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Contents

Editorial: Brick in Newark-on-Trent 2

Sunken Margins: some further thoughts

by Peter Minter 9

The Introduction of Wire-Cut Bricks

by Lawrance Hurst 15

Brick in Print 26

Brick for a Day: Highbury to Moorgate 33

Cover Illustration:

The brick kiln at Crawley Mill, Husborne Crawley, Bedfordshire, on the Duke of Bedford’s Woburn Abbey estate where a number of brickmaking machines were tried out in the 1830s

Editorial: Brick in Newark-on-Trent

The British Brick Society held its 2011 Annual General Meeting in the Nottinghamshire town of Newark. Newark might not instantly be thought of as a town with much of brick interest. The principal approach to the town from the south-west is dominated by the Bishop of Lincoln's castle, first constructed in the second quarter of the twelfth century by Bishop Alexander between 1123 and 1148 and kept in good repair by the bishops for the next four centuries: it was a day's ride from Lincoln. The last major medieval work, financed by Thomas Rotherham in the 1470s, involved a substantial reordering of the great hall and the provision of a private audience chamber for the bishop. Only after 1547 when the castle was surrendered to the crown in the great pillage of episcopal residences — to paraphrase the late W.G. Hoskins — did upkeep of the castle cease, so much so that in 1581 the building was “in great ruin and decay”. It was repaired in 1587 and, surprisingly, became defensible when this became necessary just over half a century later.

Newark was the site of one of the great sieges of the English Civil War: the Queen's Sconce, a star-shaped fort to aid in the town's defences on its southern side, is among the best-preserved fortifications of its date in England. The royalists, defending the town, built another now lost companion on the north side, the King's Sconce. The town did not hold out; the building of the extra defences had been in vain. As with all places taken by the Parliamentary armies, the castle was slighted towards the town leaving only the great cliff of stonework above the River Trent.



Fig. 1 The terrace of red brick houses on Castle Gate constructed in the 1720s using Flemish Bond. The first and second houses are a pair, as may be the fifth and sixth (the latter not visible) but the third and fourth ones differ in scale and in the case of the fourth house in size: the fourth house is only three bays wide and has no pediment. The pediments are of timber.



Fig. 2 The Martin-Forster house on Appleton Gate, seven bays of red brick in Flemish Bond, was built as the vicarage in 1730.

However, on Castle Gate, and directly opposite the park containing the castle ruins, is what appears as a uniform terrace of six large brick houses (fig. 1). Built in the 1720s in red brick laid in Flemish Bond, five houses are three storeyed and have five bays. In these the central three bays are set forward by a stretcher with the added accent of a triangular pediment. The fourth house from the north is three-storeyed but is only three bays wide. Thus, whilst appearing to be a continuous terrace, and of a single building programme, it is clear that neither the third one of the five-bay houses nor the three-bay house is of the same height as those adjoining. In these two houses both the upper rows of windows are set lower than in the other houses. It suggests a builder who constructed these dwellings over the course of a number of years or, perhaps, more than one builder was involved. Whilst the fifth and sixth houses of the terrace, with five bays and the central three bays carrying a pediment, are of the same height as the first and second houses, there are subtle differences in the treatment of the window lintels between these and those to the north. Many of the ground floors have been replaced by twentieth-century shop fronts but the third house from the north retains its original doorcase and two of the ground floor windows.

North of these is a five-bay house, Sketchley House, named after the brewer Samuel Sketchley who took on the lease of the Town Wharf Brewery in 1766. His success enabled him to purchase the house which bears his name. It had been built in about 1725. The central bay is set forward and has stone quoins and a pediment. The brewery, the first commercial one in Newark, had been built a few years earlier as a speculative venture by members of the Handley family, who also ran the banking business. Handley House, on the west side of North Gate is a two-storeyed, five-bay house in light red brick with stone quoins. But unlike Sketchley House there is no setting forward of the central bay nor any pediment.

Similar to the houses of the terrace on Castle Gate is a house of about 1780 on Middle Gate. It has three storeys and five bays with the central three set forward and placed under a pediment. These pediments are not stone or brick but timber

Flemish Bond was used for a two-storeyed house of seven bays on Appleton Gate. The central bay is brought forward and has a pediment. This is the Martin-Forster House (fig. 2), built in 1730 as the new vicarage. It was insufficiently grand for a later eighteenth-century vicar, the Rev Dr Bernard Wilson, who in 1760 built himself a new brick house on Balderton Gate, just a short walk from the church. The five-bay, three-storeyed house has a raised and panelled parapet. Subsequent additions have destroyed the Georgian sense of order. Dr Wilson was also responsible for the houses on Wilson Street where building began in 1766. Originally there were terraces of sixteen houses, each of three storeys, built of red brick laid in Flemish Bond, on either side of the street but only the terrace on the west side survives. Wilson had been appointed to the living by the Duke of Newcastle, one of the wealthiest men in England and a prominent landowner in Nottinghamshire whose property included the advowson of St Mary Magdalen church, Newark. Interestingly, the houses on Wilson Street were within the franchise but it was a condition of the lease that the tenants, in an open election where how you cast your vote was open to scrutiny of the poll book, placed their cross against the name of the duke's candidate. The alternative was to face eviction and evictions did happen: such as the power of eighteenth-century landlords.

Appleton Gate forms a close facing the church dedicated to St Mary Magdalen, one of the half dozen largest parish churches in England, and one symbol of the medieval wealth of the town based on the River Trent and the Great North Road. Timber-framed inns and substantial merchants' houses, more than one close-studded with a double jetty, are the other indicator of the strategic position of Newark-on-Trent as the lowest bridging point of that river.

By 1787, brick had replaced timber-framing as the building material of choice for both wealthy merchants and pluralist clergy of questionable character: Bernard Wilson was a man who collected livings to make himself wealthy and he had a reputation as a priest who was a toady to the rich and powerful. In contrast, John Wesley was an upright man, and one very familiar with Newark: it was on his route from Epworth Rectory to London. Wesley, a contemporary of Wilson, had something to say about Newark-on-Trent: he recognised the town as "one of the most elegant in England".

High praise but not undeserved.



Fig. 3 An advertisement for the Northgate Brewery, a complex successively enlarged by Richard Warwick beginning in 1871 with extensions of 1877, 1882, and 1891.



Fig. 4 Left: One of the two pairs of twin maltings known as George Street No 2 Malting. These and the other pair of twin maltings on the site are being converted into dwellings. Right: The Lovers Lane malt kilns with the wallplates giving the builder's name: CORCORAN WITT MALKILN BUILDER LONDON.

John Wesley, though, would have been less than approving of at least one aspect of nineteenth-century Newark. Brewing became one of its major industries, leading to the building of many maltings and several breweries. Richard Warwick succeeded Samuel Sketchley as the lessee of the Town Wharf Brewery but by 1864, his enterprise had become much larger. In 1864, he built the Northgate Malting, a brick building with an ornate exterior now undergoing restoration and refurbishment as a bar/restaurant. The brewery continued to expand and Richard Warwick built further brick structures, beginning with the first phase of the Northgate Brewery in 1871; further phases followed in 1877, in 1882 and in 1891 (fig. 3).

Sometime before 1890, Joseph Richardson, from another of the major breweries in the town, the Trent Brewery in Millgate, became the business partner of Richard Warwick, inaugurating a business which traded for three-quarters of a century as Warwick & Richardson. Soon after Richardson's arrival, the firm built a new office block, completed in 1892. Warwick remained the senior partner; the architectural expression of this is highly visible, because his office was the one with an oriel window and above this was placed a terracotta plaque bearing the town's coat of arms. Richardson, however, took on day-to-day management of the firm.

Elsewhere in Newark, individual nineteenth-century maltings can be seen. These include two pairs of twin maltings known as George Street No 2 Malting (fig. 4). These were built with three very tall storeys and retain their distinctive metal caps. George Street No 1 Malting has been reduced to a series of thick brick walls, something which has happened elsewhere in the town. Lovers Lane Malting appears to be a brick building of 1855 but the lowest courses of brickwork are from its predecessor. Wallplates can be seen on the south side of building. These hold the ends of the cast iron transverse bars within the building, designed as cross beams to keep the structure from bursting due to the weight of malt being dried. the name of the builder is cast on the wallplates: CORCORAN WITT MALKILN BUILDER LONDON.

With the brewery trade so prominent in the town and expanding in the late nineteenth century it is not surprising that Newark has one of the earliest coffee taverns in England., the Ossington Coffee Tavern (fig. 5). Coffee taverns were an attempt in the last quarter of the nineteenth century by the Temperance Movement to woo working men away from the evils of

demon drink by providing an alternative social centre but one serving coffee and later chocolate. Occupying a prominent site above the bridge over the River Trent opposite the castle ruins, the Ossington Coffee Tavern was the gift of Viscountess Ossington, daughter of the fourth Duke of Portland, another of the most prominent Nottinghamshire landowners and widow of a sometime Speaker of the House of Commons later ennobled as Viscount Ossington. The lady had “the earnest desire to promote the cause of temperance” among the male working population of Newark, although serving only non-alcoholic drink unaccompanied ladies would not have been unwelcome clientele, at least during daytime hours.

In 1881, the lady could also afford to commission what was becoming one of the most expensive architectural firms in London, the partnership of Ernest George and Harold Ainsworth Peto, the latter the son of the railway pioneer Sir Samuel Morton Peto. It is not surprising given the architects that the building has a certain panache. The site is a sloping one: the rise from the bridge is quite steep. The building is therefore placed on a plinth, above which on the ground floor is a six-bay loggia but the eastern bay is both wider than its fellows and the pillar between it and the one adjacent is wider; this is because the fireplace and stack of the first-floor coffee room is placed here. The principal building material is red brick. On the first floor are six oriel windows, one for each bay, all of four lights but that to the east is wider than the others. The second, third, and fourth bays from the west have individual gables above a continuous row of windows to the staff accommodation.

Railways came early to Newark-on-Trent. The Midland Railway line from Derby to Nottingham to Lincoln was opened in 1846. This crosses the River Trent north of the town. Their station, Newark Castle Station, whilst now unstaffed and boasting only a ticket machine, remains in use with a train — the Leicester to Lincoln service — each way every hour. The station building was built in an Italianate style in yellow brick; two features stand out. At both the north and south ends of the building the rounded plan is semi-elliptical. At regular intervals on both the straight and the rounded portions there are pilasters of brick heavily cemented to look like stone.

The Great Northern Railway followed, obtaining parliamentary consent in 1848 and opening two years later. Its station, Newark Northgate, retains nineteenth-century buildings on the down platform, that for trains going north, but there is only a modern structure for the comfort of passengers on the up platform, that for passengers travelling to London; like so many of its contemporaries the new place is hardly conducive to a long wait for the train which stops at the intermediate station where you need to change.

The contrast between the two stations in Newark-on-Trent is quite startling. It reflects a difference of attitude. Based in Derby from where lines spread out like a spider’s web, the Midland Railway was built to serve the towns of the English Midlands. Its early stations proclaimed their importance to the locality where they were built.

In contrast the Great Northern Railway was first and foremost an inter-city line. Its *raison d’être* was Yorkshire to London. Outside of termini, its stations seem almost to have been an afterthought.

Newark-on-Trent enjoyed considerable prosperity in the eighteenth century. A fine brick house became one expression of the prosperity enjoyed by the professional and entrepreneurial classes: bankers and businessmen like Handley and Warwick, and clergy like Martin-Forster and Wilson. The same is true of other middle-sized market towns in Nottinghamshire. Brick houses built in the eighteenth century can be seen in Mansfield, East Retford, Southwell, and, to a lesser extent, in Worksop.



