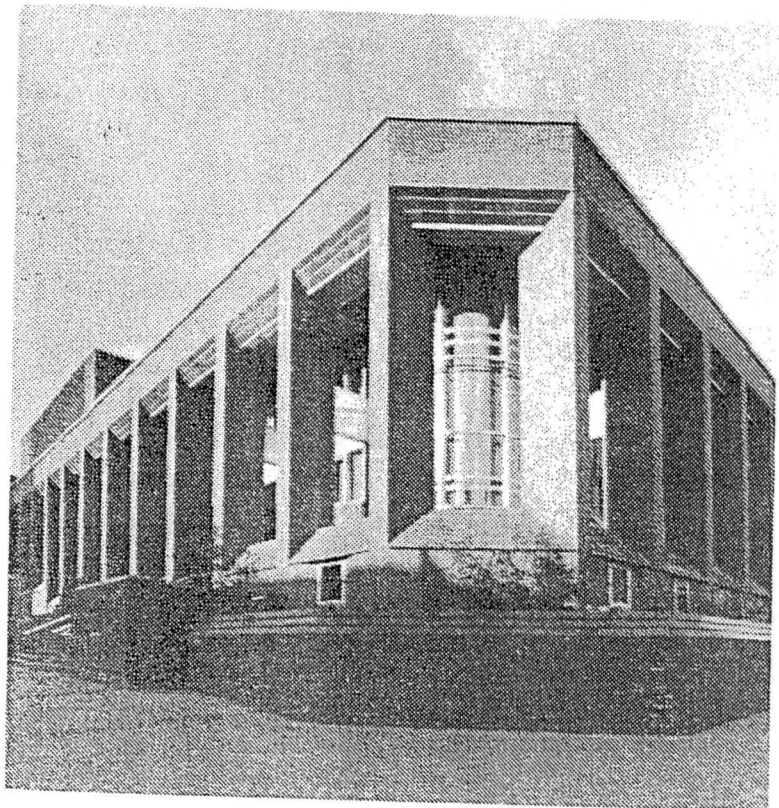


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BRITISH BRICK SOCIETY

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Cover:

The Royal Scottish Academy of Music and Dance on the corner of Renfrew Street and Hope Street, Glasgow, is one of a number of fine brick buildings built in the city in the last twenty-five years. The Royal Scottish Academy of Music and Drama was built between 1982 and 1987 to designs by Sir Leslie Martin with Ivor Richards; William Nimmo and Partners acted as executive architects for this building in orange-red brick.

Editorial: Adobe Architecture of West Africa

'Butabu' is a word used by the Batammaliba of Togo to describe the process of moistening earth with water prior to the use of earth in building. The prefix and suffix 'bu' both refer to the earth and anything associated with it; the central syllable 'ta' is indicated something has been added, in this case water.

The exhibition, *Butabu Adobe Architecture of West Africa*, was held between 28 May and 17 July 2005, in Aberystwyth Arts Centre. It included some forty large prints, mostly in black-and-white but including a few in colour, of the unfired mud brick structures of the west African countries of Burkina Faso, Nigeria, Niger, and Mali with excursions southward into the northern parts of Ghana, Togo and Benin. The photographs were taken by James Morris, a photographer specialising in the built environment and the cultural landscape. Many more photographs than were shown in the exhibition were included in the accompanying book: James Morris, *Butabu Adobe Architecture of West Africa*, New York: Princeton Architectural Press, 2004. This also has a fully annotated thirty-two page essay on 'Butabu: Adobe Architecture of West Africa' by Suzanne Preston Blier, who hold two chairs at Harvard University, one as Professor of Afro-American Studies, the other as Professor of Fine Arts.

As noted one of the specialities of the photographer James Morris is the cultural landscape. To this sociologist, one of the most annoying aspects of books on culture, and even more so of books concerned with visual culture, is their almost total disregard of the built environment. This is partly because cultural studies began life as an offshoot of the study of English literature: Richard Hoggart, *The Uses of Literacy* (1957), and Raymond Williams, *Culture and Society 1870-1950* (1958), are both early examples of the genre, although from very different standpoints and with very different contents.

The isolation of the built environment has been further distanced from cultural studies from an art historical point of view. Most art historians would subscribe, at least in part, to the sentiments by the late Sir Nikolaus Pevsner in the opening words of *An Outline of European Architecture* (1943, new edition, Harmondsworth: Penguin Books, 1959):

A bicycle shed is a building; but Lincoln Cathedral is a piece of architecture. Nearly everything that encloses space sufficient for a human being to move in is a building; but the term architecture applies only to buildings designed with a view to aesthetic appeal.

The view was considered questionable by the late Stephen Groak in *The Idea of Building*, (London: E & FN Spon, 1992). But most architectural historians look at the world through spectacles tinted with similar prejudices to those of Nikolaus Pevsner. Amongst the deceased, Lewis Mumford and Spiro Kostoff were honourable exceptions, but Mumford would be more accurately described as an urbanist rather than an architectural historian, and possibly the same applies to Kostoff.

Approaching this photographic exhibition, the significance of the built environment to a culture is totally apparent. This is a world which is not well-known. Books on brick seem to devote little if any space to these remarkable buildings. They are omitted from both Andrew Plumridge and Wim Meulenkamp, *Brickwork Architecture and Design* (2000) and James Campbell, *Brick: A World History* (2003). Only Dan Cruickshank, *Around the World in 80 Treasures* (2005), with his visit to the Friday Mosque at Djenne, Mali, makes mention of these remarkable structures and the cultural environment which accompanies them.

The Friday Mosque at Djenne and a similar structure in Timbuktu, the Djinguereber Mosque, were the only buildings pictured of which I was aware before I went to the exhibition. Both have a distinctive external profile where the outer walls have protruding from them a series of regularly spaced double spars of wood. These serve two functions. As with tile in Roman flint walls, they help to bind the mud brick structure. Additionally they provide ready-made scaffolding for the annual plastering of the walls. Mud brick decays unless it is well-maintained and this maintenance involves an annual plastering. Dan Cruickshank's television programme suggested that at Djenne this form of communal social activity was welcomed by the people of Djenne, as emphasising the importance of their religion, and this is confirmed by Suzanne Preston Blier in her text accompanying the wider selection of James Morris' photographs. Incidentally communal activity has served to keep the craft of adobe construction alive.

In her essay Suzanne Preston Blier tells us that with the preference for concrete building, the ability to use adobe is now a lost art in Batammaliba, on the border between Benin and Togo, and could be becoming rare in other regions. James Morris reports that many Kassena villages in Burkina Faso have no living person "who could build from scratch the traditional circular women's compounds".

Partly it was the hostility of Christian missionaries to Animist traditions, including building techniques, which began this de-skilling. Partly it is new money, now mostly from Islamic countries, which encourages the use of concrete. Partly it is how people are taught to see themselves in an ever changing world where the new and the novel are prized above both the traditional and the spiritual. This is a problem not confined to West Africa; it occurs throughout the globe. Concrete in the African heat would strike me as one of the *least suitable* building materials.

In the traditional world view, people adapt to their physical environment and produce a built environment in harmony with it. To try the novel involves an intellectual expense way beyond the cost of building: John Wellborn Root and the grillage beneath 'The Rookery' in downtown Chicago is an obvious example from the wetlands of the wild onion field; looking down on the landscape on both shores of Lake Michigan, one can see what the native Americans meant when they talked of "checogu", the native name for Chicago.

The adobe buildings of West Africa are in complete contrast to the skyscrapers of Chicago, not least because the cultures which made each are so totally different. Both sets of structures require architects and builders. The similarity does not end there. Architects in West Africa have learnt their trade by sitting at the feet of a respected master: Frank Lloyd Wright always referred to Louis Henri Sullivan as *leiber Meister* and wrote *Genius and the Mobocracy* (1949) to demonstrate his affection for the man who taught him how to be an architect. In the Huasa region which straddles the border between Niger and Nigeria, Falke Barmou, now retired, has been followed by several protégés. They include El Hadj Abou Moussa who designed the new mosque at Sanam, Niger. It has an extraordinary vaulted interior, one which despite the different requirements for the worship space would not be out of place in a medieval Christian church. The mosque at Sanam was built in forty-five days in 1998 during Ramadan.

The speed at which adobe buildings can be constructed was demonstrated in Aberystwyth by Apouri Ouele from Burkina Faso who built a conical adobe 'grenier', or grain store between 17 June and 3 July, finishing it in the weekend of the Tenth International Ceramics Festival, held between 1 and 3 July. When the writer saw the grenier it was almost complete. Apouri Ouele was putting the finishing touches to the structure, a series of triangles, filled, striated and blank, in black paint. In the exhibition, there was a photograph of the mother of the chief of Tangasoko outside her living quarters. These have a wide range of decoration including the use of triangles in black paint. Women's buildings are circular; men's buildings are rectangular in Burkina Faso. The distinction is common over much of the Sahel and the western Sudan (a geographical not

a political entity). Decoration for the Tangasoko is in black paint. Further south in Ghana, the women's compound in Sirigu used black paint as a background and had triangles in white, red or orange-buff paint.

Having seen the exhibition in Aberystwyth, the editor was able to appreciate differences in grain storage pods between Niger and Burkina Faso, two of the world's poorest countries, whose plight, due to climatic change and locust infestation has filled new bulletins on our television screens and in the broadsheet newspapers in July and August 2005.

These are a proud people with a rich heritage. They live in some of the harshest conditions on the planet. They have produced a sustainable architecture, albeit one requiring high maintenance. Their achievement against heavy incursion by outside forces - Arab, other African and European - is amazing. They struggle against odds few Europeans could contemplate. They deserve the world's respect and not merely a few scrapings from its abundance.

The British Brick Society has had a most successful series of visits and meetings during Summer 2005, including the society's first venture outside of England: a Scottish meeting was held in August, attracted a good response. which a Reports of meetings held in July and August are a major feature of this issue of *British Brick Society Information*.

On his way to the Scottish meeting, the society's visits co-ordinator spent time in Glasgow, as will be seen in the note on the Templeton Business Centre in the notes on Heritage Open Days, elsewhere in this issue of *BBS Information*. One of the modern brick buildings he saw when walking round Scotland's industrial capital was the Royal Scottish Academy of Music and Drama, built between 1982 and 1987 to designs conceived in the 1960s by Sir Leslie Martin with Ivor Richards, for which the executive architects were William Nimmo and Partners. This striking structure at the opposite end of Renfrew Street to Scotland's most famous building, the Glasgow School of Art, was a complete surprise. The faces to both Renfrew Street and Hope Street is in a carefully chosen orange brick set as recessing piers. It was so unexpected to one who had not visited Glasgow before that as editor of *British Brick Society Information*, the editorial prerogative of choosing the front cover has been swayed in its favour.

More seriously, Glasgow has a number of late-twentieth-century brick buildings which would repay closer inspection. If a knowledgeable guide can be found, in either 2007 or 2008 a city tour will be arranged for members. These buildings include Glasgow's Concert Hall of 1987 in a black brick and, of a somewhat earlier vintage, the Glasgow Film Theatre of 1939, originally built as the Cosmo Cinema.

Equally, the visits co-ordinator is looking to hold another brickworks visit in Scotland in the next few years.

It has taken thirty-three years for the society to arrange a visit to a brickworks in Scotland but the society has yet to visit Wales, despite the obvious attractions for brick enthusiasts of Clwyd, in the north-east, or Gwent and south Glamorgan, in the south-east. Going through Powys by various routes has also opened the editor's eyes to the possibility of visits to both Newtown and Llandrindod Wells. Hopefully a visit to Wales will be arranged in the not too distant future. Even in the twenty-first century, each of Wrexham, Ruabon, Newtown, and Llandrindod Wells remains accessible by rail although only the two first named are on the same railway line.

This issue of *British Brick Society Information*, published in February 2006, was originally prepared for December 2005. The society's journal will reach issue **100** later in Spring 2006. The editor has received a good response for this, which will be a larger than normal issue. As the

society's chairman said that the Annual General Meeting in King's Lynn in June 2005, *British Brick Society Information*, **100**, is an opportunity for the society to have a bumper issue, binding constraints notwithstanding, and for as many members as possible to contribute. Several already have and should, by the time they receive this issue, have been supplied with proofs for the longer items.

Issue **100** is a milestone for any publication, especially for one which began as a single cyclostyled sheet: despite seven house moves since 1974, the editor still has his copy, although not all of the earliest issues, some of which were lost over twenty years ago. It is a milestone also for a periodical which was dismissed as unlikely to last more than a dozen issues.

In 2006, the society hopes to produce four issues of *British Brick Society Information*. There have been previous years with four issues of *BBS Information* – 2000 and 2001 – and if enough material is forthcoming this may become the norm although three issues per year is the editor's aim. Partly because of the volume of the society's activities - no fewer than six meetings in 2005, for which reports are included in issues of *BBS Information* - and the constraints of binding each issue restricting it to a viable maximum of 36 pages plus cover, there is often sufficient material for seven issues over the course of a two-year period.

Some sad news arrived just as this issue was being put to bed. Professor John Prentice, a long-standing member and active participant in the society's meetings died on Monday 9 January 2006 after a long and debilitating illness. In 1994, John was persuaded to arrange a walking tour of Pershore to where he had retired. In 1990, John wrote a useful book, *Geology of Construction Materials*, of which Chapter 5 deals with 'Structural clay products', mostly brick and tile. The British Brick Society extends its condolences to his widow, Pat, who accompanied John to our meetings..

DAVID H. KENNETT
Editor, *British Brick Society Information*
Shipston-on-Stour, 8 February 2006

Contribution Requested

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

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

DHK

INDUSTRIAL DISPUTES IN VICTORIAN BRICKYARDS

1: THE 1860s

P.S. Brown and Dorothy N. Brown

Bricks were crucial to the building of Victorian Britain but the operative brickmakers who produced them commanded little respect. Their domestic conditions were notoriously poor but, here, we wish to focus attention on their status at work by examining industrial relationships in the brickyards during the 1860s. This decade is chosen because the operative brickmakers, as well as defending their immediate wage packets, were often attempting to resist the introduction of brick-making machinery. In this they were supported by brickmakers' trade unions to which some, but by no means all, workers in the brickyards belonged. There were wide differences in skill among these workers, ranging from the experienced moulders to some who were little more than semi-casual general labourers. It is intended that a subsequent paper will consider industrial relations under the changed conditions of the 1890s.

