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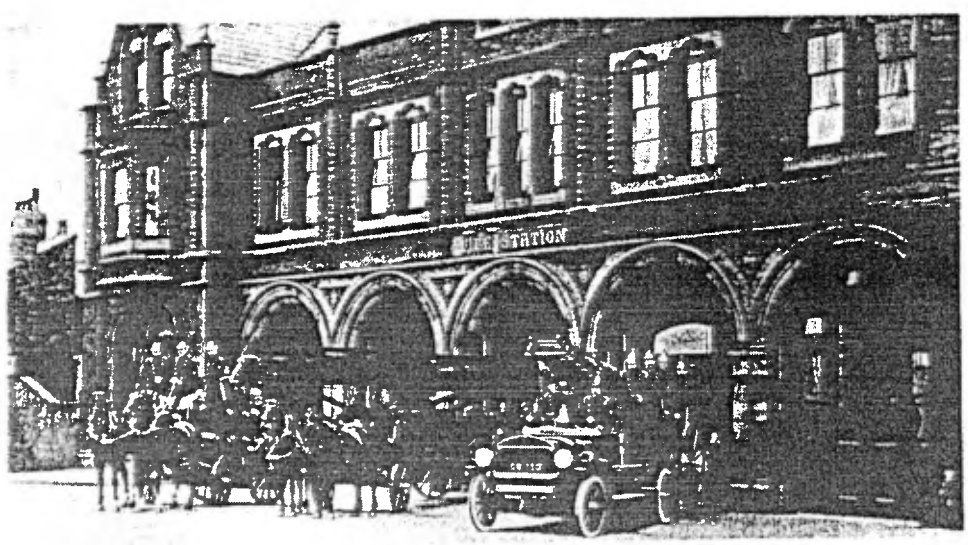

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British Brick Society web site:

http://www.britishbricksoc.free-online.co.uk/index.htm

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Cover Illustration:

Stockport Fire Station Turnout. The building had space for five engines or other vehicles. In this view, motor transport has partially replaced horse-drawn In overall plan, but not in details, this is a very similar building to that at Salford, Lancs., some ten miles away. The Stockport Fire Station is brick-built on its upper floor, the communal rest room for the firemen. The superintendent's house was on the right.
(Postcard sent 1 April 1920; collection D.H. Kennett).

Editorial:
Brick and its Uses in the Twentieth Century

With this issue of *British Brick Society Information*, the British Brick Society finally begins publication of the survey of 'Brick and its uses in the Twentieth Century'; the Editor having taken the opportunity to clear the longer items in his files prior to beginning this series. Perforce the series begins with Britain and obviously with Britain at the beginning of the twentieth century. The intention is to complete the survey of Britain with an article in most, but not all, of the issues of *British Brick Society Information* due to be issued between now and the latter part of 2003 before moving on to other countries.

Three points need to be made about the series. The articles concern brick and its uses in the twentieth century; they are not primarily about architecture and definitely not about architecture as high art. The choice of buildings thus includes many which do not figure prominently, if at all, in textbooks of architectural history.

The first article is exceptional in its length. If issues of *British Brick Society Information* were still confined to twenty pages, it would have been the only item in this issue and would probably have been published with fewer illustrations. With its companion piece on the use of brick for buildings in the private sphere, it has been condensed from a set of three, much longer, articles on brick and its uses in the twenty years before the Great War. Other articles will be much shorter. Those on Britain, 1919-1939 - Brick and Economic Regeneration' and 'Britain, 1919-1939 - Brick and the Human Spirit' are both shorter.

As far as is possible the buildings chosen for inclusion in the first two articles and those on Britain between 1919 and 1939 are structures which have been seen by the author; this is true also of the extant buildings discussed in the series of articles on the Netherlands. Demolished buildings cited in the first four articles are ones which had been seen by the author prior to the bulldozer moving in and were chosen because they were the example of that building type or for that use of brick of which he is most aware.

In this context, it may be helpful to explain that as an adult, the author of the articles on brick and its uses in Britain 1895-1919 and Britain 1919-1939 has at different times lived in Bristol, in Cardiff, near Great Yarmouth, in Luton, and in Salford, Lancashire, prior to moving to Warwickshire in 1997. In addition, at various times he has worked in Bedford, Cambridge, London, Lowestoft, Rochester, and Worthing and has studied, but not been resident in the city, in both Lancaster and Liverpool, the latter still on-going and involving trips to Bolton. Since 1997, this author has been fortunate that in the course of his employment: he is liable to be sent almost anywhere within an hour's train journey of Birmingham. It means that one has been paid to go places as diverse as Shrewsbury, Telford and Wolverhampton, Coventry and Rugby, Cheltenham Spa and Burton-on-Trent, Stafford and Leamington Spa, Worcester and Thrapston. Many of these places were visited ten or more times within a month. And, of course, one looks at the buildings and remembers them.

The list excludes places to which one had been for other reasons; Leeds springs to mind from among the buildings cited in the article in this issue of *BBS Information* and Harpenden and Norwich from those in a future article. Only the visit to Harpenden, in either 1971 or 1972, was deliberately to view that building, a branch bank.

In writing these pieces, the author has drawn on almost fifty years of looking at buildings, although many of the buildings noted in the articles are ones seen within the last five years. For the record, the first buildings I can actually remember going to look at were not brick, they were stone: Truro Cathedral and Restromel Castle in 1950 and I still have the guide books purchased

then. From the family holiday of 1951, I can distinctly remember the ruins of the Charles Church in the middle of an area as yet unrebuilt after the Second World War bombing of Plymouth.

Although the contribution on the Netherlands has already been written and articles on both the U.S.A. before 1941 and on Czechoslovakia and central Europe throughout the twentieth century are in active preparation, the Chairman and the Editor of the British Brick Society would be delighted to hear of offers to survey developments in other countries, either for part of the century or its whole. There is an especially need for authors who could write authoritively about developments in the use of brick in the last third of the century. in a country or group of countries. Experience in writing entries for the *Macmillan Dictionary of Art* suggests that some initial familiarity with the literature and/or the buildings together with the requisite enthusiasm is all that is needed to begin an investigation. This is sufficient to get an author started.

When this issue of *BBS Information* initially went to press, the society had just concluded the series of visits and meetings for the year 2000. Reports of some of these were printed in the last issue of *BBS Information,* and this issue contains notes about the others. Arrangements for meetings and visits in 2001 are already well advanced.

A number of brick buildings have been the subject of television programmes in recent months. The BBC2 programme *House Detectives* has featured at least three brick buildings: the seventeenth-century hunting lodge at St Margaret's Priory, Titchfield, Hampshire; Plymouth House, Northop, Flintshire, in north Wales, a mid-seventeenth-century house which in the late eighteenth century was a coaching inn; and a house in Spitalfields, London. Channel 4 has had excavations at both Rycote, Oxfordshire, and Basing House, Hampshire, in the archaeological programme *Time Team.* Interesting brick buildings even turn up in gardening programmes; the former Hackney Institute, now luxury flats, and the lofts of Manhattan, New York, turned up unexpectedly on *Home Front in the Garden* on BBC2, the evening before these words were written. Earlier the Channel 4 programme *Lost Gardens* had looked at No 7, Officers Terrace, Chatham, Kent, the master shipwright's house built as one of a pair of slightly larger houses at the centre of a terrace which was constructed between 1719 and 1755.

If members have taken notes on these or any other programmes and wish to submit them, a feature on `Brick and Television' is planned for a future issue.

DAVID H. KENNETT
Editor, *British Brick Society Information*
4 May 2000, 14 December 2000 and 16 February 2001

BRICK AS SYMBOL: SOME CORRECTIONS

During the copy typing, necessarily hurried to meet a deadline, of the article by T.P. Smith, `Brick as Symbol: Mies' Lost Monument', in *BBS Information,* **82,** December 2000, a number of errors crept into the final text. For members who may wish to correct their copy, the most significant are:

p.17 *l.*34 for `*Bankunst*' read `*Baukunst'*
p.18 *l.*11 for ` in the front of' read ` in front of'
p.18 *l.*48 for `*certainly* intended' red `*certainly* unintended'.

T.P. SMITH, D.H. KENNETT

Britain, 1895-1919
Part One: The Public Sphere

David H. Kennett

BRICK AND THE ALTERNATIVES

In 1895, a plethora of new buildings were appearing over much of Britain: the Great Depression which began in 1873 was finally coming to an end. Construction of J.F. Bentley's Westminster Cathedral had now begun several years after the architect had received the commission. On the southern edge of Bolton, Lancs., a new cotton mill, financed by the Bee Hive Spinning Co.Ltd., called Bee Hive Mill no.1, was completed. In Liverpool, J.F. Doyle were finishing the designs of the new offices (fig. 1) for the White Star Line: they who would later commission the *R.M.S. Titanic*. In the small town of Dunstable, Beds., E.R. Robson designed a building for Ashton's Grammar School, a school for between eighty and one hundred boys, while W.D. Gravell's design for Mills Grammar School, in Framlingham, Suffolk, an even smaller town, accommodated sixty girls in one large classroom and one small one. And presaging the future, a tall structure based on the Palazzo Strozzi, Florence, was constructed on a corner site on Manchester Street, Cheltenham, to house an electricity sub-station and provide offices for the electricity company.

What all these buildings of 1895 have in common is external walls where brick is the predominant material.

Brick therefore could be used for all types of buildings, from a cathedral to cotton mills, from shipping line offices to grammar schools. For mass housing, the small terraced house, brick was ubiquitous.

Brick on the verge of the twentieth century had few rivals for the exterior of buildings. In stone-building districts the traditional material was used. But even here the use of brick can be observed in new building, as in the back lanes of Chipping Campden, Glos. or on the village street of Weston-sub-Edge to the north. Similarly in Stoke Goldington, Bucks., where oolitic limestone is abundant and much used as the local building material, in 1892, a pair of estate cottages built in brick were inserted on a hitherto vacant plot on the main street.

Prestigious urban buildings continued to be stone-faced: notably Cardiff City Hall and Law Courts of 1898 by Lanchester, Stewart and Rickards and the National Museum of Wales by Smith and Brewer of 1911. And in 1904-06, Matear and Simon were to clad the Liverpool Cotton Exchange with cast iron.

Apart from stone blocks, the only serious rival to brick for use as walling was terracotta, which had certain advantages: a lighter material useful in high buildings, fire-resistant, a range of colours was possible, and because its production involved moulding it could provide a decorative frontage. An 1895 example is the School Board Offices, Chapel Street, Salford, by Manchester architects Willoughby and Woodhouse.

As a structural material, in buildings where large open spaces were required, for much of the nineteenth century brick had shared the accolade with cast iron Where the building regulations permitted, by 1895, the use of cast iron for structural columns was beginning to give way to steel. Twenty years later, steel-framing was more likely. The first part of the Refuge Assurance Building, Oxford Street, Manchester, (1891) is iron-framed; the second part (1910)

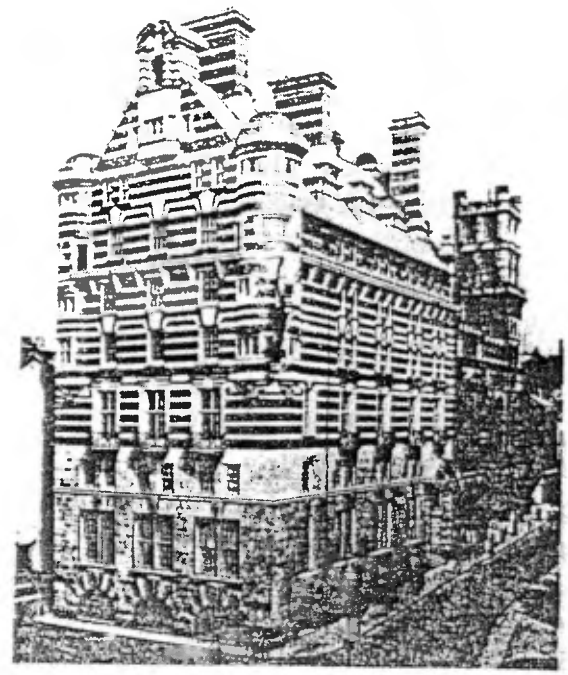

Fig.1 The White Star Line offices, The Strand, Liverpool, designed 1895 by J.F. Doyle, R. Norman Shaw, consultant architect

is steel-framed. Pioneer examples of steel-framed buildings are Robinson's Emporium, a department store in West Hartlepool, Co. Durham, (now demolished) and the Great Northern Railway Company's Goods Warehouse, Manchester, completed in 1894 and 1898 respectively. Both have outer walls of brick, the latter with the building's function picked out in white brick. In 1897, Charles Trubshaw began to design the Midland Hotel, Manchester, which is steel-framed but faced in terracotta and brick.

By 1914, brick, cast-iron and structural steel had a further rival for the engineering job: reinforced concrete. Unadorned, this was much used in industrial buildings, like a 1907 warehouse in Abertawe (Swansea) and the grain warehouse once dominating the east end of Ontario Dock, Salford. It could even be used for an office block: the Royal Liver Building, Pierhead, Liverpool, of 1908-10 by W. Aubrey Thomas is a prime example. While clad with orange-coloured terracotta, reinforced concrete is the structural material of the 1909 YMCA Building, Manchester, a late work of J.H. Woodhouse, done in partnership with A.E. Corbett, who was the first Lecturer in Architecture at the Victoria University of Manchester and supplied the expertise which permitted use of the re-inforced concrete.

