line's 'Road Meets Rail' event on the weekend of 15-16 June, the bricks to be crushed for the road-making demonstration needed to be collected from Ibstock's brickworks at West Hoathly, Surrey — by steam, of course.

Engine owner David Mansi offered to fetch the bricks using *Jess,* his 1908 Marshall 5nhp traction engine No. 51007, and his two traction wagons. One wagon he has been using for some time; built by Marshall and owned by Bridson & Son of Neston, carrying the number '2' it was used with their Burrell engine. When its side boards were removed, the flat wagon bed was the seating for a tank used for spraying. The original wheels were changed and smaller ones fitted on the front axle, where the brake was also altered. The Burrell engine and the wagon went to a museum when their working lives were over; accompanying them were the original side panels, which had been stored in a shed. But the wagon was surplus to the museum collection and was purchased by David Mansi, who wished to sympathetically restore it.

The other wagon was built by Aveling & Porter and the restoration only finished when the last coat of paint was applied to the woodwork on the night before being used for the journey with the bricks. David's purchase of the wagon, from a dealer in Kent. had been some years before it was pressed into service for the brick journey. Without an accompanying engine, this wagon had served as an ornament in David Mansi's garden. Restoration took place between February and June 2019.

Fig.1 No two West Haothly bricks are exactly the same colour and are marketed as being 'character'.

Ibstock's works at West Hoathly are opposite the former station on the Bluebell Railway. Ibstock at their West Hoathly works in 2019 were one of the last brick producers in Britain to make clamp-fired stock bricks. Produced in the traditional way, they were moulded, air dried, and fired on a grate of bricks and a bed of coke in large, semi-open-sided buildings/ Bricks made at West Hoathly subtly differ from one another and are described as 'character bricks' (fig.1). The bricks used for the demonstration were waste bricks that had been used to form the grate, and obviously could not be sold commercially.

The journey from the works to the event site at Horsted Keynes station was less than three miles but being in the Sussex High Wealden Ridge, there were some steep climbs and descents on the way. David Mansi drove with his son Will steering. Will's friends Charlie Ralph and Jack Waterman were each responsible for applying and un-applying the independent brakes of each wagon. Each man wore clothes appropriate to the age of the engine.

The bricks were weighed as they were loaded on to the wagons. Between the two wagons the bricks weighed nearly eight tons, which combined with the weight of each trailer was a considerable weight for the 5nph traction engine to haul up hills and, of more concern to David Mansi, to control on the descents.

Fig.2 (top) The steam traction engine, *Jess*, and the two wagons on the point of departure from the Ibstock brickworks at West Hoathly with stacks of the products in the background.

Fig.3 (centre) With the bricks loaded on to the wagons; the 3-mile journey can begin.

Fig.4 (bottom) The loaded wagons with waste, unsellable bricks, at the end of the journey.

Fig.5 The brakemen in place for tackling the hills of the Sussex Weald: Jack Waterman in the first wagon and Charlie Ralph in the second.

Fig.6 Having climbed Cinder Hill, the convoy takes a breather.

The journey began with a short, guided tour of the brickworks. With the additional weight, the engine had to work hard on the climbs, but working in low gear there were no heroics and having ascended several of the hills, the convoy took a well-earned rest, as at Cinder Hill. Sadly, attempting the climb from Horstead Keynes station to the event field in high gear proved to be a little bit too much for the century-old *Jess*. The old girl stalled at the top of the hill. But the convoy made it and *Jess* shunted the de-coupled wagons into their individual positions.

Editorial Note

The text and illustrations of this article are reprinted from *Bluebell News* Autumn 2019, by permission. All photographs are by James Hamilton.

It is included here as a record of a probably not uncommon method of moving bricks in rural areas in the period, approximately the 1870s to the 1920s, when steam traction was in regular use, including for the threshing of wheat and other grains.

The Former Granada Cinema, Walthamstow: an Update

Terence Paul Smith

In a longish note in a previous issue of *British Brick Society Information,* David Kennett gave details of the former Granada Cinema in Hoe Street, Walthamstow, London E17.[1] Designed by Cecil Masey (*fl.*1910-1940) and Theodore Komisarjevsky (1882-1954), with the former responsible for the exterior and the latter for the interior, it was built in 1930 with seating for 2,697 patrons. It was badly damaged by a V-1 flying bomb ('doodlebug') in 1944.[2] It was later restored, and in 1954 was the first cinema in the area to show a film in Cinemascope. From 1958 the building also served as a live music venue, with performers such as Buddy Holly, the Beatles (supporting top-of-the bill Roy Orbison), and the jazz greats John Coltrane and Dizzy Gillespie. It was converted to use as a triple-screen cinema in 1973. It became part of the Cannon Group in 1989 and was operated by Odeon until 2000, when it was sold to EMD cinemas: see the signage in figure 1. It closed in 2003, and the building was used by the Universal Church of the Kingdom of God until 2014, when permission to turn the building into a church was refused. It was sold to the Antic London public house group, and foyer and former bar were used as a pub until August 2020, the rest standing empty and derelict.

Fig.1 The former Granada Cinema, Walthamstow, in early 2020, the entrance boarded up and the stucco in poor condition.

One may remark that the comment in the previous note that 'plain brickwork *adorned* the exterior of the auditorium' (my italics) is remarkably generous, apart from the curious use of the past tense. The work, which is extant, is of variegated pinkish common bricks in English Bond and is almost featureless apart from shallow pilaster-buttresses: scarcely 'adorned'! Should anyone wish to view it, the north side is visible from Hatherley Mews; the rest is concealed by other buildings. But it is of no architectural interest; nor is it of any distinction, such characterless work being typical — and understandably so — of those parts of cinema (and theatre) auditoria not exposed to public view, as here.

What *is* of some interest is the frontage on Hoe Street. But here there is no exposed brickwork, the whole being stuccoed and whitewashed, though with some features — the trefoiled arch-heads and the spiral columns, each topped by a classical urn — picked out in pink. These features create a Moorish effect, especially that of Spain, including appropriately, *Granada,* the original name of the cinema. Much simpler are the lower ranges to each side, the southern longer than the northern, using, on the first floor, twinned round-headed windows with similar spiral columns. Below is a typical hotchpotch of shopfronts. These will be replaced and the stucco — in bad condition at time of writing — will be repaired. The roofs of the side ranges are, behind low parapets and, fittingly for the style of the frontage, of red Spanish tiles ('overs-and-unders'), although they are difficult to see except from the upper deck of a double-decker bus.

Strictly, I suppose, the building should not feature in these pages, the structural brickwork of the front being obscured by stucco and the exposed brickwork at the rear being of a commonplace and utilitarian nature and, moreover, mostly hidden from view. But since it has been introduced, a brief update on the restoration may be appended to the additional information given above, the latter, apart from that resulting from personal observation, derived from a number of published sources and the local press.[3]

As reported in the latter,[4] work on the Grade II* listed building is now underway to transform the building into a '1,000-seat comedy and entertainment venue — set to be run by 'Soho Theatre' at a cost of £25 million. The restoration/conversion is being led by Willmott Dixon Interiors in association with the architects Pilbrow & Partners, and opening is planned for Spring 2022.

At time of writing in the midst of the Covid-19 pandemic, the future of all such venues is uncertain: for example, there appears to be an hiatus in the refurbishment of the Regal cinema at Highams Park, London E4, a simple Art Deco frontage of brown bricks in Monk Bond added in 1935 to the Electric Cinema of 1911, and only 1¾ miles (2.8 km) north-east of the Walthamstow cinema.[5] Fortunately, the future of the latter, now owned by Waltham Forest Council, seems more assured, despite being on the 2015 'Buildings at Risk' register. On 17 November 2020, it was named as the winner of the New London Architecture Awards 2020 Conserving Unbuilt Prize, this category of the Awards being 'for the restoration and reuse of buildings ... where efficient use is made of existing fabric ...'.[6]

BIBLIOGRAPHICAL NOTE

There are good black-and-white photographs of the building, one exterior and three interior, in D. Atwell, *Cathedrals of the Movies: A History of British Cinemas and their Audiences,* London: The Architectural Press,1980, pages 128-129. A. Eyles, *The Granada Theatres,* London: Cinema Theatre Association, 1998, pages 33-38, has nine black-and-white photographs of the cinema, an exterior view of 1959 and eight of various interior features. There is a colour photograph of the frontage in B. Cherry, C. O'Brien, and N. Pevsner, *The Buildings of England: London 5: East,* New Haven and London: Yale University Press, 2005, plate 95, although here and at pages 87, 760, and 814 (index) the architect Cecil Masey's surname is misspelled 'Massy', alas not the only instance of laxity in this 'neo-Pevsner', to coin a convenient term.

NOTES AND REFERENCES

1. D.H. Kennett, 'Brick in the News: The Granada Cinema, Walthamstow, London E17', *BBS Information,* **142,** August 2019, p.22.
2. D. Mander, *Walthamstow Past,* London: Historical Publications, 2001, p.128.
3. Apart from Mander, 2001, p.128, the historical sources include L. Collier, *Walthamstow through Time,* Stroud, Glos.: Amberley Publishing, 2014, pp.58-59; J. Diamond, *A People's History of Walthamstow,* Stroud, Glos.: The History Press, 2018, p.111. See notes 4 and 6 *infra* for references to the local press.
4. *Your Local* [Waltham Forest] *Guardian,* 24 September 2020, p.22; *Waltham Forest News,* **233,** Autumn 2020, p.8; *Waltham Forest Echo,* **66,** October 2020, p.13.
5. B.K. Cherry, C. O'Brien, and N. Pevsner, *The Buildings of England: London 5: East,* New Haven and London: Yale University Press, 2005, p.724 gives the dates but is otherwise uninformative.
6. *Your Local* [Waltham Forest] *Guardian,* 26 November 2020, p.4.

'Time Terminus': A Brick Sculpture in London E11

Terence Paul Smith

Fig.1 (left) 'Time Terminus from the south-east, showing, from bottom to top, a double-decker bus (with on the side, the small white plaque giving the work's title, the sculptor's forename, and the date), a single-decker bus (its top front slightly damaged), and a horse-drawn bus; behind, to the left, are the curved end of a tram and the rear of an open-topped double-decker bus.