A dark corner of the brickmakers' activities was revealed by enquiries into violent 'outrages' in Sheffield and Manchester, allegedly committed by brickmakers and their trade unions.¹ In 1864, for example, one brickmaster introduced a 'hand machine', reducing the cost of producing 1000 bricks by 10 old pence (10d). He employed 100 workers of whom 24 were members of a brickmakers' trade unions. They demanded that the 10d should be passed on to them but, because the master offered only 6d, went on strike. After three weeks, three returned to work for the 6d offered. One, a brick burner, was 'beaten up' and was in hospital for six weeks. Two officers of the Stockport Brickmakers' Union were given 20-year sentences for assault, but were pardoned when the victim was induced to sign a document stating that they had done him no injury.²

The most serious incident was in Ashton-under-Lyne where an employer took on non-union workers. In retaliation, union men destroyed about 16,000 green bricks by 'trampling' them at night. Later they trampled a further 20,000 but, while returning home, they were accosted by the police and in the resulting struggle one policeman was shot dead. Of six men charged with the murder, one received a life sentence and one was hanged. Members of the same union were believed to have been involved in a serious but non-fatal shooting of a night watchman in a brickyard where non-union men were employed in place of union members striking for an increase in wages.³ Other reports mentioned men carrying pistols, and some employers received death threats. One claimed to have abandoned his business as he 'thought it better to give it up than to lose his life'. He had employed non-union men and paid them less than the 'club price': consequently his bricks had been trampled, his sheds set on fire, his dog killed and a bottle of 'combustibles' was thrown into his house.⁴ Other brickmasters had gingerbeer bottles packed with gunpowder or naphtha thrown through their windows.

Some masters employing non-union workers had their clay 'needled', i.e. contaminated with needles, nails or broken glass – which could be a serious deterrent to hand making of bricks. But it was the use of brick-making machinery which was a particular focus of the brickmakers' attacks. Members of the Manchester union were all hand-makers and it was against club rules that bricks should be made by machine. In 1862 a manufacturer of machine-made bricks had his engine house blown up: his machinery broke down with unexpected frequency and his boilers were drained so that they might blow up. His workers were assaulted and a carter carrying his bricks victimised.⁵ Builders and bricklayers using machine-made bricks were also targeted and their freshly built walls pushed over by gangs of brickmakers.

The commonest cause of strife with the unions in the 30 establishments investigated was the employment of non-union labour, either initially in 12 instances (x 12), or in place of striking union men (x 7). Next was the introduction of brick-making machinery or the use of machine-made bricks (x 8). Forms of retaliation included trampling of bricks (x 13); needling of clay (x 8); and damage to machinery and its sheds by explosives or quiet sabotage (x 9). Workers were beaten up (x 5), masters' houses attacked (x 5) and fresh walls pushed over (x 3). Violent protests were, of course, by no means peculiar to brickmaking. Nor were they confined to Manchester and Sheffield: at Widnes, for example, striking brickmakers intended to blow up three brick-making machines which had arrived in the town⁶ and, at Aston (Birmingham), two brickmakers were each sentenced to 14 years for killing three horses and injuring others belonging to a brickmaster who would not employ union members. This and related incidents were responsible for the formation of the Birmingham Brickmasters' Association to agree prices and wages and to present a united front to striking brickmakers.⁷

The enquiries into violence found separate brickmakers' unions in Manchester, Stockport, Ashton-under-Lyne, Oldham and Sheffield, with some rivalry between them. The Manchester union opposed the use of bricks made outside its area and had an agreement with the Manchester Bricklayers' Union for them not to use 'foreign' bricks. This territorial system militated against cooperation between unions but around the time that the policeman was shot, and perhaps because of that incident, an amalgamation was attempted between the five brickmakers' unions listed above with ones in Liverpool, St Helens and Birkenhead (where attempts had been made to blow up a kiln⁸). A delegate to an early meeting thought little headway was being made but, in early 1867, a meeting of the Operative Brick-Makers' General Amalgamation held in Birmingham reported good progress. Thirty-five delegates represented 2400 members in the eight districts mentioned above as well as ones in towns including Preston, Warrington, Widnes, Blackburn, Crewe, Blackpool, Jarrow, Newcastle on Tyne, Wigan and Bolton.⁹ This amalgamation of Northern unions should have been a powerful force, but little more seems to have been heard of it.¹⁰

Brickyard strikes were not necessarily dependent on pre-existing trade unions. At Bridgwater (Somerset) in February 1864 up to 100 workers from two major brickyards went on strike because the masters required them to dig 20 yards of clay for the same pay as previously received for digging 16 yards. This work would seem to involve the less skilled but the newspapers described all the strikers as brickmakers. They received support from public meetings reported to be attended by up to 3000, mainly of the working classes but also of some tradesmen who raised funds by posting notices in their windows. Workers in other brickyards also helped but it was not until the strike was under way that it was decided to form a Society in which those in work would pay 2d a week 'for their benefit when occasion arose for them to strike work'.¹¹ Similarly in 1866, brickmakers in Barnsley struck for an advance of pay but, as previously they had achieved no success, they decided to form the union of Operative Brickmakers of Barnsley. In the same year, brickmakers in Nottingham who had had little success at resisting pay cuts 'for the want of a union for the last five years', decided to form the Union of Operative Brickmakers of Nottingham and District. While other brickmakers' unions existing in the 1860s soon disappeared, the Nottingham union continued into the twentieth century.¹²

Away from the industrial North, the Friendly United Society of Operative Brickmakers of London and Vicinity was founded in 1859, later appearing as the United Operative Brickmakers' Benevolent and Protective Society of the South of England and claiming nearly 1000 members in 1866. These names suggest that it may also have functioned as a friendly society, but we have no positive evidence of this.¹³ A common problem in the brickmaking centres around London was that masters tried not only to reduce rates of pay but also to require

the brickmakers to sign a year's contract at the reduced rate. The brickmasters warned that they had formed an association and that a brickmaker discharged by one of them would not find employment with any of the others.¹⁴ The union claimed to have resisted pay cuts in Ilford, Wanstead, Stratford and Croyden, but they had to deal with several legal cases.

The union succeeded in claiming his 'back pence', which the master intended to withhold, for a member dismissed for belonging to the union. Back pence was part of a brickmaker's pay withheld until the end of the season and only paid if nothing untoward had happened such as green bricks being ruined by heavy rain. In that circumstance brickyard workers had to come in to cover the bricks at any hour, but with no extra pay. In other cases, brickmakers were prosecuted for refusing to work at reduced pay after signing a contract but when, they claimed, the master had either breached the written contract by a subsequent pay cut or had not fulfilled a verbal undertaking. In one instance three brick-moulders were arrested but not prosecuted on condition that they returned to work for the reduced pay. This they agreed to do but could not comply because the reduction of pay to the moulders would result in a proportionate reduction in that passed on to their gangs. Consequently, they could not find men to work for them.¹⁵

In January 1867, brickmakers in Essex were locked out for refusing to accept a cut in pay. To support them, the union had to appeal for funds in the *Beehive* (a sympathetic publication); and three weeks later a further 'urgent plea' to all trade unions appeared. The secretary explained that they had given much assistance during frequent strikes and also incurred considerable legal costs: now 'our funds are exhausted'. Early in April, the secretary made an impassioned plea, particularly directed at the Northern brickmakers who had failed to respond to earlier requests. Yet another appeal ended by listing the contributions received from various trade unions but from no brickmakers except the Nottingham union. The London society was clearly in serious trouble and the brickmasters took advantage of the situation. First a large employer in Stoke Newington locked out his brickmakers who refused to accept a cut in wages and he was followed by employers in Sydenham and Deptford who evicted strikers' families from their cottages, including a wife shortly to give birth.¹⁶ It is not surprising that the union was defeated, ending in debt for which the unfortunate secretary was imprisoned.¹⁷

Disputes in London and the industrial North during the 1860s cannot be taken as typical of the whole country, but information about them is relatively easy to find. Many brickyards must still have been small and isolated, with little 'organisation' of their labour. An estimate suggested in 1867 was that only about 6% of 42,623 brickyard workers belonged to a trade union.¹⁸ It would require long searches in local newspapers and other records to identify disputes in smaller centres, and often reports were brief and biased. A local paper reporting a brickyard strike around Hereford, for example, merely commented that if the masters cannot procure fresh hands 'they will be subjected to considerable inconvenience' – so, one feels, might the hungry strikers.¹⁹ The violent responses around Manchester may also be untypical as Connolly, in a comprehensive study of brickyards in North Wales, could identify only two violent or threatening incidents, and neither in the 1860s.²⁰

The brickmakers had many reverses in the 1860s. In Manchester they could not halt mechanisation in the brickyards particularly when, at the same time, the Manchester Architects reported strongly in favour of machine-made bricks.²¹ In Liverpool, the Amalgamated Bricklayers, Bricklayers' Labourers, Brickmakers and Plasterers gave notice to builders that they would not allow the use of bricks made by steam power 'as the brickmakers of Birkenhead and its vicinity can supply you with as good an article, if not superior, to ones now made by steam power, with the exception of white and blue fire-bricks'. But a meeting of Liverpool architects was told that not to introduce brick-making machinery would be 'suicidal'.²² It is surprising that the operative brickmakers could expect to control the supply of bricks to a builder: that would

seem to be the business of the brickmasters, but one of the latter explained that the operatives were 'a numerous body of men closely combined together, possessing both a determined will and funds to carry out their implied threats.'²³ So the organised brickmakers were by no means powerless but, in the long run, the organised brickmasters could usually win.

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Rhom Bricks - and a possible explanation for unusual bonding in the former German Democratic Republic

Terence Paul Smith

In a recent issue of *British Brick Society Information*, Paul Sowan drew attention to some World War II and Cold War military structures, including bunkers, built by the former USSR in what was then the German Democratic Republic (now eastern Germany).¹ On his visit it was possible to examine only the wallfaces, not the arrangement of the bricks within the thicknesses of the walls; nor was it possible to measure the wall thicknesses. What is puzzling is the bonding pattern, which resembles English Bond in having alternate courses of headers and stretchers but with the bricks so arranged that there are continuous vertical joints corresponding to the joints between the stretchers (Fig. 1). This, Paul Sowan aptly comments, "contravenes one of the 'ten rules of bonding' that I was taught at Croydon Secondary Technical School .. in the 1950s ...". It is especially perplexing since continuous vertical joints make for weaker construction, whilst military structures, including bunkers, are precisely the kinds of buildings in which one might expect *strength* to be of paramount importance.

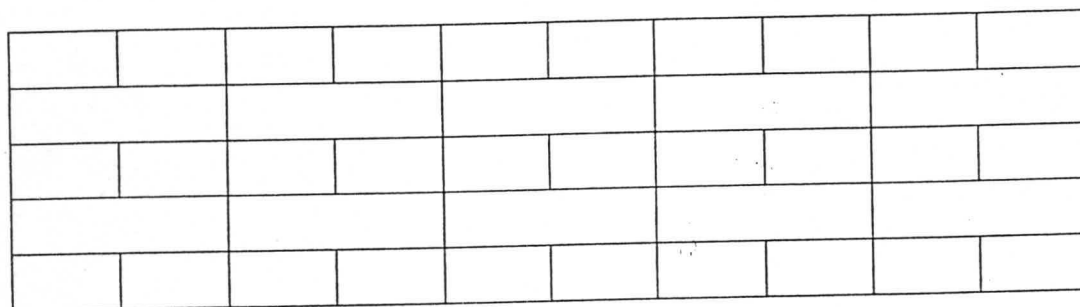


Fig. 1 The distinctive bonding pattern based on a photograph taken at Altengrabow.

One possible explanation is that the bricks are not standard rectangular types but equivalents of what in Britain were known as *Rhom Bricks*, patented by Rhombrix Ltd in 1939.² They were so-called because instead of the rectangular bedfaces of standard bricks they had a parallelogram-shaped – though not actually *rhombus*-shaped – bedfaces. At first, they had angles of approximately 60° and 120°, although by the late 1940s they were made with angles of approximately 75° and 105°; this later version was also somewhat smaller than the prototype, the breadth of 4³/₈ inches (111 mm) being more convenient in the bricklayers' hands than the earlier 5 inches (127 mm). Special quoin bricks were needed to form right-angled corners and special truncated wedge-shaped 'stopper bricks' were available if rectilinear rather than splayed reveals were required to openings; the stopper bricks were also needed to maintain bond in certain bonding patterns. They could also be used on their own to produce thin solid walls or in combination with the normal Rhom Bricks to create cavity or solid walls of varying thicknesses. They could also be employed, on edge, as coping bricks, and, in pairs, to form central keys in flat arches, with normal Rhom Bricks used as (rather wide) voussoirs. The normal Rhom Bricks could be used to create dog-tooth (serrated) wallfaces. Moreover, it was possible to use these bricks, sometimes with a semi-circular groove down the centre of one stretcher face, in reinforced brickwork of various kinds. They were thus a very versatile material.

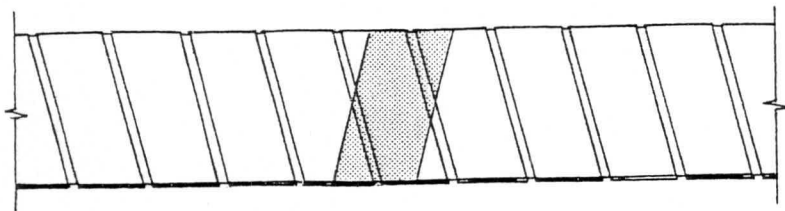


Fig. 2. Rhom Bricks in one course of a (nominal) 9-inch wall; the stippling indicates one brick of the course above; with this arrangement the wallface would appear to be in Header Bond.