That brick could still hold its own in structural terms needs no further recommendation than its visible use in Westminster Cathedral and, clad with an exceptionally thin veneer of stone, the piers constructed in solid Accrington brick laid in inter-locking courses, of the extended Royal Exchange, Manchester; the largest room in the world was built between 1914 and 1921.

In the period, when brick was used for both structure and external walling. London stocks cost £2-0s-0d per thousand in 1914 and common flettons £1-8s-0d. A rod of common brickwork in London had a prime cost, including labour, of £13-13s-9d.

Brick production figures are recorded intermittently: 4794.1 million bricks in 1907, a year at the height of the 1904-08 building boom, while in the depression year of 1912, only 3720.5 million bricks were produced. For comparison, even the latter far exceeded the largest production figure recorded during the sixty-five years when the brick tax was levied. In 1848, 2259.9 million bricks were charged with duty. A better comparison for the Edwardian years is the 4066.1 million bricks produced in 1924. While production was high, the number of brickworks was declining as the self-combusting Oxford Clays of Bedfordshire and

Northamptonshire were used to make bricks in large works. Suffolk had recorded its maximum number of brickworks in 1885; in Essex a peak number of works was reached earlier, in the period between 1863 and 1880. Board of Trade reports suggest that labourers in brickyards were paid about £51-16*s*-0*d* in a year, or, in the classic phrase "round about a pound a week".

In 1901 there were 115,995 bricklayers to lay the bricks but only 102,752 ten years later of whom 5,380 were aged 65 and over. In 1906, they were paid an average of £94 a year, about £1-16s-2d per week assuming each man worked a consistent week every week which by the nature of the employment was unlikely. The hourly rate for a skilled man in 1914 was 11.5d per hour in London. Bricklayers' labourers, of whom 10,814 are recorded in 1906, earned an average of £60-18s-0d in a year, or £1-3s-5d a week. The labourers' recorded hourly rate was 8d. in London in 1914.

Much new innovation in building tended to come from outside London. Partly this is due to the restrictive nature of the London Building Acts: that of 1874 limited heights and that of 1894 which demanded that external walls be load-bearing. Thus it is that steel-framing was already well-established in north-east England and in Lancashire long before Mewès and Davis built the Ritz Hotel, Piccadilly, London, in 1906-09.

In the period which includes both the years known as *fin de siècle* and the Edwardian Era, the country was neither exclusively urban nor totally dominated by metropolitan culture. Major towns, those with over 50,000 inhabitants, numbered ninety-eight but accommodated less than half the population. However, Britain had five of the world's twenty-five most populous cities: Birmingham, Liverpool and Manchester, each at around seven hundred thousand inhabitants, and the larger Glasgow and London. A flourishing architectural culture in each is reflected, too, in independent towns with one-fifth of Manchester's population, such as Blackburn, Oldham and Bolton.

INDUSTRY AND COMMERCIAL OFFICES

Part of the economic rationale behind these independent cultures is cotton, the second staple of Britain's trade until 1926. The confidence the buoyant trade brought to Lancashire is expressed in giant brick mills. Mills built after 1895, especially those constructed in and after the 1904-08 building boom, are much larger than their predecessors: the two Dunlop Mills at Rochdale, of 1914 and 1920, were designed to consume one-third of Egypt's cotton crop for use as the webbing of rubber tyres. In deep red Accrington brick, these are six storeys high and fourteen bays by twenty-six. In contrast to an earlier practice in Oldham, which persisted as late as 1875, whereby the bricks for a cotton mill were made on site, Accrington was a customary source for the red bricks of mills in Bury, Oldham and Rochdale particularly those designed by Sidney Stott but Ruabon brick is used in many Bolton mills such as Croal Mill and Kearsley Mill (fig. 2), both opened in 1906 and designed in the offices of Bradshaw, Gass and Hope of Bolton. At Kearsley Mill, a yellow brick is used for contrast.

Greater Manchester had over 2400 mills. Of a sample of 1112 recorded mills; one fifth were built in the first quarter of the twentieth century. In Bolton, thirty new cotton mills were built between 1895 and 1915 and a further nine after the war. The last cotton mill in Bolton, Sir John Holden's Mill at Astley Bridge, of 1926 is fourteen bays of reddish-buff brick, with double pilasters of brick between the three-light windows. It is one of the few only cotton mills to be built with mains electricity as the motive power for the machinery: Kearsley Mill was designed to be powered by electricity but this was generated on site.

Such was the prosperity of Manchester and the neighbouring towns in the twenty years between the opening of the Manchester Ship Canal on 1 May 1894 and the outbreak of the Great War on 4 August 1914, that a second, L-shaped, central business district was established. The

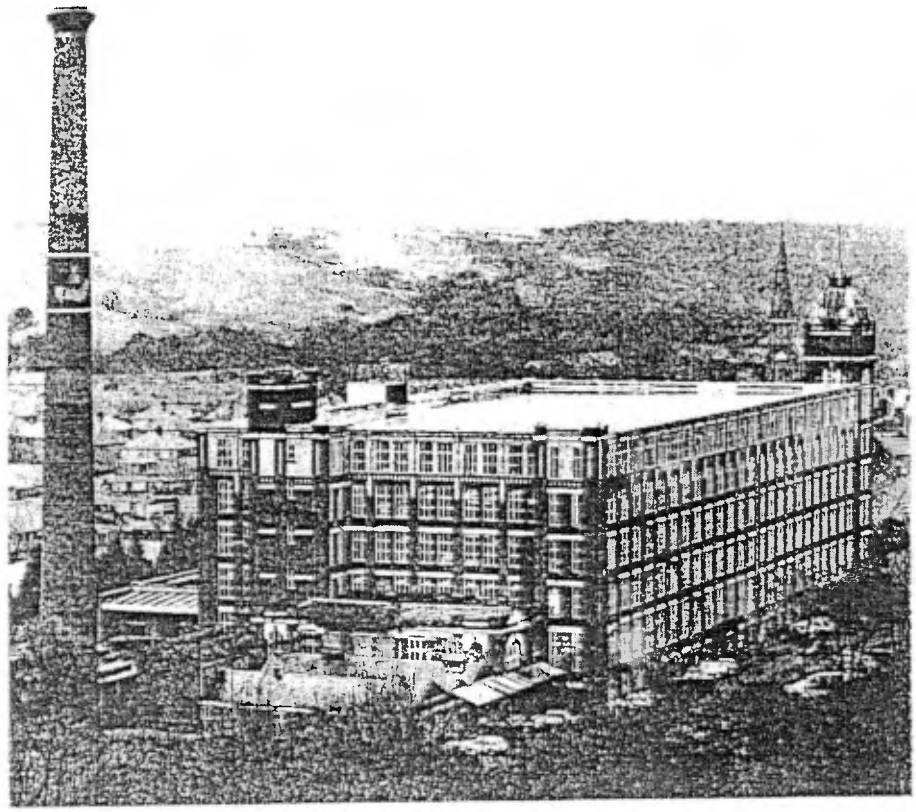

Fig. 2 The Kearsley Mill, Bolton: Ruabon red brick with yellow brick accents. Designed in the office of Bradshaw, Gass and Hope of Bolton, and built in 1906. The mill was powered by electricity generated on site.

principal structures built on these streets were cotton warehouses, where finished products and bolts of cloth were displayed. The buildings are steel-framed with terracotta façades to the street, glazed terracotta of various colours on Whitworth Street and Granby Row but the terracotta is unglazed on warehouses on Dale Street and Princess Street. Rear elevations on the buildings on Whitworth Street and Princess Street are in glazed, white brick showing the presence of ancient lights.

The same principles of mill construction underlie the double-sized mill north of Fort Dunlop, Birmingham; it would not look out of place in a Lancashire town like Bury or Burnley. The brick used was bright red when new. The brick, as much as the size of the structure, proclaims the confidence of the builder.

Similarly brick structures but with much less glass are the large hat factories of Luton: Henry Durler's factory, Guildford Street, of 1905, uses a pale version of Luton Greys for the side and rear walls but the street frontage has been rendered and painted. The lace factories of Nottingham are another variant on the idea of the large brick structure punctured by glass.

In this period architects began to encounter the problems of factories requiring large open spans. At Queensferry, Flint, H.B. Creswell designed a boiler works for Williams and Robinson Ltd. where the roof and the travelling gantry are carried on heavy brick piers. The outer brick wall became an independent screen.

New industries like the building of electrical transformers, which was established in Rugby, Warwks., in 1900 did not eschew brick as the main walling material for the factories. There is a high water tower which is a pleasing piece of brickwork.

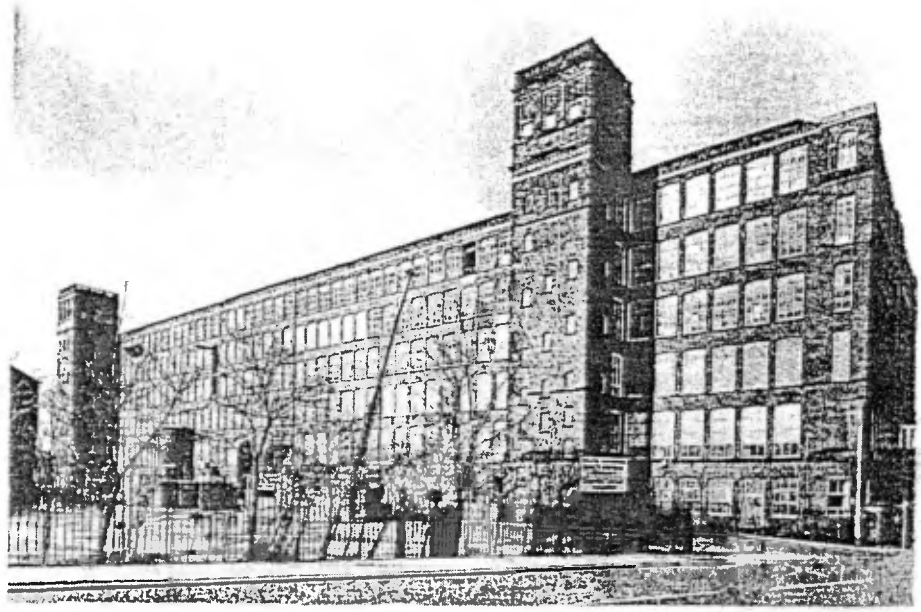

Fig.3 Swan Lane No.1 and No 2 Mills, Bolton, built in 1902 and 1905 respectively as a double mill. Stott and Sons of Oldham were the architects. They used red Accrington bricks.

Leetham's Mill, Navigation Road, York, is the sole industrial building by A.J. Penty. A corn warehouse rather than a factory, Leetham's Mill is dramatically placed, rising from water on both long sides, the River Foss and Wormald's Cut, and with the bullnose end with the stairs forming a further three storeys of tower above the five of the main structure. There is a profusion of special bricks in the tower. Of 1895-96, it is a throwback to earlier yarn mills like the Yarn Mill, Norwich, of 1834, with load-bearing brick walls.

One industry which seems to have suffered less in the Great Depression than might be instantly recognised is brewing. In Burton-on-Trent, new breweries were built throughout the second half of the nineteenth century, culminating in the 1896 buildings for Bass. On the opposite side of Station Street are buildings for a wine shipper, B. Grant and Sons of St James', London, of 1897. The gables have many specials ending in rosettes.

In Bristol, great tobacco warehouses, easily seen from the Clifton Suspension Bridge, were built on a peninsular site between the rivers Avon and Frome. There are three of them in red brick, constructed in 1906, 1908 and 1919 At eighteen bays and nine storeys they dwarf everything around them. An even larger single tobacco bonded warehouse of 1900 dominates Stanley Dock, Liverpool. At twelve storeys, with its huge front divided by broad pilasters of blue and red brick, or just blue brick except on the uppermost storeys, it is reputedly the largest brick structure in the world. Breaking up the shorter frontage, of nine bays, of irregular width, are two vertical stacks of windows.

A crenellated tower dominates the profile of the long four-storey building of the Horlicks Factory of 1906 at Slough, Bucks. With rising living standards, more processed foods were being purchased. On High Street, Deitrend, Birmingham, in 1902, Alfred Bird and Sons began the first portion of their Devonshire works with a red brick and buff terracotta front. Here the firm manufactured custard powder until the early 1990s. Lea and Perrins transferred their premises for making Worcestershire Sauce to a new site on Midland Road, Worcester, in 1897, where they built a long building of three storeys in red brick; this factory is still in use. Big commercial bakeries came into being in this period. An attractive building in the local red brick with buff terracotta accents is Crescent Bakery, St George's Place, St James' Square, Cheltenham, now in other uses.

Fig. 4 The Sanderson Wallerpaper Factory, Barley Mow Passage, Turnham Green, Chiswick, west London. Designed in 1902 by C.F.A. Voysey, it has now been converted to offices and is known as Voysey House. White brick with black brick for ornament.

One exciting industrial building is the Sanderson Wallpaper Factory, Barley Mow Passage, Turnham Green, Middlesex, of 1902-03 (fig. 4); it was designed by the country house architect, C.F.A. Voysey, who also specialised in wallpaper designs. The factory uses thin piers of glazed white bricks to separate areas of glazed white brick in English bond. Each panel of white brick has a thin black coping so arranged to give an undulating skyline. Three bands of black, two with shallow arches above the broad windows of the first and second floors, the uppermost raised, and the third, flat and one brick high, beneath the second floor windows, relieve the stark nature of the glazed white brick. Voysey's work is usually rough-cast, sometimes for weather protection, sometimes for effect. The building shows that this major architect was equally at home using brick.

