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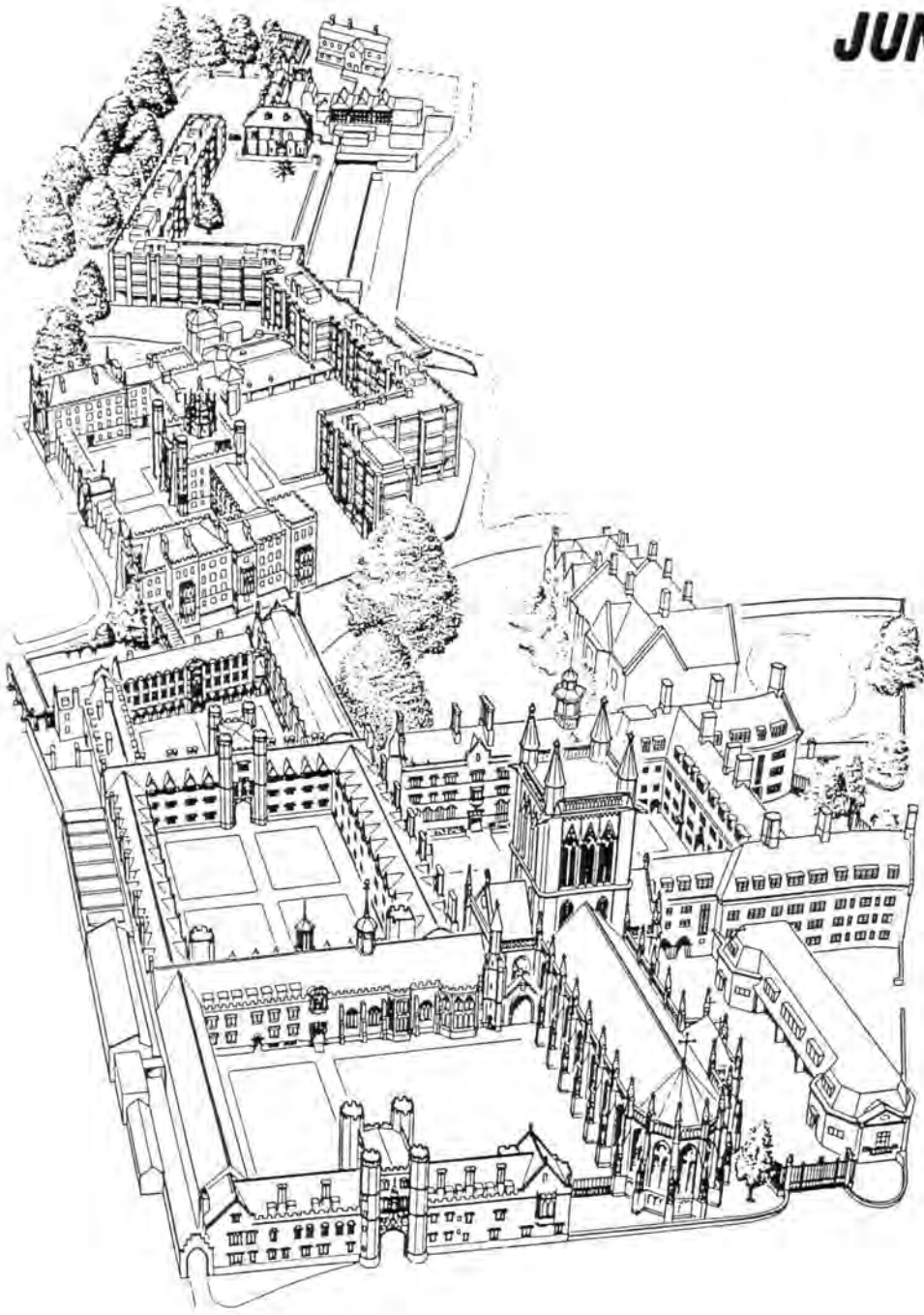

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Hon.Sec and Membership Sec *(receives all direct subscriptions .)*	M Hammett ARIBA	9 Bailey Close High Wycombe HP13 6QA (tel: 0494 520299)
Editor of 'Information' *(receives articles and items for 'Information')*	D H Kennett BA MSc	3 Melmerby Court St James Park Eccles New Road SALFORD Lancs M5 4UP (tel: 061 743 0640)
Hon.Treasurer *(only for matters concerning the annual a/cs, expenses etc.)*	Mrs Evelyn Hammersley	68 Bromley Heath Road Downend, Bristol BS16 6JT
Publications Officer and Bibliographer	Mrs A Los	"Peran", Plaxton Bridge, Woodmansey, Beverley E Yorks HU17 0RT
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CONTENTS

Cover: St John's College, Cambridge
The college was the final place visited on the society's Spring Meeting in 1991.

Editorial:

The Influence of Architecture on the Condition of the Worker

Crossing Abercromby Square in the sharp sunlight of a crisp December morning I recalled, somewhat wrongly, the title of the essay awarded the Silver Medal of the Royal Institute of British Architects in 1914. What Thomas Simons Attlee actually discussed was

> The Influence on Architecture of the Condition of the Worker (RIBAJ, 21, 1913-14, 617-638).

Slave or Free, Greek or Scythian, these were Attlee's concerns. His theme is discussed over a very wide time-span.

His paper followed a similarly titled Essay Silver Medal piece, that of H. Austen Hall in 1909:

> The Influence on Architecture of Modern Methods (RIBAJ, 16, 1908-09, 705-711).

The latter is a piece, on the early twentieth century, which has been found to be quite valuable to this researcher in his current concerns.

Having left British Brick Society Information with only the briefest of introductions for two issues, a little indulgence may be excused if the editor spreads his wings a little wider than might sometimes be the case. As life has become more settled, it is possible to offer some reflection on an aspect of brick architecture. It may also serve to acquaint members with some of the complex, and perhaps slightly baffling, reasons for the peripatetic nature of the editor's life in the past quadrennium.

Abercromby Square will be as familiar to some members of the British Brick Society as is, say, Cathays Park, to the editor or First Court and the Cripps Building to the society's chairman. St John's College, Cambridge, is a privilege given to few. Most spend their undergraduate years in some other place, and Oxford is not meant: of an English undergraduate and postgraduate population almost nine-tenths (89.5% to be precise) will be found elsewhere.

As may be noted Abercromby Square is not of the same order of fame as King's Parade or The High. But to the generation of Thomas Simons Attlee it housed the premier architectural school of the Empire. In 1900, the Liverpool School of Architecture was the first school whose degree examinations for a Bachelor of Arts with a first class pass in Architecture to be granted exemption from the Intermediate Examination of the Royal Institute of British Architects. Similar exemption for the new course at the Victoria University of Manchester and the established one at University College, London, followed in 1904. The introduction of a Bachelor of Architecture degree at Liverpool in 1920 lead to exemption for these graduates from the Final Examination of the royal institute but not from the professional practice examination.

Such items have become background knowledge as dossiers have been built up on the early careers of architects in Bolton, 1830 to the present day. The exercise has been extended in a desultory fashion to cover also Luton and both Great Yarmouth and Lowestoft. No research ever stands still, nor in my case is too specifically focused.

When I became the editor of Information, I hardly possessed the basis from which to review 'The Influence of Architecture on the Condition of the (educational) Worker'. The Norfolk years were such that the personal educative journey appeared to be like a goods train which had been left in the siding while the expresses roared past. It took a decade for the points to be released.

Readers will have noticed the use of the words "undergraduate" and "postgraduate" and may have wondered why another, shorter term has not been employed. As with many of my generation, I regard the word "Student" (capital S) as referring to the senior members of The House, such as the economist, the late R.F. Harrod. A particular resentment is the application of the wrong language to describe schoolchildren; there is an accepted synonym, it is pupils.