They had the further advantage of *strength*, even in non-reinforced brickwork, since in many bonding types each brick overlapped three (Fig. 2) or sometimes even four bricks in the course below. This, whether reinforced or not, would make them especially suitable for military structures. Using Rhom Bricks (or their equivalents), wallfaces could have the appearance of English or of Flemish Bond, but a variety of other bonding patterns could also be created, including several with regular continuous vertical joints but without compromising the strength of the brickwork, since the bricks still overlapped those of the course below despite the fact that the *appearance* of the wallface would suggest otherwise. Indeed, it was possible to create the appearance of a wallface entirely of headers one above another, with continuous vertical joints every 125 mm or so but still with each brick (of the later type) overlapping two of those in the course below.³ By arranging alternate courses in particular ways it was possible to produce, *inter alia*, the bonding pattern illustrated in Figure 1. Figure 3 shows one such arrangement, in a wall of (nominal) 14 inches (355 mm) thickness; there were other possibilities too, with reinforcement included if desired.

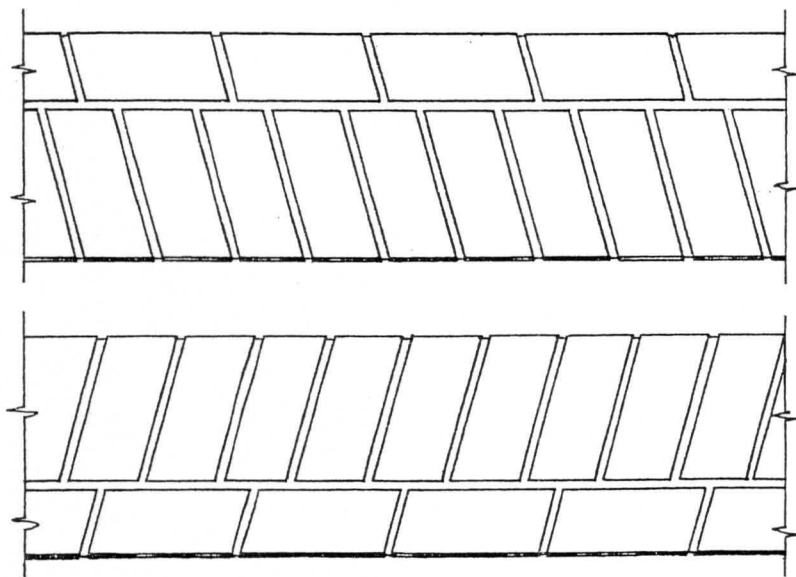


Fig. 3 Alternate course of a (nominal) 14-inch wall of Rhom Bricks so laid that the wallface would appear as in Fig. 1.

Whether or not similar bricks were indeed responsible for the appearance of the eastern German structures, Rhom Bricks are interesting in their own right. They were one of several innovations in British brick manufacture – particularly from the nineteenth and twentieth

centuries – which were vigorously promoted by some and seemed to promise much, but which nevertheless failed to find general favour vis-à-vis standard bricks.⁴ Unlike some of those innovations, Rhom Bricks, at least in their second form, were easy for bricklayers to handle and the number of specials required for various purposes was small, whilst some of these (the stopper bricks) actually increased the versatility of the material. Why then did they not find favour amongst architects and builders?

The most significant reason is that any advantages that they conferred (or seemed to confer) were not sufficient to enable them to compete successfully with the well-established standard bricks. For most building purposes the additional strength offered was unnecessary – in an average house, for example, standard brickwork is normally already stronger than it needs to be. Moreover, the "advantage" of extra strength would not necessarily apply to 11-inch cavity walls, which were dominant in domestic and some other building at the time, since in the leaves of these, so long as they simulated Stretcher Bond, the Rhom Bricks would overlap only *two* of the course below, just as in standard brickwork; only by resorting to Raking Stretcher Bond could a triple overlap be achieved. With the increased use of frame construction, involving brick cladding or infill, the strength of the brickwork was not of great importance. Dog-tooth brickwork could be formed as easily with standard bricks as with Rhom Bricks. The one remaining "advantage" was the variety of bonding patterns achievable with the Rhom Bricks whilst retaining the overlap of the bricks. Some of these patterns, however, are unattractive or even disturbing: continuous vertical joints – except in relatively small panels in framed construction or within larger patterns of bonded brickwork – give a disconcerting *appearance* of weakness, as exemplified by Paul Sowan's comment on the military structures in eastern Germany. A disadvantage of a different sort, shared by most non-rectangular bricks, is the greater difficulty in packaging them for delivery.⁵

In conclusion, then: despite the advantages (real or alleged) urged by their promoters, Rhom Bricks, like several other advocated alternatives to standard bricks, failed to find wide acceptance. For the reasons mentioned in the previous paragraph, that negative response is not perhaps surprising.

NOTES AND REFERENCES

1. P. Sowan, 'Russian Brickwork in the Former German Democratic Republic', *BBS Information*, 97, July 2005, 15.

2. W.B. McKay, 'Brickwork', in E. de Maré, (ed.), *New Ways of Building*, London: The Architectural Press, 1948, pp.165-7; I have followed McKay in giving 'Rhom Brick(s)' initial capitals. The Churchill Archives Centre at Churchill College, Cambridge, contains a letter from R.B.E. Jackson of Rhombrix Ltd, at Richford Street, London, to (Sir) Winston Churchill dated 28 February 1939 and enclosing a booklet on the bricks, which are described as the first attempt to introduce a new shaped brick since the age of the Pharaohs! Churchill's reply (carbon copy) is dated 3 March 1939. The letters are listed in the catalogue at <http://www.archives.chu.ac.uk/perl/node?a+a&reference=CHAR%201%22F350%F13> and ... 2F14. There is a brief entry under 'rhomb

brick' in J.S. Scott, *A Dictionary of Building*, Harmondsworth: Penguin Books, 1964, p.262, where it is described as "experimental".

3. There is a photograph of this, in a factory designed by W.S. Grice, an advocate of Rhom Bricks, in McKay, 1948, plate p.164; with the earlier type, each brick could overlap *three* of those in the course below: see McKay, 1948, p.165 and fig. 163.

4. For one example of such advocacy: B. Butterworth and D. Foster, 'The Development of Fired-Earth Brick', *Trans. British Ceramic Soc.*, 55, 7, July 1956, 457-505.

5. Various disadvantages of non-standard bricks are considered in T.P. Smith, 'Hiort Patent Chimney Bricks from Lambeth, London', *Trans. London & Middx Archaeol. Soc.*, 47, 1996, 190-191.

Heritage Open Days, 2005

Heritage Open Days were held nationally on the weekend of 10-11 September 2005 and in London on the weekend of 17-18 September 2005. The annual Churches Cycle Ride Day was held on Saturday 10 September 2005.

These short reports were submitted by various members from various of the days/weekends. The editor has also included notice of an interesting building seen during the weekend of the society's Scottish Meeting in August 2005. Members are encouraged to send reports from the days/weekends in 2005 and 2006 to the editor for inclusion in a future issue of *BBS Information*.

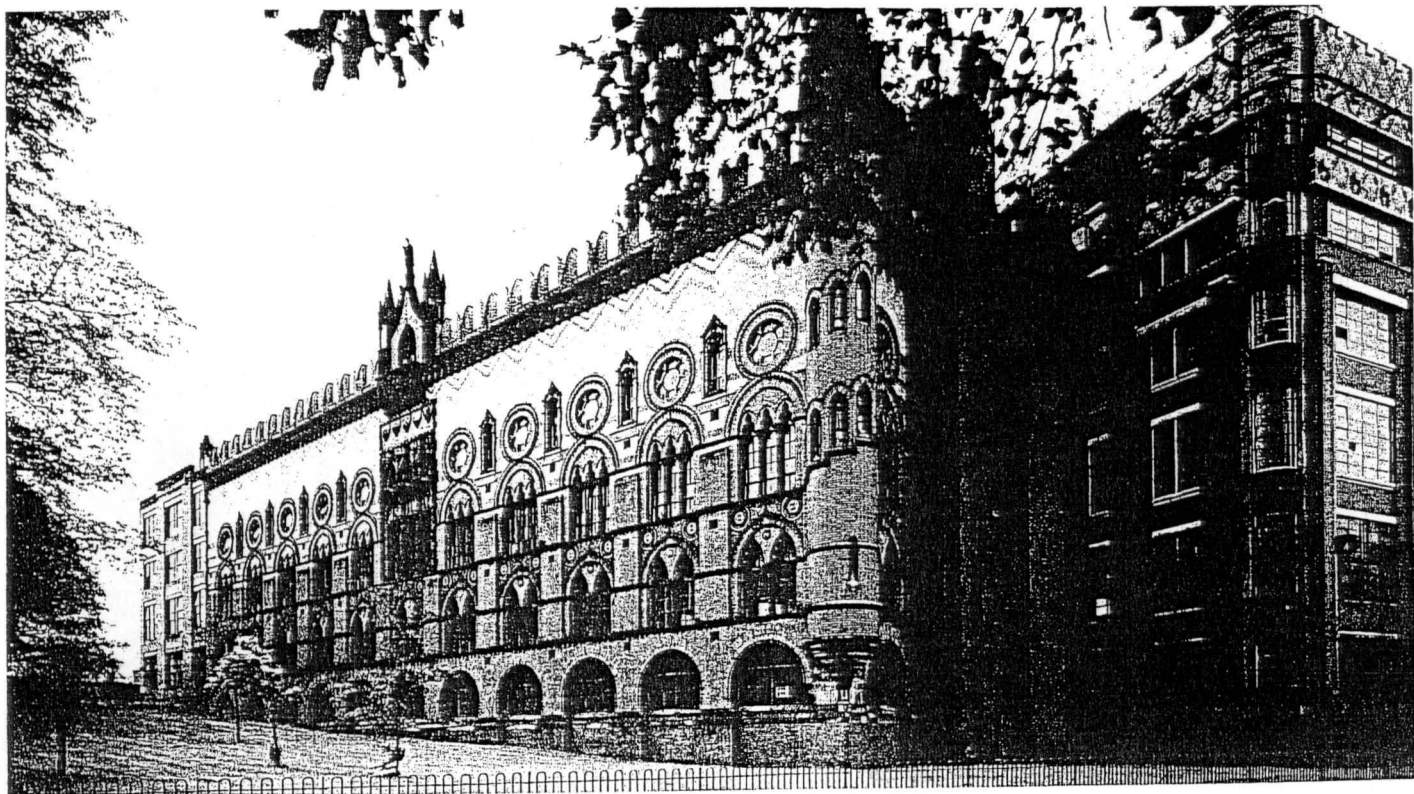


Fig. 1 The Templeton Business Centre, Glasgow Green, west front by William Leiper, 1888, rebuilt 1892, and south-west corner by George Boswell 1936.

TEMPLETON BUSINESS CENTRE, GLASGOW GREEN, GLASGOW

Even on the Sunday of the annual Glasgow Fair, this great cliff of patterned brickwork is highly visible from across the River Clyde, being not quite atop a slight rise above the level of the riverside walk: the ground continues upward to the north to meet the level of London Road.

The former Templeton Carpet Factory is really a great mill, designed by the engineers J.B. Harvey; William Leiper's front is just that: a screen wall. It fell down a year after the first time it was completed in 1888 with some loss of life and had to be rebuilt and more firmly secured to the mill structure behind. Building work was finally completed in 1892.

Behind the original building was a series of single-storey top-lighted weaving sheds. Here the work was done to weave the carpets, so the façade proclaimed. James Templeton and Son Ltd had been making carpets on the site since 1857.

The original structure is symmetrical, eleven bays wide with a distinctive centrepiece. The ground floor is arcaded in red sandstone; above this are two storeys mainly in red Ruabon brick, the lower with two-light windows, the upper with three-light windows. The twisted mullions to these are red terracotta. On the third floor are five large circular portals either side of the centrepiece and separated from each other by vertical windows set in red terracotta. The background to these is a bright yellow brick which at the top is cut by suspended triangle diaper in red and green glazed bricks. At the top, above a red terracotta and brick cornice, are Guelph battlements, each with the curving V-shaped notch. The centrepiece has moulded terracotta. At roof level there is an elaborate gable.

The original building has been much extended. To the south of the building a narrow wing and the circular corner tower was added by Leiper in 1897.

In the 1920s and 1930s much work was done to extend the carpet works: four and five hundred miles to the south the affluent workers of southern England wanted good quality carpets at reasonable prices for the floors of their semi-detached houses. George Boswell added further wings to make the whole into a courtyard. Most of these are relatively plain: sober red brickwork and glass as the skin to a steel frame. The last of Boswell's wings was south-west of the original building, a corner wing of 1936 with coloured diaper at the top, using a wider palate here than Leiper had done in his brickwork but partly echoing the colours of the tiles of the earlier tympana.

The whole was converted to a business centre by Charles Robertson & Partners between 1980 and 1985. In 2005, a new wing was being added at the south-west corner: only structural steelwork was seen at the time of the writer's visit.

On Glasgow Green, near to the carpet factory, is the huge Doulton terracotta fountain, originally the firm's principal exhibit in the Glasgow International Exhibition of 1888. A.E. Pearce knew how to proclaim the sovereignty of the British Empire: Queen Victoria above her subjects in Scotland, Wales, and England, first three soldiers and a sailor, and these above those in the colonies of Australia, Canada, South Africa, and India. They are brilliant terracotta figures.

DAVID H. KENNETT

THE JOHN KEBLE MEMORIAL CHURCH, MILL HILL, LONDON NW7

The John Keble Memorial Church is prominently sited on the corner of Deans Lane and Church Close in Mill Hill, London Borough of Barnet (Fig. 2). When built, in the mid-1930s, it was one of the more innovative of British churches. Mid-century assessment tended to be warm, (Sir) Nikolaus Pevsner describing it in 1951 as "[o]ne of the most interesting of the few London churches in the idiom of C20", and Michael Robbins, two years later, as "bold and lively". Now listed Grade II, it remains one of the more impressive churches from the inter-war period. At that time a suburban estate grew rapidly around the hamlet known as The Hale and in 1931 a young cleric, O.H. Gibbs-Smith, was appointed Priest-in-Charge, with services at first held in temporary accommodation.