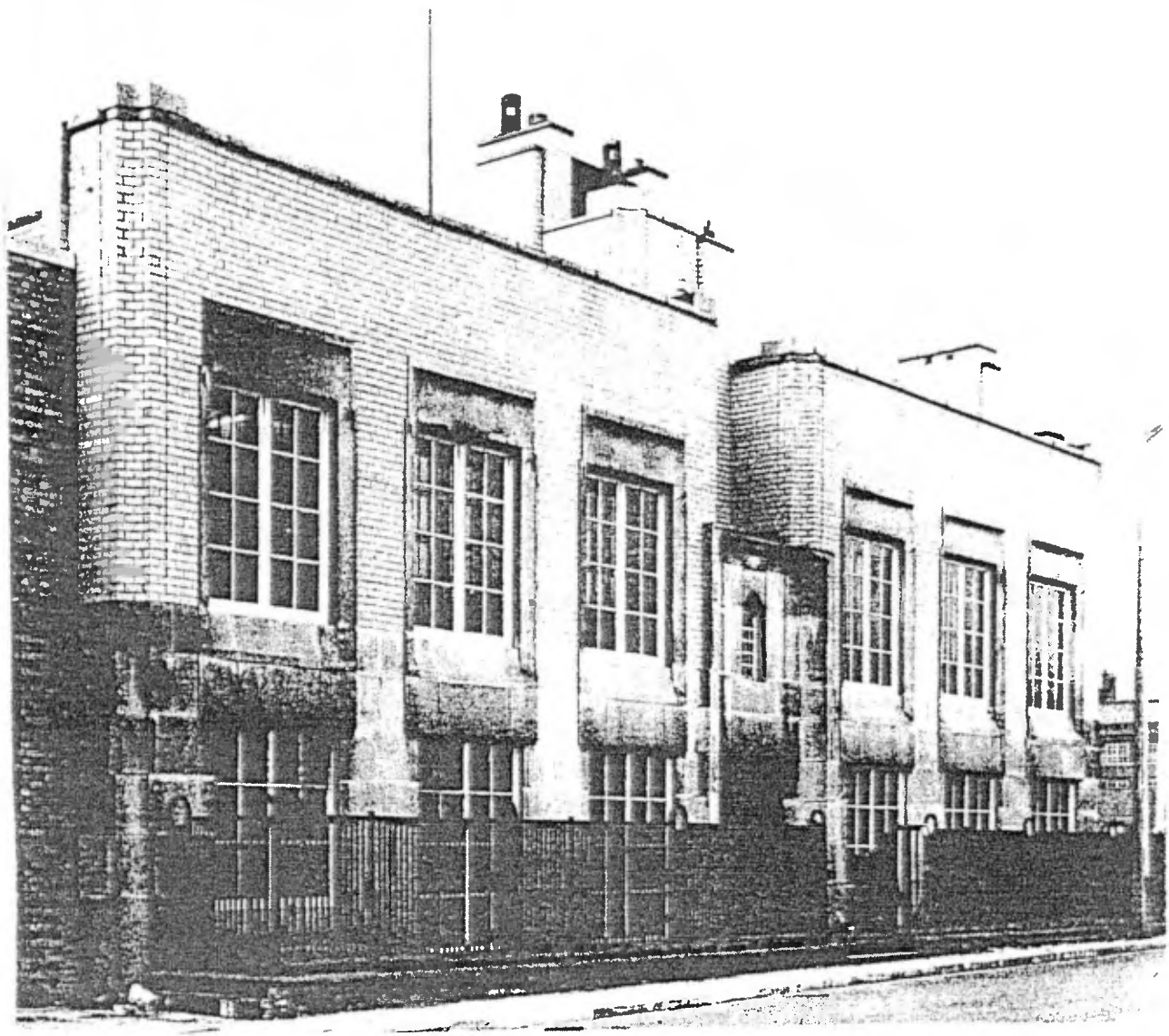

Fig.5 Offices for Dronfield Brothers, a firm of solicitors in Oldham, Lancs. Designed by J.H. Sellars, the building uses granite and green glazed bricks in English Garden Wall bond with five courses of stretchers between the headers.

On the same level of inventiveness is the offices of Dronfield Brothers, solicitors of King Street, Oldham, of 1906 by J.H. Sellars (fig. 5). As with Voysey's factory, this seeks to make an everyday building into a work of art. The walling materials are Cornish granite for the

ground floor and green glazed brick for the upper floor, both with much glass. The parapet in English garden wall bond with five courses of stretchers conceals a flat reinforced concrete roof. The design is two blocks of three bays linked by a recessed central bay. The central entrance, like each of the windows of the first floor, has granite blocks as the surround. One feature, the chamfered corners with a quarter brick inset, is repeated in a much later building: Lee House, Bridgewater Street, Manchester, of 1931, which has more complex chamfered corners with multiple insets. Lee House owes much to a design for a seventeen-storey skyscraper made by Sellars of 1917.

More usually, small office buildings are like those (now demolished) on Kimpton Road, Luton, for Vauxhall Motors by H.B. Creswell of 1907-15, in red brick which took on a neo-Georgian appearance.

Horace Field designed two offices for North Eastern Railway, a company headquarters in York and smaller premises at 4 Cowley Street, Westminster. The York offices (1902-06) are in English bond using red brick from kilns at Sudbury, Suffolk The stone dressings to fenestration and the corners uses both Portland and Ancaster. The symmetrical main façade of twenty-three bays rises through a basement, four principal and two attic storeys accommodating the army of clerks which the fourth largest company in Britain perforce employed: it is a measure of their aggregate size that the ten largest public companies in Edwardian Britain were all railways.

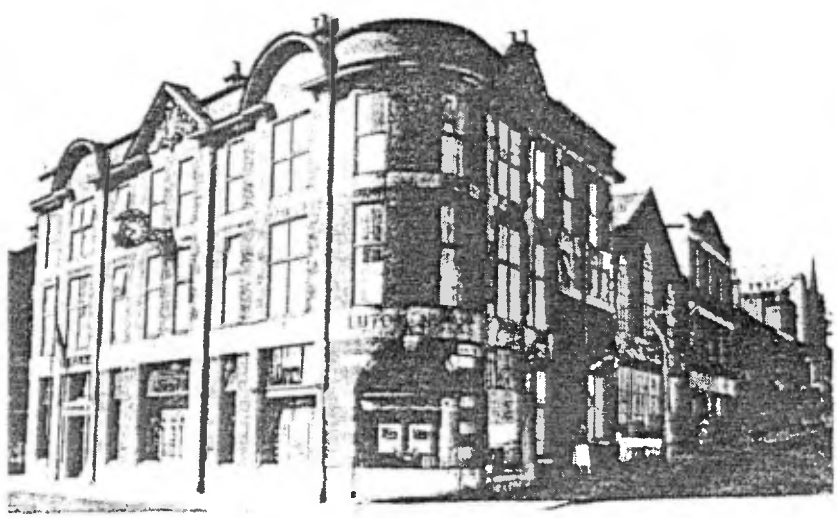

Fig. 6 Building in red brick with red terracotta for *The Luton News*, Manchester Streetm Luton, Beds. (demolished in 1975). It was built in 1912.

Another industry not often thought of as significant was newspapers; in 1907 generating business worth over £10 million (in current terms). Many towns had their own daily newspaper, certainly an evening one if not one designed to be read over the kedgeree, and this applied even relatively small towns like Luton, Beds. (population: 36,404 in 1901 and 49,978 in 1911). One of the two local newspaper companies, publishing *The Luton News*, could afford new office premises in 1912 on the corner of Manchester Street and Alma Street in deep red brick (fig. 6). The three-storey offices had broken pediments in terracotta with the curving ones laid in the style of the Catalan vault. The printing works occupying a frontage of nearly 100 feet on Alma Street were less elaborately faced.

Even printing works with a street façade in stone, such as Charles Rennie Mackintosh's

building of 1897 for *The Daily Record*, in Renfield Lane, Glasgow, have a great deal of brick in their construction. Because of the need to observe ancient lights, the rear wall is in white glazed bricks, laid in English Garden Wall bond (fig. 7), but with green decorative accents showing the designer's touch of originality.

Designed in 1904, only seven years after the magazine had been founded, Lutyens' office building for *Country Life*, at 2-10 Tavistock Street, Covent Garden, London, has a stone-clad basement and ground floor but uses brick for the mezzanine and upper floors. Lutyens liked to used mezzanines: in offices of 1905 for *The Garden* magazine at 42 Kinsgway, Holburn, has used two. This building, rendered on its upper floors, later became the London offices of the brickmakers, Redland.

A very different style, but also with careful brickwork, is evinced by H. Fuller Clark's work for Boulting & Sons offices in Riding House Street, London W.1. The sanitary and hot water engineers' new offices have their name and trade picked out on a mosaic panel. The façade is characterised nu a series of bays: each bay different and cantilevered out on a concrete base. There are complex parapets and experimentation is noticeable in the brick chimney stacks. Fuller Clark also did 'The Black Friar' public house on the corner of Queen Victoria Street, again a façade with much use of mosaic work.

BANKS

Important local banks were often built with stone façades, such as the Old Bank, Rugby, or the one on the corner of Bridge Street and Union Street, Stratford-upon-Avon. Both have three storeys but as their side and rear walls reveal they are essentially brick buildings. The Berkshire, Buckinghamshire and Oxfordshire Bank on Market Place, Wimslow, Bucks., is brick, with a brick cartouche showing the initials of the bank's name.

Banks had mostly been confined to town centre sites. However, Martins Bank in Liverpool began a policy of providing suburban branches. In these the ground floor was often of stone, as for example James Rhind's building on Deane Road of 1898, but as with Rhind's building the upper floors are of red brick. Grayson and Ould did one on Prescot Road and Derby Lane, and one with a splayed entrance at the corner of Aigburth Road and Ashfield Road.

Banks also began rebuilding branches in the centres of expanding towns. The London and County Bank used stone in a heavy baroque style for its single-storey branch on the corner of Chapel Street and George Street, Luton, in 1912. Three years later, to designs by Arthur Blomfield, Barclays Bank used brick for its five-bay neo-Georgian building of two storeys with a large attic on the site it had long occupied on Market Hill, Luton. Like John Waller's house which the bank took over in 1859, the new bank was constructed using Luton Greys.

PUBLIC UTILITIES

The town-centre electricity sub-station at Cheltenham was mentioned in the opening paragraph; it reminds us that from 1880 electricity was available to provide artificial light but that only after 1888, when municipal undertakings were permitted for the generation of electricity, did its use become more widespread. The first towns to adopt the act were Blackpool and Bradford in 1889; others soon followed. In 1893, *The Builder* reported that most large buildings were fitted for electric light.

Fig. 7 (opposite), Offices for *The Daily Record* in Glagow by C.R. Mackintosh in 1897, with white brick in English Garden Wall bond relieved by green stone above the windows.

London's electricity generating stations had two functions: to supply electric light and to provide power for the trams and underground railways. Those designed for lighting owed much to the work of C.S. Peach. Most noteworthy was that at St John's Wood whose solitary chimney, standing until 1972, will be familiar to cricket aficiandos. The upper part was a good example of the decorative use of brickwork. Brickwork of very high quality characterises the main building: thin bricks, chamfered corners, double and treble recessing to the panelling of the side walls, bricks used to form Ionic pilasters to the main front. Of red brick arcading and superstructure with yellow brick used for the panels beneath the arches is the generating station on Frederick Road, Salford. A great deal of thought went into this and the design of other plants, even when, like that at Wolverhampton the brickwork is essentially plain.

Electric pumps allowed water to be pumped from great depth and to be stored in raised tanks. In the 1890s, brick water towers were built to house tanks and to provide cover for the machinery needed. At Finedon, Northants., engineering brick is used as the basis for polychrome work including also red and white in an essentially horizontal scheme with panels of brickwork recessed in each of the eight sides. Water towers for developing urban areas occupy prominent high sites, as with that visible for many miles at Uxbridge, Middlesex.

There is a long tradition, from the 1846 onwards, of public washhouses which included laundries, male and female slipper baths, and, in all except the earliest examples, swimming pools. These continued to be built as late as the late 1930s. They tended to continue to be heated by steam boilers, for which distinctive chimneys had to be provided. If the municipal authority was sufficiently grand, the street façade could be expansive, red brick and Portland stone in a 'Wrenaissance' style as with H.W. Wills' Chelsea Public Baths of 1907. If there was less need to be seen to be spending money, plain brickwork with concrete blocks would suffice as with the baths on Stratford Road, Springfield, in south Birmingham, built by Yardley Urban Distict Council. From the outset, both these buildings had electric light.

Not to be out-done by their new rival, gas companies which previously had a monopoly on providing artificial light asserted their presence by building new offices. The gas offices at Cheltenham are in red brick with the name `Cheltenham Gas Company' in brick in a raised band of brickwork between the ground and first floors; dating to the mid 1890s, the name was on the Gloucester Road front of the gas works.

The *R.M.S. Titanic* sailed from Southampton on 8 April 1912 having taken on board mail at Southampton. Southampton Post Office on Admiralty Quay was built in 1902, one of the many post offices designed under the direction of Sir Henry Tanner, Chief Architect to the Office of Works from 1898 to 1913. Most were built using re-inforced concrete for structural purposes and faced in stone. Earlier ones like that at Southampton used brick for structural stability and as the main walling material, even though there is a classically-inspired façade with stone columns and stone pediments.