Fig. 5 The Ossington Coffee Tavern, built 1881-82 to the designs of Ernest George & Peto, for the Viscountess Ossington, a strong advocate of the Temperance Movement.

In Southwell, two separate developments occur; however, both derive from the presence in the town of Southwell Minster, a collegiate church of secular canons with its own chapter, separate from that of the diocesan cathedral at York: Nottinghamshire was part of York Diocese for almost nine centuries, from 956 to 1836. Several medieval bishops, notably the Booth brothers, William and Lawrence, preferred Southwell to any of the palaces in Yorkshire. Both of the brothers were buried at Southwell, in a chapel now destroyed. Even when the county was combined with Lincolnshire in the mid-nineteenth-century, the minster retained its chapter. In 1884, the minster was raised to cathedral status for a diocese covering Nottinghamshire and Derbyshire, and since 1927 just for its own county.

The canons held the sixteen prebends of the minster, only two of which did not possess a house in Southwell. Six surviving individual eighteenth-century houses along the north side of Church Street and four on the west side of Westgate, all in full view of the minster, are the physical evidence of the prebendal houses and the sites of the four other houses are known. Those extant include some which are rendered, and one of them is now part of the branch of a bank. The houses are various sizes, partly depending on the income of the individual prebend: some have two storeys but others three, some have three bays but others five or four. But behind the differences in size would have been the ground rent the tenant paid and his, or more rarely her, own income which could have led to rebuilding. In the eighteenth century, most canons were non-resident: the prebend stall could be a substantial additional income for a pluralist cleric; more comforting to a man like Bernard Wilson, a prebend stall conferred an elevated place in the social and clerical hierarchy and with it more than a modicum of prestige.

To do their work as prebendaries — sing the services, the day-to-day administration of the minster, visit the sick — the absentee canons delegated their duties to four vicars choral, men with families who had to be housed. In the eighteenth century, outside of the colleges of Oxford and Cambridge, the expectation was that an ordained minister of the Church of England would be married. Beyond the east end of the minster on the south side of the churchyard, five houses were built in the 1780s by Prebendary Mompression, one of the few eighteenth-century canons

to be resident, forming a close, two houses on either side of a green with his own, slightly larger, house, now called the Residence and used by the cathedral dean, closing the square open at its west end. Each is a five-bay house of two storeys in a dull red brick laid in Flemish Bond: Mompression's house has wider bays than the other four.

Nottinghamshire is actually one of the counties "where traditional brick houses and cottages still predominate"; the map provided as Figure 16 in *The Smaller English House Its History and Development* by BBS member the architect Lyndon Cave shows this most clearly with almost the whole of the county included in the brick zone. The preponderance of brick is brought out even more on Lyndon Cave's Figure 10, "Main districts where traditional stone houses and cottages are still to be found", where Nottinghamshire is almost a complete blank, showing only a tiny fringe of the use of stone on the extreme western edge of the county. The Manor House at Sutton-in-Ashfield, is one of the very few stone-built houses in the county: a datestone says '1570' but the mullioned windows may be more than a generation later.

The British Brick Society held a successful session at the 2011 Leeds International Medieval Congress; a brief report is elsewhere in this issue of *British Brick Society Information* (page 14). At the Historical and Archaeological Societies Fair held on the Wednesday afternoon of the congress, society's stall was visited by about twenty persons, eight of whom took away the leaflet produced for the event. Hopefully this will result in some new persons joining the society.

Since the last issue of *BBS Information* was prepared, the society has held one meeting, a walking tour of a part of London rich in brick buildings: Canonbury in Islington; Essex Road; the Gainsborough film studios which were originally a power station for an electric railway and have now been converted into flats; ending with three buildings at the eastern edge of Finsbury — the Leysian Mission, Moorfields Eye Hospital, and Wesley Chapel. A report on this appears elsewhere in this issue of *British Brick Society Information* (pages 33-36).

DAVID H. KENNETT

Editor, *British Brick Society Information*,

Shipston-on-Stour, 5 July 2011 and 26 September 2011

Sunken Margins: some further considerations

Peter Minter

I, like many members of the British Brick Society over the years, have come across examples of bricks with sunken margins, the majority of these being early, dating from around 1430/1450 through to the later part of the sixteenth century.

They appear to be 'Place' bricks, having been made with soft 'mud' and placed to dry where they were made. The margins are on the upper or struck face, and can show signs of sand in the margin, but not on the struck face. Much has been written as to why these marks appear; to date none has been quite convincing from a brickmaker's point of view.

As a brickmaker, I am quite sure the reason has to be one of a practical nature. Brickmaking has always been hard work, and the quantity he can make in a day vital to the brickmaker's success. Not only because the brickmaker was usually paid 'piece work' but also because the time available to make bricks is always dependent on the weather and therefore the 'season': some thirty weeks.

Amongst the suggestions the idea that the brick was being pushed out of its mould in some way does seem to be valid; however, when making bricks in a frame mould, even when slop moulding, this need does not really arise. It is far easier to give the mould a slight tap on the corner or a shake thereby releasing the clay from the mould.

At the Bulmer Brickfields, we have tried differing ideas to see if any advantage might be gained but none of the suggestions have done so. We have used the three different clays we have at our yard, and have mixed these as a 'slop' and a pug. There are differences in the way the clay is 'pugged' and, as would be expected, clays coming from today's pug mills are far easier to use. We have used sand as a releasing agent and also water. We have used our normal metal mould and also wooden ones. The need for some form of tool to help de-mould the bricks is just not necessary.

When I was again contacted and asked how and why?, I decided to revisit the problem. I believe we have all imagined the bricks being made in a single mould; this I think was not the case. I would suggest that a three-part mould was more likely to be the case. If that is so, then the biggest problem with the method is the release of all three bricks from the mould at the same time. If you try removing the mould in the normal way, even if using sand as the releasing agent, one or other of the bricks will either stick or fall out prematurely. When slop moulding, removal is all but impossible. If, however, a form of releasing board is used, then the release is satisfactory.

We made up a three-part mould and a board on which we created three oblongs that fitted easily into the mould sections. Once the mould had been filled and the surplus clay struck from the top of the brick, we placed the board on top as we lifted the mould we pressed down with the board. The bricks were left in the 'place' and we could move on and repeat the process.

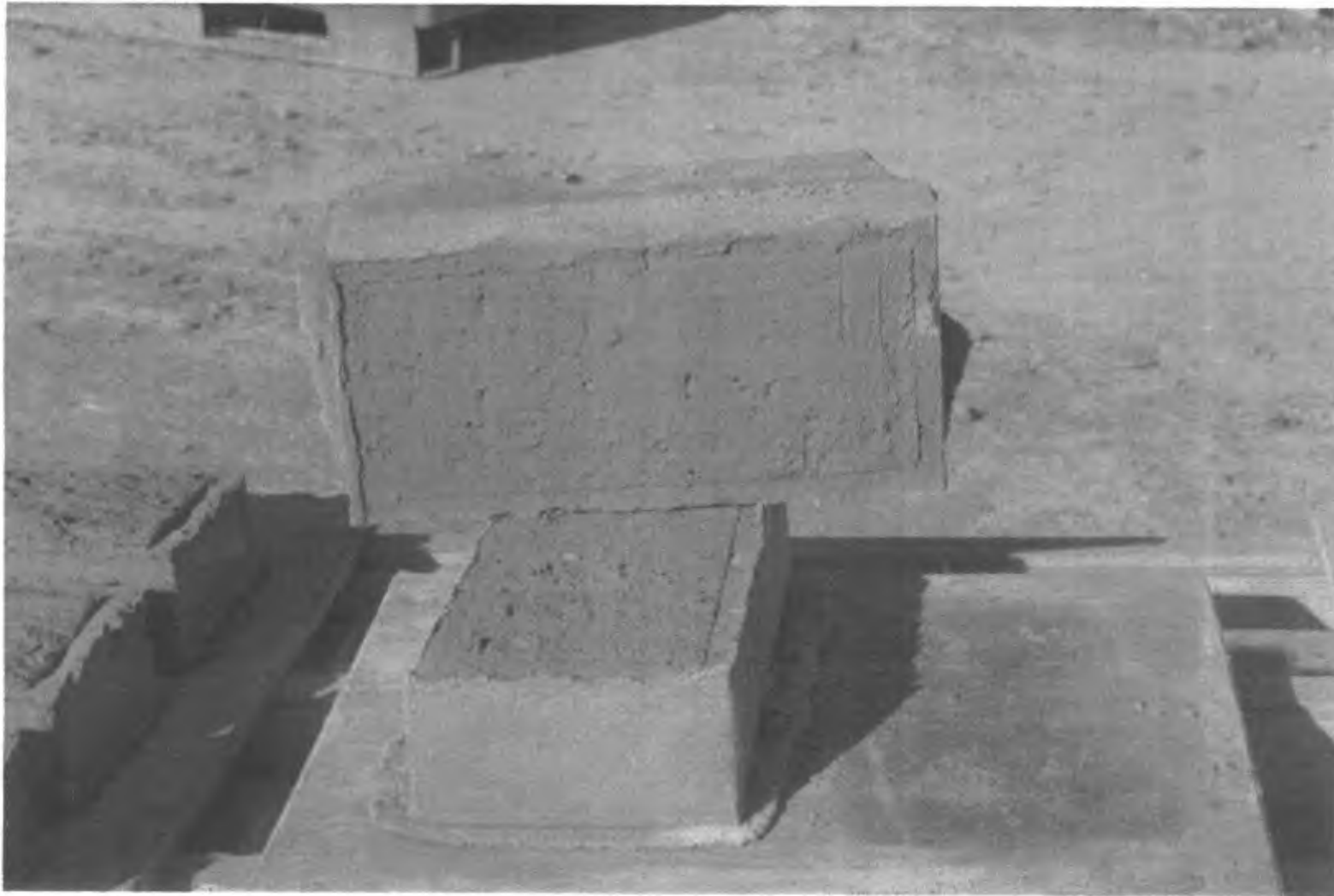
To aid the releasing process, it was found that if we lightly sanded the surface of the 'press' it allowed the board to be removed without 'plucking' but also left tell-tale traces of sand on the margin.

With this system some clay tends to squeeze out under the frame and leave a ragged edge. This can be trimmed off as would appear to be the case on the original examples.

I should point out that our mould was a well-made mould with sections well-housed into the sides and screwed tight, not quite what one would expect from perhaps the fifteenth and sixteenth centuries. I am sure that they also did not have 12mm ply to mount their releasing frames on, but a cruder form would still be as effective and easy to make.



Fig. 1 Bricks made using slop-moulded unpugged clay, with the release board sanded, leaving sand on the margin.



11 Fig. 2 Bricks made using pugged clay, sand moulded using the mould.



Fig. 3 New three-piece mould with the releasing board behind.