The church was built in 1935-36 to a design by D.F. Martin-Smith (*fl.* 1934-1966), following a competition held in 1934, the assessor being (Sir) Edward Maufe (1883-1974), architect of the brick-built Guildford Cathedral. At Gibbs-Smith's insistence, it was erected as a memorial to John Keble (1792-1866), of whom the young priest was a great admirer. Keble had been one of the leaders of the Oxford Movement, and Gibbs-Smith's own High Church sympathies are reflected in the building itself: at one corner is a Lady Chapel, appropriate to Anglo-Catholic worship, whilst what might elsewhere be called a 'Sunday school' or 'children's

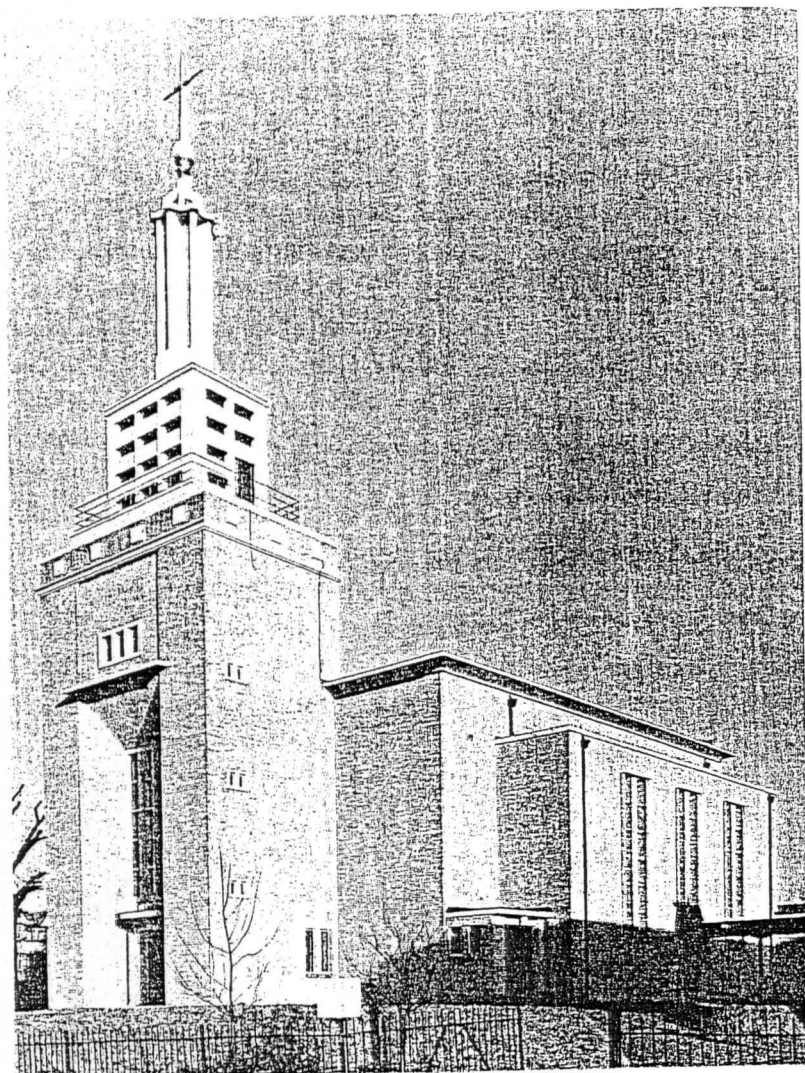


Fig. 2 The John Keble Memorial Church, Mill Hill, London NW7 from the south-west.

church' was here designated 'children's *oratory*'. The concern to involve lay people more fully in the worship, on the other hand resulted, in unconventional planning: the choir is located at the centre of the nave, partly surrounded by the seating for the congregation.

The church, oriented to the east-north-east, is of concrete frame construction with brick cladding. Viewed from the (liturgical) east, it comprises a series of flat-roofed blocks, beginning with a low-storey range embracing the sanctuary and containing the Lady Chapel, priests' room, sacristy, vestry, choir room, and churchwardens' room, as well as toilets and a connecting corridor. Windows here are quite small. Above this range rise the sanctuary and aisles, all with tall square-headed windows, each with slightly projecting brick jambs and a square central brick mullion. Above this again rises the almost-square block of the nave with quite widely projecting eaves. There are no clerestory windows. All this builds up to the tower with its tall rectangular brick block topped by a concrete lantern and spire, the latter with gilded orb and cross. Fenestration in the brick portion of the tower is minimal, except on the west front, where raked walls run inwards to the doorway and a lofty rectangular stone grid-window. This entrance is covered by a raked concrete slab: in its lower face, above an incised demi-eagle rising from flames, is the name JOHN KEBLE in incised seriffed capitals; below the eagle, and in similar but

smaller characters are the years of Keble's birth and death - 1792, 1866 - and the words PRIEST REFORMER POET SAINT (*sic*: the Anglican Church does not create to own saints - although Charles King and Martyr (*viz.* Charles I) comes suspiciously close - and the usage is entirely unofficial). This impressive entrance opens into a partly enclosed space containing the children's oratory, flanked by stairs leading to a west gallery. Access to the church is through low north and south porches set in the re-entrant angles between the nave and aisles at their west end.

The bricks used are London Stocks, of quite variegated hue, giving the church its distinctive yellowish appearance. They are laid in English Bond. Several show pressure marks, mostly longitudinal but with a dew diagonal: this disparity in numbers probably reflects the fact that the bricks were hacked in a parallel setting but with those at the ends of the alternate courses set diagonally to provide stability. Some of the brickwork has pulled away from the concrete frame - as often with such construction - and the resulting fissures have been filled, not very sympathetically, with mastic.

The interior is plastered. The ceiling of the main space is of a diagonal coffered design, reflecting the reinforced-concrete diagrid construction of the roof, and incorporating patterns of large coloured square tiles, somewhat reminiscent of the work of the Dutch artist Theo van Doesburg (1883-1931). In a High Anglican church a rood screen, if not quite a *sine qua non*, is a highly desirable feature. But the absence of a chancel arch made its provision problematic. The solution proposed was a free-standing structure in front of the sanctuary. In two variant designs it appears as a gawky construction, something like a signal-gantry. Fortunately, this distracting contraption seems never to have been erected, for it is not present in early photographs. The central placing of the choir is an interesting liturgical experiment, although, as Arnold Whittick has observed, "the altar remains a little remote", set, as it is, within the proscenium-like sanctuary.

Martin-Smith, in the partnership of Braddock & Martin-Smith and later of Braddock, Martin-Smith & Liple, continued to design churches in the post-war period. All are decidedly gimmicky, and there is nothing to match the simple dignity - or, sadly, the early promise - of the John Keble Memorial Church.

Close by the church is now the attractive Baden-Powell (Scout and Guide) Centre, built of brick in a Post-Modern style in 1998 by the Gordon Spence Partnership of Radlett, Herts.

TERENCE PAUL SMITH

THE CHURCH OF ST MARY MAGDALENE, WILLEN, BUCKINGHAMSHIRE

The parish church at Willen originally consisted of a west tower, with side pieces, a three-bay nave and a short chancel. It was designed in 1678 by Robert Hooke for Dr Richard Busby, sometime headmaster of Westminster School. Busby had been born in Willen and wished to replace the old Norman church which was no longer fit for worship. Willen church is red brick with stone dressings. The two sidepieces to the tower are single-storey rooms for a vestry and a parish library: the latter was given to Willen by Dr Busby in 1695. Within the barrel-vaulted interior are a remarkably complete set of church furnishings of the period of construction, the four years after 1678.

A cupola on the tower was removed some time after the church was illustrated in 1793 in *The Gentleman's Magazine*. The chancel was replaced by an apse in 1861 to a design by T.H. Lewis. By 1998, the north set of steps to the west door had been replaced by a wheelchair ramp, at a shallow gradient, in accordance with one of the first disability discrimination acts.

Although remaining headmaster of Westminster School until his death in 1695, then aged 89, Dr Busby had retired to Willen in 1671. The present Willen Hospice is built around a

replacement of 1822 for Manor Farm, his house, from which the cellars survive.

Busby had been born at Lutton, in the Lincolnshire fenland, where there is a brick church of fifteenth-century date. In his will, Busby left money for Hooke to repair and beautify this church; a pulpit of 1702 and possibly the communion rail are evidence of this bequest.

DAVID H. KENNETT

Brick Query

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

DHK

A STAMPED BRICK FROM THE ISLE OF WIGHT

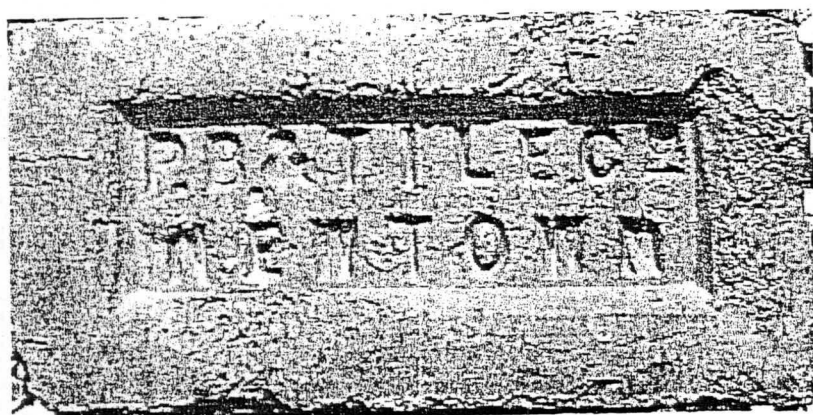


Fig. 1 Brick stamped P.B. & TILE Co NEWTOWN, found on the Isle of Wight.

The brick illustrated (fig. 1) is pinkish red in colour and has the stamp:

P.P. & TILE Co
NEWTOWN

It was found on the Isle of Wight but it is not from Newtown Brickworks on the island. Can any member held identify the source.

Replies to:

Mrs Jill Reilly,
34 Madeira Road, Ventnor, Isle of Wight PO38 1HW
e-mail: jillreilly@iwias.fsnet.co.uk
web site: iwias.org.uk
telephone: 01983-853612

Brick for a Day

In Summer and Autumn 2005, the British Brick Society held several meetings. In July there was a return midweek visit to Lambeth Palace, which included features not seen during the previous visit. The meeting in August was the society's first venture to Scotland when members visited the Errol Brick Company, Perthshire, and held a short afternoon visit to Dundee. In September, the society visited Charnwood Brick in west Leicestershire and in October the British Brick Society visited Brick Lane and other parts of east London.

The visits of these meetings were arranged by David Kennett and Mike Chapman. The society's thanks are due to them for the work they put into making these meetings a success.

A report on the meeting in October will appear in the next issue of *British Brick Society Information*. The unsigned accounts in this section of *British Brick Society Information* are by the society's editor.

DHK

LAMBETH PALACE

The society has visited Lambeth Palace before and the meeting on 14 July 2005 was arranged so that those unable to come in 2004 would have the chance to see the building. Verity Montagu gave an account of the previous visit by the society was given in *BBS Information*, **95**, November 2004, and *BBS Information*, **83**, contains an account of a visit made by David Kennett in 2000.

The day of the 2005 visit was one week after the terrorist attack on London's transport system, when a two-minute silence was held to acknowledge the lives of those killed a week earlier. This act of commemoration took place outside Morton's gatehouse and thus gave members the opportunity to examine two areas not usually seen on the tour of Lambeth Palace: Morton's gatehouse (fig. 1) and the west side of the great hall. John, Cardinal Morton was consecrated Archbishop of Canterbury in 1487 and died on 15 September 1500. Previously, Morton had been Bishop of Ely, consecrated on 31 January 1479. He was given the red hat in 1493.

Morton's gatehouse, built c.1495, is the brick building most readily associated with Lambeth Palace, although he is the most likely person to have added the upper storeys to Chichele's building in front of the chapel. The south and west walls of the latter are brick. Morton's gatehouse has two flanking towers five storeys high and a recessed central portion of three and a half storeys. The eastern one of the two towers had a porter's lodge on the ground floor, still used as such, with a small inner chamber, to the outer face of the building used as a prison. For several centuries, the ground floor of the west side was used for storage of the records kept by the Prerogative Court of Canterbury; the granting of probate for wills being the business of the church by law established until the civil authorities took it over in 1857. The floors above were used as accommodation by the archbishop's staff. Each suite of rooms had a large living room and a smaller room for sleeping, with a garderobe off. The eastern tower also had four sets of chambers but here the garderobe was entered from the outer chamber, the living quarters. Between the two towers was a two-storey passage entered from the front by a high double door or a low single door for pedestrians. This is rib-vaulted. Above the entry is a large room, variously known as the evidence chamber or the audience chamber.

Morton's gatehouse is brick with stone dressings and has simple lozenge and diamond diaper patterns. Similar diaper patterns may be seen on a drawing made in 1748 of the "Tudor"



Fig. 1 Morton's gatehouse tower: a modern view.

buildings demolished by Edward Blore for the present buildings on the north side of the courtyard at Lambeth Palace. These buildings may be from Morton's time or have been commissioned by one of his sixteenth-century successors. Morton is certainly known to have completed his predecessors' work at another of the archbishop's palaces, that at Croydon, Surrey, where he rebuilt the chapel and the west range: the latter is brick-built. He also built a gatehouse at Croydon Palace, demolished in 1808.