Fig.2 (right) 'Time Terminus' from the south-west, showing, bottom to top, a single-decker bus (at left),a curved ended tram, an open-topped double-decker bus, and the horse-drawn bus as at the top of figure 1; behind to the right are the front of the double-decker bus and the rear of the single-decker bus seen in figure 1.

This striking, and somewhat gnomically named, sculpture created in brick (figs.1 and 2) occupies the centre of the forecourt and bus stand immediately west of the Central Line station at Leytonstone, London E11. A small white plaque on the eastern side of the work bears the legend, in minimally serifed capitals,

TIME TERMINUS / BY / LODEWYK 1999.

The full name of the sculptor is Lodewyk Pretor.

The sculpture proper stands above a circular podium which also serves as a public bench. The podium is of bands of hard, smooth red bricks 8 × 4 × 2½ inches (203 × 102 × 63 mm) and rougher-textured buff bricks 8½ × 4× 2¼ inches (216 × 102 × 57 mm) laid in Flemish Garden Wall Bond using buff mortar. The edge of the bench is of bullnose headers on flat, providing a quarter-round moulding and thus avoiding a sharp arris.

The sculpture comprises six inter-locking vehicles: two single-decker and two double-decker buses, one of the latter open-topped and with an external rear stair; a tram with curved ends and, at the very top, an early horse-drawn bus (but with no horse) with front and back wheels of different sizes and an external rear stair. The vehicles are created from fairly rough-textured red bricks with windows and doorways made from fairly rough-textured buff bricks; both brick types measure 8½ × 4 × 2½ inches (216 × 102 × 63 mm). Standard buff mortar is used with the buff bricks, but with the red bricks the mortar is coloured to match.

Wheels are formed in off-white cement with tyres painted black; the wheels of the horse-drawn bus at the top have spokes made from thin slips cut from red bricks. Some other features, such as headlights, rear lights, and mudguards, are incised in red brickwork, whilst cut and rubbed red bricks are used for engine bonnets and the like at the front of some vehicles as well as for the curved (quarter-round) edges f some of the roofs; one of the double-decker buses has a cylindrical support at the front nearside, also from a cut and rubbed red brick (fig.1, left).

The sculpture is a pleasant and intriguing creation in an otherwise not especially attractive location, whilst the bench provides a welcome amenity. Sadly, some children cannot resist climbing on it and some parents seem all too willing to indulge them. It is presumably such behaviour that has caused some slight damage to one of the single-decker buses (fig.2, right).

Finally, one may mention for any wishing to view the sculpture that cars are not allowed in the forecourt/bus stand and that parking in the vicinity is very restricted. Those using the Central Line to Leytonstone station should turn right on leaving the subterranean ticket hall and follow the pedestrian subway to the forecourt.

BRICK IN THE NEWS: THE COLOSSEUM, ROME

The Colosseum is in the news again. There are proposals to create a retractable stage covering the whole of the centre of Rome's largest monument from the ancient world, the Colosseum. This will stand above the subterranean brick pillars and walls of the area where wild beats and gladiators were kept before they went out to perform the bloodthirsty spectacle.

The structural engineering firm, Milan Ingegneria, have secured a €18.5 million (£16 million) contract to build and install the new stage, the Italian Minister of Culture, Dario Franceschini, has announced. The project is expected to be completed in 2023 and allow the staging of cultural events: the amphitheatre in the north Italian city of Verona is regularly used for productions of both Verdi's opera and relevant Shakespeare plays.

Contrary to its stone exterior, the Colosseum is essentially brick-built. Both the subterranean section and the oval seating area are constructed of brick.

D.H. KENNETT

BRICK IN THE NEWS: AN EARLY THEATRE IN LONDON

Archaeologists excavating at 85 Stepney Way, London E1, in advance of the construction of a block of flats, have uncovered evidence of what may be the earliest theatre in London, a playhouse attached to the 'Red Lion' inn. Documentary evidence records that John Brayne had a playhouse behind his establishment, but the exact location of the 'Red Lion' in London's East End was unknown prior to the excavation. A potential date for the inn and its playhouse is 1567 but this is subject to dendrochronological investigation of the timbers discovered. The 'Red Lion' was described in a lawsuit as having a stage 40 feet (12.2 metres) from north to south by 30 feet (9.1 metres) from east to west and 5 feet (1.5 metres) high. The documents describe the stage as having timber scaffolds or galleries round it.

Bayne went on to build 'The Theatre' in Shoreditch in 1576, the first permanent theatre in London, where from 1590 the early plays of William Shakespeare were performed. The timbers from 'The Theatre' were dismantled and transported across the River Thames to build the 'Globe' on Bankside, in Southwark.

The photograph accompanying the report of the excavation in *The Guardian,* 10 June 2020, shows two excavators working inside a brick-lined room, approximately 10-12 feet from front to back and slightly more from side to side, with the remains of lower brick walls going from front to back. This may have been a beer cellar where beakers, drinking glasses, and tankards have been found.

In the seventeenth century, the theatre seems to have been used as a baiting pit: skeletons of dogs with their teeth filed down were discovered.

D.H. KENNETT

The History of Building Control in London from 1135 to 2017

Michael Oliver

London has long been the largest city in England and Britain, and the measures to control its standards of building are also long-standing. For more than 900 years there has been a particular recognition of fire hazards in building and the development of methods to minimise them, but the last 20 years have reversed this history of improvement, and resulted in the tragic fire at Grenfell Tower in June 2017.

In 1135-36, at the start of King Stephen's reign a serious fire resulted in the houses of a number of citizens being covered in thick tiles of varied designs (*spissis tegulis coopertum*).[1]

In 1189 Henry II and Richard I allowed London to appoint a Mayor: Henry Fitzailwin was appointed and he formulated the first building regulations, which encouraged the use of stone in buildings, and regulated the construction of party walls.[2]

In 1212 another serious fire took place, which caused substantial damage to the City, London Bridge and Southwark, and caused a thousand deaths. Within ten days the City assembly had met, still under the leadership of Henry Fitzailwin. It appears that the previous regulations had not been observed nor enforced adequately – as London did not have ready access to stone for building this requirement was difficult to achieve. Consequently, the new regulations of 1212 re-emphasised the need for measures to discourage fire from spreading if it started, which included thick party walls between adjacent premises. The regulations required "hard" roof coverings of wood shingles, boards, ceramic tiles, lead, or plastered straw to be used instead of thatch. Not exactly a requirement for non-combustible materials, but certainly an attempt to use materials that were not easily ignitable. The regulations also restricted bakers and brewers to use firewood rather than reeds, straw or thatch if they worked at night.

The fire in 1212 prompted citizens to be vigilant about building standards and their neighbours' failures to observe them, so that by the next century, the City had appointed two masons and two carpenters to act as surveyors to monitor construction standards and advise on major building projects.

The regulations were tightened in 1245 to require tiles or shingles to be used on houses in the principal streets of the City.

Elsewhere in England it was not till 1474 that a restriction on thatch was introduced – in Coventry.

For more than 400 years London experienced no major fires – something of a triumph for the regulations of 1212 and 1245. The Globe Theatre in Southwark was built in 1599 and was destroyed by fire in 1613. Southwark was outside the control of the City and the building was thatched, and the fire was caused by a cannon used in a performance, and can in no way be attributed to a failure of the City's regulations.

This situation changed in 1666, but the Lord Mayor's initial complacency about the fire in Pudding Lane rather suggests misplaced confidence that the existing arrangements and the record to date were effective.

The consequence of the Great Fire in 1666 was the introduction of the London Building Bylaws, which restricted the use of combustible materials in walls, and required enforcement by surveyors. Unlike in 1212, when firing of clay bricks was only just being reintroduced into English life, clay brick production was widespread in 1666 and became the norm in London's buildings.

The London Building Bylaws were extended to the City of Westminster in 1707-9, and party walls were extended above the roof-line, as a precaution against fire spread between adjacent properties.

When the London County Council was created in 1889 it used the London Building Bylaws throughout the area it controlled, and District Surveyors were given considerable powers and status.

The Greater London Council was created in 1965, and continued to enforce the London Building Bylaws in the former LCC area. Consequently, the original construction of Grenfell Tower was covered by the London Building Bylaws.

National Building Regulations were introduced into England and Wales in 1966. Anomalously, outer London boroughs which had not been in the LCC were covered by the national Building Regulations, despite their new position in the GLC.

The Building Regulations were revised and extended to all of London in 1985,[3] with regulations defined in broad terms, with Approved Documents defining established ways of meeting them, but allowing alternative approaches, if they could be demonstrated as meeting the requirements. The intention was that the new approach should replicate the powers which the District Surveyors previously held in Inner London.

The 1985 regulations included restrictions on the fire properties of the cladding for external walls – "shall adequately resist the spread of fire over the walls . . . . . having regard to the height, use and position of the building".[4] The refurbishment work at Grenfell Tower was conducted under the national Building Regulations.

But elsewhere the regulations have changed fundamentally – since 1985 a definition of "Building Control Body" has been introduced, which reads - "Building Control Body – both local authority Building Control and Approved Inspectors". This clause removes the independent scrutiny that was once held by District Surveyors in Inner London and by local authority Building Control officers, and allows parties to a building contract to determine whether their construction complies with the regulations, effectively allowing them to "mark their own homework".

In the different field of education, anyone involved in the work is subject to strict scrutiny under Ofsted. A severe contrast to construction, where no parallel scrutiny exists. A situation with a tragic result!

NOTES AND REFERENCES

1. T.P. Smith, 'London's earliest medieval roofing tiles: a comparative study, *Medieval Ceramics.* **22-23,** 1998-89, pp.66-71
2. H.T. Riley, *Regulations for building construction and fire safety.* Corporation of London Records Office, *Liber Custumarium* f.52.
3. Statutory Instrument 1985 No 1065, *Building and Buildings. The Building Regulations 1985.*
4. Building Regulations 2010 Fire Safety, Approved Document B – Buildings other than dwelling houses.