Having now been a postgraduate of no fewer than three universities and with an approaching involvement which will, one expects, be protracted with a fourth, perhaps there is some background to review the security that the educational buildings offer to undergraduates.

The size of the undergraduate body has had its effect on the buildings. Given 1993-94 undergraduate numbers it is difficult to recall just how small most universities were thirty years ago. One Thursday in July 1966, barely five hundred science and engineering graduates in the morning and a smaller number of arts, theology, and music people in the afternoon climbed on to the dias in the great hall of City Hall, Cardiff, to doff the mortar board at Lord Morris of Borth y Gyst. And Cardiff was the largest of the four constituent colleges of Prifysgol Cymru.

University College, Cardiff, when I was an undergraduate (1963-66) was still the building planned by W.D. Caroe whose erection was supervised by his son, Alban D. Caroe. In the Architects' Journal feature on universities in the issues of 2 and 9 January 1958 part had yet to be built. The Cathays Park campus of University College, Cardiff, is stone. Brick is not a visible building material, even internally: the University Grants Commission could afford plaster and plasterers. As a role model for brick in universities, my first university need detain this editorial no more.

Not so those instititions with which I have been associated since October 1990.

Apart from the revolution in undergraduate numbers, there have been other changes in the past thirty years. Two of the successors of the long-established Merchant Venturers' College, namely Bristol Technical College and the Bristol College of Commerce, joined with the West of England College of Art to form Bristol Polytechnic. Into this in 1976 were amalgamated two teacher training colleges, the Redland College of Education and the Bristol and Gloucester Diocesan Training College for Schoolmistresses at Fishponds, the latter more usually known as St Matthias' College. Parts of the future Faculty of the Built Environment were scattered across several sites: construction at Ashley Down, the original polytechnic site, surveying in the original building of the Merchant Venturers' College in Unity Street, and the planning departments out of Bristol at Fishponds. In October 1990, this was still the case, although of the original polytechnic only one building on the Ashley Down site remained in their use. Although not brick, it was an humane building.

One may resent Sir Nikolaus Pevsner's final comment about "the impressively large but bleak group of buildings" as "this estate of barracks", as equally the description of Unity Street as "damaged by the towering fiery red brick of the College of Technology":-(Pevsner was writing in the 1950s when the institution had this name.)- would appear harsh. On almost my final evening in Bristol in January 1994, I walked down Unity Street and I did not find its character damaged.

But now neither Unity Street nor Ashley Down's complex of former childrens' homes house parts of the University of the West of England, as Bristol Polytechnic became on 5 October 1992. The Faculty of the Built Environment was transported to the giant out-of-town complex in the Frenchay Campus, on Coldharbour Lane. Encountering this as a place to work for almost the first time in April 1993, I wondered about the validity of an educational establishment whose immediately

noticeable characteristic is to proclaim its nineteen car parks. To a man too poor to own a car, it sends the wrong message. Environments should teach undergraduates about caring for the world: the context of the built environment is important.

Perhaps the number of car parks equalling the minimum gross income (in £000s) at which an observer feels that even a modest car might conceiveably be affordable is a comment on the grotesque.

By July 1993, I was very glad to have in prospect the possibility of escape to a more humane campus.

About the generally despressing nature of the Frenchay Campus little need be said. But set on the edge of this bleak, characterless wasteland of steel, concrete, and glass interwoven into interlocking quadrangles without a blade of grass or much blue sky to be seen is a brick building. This is the new Faculty of the Built Environment. Set on a rise, it is approached by a series of steps with low risers but deep treads: the latter are not quite a stride. The building is low rise, mostly two floors; there is a third storey in two sep rate portions. In a neutral orange brick on its own the building might be acceptable, despite the red metal roof, were it not for the plan. Lecture theatres are not ranked but have external windows facing south-west to west. Computer rooms are placed internally and dependent on air conditioning. They are between parallel corridors and without windows: at Ashley Down the eyes could be rested by watching Gloucestershire.

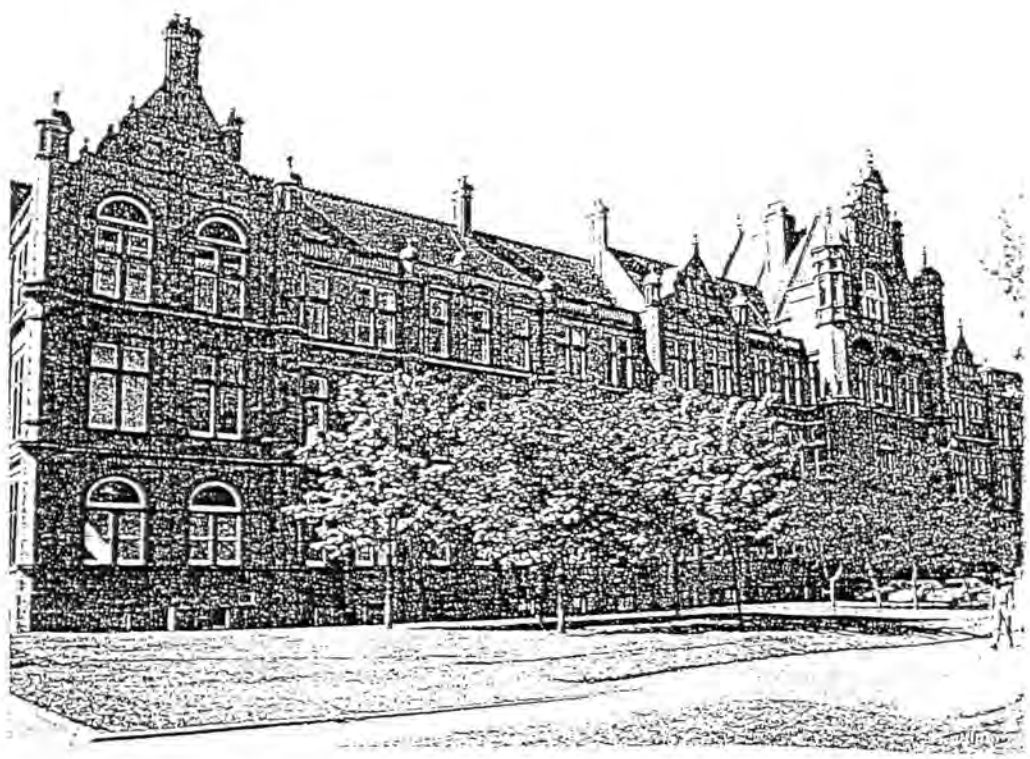


Fig. 2. The Peel Building, the University of Salford.
This is the original building of the Royal Technical Institute, Salford, built in 1896.

Moving north, something in the order of 185 miles, to a different city and one which prior to 1994 I had not visited, and its larger neighbour once only and that for less than half a morning, and taking on a new intellectual direction, 'Technology and Society', there has been a sense of coming home. It is almost a sense of belonging.

Like many schoolboys, Luton Grammar School (visited by the society during the Spring Meeting in 1993) was the first place where I had belonged. No small part of this was the building: "a thrill to more than one eleven-year-old schoolboy, an inspiration to each who truly cared about its ideals for the seven years that he was privileged to go there." Those words were written almost two decades ago; Portrait of Bedfordshire from which they are taken was published in November 1978, but the final chapter, entitled 'Luton: The Great Colossus',was actually written in June 1976 and incorporates, particularly in the sections on the nineteenth and twentieth centuries, material composed up to two years earlier. Even now, thirty years after I left school, I recall the institution with pride and the building with excitement.

There was the same feeling of excitement, almost the thrill of the schoolboy, when looking at the Royal Technical Institute, Salford, for the first time. It was an exceptionally rainy day, 5 January 1994.