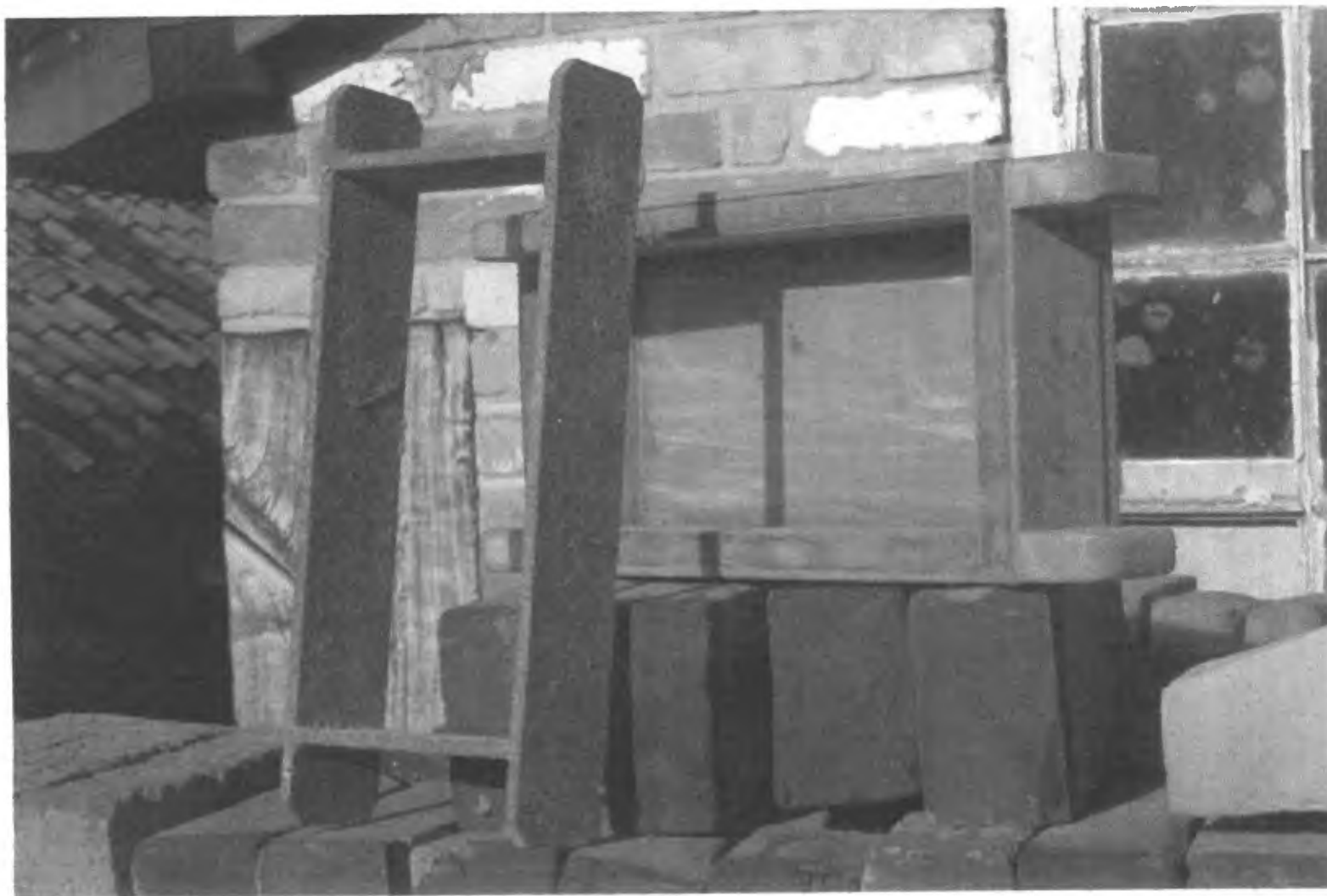


Fig. 4 Normal steel stock mould and a wooden box mould, with representative bricks beneath and behind.

The small releasing frame could well have been formed with strips of leather rather than wood, and a hard wood used for the moulds instead of soft. (This does make a difference, as it is less porous.)

We are intending to refine our experiment with a possible view of using it at times when making bricks for fifteenth/sixteenth century restoration work!

The British Brick Society at Leeds International Medieval Congress, 2011

The British Brick Society sponsored Session 1120, 'Brick and Building: Rich Patrons, Poor Producers' at the Leeds International Congress, 2011. The session attracted over twenty persons in a room which held only twenty-five. There were three speakers.

Mike Kingman spoke on 'Early Brick Buildings in Staffordshire and Beyond', research which has shown that far from being a backwater in the use and development of brick as a major building material in the decades around 1500, Staffordshire in general and the cathedral close in Lichfield in particular was very much at the forefront of the adoption of brick as a principal building material. The ravages of the Civil War, when Lichfield was a prime target, and later demolitions have meant that only two brick buildings constructed before 1520 remain in the county: the St John's Almshouses in Lichfield and Pillaton Hall, Penkridge.

David Kennett spoke on his on-going research on 'At the Court Of Henry VIII: Holbein's Sitters and their Houses' demonstrating that many of the courtiers of Henry VIII who could afford to be sketched and/or painted by Hans Holbein, the most expensive painter working in England in the 1530s, could also afford to build a new house in brick.

The session concluded with Nat Alcock speaking on 'Housing the Poor in Medieval Coventry', a description of the work he and others have been doing on narrow recessed hall houses and other craftsmen's dwellings in the fourth or fifth most populous town in late medieval England: in 1522, the city had 1350 households. The timber-framed house at 122, Upper Spon Street, Coventry, one of a terrace of six houses from which four survive, had been built after the winter of 1454/5, the date when the timbers were felled. This single bay house has been reconstructed and fitted out to how it would have looked when John Croke, a narrow-loom weaver, was its resident in 1540.

The British Brick Society thanks those who spoke at its session at the Leeds International Medieval Congress in 2011. The society hopes to be represented at the 2012 congress.

It is anticipated that some of the speakers at the society's session will be writing an extended version of their contributions as papers in future issues of *British Brick Society Information*.

D.H. KENNETT

The Introduction of Wire-Cut Bricks: Responses to an On-line Enquiry

Lawrance Hurst

with a Postscript by David H. Kennett

An initial enquiry was posted by an architect on CEHX (Civil Engineering Heritage Exchange)—an e-mail discussion group for all aspects of construction history hosted by the Institution of Civil Engineers and open to all.¹ The enquiry asked:

Is anyone able to suggest a reliable date for the introduction of wire-cut bricks into British building construction?

Four responses were received, which have been edited, given references, and some additional information added for the benefit of readers of *British Brick Society Information*. A Postscript has been written by David Kennett to provide an outline of the development of brickmaking machinery during the second half of the nineteenth century.

First Response

In *Brick Building in Britain*, R.W. Brunskill considered that

From about the middle of the nineteenth century, extruded or 'wire-cut' bricks were made. In this process tempered clay was forced through a die until a green brick of the necessary dimensions could be cut off by means of a taut wire. In early examples of such machinery, clay from a hopper was forced into a chamber from which a piston pushed sufficient [clay] for a single brick through the die, to be cut off by the wire. These machines were called 'stupidis'. In later examples a continuous supply of clay was fed into the machine by an Archimedes crew, while the extruded clay was fed along a bed of rollers to a table on which a set of wires cut off a batch of bricks at a time. These were then automatically pushed to one side to free the table for the next extrusion. Wire-cut bricks may be perforated if an appropriate die is used. They cannot have a frog unless re-pressed, which was sometimes done if an especially dense brick was required. Wire-cut bricks are still produced in large quantities: they usually display some striations to betray their origin.²

On its visit to the Ibstock Works at Arnold, near Nottingham, in September 2000, members of the British Brick Society saw this process in action with a modern machine being used in making of bricks for the volume house-building industry.

In *Building Materials*, Kenneth Hudson is more precise about the date and suggests a name for the man who responsible for its introductions:

The process known as wire-cutting, in which a slab of clay was cut into bricks by dragging a wire through it, was invented by William Irving in 1841.³

Neither R.W. Brunskill nor Kenneth Hudson give a source for their statements

Second Response

The first Scottish machine for this was invented by the Marquis of Tweeddale in 1837 so wire-cut bricks could be found from that date onward as there are records of several works employing the machine from that date onward. It could produce 15 to 20 bricks a minute. There are drawings of this and of William Irving's machine.

Third Response

A correspondent in Australia reported that in 1836, the Marquis of Tweeddale invented the first significant extrusion machine, which ground and kneaded the clay, then pushed it out in a continuous strip which could be cut off in sections, presumably by wire as in later models. The shape of the strip was determined by the die used, and it could produce not only bricks but roof and drainage tiles, both flat and curved. This was the sort of machine that would be useful to a large landowner, but by 1843 a smaller model was available which was suited for use by unskilled labour on a private estate and produced fifteen bricks a minute.

In 1838, Tweeddale obtained a further patent 'to extend to the colonies only', and it appears that the machines were being made by London engineers and iron founders Cottam & Hallen, who in 1839 were advertising brick and tile machines in books aimed at emigrants to South Australia. Tweeddale's machines seem to have been more useful to private landowners than to commercial brickmakers.

However, he was not alone and it appears from a later account that at about the same time a man with the surname Murray, who was the manager of the Garnlick Coal Company, invented a machine in which the clay was pugged and then extruded at the bottom in a form which could be slid off to make tiles.

A number of later machines similarly combined pugging and extrusion, and it was predicted in the 1850s that this approach would supersede all others in the larger brickyards.

Fourth Response

Mention of wire-cut bricks reminds me of my time in a brickworks.

During the summer holidays between school and university, in my youth in the late 1960s, I worked at Warnham Brickworks, near Horsham, Sussex.⁴ I worked on a mechanical rack which delivered two timber strips (4in × 2in ?), between the brickmaking plant and the kilns. The bricks were extruded from a machine at one end as a long brick-shaped block, wire-cut to shape and set down on two long pieces of timber fed from mechanical rack automatically. The two timbers were then picked up by a manually-driven forklift on rails that would deliver them to one of six (?) kilns in a line. After firing in the kilns over one or two (?) days the forklift man would take them out and set the two timbers on a conveyor machine that would remove the two timbers into a rack, the fired bricks carrying on by conveyor to several men who would load them on to lorries for delivery. The two timbers would be stacked into my mechanical rack, that in turn removed them to go under the fresh bricks as they were extruded from the first machine.

I was, in effect, the key 'man' of the operation as I was put in charge of the timber rack machine, and my job was to keep the rack amply stocked so that the fresh wire-cut extruded bricks would have two timbers to sit on as necessary. Conversely, as the forklift delivered cooked bricks, I had to make sure that the timber rack was not overflowing by removing surplus timbers. If there were insufficient timbers in the rack, I would have to load the rack with an

external supply. I had a panic button that would stop everything if the rack got blocked by too many timbers or fresh extruded bricks started dropping into the pit below where the two timbers were expected. When the rack overflowed, invariably it would take some time to unblock the continuing supply of timbers. As one can imagine, the brick loaders were not too happy when the panic button was pressed as they were paid on productivity. I felt like one of the child miners of the nineteenth century, although working conditions were considerably better. It was hard work and I only stayed there for a few weeks. I moved on to a precast concrete plant in Horsham for another few weeks.

Postscript:

The Development of Brickmaking Machines, c.1840 to 1914: an outline

As these notes were being set, it seemed sensible to look at the literature on brickyards, brick kilns, and brickmaking in general easily available to the editor⁵ to see if further comment on early machines for wire-cut and extruded bricks could be found. To discuss later developments in the manufacture of machines for making wire-cut and extruded bricks, it is possible to draw on the work of a number of modern writers who have illustrated various machines for making extruded, wire-cut bricks in their publications. The discussion which follows considers these machines in order of manufacture or in some cases proof of purchase by the owner and/or manager of a brickworks or tileworks.