Jane Wight Brick Collection

Jane Wight is best-known to members of the British Brick Society as the author of *Brick Building in England from the Middle Ages to 1550,* London: John Baker, 1972. She also accrued a collection of bricks with notes about them and notes about bricks in general. In 2017, the British Brick Society was contacted to see whether there were any suitable institutions who would be willing to take the bricks and the notes.

Michael Hammett has confirmed that Jane's collection of bricks and notes has been transported to the Bursledon Brickworks Museum. The collection covered three geographical areas. Jane's father was the doctor in Reydon, a village west of Southwold on the Suffolk coast, and she lived in Norwich for over forty years. Part of the collection concentrated on Suffolk and Norfolk with strays acquired from counties immediately beyond the borders of East Anglia, namely Essex and Cambridgeshire. Much of *Brick Building in England from the Middle Ages to 1550,* London: John Bake, 1972, was written in Reading and a further part of the collection covered the multifarious brickworks of Reading and its environs. The third substantial part of the collection was more widespread in its geographical location, much derived from the research for *Brick Building in England from the Middle Ages to 1550.*

MICHAEL HAMMETT and DAVID KENNETT

BRICK QUERY: DUBLIN

An account for bricklayers' work done for a house in Abbey Street, Dublin, in 1793 refers to '32 feet of 4½ inch Blister Stock Brick topping a chimney shaft of 8 funnels and 152 feet under the breast and ends 9 inch thick of Blister Stock Bricks and back 4½ inch of Place Bricks'.

I am wondering if any British Brick Society members are familiar with, or have come across, the term 'Blister Stock Brick'?

Both Michael Hammett and Michael Chapman have been consulted, neither of whom could claim knowledge of the term. However, Michael Chapman found a reference in A.B. Searle, *Modern Brickmaking,* where Blister Stock Bricks are described as overburnt with surface blistering and some distortion. So possibly the term refers to very well fired stock bricks which would have a higher compressive strength and greater durability. This would be in direct contrast to Place Bricks, which would have been underfired and generally of poorer quality.

Michael Hammett concurs that using the term to instance overburned characteristic of particular bricks seems plausible. The visual characteristic indicated an increased vitrification and consequently increased resistance to frost damage, which would be desirable in the exposed location of a chimney top.

Further examples would be welcome.

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Received for Review:

Susanna Avery-Quash and Kate Radford, editors,
The Georgian London Town House: Building, Collecting and Display,
New York and London: Bloomsbury Visual Arts, paperback, 2021,
xxi +335 pages, 1 map, 88 illustrations, many in colour.
ISBN 978-1-5013-7374-9, price paperback, £24-99.

Geoffrey Marsh,
Living with Shakespeare: St Helen's Parish, London,1593-1598,
Edinburgh: Edinburgh University Press, 2021,
x + 502 pages, 157 illustrations, 9 tables,
ISBN 978-1-4744-7972-1, price, hardback, £25-00.

Jane Whitaker,
Raised from the Ruins: Monastic Houses after the Dissolution,
London: Unicorn, 2021,
404 pages, 235 illustrations, many in colour,
ISBN 978-1-913491-1-8, price hardback, £35-00.

It is hoped to include reviews of each of these three books in future issues of *British Brick Society Information.* In fact, a review article on the third of them is in draft form, intended for a possible 'Brick Churches' issue of *British Brick Society Information* either in late 2022 or early 2023.

Book Review:
A London Square and its Residents

Francesca Wade, *Square Haunting: Five Women, Freedom and London Between the Wars*,
London: Faber & Faber, 2020,
x + 422 pages, 26 unnumbered black-and-white illustrations,
ISBN 978-0-371-33063-2, price, hardback, £20-00.

Herein, Francesca Wade provides snapshots of the lives of five women, all of whom wrote books, either poetry or prose, the latter both fiction or non-fiction, and who in the 1920s and 1930s lived in Mecklenburgh Square,[1] east of London's Foundling Hospital. Mecklenburgh Square was in 'Bloomsbury' but certainly not 'of Bloomsbury', that over-hyped, upper-middle-class set, typified by the frightfully snobbish Virginia Woolf (1882-1941). Although some of its adherents lived in genteel poverty, they still thought that they could rule the world.[2] As Wade points out, far superior in intellect were other inhabitants of Mecklenburgh Square, not least, the Professor of Economic History at the London School of Economics, R.H. Tawney (1880-1962),[3] an inveterate pipe smoker whose study, quite visible from the square, has been described as 'a compost heap'. Insightfully, Tawney described 'Bloomsbury', a self-fashioned and rather bogus aesthetic, as a 'mental disease'.

Francesca Wade examines the inter-relationship between five women and the time when they lived in the square. In the 1920s and 1930s, Mecklenburgh Square provided cheap rooms[4] or even whole houses at moderate rents for impecunious single women and distinguished, if somewhat eccentric, academics. Four of those she considers were younger than Tawney; one, Jane Ellen Harrison (1850-1928) (pages 153-205), a generation older. A classical scholar who treated Ancient World as anthropology and was interested in its archaeology, Miss Harrison spent the final two years of her life at number 11. Three other women spent two years or less in one of the early-nineteenth-century houses: Hilda Doolittle (1886-1961), known as H.D., an American modernist poet, in a room at no.44 from February 1916 to March 1918 (pages 33-92); less than two years later, the novelist Dorothy L. Sayers (1893-1957) occupied the same room in the same house from December 1920 to December 1921 (pages 93-151); and Virginia Woolf and her husband, Leonard, were at no.37 from August 1939 to October 1940 (pages 261-316). The longest residence was that of Prof. Eileen Power (1889-1940) at no.20, a very neat house next door to a later Tawney residence, and, as Wade points out, without the richly-deserved blue plaque;[5] she was Tawney's intellectual equal. Also a Professor of History at the London School of Economics, Eileen Power and her sister Rhoda, herself an historian, were there from January 1922 until after Eileen's death from a heart attack whilst shopping in Bourne & Hollingsworth. Eileen Power was Tawney's co-author in creating the three volumes of *Tudor Economic Documents*: one suspects that she, with the incredibly neat study, rather than Tawney was really the lead author.[6]

Even with the privilege of belonging to the upper middle class, they were, like most female graduates of their era, *formidable*.[7] Harrison and Power were both escapees from the meanness and misogamy of Cambridge men who in 1897 and again in 1920 — the latter, it must be noted, a vote taken after the Sex Discrimination (Removal) Act had received the royal assent on 24 December 1919 — refused to allow women to be awarded a degree, as Oxford.[8] On 14 October 1920, Sayers had been in the first batch of Oxford women to take advantage of the new regulations; earlier, she had also been awarded the highest marks in the Cambridge Higher Local Examinations in 1912 and in 1915 went on to achieve an Oxford first in Modern Languages: years after leaving Mecklenburgh Square and long after the nine Peter Wimsey novels had been published, the first of which, *Whose Body?*, was written in Mecklenburgh Square, she proceeded to produce a complete translation of Dante's *La Comedia Divina* for Penguin Books.[9]

Buildings are there for a purpose: domestic in the case of Mecklenburgh Square. Built by a succession of builders, Mecklenburgh Square adopts a consistent design by Joseph Kay (1775-1847), the Surveyor to the Foundling Hospital.[10] The south side, numbers 1-10, was erected between 1808 and 1810; the east side, numbers 11-34, was constructed fairly slowly between 1810 and 1820; while the north side, numbers 35-47, went up over two building seasons, 1824 and 1825. The principal material was an orange-red brick laid in Flemish Bond, but on the longer east side, are three sets of houses which have a stucco frontage. The central

group of houses on the east side are recessed and have three bays; all other houses are two bays. The houses are, or were before rebuilding of the square after bomb damage, of four storeys with a basement.[11]

There is much to be said for Woolf's observation of 1916: 'Personally, we should be willing to read one volume about every street in the City and we should ask for more'. A comparison for *Square Haunting* is Devon Cox, *The Street of Wonderful Possibilities: Whistler, Wilde & Sargent in Tite Street,* which is somewhat more architectural in its outlook.[12] Perhaps, because Francesca Wade seems to have a background in literary matters, the purely building chapter, 'In the Square' (pages 5-31), is less detailed than one might wish. However, the book is a good example of the social history of building.[13] Its quality may be judged from having been placed on the long list for the 2020 Baillie Gifford Prize, the UK's most prestigious non-fiction award.

DAVID H. KENNETT

Fig.1 Mecklenburgh Square, London WC1: two-bay houses of four storeys with a basement on the south side. seen prior to bombing in this pre-1939 photograph.

NOTES AND REFERENCES

1. For a description of Mecklenburgh Square see W.H. Godfrey and W. McB. Marcham, *Survey of London: Volume 24, the Parish of St Pancras Part 4: King's Cross Neighbourhood,* London: London County Council, 1952, pp.25-55, section XCIV Mecklenburgh Square; available online at *www.british-history.ac.uk/survey-london/vol24'pt4/,* [accessed 24 June 2020]; this is the best description and was obviously written before 1939 and possibly set then; later bomb damage is not recorded. More recently, B. Cherry and N. Pevsner, *The Buildings of England: London 4: North,* London: Penguin Books, 1998, pages 332-333, which describes its then condition. The square suffered serious bomb damage in 1940 and

1941; much rebuilding and new building, particularly of the north and south sides, has taken place. Mecklenburgh Square also features briefly in Todd Longstaffe-Gowan, *The London Square: Gardens in the Midst of Town,* New Haven and London: Yale University Press for the Paul Mellon Centre for the Study of British Art, 2012.

2. In a sense, one Bloomsburyite did: John Maynard Keynes (1883-1946), the creator of the Bretton Woods Agreement (1944) which supervised world trade and monetary arrangements for over three decades. Keynes also had the right idea as to how to an economy can work and build its way out of recession.

3. Tawney lived at various addresses on Mecklenburgh Square: no.17, 1913-15; no.44, 1917-1940; no.26, 1947-51; no.21, 1951-62. The first hiatus was war service, as a sergeant in the Manchester Regiment; the second was when he was bombed out.