The great hall of Lambeth Palace was rebuilt for Archbishop William Juxon (in office 1660-1663) as a replacement for the great hall which had been destroyed during the Commonwealth. Samuel Pepys described Juxon's building as "a new old-fashioned hall" and having seen the exterior Inigo Jones' Banqueting House on Whitehall as I walked to Lambeth Palace, one can see what the diarist meant. Jones' work is classical and stone; the work for Juxon is gothic and brick. In one sense, its plan echoes that of a medieval great hall with service rooms at the low end and a high table light by a great window at the other end. Both west and east walls are brick with buttresses of brick with stone quoins. According to an engraving by Wenceslas Hollar of 1647, the preceding hall did not have buttresses; the 1697 engraving by William Kip clearly shows the buttresses .

In *BBS Information*, 95, November 2004, David Kennett drew attention to the use of bricks with pressure marks on the courtyard in front of the entrance to the crypt of the chapel. Other bricks with diagonal pressure marks were observed on the wall inserted by Blore to face the chapel's east window as the outside wall of the corridor leading from the great dining room to the state rooms within Blore's work.

ERROL BRICK COMPANY, ERROL, PERTSHIRE, SCOTLAND

In the village of Errol, many of the older houses are built in a distinctive but attractive pale red brick. These bricks a little larger than the standard southern English size. They are the products of the predecessors of the Errol Brick Company, on whose raw material is the glacial clay found in the Carse of Gowrie on the north bank of the Firth of Tay. This alluvial deposit, deposited as mounds of glacial till was left high and not very dry when the ice receded and as the pressure on the landmass was released raised the eastern Scotland by some 50 feet (15.25 metres). These clays have been utilised by two brickyards: the Errol Brickworks and the Pitfour Brick and Tile Works at Glencarse, some 4 miles to the west, which was in operation c. 1867 to 1913. The Errol Brickworks was formerly known as the Inchcoonans Tile Works.

Errol Brick Company have supplies for approximately three years at one claypit and seven years at another. The clay is thick, dense and has a high moisture content, approximately 18-19% being water. It makes a strong, dense brick. There is evidence that clay had been dug from the banks of the River Tay as early as 1750.

The earliest record of brick in the area is in 1785 when a farmhouse at Flatfield was built of hand-made bricks. In the same year, at Stanley, a village some 6 miles north of Perth, a six-storey cotton mill was built of red bricks with stone dressings and the two-storey houses associated with it were constructed from hand-made bricks using local clay.

In 1854 Lady Henrietta Allen of Errol Park sold land to John Adam for the making of drainage tiles, bricks, pottery and roofing tiles. Local farmers have been using the horseshoe-shaped drainage tiles for a century and a half with little trouble caused by the product, unlike modern plastic drainage tiles. Clay tile resists earth pressure and frost, plastic products do not, and in this area of Scotland winter temperatures can fall to minus 13°C, cold enough to freeze the clay. These climatic conditions have implications for the working of the brickworks. The raw material has to be gathered in before the winter as working the claypit is impossible. Five lorry loads of clay are delivered each day during the extraction season.

The brickworks at Pitfour were later bought by Alexander Frazer of Inchcoonans and a new factory at Grange of Errol was set up in 1937. This works, the nucleus of the present works had two round downdraught kilns, a rectangular downdraught kiln, a tunnel kiln and a modern shuttle kiln when recorded in 1979 by the Royal Commission on the Ancient and Historical Monuments of Scotland for their survey, *Brick, Tile and Fireclay Industries in Scotland*, (Edinburgh: RCAHMS, 1993). When the survey was published, this brickworks had been closed for a period. It remained closed until bought by the present directors Andrew Clegg and Martin Deighton.

The two beehive kilns remain: one is used as a showroom, where members were treated to coffee and from whose exhibition storyboards many details have been abstracted. This beehive kiln was in use from 1950 to 1986 but the intermittent downdraught kiln is an inefficient way to make bricks. Temperature is variable, with higher temperatures at the top, although there is an equal distribution of hot gases as they descend at approximately 950°C in an oxidising atmosphere. The waste gases are conveyed from the base of the kiln to an external square chimney but the smoke emissions are great, often with dangerous particulates. The kiln requires reinforcement with steel bands to prevent outward expansion. The operation of the beehive downdraught kiln was seasonal and no bricks were fired during the winter.

With a capacity for between ten and one hundred thousand bricks per firing, depending on the quantity of rooftiles and drainage pipes included in the loading, the intermittent downdraught kiln is less economic than a continuous kiln. The beehive kilns had disadvantages of seasonal use only and requiring much repair each year. For example, the roof lifts during each firing and requires resetting.

The modern shuttle kiln is used to fire 225,000 bricks each week, a yearly output of a million bricks. These bricks are extruded, wire-cut bricks with ten holes through them for ease of use. The extruder has a series of bolts in it to make the holes. The bricks are dried in chambers containing 24,000 bricks each for 24 hours before being sent onto the cars for loading into the kiln. Every 90 minutes an alarm sounds and a new car is loaded into the kiln as the fired brick on the car at the end of the process is pushed out of the kiln to go to the packing station.

The works ships out five articulated lorry loads of bricks per day.

Errol Brick Company still make drainage pipes. They also produce to order a few hundred hand-made bricks each month. The hand-made bricks are mostly used for interior work such as fireplaces.

A feature of the products of Errol Brick Company is earth bricks, made from unfired clay. Examples have been used in houses locally.

The British Brick Society thanks Martin Deighton, the Managing Director of Errol Brick Company Limited, for a most informative visit.

BRICK IN DUNDEE

The clay deposits used for the bricks made at Errol had earlier been the source for the bricks, made at the nearby Pitfour Brick and Tile Works, Glencarse, which were used to build the brick pillars and approaches to the ill-fated first Tay Bridge completed in 1878. The destination of the single-track lattice-girder bridge was the railway station at Dundee. This was built of pressed bricks from Glencarse, 4 miles west of Errol, using another glacial clay deposit of the same type used at Errol. The older buildings at Dundee railway station are red brick with stone quoins.

Dundee has a number of interesting brick buildings which members viewed after visiting the railway station. At 11-13 Crichton Street, W.J. Anderson designed a splendid frontage, basically in deep red brick, probably not from Errol or a nearby works, but with many other colours used also. There are bands of yellow bricks and what appeared to be unglazed green bricks, the latter complementing the green-painted oriel windows of the second floor. Above these windows is an ogee-shaped gable in red brick where the curving sides are made from specials, each course being narrower at either the outer or the inner end, thus producing the sinuous curve.

On Seagate are the buildings of Watson's Bond, occupying most of the space on the south side between Candle Lane and Trades Lane. Built in 1907 and designed by Johnson and Baxter, these five-storey bonded warehouses have now been converted to social housing with additional housing blocks of 1995 at the rear. The building on the corner of Seagate and Candle Lane is five storeys with a crow-steeped gabled attic to the Seagate frontage. This is a powerful building with a high arcade: shades of the much earlier Walker Warehouse in Chicago. On Candle Lane, the frontage block has a single round arch at fifth-storey level below a crow-step gable, all in red brick. The red brick building on the corner of Trades Lane and Seagate, again five storeys, contains a high arched entry in the centre. All this red brick, however, is just cladding: the structural work of these building is done by reinforced concrete on the Hennebique system. The additions at the rear are in yellow brick with red brick trim.

Between the two buildings of Watson's Bond is a two-storey office building, also of 1907 and also by Johnson and Baxter, the Loyal Order of Ancient Shepherds, with their nameplate still proudly displayed above a large brass letterbox. This is a charitable and savings body on the lines of the Ancient Order of Oddfellows. As befits its function as offices, there are large windows and high ceilings. Two storeys here are almost three storeys of the adjacent Watson's Bond.



Fig. 2 Watson's Bond, Seagate, Dundee, was built in 1907 as part of a bonded warehouse. It has now been adapted for use as social housing.

In Albert Square are many of the buildings of the commercial and civic life of the city. Most are stone-built but one is in red brick, the former Prudential Assurance Building of 1875 by Alfred Waterhouse and Son, most probably largely the son, Paul Waterhouse: he is recorded as responsible for the glazed tile interior. Adjacent is a modern brick building in brown brick, built as the Cleghorn Housing Association's offices (fig. 3), exactly a century after its neighbour. The architects were Baxter Clark and Paul.

The final brick building seen by members was the Dundee Arts Centre, at the western end of Nethergate. This was designed by Richard Murphy Associates in 1997 and opened in 1999. The brick reuses the bricks from a former building on the site. The interior is particularly well appointed with white walls and high-level fenestration to the exhibition gallery, which has white walls. There is good quality woodwork as covering to the walls of the entrance foyer.

Dundee has a strong tradition of fine stone buildings in different styles. Several were seen in the perambulation. In Albert Square there are two different interpretations of the Gothic: the Royal Exchange Building by David Pryce, of 1854, looking like a Flemish cloth hall, and the former Albert Institute of 1865-67 by Sir George Gilbert Scott, looking like a minatory north German town hall. This building, whose design is an adaptation of part of the unsuccessful competition design for Hamburg Rathaus, was sympathetically extended and is now the city's art gallery, the McManus Galleries. In the classical tradition is Dundee High School of 1824 by George Angus, with its large foreground occupying the north-western corner of Albert Square.

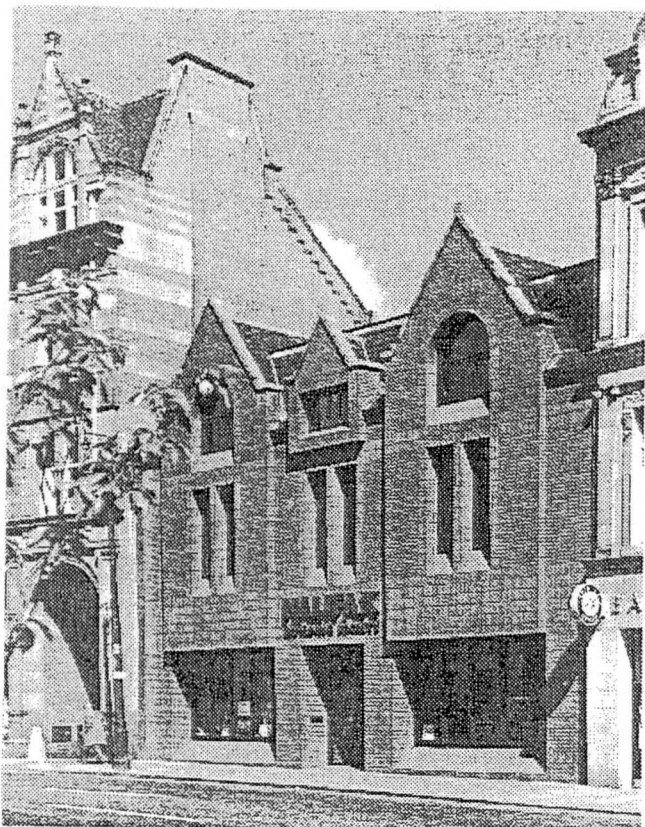


Fig. 3 Originally built as offices for the Cleghorn Housing Association, this modern building in brown brick on Albert Square, Dundee, is now the offices of a bank.

Shades of childhood could be remembered in the Courier Building, the headquarters of D.C. Thomson, owners of *The Dundee Courier and Advertiser* but also publishers of children's comics. The original building of 1902 by David Niven and H.H. Wigglesworth has an American feel: it is steel-framed, eight bays by three, five storeys and an attic; the foundations are reinforced concrete to counteract possibly unstable geology encountered at the Royal Exchange less than a hundred yards away. The whole presents itself to the world in red sandstone. Adjacent on Meadowside is an eleven-storey, three-bay tower in pink sandstone, very like the smaller, mid-century skyscrapers of provincial cities in the U.S.A. It was designed by T. Lindsay Gray and built in 1960.

Obviously in a short afternoon visit, members could not see all of what Dundee has to offer those interested in buildings and their social setting. There is a good architectural guide book: *Dundee: An Illustrated Architectural Guide* by Charles McKean and David Walker (Edinburgh: Royal Incorporation of Architects in Scotland, 1984).

Members wishing to spend more time examining brick in Dundee could include also the buildings of Dundee University, particularly the Old Medical School. Members did not get to see the complex at Cox's Mill, Camperdown, which has a very tall brick chimney.

Those interested in the Arts and Crafts tradition of the turn of the twentieth century will find many rewarding houses to see, particularly on Perth Road, and also commercial premises at 14-16 Murraygate of 1911, a conversion by local architects, Gaudie and Hardie, of an earlier, eighteenth-century house.

CHARNWOOD FOREST BRICK COMPANY, LEICESTERSHIRE

Members of the British Brick Society visited the Charnwood Forest Brick Company on Saturday 16 September 2005, followed by an afternoon visit to Sharpe's Pottery Museum at Swadlincote, Derbyshire.