The late Martin Hammond stated that between 1820 and 1850 no fewer than 109 brick patents were taken out; the total includes both brickmaking machines and improvements to kilns. He also noted that the Great Exhibition of the Arts and Manufactures of All the Nations held in Hyde Park, London, in 1851 included a section where a number of brickmaking machines were displayed.⁶

However, in Edward Dobson's *A Rudimentary Treatise on the Manufacture of Bricks and Tiles* of 1850,⁷ we find an author completely silent on the use of machinery in making wire-cut and extruded bricks. The manufacture of these types of bricks finds no place in his work. This response, contemporary with the Great Exhibition, makes one wonder how far machinery had penetrated the generality of brickworks in Britain by the late 1840s when Dobson was writing.

But at the same time, when discussing the manufacture of bricks in Nottinghamshire, Dobson is highly dismissive of using a screw press:

In some yards screw pressed are used for pressing front bricks, and with considerable success. It is, however, questionable whether they are as durable as those dressed by hand. In making machinery for this purpose, the great desiderata are, 1st, to make the metal mould in which the brick is compressed so strong that it shall not spring on the application of the power; and, 2nd, that the piston shall exactly fit the mould: when from bad workmanship or long use, this is not the case, the clay is forced between the piston and the mould for a short distance, leaving a slightly-raised edge all round the side of the brick.

We do not propose here to enter upon a comparison of the respective merits of machine-pressed bricks and those dressed by hand. The operation of dressing on the bench requires an experienced workman, whilst a common labourer can use a machine. For this reason machine-pressed bricks can be produced much cheaper than those dressed by hand, and there is little inducement to employ the latter process.⁸

Dobson's concern seems to be with the skilled operative and his — more rarely her — prospects

of employment.

Dobson provides no illustrations of machines for making bricks using an extrusion process and wire cutting, again an indication that they were possibly uncommon, especially given the high number of illustrations in the work.⁹ In contrast, in 1852 *The Builder*¹⁰ reported that 'brickmaking machines of various sorts are [being] patented' but like Mr Dobson, the attitude was pessimistic:

We scarcely anticipate that bricks will be made more cheaply by machines than by hand.¹¹

One of the five machines discussed in the article in *The Builder* is that used at the brickworks of the builder of a substantial part of mid-nineteenth-century London, Thomas Cubitt:¹²

Amongst those who are entering largely into the manufacture of bricks is Mr. Thos. Cubitt, who has opened extensive grounds on the Medway, set up steam engines with lofty furnace shafts, and is otherwise preparing for large operations in machine-made bricks. The arrangement he has in use at Thames-bank is that known as the Ainslie machine, with some improvements. One of these, attended by three boys, turns out 1,000 bricks an hour, a limit fixed, not by the machine, but by the ability of the attendants to remove those made. The clay passes through two rollers out of the pug-mill, by which means air is driven out ... Oil runs in behind the die, to facilitate the passage of the clay through it, and this assists in giving a smooth face and ends to the brick, while the wire which cuts off each leaves a rough top and bottom for the mortar. There is a nice adaptation of the Ainslie machine for making large earthen pipes, with a collar at the end of each, by one operation.¹³

John Ainslie, a Scottish farmer from the country around Dalkeith, Midlothian, had first become interested in tilemaking machinery, which could be adapted for brickmaking by using a different die: a die is a plate with a hole in it through which the clay is extruded; the shape and size of the hole through which the clay must pass can be changed to suit the finished product. Ainslie wanted to make tiles to drain his land and then found that he could use the same machine to make bricks. He took out his first patent in 1841. It was claimed that his machine was the first which allowed the cutting of bricks and tiles without the whole process coming to at least a temporary halt. Ainslie secured further patents: in 1845, for a more refined version of his machine and, in 1846, for a complete brickmaking system linking pug mill, moulding through extrusion and wire-cutting, kilns and drying rooms. Ainslie's machines were in use by Thomas Cubitt at his works at Burnham Rectory, Aylesford, Kent.

Tilemaking machinery was developed by a number of manufacturers at about the same time as the Tweeddale and Ainslie machines, if not some years earlier. In the early 1830s, Robert Beart of Godmanchester, Hunts., developed his tilemaking machine;¹⁴ one was purchased in December 1833 by the steward of the Duke of Bedford's Bedfordshire estates for use with the duke's kiln at Husborne Crawley (fig. 1).¹⁵ Using the machine to make drainage tiles reduced their cost per thousand from £1 14s. 0d. to £1 0s. 0d. and left a profit of over one shilling which had not been the case when making the tiles by hand. But, whilst the clay had been taken from estate land this expense was not included in the manufacturing cost. In the course of the 1830s, the cost of a Beart machine, primarily a tile-making machine, had come down from £60 in 1833 to £10 in 1839. In the late 1830s and early 1840s, the Bedford estate experimented with a variety of tilemaking machines: In 1839, purchase of a second, improved, version of Beart's machine was considered in preference to the more expensive and as yet untried Tweeddale machine, then



Fig. 1 The brick kiln at Crawley Mill, Husborne Crawley, Bedfordshire, where the tilemaking machines developed by Robert Beart, the Marquess of Tweeddale, and William Irving were all tried, those by Beart and Tweeddale being the most successful. The kiln is left of centre behind the haystacks, with the drying sheds to the left of the haystacks and the wind-driven clay mill on the extreme left. Motive power for clay mill could also be provided by using one or two horses. This was the estate brickyard and one of the estate corn mills for the Duke of Bedford's estate in central Bedfordshire based on the parishes adjacent to his house and park at Woburn Abbey.

costing £100 each. In 1842, one of William Irving's machines was given a trial run but its wires for cutting the extruded clay "proved incapable of dealing with the Crawley clay" and the machine was returned as unsuitable for that particular location. Eventually, in 1843, a Tweeddale machine was purchased at a cost of £60, something which the duke himself had urged in 1839.¹⁶ The Tweeddale machine received a highly favourable notice from the new Bedford estate steward, Thomas Bennett, in the *Journal of the Royal Agricultural Society of England*. Bennett wrote:

[Its advantages] consist of economising the labour of making to a small extent; in giving a greater certainty to the quantity made; and in producing a better article than tiles of the same kind manufactured in the ordinary manner. This superior quality arises from the greater density given to the clay in passing through the machine than can be obtained by hard labour.¹⁷

Labour for a Tweeddale machine was a single man and a stout lad together with two boys, obviously younger than the "stout lad", who were required to carry the tiles to the drying shed. Up to 600,000 tiles could be produced in a season.¹⁸

In the early 1850s in addition to the five especially noted by *The Builder* in 1852,¹⁹

several other tilemaking and brickmaking machines were available. Indeed, the year before the *Journal of the Royal Agricultural Society of England* had commented:

Twelve years ago [*i.e.* in 1839] draining tiles were made by hand, cumbrous arches with flat sides, costing respectively 50s. and 25s. per 1,000. Pipes have been substituted for these made by machinery, which squeezes out clay from a box through circular holes, exactly as macaroni is made at Naples, and the cost of these pipes averages from 20s. down to 12s. per 1,000 ... The result has been obtained by a most spirited competition among machinists, as no less than 34 different tile-machines competed in 1848 at the York meeting ...²⁰

Not necessarily on the Bedford estates but certainly, elsewhere it was reported that “the Marquis of Tweeddale’s machine is also in use” when the 1866 *Appendix to the Cyclopædia of Useful Arts: Mechanical and Chemical Manufactures, Mining and Engineering* was compiled.²¹

By 1867, when Frederick Hogg, a brick and tile maker at Sandy, Bedfordshire, was on the point of retiring, machines were becoming more common. The sale of his ‘Utensils in Trade’ was advertised in a local paper, the *Bedfordshire Mercury*, on 9 April 1867; the goods offered included ‘2 Brick and Tile-making Machines’,²² but no further details of the machines used at the Sandy kiln²³ are available.

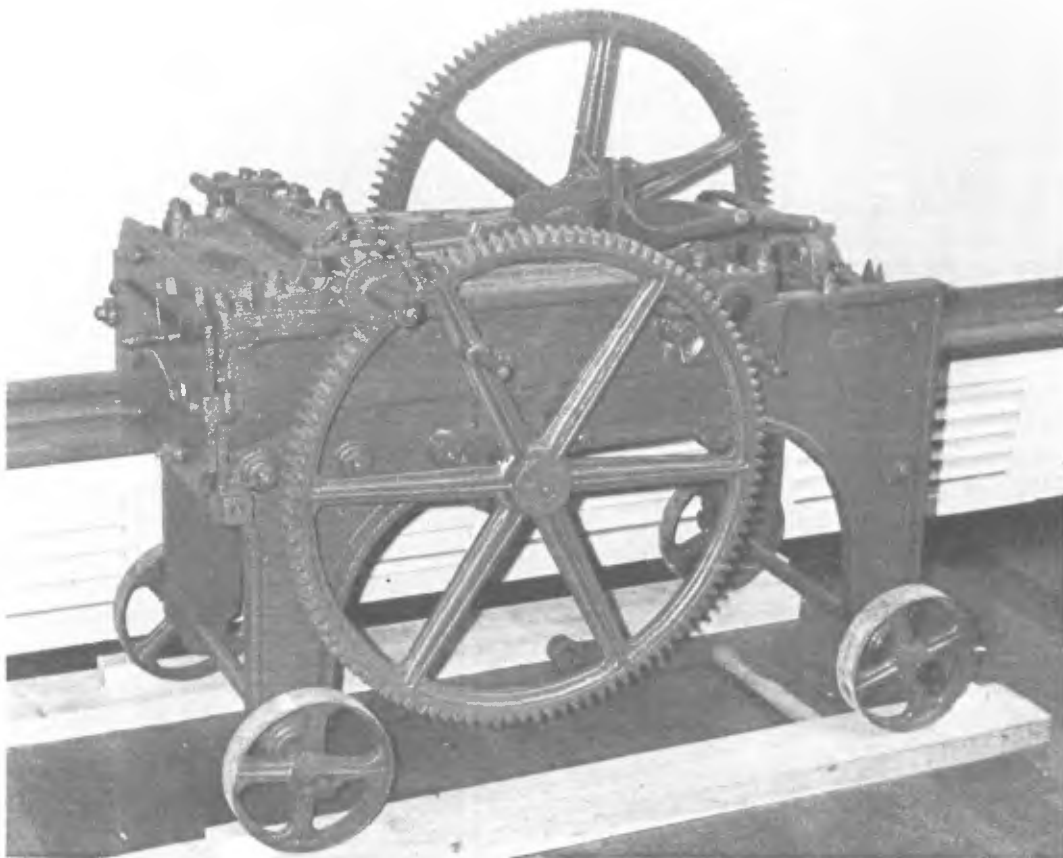


Fig. 2 Brickmaking machine of the 1860s manufactured by Edward Page & Co of Bedford.