The University of Salford began as the Royal Technical Institute in 1896 in the building now known as The Peel Building on the edge of Peel Park above the River Irwell. There have been changes of name: first the Royal Technical College and then the Royal College of Advanced Technology; from these developed the University of Salford, chartered in 1967. Much will doubtless be said in future editorials about buildings on the campus.

Part, of course, derives from the setting: opposite is the gentle curve of The Crescent, with its fine red brick late-Georgian houses. The Crescent has been punctured by assorted bits of unsuitable implantations: black brick when red predominates, glass and steel even when keeping the initial frontage low.

The Royal Technical Institute is very clearly a building making the statement that education matters.

Sir Nikolaus Pevsner castigated the Maxwell Building, the University of Salford, as "restless". The fenestration of the east wall, of eight storeys, attempts to get away from the flat facade. Above the River Irwell when viewed from the other side of the great loop it seems like a dramatic cliff rising. If you look the other way, east above the roof-line of Manchester and the tower blocks of Oldham, there is seen the softness of the Pennines, deceptive in its beauty. More reminiscent is crag and fell; G. Noel Hill's building reflects a truism of the wider landscape.

There is a firm, red-brick wall facing The Crescent. Set on the north wall of the Maxwell Building, in bold white lettering, sans-serif, 'The University of Salford', and the university arms. The Maxwell Building provides an excellent foil for the Peel Building, as the original Royal Technical Institute building is now called.

The thrill of the building remains, five months on, when I am walking to the university or even when I am walking into Manchester: it is less than two miles.

There are other reminders of the town I ceased to live in on 14 August 1980. Crossing the main road, the six-lane A6, to get to the university. The main street of Luton is an earlier piece of the A6 road. Crossing the Liverpool to Manchester Railway of 1830, which I have to do to go to the university, I look east and see the great shed of the Manchester G-MEX centre. Originally this was the Midland Railway's Manchester Central, one end of the line from London St Pancras. The latter is 240 ft in span; the Manchester structure built above the brick undercroft with its brick vaulting only 30 ft less. Although I have rarely used London St Pancras in the past fifteen years, it remains with London Paddington one of my two favourite termini. Another sense of the past is provided by the Great Northern Railway's Warehouse adjacent to the G-MEX centre. Until 1993, Luton had warehouses erected for the hat trade by the Great Northern Railway. Members may have noticed these on the opposite side of the road from William Hamlyn's station.

Moving from a campus with interlocking blocks it is a pleasure to walk through a campus with greensward in the centre, individual buildings - of cladding, of concrete, and of brick - set round and across the grass but not forming closed quadrangles. Whereas the blocks had been designated by letters, the buildings at Salford have names. The names record those who have made a distinguished contribution to science or the city. Separate buildings with individual names does allow the necessary sense of basic humanity in education to be restored.

At Salford some of the newer buildings are a sand-coloured brick, in contrast to the red of the Royal Technical Institute and the Maxwell Building. Most of the newer buildings are low in scale. It does not seem a crowded campus: 4400 undergraduates and postgraduates is not large by 1993-94 standards. (The University of Wales, College of Cardiff, as it now is, has nine thousand undergraduates and three thousand postgraduates. Thirty years ago there was no law school, not a thousand strong body as there now is).

If brick is only one of the building materials used in Salford University's buildings, it is a predominant impression of the University of Liverpool. Sir Nicholas Pevsner did not like what had been done by the university to Abercromby Square. What there is remaining is three sides out of the four from an early-nineteenth-century development with brick houses. This is high quality housing designed to attract the prosperous among Liverpool's merchants. The brick in Liverpool is dark, a very dark purple almost brown. But the Victoria Building, Alfred Waterhouse in 1887-92, is red with much red terracotta.

Abercromby Square has Architecture in the north-east corner, Archaeology in the south-west. Many years ago, it was suggested that I should read for a first degree under the latter's tutelage. By a curious irony, I am going to join the former as a part-time postgraduate reading for a Ph.D. researching the work of the Bolton architects, Bradshaw Gass and Hope, something like thirty-two years after I declined to put Liverpool on my UCCA form in the first year of that body's life.

The interest in the architects was the starting point for one of the society's two Spring Meetings in 1994. The interest in the architects began with the Town Hall in Luton. Although steel-framed and faced with Portland stone, it does have seven million bricks in its construction. Indeed, the back wall, visible though gaps between buildings, is of a white brick.

It has been mentioned that only three sides remain from the original buildings around Abercromby Square. The human scale is preserved by the university which built a new Senate House along the west side. It does not rise above the level of the houses. Crossing the road, also known as Oxford Street, the Senate House effectively closes the square. It makes the onlooker turn east and look down to the sea: Liverpool was built on the sea.

Set back from the south-west corner of Abercromby Square is the Sidney Jones Library. Again the scale is human but this building has a fault. Set on a podium to accommodate a semi-basement, entry is approached via a brick-paved slope with trees in it. The trees are set in brick kerbed areas. I, for one, would not wish to push a wheelchair up this slope, even on a dry day. On a wet day with the leaves from the trees on the ground, it could be exceptionally treacherous. Considerable expertise would be needed to negotiate a downward path.

Much background has already been done in the study of the work of Bradshaw Gass and Hope although much remains to be done. It will probably take the remaining years of the twentieth century. Doubtless, given the person's inclinations, there will be breaks, when other areas are intensely investigated. Hopefully these and the architectural history will be persued in institutions conducive to the good condition of the worker.

The background, as noted including the compilation of dossiers about the early careers of architects in Bolton, has been followed in a variety of libraries. The Sidney Jones Library of the University of Liverpool has been mentioned. But

part was done in Charles Holden's original building for Bristol City Library: it is a strange sensation to be making notes about an architect in a building he designed. Part was done in the former Arts Library of Bristol University where the Architecture Library begun in the Royal West of England Academy is housed on the mezzanine floor and that is certainly a relaxed setting in which to read obituaries of the Great War. Part, recording in depth the town halls of England, Wales, and Scotland, was done in the new Arts and Social Sciences Library of the University of Bristol: that is a quiet place in which to work. Part has been done in the Clifford Whitworth Building of the University of Salford sat by a window offering a view of the Royal Technical Institute building. In each case I have been fortunate to work in settings not merely conducive to academic work but in atomospheres which are green and open.

Would that undergraduates in all settings, university, former polytechnic, former college of higher education, could have such fortune. Not all I fear will be so lucky. Their work may well not be the best which they could have done.

DAVID H. KENNETT

The Feast of Bede the Venerable, 1994

AN APOLOGY

I must apologise to Dr R.J. Firman for my mis-spelling of his surname in Information 61 (February 1994), especially when his article on 'The Colour of Brick in Historic Buildings' ensured that several names appeared on the Contents Page.

DAVID H. KENNETT

ENERGY SOURCES AND EARLY BRICK: A SUBJECT FOR ENQUIRY

B.P. Day

As As a new member of the British Brick Society, and one who is just starting out with an enthusiasm for bricks, I am scarcely qualified to respond to the editor's exhortation in Information 60 to contribute to its papges (1).

Perhaps, however, I may solicit a response in future editions to the question which has vexed me from such reading as I have done so far:

> To what extent did the availability of energy sources govern the use of brick before the ready availability of coal after the Industrial Revolution?

I ask this because of what apparently happened in Crondall, Hampshire, which is where my primary interest lies. The first buildings in new brick, after the usual Roman activity, were two Tudor houses. Both had been demolished by the end of the eighteenth century and not one brick remains on either site. The church tower. the oldest extant brick structure, was built in 1659. Nothing further happened until the late eighteenth century when much brick facing took place and some new, entirely brick, cottages and a chapel were built. The canal connecting Crondall and London was completed in 1790.