4. An example of a provider of 'cheap rooms' was Helena Normanton (1882-1957), who lived at no.22 Mecklenburgh Square from 1920 to 1928. Helena Normanton was the first woman to practise as a barrister (student Middle Temple, 1919; called to the bar, 1922) and one of two first to be made a King's Counsel in 1949. For Helena Normanton see J. Bourne, 'Helena Normanton: legal crusader or myth maker', *Women's History Review,* **20**/4, 2020, pp.671-685, and J. Bourne, ''Feminist Reformer, Pioneer, and Figurehead', *Law Society Gazette,* **10,** February 2020. There are brief references to Helena Normanton in the chapter, 'All Rise: Rose Helibron QC', in R. Cooke, *Her Brilliant Career: Ten Extraordinary Women of the Fifties,* London: Virago Press, 2013, p.268 n.2, and p.279, with photograph on p.269. Both Cooke, 2013, p.276, and Joanne Workman in the entry in *OBNB* make the point that make ends meet in an era when barristers were much less paid than they are in 2021, 'even at the height of her career, Helena Normanton was compelled to let rooms in her house in Mecklenburgh Square, Bloomsbury, the better to supplement her income; there simply was not enough work to go round'.

5. Only Hilda Doolittle has a blue plaque, but this is not an English Heritage one. Excepting HD and the ubiquitous Virginia Woolf, the women do not figure in the list of distinguished residents at the end of the entry in Godfrey and Marcham, 1952.

6. R.H. Tawney and E. Power, *Tudor Economic Documents*, London: Longman, Green & Co, 3 volumes, 1924-27.

7. The word '*formidable*' is used in the sense of the French *formidable*, a far more powerful word than in its English equivalent. I was thinking of some whom I knew slightly in my youth: for example, Margery Venables Taylor (1881-1963), or from a later generation, Margaret Ruth Toynbee (*b.*1900) and her sister Prof. Jocelyn Mary Toynbee (1897-1985); all from a relatively affluent upper-middle-class background. Miss Taylor was a contributor to volumes of the *Victoria County History* series; Margaret and Jocelyn Toynbee both held university teaching positions, at Oxford and Cambridge respectively, and both were distinguished scholars, respectively of the English Civil War and the art and archaeology of the Roman Empire. Equally, one may note the exceptionally *formidable* Sorbonne-educated Whilhelmine, Lady Harrod (1911-2005), doyenne of all things historical and architectural concerning Norfolk for five decades after the Second World War.

8. The decision of the University of Oxford to grant degrees to women was in part a consequence of the Representation of the People Act, 1919, enfranchising all women over 30, all married women over 21, and all war widows. By then, Scotland, Wales, and Redbrick, of course, had made no such distinctions between genders. In 1919, legislation was passed ensuring that women could legitimately qualify for the professions (clergy of the Church of England and of the Church in Wales both excepted) where this had not been granted: since before 1900, the professional bodies for architects in 1898, dentists in 1895, and medical doctors in 1865 had all permitted women suitably qualified by examination to be made members of their respective professional organisations.

9. D.L. Sayers, translator, *The Comedy of Dante Alighieri: Cantica 1: Hell,* Harmondsworth: Penguin Books, 1949; D.L. Sayers, translator, *The Comedy of Dante Alighieri Cantica II: Purgatory*, Harmondsworth: Penguin Books, 1954; D.L. Sayers and B. Reynolds, translators, *The Comedy of Dante Alighieri: Cantica III Paradise,* Harmondsworth: Penguin Books, 1962.

10. For Joseph Kay see H.M. Colvin, *A Biographical Dictionary of British Architects 1600-1840,* New Haven and London: Yale University Press, 3rd edn, 1995, pp.568-569.

11. Summary of the entry in Godfrey and Marcham, 1952.

12. Devon Cox, *The Street of Wonderful Possibilities: Whistler, Wilde & Sargent in Tite Street,* London: Francis Lincoln, 2015, *passim.*

13. There are a number of books published relatively recently which look at individual buildings or a group of them and their occupants. Examples include D. Burke, *The Lawn Road Flats: Spies, Writers and Artists,* Woodbridge: The Boydell Press, 2014, pbk 2019; Kate Kennedy and Hermione Lee, editors, *Lives of Houses,* Princeton NJ and Oxford: Princeton University Press, 2020, (reviewed pp.44-47, this issue of *BBS Information*); and to Caroline Maclean, *Circles and Squares: The Lives and Art of Hampstead Modernists,* London: Bloomsbury, 2020.

Book Review:
Literary and Artistic Houses of Brick: Real and Imagined

Christina Hardyment, *Novel Houses: Twenty Famous Fictional Dwellings,*
Oxford: The Bodleian Library, University of Oxford, 2020,
vi + 250 pages, 44 unnumbered illustrations,
ISBN 978-1-85124-480-5, price, hardback, £25-00.

Kate Kennedy and Hermione Lee, editors, *Lives of Houses,*
Princeton NJ and Oxford: Princeton University Press, 2020,
304 pages
ISBN 978-0-691-19366-3; price, hardback £20-00

Fig.1 An early postcard of Lamb House, Rye, East Sussex, the home of Henry James and the model for Poynton in *The Spoils of Poynton* (1896).

Houses[1] where writers and artists have lived and those which writers' imaginations have created are much in vogue. The books, here reviewed, cover a wide range of people and buildings. All have London connections. Hardyment looks at houses from the world of the imagination. But Hardyment, equally, seeks to place her selected houses in the context of their authors' lives and actual residences. E.M. Forster never forgot Rooks Nest, a timber-framed house, in the eighteenth century given a brick façade, in old Stevenage, Hertfordshire; the house originally named 'Howards';[2] he had grown up there. It became the house at the centre of *Howards End* (1910).

At least seven other houses in Hardyment's book are brick, some only in part, whilst others may have either stone or timber-framing in the external walls; one house is covered in stucco.

Jane Austen (1775-1817) knew Chawton House[3] well: it was one of the residences of her brother, Edward Knight, who inherited from a distant relation on condition that he changed his name. Originally a triple-gabled house of brick facing south, of late Tudor origins begun in 1583 but after 1592 reorientated and provided with a west front of malmstone, Chawton was the basis of the idea of Mansfield Park, the eponymous house in *Mansfield Park* (1814). Chawton House also became the basis for George Knightley's Donwell Abbey in *Emma* (1815) and Kellynch Hall in *Persuasion* (1818). A clergyman's daughter, Miss Austen much preferred the parsonage to the great house as is evident from Delaford Parsonage in *Sense and Sensibility* (1811), Hunsford Parsonage in *Pride and Prejudice* (1813), and Woodston Parsonage in *Northanger Abbey* (1818) And Mansfield Parsonage was ultimately to be superior in its attraction to Fanny Price.

A bachelor lair in rooms rented in a discreet London suburban house was the setting for the home of Sherlock Holmes and Dr Watson at the fictional 212B Baker Street, London,[4] from where Conan Doyle's intrepid investigator set out on his quest to solve the mysteries of crimes committed across England and ultimately across Europe. In late Victorian London, the suburbs had not yet completely crossed the western portion of the New North Road (Euston Road and Marylebone Road).

Henry James (1843-1916) liked houses and used his own house, Lamb House, Rye, East Sussex,[5] as 'Poynton' in *The Spoils of Poynton* (1896). The house is chequered brick laid in Flemish Bond (fig.1).

Knole,[6] the ancestral home the Sackville-West family in west Kent, makes more than a fleeting appearance in two novels: *Orlando* (1928) by Virginia Woolf (1882-1942) where it is unnamed and *The Edwardians* (1930) by Vita Sackville-West (1892-1962) where it becomes Chevron: in both novels, it is the chief *persona.* Eight years before *The Edwardians,* Sackville-West had written *Knole and the Sackvilles* (1922). For her, the only child of Lionel, third Baron Sackville, the house was the lost inheritance: being a woman, neither the title nor the estate could be passed on by her father.

From the four rooms of Holmes and Watson to supposedly '365 bedrooms' of *Orlando,* the dwellings are bricks and mortar, recalled, adapted, and reimagined. Speaking as someone who has tried (unsuccessfully) to write at least two novels, it is easy to have the physical actuality of the current residence in one's mind.

On the other hand, the individual essays in Kennedy and Lee are about actual buildings. A book for dipping into, twenty-three places where authors have lived are considered. W.H. Auden turns up twice: in New York and in his winter residence in Austria: a brick house at 77 St Mark's Place in the relatively unfashionable East Village — St Mark's Place is the portion of East 8th Street between First Avenue and Tomkins Square — and a timber lodge in the small village of Kirchstatten, respectively.

Kennedy and Lee have a section labelled 'House-Proud'. Brick houses are prominent, both from above stairs and from below stairs: Hughenden, Buckinghamshire,[7] for the former, where the county's Member of Parliament, Benjamin Disraeli (1804-1881) was Lord of the Manor. The latter is Uppark, West Sussex,[8] where in 1880, the fourteen-year-old H.G. Wells (1866-1946) went with his mother, Mrs Sarah Wells, when she became its housekeeper. Uppark is the model for the house in *Tono-Bungay* (1908).

Fig.2 Uppark, West Sussex, where Mrs Sarah Wells was housekeeper from 1880 to 1893, and where her son, the novelist and writer H.G. Wells, lived from the age of fourteen and would later visit. Uppark is the model for 'Bladesover' in *Tono-Bungay* (1909).

Apart from Auden's New York place of residence, 77 St Mark's Place, essays on 'Creative Houses' cover the Villa Emily,[9] the house in San Remo, Italy, built for Edward Lear (1812-1888); on 'The Red House', Aldeburgh, Suffolk,[10] the home of Benjamin Britten (1913-1976) and Peter Pears (1910-1986); and on Samuel Johnson's houses, by Jenny Uglow, Lucy Walker, and Rebecca Bullard, respectively. In a different vein, David Cannadine offers a glimpse of how Chartwell[11] was the dream house for Winston Churchill and a nightmare for his wife Clementine (1885-1977); after his death, she never spent another night there. 'The Red House', 17 Gough Square,[12] the London home of Samuel Johnson (1709-1794), and Chartwell are brick houses.