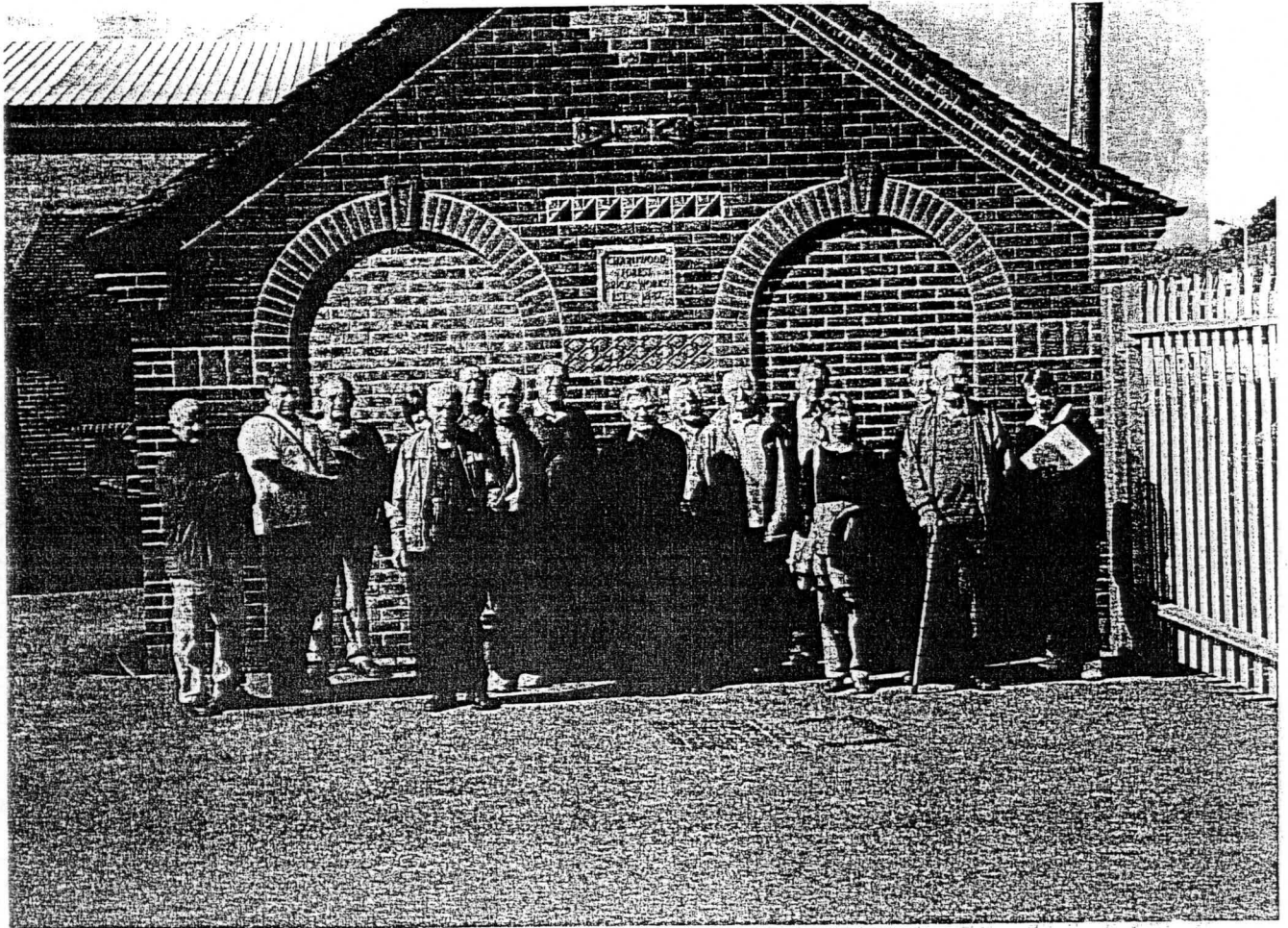


Fig. 4 Members of the British Brick Society at Charnwood Forest Brick Company

Charnwood Brick, now part of the Michelmersh Group are presently engaged in manufacturing so 800,000 handmade bricks for the restoration/refurbishment of the hotel buildings at St Pancras Station. Most of this work involves cutting out areas of original brickwork that has failed and replacing these with new brick.

To ensure a good match with the original facings, the Charnwood handmades are manufactured with a smooth-faced finished, and wedge-shaped and made oversize on length to allow for cutting in the fired state, all to ensure dimensional accuracy and ease of fit.

MIKE CHAPMAN

Review Article:

Important Essays on Vaults and Reinforced Brickwork

James W.P. Campbell

*Eladio Dieste: Innovation in Structural Art*¹ is not the first monograph on Dieste,² but this new volume is the one which will probably be of most interest to brick enthusiasts not just because of its beautiful photographs of stunning brickwork but also because of the essays on related subjects which it contains.

Eladio Dieste (1917-2000) is only now beginning to gain the recognition he deserves. He is one of those figures who defy categorisation. As an engineer, he also ran a building firm which gave him greater control over the design and construction than he would have had otherwise and he also acted to all intents and purposes as an architect although he himself eschewed the title. The fact that with the partial exception of the Church at Atlántida,³ until recently Dieste's work has been so little known in America and Europe⁴ can be put down partly to geography. Dieste was born, grew up and practised almost exclusively in Uruguay; and partly due to his choice of material, brick, which the twentieth century tended to see as somehow less modern and thus less interesting than concrete. Dieste's importance lies in his unparalleled mastery of the long-span reinforced-brick vault. His churches, petrol stations, warehouses, and grain silos have vaults that appear to float on slender supports and span 150 feet (45.75 metres) with cantilevers of up to 50 feet (15.25 metres) all done with brickwork only one brick (or at most two bricks) thick.

This particular monograph grew out of a symposium held at MIT in 2000. Professor Anderson has managed to arrange the various resulting papers into a workable book. It begins with an introductory essay by Anderson.⁵ Dieste's son then provides a commentary on a beautiful set of pictures of Dieste's house and reminiscences on life with his father. This is followed by four essays, interspersed with stunning photographs of all his major works arranged in chronological order. The first essay (again by the editor) is aimed presumably at architects, and makes the case for Dieste as an architect of outstanding merit, focusing on some of his more extraordinary churches.⁶

The second essay, by Edward Allen,⁷ is probably of more direct interest to enthusiasts for brick as it explains the relationship between Dieste's work and that of the Spanish engineer Rafael Guastavino (1842-1908). Guastavino was responsible for transporting the idea of Catalan vaults (also called "timbrel vaults") to America, where he improved upon them using methods of graphic statics developed by Karl Culmann in the 1860s. As Allen points out, Culmann's methods were also used on other materials by Guadi, Eiffel and Maillart.

Allen's article provides a useful introduction to Guastavino⁸ (who is less well-known in the UK than in the US) and clearly points out how his techniques relate to those used by Dieste (which is less than one might at first suppose). Guastavino employed Catalan vaults which are thin-vaults constructed of large flat bricks or tiles without centring held in place by quick-drying gypsum mortar. Allen points out that gypsum mortar was not waterproof and thus had to be supplemented by thin layers of Portland cement. The vaulting system was used in Spain as far back as the sixteenth century and possibly earlier. Members of the British Brick Society will note that if Guastavino's structures had used Portland cement that would have been a relatively early example of its employment and perhaps the first in this context. However, Allen does not explore this aspect, instead claiming that Catalan vaults traditionally used Portland cement, which is clearly an error marring an otherwise interesting piece.⁹

Allen is keen to point out that Dieste's vaults are not pure masonry structures in the traditional sense which is why - although they are thin - they have little in common with the traditional timber/Catalan vaults which Guastavino used. Dieste's vaults rely instead on steel reinforcement and have to be built with some centring. In this sense they are closer to reinforced concrete, a fact that he acknowledged with the bricks acting as close-fitting aggregate. The characteristic thinness derives from Dieste's use of highly efficient shapes for the vaults and a new method he invented for pre-stressing the reinforcement. The extruded wire-cut hollow bricks he employed had the advantages that they were lighter than normal aggregate, more thermally stable, and readily available.

Again pointing out the similarity with concrete, John Ochsendorf's essay¹⁰ then goes on to compare Dieste with Eduardo Torroja (1899-1961, a Spanish engineer who also used reinforced-brick shells and places him within the context of other better-known designers who used thin-shell concrete. The last essay in the main body of the book, by Remo Pedreschi (author of a previous monograph on Dieste) and Gonzalo Larrambebere,¹¹ categorizes the various structural forms Dieste employed, including his use of pre-stressing and shows how he defended brick as a modern material.

One of the more surprising aspects of the book is that some of the most interesting brick-related material can be found in the appendices. After some short essays by the engineer himself, black-and-white photographs show one of Dieste's vaults in construction. These are followed by a highly illustrated essay by Timothy Becker and Kent Anderson¹² giving step-by-step instructions on how to make Catalan vaults. This is one of the best accounts of their construction in English to date. Next there is an essay by Remo Pedreschi and Braj Sinha providing a detailed account of the development of reinforced brickwork from Brunel to the present day. Pedreschi and Sinha show how engineering research tends to happen in laboratories and pays little attention to innovative built works like Dieste's.¹³ Readers will find this essay invaluable as a summary of twentieth-century research into reinforced brickwork which promised a great deal but was rarely employed in practice. The account appears comprehensive for the twentieth century but its treatment of Brunel and other nineteenth-century pioneers of this type of construction is less convincing. The final two essays¹⁴ look at problems with use of Dieste's technology in the future, particularly as it is now acknowledged that his designs are subject to problems with corrosion of the reinforcement. The appendices end with maps and a chronological catalogue of his major works, together with a comprehensive bibliography.

There is no doubt that Dieste is interesting in his own right and as a pioneer of reinforced brick vaulting, but *Eladio Dieste: Innovation in Structural Art* is far from just a simple monograph of the South American architect. In compiling it, Professor Anderson has managed to bring together an indispensable collection of papers which should appeal to all those interested in the development of masonry vaulting from the sixteenth century to the present day and it is a very useful addition to the book shelf of any interested in beautiful innovative brickwork.

NOTES AND REFERENCES

1. Stanford Anderson (ed.), *Eladio Dieste: Innovation in Structural Art*, New York: Princeton University Press, 2004. 264 pages.

2. Two previous monographs are: Remo Pedreschi, *Eladio Dieste: The Engineers' contribution to contemporary architecture*, London: Thomas Telford, 2004; and Antonio Jiminénez Torrecillas,

(ed.), *Eladio Dieste: 1943-1996*, Seville: Consejería de Obras Públicas y Transportes, 1996.

3. A brief note on Dieste appears M.S. Baborsky, *XX Century Architecture*, Chichester: Wiley-Academy, 2001, pp.62-63, the Church of Atlántida, exterior photograph in black and white, plan and longitudinal section, with p. 318, biography. See

also the very recent publication: P. Gössel and G. Leuthäuser, *Architecture in the 20th Century*, Köln, London: Taschen, 2005, p.343 with interior in colour photograph and longitudinal section.

4. Dieste is *not* mentioned in the index of any of the following: D.P. Doordan, *Twentieth-Century Architecture*, London: Laurence King, 2001; K. Frampton, *Modern Architecture*, London: Thames and Hudson, 3rd edition, 1992; J. Glancey, *C20th Architecture*, London: Carlton Books, 1998; H.-R. Hitchcock, *Architecture: Nineteenth and Twentieth Centuries*, Harmondsworth: Penguin Books, 3rd edition, 1969.

5. S. Anderson, 'Introduction', pp.13-17.

6. S. Anderson, 'Dance without effort or fatigue: the architecture of Eladio Dieste', pp.32-41.

7. E. Allen, 'Guastavino, Dieste, and the two revolutions in masonry vaulting', pp.66-75.

8. For Guastavino see Janet Parks and Alan G. Neumann, *The Old World Builds the New*, New York:

Columbia University [exhibition catalogue], 1996.

9. Portland cement is a nineteenth-century innovation. Perhaps the earlier vaults used hydraulic lime mortars.

10. J. Ochsendorf, 'Eladio Dieste as Structural Artist', pp.94-105.

11. R. Pedreschi and G. Larrambebere, 'Technology and Innovation in the work of Eladio Dieste', pp.138-151.

12. T. Becker and K. Anderson, 'Building Catalan Thin-tile Vaults in Spain: a field journal', pp.202-207.

13. R. Pedreschi and B. Sinhua, 'Research and Practice in reinforced and prestressed brickwork and the place of Dieste within it', pp.208-219.

14. Antonio Dieste, 'A prospect for structural ceramics', pp.220-22; and Martin Seph, 'Unreinforced shell structures in traditional masonry: a contemporary approach to design and construction', pp.223-231.

Received for Review

Barbara Perlich and Gabri von Tussenbroek [eds.], *Technik des Backsteinbaus in Europa des Mittelalters*, [being *Berliner Beiträge zur Bauforschung und Denkmalpflege* 2]

154 pages, 108 illustrations

Petersberg, Germany: Michael Imhof Verlag, 2005.

ISBN 3-937251-99-5, price € unknown; £35-00 plus p. & p.

(Available from Buckland Books, Holly Tree House, 18 Woodlands Road, Littlehampton, West Sussex BN17 5PP)

A review of this important collection of papers arising from a conference on 'Brick Techniques in Europe in the Middle Ages' will appear in a future issue of *British Brick Society Information*.

DHK

Book Review

Lynn Pearson [ed.], *Tile Gazetteer: A Guide to British Tile and Architectural Ceramics Locations*,

512 pages; 32 colour plates, 363 black-and-white photographs

Shepton Beauchamp, Somerset: Richard Dennis for the Tiles and Architectural Ceramics Society, 2005

ISBN 0-903685-97-3; price £25-00, paperback.

(Available from Buckland Books, Holly Tree House, 18 Woodlands Road, Littlehampton, West Sussex BN17 5PP; p. & p. add 50 pence in UK, £1-00 overseas. Cheques should be made out to 'Tiles and Architectural Ceramics Society'; VISA, MASTERCARD and SWITCH - but no other - cards may be used; send usual card details, including card number and expiry date.)

This rather chunky publication, with its enticing cover photograph of the Doulton fountain (1887-88) on Glasgow Green in front of William Leiper's former Templeton Carpet Factory (1888), brings together a vast amount of information garnered by members of the Tiles and Ceramics Society (TACS) and edited by Dr Lynn Pearson.

The book begins with a multi-authored 'Introduction' on 'Decorative Ceramics in Architecture' (pp.8-28). Catherine Johns opens with a discussion of 'Fired Clay Tiles in Roman Britain', covering several ceramic building materials of the period, though - curiously - omitting others: voussoir tiles (solid and hollow), *tegulae mammatae*, and so-called 'lamp chimneys', for example; the essay includes the assertion that complete "tiles" (= bricks) "were not used as flooring in Roman buildings" (p.9), thus ignoring the small *opus spicatum* bricks which were used, on edge, for precisely that purpose. Beverley Nenck summarises current knowledge on 'Medieval Tiles' - floor, wall and roofing; but she does not mention the floor tiles - mostly plain, occasionally decorated - imported in large numbers into southern and eastern England from the Low Countries in the late Middle Ages. Although louvres, roof-finials, and chimney pots are briefly mentioned, the concentration on *tiles* ensures that shaped bricks used to create architectural decoration on late medieval buildings are not considered. Hans van Lemmen considers tiles and architectural ceramics 'From 1500 to 1830'. As one might expect, this is particularly good on tin-glazed wall and floor tiles, although, oddly, no mention is made of the introduction in the late seventeenth century of purple (manganese) glaze. He also considers early Tudor terracotta, brick chimneys, and the use of 'Coade Stone' (a form of terracotta) in the eighteenth and nineteenth centuries: he raises the intriguing possibility that Eleanor Coade may have adopted the term "artificial stone" in an attempt to avoid the Brick Tax of 1784 to 1850.