Brick use really took off in the mid nineteenth century. By the end of the century there were at least 25 brickworks (2) within a 5 mile radius of the

village supporting not only the growth of Crondall but also of Farnham, Aldershot, Farnborough, and Fleet.

The London and South-Western Railway arrived at Winchfield in 1838 from Nine Elms, and the brickworks at the new terminus was certainly sustained by coal from London. The only extant kiln in the area, an updraft, remains there, well restored, and there are records of the mixing of coal dust with the Bracclesham clays for use in clamp firing as well. Crondall is built on chalk adjoining Reading Clay, London Clay, and more recent deposits down to the Quarternary. There has, therefore, always been a ready supply of accessible clay.

That energy was a limiting factor seems to be underlined by the entry in the Customary of 1567 (3) where the use of wood for the burning of bricks is prohibited. This must surely be one of the earliest examples of an energy conservation policy.

The appearance of the bricks from the Tudor houses, in facings on at least two large houses in the village, in massive repairs to the church, and in walls built as recently as the nineteenth century, reflect the relative availability of labour to bricks. More simply expressed, bricks were expensive but to reduce the question to simple financial terms in relation to a quasi-self-sufficient agricultural economy is perhaps to cloud the underlying issues.

Just how much wood is required to burn a brick? It is recorded that 100,000 bricks were made for the church tower. Making gross simplifying assumptions, I calculate that this would have required all the wood from over 5 acres of mature oak woodland! No wonder restrictions were imposed in the sixteenth century.

Plumridge and Meulenkamp (4) note that the first revival of brick use in Britain after the Romans was at Great Yarmouth (1393) and Newcastle (1408). The availability of peat (from the Broads) and coal, respectively, at those towns cannot have been a coincidence.

Notes and References

1. 'Editorial', BBS Inf., 60, October 1993, 2.

2. A. Wright, A Gazetteer of Brick & Tile Manufacturing Sites in N.E. Hampshire, private publication, 1980.

3. W. Baigent, The Crondall Record, Hampshire Record Society, 1890.

4. A. Plumbridge and W. Meulenkamp, Brickwork: Architecture and Design, London: Studio Vista, 1993,
(The date of 1393 for the first brickwork in Great Yarmouth seems at least three generations too late. The walls of Great Yarmouth are still standing and are brick with an outer flint skin. Murage, a tax to pay for building walls, was first granted in 1284, and the last one in 1390 for three years. The east wall from St Nicholas Road to the south-east tower is complete and can be viewed from both sides. Fourteenth-century brick is used as the principal construction material as for decorative purposes on the towers. A future issue of Information will contain a lengthy discussion of 'Brick in Towns: Great Yarmouth'. (DHK).)

BRICK AND COAL IN PAKISTAN

An interesting sidelight on Mr Day's enquiry and presuppositions can be gleaned from contemporary practice in Pakistan. In a survey of energy production in the Asia-Pacific Region, the Economic and Social Commission for Asia and the Pacific Region (ESCAP) noted that in Pakistan, coal is mined solely for use in the country's brickworks. See, ESCAP, New and Renewable Sources of Energy for Development, being ESCAP, Energy Resources Development Series no 30, July 1988.

DHK

BRICKWORK - A STRANGE ANIMAL

Roger Kennell

The bricklayer uses a vocabulary during his everyday work activities that has a wide range of technical terms. These relate to the tools and equipment, and also to the materials that are used. Amongst this diverse range of terminology, it is interesting to find a significant number that relates to the animal world, either in whole or in part.

The use of a significant range of brickwork terms is now declining, as work practices change and new generations of bricklayers practice their craft. As many terms as can be directly identified to animals, and used by the bricklayer have been collected before they disappear.

The list which follows gives such terms together with their meanings.

BAT	Cut portion of a whole brick.
BIRDS MOUTH	A special shaped brick for an internal corner.
BULLS EYE	A circular opening.
BULLS HEAD	Special shaped brick for radius work.
BULL NOSE	A special shaped brick to give a rounded corner.
COW NOSE	A special shaped brick to give a rounded header end.
DOG LEG	A special shaped brick for an internal corner.
DOG TOOTHING	Projecting angled brickwork.
DOG	Fixing device to a frame.
FISH TAIL	Shape to the ends of a wall tie or fixing cramp.
FROG	Depression to the top of a brick.
GRUB saw	Rudimentary saw to score soft clay bricks.
HAWK	A hand held board to hold pointing mortar.
HERRINGBONE	Method of laying bricks in a panel.
HONEYCOMB	Pierced brickwork.
HORSE SHOE	A type of arch.
PIG	Wall with unequal courses, thus producing one tapering course.
RAT	Sacking pulled through a chimney stack or a drain to remove mortar debris.
RAT-trap	A type of brick bond using bricks laid on edge.

Using the human of the species the range can be extended thus:

BREAST	Chimney breast.
BONING rods	Simple alignment equipment.
DEAD MAN	Temporary aid to help laying bricks.
FRENCH MAN	Tool used to form a pointed finishe to joints.

KING closer	Type of cut brick used at an opening to a solid wall reveal position.
MAN hole	Inspection chamber to a drain system.
MONK bond	Type of brick bond, also known as Yorkshire Bond or Flying Bond, a variation of Flemish Bond with two stretchers in place of one between each pair of headers.
QUEEN closer	Type of cut brick to create quarter lap.
SOLDIER arch	A brick lintel.
SOLDIER course	Course of bricks laid on end.

Can these listings be added to?

BRICKS AND BRICKMAKING: ONE APPROACH FOR SCHOOLS

One of the consequences of recent legislative changes within the field of education has been an increased awareness of the educational potential of buildings. Buildings have a relevance to almost any area of the curriculum. They can be drawn, described, designed, or measured. They provide an obvious resource for an investigation of materials, forces, or structures. Pupils can study the technological aspects of a building: how it is heated, protected, or serviced; or the historical aspects, both of the building itself and the people who lived, worked, or played within it.

Like many of the country's open-air museums, Avoncroft Museum of Buildings, near Bromsgrove, Worcestershire, has responded positively to the educational opportunities provided by the implementation of the National Curriculum. Avoncroft is an established open-air museum set within 15 acres (6 hectares) of Worcestershire countryside, the primary aim of which is to rescue buildings from destruction. Since 1967 over twenty buildings, covering seven centuries, have been rescued and rebuilt on the museum's site. An early concentration on the rescue of timber-framed buildings has been complemented in recent years by a greater emphasis on the dismantling and re-erection of brick structures. The collection now includes a brick ice-house and earth closet dating from the eighteenth century together with a growing number of nineteenth-century brick structures, including chain and nailmaking workshops, a Cell Block, a Toll House, and a working Cider Mill. The growth of this collection has provided a marvellous opportunity for the development of innovative work with school groups involved in the study of bricks and brickmaking, bricklaying techniques, and related themes.

Using a combination of workshops, 'hands-on' resources, a teachers' resource pack and the buildings themselves, the museum has formulated its own unique approach with visiting schools studying bricks. Due to the generosity of a charitable trust, Avoncroft has been able to appoint a qualified teacher to the new post of Technical Officer. Within the confines of a new working display area on the theme of 'Bricks and Brickmaking', the Technical Officer has developed a series of workshops with visiting schoolchildren. Children are introduced to slop moulding, sand moulding, and other early brickmaking techniques. A series of foam bricks are also available for groups to gain hands-on experience of brick-bonding techniques. In addition to information panels telling the history of brickmaking, examples of bonding, and a display of hand-made and machine-made bricks, the exhibition area also includes a fully restored Victorian brickmaking machine which produces minature souvenir bricks. This facilitates a demonstration of the impact of nineteenth-century technology on the brickmaking process.