By far the saddest chapter in the Kennedy and Lee volume is that on Ivor Gurney (1890-1937), condemned to spend his final decade and a half at the City of London Mental Hospital, Dartford (1861-66: J.B. Bunning).[13] A man so damaged by his war experiences that society shut Gurney away far from the hills of his native Gloucestershire: it was, to quote the familiar, final line of the most famous work of his friend, Edward Thomas (1878-1917), very much that he could no longer could hear 'All the birds of Oxfordshire and Gloucestershire'. The bleakness of the asylum was the very opposite of what Gurney needed.[14] Kate Kennedy gives us a poignant account of the visits by Edward Thomas' widow Helen (1877-1967) to the incarcerated man who had so much to offer as a poet, as a pianist, and as a composer.[15]

Both books are background reading to the brick buildings of their eras. Whilst both temporally and spatially, the two volumes of short essays have a wider compass, checking for references to houses cited, of those in England, only Benjamin Britten's 'The Red House', Aldeburgh, is outside London or the adjacent counties of south-east England. Both Felbrigg Hall, Norfolk,[16] last occupied as a dwelling by the writer Robert Wyndham Ketton-Cremer (1906-1969) before being donated by him to the National Trust, and no.84 Plymouth Grove, Chorlton-on-Medlock, Manchester,[17] where Elizabeth Gaskell (1810-1865) wrote her novels spring to mind as worthy of inclusion in a volume such as *Lives of Houses*. However, written from individual and different literary perspectives, the books offer interest and insights you would not expect from reading the far too often dry prose of building historians.

DAVID H. KENNETT

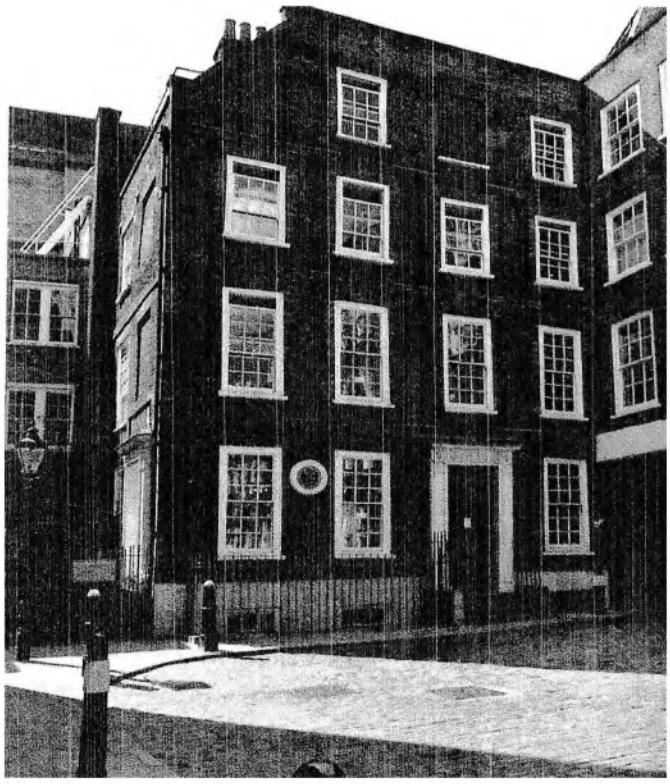

Fig.3 Dr Johnson's London home, 17 Gough Square, London EC4

NOTES AND REFERENCES

1. References are mainly given to recent accounts of the houses and studios of the persons noted in this review. The attempt has been made to provide at least one reference to each building.

2. Rook's Nest: J. Bettley and N. Pevsner, *The Buildings of England: Hertfordshire,* New Haven and London: Yale University Press, 3rd edn, 2019, p.542.

3. Chawton House: M. Bullen, J. Crook, R. Hubbock, N. Pevsner, *The Buildings of England: Hampshire: Winchester and the North,* New Haven and London: Yale University Press, 218-22, with pl.59 which shows both the south and the west fronts.

4. 212 B Baker Street is fictional but Baker Street and streets near it have blocks of flats, usually with shops on the ground floor. See B.K. Cherry and N. Pevsner, *The Buildings of England: London 3: North-West,* London: Penguin Books, 1991, pp.630-651 for the former Borough of St Marylebone south of Marylebone Road where many possible houses converted or built as apartments can be found. Baker Street is *ibid.*, p.631.

5. Lamb House: N. Antram and N. Pevsner, *The Buildings of England: Sussex: East with Brighton and Hove,* New Haven and London: Yale University Press, 2013, p.608.

6. Knole: J. Newman, *The Buildings of England: Kent: West and the Weald,* New Haven and London: Yale University Press, 2012, pp.337-349, with pl.46, an aerial view. G. Jackson-Stops, *Knole,* London: National Trust, 1978, is the most recent guide book available to the writer of this review.

7. Hughenden: N. Pevsner and E. Williamson, *The Buildings of England: Buckinghamshire,* London: Penguin Books, 2nd edn, 1994, pp.405-406.

8. Uppark: E. Williamson, T. Hudson, J. Musson and I. Nairn, *The Buildings of England: Sussex: West,* New Haven and London: Yale University Press, 2019, pp.669-673, with pl.56 (principal front) and pl.64 (the saloon) Uppark suffered a devastating fire in 1989. It has since been restored.

9. San Remo: J. Uglow, *Mr Lear: A Life of Art and Nonsense,* London: Faber & Faber, 2017, pbk 2019, pp.416-418, 447-451, with illustration p.448 principally of the garden. After the building of an hotel spoiling his view, Lear lived in the Villa Tennyson in San Remo. Lear was, of course, not merely a nonsense poet but an accomplished ornithological and topographical artist. Unfortunately, no catalogue was issued of the exhibition of his works at the Ashmolean Museum, Oxford, some years ago.

10. Red House, Aldeburgh: James Bettley and N. Pevsner, *The Buildings of England: Suffolk: East,* New Haven and London: Yale University Press, 2015, p.86.

11. Chartwell: Newman, 2012, p.149-150.

12. 17 Gough Square: S. Bradley and N. Pevsner, *The Buildings of England: London 1: The City of London,* London: Penguin Books, 1997, p. 506.

13. Dartford Hospital: Newman, 2012, p.569, under Stone and now called 'Stone Hospital'.

14. Ivor Gurney was unmarried. Once, in the early 1980s, the wife of a soldier of the Great War, Tom Levell MM, who died aged over 95 in 1984, told a friend of how she had to nurse her war-damaged husband back to health; I was merely a bystander to this conversation. Tom, of course, never spoke of it. How many wives took on this unenviable task remains unrecorded; no government agency ever thanked these innumerable wives for their devotion.

15. Since the draft of this Book Review was written, for Ivor Gurney see now K. Kennedy, *Dweller in Shadows: A Life of Ivor Gurney,* Princeton NJ and Oxford: Princeton University Press, 2021.

16. Felbrigg: N. Pevsner and B. Wilson, *The Buildings of England: Norfolk: Norwich and the North-East,* London: Penguin Books, 2nd edn, 1997, pp.462-466, with pl.69 (south front), pl.70 (west front), and pl.74 (drawing room). The classic account is R.W. Ketton-Cremer, *Felbrigg: The Story of a House,* London: Hart-Davis, 1962. A recent guide book is J. Maddison, *Felbrigg Hall,* London: National Trust, 1995.

17. 84 Plymouth Grove, Manchester: C. Hartwell, M. Hyde, and N. Pevsner, *The Buildings of England: Lancashire: Manchester and the South-West,* New Haven and London: Yale University Press, 2004, p.437.

Book Notice:
Multiple Uses of the Thames Waterfront in Battersea

Alistair Douglas, Berni Sudds, Marit Gaimster, and Frank Meddens,
Elite Residence to Manufacturing Centre: Excavations on the site of the Archbishop of York's Palace and the Battersea Enamelling Works, of the former Price's Candle Factory, Regent and Grove Wharves and Bridges Wharf, Battersea,
London: Pre-Construct Archaeology, 2019,
175 pages,
ISBN 978-1-819996155-3-6, price, paperback, £20-00.

Although having lived in Battersea only since 1673, Sir Edward Wynter (*d.*1686) was sufficiently prominent in the community and, moreover, exceedingly wealthy, mainly from the exploitation of other human beings, first in India and then in Jamaica, to warrant burial within St Mary's church, Battersea, where he is commemorated by a wall tablet. When the church was rebuilt in 1775-76, his great-grandson, Sir Edward Hampson Wynter, ensured that the memorial was re-sited in the church. Less than half-a-mile south of the church, the elder Wynter had built a new house, York House (pages 49-59). York House had nine bays, with the centre five pushed slightly forward. There were two storeys and a basement under a hipped roof of pantiles. The attics had dormers on the north front.

Wynter's house was the last purely domestic use of the Price's Candle Factory site. Two centuries earlier, in 1474, Lawrence Booth (*d.*1480), then Bishop of Durham but two years later translated to York, had begun a private house on the waterfront site (pages 14-26): it was to be a place for the prelate to relax but was sufficiently close, within a day's ride, of the seat of power at Westminster and then at Whitehall. Construction, it is argued, was completed by Booth's successor, Thomas Rotherham (*d.*1500). A double courtyard brick structure is envisaged by the excavators, although their brief extended only to the south-west side of the inner courtyard, an area postulated as the private quarters of the archbishop and probably including a tower house. One may cavil at the misunderstanding of the separate functions of a solar tower, the private residence of the builder, and a great gatehouse, the place whereat your social superiors might be accommodated if they come to visit.

A later archbishop, Thomas Wolsey (*d.*1530) made extensive use of the Battersea site and its brickworks for the source of the bricks for his rebuilding of York Place, later Whitehall Palace.

After 1843, the whole of the site of the two houses was taken over by Price's Candle Factory, although the report says little of these buildings. An early industrial use of the site was the Battersea enamelling factory, which was short-lived, being in business only from 1753 to 1756 (pages 85-105). The enterprise was innovative and relied on skilled craftsmen who, unfortunately, left after the first year; the probable cause of the business owner's bankruptcy.

Price's Candle Factory was the southern one of three sites investigated. Immediately north, Bridges Wharf was examined for successive timber revetments on the river's edge. More significant in the growing industrialisation of the area was the northern one, Regents Wharf which had been the site of a late-seventeenth-century sugar boiling and refining factory. This was burnt down in the middle decades of the eighteenth century and not re-opened.

Brick in various uses figures heavily in the remains of the buildings, occasioning an appendix on the fabric of ceramic building materials (pages 136-137) and explanations in the main text of why certain brick types were used.