The former central post office on Lichfield Street, Wolverhampton, uses brick as the structural material. In a red-purple brick with yellow terracotta surrounds to the windows and over the entrance porch where the date is inscribed, the building has rear entrances on Berry Street and Garrick Street which use the same combination of materials.

The National Telephone Company was not originally government-owned but a private concern: a legal judgement of 1911 equating telephone conversations with telegraphic messages implied infringement of the Post Office's prerogative. Twenty telephone exchanges were designed by Leonard Stokes between 1898 and 1908. These are buildings of some architectural pretensions: witness the one faced in stone at 24 Highborough Road, Glasgow. The demolished exchange in Soho, London, had brick and stone in bands on the exterior. Later telephone exchanges took advantage of the Office of Works' knowledge of the structural and load-bearing properties of re-inforced concrete: many are brick-faced.

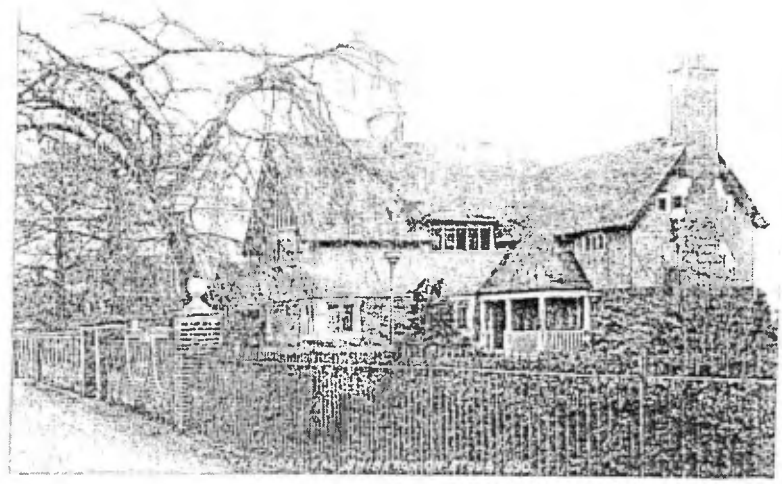

Fig. 8 The Ellen Badger Cottage Hospital, Shipston-upon-Stour, Warwks., designed by E.W. Mountford for his friend Richard Badger in 1896. Much rough-cast over non-facing bricks on the upper floor. This building is clearly visible despite later additions.

HOSPITALS

By the time of Queen Victoria's Diamond Jubilee (1897), the provision of hospitals in major towns had become a pressing issue. Late in his career and with much assistance from his son, Paul, that supreme planner of public buildings, Alfred Waterhouse developed new talents in planning hospitals. one of the earliest in red brick, purple brick and red terracotta blocks is the (former) Royal Infirmary, Liverpool, of 1887-90, mostly in English bond. Completed in 1906, and one of Alfred Waterhouse's last works to be finished is University College Hospital, Gower Street, London,. There is less terracotta here.

Also in London, but in completely different style is Charles Holden's Belgrave Hospital for Children, near Kennington Oval. The powerful centre had twin turrets, linked by a recessed porch, and on the front of a tall gable three windows flanked by broad pilasters and divided by narrow pilasters, an arrangement derived from medieval abbeys. the name was originally picked out in white brick in recessed panels.

Holden used red bricks and Luton Greys for the walls of the King Edward VII Sanatorium at Midhurst, Sussex, with the gables and dormers faced in local tiles.

Hospitals were not confined to big cities. Many small towns acquired their first purpose-built hospital, as opposed to infirmary buildings at the local workhouse, such as Wells-next-the-Sea, Norfolk, and Shipston-on-Stour, Warwks. (fig. 8). The latter has exposed brickwork on the ground floor and roughcast work on the first floor; despite later additions, the original buildings, by locally-born architect E.W. Mountford, can easily be discerned.

TRANSPORT

Transport in the Edwardian era was changing. On 14 August 1901, the *Daily Mail* reported that King Edward VII reached Marlborough House, having travelled up from Windsor in his motor car.

Saddlery and Harness was alarmed, not without justification: the Birmingham horse market had ceased to occupy its traditional site on 22 July in the same year. Between 1903 and 1913, the horse bus was replaced by the motor bus. In 1904, at the Midland Hotel, Manchester, the engineer Henry Royce met the Honourable Charles Rolls.

These changes have building implications. If the client was rich enough, and very few,

for instance, of C.F.A. Voysey's clients had sufficient money, there would have been a stables to the upper middle-class house. Edgar Wood provided these as late as 1902 in a stone house, 'Barney Royd', Huddersfield, for William H. Armitage, an accountant. When he came to design the brick house, 'Upmeads', Newport Road, Stafford, for Frederick Bostock of Lotus Shoes in 1908, what is called the "motor house" is provided as a detached building away from the main dwelling. Its curving back wall forms part of the ornamental outer entrance. As early as 1903, Voysey provided a "motor house" in an enclosed courtyard at 'Hollybank', Chorleywood, Herts., a rendered house including a surgery. built for a general practitioner, Dr H.R. Fort, in 1903. Voysey's own house in Chorley Wood, 'The Orchard', of 1899 had neither stables nor motor house.

New showrooms connected with motoring and its accoutrements appear. Best known is the Michelin Building, 81 Fulham Road, Chelsea, by François Espinasse, of which the earliest part was built between 1909 and 1911; subsequent additions were made in 1912 and 1922. Often well-regarded as an early example of a reinforced concrete structure in the Hennebique system, it is clad in red bricks and white Burmantoft's 'marmo' tiles.

In towns, electricity was the spur to the development of tramway systems. Blackpool trams were powered by electricity as early as 1889. Fragments of the red brick walls of a contemporary depot survive in the still operational and much rebuilt tram depot. Salford Tramways Depot, on a corner site on Frederick Road, built in 1907, was more complete in 1994 than it is now. In red Accrington brick, it has a high arch over the central entry, with two wings set at an acute angle.

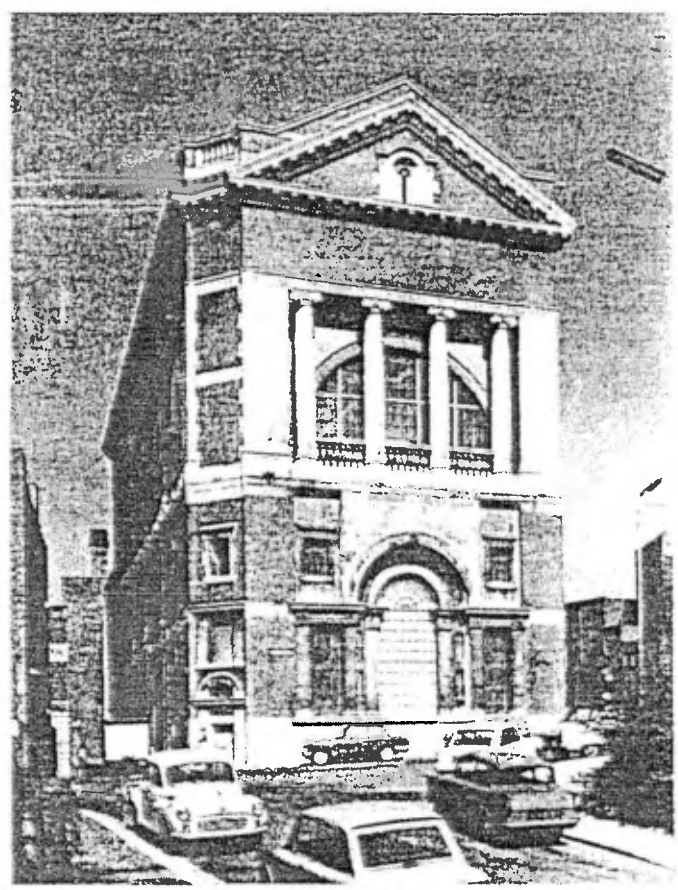

Fig. 9. The generating house designed by W. Curtis Green in 1900 for Bristol Tramways.
Red brick with much stone.

In 1900, W. Curtis Green built a great classical façade to the generating house for Bristol Tramways: a Venetian window on the ground floor with four Ionic columns in front of a large

Diocletian window on the second and third floors (fig. 9). In light red brick, with much stone, it symbolises the confidence inherent in the new technology available for general use.

London had its trams but what set London apart was London Underground, whose beginnings were the Paddington to Farringdon Railway of 1863. Now cleaned, the distinctive yellow, London Stock Brick used is evocative. This railway used steam locomotives until 1900; after electrification, office blocks were built above the stations. George Sherrin did one in light red brick with minimal stone trim above a stone -faced ground floor over Moorgate in 1902-03. The brick at Moorgate is load-bearing but in later work over stations steel-framing is used even if there is a brick façade. An example is Sherrin's front to the (former) Ponting's Store at High Street, Kensington.

A short piece of underground railway opened in 1890 in south London was later extended north from London Bridge to Euston and south from the Elephant and Castle to Clapham Common; it became the eastern arm of the Northern Line. S.J.R. Smith designed a station covered with white faience blocks with darker blocks in the voussoirs at Euston which proudly proclaimed name, in light colour on a dark background, of 'The City and South London Railway'.

In 1903, Leslie Green, architect to the Underground Electric Railways Co. of London Ltd., began work on new stations for the Bakerloo and Piccadilly Lines and those of the northern section of the Northern Line. By the time of his early death in 1908, he had designed fifty stations. These have a characteristic style. Underground, it is white, glazed brick lining to the iron tube of the railway tunnel: Mornington Crescent, opened on 22 June 1907, is a prime example. Black and coloured tiles are used decoratively, including picking out the name of the station, as at Piccadilly Circus. Above ground the stations have exteriors in glazed faiance blocks in "ruby red".

For transporting both goods and people, the railways were the sole long-distance carrier; they were also, perhaps surprisingly, the largest short-distance carrier, owning as many as one-third of the horses in a town. There are still substantial remains of the brick-built stables in the yards of the Great Northern Railway's Goods Warehouse in Manchester.

The last main line was not driven south from northern England until the mid-1890s: the Great Central Railway was the sixth of the lines built to carry coal to London. Completed on 24 May 1900, this joined the Manchester, Sheffield and Lincolnshire Railway from Annesley, Notts., south of its node at Sheffield, via Nottingham. Leicester, and Rugby to the Metropolitan Railway at Aylesbury and thence to London Marylebone. Many miles were carried on viaducts, built of blue brindle brick: ones of many arches can be seen east of Loughborough Station, west of the town centre in Leicester, and east and north of Rugby. In central Nottingham, south of the tunnel from the former Victoria Station, one viaduct includes a junction. Often there were deep cuttings, as for example at Helmdon, Northants. The rational behind the construction was limited climbs, gentle curves and, for express passenger trains, fast running.

The building of the Great Central Railway was both a major capital investment and provided a ready market for the makers of engineering brick for the six years of construction, 1893-1899. The Great Central Railway built several new stations, the principal ones were named after Queen Victoria. In Nottingham only the asymmetrically-place clock red brick tower. survives from the Victoria Station of 1898-1900 by Edward Parry.

Other major railway buildings projects of the period were four undertaken by the Great Western Railway (GWR). All used existing portions of line to provide more direct routes. The first was between Swindon and the Severn Tunnel, where much of the twin track is on embankments concealing long viaducts built of common bricks, completed in 1903. The second joined Taunton to Reading in 1906 and the third, in 1908, gave the GWR a shorter route from Birmingham to Bristol via its branches to Stratford-upon-Avon and a new line between

Honeybourne and Cheltenham. In addition to new stations and signal boxes, being built on the edge of the Cotswold Hills, the new linet was constructed with cuttings and embankemnts resulting in many bridges with blue engineering brick supports. Major works were a fifteen-arch viaduct at Toddington, Glos., in blue engineering brick, and a brick-lined tunnel at Winchcombe. The station at Toddington was in orange-red brick, with many specials used round the fenestration, thus continuing the traditions of the late Victorian stations on the GWR, *e.g.* Wilmcote, Warwks., of 1888. For the anticipated increased number of passangers, new buildings were provided on the south-bound platform of the forty-year-old station at Stratford-upon-Avon. There are in red brick with the fenestration outlined in white bricks, mostly laid in header bond, and set so as to protrude by a quarter brick. The fourth project was a more direct line from Birmingham to London using existing tracks to south of Banbury and from north of Thame, opened in 1910, and requiring many bridges. Both the Birmingham based projects necessitated enlarging the platform on which the station at Birmingham Snow Hill stands, with outer walls in blue brindle bricks,

The Midland Railway was a direct competitor of the Great Central Railway, serving the same east midland towns but differing in its route south from.Leicester. A programme of station rebuilding under Charles Trubshaw, its chief architect, began at Leicester in 1892: the porte-cochere is clad in orange terracotta blocks, and in the spandrels includes the arms of all the counties served by the Midland Railway, then the largest limited liability pubic company in Britain. Trubshaw was also responsible for the red brick Sheffield station of 1905. The new station at Nottingham, built in 1904, was the work of A.E. Lambert; it is in red brick with much rustication.

Other companies, too, built new stations. One of the most important provincial station to be rebuilt at this time was Crewe, the junction in south Cheshire for the London and North Western Railway. White brick was used with red brick in the voussoirs.

Rebuilding of Manchester Victoria began in 1903 to the designs of William Dawes. This is a long thin block of twenty-seven bays, clad externally on the street frontage in cream terracotta, with white glazed and green glazed bricks on the interior where the seventeen platforms of the station are. In some courses, the brickwork uses three stretchers between the headers. The upper part of the building, visible above the roof over the platforms, is red brick. The office block provides the headquarters building for the Lancashire and Yorkshire Railway, Britain's fifth largest company.