The brickmaking sessions are proving particularly popular with special needs groups, with whom the Technical Officer gas extensive teaching experience. The highly tactile nature of the brickmaking display also makes it amenable to partially-sighted and blind visitors. Positive feedback from participating schools leands support to the merits of this approach to the study of buildings which in this particular case aims to draw links between clay and structures and thus enhance public appreciation of this most varied and fascinating of building materials.

Avoncroft Museum of Buildings is open from March to November. Please For further details of opening times, admission prices and special events please telephone 0527-831363 or 0527-831-886.

SIMON A.C. PENN
Curator
Avoncroft Museum of Buildings.

DRAGONS AND FRIENDS

Several members have contributed notes of sightings of dragons and other beasts on buildings. The editor has left them to slumber in Grendel's lair, hoping that other dragons and friends will join them for inclusion in a listing probably in Information, 65 (June 1995).

The story of the Marlow dragon and its wandering, however, has been included in this issue because of its topicality.

DAVID H. KENNETT

LOST DRAGONS!

During upheavals over the last year, I have unaoidably lost much material, including destails of dragon roof-finials sent to me by a few BBS members. I should like to apologise for this, and also ask if members who sent me such materials within the last couple of years will be kind enough to send it once again, although this time direct to David H. Kennett, who is compiling a further listing of dragon and other finials. Once again my apologies for the inconvenience and estra work that this will cause.

T.P. SMITH

THE HULL DRAGON

The notice of the dragon on 'The Punch Bowl' Hotel, Hull, was not lost and has been passed to the editor: it is now safely in the appropriate file which serves as Grendel's lair.

DAVID H. KENNETT

DUTCH BOND

On a similar theme, the editor's move from Bristol to Salford produced a loss. I was sent a poem about different meanings of Dutch Bond. Unfortuanately, this seems to have not reached a safe place. Could the member who kindly sent me this do so again, and accept my apologies for the estra work involved.

DAVID H. KENNETT

MATHEMATICAL TILES AND THE BRICK AND TILE TAXES

Maurice Exwood

It seems that there still remains uncertainty about the effect of the Brick and Tile Taxes on the spread and popularity of Mathematical Tiles to clad buildings (1).

The fallacy that tiles, or specifically brick tiles, were exempted from these taxes and that their use consequently started or increased from 1784 (when the taxes were first introduced) has got into print so often - even in authoritative works which become standard books on architecture (2) - will no doubt result in its perpetuation. This will not be surprising since published information that it is false is very limited.

So it seems timely to record how the 'CANARD',as I once called it (3), was exposed. Some of this has been written about before but much is so far unrecorded and should have been so years ago.

It is an interesting coincidence that the earliest publication of the fallacy so far found and the discovery that it was false both come from the same area: Gordon Home said it in 1901 when writing about Epsom (4) and Norman Nail, writing to Surrey County Council in 1970, pleading for the conservation of West Hill House, Epsom, in an annex to his submission wrote:

> The Tax applied to bricks of all kinds and tiles of all kinds. There was no way of avoidance by use of tile hanging or brick tiles (5).

Unfortunately and surprisingly, he did not publish anything on the matter, not even in the Newsletter of the Nonsuch Antiquarian Society, which regularly published items of local history, archaeology and conservation. I personally was not aware of the correspondence on West Hill House until September 1981, when Nail told me, belatedly, that he wanted to talk about Brick and Tile Taxes to the Mathematical Tile Symposium, held in Ewell in November 1981.

I first heard about the issue in 1977 from Ian West, who from childhood had been fascinated by the Mathematical Tiles in Ewell Village. He planned to do a report on these tiles for the Domestic Buildings Research Group (Surrey) (6), whose members had just made the rather exciting discovery of a tile dated 1724 on the Malt House, Milton, near Dorking.

West had asked a solicitor friend of his, Joan Wakeford of Kingston-on-Thames to look up the statutes on the taxes. In September 1976 Wakeford produced an extract of the 'Act to grant His Majesty certain Rates and Duties upon Bricks and Tiles made in Great Britain' (5). She included what I later (3) called the 'Sweeping-in Clause':

> For an upon all tiles other than such as are hereuntofor enumerated and described by whatever name or names such tiles now or hereafter may be called or known, a duty of 3s per 1,000 or so in proportion.

When West told me about it I though that not all authors on the point could be wrong and that there must be some loophole. So I studied many statutes (7) and then ploughed through the Excise records for the period, first at King's Beam House, the Customs and Excise Library, and later at the P.R.O., Kew, when the records were transfered there.

I came to the conclusion that there was no loophole and that the Commissioners for Excise, who were responsible for the collection of the tax, enforced the law meticulously and to the letter. (I am still hoping to write up my findings on the operation of the Excise system at the time).

In 1979 Terence Paul Smith followed up his earlier writing (8) with 'Refacing with brick tiles' published in Vernacular Architecture (9) in which he proved that the tax did not affect the relative economics of tiles versus bricks, but wrongly stated that tiles were not taxed until 1803, nineteen years after the introduction of the Brick and Tile Tax.

I submitted the result of West's and my own findings to the editor of Vernacular Architecture in the summer of 1980, but this was not published until late in 1981.

In the meantime I heard from our late member Ted O'Shea of Lewes that Alec Clifton-Taylor had visited there in connection with his B.B.C. Television series on the Architecture of English Towns and had shown great interest in the Mathematical Tiles in Lewes. I contacted Clifton-Taylor in July 1980 telling him about my researches and sent him a draft of my article for Vernacular Architecture. (I did not know then that Clifton-Taylor had visited Ewell in October 1978 and there met West, who showed him the many houses with Mathematical Tiles in the village and told him about Wakeford's and his own findings (10).). Clifton-Taylor immediately replied and in a charming letter accepted that his chapter on The Pattern of English Building, which by then had reached its third edition, needed amendment. He wrote:

> I hope one day that the Pattern ... will reach a 4th edition - for being the standard work in most Schools of Architecture, it goes on selling - and that will give me a chance of rewriting my pages on Brick Tiles ... (12).

Thereafter Alec Clifton-Taylor honoured me with a regular correspondence and friendship and I persuaded him to chair the Symposium on Mathematical Tiles which took place in Ewell in November 1981. At that symposium, Norman Nail was the first to get his researches on the Brick and Tile Tax Statutes - proving that fallacy that these taxes did not apply to tiles - published (13).

My first contact with Clifton-Taylor came too late to note the new researches in his television programme on Lewes, which was already in the can, and he had apparently forgotten what West told him in 1978. However, in the book accompanying the series, published by the B.B.C. in the Atutmn of 1981, when the series was broadcast, he corrected what he had said in The Pattern of English Building on brick tiles. In Six More English Towns, Clifton-Taylor said:

> It used to be thought (and by me amongst others) that the main reason for making these tiles, which were never very cheap, was to avoid the Brick Tax, which was first imposed in 1784. It has now been established that tiles were not only liable to the tax from the outset but at a higher rate than for brick ... (14).

In correspondence Clifton-Taylor several times referred to his hope of a 4th edition of The Pattern of English Building. The last time was when he had seen my article in Period Home (15) when he wrote:

> It makes me long to have a chance - which will come in a year or two - of revising that section in The Pattern of English Building, which has several bad errors. I have learned a lot from Ted O'Shea, yourself, and others (16).