Tony Herbert provides a useful short summary of 'The Victorian Period to the First World War: an Overview'; and this is followed by a series of individual studies. Hans van Lemmen considers 'Ecclesiastical Tiles' in an expectedly competent manner. Alan Swale discusses 'Civic and Public Buildings', covering a wide range of buildings from the New Palace of Westminster (the Houses of Parliament), with its rich tiling, down to local post offices and railway stations: the story is largely one of terracotta and its glazed variant faïence. Bidy Macfarlane displays warm empathy in her discussion of 'Hospitals' - although this is a melancholy contribution since, as she stresses, so much has been or is still being lost, including some even quite recent tilework. Joan Skinner's consideration of 'Factories' views the subject against an historical and social background: covering a long period and variety of materials, it is a model of how such short essays should be written. A similar approach is adopted in Chris Blanchett's discussion of 'Shops and Commercial Buildings', emphasising the concern for hygiene in the choice of ceramics for butcher and other food shops. It makes poignant reading for those old enough to remember 'real'

Sainsbury's shops - with their mingled scent of bacon flitches, cheese, and butter! - or small local butchers' shops with tile panels of farm animals. David Kennett tells me of examples in one of the butchers' shops in Shipston-on-Stour: beef steers on one panel, pigs and chickens on another, and Cotswold sheep on a third. Other commercial buildings - banks or insurance offices, for example - might adopt architectural ceramics for reasons of prestige. Lynn Pearson's essay on 'Entertainment Architecture' is appropriately entertaining: it covers a wide spectrum, from a "day at the races" to "a night at the opera" (p.21), with much in between. She then goes on to consider the related topic of 'The Brewery Industry': in breweries, ceramics were adopted partly for hygienic, partly for advertising reasons; for public houses, it was largely the latter which predominated, although sanitary ware was also important. Equally concerned with matters of hygiene is Tony Herbert's brief consideration of 'Baths, Washhouses and Toilets', a sociologically important though often neglected topic. The essay ends with a nice comment on a particular problem concerned with the study of public toilets, with specific reference to "the gents at the Philharmonic Hotel in Liverpool, where the landlord is quite accustomed to requests for unisex access to view the tiles!" (p.23). Alan Swale and Lynn Pearson consider 'Monuments', an important aspect of ceramic history though not strictly *architectural*: the matter deserves a book to itself. Peter Rose brings the period to a close by discussing 'Tiles in a Domestic Context', he considers various applications, including tiles around fireplaces, particularly "designs based on a theme such as months of the year, scenes from Shakespeare, the novels of Walter Scott, Aesop's fables, classical figures or animals or birds" (p.25). But it is a pity that there is no mention of tiles once frequently but now less often seen in the interiors of domestic porches: these are items which - as my colleague Ian Betts first suggested to me - require urgent recording before even more of them disappear.

Chris Blanchett brings the story into more recent times with a discussion of tiles and architectural ceramics 'Between the Wars'. New manufacturing techniques were introduced and there were also changes of taste. The firm of Carter's of Poole, Dorset, was important in these developments, as was the design policy of the London Underground. Chris Blanchett concludes the story with a consideration of developments 'Post-War to the Present'. Again there were technical innovations, in particular the pioneering by Carter's of mechanical screen printing. Then came the DIY revolution, with thin tiles, mostly of foreign manufacture being sold by retail outlets. In the 1970s it "sometimes seemed that only tiled underpasses kept architectural ceramic decoration alive"; but then came a "rise of interest in tiles as a decorative medium" (p.28). The present situation is uncertain, although the introduction of new material "bodes well for the British tile industry of the twenty-first century" (p.28); one might add that the advent of Post-Modern approaches in architecture has encouraged the use of some other architectural ceramics.

If one has any qualm at all about this multi-authored approach - without, I hope, being merely carping - it is that it almost ineluctably leads to the omission of a number of topics which ought, really, to have been mentioned: the use of 'bottle bricks' to create fire-proof vaults and domes, most notably by Sir John Soane at the Bank of England, for example, or mathematical tiles to simulate brickwork or - in a nice reversal - the use of specially moulded bricks to simulate tile-hanging, or tile-hanging proper, post-medieval chimney pots and roof finials, plain unglazed floor tiles, brick gauged work, brick sculpture on buildings - even humble roof tiles, which are considered here in the Roman and medieval periods but not beyond.

The bulk of the book (pp.29-448) comprises a gazetteer, arranged first under country - England, the Isle of Man, Scotland and Wales (Northern Ireland is excluded) - and then England by county - including London - and Scotland and Wales by unitary authority. Each region is given a short introduction, a series of fairly full descriptions of particular features, and a "Roundup" of more briefly noticed examples. It would be both churlish and foolish to complain that this is - could *only* be - a *selective* gazetteer; but it *is* fair to insist that this ought to be

signalled in the title and made clearer in the preface. Strictly speaking, after all, a *complete* gazetteer would have to include every *in situ* chimney pot and all our B&Q-purchased kitchen or bathroom tiles! More seriously, in my home town of Luton, to take just one instance, the terracotta roundels - containing heads of prominent persons - and other decorative features, including a dragon finial, at Wardown House (1876; now Luton Museum and Art Gallery) or the tile panels with Art Nouveau plants and musical instruments on the former Bone's musical instrument shop in Manchester Street (c.1900) are no less interesting, and therefore worthy of inclusion, than the green-glazed bricks of the Painter's Arms public house on High Town Road (1913), which is the only entry for the town (p.31). Houses, for example, on Havelock Road (c.1905) had tile-decorated porches at least to dado level. Other readers will doubtless find similar instances in areas with which they are familiar.

If this suggests a somewhat aleatoric approach - with inclusion or lack of it dependent on whether one of the contributors has *happened* across a particular feature - that must be regarded as inevitable, given the vast amount of material. And the observation is in no way intended to detract from the fascination of the book. There is a great deal of pleasure to be derived, and much to be learned, from its approximately two and a half thousand entries, whether one is using the book as a guide in the field or dipping into it from the comfort of an armchair. The numerous black-and-white photographs help understanding, whilst the excellent colour plates - some of familiar, others of less familiar, features - are a particular joy.

The gazetteer is followed (pp.449-485) by three useful appendices: a biographical dictionary of artists, designers, and manufacturers; a glossary of technical terms - although this omits the term *bianca-sopra-bianca* used (unexplained) at p.11; and a quite full bibliography. There are two helpful indices: one of artists, designers and manufactures, the other of places.

Although quite highly priced (but with a 20% discount for TACS members), this attractive book is warmly recommended - indeed, it may be judged a *must* for anyone with a serious interest in tiles and architectural ceramics. Dr Pearson and her many helpers are to be congratulated on their achievement.

TERENCE PAUL SMITH

BRICK IN PRINT

During 2005, the Editor and the Chairman of the British Brick Society received notice of a number of publications of interest to members of the society. 'Brick in Print' is now a regular feature of *BBS Information*, with surveys appearing usually twice in a year. Members who are involved in publication and members who come across books and articles of interest are invited to submit notice of them to the editor of *BBS Information*. Websites are also included. Unsigned contributions in this section are by the editor.

DAVID H. KENNETT

1. Rosalind P. Blakesley, 'Dorich House, London SW15'
Country Life, 4 August 2005, pages 58-63.

Dorich House was built for a partnership that was not unusual in the mid twentieth century. The sculptor Dora Gordine, an émigrée from Estonia via Paris, in 1936 had married the Hon Richard Hare, younger son of an earl, diplomat, traveller, art collector, Russophile, and the inaugural Professor of Russian Literature at the School of Slavonic and East European Studies in the University of London.

Gordine had commissioned Auguste Perret to design her a house in Paris. The service rooms and the wet plaster studio were on the ground floor, a sculpture gallery and studio on the first floor and the artist's private quarters on the second floor with a roof terrace. The same arrangement was followed in Kingston Vale but the construction materials were changed. Perret, the pioneer of reinforced concrete, had used his favoured material in Paris, both structurally and externally; Dora Gardine, acting as her own architect with the aid of her husband and Henry Ivor Cole, a local 'architectural builder', chose red Welsh brick for the exterior of the house in England but kept the reinforced concrete for the floors and roof, itself a terrace. The view became not the Boulogne Billancourt but the leafy and open expanses of Richmond Park to the north and west of Kingston Vale.

Gordine and Hare lived in the house for the rest of their lives: Hare died in 1966, Gardine in 1991. Despite its somewhat neglected state in the quarter century of its owner's widowhood, Kingston University took the house over and renovated it. Regrettably, about half of Richard Hare's art collection had to be sold to finance the restoration. It is open to the public. The visits co-ordinator of the British Brick Society is hoping to arrange a group tour in 2006 or 2007.

2. Jörn Janssen, 'The Transformation of Brickmaking in 17th Century London',
Construction Hist. Soc. Newsletter, 71, May 2005, pp. 1-9.

This paper was written in 1984 and is now published, "only marginally edited", for the first time; the author informs us that is he aware of more recent relevant work but that he has been "unable" to include it in the references. The discussion ranges beyond the geographical and chronological limits implied by the title. It is not concerned with changes in manufacturing methods (which were important in seventeenth-century London), but with what the author calls "social relations" in brick production. Four organisational "forms" are distinguished and each is considered under a subheading: 'Brickmaking at Task', 'Brickmaking by measure', 'Brickmaking for sale', and 'Brickmaking for wages and brickmaker's profit'. The burden of the paper, if I have understood it aright, is that the organisation of brickmaking developed over time, with the last "form" becoming dominant in the seventeenth and eighteenth centuries. But it is by no means an easy read, and I found that some individual sentences required several close readings in order to tease out their meaning. The paper clearly rests on considerable research, some of it amongst unpublished sources, and the topic is an interesting one which would benefit from more pellucid exposition and argument than it receives here.

T.P. SMITH

3. Mary Miers, 'Sion Hill, Yorkshire',

Country Life, 5 August 2004, pages 38-41, with watercolour illustration on page 31.

Walter Brierley (1862-1926) was the pre-eminent Yorkshire architect of the late 1890s and the first quarter of the twentieth century, with an extensive practice in York, which retains his name today. Apart from the well-known schools in York and the County Hall for the North Riding in Northallerton, the firm designed a number of country houses for rich businessmen.

His client who had bought the estate at Kirby Wiske was Percy Stancliffe, a brewer from Macclesfield, Cheshire. To Stancliffe, Brierley wrote:

I propose to build a house of good brindled red (not too bright) bricks, with red sand stock brick arches and quoins and rich red weatherable roofing tiles and painted white windows. I should like to use some charming thin Dutch bricks for facing the whole of the outside walls. a comfortable house is expensive and requires a great effort to produce and pay for but once paid for one forgets it, whereas cheap work is always there

to remind and annoy us.

And so he did, for £5,310, less than half the auction price of the estate (£14,189 for 469 acres in 1911), where there was a house "so faulty that it would be necessary to pull the house down and rebuild." The result was a brick house with rusticated quoins, not quite symmetrical because of the service wing to the east.

4. Jeremy Musson, 'Shropham Hall, Norfolk',
Country Life, 24 February 2005, pages 76-81.

To quote Jeremy Musson, "Shropham Hall is an example of a type of attractive smaller country house that, modestly adapted, serves every generation well". There are many of them: Norfolk, admittedly England's fourth largest county, has around thirty brick-built E-plan houses from the late sixteenth century or the first two decades of the seventeenth, each with between nine and fifteen hearths in the 1664 Hearth Tax, and about as many eighteenth-century houses of equivalent size. If they have been counted correctly from the article's photographs, Shropham Hall has twelve chimney pots on five stacks.

Shropham Hall is built of good quality red bricks in a fine, mortared Flemish bond, and it is orientated north-south with the centre portions each ending in a gabled half pediment. Both in the centre of the north and south fronts and towards the edges of the wings of the south front, are brick pilasters, ending in a stone string course, immediately above the first-floor windows. On the east and west fronts, there is diaper work using black headers.

The orientation of the house and the gabled rather than hipped roof, together with earlier panelling in the attic rooms, suggests remodelling of an earlier house. In its present form, Shropham Hall was built for John Barker in 1729, the year of his marriage to Elizabeth Eagle, the daughter of a Great Yarmouth merchant.

The house is two-and-a-half storeys with an attic in the centre but only two storeys in the side wings. There have been alterations, both internally and externally. The south front gained a classical porch around 1800: Tuscan columns supporting a Doric entablature. At about the same time, the whole exterior was limewashed, but two centuries of Norfolk wind and rain have removed much of this. On the north front, both wings were enlarged by deep canted bays in 1756. On the ground floor, at about the same time, a fine Rococo plasterwork ceiling was introduced into the library and this extends into the canted bay. The patina of the limewash is more noticeable on the north front than to the south, from where most has been washed off.

5. Jeremy Musson, 'Fairfax House, York',
Country Life, 9 June 2005, pages 134-139.

The Annual General Meeting of the British Brick Society, held in York in 1988, included a tour of some of the brick buildings of the city ending at Fairfax House, then in an early stage of its restoration.

Jeremy Musson essentially considers the interior of this five-bay early Georgian brick townhouse. The contents include the furniture collection of Noel G. Terry, who died in 1980, together with judicious donations, additions and purchases. Noel Terry's furniture was in his own home, 'Goddards', a brick house built in 1926-27 and one of the last houses designed by Walter Brierley of York. Through direct descent via the three Atkinsons and then James Demaine, Walter Brierley inherited the practice of John Carr of York.