This is a very informative excavation report of a multi-period series of sites. It is underpinned by the careful documentary research of the late Christopher Philpotts, whose name should have been given with the main authors and not merely acknowledged.

D.H. KENNETT

BRICK IN PRINT: LONDON

Between July 2020 and July 2021, the Editor of the British Brick Society has received notice of a number of publications on brick and its uses in London of interest to members of the British Brick Society. 'Brick in Print' has become a regular feature of *BBS Information*, with surveys usually two or three times a year. Members who are involved in publication or who come across books and articles of interest are invited to submit notice of them to the editor of *BBS Information*. Websites and television programmes may also be included. Unsigned contributions in this section are by the editor.

D.H. KENNETT

'Making Bricks Work',
Country Life, 21 July 2021, pages 96-97.

A *Country Life* masterclass in association with Janine Stone, from whom Jeremy Spencer answered a series of questions put to him by Giles Kime of *Country Life*. The questions were 'What are the characteristics of a good-quality brick? and 'Why is brickwork so vital to the great architecture of the Past?' with, allied to that, and are there some examples you could share? From London, Mr Spencer instanced St Pancras Station, Camden, NW1, and the houses on Cadogan Square, Westminster, SW1: the latter is illustrated. Mr Spencer was asked, 'How do Georgian and Victorian brickwork compare?' and 'Among architects of the past, which ones had a particular understanding of brickwork in your view?' to which the answer was Sir John Soane, but he was the son of a bricklayer. Three questions related to new build: 'What does great brickwork lend to a new building?', 'How is this incorporated in the overall architectural plan?', and 'What bricks should I use for my project?'.

Apart from houses on Cadogan Square, the photographs included the brick chimneys at Hampton Court; the north façade of Holkham Hall, Norfolk, and William Butterfield's Keble College, Oxford. The answer to the second question had a reference to the Pantheon in Rome and the brick arches there; the raw brickwork is illustrated.

'London Life',
Country Life, 5 August 2020, pages 17-34.

This collection of mainly anonymous pieces has a feature on Chiswick, home of Hogarth, location of the Earl of Burlington's Chiswick House, and Bedford Park, including an advertisement for a multi-million-pound house in the latter and similarly-priced recommendations for houses elsewhere in Chiswick. The house on Marlborough Crescent reminded the writer of the unfinished painting of Bath Road by the French artist, Camille Pissarro, when he was staying with his son Lucien: the painting (Oxford: Ashmolean Museum) includes his infant granddaughter in the front garden of no.62 Bath Road. A montage of photographs includes a late Victorian terrace, all with gabled bay windows rising through both storeys and into the attic, mostly with stuccoed fronts but two in plain brick. A feature of all is the inserted unglazed terracotta panel between the ground and first floors. Also included in the montage is the former Chiswick Fire Station, now a Michelin-starred restaurant.

Another item in these pages draws attention to the multi-period Eltham Palace with brickwork of the late Middle Ages, the reign of Henry VIII, and the 1930s, the last being the Art Deco transformation effected by Stephen and Virginia Courtauld in 1933.

In Emma Hughes, 'Hidden Treasures' (pages 30-33), draws attention to four reserve collections: those of the Transport for London depot, Blythe House in Olympia, the government art collection, and the Horniman Museum, Forest Hill, London SE23. Blythe House, the former headquarters of the of the Post office Savings Bank, is an early attempt at the swagger of Edwardian London: a red brick and much stone creation through four storeys in Greenwich Baroque. For many years it has held the reserve collection of the Victoria and Albert Museum in South Kensington. Apart from the justly famous stuffed walrus, beloved of children, the Horniman

Museum has major collections of musical instruments, anthropological artefacts, and botanical items, all reflecting the interests of the tea importer Frederick Horniman. The original building, designed in 1898 by Charles Harrison Townsend (1851-1928) and completed in 1903, has a stone frontage with a mural by Walter Crane, but the long two storeys of galleries behind the stone-faced entrance tower are in red brick laid in Flemish Bond.

C. Aslet, 'Inside the other No 10',
Country Life, 12 August 2020, pages 60-62.

Chatham House, the Royal Institute of International Affairs, at 9 and 10 St James' Square, occupy two of the three houses, nos. 9-11, erected in 1735-36 by Benjamin Timbrell (*d.*1754), a carpenter and master builder. Number 10 St James' Square was home to three prime ministers: William Pitt the Elder, the Earl of Derby, and William Ewart Gladstone. While both the two other houses are three bays wide, number 10 is four bays. Each house is different in its plan: number 9 is entered from Duke of York Street, which connects the square with Jermyn Street and provided access for the square's inhabitants to the church at St James, Piccadilly. Also at number 9, the porch supports an early canted bay. Number 11 has been refaced. An excellent photograph (page 60) demonstrates the quality of the brickwork in Flemish Bond of number 10.

For a brief account of the houses see S. Bradley and N. Pevsner, *The Buildings of England: London 6: Westminster,* New Haven and London: Yale University Press, 2003, pages 627-628. For the British Brick Society visit to St James Square in July 2012 see *BBS Information,* **124,** April 2013, pages 18-20.

Sean Fletcher (presenter), 'River Walks: The River Lea'
BBC4, Tuesday 14 July 2020

In the week beginning 13 July 2020, BBC4 ran a series of four programmes under the title 'River Walks'. This was the second of them, when Sean Fletcher, better known for his work on the Sunday evening programme 'Countryfile' on BBC1, walked from Tottenham Hale to Leamouth in Canning Town. This is the final 8 miles of the River Lea, which originates in a spring in Leagrave, a northern suburb of Luton, Bedfordshire, and proceeds through the southernmost part of that county and then traverses Hertfordshire and Middlesex to reach the River Thames at Leamouth. The Middlesex section was the historic boundary with Essex and one must remember that the populous borough of West Ham, now a constituent of the London Borough of Newham, fought for many years to be outside London. As the presenter showed, this is edgeland, the border between one type of settlement and another, hence its use for reservoirs, marshes, and noxious industry where the subsoil is firmer.

Whilst in part a natural history programme on the flora and fauna, particularly the birds, of the wetlands and marshes beside the River Lea and the canalised Lea Navigation, three buildings and one other structure of interest to members of the British Brick Society were examined. From north to south they are Abbey Mills Pumping Station, the tidal mills on Three Mills Island, the seven remaining gasholders of the Bromley-by-Bow Gasworks, and the lighthouse at Leamouth.

The Abbey Mills Pumping Station is the third of the pumping stations pumping stations built between 1865 and 1868 for the Metropolitan Board of Works to convey London's sewerage away from the capital and ultimately (after treatment) out to sea. Designed by Charles Driver, with a Greek cross plan to hold eight great beam engines, two in each arm of the building; it was there to raise effluent to the level of the Northern Outfall Sewer and thus take the excreta out to the sea at Beckton, something which persisted for two decades until Beckton Treatment Plant was constructed in 1889. The exterior of the Abbey Mills is in London stock brick with red brick accents mostly over the fenestration. The great chimneys, modelled on Moorish minarets have been demolished.

Also demolished are two of the gasholders of the Bromley Gas Works of the Imperial Gas-Light and Coke Company: seven gasholders in cast iron frames remain, most of two tiers of lattice work with 24 uprights, but one raised to three tiers of lattice work in 1927. They were designed by Joseph Clark and built between 1872 and 1882.

Three Mills Island has two, but originally three, tidal mills, working on the same principle as the Woodbridge Tide Mill, Suffolk. In the film, the workings of one of the mills was explored with the assistance of an enthusiastic Dan Cruickshank. Originally for flour, they became centres for distilling gin in 1727. The restoration reverts the use to grain milling.

At the end of Bow Creek, as the final section of the River Lea is known, is the Leamouth peninsula. The experimental lighthouse was a training facility for instructing lighthouse keepers. It is an octagonal building in stock brick designed by Sir James Douglass in 1864 and built with the Trinity House Buoy Store over the next two years.

These four buildings are considered in B.K. Cherry, C. O'Brien, and N. Pevsner, *The Buildings of England: London 5: East,* New Haven and London: Yale University Press, 2005, pages 229-230 with drawing and plate 67 (Abbey Mills Pumping Station); page 231 (Bromley Gas Works); 241-242 (Three Mills Island); and 663 (the Experimental Lighthouse).

John Goodall, 'The Last Royal Hall: Hampton Court Palace, Surrey, Part I',
Country Life, 7 October 2020, pages 76-83.
John Goodall, 'The Threshold of Power: Hampton Court Palace, Surrey, Part II',
Country Life, 14 October 2020, pages 58-62.

Hampton Court Palace on the north bank of the River Thames is well-known to many members of the British Brick Society. John Goodall's first article considers the building and furnishing of Henry VIII's great hall, one of the largest in England and probably the last to be constructed, at least on this most grand of all scales.

The great hall of a Tudor royal palace, as with any major house, served several functions, principal among which was to act as a giant canteen where the whole household could eat: pages 80 and 81 of the first article show the room laid out as it would have been in the sixteenth century. The royal household probably numbered in excess of 600 persons who would be seated on long benches either side of trestle tables set length-ways in the room: two sittings would have been required. At the far end was the high table, placed on a raised dais and lighted by the oriel window, where the king and honoured guests would have sat and been served. An exterior photograph (I, page 82) shows how the windows of the oriel occupy the full height of the hall while the windows of the six lower bays have their sills at half height; the interior view (I, pages 80-81) also demonstrated this.

This purpose and arrangement survive in the halls of Oxford and Cambridge colleges and was true of the dining halls of the halls of residence of redbrick universities (at least in the early 1960s; after 1964, two sittings were required, and today many halls of residence are self-catering).

Henry VIII had acquired Hampton Court from his chief minister Cardinal Thomas Wolsey in January 1529 and set about rebuilding parts of the palace. He spent £46,000 over the next decade. We must not forget John Shelton's remark of about 1520 that 'The King's Court should have the excellence, but Hampton Court hath the pre-eminence'. As an aside, Goodall suggests that Wolsey's building programme did not touch the existing great hall, constructed for the previous tenant, Lord Daubeney, who held the property from 1494 to 1514.