It is therefore surprising to me that the 4th, 'definitive', edition of The Pattern of English Building, published posthumously, edited by Jack Simmons, former Professor of History, University of Leicester, in 1987 (six years after Clifton-Taylor's B.B.C. book which included Lewes) does not correct the chapter on Brick Tiles. Indeed this chapter is identical with that in the 3rd edition (1972), except for five additions in an appendix, marked by asterisks in the text. These notes (17) include information gleaned at the Ewell Symposium and from later publications but miss the main point of Alec Clifton Taylor's expressed desire for the new edition (18).

Professor Jack Simmons was shown an earlier draft of this paper and comments as follows:

> Alec Clifton-Taylor was well aware of the changed view of brick tiles and the Brick Tax that emerged in the 1970s. He showed that in relation to Lewes in his Six More English Towns (1981), pp. 119-120. He certainly would have amended what he says of them in The Pattern of English Building (pp. 228, 282, 285) had he lived to revise the 1972 edition for a new one. But he died in 1985 before he had re-written these passages. In preparing the fourth edition of the book, published in 1987, I confined myself to including only the alterations that he had himself drafted for printing.

Notes

1. D.H. Kennett, 'Review Article: Parsonage and Town House: the brick house in Georgian England', BBS Inf., 60, Oct 1993, 12.
2. e.g. N. Lloyd, A History of English Brickwork, 1925, 52; N. Lloyd, A History of the English House, 1931, 281; A. Clifton-Taylor, The Pattern of English Building, 1st ed., 1962.
3. M. Exwood, 'Mathematical Tiles', Vernacular Architecture, 12, 1981, 49.
4. G. Home, Epsom I't's History and Surroundings, 1901.
5. He referred to 24 Geo.III, sess. 2, C.24, the Act introducing the taxes.
6. Newsletter Surrey Archaeological Society, no.123, Jan. 1971.
7. M. Exwood, 'The Brick Tax and Large Bricks', BBS Inf., 24, 1981; reprinted British Brick Society Information Compilation Volume 1 1973-1981, 1988, 84-86.
8. T.P. Smith, 'Eighteenth-century Brick-tile Cladding in the City of Cambridge', Proc.Cambridge Antiq.Soc., 65, 1974, 93-101.
9. T.P. Smith, 'Refacing with Brick Tiles', Vernacular Architecture, 10, 1979,
10. Letters from A. Clifton-Taylor to I. West, dated 7 and 10 Oct. 1978, confirm.
11. A. Clifton-Taylor, ibid.
12. Private correspondence, 24 July 1980.
13. N. Nail, 'Mathematical Tiles', Notes of the Ewell Symposium 14 Nov. 1981, 31.
14. A. Clifton-Taylor, Six More English Towns, 1981, 119, 120.
15. M. Exwood, 'Mathematical Tiles, A Georgian Masquerade', Period Home, 3, no 6, 1983.
16. Private correspondence, 11 April 1983.
17. Appendix Note 285, 2 is in error. A. Clifton-Taylor knew there were no mathematical tiles in Bridgwater.
18. Paper written January 1994.

BRICK IMPORTS TO HAYLE, CORNWALL

late 18th- and 19th-century

John Fergusson

(i) DOCUMENTARY EVIDENCE

Following the dictates of fashion, a number of late 17th- and early 18th-century Cornish mansions were constructed from brick rather than the traditional granite. One example is Heligan House (near Mevagissey), built c.1690 and, in common with others of the period, built of brick made from local clay and burnt on site (1). It was not until later, during the period 1830–1910 (2), that a Cornish brick industry developed. Although these were mainly small concerns, there were a number of large scale production sites, often working in association with china clay extraction. However, even during the heyday of Cornish production much brick was imported into the county, particularly from Bridgwater, Somerset. The reasons for this were largely economic. For example, in the mid-19th-century, except in isolated areas, it was still cheaper to use imported Bridgwater bricks (3). Also the bricks were of better quality and specialist bricks, such as those required for use in the construction of the top part of engine house chimney stacks which are so characteristic of west Cornwall, were readily available from the Somerset manufacturers (4).

One of the ports involved in the import of brick into West Cornwall during the 18th and 19th centuries was Hayle, situated on the southern shore of St Ives Bay (see Map, Fig. 1). Although disadvantaged early in its history by the problem of silting of the harbour, it was developed as an attractive alternative to St Ives, because of the easy access to the Camborne–Redruth mining area. Records, dating from the early part of the 18th century, suggest that local entrepreneurs started trading as mine merchants, building quays and warehouses to facilitate the import of materials such as coal, timber, rope, limestone, and brick. One of the largest of these was Lemon & Co., established in 1740. In spite of difficulties created by the silting of the harbour, leading to restrictions in the size of vessel which could be berthed, trade developed and the firms prospered. In 1757, the Cornish Copper Company (C.C.C.) was formed to smelt copper, building their smelter in the area now known as Copperhouse. One of their early achievements was to dig a short canal (the Copperhouse Canal), to allow coal etc. to be shipped directly to the smelter. Not only did this lead to the creation of more quays and warehouses, but by utilising a system of weirs and sluices, they were able to control the silting problem in the harbour. By 1780, the C.C.C. had expanded its activities by buying-out a number of smaller firms including Lemon & Co., describing themselves additionally as mine and general merchants (5).

Meanwhile, nearby, John Harvey set up an iron foundry in 1779, thus founding the very successful firm of Harvey and Co. By the last decade of the 18th century, they had absorbed a number of the smaller traders to become mine and general merchants in direct competition with the C.C.C. (6). The records of both companies indicate that the importation of bricks and their subsequent resale was an important part of their business.

Surviving information relating to the C.C.C. is somewhat sketchy, although an inventory prepared in 1758 it is recorded that they held stocks of building materials which included 10,000 firebricks and 40,000 common bricks. Later, in 1833, a stock evaluation records that their holding of brick and tiles was

Fig. 1 West Cornwall showing places mentioned in the text

NPC National Explosives Company site
PCW Porthia Clay Works

Fig. 2 "GWR" brick, a standard brick, showing maker's name in frog.

valued at about £438 (7). No details as to the number of bricks or tiles are given, but this figure must represent a considerable stock. Although not specifically stated, it is thought that the majority of these were imported from Bridgwater, Somerset.

The Harvey records are a little more complete. For example, in a letter book dated August 1791 to February 1796, kept by Henry Harvey (son of John), the import of brick and tile from Bridgwater and from Hawarden on the River Dee is recorded (8). Also, in 1809, after setting up the ill-fated United Mining Company (later to revert back to Harvey's) orders were made for bricks from four different manufacturers including two in Flintshire (9). Later, in 1827, there are further records of Harvey buying brick and tile from Bridgwater and shipping them to Hayle (10).

An interesting letter preserved in Henry Harvey's letter book, dated 9 January 1795, relays instructions to the Captain of one of Harvey's ships, requiring him to purchase the very best quality brick at the cheapest price from Bridgwater. It specifically refers to a Mr James Haviland (also spelt Havilons in the same letter), who is offering a cargo at Bridgwater charged at 24 s. 0 d. (£1-40) per thousand (bricks) and Crest (? ridge tiles) at 2s. 0 d. per dozen with 7.5% discount for cash. The letter indicates that they (Harvey's) think that this price is too high and the Captain is instructed to "shop around", (11).

Although the C.C.C. ceased copper smelting in 1819, they continued to trade as mine and general merchants as well as founders and engineers, based at Copperhouse Foundry until 1867, when the business failed (12). Harvey's foundry and engineering interests continued until the recession at the end of the 19th century brought about the closure of the foundry in 1903 (13). The firm was then reconstituted and emphasis placed on the merchanting and building supplies side of the business.

(ii) SITE EVIDENCE

A site of particular importance to this study is that of the National Explosives Company, situated on Upton Towans about 1 mile north-east of Hayle (grid ref: SW/570390) and marked NPC on the map (fig. 1). The works, originally constructed in 1889, was largely demolished in 1920 (14), leaving a debris strewn, derelict site on which part of the brick shell of the nitric acid plant plus a single chimney stack remain. These two survive principally because the bricks were found to be acid-soaked and not fit for any further use (15).