Manchester Victoria was the hub of a commuter system, stretching out into south Lancashire and across the Peninnes into the West Riding. One principal station was rebuilt: Bolton Trinity Street, with terracotta façades to the buildings on the two island platforms.

A very different treatment was employed by Gerald Horsley in building new commuter stations in north London. Both Hatch End and Narrow and Wealdstone are in red brick but here the brick is used as the foil to much decorative stone.

The largest railway station built by a British architect in this period was abroad. Howrah Station, Calcutta, India, completed in 1901, was the work of Halsey Riccardo. It is a vast complex in red brick and coloured tile with a series of decorative grills replacing the windows.

HOTELS

Trubshaw went on to build hotels for the Midland Railway beginning in Leeds and Bradford: the interior of the latter was very much in the spirit of Art Nouveau. Like his Leicester London Road Station, much terracotta is used in the exterior walls, but only those to the street. Most famous is the Midland Hotel, Manchester, whose decoration on the Bridgewater Street façade includes a series of tableaux of the arts: Architecture, represented by Palladio and Wren;

Painting, by Titian and Millais; Sculpture by [Michael]angelo and Flaxman; and Literature by Homer and Shakespeare. Inside the building the five-storey high walls of the internal courtyard are constructed of unglazed white brick but with some red brick as voussoirs.

Fig. 10. The Russell Hotel, Russell Square, London,

For the Great Central Railway, Col. R.W. Edis designed the Hotel Great Central, Marylebone Road, London, in yellow brick and yellow terracotta. At the same time, 1897-99 and not far to the south, on the Bedford Estate, Charles Fitzroy-Doll was creating the Russell Hotel in red brick and using terracotta coloured like milky tea, on a site on the corner of Woburn Place and Bernard Street, at the north-east corner of Russell Square (fig. 10). South of this, although actually dating to after 1901, in the most brilliant *fin-de-siècle* creation of all, the same architect produced the (now demolished) Imperial Hotel on the east side of Russell Square. It was an absolute riot of shapes clad in colouredfaience, incredibly well-handled and adorned with statues of Julius Caesar, Charlemagne, King Edward VII and Queen Alexandra. The implication is clear.

In the hotels more than in any other building type we see the full swagger of the confidence of a rich empire: on the floor of the Manchester Royal Exchange no less than one seventh of the world's trade was conducted. Harold Macmillan described it well when he recalled the event he had seen when he was four years old, the Diamond Jubilee of Queen Victoria, in 1897, "at the end of the procession came a little old lady to whom a quarter of the globe owed fealty".

URBAN CENTRES

Urban centres in 1914 looked very different to what they had done twenty years earlier. This is largely irrespective of the size of the town. In the smallest towns, of which Evesham, Worcs.,

is a good example, single plots are rebuilt with brick frontages or two plots combined for a new single building.

In medium sized towns like Rugby, Warwks., and Burton-on-Trent, Staffs., there is much more building. Rebuilding in Rugby began with Imperial Buildings, North Street, of 1897: brick with upper parts covered with pebbledash and with timbering attached to the outside. To the east of North Street, a new road was cut across open land north of Church Street. Regent Street terminates in a small open space, Jubilee Gardens. There is only one stone-faced building on the street: a bank of 1904 on a corner site and even this is essentially a brick building, as noted above.. The street contains two buildings for large shops, one, on a corner site, originally a drapers and the other purpose-built as a furniture store with very large windows. Like their narrower neighbours these are three storeys. Most of the other buildings were constructed as shops with storage on the first floor and living accommodation on the second floor and in the gabled attic storey.

In Burton-on-Trent, new buildings replaced old ones in High Street and Station Street. More than a third of retail part of the latter was rebuilt, some buildings even as late as 1913. One purpose-built shop has and upper façade incorporating much terracotta. On High Street there is a tall, narrow terracotta-faced building whose now occupiers have cleverly re-used the motifs of ninety years ago. Many new buildings have attractive brickwork as with the large shop with a corner frontage to Market Place and High Street, with a stone date plaque of 1908.

The retail Co-operative societies being building ne shops in town centres. One in Banbury, Oxon., the shop built in 1908 has the name of the society and the building date picked out in lettering of bricks standing proud from the façade. Also in Banbury, a former corn chandler on a corner site has a pair of brick cartouches on the first floor: one with the name of the firm, 'J.S & Son Ltd', and the other with the building date, 1905.

In towns not much more populous than Burton-on-Trent, a feature of new building in the town centre is the provision of shopping arcades, although the idea was not particularly new. Makinson's Arcade, Wigan, Lancs., is noteworthy for the excellent orange terracotta arch to the red-brick street frontage. It was designed in 1898 by R. Ablett. Later is the Central Arcade, Great Yarmouth, which is L-shaped. Notable features are the light grey terracotta blocks of the external walls at the entrances and the glazed brown bricks on the back walls. Best-known of these arcades are those in Leeds; the County Arcade of 1898 is by theatre architect, Frank Matcham, and has much red terracotta.

Arcades are also a feature of seaside towns. The two on the front at Great Yarmouth are by C. Hewitt and were built in 1902 and 1904, using dull red terracotta as the exterior walling. Like those faced in glazed light-coloured terracotta in Blackpool, they were originally for shops selling seaside trinkets.

In Great Yarmouth also a big, purpose-built department store faced with buff-grey terracotta was built in 1908 for Arnolds on the north-east corner of Regent Street. With very large windows to the Regent Street frontage, ideal for the display of goods, this demolished building is a good example of just how far the new technology of steel-framing allied to the ability to manufacture large panes of glass allowed new shop buildings to become more functional. A surviving terracotta-clad building with large plate glass windows is a linen store facing the Market Place in Banbury, Oxon.

The technology was taken even further by an American import, the great store on Oxford Street, London, designed for the Chicago entrepreneur Gordon Selfridge. His store was not brick: it was steel-framed and faced with great stone columns in homage to the new city hall of the owner's home city. The English architect who supervised work done before the Great War was R. Frank Atkinson. Both in spirit and materials, Selfridges is a long way from Atkinson's earlier work, the store for the furniture makers Waring and Gillow, built further along Oxford Street

between 1898 and 1903. This is in brick and in imitation of Sir Christopher Wren's Hampton Court. Selfridges is even further removed from the wild extravaganza in buff terracotta, the Knightsbridge frontage of Harrods, by Stevens and Munt, built 1901-05.

A different American import, the first Woolwoorth store, was opened in November 1909 on Lord Street, Liverpool. Big windows characterise the ground floor but the first floor is brick in a neo-Georgian style.

In large cities, rebuilding between 1895 and 1914 could be extensive although in Birmingham it is only individual buildings where the plots had not been redeveloped in the 1880s. In this city, too, stone was often the favoured walling material. Terracotta, however, was used for the Piccadilly cinema, which lasted only until the 1920s when the interior was remodelled as a shopping arcade.

There are two features from Manchester's new business district to which attention must be drawn. It included large shops: a notable example is the former outfitters (now an hotel) with a long frontage to Piccadilly, which uses green terracotta blocks round the fenestration. New buildings also mark the beginning of a move away from brick and terracotta to stone for external walling, as with an hotel of 1909 and a bank of 1913 on Piccadilly and, on Oxford Street, St James' House built for the Calico Printers' Association in 1912. These, even more than Ship Canal House, King Street, of 1926, mark a change in the prevalent style in the city.

PUBLIC BUILDINGS

Undertakings like tramways and electricity were municipal enterprises: critics called it gas and water socialism. These added to the functions of local government and its need for buildings. In the twenty years before the Great War, 196 town halls were built, 82 of them in the five years 1895 to 1899 but with reduced numbers in each subsequent quinquennium, only nineteen in 1910-14. Building of town halls was also in response to changes in local government beginning with the County Councils Act of 1888. In 1891 small towns in rural areas were made into urban districts and hence administratively separated from the villages. Twelve town halls owe their origin to the creation of London boroughs in 1899 out of the old London vestries; some, like Chelsea, had a Victorian vestry hall.

The grander town halls were faced in stone. Alfred Brumwell Thomas designed two such: Belfast City Hall (1898-1906) and Stockport Town Hall of 1903-08. The office portion at the rear of the latter is faced in red brick. But a surprising number use brick. Thomas gave Woolwich Town Hall of 1899-1905 the full swagger of a Edwardian Baroque stone façade, with brick in the corner bays, but there is a massive brick tower and the office block behind is much more modest: two storeys of brick round a quadrangle. Almost completely of brick is Lambeth Town Hall (1905-08) by Septimus Warwick and H. Austen Hall. Each pair of windows is set in a broad vertical band of stone separated by brick walling. Rusticated stone corners characterise a tower otherwise of brick and the nose of the narrow V-shaped site is clad in stone. With minimal use of stone, as window surrounds and rusticated corners only, is Bromley Town Hall by R. Frank Atkinson (1905-06).

Town Halls outside of London were often quite modest. The young T.G. Lucas won the competition in 1900 for the new town hall in his native Hitchin, Herts., but the finished result in light red brick and neo-Georgian style owes much to collaboration with E.W. Mountford, the assessor for the competition. Chadderton Town Hall, Lancs., by Taylor and Simister of 1912-13 is red brick, gentler in hue than the Accrington of the nearby cotton mills, with stone used to accentuate the corners.

Town Hall extensions were often in brick. Salford Town Hall by Richard Lane of 1825-27 with a classical stone front but the brick walls to the sides had been extended three times previously to form two parallel blocks of offices. After 1908, a third range of offices was built

extending the complex by half as much as its then size. The 1908 range is red brick using Flemish bond and has some stone trim echoing the fashionable neo-Baroque style.

Public Libraries financed by munificent millionaires of whom Andrew Carnegie, Passmore Edwards and Henry Tate are best-known began to appear in the 1890s. Specialist practices developed with some architects winning many competitions. Henry T. Hare was successful at Hammersmith, Fulham, Shoreditch, and Wolverhampton, at all of which he used brick, often with much terracotta or stone trim, but for the central libraries of Islington and Harrogate, stone was employed. Many of these display his Beaux-Arts training in Paris in the mid 1880s: that in Wolverhampton has a series of terracotta window surrounds which feature notable English writers in the tympana. The buff terracotta forms a neat contrast with the red brick; a more dull shade was used for the bricks at the back, a not uncommon way of a local committee economising. Another specialist was A.J. Hope of Bolton, a man who had had none of the advantages of the Paris training of H.T. Hare, yet his libraries in Bolton suburbs and at Stockport display a firm grasp of internal planning and have interesting brick exteriors.

Such work was not confined to specialist practices. The delightful Thornhill Square branch library, Islington (1909), by Beresford Pite, has four bays facing the square, recessed for the fenestration with arches of gauged brickwork in contrasting light brick above the plain tympana over the square-headed windows. The side has arcading over three central bays of windows but the two end bays are recessed panels of brickwork. The colour is uniform throughout the building. Another branch library in Islington used red brick with rubbed brick trim. Mervyn MacCartney designed the Essex Road branch library in 1916.

Fire stations were provided in or near many town centres from the late 1890s onwards: permissive powers were granted to all local authorities in 1896. The brick one on Euston Road, London, is one of several in the capital. In provincial towns many are large with accommodation for the firemen and their families. In Bolton the fire station occupied a narrow, sharply sloping site with the carriage house facing west and covered with dull reddish pink terracotta appears three storeyed. The four storeys of flats at the back in red brick in Flemish bond sit over a tall base which contained the stables. The hose tower in English bond is at the north end. The large fire station in central Manchester was built on a triangular site in buff brick and much orange terracotta from Burmantofts of Leeds. In 1901 Woodhouse, Willoughby and Langham designed a self-contained village with flats above the stables. The new fire station opened in 1906.

At both Salford and Blackburn, the fire stations were built with a square of houses behind. The houses face into the square at Salford: red brick with bands in yellow brick. Red brick with much buff terracotta characterise the 1902 building for the storage of five fire engines (fig. 11). It cost £26,855 to build. The architect was Henry Ernest Kirby, a London man who soon after went to South Africa to practise. The fire station at Blackburn is a late example, not built until 1921-22, and unlike the other Lancashire ones mentioned is away from the town centre. In red brick in a Beaux-Arts influenced style by a local architect, Walter Stirrup, the tower has stone Baroque top. The houses in red brick face outwards from a large drying area.

New fire stations are a feature of many towns outside Lancashire. There is a three-storey one, in red brick with terracotta trim at Pool Meadow, Coventry, while built with only two high storeys is that on George Street, Oxford, in red brick and stone trim. The hose tower survives to be seen above the roof of the new bus station. One of the most remarkable buildings is that at Great Yarmouth, Norfolk, (now converted to municipal offices) whose façade to Middlegate Street is in orange terracotta with many decorative flourishes. The architect was J.W. Cockerill, the Borough Surveyor. Some towns, despite their size, had fairly modest fire stations. Space for only two engines was provided in a red brick building of 1906 in Cheltenham, Glos. No accommodation was provided at Luton, Beds., where red brick with moulded brick trim was used at the modest fire station of 1907 (demolished 1962).

Fig. 11 The Central Fire Station, The Crescent, Salford, of 1902, by H.E. Kirby. In the main façade, buff terracotta predominates over red brick.