The first article is generously illustrated: eight colour pictures by Will Pryce. Three show exterior brickwork and have good colour definition. A wide view of the front of the base court (I, pages 78-79) demonstrates the difference in brick colour between Wolsey's work in the 1510s and 1520s with the rebuilding in reduced form of the great gate of the base court from five storeys to three, although repositioning the Italian terracotta roundels of Roman emperors. Different views give a clear indication of the base court side of the Clock Gate or middle gate (I, page 78) and the great court side (I, page 82). On the latter the difference in brickwork of Henry VIII's great hall and the Clock Gate is clear.

The second article considers the transformation of the third court into an English version of a Baroque palace after 1689, when the Batavian-English couple, William III and Mary II, came to the throne. Mary was the elder daughter of the deposed James VII and II. Work was done not least because the asthmatic William disliked living in St James Palace in central London with the capital's smog induced by coal-fires; he would acquire Kensington House for his enforced weekday sojourn in London.

New apartments for both monarchs were built by Sir Christopher Wren round a courtyard faced in red brick but with much stone round the windows and providing the ground-floor cloister (pages 58-59). Wren, however, had rivals and much of Goodall's piece is concerned with coups against different architects: Wren and William Talman in William III's reign, John Vanbrugh and William Benson in George I's.

Much of the second article is concerned with internal decorative schemes, not least the King's Stair by Antonio Verrio in 1701 and the Queen's Stair by William Kent in the late 1720s.

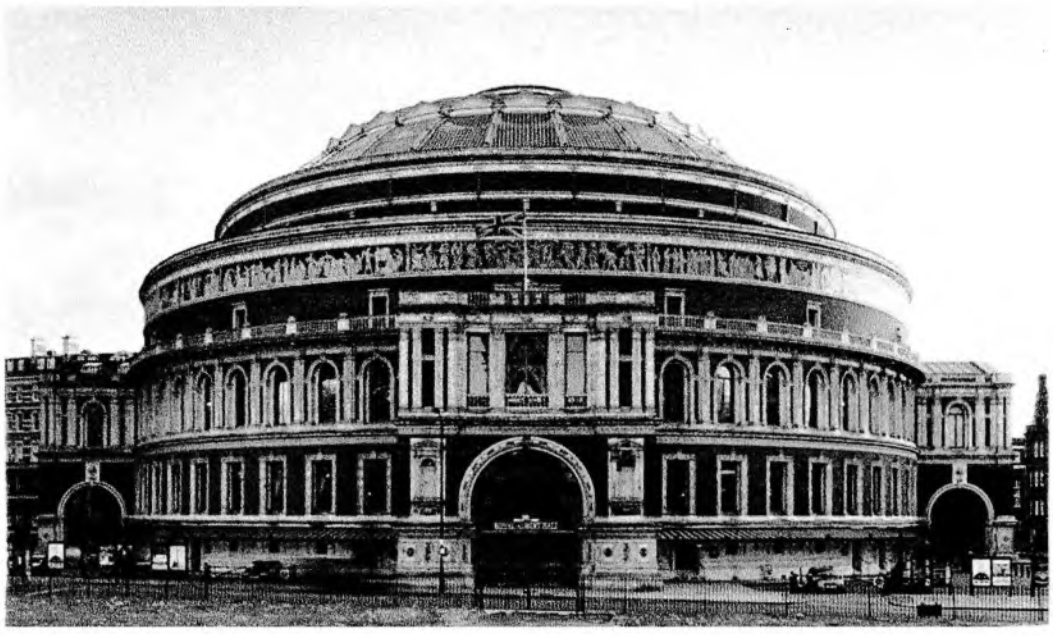

Fig.1 The Royal Albert Hall, Kensington Gore, London SW7. The building is of red brick with a frieze in buff terracotta above the second floor.

John Goodall, 'In the Round: Royal Albert Hall, London SW7',
Country Life, 24 March 2021, pages 125-132.

The Great Exhibition of the Arts and Sciences of All the Nations of 1851 made a huge profit, £186.436 to be precise. The great glass exhibition hall was removed from Hyde Park to become the Crystal Palace in Sydenham, south London, but the question remained of what to do with the financial surplus. Prince Albert, suggested that the money be used to purchase the South Kensington estate on which to create 'a lasting legacy of the exhibition' (p.128); later the area became known as 'Albertopolis'. The initiative ultimately produced the museums on Cromwell Road: the Natural History Museum and the Victoria and Albert Museum together with the Science Museum and the Geology Museum on Exhibition Road. In the centre of all this would be the now demolished Imperial Institute, of which the tower remains, an incongruous element of the Imperial College of Science and Technology, University of London.

These are at the southern end of the estate. At the northern end is the Royal Albert Hall, an elliptical space, internally measuring 219 feet by 185 feet (66.8m × 56.4m) (p.132). The Royal Albert Hall (fig.1) is a military engineers' building; the designers were army engineers, Captain Francis Fowke (1823-1865) and, after his death, Lt-Col. Henry Scott (1822-1883). The structure was cast iron, suitably enclosed. The outer walls were constructed in red brick from Farnham, pointed in with dark grey mortar, although the mortar joints are not easily made out. Decoration is provided by window surrounds and an external balcony in buff terracotta from the Glascote Works at Tamworth, Staffs. The roof was originally of glass within an iron frame but in 1949, the inner dome was rebuilt in aluminium. The baffles to reduce the infamous echo were installed between 1998 and 2004.

Fig.2 Part of the exterior frieze of the National Building Museum, Washington DC. The frieze is between the ground and first floors. It sows seven different scenes of military activity.

The great glory of the exterior is the continuous frieze, an 800 ft-long mosaic in buff terracotta on a red background displaying as the inscription above it says 'This hall was erected for the advancement of the Arts and Sciences and works of industry of all nations in fulfilment of the intention of Albert Prince Consort'. This is in seven sections, each by a different artist whose designs were photographed by another Royal Engineer, Benjamin Spackman, before being scaled up for production.

Four thousand miles west in another capital is another building in red brick with a continuous frieze in buff terracotta: the Pensions Building, Washington DC. Now the National Museum of Building, this double cube measures 400 feet by 200 feet (122 m × 61m) externally. But unlike the arts of peace on the Royal Albert Hall the frieze on the Pensions Building shows the arts of war (fig.2). Whereas the frieze on the Royal Albert Hall which is at the top of the building, the frieze on the Washington building is between the ground and first floors (first and second floors in American terminology). The Pensions Building was constructed between 1882 and 1887 to provide a single space for the 1,500 clerks who, after the Civil War (1861-65), administered the pensions of Union soldiers, their widows and orphans. It too has a cast iron frame, enclosed in brick, with a rectangular, central open space rising through three equal storeys to the iron-framed glass roof. This, too, was an engineer's building; the designer was Brevet-Major-General Montgomery C. Meigs (1816-1892), sometime Quartermaster-General of the US Army. Unlike previous government buildings in Washington, of stone and classical in their inspiration, the Pensions building uses Italian Renaissance palaces, specifically the Palazzo Farnese, Rome (1515-34: Antonio da Sangallo) as the model for the exterior and the Palazzo della Cancelleria (1489-1511: Donato Bramante) for the interior.

On both sides of the Atlantic, these are amazing spaces. Various musicians, mostly male, ageing pop stars, interviewed for *The Guardian G2*, 29 March 2021, the sesquicentenary of the hall's opening by Queen Victoria, described the impact of walking out on stage to perform there. Of the thirteen persons featured, the five women were the boxer Nicola Adams, the orchestral conductor Marin Alsop, the singer Shirley Bassey, the sitar player Anoushka Shankar, and the singer Regina Spektor. All, irrespective of gender, spoke of the special atmosphere and warmth of the building. For those whose experience of the Royal Albert Hall is

classical music, not least the Henry Wood Promenade Concerts, the general approval of the building by such a wide range of musicians has come as a revelation.

For the Royal Albert Hall see *Survey of London,* **38,** London: London County Council, 1975, pages 177-195, available online at *www.british-history.ac.uk/survey-london/vol38/pages177-195* with brief account in B.K. Cherry and N. Pevsner, *Buildings of England: London 3: North West,* London: Penguin Books, 1991, pages 488-489 and plate 66. For the Pensions Building, Washington DC, see Pamela Scott in P. Scott and A.J. Lee, *Buildings of the United States: Buildings of the District of Columbia,* New York: Oxford University Press, 1993, pages 183-186 with photograph on page 184.

Helen Macdonald (presenter), 'The Hidden Wilds of the Motorway'
BBC4, Sunday 5 July 2020

This drive round the London Orbital Motorway, the M25, in an anti-clockwise direction from south of Dartford to Grays in Essex and the Queen Elizabeth II Bridge was designed to highlight the wildlife close to the motorway. Macdonald, the author of *H is for Hawk,* divided the background to the motorway into four zones. South from Dartford to beyond Leatherhead is characterised by 'Wood'. West from Leatherhead to Rickmansworth responds to 'Water' and the reservoirs for London. North from Rickmansworth to Epping is 'Grassland' and East from Epping to the Dartford Bridge has 'Industry'. In each of the four zones the presenter managed to include at least one interesting brick building or structure.

In the middle of the programme, rather than at the beginning, Macdonald explained that the M25 is roughly follows the route of the outermost of the five orbital roads proposed for London by Sir Patrick Abercrombie is the ambitious *Plan for London* of 1944. The M25 was the only one of the five orbital routes to be constructed.

The first brick building which Macdonald examined was a house near Leatherhead, multi-period in its construction, with brick mullions to the windows, separated from the road by woodland. The M25 incorporates a number of older bypasses, one of which was built in the 1930s for traffic going north to south and vice versa avoiding the centre of Staines, then Middlesex but now Surrey. The original bridge over the River Thames was designed by Sir Edwin Lutyens with a long but very low arch in brick edged with concrete slabs. It has echoes of Isambard Kingdom Brunel's bridge over the same river at Maidenhead, Berks., for the Great Western Railway, a century earlier. The route of the Staines bypass was repurposed for the M25 with the older bridge being the anti-clockwise carriageway and a new bridge being constructed by Arup Engineers in keeping with the earlier one for the clockwise one.