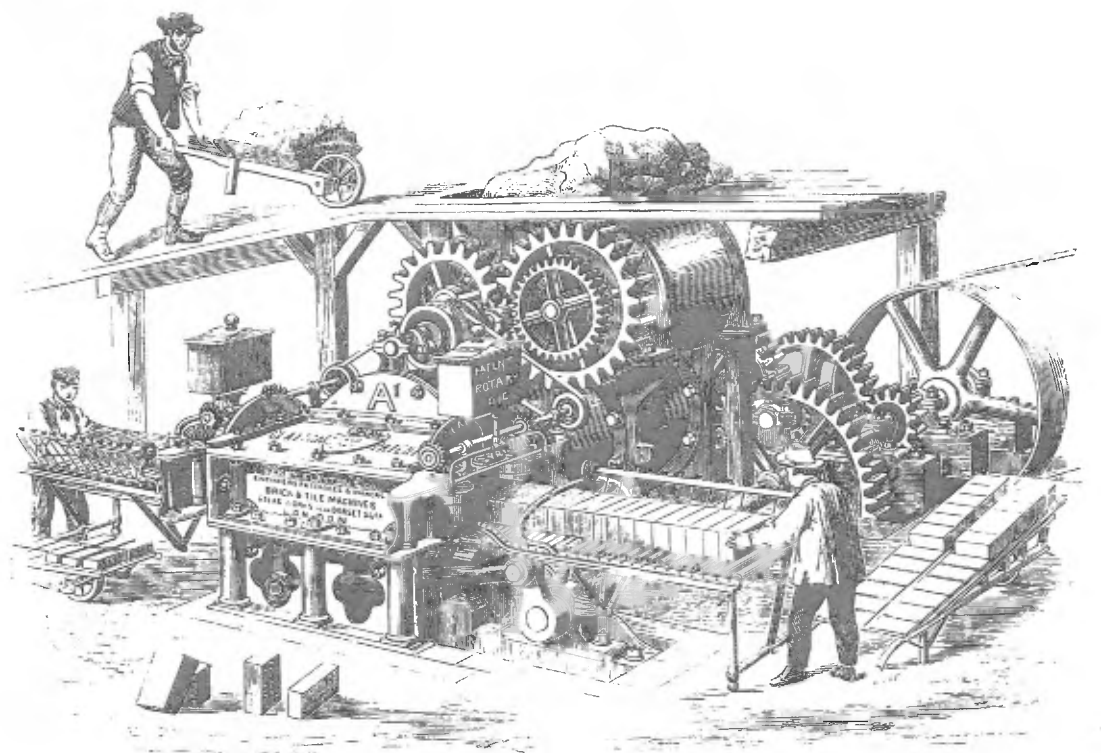


Fig. 3 By the early 1860s brickmaking machines could be elaborate. Clayton's brickmaking machine of 1863 allowed clay to be fed in at the top between a pair of rollers and extruded on both sides. Each column was cut by a wires on a hand-operated frame from which the green bricks were loaded on to the hack barrows. The tanks contained water, used to lubricate the clay columns.

By the 1860s, iron founders and agricultural machinery makers had diversified into the manufacture of brickmaking and tilemaking machines. One Bedford firm to do so was Edward Page & Co.²⁴ and it may be that they supplied Frederick Hogg at Sandy, but, equally, the source of his machinery could have been another ironfounder in St Neots or Huntingdon or Hitchin or Cambridge or Baldock, from all of which a machine could have been delivered to Sandy by railway.²⁵ Excepting Baldock, all of these towns were directly connected by a railway to Sandy.

At some unknown point between 1855 and 1877, and probably before 1869, Edward Page & Co of Bedford had bought the patent for "Improvements in the manufacture of bricks, pipes and tiles" taken out on 11 July 1855 by William Williams, another Bedford ironfounder. One of the Page machines (Fig. 2), probably employing Williams' patent, was in use in 1868 at the brickworks at Hargrave, Northamptonshire, where bricks were made use in the bridges and stations of the Kettering to Huntingdon branch of the Great Northern Railway. A century after its use by the railway company, this machine was on show at Raunds Manor Brickworks, another Northamptonshire brickworks. Another one of these extrusion machines was in use at Yirrell's Brickyard, Stanbridge, in south Bedfordshire, as late as 1939. These small machines, for brickmaking not tilemaking were ideal for a brickyard supplying local needs or a specific building project, such as a new branch line of a major railway company.

For an iron founder and agricultural machinery maker, the manufacture of brickmaking machines was good business. In the 1880s, Edward Page & Co opened a new factory in Kempston to complement their Victoria Iron Works in Mill Street, Bedford. Edward Page & Co were noted as manufacturers of brickmaking machines in the editions of Kelly's *Post Office*

TO BRICKMAKERS, ETC.

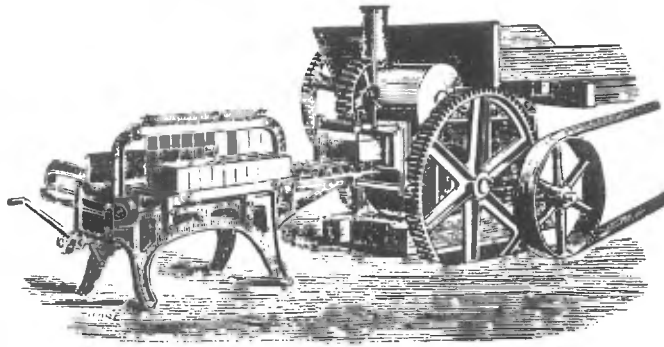
CLEWS' IMPROVED BRICK, TILE AND PIPE MAKING MACHINE.

J. CLEWS begs to call attention to his new high-class Brick Making Machine, which to makers requiring a really sound and good brick is invaluable.

AMONG THE ADVANTAGES these Machines have over others are they are low, the PUG BOX which is in an horizontal position, being only 3ft. from the ground, and are entirely devoid of bevil gearing.

THE PUGGING APPARATUS is very effective and will work up any plastic material without any previous preparation, and make the bricks sufficiently stiff to act 7 or 8 high.

THE DIE is brass-lined and requires no rustian, and can easily be attached to any other make of Brick Machine.



J. CLEWS, Engineer, Clarendon Iron Works, OXFORD.

They are capable of making from 15,000 to 20,000 bricks per day when driven by an 8 H.P. Engine, and if desired, can at an extra cost be fitted with **WINDING GEAR** for bringing the clay to the Pug box.

These Machines are simple in construction, of the very best material and workmanship, and for neatness and efficiency of their work, combined with the low price, are not to be equalled by any other machine in the market, and wherever they have been placed give the greatest satisfaction. Testimonials on application.

Fig. 4 Advertisement of 1885 for J. Clews, Engineer, of the Clarendon Iron Works, Oxford, who had recently introduced into his range of goods the 'new high-class Brick-Making Machine'

Directory for Bedfordshire issued in 1869, 1877, 1884, and 1914; however, brickmaking machinery is not listed in their entry in any later directory. The firm was still operating in 1925.

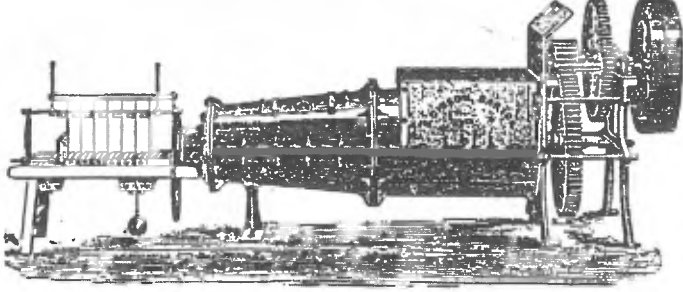
The machine made by Edward Page & Co was fairly simple in its workings. Other machines were more complex, particularly when extrusion became continuous.²⁶ In Clayton's 1863 brickmaking machine (fig. 3), clay was fed into the top of the machine, obviously from a barrow. The clay then fell into a trap between a pair of rollers in the crushing mill, from which two columns of clay extruded sideways with the clay designed to produce bricks on edge: each column of clay was the width of the stretcher face and its height was the equivalent to the depth of the header face. The bricks were then cut with a set of wires, thus giving a consistent height to the bricks produced. The column of bricks could number ten or slightly more.²⁷

Clayton's machine pugged the clay before it was fed to the extruder, and by the 1880s, this was typical of machines manufactured by other makers. In Oxford, J. Clews at the Clarendon Iron Works,²⁸ produced one such machine (fig. 4) whilst in Lincolnshire, Samuel Gibson of Barton-on-Humber, who described himself as an "Engineer, Machinist, Millwright, Boiler Maker &c"²⁹ created a similar machine (fig. 5). The difference between these two seems to be that Clews' machine was designed to work only using steam power whilst Gibson stated that his machines were "For HAND or STEAM POWER" although the illustration in his advertisement shows the "NEW STEAM POWER BRICK MAKING MACHINE"

Both the Clews machine and that produced by Gibson include a pugmill as the first operation which the machine can accomplish in creating wire-cut bricks.

Machine-made bricks made possibly the expansion of the built environment in the second half of the nineteenth century.³⁰ Not all the brickmaking firms who used the machines survived to the Great War. In Lincolnshire, the greatest number of brickmaking firms was reached in the early 1880s when the county had 187 firms. By the 1890s, the number of Lincolnshire firms had dropped to 126, and by 1914, there were a mere 80 brickyards in Lincolnshire.³¹ This, of course, had a knock on effect on the firms making brickmaking machinery. These notes have already recorded that Edward Page & Co of Bedford and Kempston stopped manufacturing brickmaking

PATENT BRICK, TILE, & PIPE MAKING MACHINES,



For HAND or STEAM POWER. The very Best and Cheapest in the Trade, for either Grinding or Making from Plastic Clays.

The above shows a NEW STEAM POWER BRICK MAKING MACHINE. It is one of the Simplest and Easiest to Manage, and will make a very large quantity. The Bricks are Cut Off perfectly Parallel and Square, while the Machine and Clay and everything is in Motion. Using no common principle, requiring neither Reversing nor Stopping, this Machine is giving entire satisfaction.

The highest References can be given as to the merits of this first-class Brick Making, &c., Machine, which makes the very best of Bricks. Can be seen at Work any time during the Making Season.

Full Particulars may be had on application to the Manufacturer,

SAMUEL GIBSON,
Engineer, Machinist, Millwright, Boiler Maker, &c.,
MABEL FOUNDRY, BARTON-ON-HUMBER.

Fig. 5 Advertisement from the mid 1880s for Samuel Gibson's patent brick, tile & pipe making machine. Like most manufacturers of brickmaking machines, Samuel Gibson at Barton-on-Humber, Lincs., was a general iron founder able to produce machines for a wide range of rural industries.

machinery in 1914 or soon after even though the firm continued with other lines of business until at least 1925.

Brickmaking machines and the firms who made them is a subject on which little research has been done. A useful starting point would be the trade directories for individual counties and larger towns and particularly the advertisements therein.

Similarly the evolution of brickmaking machines, which has only been sketched in these notes, is a subject worth investigating. Martin Hammond found 109 patents for brickmaking, both machinery and kilns, in the thirty years between 1820 and 1850. As yet, there are no comparable statistics for the two generations between the Great Exhibition and the Great War: in those sixty-four years, there is no doubt that engineers, brickmakers, iron founders, and others were no less inventive than in the previous thirty.³²

NOTES AND REFERENCES

1. Members wishing to know more about CEHX, or to join, are invited to contact Lawrance Hurst at lhurst@hurstpm.co.uk

2. R.W. Brunskill, *Brick Building in Britain*, London: Victor Gollancz with Peter Crawley, 1990, p.25; R.W. Brunskill, *Brick and Clay Building in Britain*, New Haven and London: Yale University

Press in association with Peter Crawley, 2009, page 25, has an identical paragraph. See also M. Hammond, *Bricks and Brickmaking*, Princes Risborough: Shire Publications, 2nd edn., 1990, p.14 for developments in brickmaking machines in the nineteenth century.