At Baldock, Herts., the fire station of 1897, by Talbot Brown and Fisher of Wellingborough, is a relatively small building in red brick with minimal Arts and Crafts detailing. It replaced earlier buildings on island where the Market Place terminates. A plain brick building in Luton Greys was built in a similar situation at Leighton Buzzard, Beds.: Both of these now serve as town council offices. A feature of both of these is the inclusion of public conveniences, underground and from the onset at Baldock, and probably so in the street level ones at Leighton Buzzard. Purpose-built public conveniences faced in brick or terracotta were built in these decades: an example are those on the landward end of the Jetty at Great Yarmouth, designed by J.W. Cockerill.

ACKNOWLEDGEMENTS

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Brick for a Day in 2000

The British Brick Society had an exceptionally active year in 2000, holding five meetings. Reports were included in the last issue of *British Brick Society Information* of the Spring Meeting in Sussex, the Summer Meeting in Essex and the Autumn Meeting in Nottinghamshire. Reports follow on the visit to Kew Palace after the Annual General Meeting on 10 June 2000 and the Late Autumn Meeting at Glyndebourne on 11 November 2000..

The thanks of the British Brick Society are due to those who organised these meetings: Michael Chapman and Michael Hammett in Nottinghamshire, Michael Hammett at Kew Palace, and David H. Kennett for the two meetings in Sussex and that in Essex.

Fig, 1 Kew Palace, the much rebuilt front on the landward side.

KEW PALACE

It could hardly have been finer weather for the society's Annual General Meeting nor could one have hoped for a much more congenial setting than Kew. The meeting in the morning was followed by an excellent lunch at the "Greyhound", on Kew Green, while the whole of the sun-drenched afternoon was taken up by a visit to a single building, Kew Palace.

Our guide for the afternoon was Jonathan Foyle, Curator of Historic Buildings for the Historic Royal Palaces, who has been involved in the restoration of the building. He is also

responsible for Hampton Court Palace and thus holds the keys to two of the most important brick buildings in England.

It should, of course, be noted that Kew has not always been a Palace. It was built in 1631 for Simon Faultrey as a villa. Leased from 1728, it was only in 1781 that it was purchased by the Crown, chiefly as a residence for Queen Caroline and belatedly acquired the accolade. Likewise the setting of splendid isolation in the gardens that it enjoys today is equally deceptive for most of its life the "Palace" has been surrounded by large imposing buildings that have dwarfed it by comparison. Of course today, Kew holds an almost mythical place in the history of brickwork as the first known building to have been built in Flemish Bond in this country. It has not been inhabited by Royalty since 1818 and is currently undergoing restoration with the aim of eventually making it open to the public.

The house has two fronts, one to the road and one towards the river. Brick analysis of the façades has revealed that much of the exterior (including all of the Dutch gables and the right-hand side of the south façade) has been replaced over the last three hundred years. Jonathan recounted how paint found in the mortar has suggested that the original façade was lime-washed and how this controversial covering has been replaced at enormous cost. The effect is staggering. The mortar joints all bus disappear, while the colour, a bright terracotta pink seemed almost florescent in the bright sunshine of the day of our visit. One can only speculate on how different seventeenth-century England must have looked if such a finish was commonly applied. Any of the members who were not on the visit and have not been to Kew recently can only be urged to go before the effect of the limewash wears off: be warned, however, that it is not to everyone's taste!

The façade itself is coarser than the guaged brickwork which became so popular in the late seventeenth and eighteenth centuries and seems to modern eyes, accustomed to the latter, almost primitive by comparison. Inside, the house is still in the process of restoration, giving an excellent opportunity to examine walls with panelling partially removed and centuries of wallpapers peeled away. As might be expected from a house that has been used by generations of very different families for different purposes, the internal layout has been radically altered and bears little relation to the original. For instance, where once a spacious hall would have been entered on the south side, there is now a dark, central corridor. Carvings from the original hall screen and panelling have been found scattered throughout the house and the while enterprise is like one immense jigsaw that is only now in the process of being put back together. Jonathan provided a patient and highly knowledgeable guide as he took the members through a large proportion of the building room by room.

The tour ended in the extraordinary brick rib-vaulted cellars, which, according to current scholarship were built for the house, but which many members felt were remnants of something much earlier and more exotic, proving a an interesting puzzle at the end of what had been a fascinating afternoon.

Jonathan Foyle has promised an article on Kew for a forthcoming issue of *British Brick Society Information*. I know that, given the knowledge he exhibited on the visit, all of those present will be looking forward to reading it. We are very grateful to him for his time and to Terence Smith and Michael Hammett for organising an excellent day, much enjoyed by all.

JAMES W.P. CAMPBELL

THE NEW OPERA HOUSE AT GLYNDEBOURNE, SUSSEX

November has not previously been a month for a BBS meeting; the weather was atrocious, squally rain; the roads sodden, driving difficult; the trains delayed and diverted - although that

worked to the writer's advantage. Yet thirty-eight members and guests came to see the new Glyndebourne, winner of the 1994 Brick Design Award.

The building has a very simple basic geometry of two semicircles attached to an almost square performance area, which is expanded laterally to provide parallel sides between the ends of the semicircles. One semicircle has within it a horseshoe whose outermost curve is centred on the same radial point as the outer semicircle. The horseshoe is the auditorium; beyond it, at the level of the upper circle, in an open segment of the south semicircle is the terrace, part of the outer space of the structure (fig. 2). Offices, green room, dressing rooms, cloak the majority of the outer space.

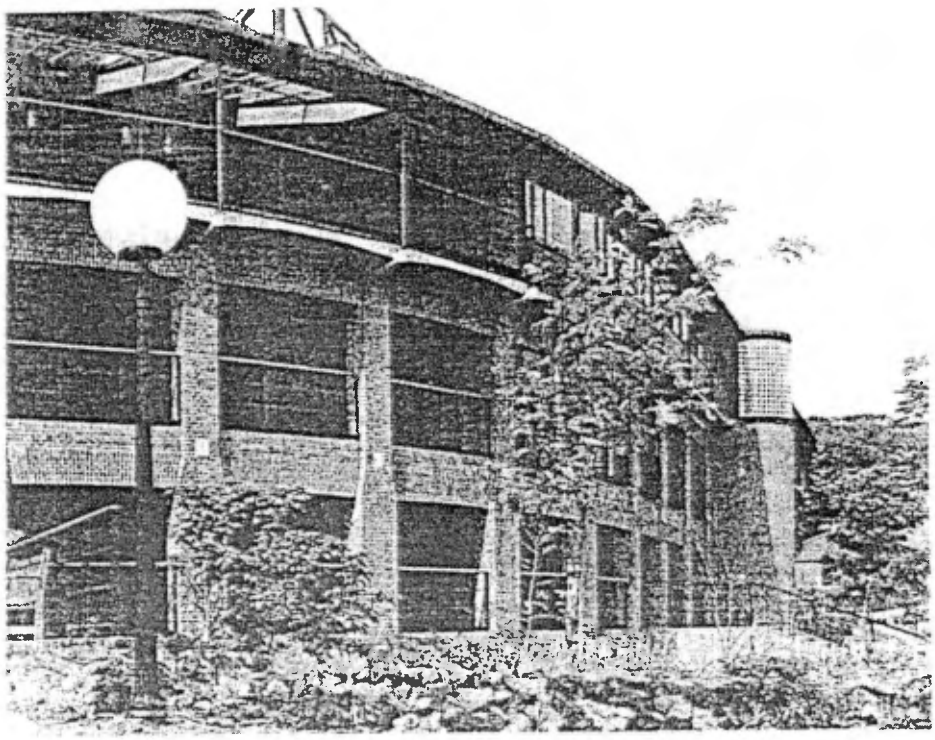

Fig. 2 Glyndebourne: the two storeyed arcaded perimeter wall, with staircase tower to right. [Photograph: courtesy *Brick Bulletin*]

The old Glyndebourne designed by Edmund Warre, of which we saw drawings and photographs in the green room, began as a raked auditorium with seats in rows all facing the stage: the model was the Wagner Opera House at Bayreuth. The new Glyndebourne has an open auditorium, with both a dress circle and an upper circle, the Italian model in miniature. However, the auditorium differs from its model in that the box for the Christie family is placed at the rear of the dress circle directly facing the stage as also happens at Bayreuth.

The great difficulty in designing a theatre or an opera house is not the outer envelope but the problem of the exterior being unbalanced by the necessary bulk of the fly tower, sometimes but not at Glyndebourne with the carpenters' shop above. The architects, Sir Michael Hopkins and his wife, Patricia, Lady Hopkins, solved this by cladding the fly tower in sheet lead with bold bracing at the top of the four sides. By using a double semicircle form for the building envelope, the space required for scenery building and repair could be accommodated at full height and at stage level behind the actual performance space.

All the spaces around the stage are exposed brickwork, not least for ease of maintenance. In the auditorium, pine was used, thus enhancing the acoustic qualities yet even here brick is visible and meant to be seen.

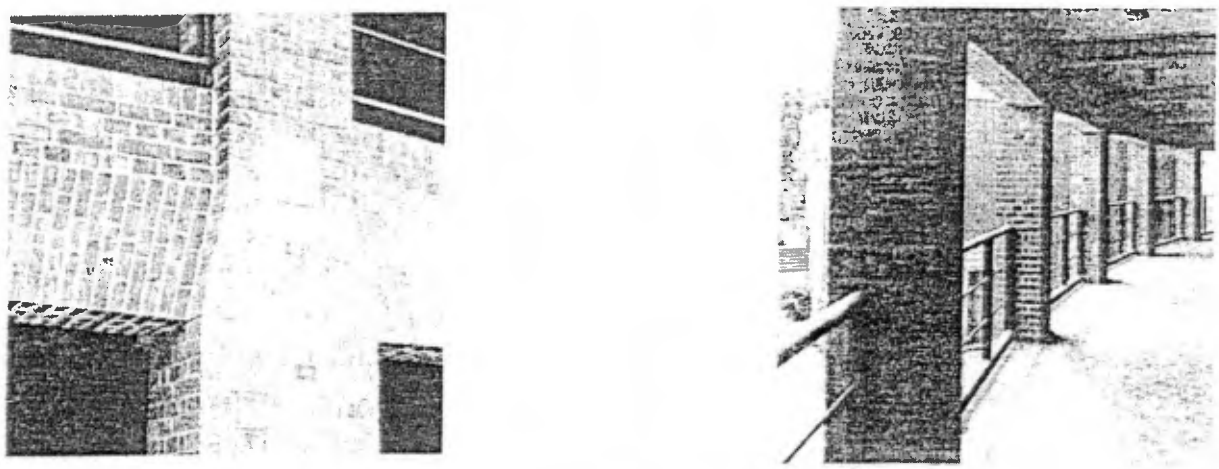

Fig. 3 Glyndebourne Opera House: brick details.
Left: Column and arches in Selborne real hand-made bricks, with concrete beam end.
Right: Upper level of arcade, with brick paving. The house is in background.
[Photographs: courtesy *Brick Bulletin*]

The building contains a number of technical innovations. The 1.5 million bricks were laid using a 1:2:9 cement: lime putty: sand mortar, thus providing a softer mortar able to take some movement and obviate the need for movement joints. The bricks were carefully chosen to match the colour of the bricks of the house; and selection fell on machine-made, hand-finished facing bricks from specialist brickmaker Selborne in Hampshire, which are 220 x 106 x 60 mm in size, as close as possible to the size of the bricks in the house, which, of course, were made to imperial dimensions in 1876, although parts of the house are much earlier. We did not see the house.

The brickwork throughout is loadbearing: walls are 334 mm thick, columns 448 mm thick. Embedded in the columns are the ends of the pre-cast concrete beams which take the load of the pre-cast concrete floors. Gauged brickwork flat arches in the ambulatories offer a high quality finish to the whole building.

Glass bricks were used in the upper courses of the internal walls of dressing rooms to give some natural light a corridor and also on the exterior in the upper part of staircase turrets.

Glyndebourne proved yet again just how beautiful modern brickwork can be, just how versatile the material is. The writer may have done the organising, but the real thanks are due to BBS member Andrew Langridge for making the suggestion for the visit and for providing the initial contacts.

DAVID H. KENNETT

GLYNDEBOURNE: a note on the literature

Glyndebourne has been featured in the building and architectural press:
'Brick Design Awards: Structural Brickwork', *Architects' Journal*, 13 October 1994, page 27.
'A Day in the Life of Glyndebourne', *Architects' Journal*, 13 October 1994, pages 31-41
'Brick in the Spotlight: Glyndebourne Opera House', *Brick Bulletin*, Spring 1995.
Many thanks to Michael Hammett and Alison Norcross for making copies of these available on the day.

DAVID H. KENNETT

Heritage Open Days, 2000

Heritage Open Days were held nationally on the weekend of 16-17 September 2000 and in London on the weekend of 23-24 September 2000. The annual Churches Cycle Ride Day was held on Saturday 9 September 2000.

These short reports were submitted by various members from various of the days/ weekends. Members are encouraged to send reports from the days/weekends in 2001 to the editor for inclusion in a future issue of *BBS Information.*

ST MICHAEL AND ALL ANGELS, COLEHILL, WIMBORNE MINSTER, DORSET

One church built largely of brick which I visited on the 9 September 2000, during the Dorset Architectural Heritage Week, was St Michael and All Angels, Colehill, near Wimborne Minster, designed by W.D. Caroë (pronounced `Carew'). Colour photocopies of the architect's drawings, dated 21 October 1892 were on display: the originals are in Dorset County Records Office, Dorchester. The foundation stone was laid on 6 April 1893. The style is Arts and Crafts Gothic: the walls are of light red to buff hand-made brick in English bond, pointed with red mortar, inside and out. The roof structure is reminiscent of a medieval aisled barn. The Paget memorial, to the right of the chancel arch, has a canopied statue niche in carved gauged brickwork.