Fig. 3 "OBSIDIANITE/REGD/ACID PROOF" brick

The stack, built on a stepped brick plinth, is 8 ft 6 in. in diameter at the base, with a 3 ft 6 in. flue and an estimated height of 60 ft, is constructed in blue/red engineering brick in English Garden Wall Bond, with three stretcher courses between the header courses. The bricks are marked "GWR" in a shallow frog and are assumed to have been produced at the Great Western Railway brickworks at Swindon (16). (fig. 2 - "GWR" brick).

The upstanding walls of the nitric acid plant itself are built of unmarked, perforated red brick, in Flemish Bond. The perforations consist of three rows of three-quarter inch diameter holes, seven in each of the outer rows and six in the inner. These bricks are very similar to those illustrated in a broadsheet advertising Barham's Bricks from Bridgwater (17). Internally the lowest four courses of the walls are of very dark red/blue glazed brick, marked "TRADE MARK/ METALLINE", with no frog. (18). The window sills are constructed of similar dense, dark-coloured bullnose bricks. No mark has yet been discovered on these bricks.

The floor of the building still has some of its original acid-proof, brick surface intact. The bricks are all dark coloured and three types have been seen. These are marked: "HANCOCK & CO/HAWARDEN", "OBSIDIANITE/REGD/ACID PROOF" (fig. 3), and "C. DAVISON & CO'S/"ADAMANTINE"" (fig. 4). All with no frog. Beneath this floring a series of brick-lined flues can be seen. These are constructed with light coloured refractory brick, some produced locally (marked "ST. DAY"). The

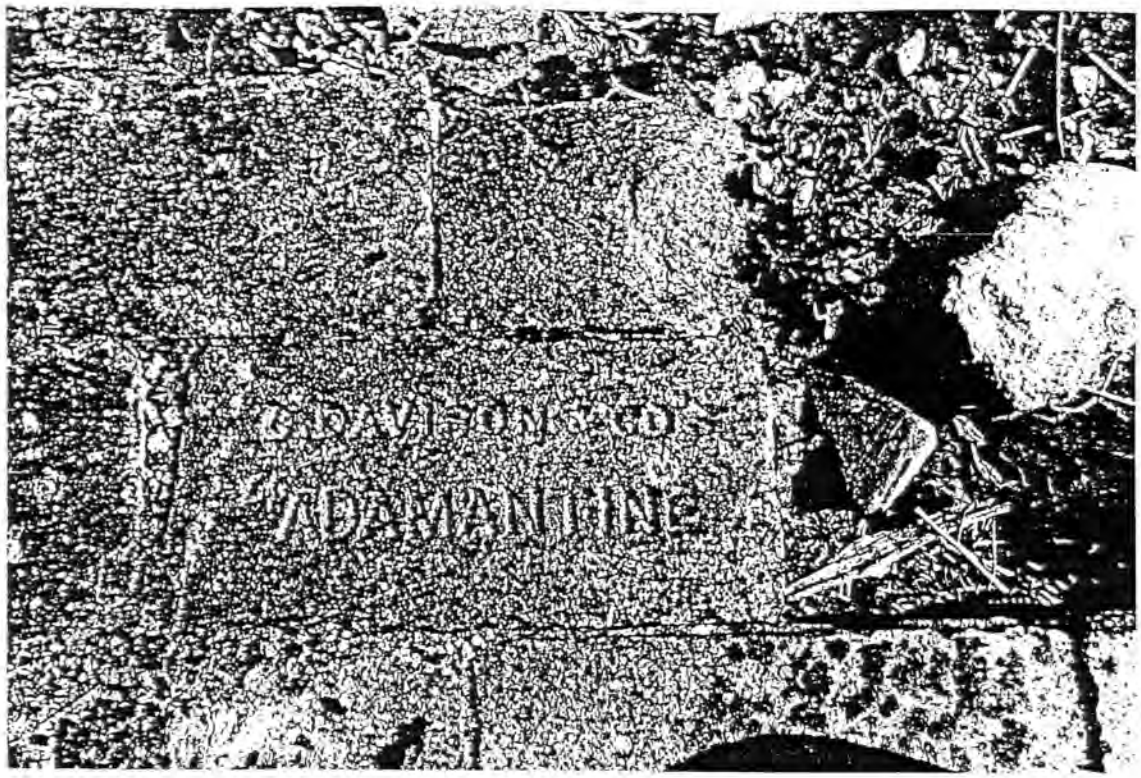


Fig. 4 Acid-proof brick marked "C. DAVISON CO'S/"ADAMANTINE""

most common, however, are marked "GARNKIRK" (fig. 5) and are a cream/pink colour with no frog.

Elsewhere on the site there is much brick debris showing evidence of the common use of the perforated brick (fig. 7), along with other types already recorded, such as "OBSIDIANITE/REGD/ACID PROOF" (fig. 3) and "GARNKIRK" (fig. 5). Also among this debris is evidence that local brick was used and brick marks of at least four factories have been recorded. In the sand dunes, which formed part of the site, are the foundations of wooden huts (now gone), in which the explosives themselves were manufactured. These are often brick-built and at one locality, dark coloured engineering bricks marked "GWR" have been used.

Brian Earl (19) records that bricks recovered from the demolition of the works were sold second-hand and are widely distributed around the district. Of particular interest in this context is the abandoned site of Porthia Clay Works situated about two miles south of St Ives (grid ref SW/498378), marked PCW on the map (fig. 1). The main structures, including micas, settling tanks, and a clay dry with its associated chimney stack, were built in 1922. The works operated for less than a decade, closing with all the equipment sold by 1931 Here large numbers of bricks, assumed to have been bought second-hand from the National Explosive Works, can be found incorporated into the various buildings and tanks. Those found in the clay dry include bricks marked "TRADE MARK/METALLINE" "OBSIDIANITE/REGD/ACID PROOF" (fig. 3), and "C. DAVISON & CO'S/"ADAMANTINE"" (fig. 4). The arched flue between the end of the dry and the chimney stack is constructed out of cream/pink refractory bricks, marked "GARNKIRK" (fig. 5). The stack itself, built of brick on a granite base, shows every indication of having been constructed out of second-hand bricks.

Returning to Hayle, near the East Quay (grid ref. SW/557376) is the remains of the Hayle Gasworks, constructed in 1888. This building is of granite with brick dressings. These are of the red perforated type already described, except that in this building many moulded forms are used to form plinths and corbels and other

decorative effects. Nearby on the side of the Copperhouse Canal is the small brick-built structure of 1880 which houses the swing bridge mechanisim (grid ref: SW/558376). This again is built with red perforated brick using English Garden Wall Bond. Associated with this building was some walling (now demolished) containing bricks marked "THOMAS & CO/WELLINGTON" (fig. 6), presumably Wellington, Somerset, south of Taunton and not far from Bridgwater. These bricks are red coloured with a shallow frog.