3. K. Hudson, *Building Materials*, London: Longman, 1972, p.32.

4. M. Beswick, *Brickmaking in Sussex A History and Gazetteer*, Midhurst: Middleton Press, 1993, p.201, site Horsham 15, with illustration 23 for aerial view of the works in 1928. M. Beswick, *Brickmaking in Sussex A History and Gazetteer*, Midhurst: Middleton Press, 2001, p.201-2, site 15, with illustration 23. The continuous process at Warnham Brickworks is illustrated in both editions of Beswick's book as illustration 45.
5. Essentially the material in the editor's book collection. Due to the closure of the bookstacks in Birmingham Central Library from late July 2011, pending removal of the books and extensive periodical runs to the new Library of Birmingham prior to its opening in 2013, the editor's access to nineteenth-century periodical literature is currently more difficult than has been the case for the last fourteen years.
6. Hammond, 1990, p.14.
7. W. Dobson, *A Rudimentary Treatise on the Manufacture of Bricks and Tiles*, 2 volumes, London: John Weale, 1850, re-issued in facsimile with 4 pages to an A4 page and edited with an introduction by F. Celoria, as *Journal of Ceramic History*, 5, Stafford: George Street Press, 1971.
8. Dobson, 1850, I, p.74.
9. Dobson, 1850, has a total of 81 individual figures: 34 in volume I and 47 in volume II. Figures are numbered sequentially in each chapter in both volumes.
10. *The Builder*, 10, 19 June 1852, p.285
11. *The Builder*, 10, 19 June 1852, p.285; the statement is not true as is shown by the quotation given; see note 13.
12. H. Hobhouse, *Thomas Cubitt Master Builder*, London: Macmillan, 1971, *passim*.
13. Hobhouse, 1971, p.312, quoting *The Builder*, 10, 19 June 1852, p.285.
14. A. Cox, *Survey of Bedfordshire Bedfordshire Brickmaking A History and Gazetteer*, Bedford: Bedfordshire County Council and RCHM, 1979, pp.37-38, with fig.24.
15. Cox, 1979, pp.19-20 with fig.10, and p.79 site G79.
16. Cox, 1979, pp.38-39.
17. T. Bennett in *Journal of the Royal Agricultural Society of England*, First series, 4, 1843, p.370, quoted Cox, 1979, p.39.
18. Cox, 1979, p.37.
19. *The Builder*, 10, 19 June 1852, p.285
20. *Journal of the Royal Agricultural Society of England*, First series, 12, 1851, p.638, quoted Cox, 1979, p.37, with n.84.
21. C. Tomlinson, editor, *Cyclopædia of Useful Arts, Mechanical and Chemical Manufactures, Mining and Engineering, Volume III Appendix - Abaca to Wool*, London: Virtue and Co Limited, 1866, p.128.
22. Cox, 1979, p.39 with n.100; for the Sandy works see Cox, 1979, p.96, site G140. In 1867, one may estimate that Frederick Hogg was aged at least 70; he was running another brickworks at Girtford Bridge, Sandy, (Cox, 1979, p.95-96, site G139) between March 1819 and at least October 1820; he was in charge of the larger works at Cox Hill from 1830, when the kilns are first recorded, if not before.
23. The kiln continued in use until 1914; see Cox, 1979, p.96, site G140.
24. Cox, 1979, pp.39-40; this with *ibid.*, notes 101 and 102 is the source of the comments on the Page concern.
25. Railways to Sandy in the nineteenth century included the local and freight services on the Great Northern Railway's main line from Yorkshire to London King's Cross, thus from Huntingdon and Hitchin directly and Baldock via Hitchin. The Oxford to Cambridge line linked Sandy with both Bedford to the west and Cambridge to the east. No attempt has been made to check trade directories for Bedfordshire, Cambridgeshire, Hertfordshire or Huntingdonshire.
26. Hammond, 1990, p.14, suggests 1860 as the date at which extrusion became continuous; it is clear that Clayton's machine illustrated in fig.3 extruded continuously but almost certainly at the same time other machines were produced which produced just a single extruded brick.
27. A much fuller is the account of Clayton's brickmaking machine in Byrne and Spon, eds., *Spon's Dictionary of Engineering* ..., London: E. & F.N. Spon, 1874, vol I, p.642 with fig.1304.
28. J. Bond, S. Gosling, J. Rhodes, *The Clay Industries of Oxfordshire Oxfordshire Brickmakers*, Woodstock: Oxfordshire Museums Service Publication 14, 1980, p.25-26.
29. D.N. Robinson, *Lincolnshire Bricks History and Gazetteer*, Hecklington, Lincs.: Heritage Trust of Lincolnshire, 1999, p.21.

30. Cox, 1979, p.37 notes the use of machine-made bricks in Shire Hall, Bedford and comments that "it would have been quite impossible to produce the unprecedented number of bricks needed at the time [1881] without machines"

31. Lincolnshire figures from Robinson, 1999, p.20. Preliminary work on Berkshire brickmakers 1877 to 1939 shows a similar level of decline there.

32. David Kennett thanks Lawrance Hurst when returning proofs for sending photocopies of various

nineteenth-century engineering dictionaries and encyclopedias, which have been most useful in slightly augmenting what was originally written in the 'Postscript'. Tomlinson, ed., 1866, pp.128-130 gives an account of Oates' machine; Byrne and Spon, eds., 1874, pp.642-650 describes those by Clayton and Howlett, Oates, and Platt, not all of which are considered herein. E. Spon, ed., *Supplement to Spon's Dictionary of Engineering* ..., London: E. & F.N. Spon, 1881, pp.182 notes Liddell's machine. The subject of the development of brickmaking machines requires further investigation.

Current and Forthcoming Exhibitions

Two of the current and forthcoming exhibitions are of interest to members of the British Brick Society:

John Atkinson Grimshaw (1836-1893): Painter of Moonlight

Guildhall Art Gallery, City of London, 12 September 2011 to 15 January 2012

Grimshaw painted atmospheric scenes of town and country by moonlight. His paintings evoke the Victorian age and how its towns appeared to contemporaries. The show, which has transferred from the Mercer Art Gallery, Harrogate, includes some of his London night-time paintings and four of those he painted in Whitby as well as views of Leeds, his home town. The excellent view of Beckett's Bank, Leeds, in the foreground of 'Park Row, Leeds' of 1882, shows the bank built between 1863 and 1867 to designs of George Gilbert Scott; demolished in about 1965, it has been described as "the first major casualty of the rebuilding of Park Row". Grimshaw was an excellent painter of both brick and stone, as is obvious from 'Autumn Glory: The Old Mill' of 1869, showing the late-sixteenth-century mill in the grounds of Dunham Massey Hall, Cheshire.

Building the Revolution Soviet Art and Architecture 1915-1935

Royal Academy of Arts, London, 29 October 2011 - 22 January 2012

Concrete is the material most commonly associated with early Soviet construction but the Soviet Doctors' Housing Cooperative in Kiev, by Pavel Aleshin, built 1927-30, had facing bricks and many examples of workers' housing were brick covered with stucco. Even the only private house built in Moscow in these years, the Melnikov House, designed by Konstantin Melnikov in 1927-31, was brick covered with stucco: a construction photograph shows the techniques used by the bricklayers to key in the plaster and create the hexagonal openings on the curved walls. Some industrial buildings also had outside walls of brick, notably the Central Institute of Aerodynamics and Hydrodynamics in Moscow of 1924-28 by Aleksandr Kuznetsov and others.

BRICK IN PRINT

Between February and August 2011, the then Chairman and the Editor of the British Brick Society received notice of a number of publications of interest to members of the society. This is a now regular feature of *BBS Information*, with surveys usually two or three times a year. This listing includes two items held over from *BBS Information*, **116**, April 2011, due to considerations of space. Members who are involved in publication and members who come across books and articles of interest are invited to submit notice of them to the editor of *BBS Information*. Websites are also included. Unsigned contributions in this section are by the compiler.

TERENCE PAUL SMITH

1. Natasha Blair, 'Fabulous at 400' [Hatfield House],
Heritage, May 2011, pages 22-26.

Mark Griffiths, 'Happy Birthday, Dear Hatfield',
Country Life, 11 May 2011, page 120.

'In 1611,' so Natasha Blair's article begins, 'Robert Cecil, 1st Earl of Salisbury and Chief Minister to King James I[,] built the imposing house' at Hatfield, Herts., which thus, this year 'celebrates its 400th anniversary' (p.23). Of course, a building on this scale cannot be assigned to a single year, and Hatfield was actually erected between 1607 and 1612. But let that pass: 2011 is at least its 400th-ish anniversary! Blair's article opens with a brief history of the building, which is of red brick in English Bond with stone dressings, and notes that it replaced an episcopal palace. This had been built, again of red brick in English Bond, c.1480-86 for John Morton, then Bishop of Ely (and from 1486, Archbishop of Canterbury). As the article notes, 'the majority [*recte* most] of the Old Palace was knocked down in 1608' (p.23); of its four ranges, just one survives (fig. 1). The article continues with an imaginary tour of the interior, concentrating on (a few of) the details, fittings and paintings. But it also includes (at pp.22-23 and 24-25) two good colour photographs of the brick exterior, as well as one of poorer quality (at p.26) of the surviving range of the Old Palace. At the end of the article are useful data for those wishing to visit Hatfield House.

The brief article in the 'In The Garden' section of *Country Life* is, appropriately, concerned almost exclusively with the gardens of Hatfield House. But the building of the stone-dressed red brick house is mentioned, and a colour photograph of the parterre garden also shows the one surviving range of the earlier red brick palace. The black brick patterning on the entrance tower is very prominent.

The May issue of *Heritage* was accompanied by a 'free' 32-page magazine, *British Castles*, which includes (pp.16-17) an aerial and a ground-level photograph of Herstmonceux Castle, Sussex, built of red brick, c.1441, for Sir Roger Fiennes (1384-1450), with a brief description by Angharad Moran.