The grandfather of the local newsagent fetched the bricks from Poole, probably from a yard in the Newtown area, some 9 miles away, by horse and cart.

MARTIN HAMMOND
3 October 2000

Fig. 1 St Michael and All Angels, Colehill, Wimborne Minster, Dorset
By W.D. Caroë, 1897-1898
Drawn by Martin Hammond, September 2000

HADLEIGH DEANERY TOWER, HADLEIGH, SUFFOLK.

This splendid Grade I late-fifteenth-century brick gatehouse was open to the public on the afternoon of Sunday 17 September for tours (the writer was invited to conduct these). It was built in 1495 by the Rector of Hadleigh as the gatehouse for an intended palace, but which was not completed. The gatehouse has close similarities to that at Oxburgh Hall in Norfolk, which was built some twelve years earlier. The tower has twin attached turrets, one of which contains a fine brick spiral staircase, even the handrail being of brick. Thomas Gainsborough painted a 'View of St Mary's Church, Hadleigh', in 1748; this shows the gatehouse and the timber-framed rectory house behind, which the palace was intended to replace. A copy of the painting is in the gatehouse. Visitors were able to view the first and second floors, then continue up and on to the roof. This vantage point afforded a view of the adjacent St Mary's church, and another Grade 1 listed building within the churchyard, the timber-framed Guildhall. These three buildings - of brick, flint and timber, respectively - provide one of the finest architectural views in the country.
ROGER KENNELL

HERTFORD CASTLE, HERTFORD

Hertford Castle, situated on low-lying ground by the River Lea, was probably one of those created by William I soon after the Battle of Hastings. It remained, with brief *lacunae*, a royal castle down to 1628, when it was granted to the Cecil family. Little remains apart from the motte, parts of the flint curtain wall with a mural tower, and the late medieval gatehouse. The latter will be of particular interest to members of the British Brick Society. Built for Edward IV in 1461-65, it is a rectangular structure of red brick, in English Bond with some diapering. Above the entrance arch is a decayed plaque of the royal arms, carved in London by the mason Reginald Langley; it was originally coloured and gilded by John Payntour of Ware. The entrance is flanked by shallow half-hexagonal turrets. The bricks, 8 x 4-4½ x 2¼ inches, were made locally by Cornelius Gyles - clearly of continental origin - for 1*s.* 9*d.* per thousand. They were laid by nine "breekmasons".

In the later eighteenth century there were additions and alterations. A Gothick porch with plaster vault was added and the fenestration changed to a more domestic appearance. At the top of the building is a brick corbel-table, different from most encountered in medieval brick buildings, and consisting of subdivided semicircular archlets. It has usually been regarded as primary and commented upon accordingly, although Jane Wight notes that it "looks ... suspect". In fact, it appears genuine enough on the rear face, but at the front the brickwork seems to be different, and the corbel-table is difficult to reconcile with documentary evidence for eighteen machicolations, of Kentish Rag, placed beneath the battlements (*pro mascellyng supra .. le Gatehous)* in 1465. It is likely, indeed, that the corbel-table on the front face, apart perhaps from the lowest members of the corbels themselves, belongs to the late-eighteenth-century emasculation of the gatehouse, as, certainly, do the toy crenellations above. In 1967, extensive work inside the building revealed partition walls of timber-framing with infill of brick nogging arranged in different patterns. This has suggested to some that the work was intended to be seen and was thus left uncovered, though the judgement is temerarious.

Early in the twentieth century A.W. Clapham and W.H. Godfrey reported on a brick handrail built into the surviving mural tower of the curtain wall of the castle. But I have never been able to locate this.

If the building is open in subsequent years, it will be well worth a visit. And there are other things in the town to delight the brick enthusiast too.
T P. SMITH

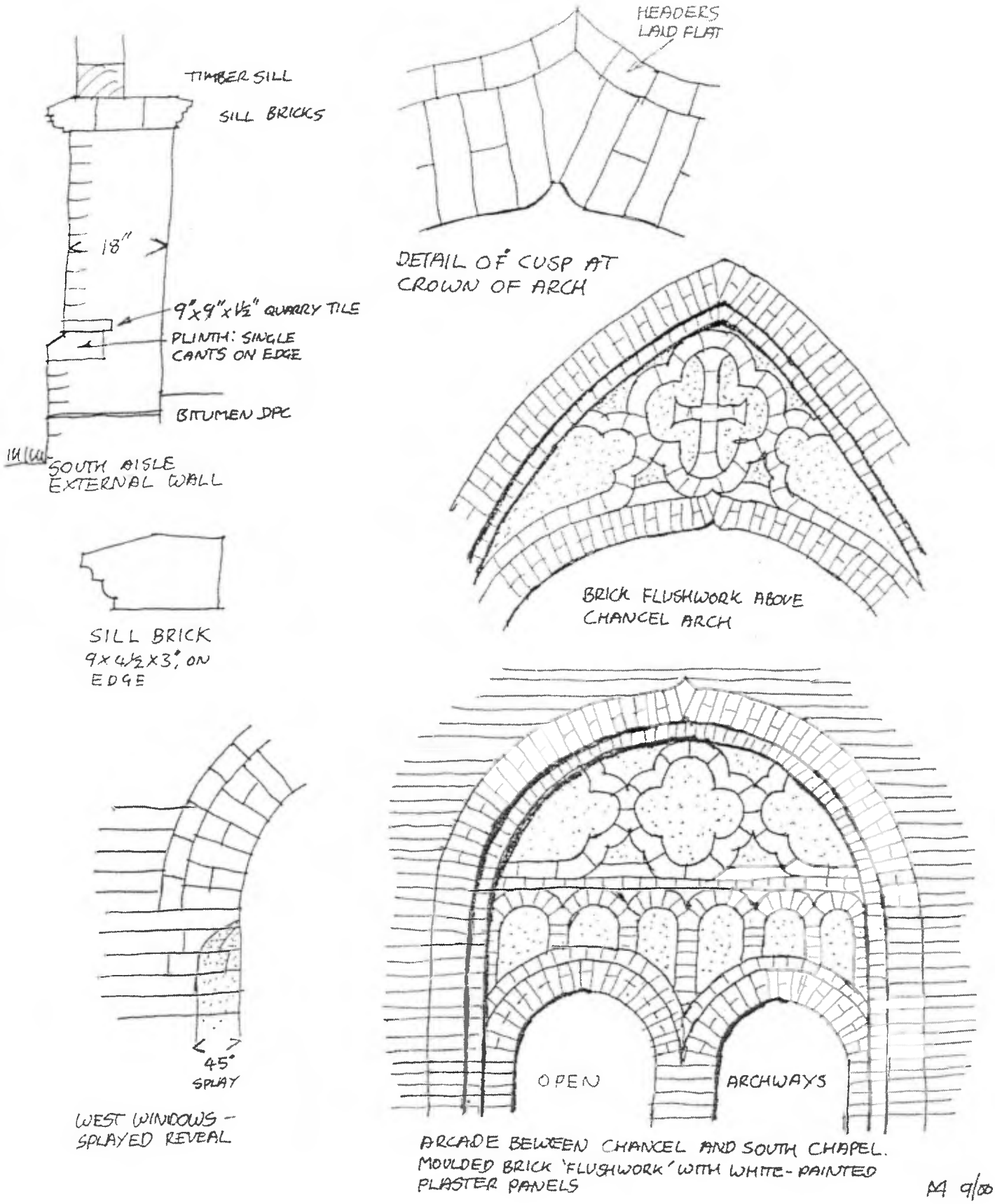

Fig. 2 St Michael and All Angels, Colehill, Wimborne Minster, Dorset
Brickwork Details
Drawn by Martin Hammond, September 2000

LAMBETH PALACE, LONDON BOROUGH OF LAMBETH

Lambeth Palace, the official residence of the Archbishop of Canterbury, was opened to paying visitors for the first time in the year 2000. Although not strictly part of the 'Heritage Open Days 2000', it seems appropriate to record a visit in the pages of *BBS Information* at this juncture.

Lambeth Palace is one of those buildings one thinks one knows: the Morton gatehouse, the view from the Victoria Embankment on the north bank of the River Thames, the drawing by Wenceslas Hollar, all conspire to give the building an air of familiarity. Since the 1647 drawing was executed, the great hall was demolished during the Interregnum and the private apartments in the east range were also demolished but not until 1830.

The tour was essentially designed for pre-booked groups: The writer went with his fellow congegands from St Edmund's church, Shipston-on-Stour. The tour begins with a video presentation followed by a guided visit of an hour's duration. Most of the visit is internal, and brick details are not easy to see from the short period spent in the central courtyard. The visit begins in the crypt chapel, one of the best-preserved medieval vaults in London, of Reigate stone

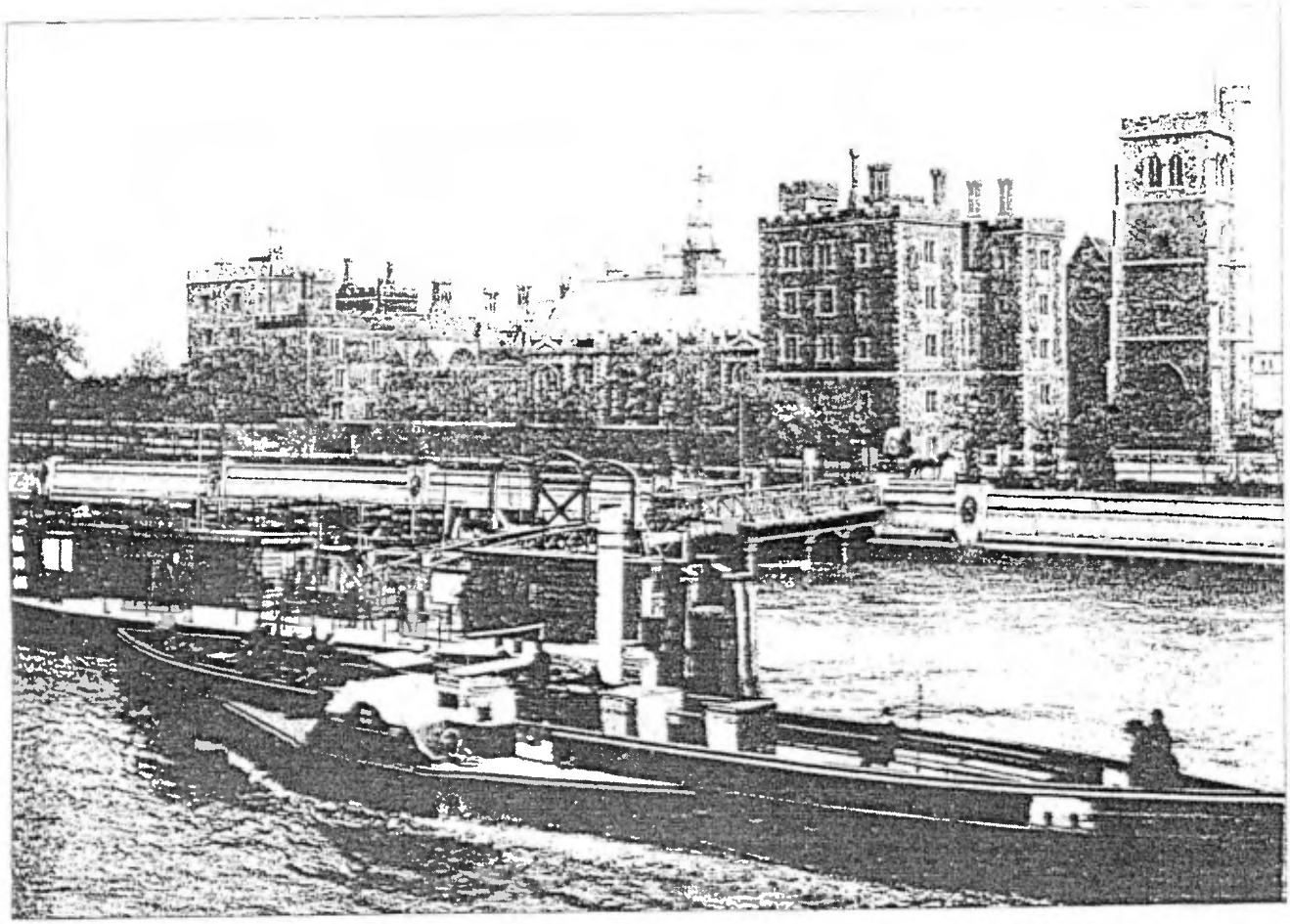

Fig. 3 Lambeth Palace from the River Thames, a late-nineteenth-century photograph
Collection D.H. Kennett

and Purbeck marble, before going outside to the central courtyard. Here is a view of the show front of the rebuilt east range, done by Edmund Blore in 1830-33 using Bath stone; - shades of the façade of Bedford Modern School in central Bedford, also Blore's work, completed in 1830. There is a distant view of the back of Morton's Tower, the brick gatehouse of *c.*1495, and a

rather better one of the brick south wall of the courtyard.

Thereafter the tour is totally internal: the interior of the Great Hall built for Archbishop Juxon in the 1660s to replace that damaged and part demolished a decade earlier is followed by the Guard Room where Blore reused a fourteenth-century timber roof structure. Blore's work was again on show in the State Dining Room and the State Drawing Room, part of his east wing. Climbing the stairs inside the Lollards' Tower, one enters fifteenth-century work done for Archbishop Henry Chichele in 1434-35 built of Kentish Rag. The visit ends in the Chapel, much rebuilt after war damage in 1939-45; the architects in 1955 were Seely and Paget.