In the early 1760s, Fairfax House was remodelled by Carr of York for Viscount Fairfax, who intended it as a house for his daughter Anne. Fairfax described it to his banker in October 1762 as "my daughter's house, which is just finished and has drained me of all my money". She

had been engaged to William Constable, of Burton Constable Hall, but Fairfax doubted the sincerity of the young man's adherence to the Roman Catholic faith. Among recusant families, strength of the faith was important. Classical illusion mixes with references to Roman Catholic doctrine in the decoration.

The twentieth-century history of Fairfax House has been chequered. In 1920, a cinema was built to the side the house and at its rear. The first floor was knocked into one as a dance hall and gentlemen's lavatories inserted in an elegant bedroom, although the main stair with its ironwork balustrade seems to have suffered little damage. The cinema and dance hall folded in the early 1960s and Fairfax House lay empty and not particularly cared for over the next two decades. Rescued by the York Civic Trust, it was restored by the architect, Francis Johnson of Bridlington, with an exceptionally able crew of local craftsmen (see John Cornforth in *Country Life*, 7 March 1985). As an example of a Georgian townhouse, Fairfax House has been open to the public for 21 years.

6. William Palin, '31 Melbury Road, London W14',
Country Life, 21 October 2004, pages 102-105

The "London" issue of *Country Life* in Autumn 2004 had a number of items of interest to BBS members. One concerns Melbury Road, west of Hyde Park, laid out in 1874 across part of the former grounds of Holland House, a major E-plan brick house of before 1607 with wings added before 1614. Melbury Road was artists' country with large studios integral to the houses: Frederic Leighton at no. 12, to which was later added the famous Arab Hall, and Val Prinsep at no. 14, and they were joined by Marcus Stone at no. 8. George Aitchison designed Leighton's house and Philip Webb was employed by Prinsep. All of these are brick houses.

Following the success in 1874 of *Applicants for Submission to a Casual Ward*, two years later, Luke Fiddes commissioned Richard Norman Shaw to build him a house on the north side of the street, at first no. 11 and now no. 31. Like the houses of his fellow artists, the house was dominated by its studio, a room two storeys high on the first floor and approached by a grand staircase. Edward VII came there to have his portrait painted; the king was impressed: he called the studio "one of the finest rooms in London". An alteration to the fenestration had taken place twenty years before the king's accession, joining the two central windows to provide more light from the north. When the house was converted into flats after 1945, the studio was sub-divided both horizontally and vertically. Restoration of the room to the space wherein the full-size set for *The Doctor* had been constructed revealed serious structural problems. A steel frame coped with these; the rebuilt north wall utilised bricks from a demolished board school. These bricks were almost an exact match as to type and date.

For another account of no. 31 Melbury Road and Norman Shaw's other work see Mark Girouard, *Sweetness and Light*, New Haven CT and London: Yale University Press, reprint 1984, pages 99-109, especially pp. 105-107 with photograph and original elevations and floor plans (figures 82 and 83).

One of the last houses to be built on Melbury Road was no. 59, by Williams & Cox, still in a modified and plainer version of the 'Queen Anne' tradition. Currently for sale, it is included in the 'Property Market' column of this 'London' issue of *Country Life*. The column also notes and illustrates no. 15 The Vale.

On pages 94 to 99 of the same issue is an article by Mary Miers, 'Return to Mayfair', describing how a socially exclusive area of the Grosvenor Estate east of Hyde Park, south of Oxford Street and north of Piccadilly developed from 1720 onwards with 277 houses, almost all of which were brick-built, has returned to domestic use. One surviving retail outlet in a late-nineteenth-century terracotta-faced building is Allen, the butchers on Mount Street.

7. Richard Pollard, 'The Quality of Mersey',
Country Life, 11 November 2004, pages 78-81.

In the city of their birth, during the lifetime of Canning and in the early manhood of Gladstone, the city of Liverpool was transformed by brick-built terraces constructed for the professional middle classes. William Roscoe laid out Rodney Street in 1783-84; Huskisson Street with its columned porches was begun in 1839. These houses have experienced many vicissitudes: in the 1960s, John Lennon, like many students, lived in the grander Gambier Terrace, one of the few stone-fronted terraces. Rodney Pollard examines how these buildings formerly in multiple occupancy have returned to their original function as family houses for the professional middle classes.

8. Kathleen Watt, "'Making drain tiles a "home manufacture"': Agricultural Consumers and the Social Construction of Clayworking',
Rural History, **13**, 1, 2002, pages 39-60.

Despite my many and varied interests, I have to admit that *Rural History* is not a periodical to which I currently subscribe. Nor is the title of Dr Kathleen Watt's article designed to inspire curiosity amongst those interested in bricks. Nonetheless, I have no hesitation in bringing this article to the attention of members of the society as it is perhaps the most important article published anywhere on brickmaking machinery to date. As some readers may know, Dr Watt had previously written a University of York Ph.D. thesis looking at the development of brickmaking machinery. In this article, she provides an intriguing insight into the problem of how and why brickmaking machinery appeared when it did in England. The reason for the strange title and the placement of the article in such a journal becomes clear on further reading.

As Dr Watt explains, previous writers have noted that brickmaking machinery was slow to be adopted in England and they have seen this as being due mainly to the imposition of the Brick Tax. The Brick Tax, which operated between 1784 and 1850, was charged on all bricks moulded, including those that were too badly formed to fire with a ten per cent allowance made for firing and other losses. Dr Watt asserts, as others have before, that the imposition of the tax in this way hampered innovation by making experimentation prohibitively expensive and thus it was not until the repeal of the tax in 1850 that brickmaking machinery came to be employed in any significant way. Once the tax had been repealed, brickmakers immediately began to employ wire-cut method machines in preference to all others and the period 1840 to 1850 saw an enormous rise in patents for machines using this method. Why there should be such an increase in patents for machines not yet being employed in the brick making industry, and why the wire-cut method became so popular, is made clear for the first time in this ground-breaking study.

Dr Watt's great insight is that developments in moulding machinery in the 1840s were driven not by the brickmaking industry *per se* but by the rural demand for drainage tiles. As these were not taxed, machinery for their manufacture could be developed unhindered. Moreover, there was an enormous demand for efficient, light pipe-making machinery that could be afforded by individual landowners. The urgency to produce new pipe-making machinery was so widely recognised that prizes were offered for the best tilemaking machines at agricultural shows. As Dr Watt demonstrates, it was these shows and the cash incentives they offered, that provided the opportunities for the inventors to learn from each other, while the judges provided feedback on what the industry required. The resulting competition to produce practical, cheap and efficient machines greatly hastened development. Pipe-making favoured the wire-cut method of production, where the clay was forced through a die and further shaped by rollers

before being cut off in lengths; thus it was this method that came to predominate. After the repeal of the Brick Tax, Dr Watt observes that it was not very difficult for the manufacturers of their now highly- developed pipe-making machinery to modify them to make bricks.

Dr Watt's article introduces these ideas and in the process provides an excellent (if all too brief) overview of the developments of early brickmaking machinery. The article, sadly, lacks illustrations, but its copious footnotes do provide an invaluable guide to further reading. I have no doubt that it will remain the most important source on the subject for many years to come.

JAMES W.P. CAMPBELL

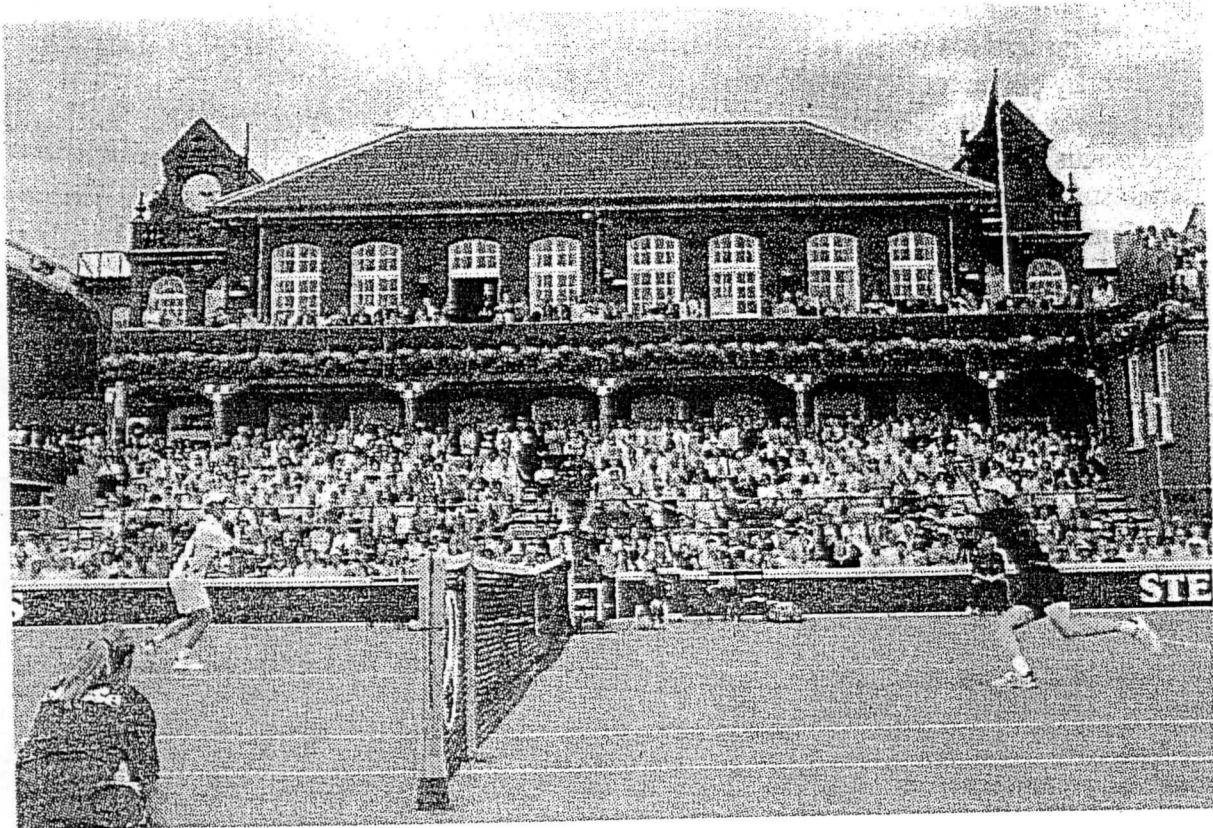


Fig. 1 Queen's Club, London, has both lawn tennis courts and indoor courts for real tennis.

- 9 Jason Wood, 'Team Effort',
British Archaeology, 85, November/December 2005, pages 10-13.
Anon., 'Rising from the Ashes',
Country Life, 3 November 2005, pages

In the wake of London's successful bid to host the 2012 Olympic Games, Jason Wood's short article argues that the country's cultural heritage is losing out, financially, to sport - the two are locked together in the governmental Department for Culture, Media and Sport - and that this situation will be exacerbated as we move closer to the Games. This, of course, affects *brick* buildings no less than others and should thus be a matter of concern for members of the British Brick Society. Jason Wood's answer lies in bringing the two aspects together by a concentration on *sports heritage* - that is, on structures specifically associated with sport.

One may or may not be persuaded by this proffered solution - it would, apart from anything else, focus on a very restricted set of buildings, ignoring most. But for those of us with

an interest in brick buildings the article includes two fascinating colour illustrations, both of buildings in the Manchester conurbation. The first is a full-page photograph of the Tennis and Racquets Club (opened 1880), on Blackfriars Road, Salford, which as well as containing facilities for those two sports also includes a skittle alley, a wine cellar, and a workshop. Designed by George Tunstall Redmayne in 1876, it is of red brick in English Bond with some brick specials and terracotta panels in *Rundbogenstil*. There is exposed brickwork inside. If not very lovely, it is certainly a most powerful building. The second is a half-page photograph of the Victoria Baths (1903-1906), familiar as the winner of the telephone poll following BBC2's *Restoration* programme in 2003, a welcome reprieve, whatever one's reservations about letting a nation's conservation policy rest on what was essentially a television game show, complete with celebrity presenter. Designed by the City Architect, Henry Price, the building - which included public swimming pools, wash baths, a Turkish bath, and a public hall - is in red Ruabon brick in English Bond with ornate detailing in buff terracotta in a Flemish Renaissance style. It is a most striking edifice. Inside there is a great deal of exposed brickwork as well as tiling.

Coincidentally, the 'Property Market' section of the 2005 London issue of *Country Life*, following England's victorious Ashes series in 2005, is a brief article on buildings "connected" - sometimes a little tenuously - with cricket. Of several west London buildings, three in brick are illustrated. Wandsworth House, East Hill, SW18, is a red brick house of c.1680, extensively enlarged c.1735. For half a century it was the home of Alf Gover (d.2001), who ran an indoor cricketing school from an industrial shed at the rear: Viv Richards, Ian Bishop, Andy Roberts, Gary Sobers and Brian Lara were amongst those who trained there. The second illustrated building is Burton Court, Franklin Row, SW3, a nineteenth-century brick-built mansion block with its own playing fields, including a cricket pitch. (No. 14 Burton Court is for sale.) Overlooking the playing fields are two houses offered for sale: the illustrated example, 33 St Leonard's Terrace, is a (surprisingly ill-proportioned) late Georgian red brick building with a stuccoed ground-floor storey. (For any BBS member sufficiently well-heeled, perhaps it may be added that the guide prices for these properties are, respectively, £2.295 million, £3.5 million, and £2 million!)

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

Subscriptions for 2006 are now due should be forwarded to the Membership Secretary.

BRITISH BRICK SOCIETY MEETINGS IN 2006

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

Saturday 1 April 2006

Spring Meeting

Oxford: brick in the town and the suburbs beyond the University of Oxford

Saturday 17 June 2006

Annual General Meeting

Bursledon, Hampshire

A Saturday in July 2006

July Meeting

We hope to arrange a visit to a brickworks for one Saturday in July

A Saturday in August or September 2006

Autumn Meeting:

To be arranged

Saturday 14 October 2006

London Autumn Meeting

London north of the City.

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

Further details of the Spring Meeting 2006
is included in this mailing.

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

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

Suggestions of brickworks are particularly welcome.

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