2. J. Goodall, 'A Merchant's Palace Penhurst Place, Kent, Part I'
Country Life, 2 February 2011, pages 38-44
S. West, 'Ancestral Renown Penhurst Place, Kent, Part II'
Country Life, 9 February 2011, pages 52-59

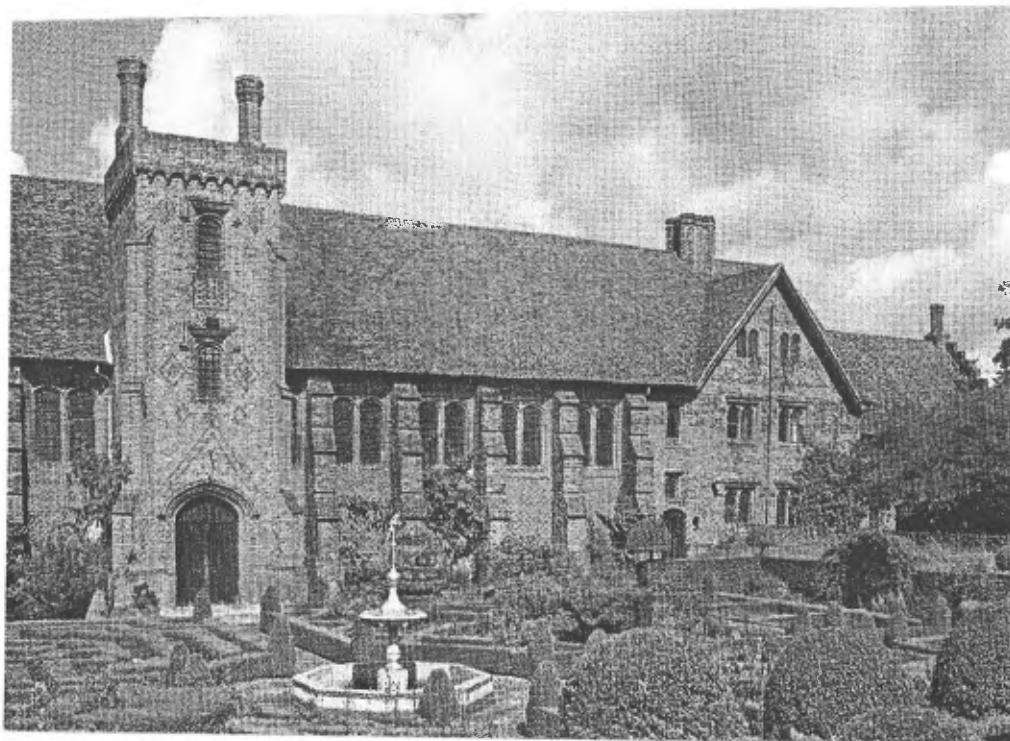


Fig. 1 The single surviving range of the red brick palace built for John Morton, Bishop of Ely, in the early 1480s, as seen from the parterre. The black brick used for diaper patterning on the entrance tower is highly visible.

These well-illustrated articles explore the early history of one of the largest private houses in England, the largely stone-built Penhurst Place, home since 1552 of the Sidney family, but originally constructed in the 1430s by Sir John de Pulteney: there is a licence to crenellate of 6 October 1341. Goodall explores the early history of the building, up to its acquisition by John, Duke of Bedford, the brother of Henry V. West concentrates on ownership by the Sidney family which continues to the present day. The intervening century between the death of Bedford in 1435 and 1552 is only lightly sketched.

Of most value to members of the British Brick Society are the stunning photographs of the exterior, especially in Goodall's piece, which show the exterior where brick was used in the sixteenth century to repair and replace some of the stonework, as in the President's Tower. The many red brick chimneys are a highly-visible contrast to the mellow, off-white stonework.

D.H. KENNETT

3. Richard Haslam, 'Shared Enthusiasm Oakly Park, Shropshire', *Country Life*, 23 February 2011, pages 58-63.

Charles Robert Cockerell (1788-1863) is best known for his later stone-built public buildings in the classical style: the Ashmolean Museum and Taylorian Institute, Oxford, of 1841-45 and contemporary with the museum, the Bank of England branches in Bristol, Liverpool, Manchester, Plymouth, and Portsmouth. One of his first major commissions in 1822 was the rendered but brick-built St David's College, Lampeter. Cockerell is not usually thought of as a country house architect but early in his career he extended and remodelled Oakly Park for his friend Robert Henry Clive, who like Cockerell had travelled extensively in the Near East and throughout the Mediterranean.

Clive inherited Oakly Park in 1817 and two years later married Harriet Hickman: portraits by Thomas Lawrence (reproduced as figs. 7 and 8) doubtless commemorate their nuptials. The house he inherited was a substantial, older, timber-framed house to which two brick blocks had been added. The first on the north side was a tall, two-storeyed wing, added for Lord Powis in the 1750s by William Baker. In the late 1780s, John Hiram Haycock of Shrewsbury added a further brick block to the south-west corner of the existing house as a dower house for Margaret Clive, the widow of Robert Clive of India, whose portrait adorns the morning room (fig.9), one of three rooms survive from this build.

Cockerell twice worked for Robert Henry Clive, the grandson of the soldier. In 1819, he built a staircase hall (fig. 4) on the site of the former kitchens, thus unifying the building, and created two storeys of the present west front (fig. 1) but with the southern entrance as its centrepiece. This is in fine red brick, laid with very thin lime mortar joints with the cornice and quoins in Grinshill stone.

Then in 1836, Cockerell was called back to create a family wing: in seventeen years of marriage, R.H. Clive and Harriet, by now Baroness Windsor, had produced six children. The result was an additional five bays to the west front, which became fourteen bays in length; leaving a three bay portion to the south and the two northernmost bays at two storeys, the centre portion has an additional floor, and to balance the original entrance and portico, the three northern bays of the three storey portion have a second portico and are marked out by the use of Grinshill stone. The brickwork is again of the highest quality with thin lime mortar joints.

For a further account of Oakly Park see J. Newman and N. Pevsner, *The Buildings of England: Shropshire*, New Haven CT and London: Yale University Press, 2006, pp.448-451.

D.H. KENNETT

4. Cherry Ann Knott, *George Vernon (1636-1702) 'Who built this house' Sudbury Hall, Derbyshire*,

Stroud, Glos.: Tun House Publishing, 2010, limited edition of 500 copies.

800 pages, 177 colour illustrations, 88 black-and-white illustrations,

ISBN 978-0-9565240-0-3, price £75-00

(Available from Tun House Publishing, The Tun House, Brewery Yard, Stroud, Glos. add £7-50 for postage and packing: cheques payable to Cherry Ann Knott)

This is a big book about the house and its builder which the society visited as part of the 2007 Annual General Meeting. Built in the last third of the seventeenth century, Sudbury Hall was erected by the courtier and politician, George Vernon. Building the house, with its façades of richly diapered brickwork, was his life's work, spanning more than forty years

Part I describes the man, his life and his career. Part II is an account of the construction and furnishing of the house. This is a house where men whose workmanship was unquestionably of the highest quality were employed: Grinling Gibbons, Edward Pearce and William Wilson were the woodcarvers and Louis Laguerre the muralist. Vernon's employment of much humbler men, including brickmakers and bricklayers, is examined in detail. The sources utilised for bricks and other building materials are examined in depth.

AUTHOR (adapted)

5. Nicola Lisle, 'Building Your Family Tree' [Brickmakers]

Family History Monthly, 193, March 2011, pages 38-41

The illustrations to this article, most of them not easily available elsewhere, are interesting and valuable, albeit one appears to show lime-burning rather than brickmaking and another clearly

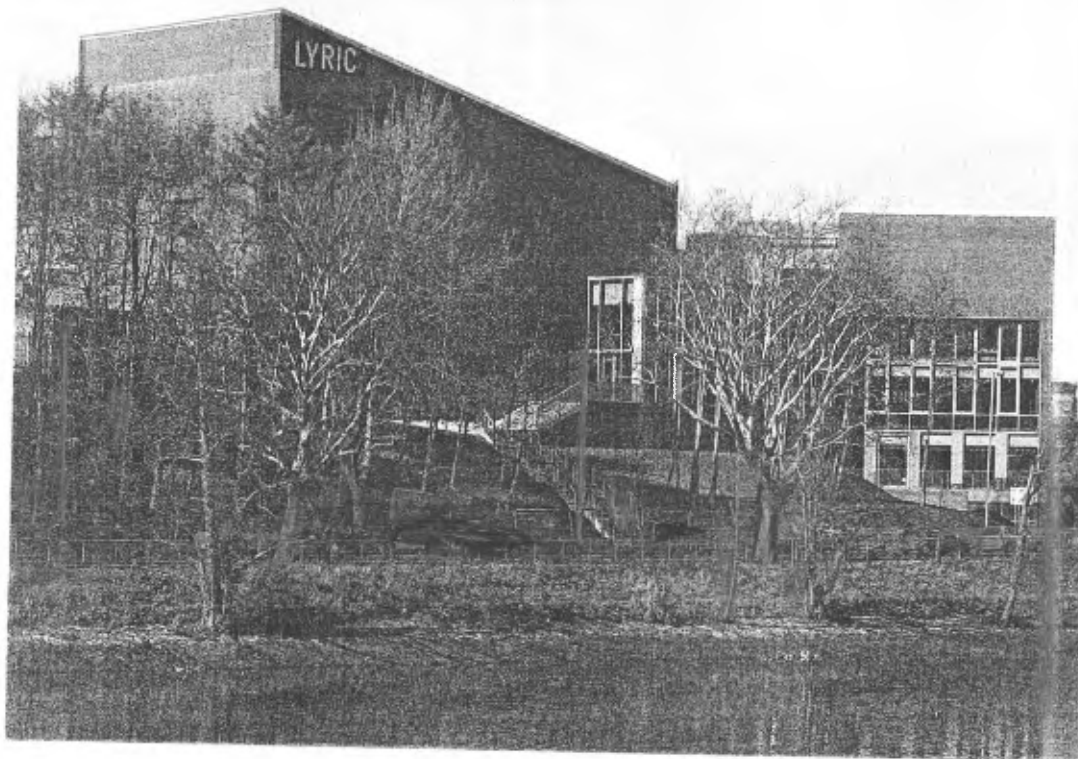


Fig. 2 The Lyric Theatre, Belfast, viewed from across the River Lagan.

a single perpend misaligned: this is brickwork at its consummate best.

The winged profile of the larger, auditorium, section of the building echoes the pitched roofs of the houses and also ‘underlines [*sic*: reflects?] the skyline of the hills’, whilst the ‘handsome brickwork is plainly a match (although the brick must be sourced elsewhere) for [that of] the steep raw Belfast terraces running up behind’ (p.44). There are also areas of glazing, some open, some behind Japanese-looking wooden slatted screens, and some patches of vertical timber cladding, all realised with great — in places Miesian — finesse. There are witty touches too: inside, the abstract zoomorphic handrails, with their variously angled supports, seem to be walking up the steps — although there is the obvious danger that others will now repeat the joke to the point that it becomes tedious. Above the main stair, ‘upper level timber galleries are almost Shakespearean in character’ (p.48, figure caption): that is, they hint at the galleries of Elizabethan London’s theatres.

Red brick is much, and beautifully, used in the interior too, although the auditorium — its complex, juxtaposed facets ‘designed in response to acoustics, sightlines and lighting’ — is clad with timber: ‘a sort of dark, luscious “marquetry”, a cheap yet brilliant coup’ (p.47).

Overall, as the author notes, the building recalls the twentieth-century’s great auditoria by Alvar Aalto (1898-1976) and Hans Scharoun (1893-1972). And for some of us — for better or worse — there is the added attraction of the ‘open ... yard for trucks, ... [which] is much used for smoking, as is the seat dented into the main entrance’ (p.44).

With so much attention to detail throughout, it is curious that the large letters ‘LYRIC’ above the entrance to the lower foyer are in red against a red brick background: surely *white* lettering would have been better, as elsewhere in the building, although at one point red lettering is used against pale timber? But that is a small grouse with regard to a building which adroitly exploits its difficult site and sensitively responds to its unpromising surroundings. This superbly

conceived and executed building is, literally, a standing rebuke to those neophobes, not entirely unknown in the British Brick Society, who deprecate *all* modern architecture just because it is — well, not *old* architecture.

It is a pity that the contractors are not named, since they — or, rather, their accomplished but anonymous craftsmen — were responsible for the superb deployment of materials — concrete, glass, stone, timber, and, above all, immaculately laid bricks.

It would be pleasing to see the integration of the brickwork — the absence of those dividing expansion joints — as a symbol of union in Belfast itself: unfortunately, at the time of writing ...