One descends from the Chapel beside brick walls. Brick, of somewhat indeterminate date, had dominated the view while waiting to be ushered into the palace.

Brick at Lambeth Palace falls into three distinct groups of buildings. Extant are Morton's gatehouse of *c.*1495 and Juxon's great hall of the 1660s. In the latter the brickwork seems more regular, but the outer wall, of nineteenth-century date, makes examination difficult. From the careful watercolours the architect painted, it is clear that the ranges demolished by Blore were mostly built of brick.

The tour can be booked on the day, if places are available at a later hour, and on the day I went in mid July 2000 (not in school holidays) not all places had been taken up for late afternoon times or the early morning slots. Lambeth Palace is not far from the London Eye.

Attempts are going to be made for a special BBS tour with the possibility of looking at some of the exterior brickwork in more detail. In the meantime, despite the paucity of brick actually visible, it is still worth brick enthusiasts going on the commercial tour.

DAVID H. KENNETT

HART LANE WATER TOWER, LUTON

In 1898 Luton suffered a severe drought, leaving some parts of the town without water. To prevent this happening again the Luton Water Company erected two water towers, one in West Hill Road, designed by Henry T. Hare, in an engaging Arts and Crafts style, in 1901, the other in Hart Lane in 1900. It is the latter - long familiar to the writer, who was born and brought up opposite and once lost a school cap whilst trespassing in its grounds! - which was open on both Saturday 16 and Sunday 17 September 2000. It is a strange, tall building, its style seemingly based on a French medieval château - or rather on a French medieval château as romantically envisioned by Eugène-Emmanuel Violet-le-Duc (1814-79). A plaque inside the building records the names of the company directors and that the engineer was W.R. Phillips CE, the assistant engineer and architect W. Phillips CE, and the contractors S. Redhouse (building) and S. Cutter & Sons (water-tank and girders). It is a four-storey octagonal tower with a part-octagonal stair-turret attached to one side. It finishes in an octagonal conical roof, with dormers, covered with stone slates. The tower is of attractive Luton Grey bricks in English Bond with red brick trim, red terracotta decoration, and a plinth offset of red sandstone. Deep recesses in the lower three storeys are topped by segmental arches and frame windows of varying sizes. The top storey has segmental-headed windows above terracotta panels of guilloche ornament. The round-headed doorway of several orders bears the inscription "HART LANE WATER TOWER / ERECTED A.D. 1900"; there are decorative fleurons in the spandrels. The interior is of English Bond brickwork painted white. The doorway to the stair-turret is of bull-nosed bricks and the windows have deep splays. More intriguing than beautiful, perhaps, it is worth a visit if open in subsequent years. (It is intended to consider both the Luton water towers in a subsequent issue of *BBS Information*).

T.P. SMITH

Brickmarks Identification

Michael Hammett

In *British Brick Society Information,* 79, February 200, we asked if any member knew the identity of the manufacturer of a Staffordshire blue brick with a six-pointed 'Star of David' symbol in the frog. The accompanying picture showed that there was a W in the centre of the star.

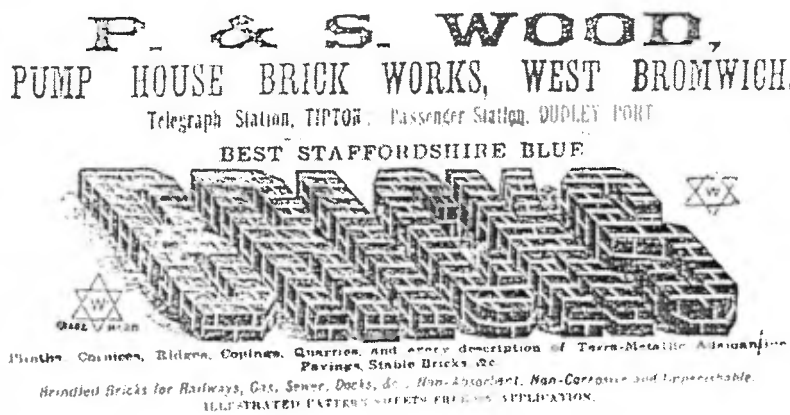

Fig. 1 The 1884 advertisement for P. & S. Wood, brickmakers of West Bromwich.

Alan Cox provided some fairly conclusive evidence in the form of an advertisement he had found in the *London Suburbs Post Office Directory for 1884,* page 69. It is for 'Best Staffordshire Blue Brick' by P. & S. Wood of West Bromwich and shows the symbol, with the W in the centre, as their trade mark. Being advertised in London, it is reasonable to assume that they could have been supplied by rail to most parts of the country.

Many of the enquiries about this mark referred to blue engineering bricks, but one described an example found in Derbyshire as being a red. No red bricks are mentioned in the advertisement although, as Alan Cox points out, other West Bromwich works produced both red and blue bricks.

The red example may have been a rogue, however. The colour of blue bricks is produced by firing them in a reducing atmosphere, created by severely cutting the air supply into the kiln. Imperfect blocking-off of airways might lead to unintentional localised oxygenation that could cause red coloration of a few of the bricks produced.

M.A. Rawson of Leeds provided details of an interesting decorative special shaped brick of the red engineering type that had been found in a wall at Bootle, Merseyside. It has a Star of David (but no W) and there are stylised foliage motifs - but the whole design suggests it is a decorative feature rather than an identification or trade mark.

MORE HELP WANTED

Please can anyone help answer these requests for brick maker identification?

Used in the Falkland Islands:

1. Frogged brick 172+ x 100 x 64 mm high. Marked 'JBW'.
2. Flat bricks, 140+ x 108 x 64 mm high. Marked '-TEHILL/-TENT' on two lines. (*WHITEHILL PATENT* from Scotland seems likely)
3. Flat bricks, 158+ x 108 x 58 mm high. Marked 'LUCA-'

Two Others:
Brick with marks in the frog: G (*thistle*) G and PETHERS PATENT

Wanted:
An enquirer is anxious to acquire a brick with the mark: SHERLOCK.
All replies to Michael Hammett
Hon. Sec. British Brick Society
9 Bailey Close, High Wycombe, Buckinghamshire. HP13 6QA

Brick Kiln Firing at the Weald and Downland Open-Air Museum, Singleton, near Chichester `Fire Event' 25-27 March 2000

Martin Hammond

In February 2000, I was approached by the museum about buildings and firing a small brick kiln for their 'Fire Event'. I decided to use a design which I had tried at home with success in 1975. The kiln would be built and set on day one, fired on day two, and drawn on day three.

I arrived on site with all the tools and equipment I would need. I had already given the museum a specification and agreed what they would provide. On the site at one end of the brickmaking shed the turf had been lifted and levelled with gravel. At 11.30 a.m.. I started building the structure, with BBS member Ron Ireland helping me. For speed the brickwork lining was laid dry, daubed outside with a 1:1 clay-sand mix and cased with bricks laid on edge. Around five hundred lightly-burnt stock bricks were used. Setting the kiln with dried bricks started before the walls reached their full height. We used some Ibstock and Wealdmade stocks, a few of Ron Ireland's demonstration bricks made on site, and some briquettes and roofing tiles made by me at Bursledon Brickworks.

At 4.30 p.m., all was ready and the fire was lit, and kept going slowly with two or three logs of 3-4 inches diameter, 5 ft long. At 6.00-6.45 p.m. the fire was banked up for the nigh with coal and coke breeze to run all night without attention. I spent the night at the museum hostel in West Dean village, about a mile away. The clocks changed to British Summer Time during the night. The next morning at 8.30 a.m. the fire had burned down and there were a few embers left, to be revived with paper and kindling. Once a good fire was going the grate was cleared of ash. Large logs were fed in, two or three at a time. At 10.30 a.m. the platting bricks were adjusted to draw the heat towards the back of the chamber. Several bands were heard as some of the bricks shattered. It was later found that the Ibstock bricks, made of pure clay, were most prone to this. The Weald-made bricks, which contained fuel, were unharmed. By 11.30 a.m. there was a marked reduction in the amount of steam coming from the top of the kiln. At 1.30 p.m., the front of the firehole was closed to increase the draught, and at 4.00 p.m. the bricks around the fire channel were showing a good red glow and flames were coming out of the top of the kiln at each stoking. I continued stoking with birch and hazel logs, then after 5.30 p.m. only used hazel, 1.5 in diameter, until the end of the firing at 7.30 p.m. Then the fire hole was closed up tightly and the kiln left to cool overnight.

The weather had been dry during the day even though showers had been forecast. But at 8.00 p.m. the heavens opened. An old brickmaker once told me that platting bricks should be laid frog upwards to catch any rain and evaporate it without harming the bricks being fired. By the end of the firing I had noticed that two platting bricks had dropped about 0.75 inches relative

to the top of the kiln walls. This shrinkage was watched by the old kiln-burners as an indication that the bricks were properly fired.

After a good night's rest - for firing is tiring - I returned to the kiln at 11.00 a.m. to start unloading. I had to remove a few courses from one of the side walls to reach in and get the bottom three courses of the setting out. The yield was as follows:

70 best quality, at least one face and suitable for use in building. Light red to orange; included 21 good flared headers.
60 second quality, chipped before going into the kiln or cracked during firing.
23 re-fires, from bottom course and from back corners up to three courses from the floor.
9 Ron Ireland's bricks. Rather sandy clay; had been used repeatedly in brickmaking demonstrations and had moulding sand mixed in with it. One had cracked in half.
8 50 mm thick bricks.
12 6 in x 6 in small briquettes.
7 plain roofing tiles, 3 cracked or broken.
22 rejects, shattered in firing. Residual moisture in early stages of firing.

The nominal capacity of the kiln was 200 bricks. The fuel consumption 0.75 cubic metres of assorted logs; some of the hazel was a bit green. The draught was satisfactory. Most of the time, the wind blew left-to-right across the kiln. The use of a grate prevented excessive build up of embers in the firehole. The gap under the back edge of it was periodically poked and raked out.

The best flared headers were from the fire channel lining in the front half of the kiln, and were dark brownish grey in colour. The Wealdmade bricks developed small grey hearts. Ron Ireland's bricks were rich bright red/ grey/ purple brown.

The kiln was not demolished, so it might be used again in the future, and a possible larger kiln, with a capacity of 800-1000 bricks, has been suggested. From the museum's point of view the event was a success, with 1700 entrance tickets sold.

Publications Received

The following publications by members have been received:

1. Graham Brooks, 'Cumbrian Brick and Tile Works: North Cumbria',
The Cumbrian Industrialist, **3,** 2000, 49-59.
Available from G. Brooks, Coomara, Carleton, Carlisle, CA4 0BJ, price £5-00.
2. A.J. Mugridge, *A Short History - William Exley & Sons,*
A.J. Mugridge, 1997, price £2-00.
A.J. Mugridge, *Maw & Company 1850-1969 A Short History of the Celebrated Encaustic Tile Manufacturer,*
A.J. Mugridge, 4th edition, 1997, price £1-50.
Both available from A.J. Mugridge, Brosley Brick & Roofing Tile Manufacturer,
C24, Maws Craft Centre, Jackfield, Ironbridge, Shropshire TF8 7LS
or A.J. Mugridge, 27 Garbett Road, Aquaduct, Telford, Shropshire TF4 3FX
3. Brian J. Murless, *Somerset Brick & Tile Manufacturers A Brief History & Gazetteer,*
Somerset Industrial Archaeological Society, 2000: 54 pp.7 pl., 15 fig.. price £3-00
Reissue in new format (A5) of work first published in 1991.
Available from Derrick Warren, SIAS Publications Officer,
52 Stoke Road, Taunton, Somerset TA1 3EJ

Full notice of these and other items will appear in our occasional feature 'Brick in Print' in *BBS Information,* **84,** June 2001.

BRITISH BRICK SOCIETY

MEETINGS IN 2001

The British Brick Society hopes to hold meetings in 2001 as follows:

Saturday 31 March 2001 *Spring Meeting*
South-east Warwickshire including the Oxford Canal brick kiln (disused) at Fenny Compton, the sixteenth-century Wormleighton manor, and the seventeenth-century arch at Chesterton.

Saturday 12 May 2001 *Northern Spring Meeting*
Study Day with Dr Margaret Imrie at Burton Agnes Hall, East Yorkshire.

Saturday 9 June 2001 *Annual General Meeting*
King's Lynn with visit to some of the many brick buildings in the town.

Saturday 15 July 2001 *Summer Meeting*
(date to be confirmed)
Basingstoke Area, including Basing House and a brickworks office building designed by Sir Edwin Lutyens which is now the offices of the management company running a trading estate. We hope also to see some of the churches in the area with seventeenth-century brick features.

a Saturday in September 2001 *Autumn Meeting*
(date to be arranged; *Note* - we shall attempt to avoid a clash with Heritage Days)
Bursledon brickworks and St Margaret's Priory, Titchfield, Hampshire.
St Margaret's was built as a hunting lodge with a prospect tower and has a dedrochronological date of 1623/1624

a Saturday in late October/early November 2001 *Late Autumn Meeting*
(date to be arranged)
North London to include tours of Lord's Cricket Ground and the Midland Grand Hotel, St Pancras; and the exteriors of the British Library and Quinten Kynaston School.

Details of the first two are included in this mailing.
Further details of the remaining meetings will be issued in future mailings.

The British Brick Society is always looking for new ideas for future meetings. Suggestions should be sent to Michael Hammett, David H. Kennett or Terence Paul Smith. Thank you.