The scrubby grassland of the North zone relies for its biodiversity on the results of the world's longest running ecological experiment. The Rothamsted Research Station has been looking at the consequences of applying different quantities of nitrogen and other fertilisers on individual patches of grass. The plot where neither nitrogen nor fertiliser have been applied for 156 years has the greatest diversity of plants and hence the widest biodiversity. Plots to which the largest quantity of artificial fertiliser has been applied have the least biodiversity, both flora and fauna. The programme did not show the house at Rothamsted; the research station on the edge of Harpenden, Herts.; it is based around Rothamsted Manor, older timber-framed house remodelled with red brick walls by Sir John Wittewronge (*d.*1693) between 1638 and 1653, a rare example of building work continuing while the English Civil War was ongoing. In 1822, the estate was inherited by John Bennet Lawes (*d.*1890) who turned the whole into an agricultural research station in 1843.

At the eastern end of 'Grassland', beside the River Lea, was the Royal Gunpowder Mills at Waltham Abbey, an eerie collection of now deserted brick buildings where the kingdom's stock of explosive materials was made: Nelson and Wellington each relied upon the products for Trafalgar and Waterloo. A characteristic of the buildings where the nitro-glycerine was produced and stored was thick, brick walls but a very thin roof, to minimise damage to workers: the roofs have mostly gone. Macdonald considered the East as edgelands, brownfield sites awaiting redevelopment, not least former landfill areas; when grassed over, the last-named support a great variety of species. Edgelands as a concept is perhaps more familiar to American geographers than to students of brick structures. The programme included was the disused army rifle range on Rainham Marshes. The firing range ended with a thick wall of London stocks laid on edge in Header Bond.

Uniting the whole programme was the final house shown, that build for the naturalist Alfred Russell Wallace in 1873. Based on his experience in the Far East, Wallace passionately believed in the protection of the natural world but his house was built of concrete.

For Rothamsted see J. Beetley, N. Pevsner, and B.K. Cherry, *The Buildings of England: Hertfordshire,* New Haven and London: Yale University Press, 2019, pages 236-239. The Royal Gunpowder Works are described J. Beetley and N. Pevsner, *The Buildings of England: Essex,* New Haven and London: Yale University Press, 2007, pages 814-815.

Carla Pissano, 'A Road to Remember: [Pimlico Road, Westminster, London SW1]'
Country Life, 7 October 2020, pages 38-40.

In the Autumn issue of the quarterly 'London Life' supplement included in the pages of *Country Life,* Pimlico Road, on the western edge of the City of Westminster is given two half pages of text, a full page and a half page of illustrations, plus a half page of advertisements for expensive residences.

At the other end of the social scale, the full-page montage of illustrations includes a photograph of part of the front of the south block of Coleshill Buildings on Pimlico Road and of much of the rear of the north block on Ebury Street. These two six-storey tenement blocks were built in 1868-70 for the Improved Industrial Dwellings Company, headed by Sir Sydney Waterlow, to a design by W.W. Lee. In white London stock brick with red brick bands level with the sills and lintels of the windows, each of the domestic floors above the ground-floor shops provided six flats, on the second to fifth floors with balconies overlooking the street. The uppermost floor is part of a French mansard roof whose dormers have open pediments. The French mansard roof was to accommodate the 2nd Marquess of Westminster's requirement that the blocks be 'as attractive as possible' when providing the land on which they were built; Pimlico Road marks the edge of Belgravia, a more upmarket development by the Grosvenor Estates.

These flats are in contrast to later provision of working-class housing by the Improved Industrial Dwellings Company. A different photograph in the montage shows another block, also in white brick, in the part of Pimlico Road in Chelsea: Lumley Buildings was built in 1875, with balconies but without the mansard roofs. This photograph also shows a tenement block, of seven storeys, from a third provider of working-class housing, also in the part of Pimlico Road in Chelsea.

Elsewhere, Simon Bradley describes three blocks erected by the Improved Industrial Dwellings Company on Ebury Bridge Road and Chelsea Bridge Road, Wellington Buildings of 1879, as 'a harsh scheme', again of six storeys. For brief account of these buildings see S. Bradley and N. Pevsner, *The Buildings of England: London 6: Westminster,* New Haven and London: Yale University Press, 2003, pages 751 (Coleshill Buildings) and 776 (Wellington Buildings).

Issues of *British Brick Society Information* in 2022 with a Regional Focus

In view of the impending Annual General Meeting in Lincoln on a Saturday in June 2022, the Editor of *British Brick Society Information* would like to include in one or both of the first two issues of *BBS Information* in 2022 articles about brick in Lincolnshire and adjacent midland counties. Contributions on the uses of brick and brick buildings in Lincoln, Lincolnshire and adjacent counties are invited.

If a member has even the shortest of pieces relating to brick or a brick building in Lincoln, Lincolnshire, and the adjacent counties, the Editor of *British Brick Society Information* would welcome notice of the contribution and indication of its length and number of illustrations, and whether these are in colour or black and white, by Saturday 25 December 2021 and final submission of the text with the illustrations by Thursday 31 March 2022. Earlier submission is encouraged.

NOTES ON CONTRIBUTORS

ARYA ASSADI-LANGROUDI is Senior Lecturer and director of geotechnical activities at UEL, the University of East London. Works with Ian Smalley on the nature and properties of loess material and loess deposits. Based at Docklands Campus in London E1, in brick country, quite near part of the great Bazalgette drainage enterprise. PhD Birmingham University. A recent publication is A.Assadi-Langroudi, S.Ng'ambi, I.J.Smalley, 'Loess as a collapsible soil: some basic particle packing aspects', *Quaternary International,* **469A**, 2018, pages 20-29.

MICHAEL CHAPMAN is Chairman of the British Brick Society. He spent his working life in the UK Brick Industry, gaining a range of professional qualifications enabling him to work in technical and managerial roles and gaining expertise in all aspects of brick production and general management. Since retirement, he has remained active as a consultant, working on environmental, training, and quarry projects. He also remains active in the industry's professional institution, the Institute of Materials, Minerals and Mining, being a Fellow of the Institute and through it a Chartered Environmentalist. His principal interests lie in all aspects of both historical and modern brick manufacture and the application of brick in the built environment and as a contributor to *British Brick Society Information.*

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

GREVILLE LILL is a long-time geologist with the old National Coal Board. A pioneer in the study of brickearth at Leeds University, with Ian Smalley, he is also a pioneer in the use of large sample thermogravimetry in the analysis of soils and sediments and the development of derivative thermogravimetry. One time pet shop operative and tortoise polisher. Studied at Sir John Cass College with Colin Moon. PhD Leeds University.

MICHAEL OLIVER has been Secretary of the British Brick Society since 2005. He is a graduate in Chemistry and his working life started developing building materials. He joined Agrément on the Building Research Establishment's site where his work involved evaluating building materials, granting approvals, and serving on British and European committees. He developed an interest in historic brickwork in churches when English Heritage helped his parish in a project to make a neglected brickwork ruin of a Caroline church in its churchyard safe.

SUSAN ROUNDTREE is a retired conservation architect living in Dublin. She holds a Master of Letters (M Litt) from Trinity College Dublin (1999) for research on the history of clay brick as a building material in Ireland. She has contributed to several publications on the subject of historic brick in Irish buildings, including *The Eighteenth-Century Dublin Town House,* Dublin, 2010, and *Architecture 1600-2000,* Royal Irish Academy, Dublin, 2014. Her forthcoming book, *A Gazetteer of Brickmaking in Ireland,* is due for publication in 2022.

IAN SMALLEY is Honorary Professor of Physical Geography at Leicester University and proprietor of the Tin Drum bookstore in Narborough Road in West Leicester. He worked with Grenville Lill on the thermogravimetry of brickearth and loess at Leeds University and works with Arya Assadi-Langroudi on the nature and properties of loess material. He has a very particular brick interest focussed on the Crayford Brickearths and the London Stock brick. Publishes Loess Ground blog *www.loessground.blogspot.com.* PhD City University, London

TERENCE PAUL SMITH, a co-founder of the British Brick Society, has been its Chairman and Editor of *British Brick Society Information,* to which he has also been a regular contributor. Now retired, he worked on the archaeology of building materials, following an earlier career as a schoolteacher.

BRITISH BRICK SOCIETY
MEETINGS in 2021 and 2022

Saturday 25 September 2021 (Subject to Covid-19 restrictions not being in place.)
Autumn Meeting
Banbury, Oxfordshire
Tour of town: Horton Hospital, Public Library, Commercial buildings with polychrome brickwork, shaped and special bricks on Victorian houses, modern treatment of rear extension to stone-fronted bank, terracotta-faced food store, brickwork of rear of shopping mall.
Possible afternoon visit to view exterior of Hanwell Castle, an early-sixteenth-century brick house.
Contact: David Kennett, *davidkennett510@gmail.com*
7, Watery Lane, Shipston-on-Stour, Warwickshire CV36 4BE

A Saturday in May 2022
Spring Meeting
Industrial Worcester
A walk from Shrub Hill Station to the city centre before lunch; a walk along the canal in the afternoon, returning to Worcester Shrub Hill in time for the London train around 4.00 pm
Contact: David Kennett, *davidkennett510@gmail.com*
7, Watery Lane, Shipston-on-Stour, Warwickshire CV36 4BE

Saturday 18 June 2022
Annual General Meeting
Lincoln
With afternoon visit to see the brick buildings within Lincoln Castle
Contact: Mick Oliver, *mickshelia67@hotmail.com*
19 Woodcroft Avenue, Stanmore Middlesex HA7 3PT

Planning for possible visits in 2023 is in progress and dates will be announced in the next mailing: it is to include two visits to brickworks in the 2022 programme: due to Covid-19 restrictions no brickworks is open for works visits in 2021. Visits to Abbots Bromley and the Ridwares, Staffordshire; Risley and Ockbrook, Derbyshire; Cardiff Bay; and Tewkesbury are being planned for future years.

At the 2021 Annual General Meeting on Zoom it was agreed to hold the next southern Annual General Meeting in Bridport; this will now be held on a Saturday in June 2023.

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

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

Changes of Address

If you move house, please inform the society through its Membership Secretary, Dr 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.