In a subsequent issue of *Architectural Review*, **1374**, August 2011, pages 52-55, a further building by the same architects is briefly considered: a large house, which they nicknamed 'The Sleeping Giant', at Killiney, Co. Dublin. Although of lime render above a granite base rather than of brick and with a roof of sand-blasted concrete, the building exhibits similar diagonal planning and elevations and the same careful attention to detailing as the Belfast theatre.

But whilst welcoming these two buildings, one may hope that their accomplishment will not beguile the architects into forsaking their Irish roots, becoming yet one more international, globe-trotting practice, striving to be different for difference's sake: there are enough of *them* — whether beginning in London, Basel or wherever.

10. Bruce Watson, 'Suffolk Place: Southwark's Forgotten Tudor Royal Palace', *London Archaeologist*, **13**, 1, Summer 2011, pages 21-26.

This article by a former colleague, with whom I worked on the architectural terracottas, considers the palatial house built for Charles Brandon (c.1485-1545), Duke of Suffolk, on Borough High Street, Southwark. Work began *circa* 1516 and was probably completed by 1521-22, when Brandon 'sold 30,000 bricks at his nearby kiln' and eight cart-loads of brick bats to the Bridge House estate (p.21). In the 1530s Henry VIII asked Brandon to exchange his new house, with its associated deer park, for Norwich Place near Charing Cross. The exchange duly went through: when Henry "asked" one did not say *no*! The house thus became a royal palace. But after a remarkably brief and vicissitudinous history, it was 'pulled downe' in 1557, 'the leade, stone, iron, etc' being sold (p.24).

The brick house, which is depicted in Anthonis van den Wyngarde's panorama of London (c.1544), was of double-courtyard plan and was decorated with numerous architectural terracottas, which were something of a fad at the time — at least for those who could afford them, for they were an expensive indulgence. Much of the article is devoted to a consideration of the terracottas, some excavated in 1887-88 and 1937 and others — probably rejects — recovered during excavations by Museum of London Archaeology Service much more recently. They typically combine Gothic and Renaissance motifs, with the latter predominating. There is also a fine alabaster sculpture 'of winged bare-breasted female figures with mermaid tails holding back drapery either side of a six-sided opening ... [and with a centrally-placed] grotesque face possibly intended to be a water spirit' (p.25).

A fuller discussion of the building and its decorations — particularly the terracottas — is in preparation for *Post-Medieval Archaeology*.

Brick for a Day: London: Highbury to Moorgate

On Saturday 23 July 2011 a small contingent met outside Union Chapel, Highbury, London N1 for the start of a tour of brick buildings organised and led by David Kennett. Unfortunately, scaffolding and netting obscured the striking steeple of the chapel — which was undergoing restoration — but, helpfully, one member had with him a book which includes a plan and a (not quite accurate) drawing by the late Martin S. Briggs, FRIBA (*Puritan Architecture and its Future*, London and Redhill: Lutterworth Press, 1946, pp.42-43, figs.9, 10). The chapel was designed by James Cubbitt (1836-c.1911) and built in 1876-77, though the steeple, which culminates in a quirky spire rising from behind four gables and corner pinnacles, was not completed until 1889. Replacing a more modest chapel of 1806, this far from reticent building is of well laid red bricks with stone dressings in a thirteenth-century Flemish Gothic style. It belongs, indeed, to a period when Nonconformists, with a renewed sense of confidence, often turned to the Gothic Revival, erecting buildings which more resembled Anglican churches than traditional meeting houses. But Cubbitt, who wrote several books on Nonconformist architecture, was aware of the need for congregations to be able to hear the preacher — the dominant concern in Dissenting services. At Union Chapel, which was required to seat 1,650, this was achieved by the decidedly *non*-Anglican plan of an octagon within a modified Greek Cross and with galleries on three sides (fig.1). Behind the chapel are a lecture hall, a Sunday School, and a house for the caretaker, which we were able to view at a later stage of our visit. Of yellow/brown London Stocks with red brick trim and a minimal use of stone, they are, appropriately more domestic in character than the chapel itself. Included across the façade are tiles spelling out UNION CHAPEL SUNDAY SCHOOL.

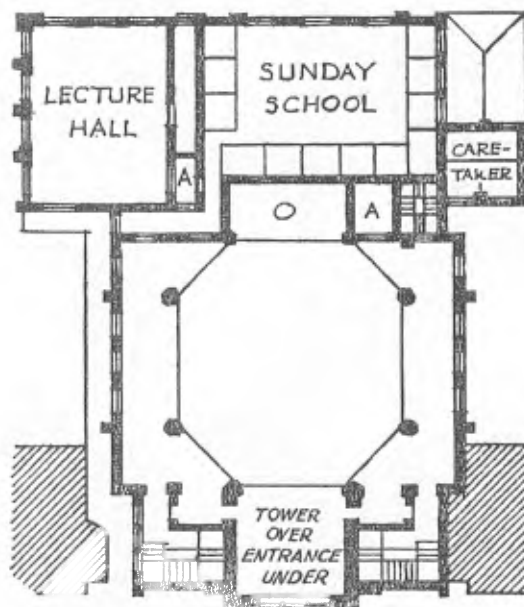


Fig. 1 Union Chapel, Highbury, London N1; plan at gallery level; A = open (unroofed) area; O = organ, above communion table. (scale: 1 inch = 50 ft).



Fig. 2 The brick tower at Canonbury House, Islington, was constructed for Prior William Bolton of St Bartholomew's Priory in the first third of the sixteenth century.

From the chapel we walked southwards along Compton Terrace to view the pleasant London Stock brick houses, started in 1804 by Henry Leroux, presumably a 'spec' builder working from pattern books. But after building only two pairs of houses, Leroux was declared bankrupt in 1809, and the later houses, completed *c.* 1830, were erected by the builder Henry Flower and the carpenter Samuel Kell.

As David emphasised, Leroux's bankruptcy affected another scheme, Canonbury 'Square' — in fact a long rectangle — started in 1805. We admired several houses here, many including Regency features such as simple intersecting tracery, cast iron columns to doorways, and iron balconies.

We then examined the Tudor Canonbury Tower, which began as the out-of-town (at the time) residence of the Prior of St Bartholomew's Priory, William Bolton (in office 1508-32). Here and elsewhere his name is recorded in a rebus showing a crossbow *bolt* penetrating a *tun* (a small barrel) — thus *bolt-tun* = *Bolton*. Of four storeys of red brick in English Bond, the tower

is the earliest feature of Canonbury House, a courtyard house whose architectural history is complex and not well understood. There were reconstructions and alterations by C.E. Dance in the early twentieth century. The south range of the building has been replaced by eighteenth-century houses of stuccoed brickwork; these, numbers 1-5 Canonbury Place, were erected by John Dawes between 1767 and 1771. In Alwyne Place and its surrounds, we viewed various early nineteenth-century houses and two polygonal garden-houses originally belonging to the Tudor Canonbury House: at the south end of Alwyne Villas, no.4A is a red brick building in English Bond with a datestone of 1526 and a reset panel of Bolton's rebus, although the upper storey is of nineteenth-century red brick with black brick diaper patterning; the other garden-house, next to 7 Alwyne Road, is covered with an unfortunate pink stucco.



Fig. 3 The Carlton Cinema, Essex Road, Islington, built in 1930 was one of the many cinemas designed by George Coles. The decorative scheme is based on red, yellow, slate grey, and blue. The lotus-top columns were inspired by those at Karnak, Egypt.

After viewing other houses in the area, including some of c.1824 by the developer Richard Laycock, we broke for lunch before taking the bus to Essex Road, where we viewed the former Carlton Cinema, designed by George Coles (1884-1963) and built in 1930. It is of multi-coloured faience with Egyptian motifs, reflecting a vogue for the style following the Paris Exhibition of 1925, which featured, *inter alia*, Egyptian archaeology, and further boosted by the discovery in 1926 of the tomb of the boy-pharaoh Tutankhamun. Currently being refurbished, the cinema is a most striking building. For those who prefer something less garish, there is the Essex Road Library of 1916 by Sir Mervyn Macartney (1853-1932), Surveyor of the Fabric to St Paul's Cathedral. It is of red brick with stone — or is it terracotta? — trim, including some fine oval recesses of cut brick.

The group then walked down New North Road to Shoreditch Park, where it was pointed out that the surviving houses that we had admired on the way were not always entirely typical of the area: a small training excavation in the park some years ago revealed the footings of nineteenth-century slum dwellings. In Poole Street, we examined the brick-built power station of the Great Northern & City Railway, probably designed by Douglas Fox & Partners, engineers, and opened in 1901. One of the earliest lines powered by electricity, the Great Northern & City Railway was designed to take City workers from their modest houses in Finsbury Park to Moorgate. In 1914, the power station became the Gainsborough Film Studios, where Alfred

Hitchcock made some of his earliest films. It is now incorporated within a large block of flats — far beyond the pockets of many of us!

We then took the bus to Old Street roundabout, where we viewed the red brick Moorfields Eye Hospital, founded in 1804, and opened on this site in 1899; it was designed by Young & Bedell, the firm lead by Keith Downes Young (1848-1929), an architect specialising in the design of hospitals. We also examined the associated Institute of Ophthalmology on Bath Street, built to a design by the GMW Partnership in 1989-92: it is of red brick encasing a steel frame.

Our next visit was to the former Leysian Mission (now Imperial Hall) founded in 1885 by the Methodist Leys School, Cambridge. The building was designed in 1901 by Jonas James Bradshaw (1837-1912) of Bradshaw & Gass of Bolton and completed in 1906. One of the earliest steel-framed buildings in London, the street frontage is clad with elaborate red terracotta, which was shipped on special overnight trains from the factory in Bolton. In contrast the side walls of the hall are of utilitarian off-white brick. Just to the south, on the opposite side of the road, we visited the Methodist Centre, including John Wesley's own house and a manse, rebuilt in 1898. The centrepiece, literally and metaphorically, is Wesley's Chapel, begun in 1777. A simple oblong of London Stocks, it is of five bays and two storeys, with round-headed windows and a central pediment. There have been several alterations inside and out. An example of Nonconformist architecture, its reticence is in marked contrast to the exuberance of the Union Chapel where our visit began.

Thanks are due to David Kennett for organising and conducting the visit. But it is a pity that attendance was so low — just five members plus our guide — an increasingly common situation with regard to our meetings, including the Annual General Meeting.

TERENCE PAUL SMITH

Changes of Address

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

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

BRITISH BRICK SOCIETY

MEETINGS in 2012

Saturday 21 April 2012

Spring Meeting

Brick in North Oxford

The non-tourist part of the city. Three women's colleges: Lady Margaret Hall, St Hugh's College, Somerville College; Ruskin College; St Barnabas' church; late nineteenth-century houses on Banbury Road and Woodstock Road; dragons.

Saturday 9 June 2012

Annual General Meeting

Faversham, Kent

with walk round historic Faversham in the afternoon

Saturday 14 July 2012

London Meeting

South Westminster

Polychrome brick at St James the Less; LCC housing of various periods from 1890s to 1970s; the Royal Horticultural Society Hall, Westminster Kingsway College and other buildings around Vincent Square (Westminster School Playing Fields); Rochester Row; Westminster City Archive Office.

Details of these future meetings will be included in mailings in the early part of 2012.

The society hopes to arrange a brickworks visit during 2012 and a summer visit to the Tilbury Forts is being planned..

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

Suggestions of brickworks to visit are particularly welcome.

Offers to organise a meeting are equally welcome.

Suggestions please to Michael Chapman, Michael Oliver or David Kennett.

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