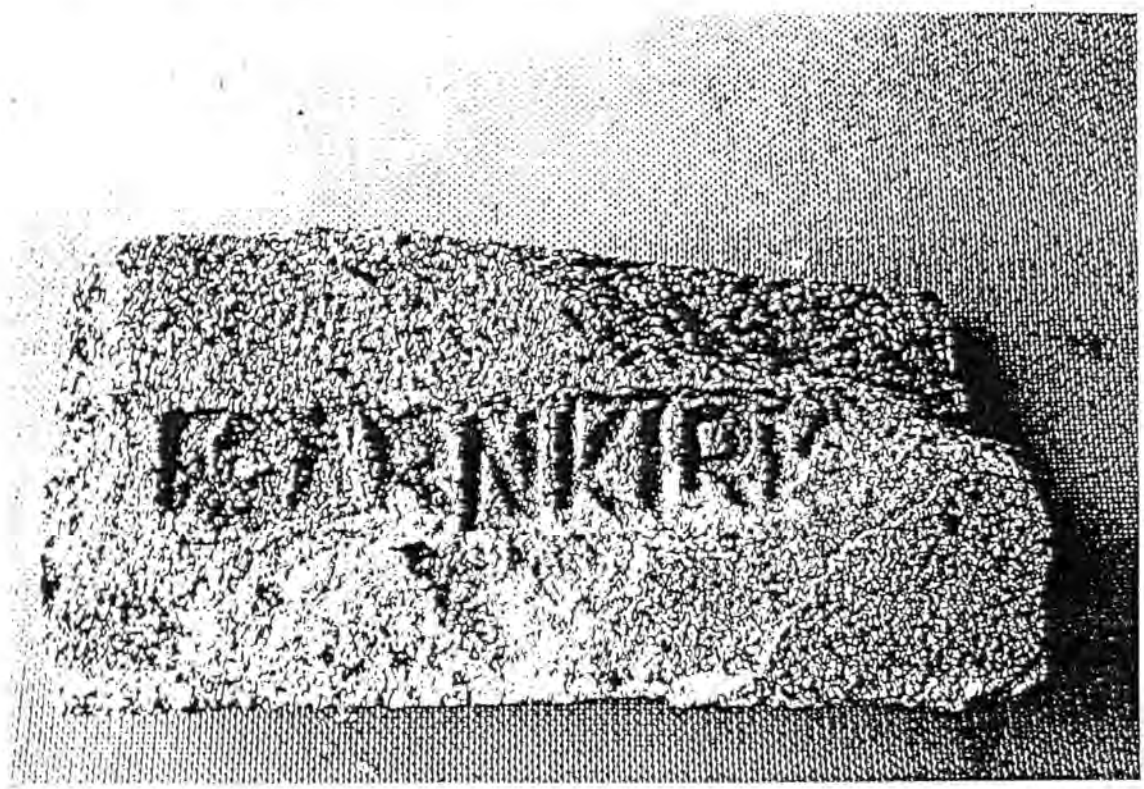


Fig. 5 Brick marked "GARNKIRK".

Elsewhere in Hayle fly tipping has contained further examples of "GWR" brick (fig. 2), as well as examples of red brick, with no frog, marked "BROWN & CO/ BRIDGWATER". These last examples, with their soot-stained appearance, are likely to have come from domestic flues. A small number of ridge tiles have been examined, the only mark see being "BRIDGWATER".

The other important brick-built structures in Hayle are associated with the railway. These are the piers at the south-west end of Hayle Viaduct (rebuilt in 1886) and the abutmets of a railway bridge constructed early in the First World War (c.1914) to carry a line connecting the National Explosives Works with the quays at Hayle, across Logans Stream. Hayle Viaduct is built in Flemish Bond, while the abutments of the Logans Stream Bridge are built in English Garden Wall Bond; both a built with dark red/blue engineeing brick. Although these is no evidence of a brickmark in the case of the viaduct, the bricks of the Logans Stream Bridge are unmarked.

(iii) CONCLUSION

Currently, it would be difficult to say how much of the brick seen in the older buildings in and around Hayle were imported by either Harvey's or the C.C.C. However, what has become clear,from the study carried out, is that the historically established trading pattern with North Wales and Bridgwater brick manufacturers, dating from the end of the 18th century, continued until at least the end of the 19th century. Also, although by the second half of the 19th century locally manufactured bricks were being used, several other sources from outside Cornwall were exploited to provide specialist bricks.

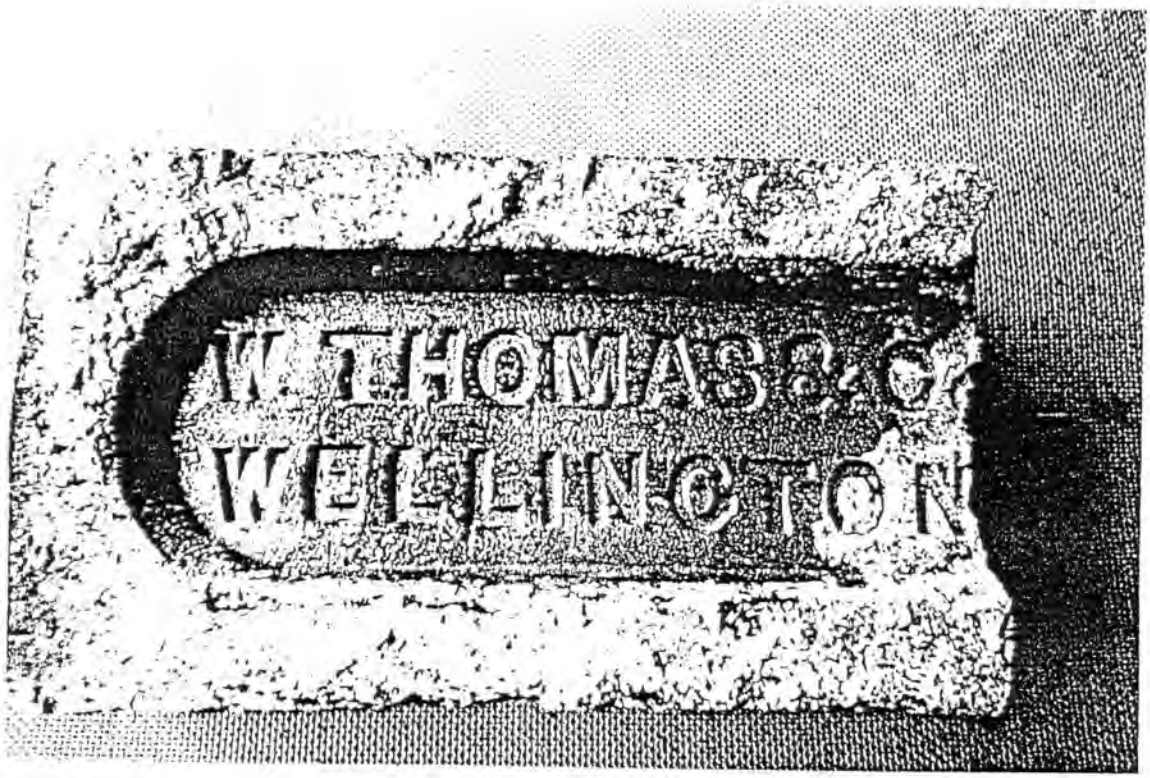


Fig. 6 Brick marked "W THOMAS & CO/ WELLINGTON" in round-ended frog.

The evidence of the use of second-hand bricks from various sources throughout this area of west Cornwall, is quite compelling. The examples of the Porthia clay works outlined is interesting in that the structure contains examples of a number of specialist acid-proof bricks, used in a situation where common bricks would have been adaequate. This evidence, when taken with the building date for the works and the date of demolition of the National Explosive Company's works, is reasonably conclusive. Further support comes from the operation dates for the Garnkirk Fireclay Company of Glasgow. Brunskill (20) records these as c.1843 to 1901, which fits with the building date of 1889 for the National Explosives Company works but not the date for the Porthia clay works.

Finally, it is worth noting that many red-brick buildings in West Cornwall, dating from the mid 19th to early 20th centuries turn out on close examination to be built with perforated brick (fig. 7) similar to that described from the National Explosives Company's nitric acid plant, which were probably manufactured at Bridgwater, Somerset.

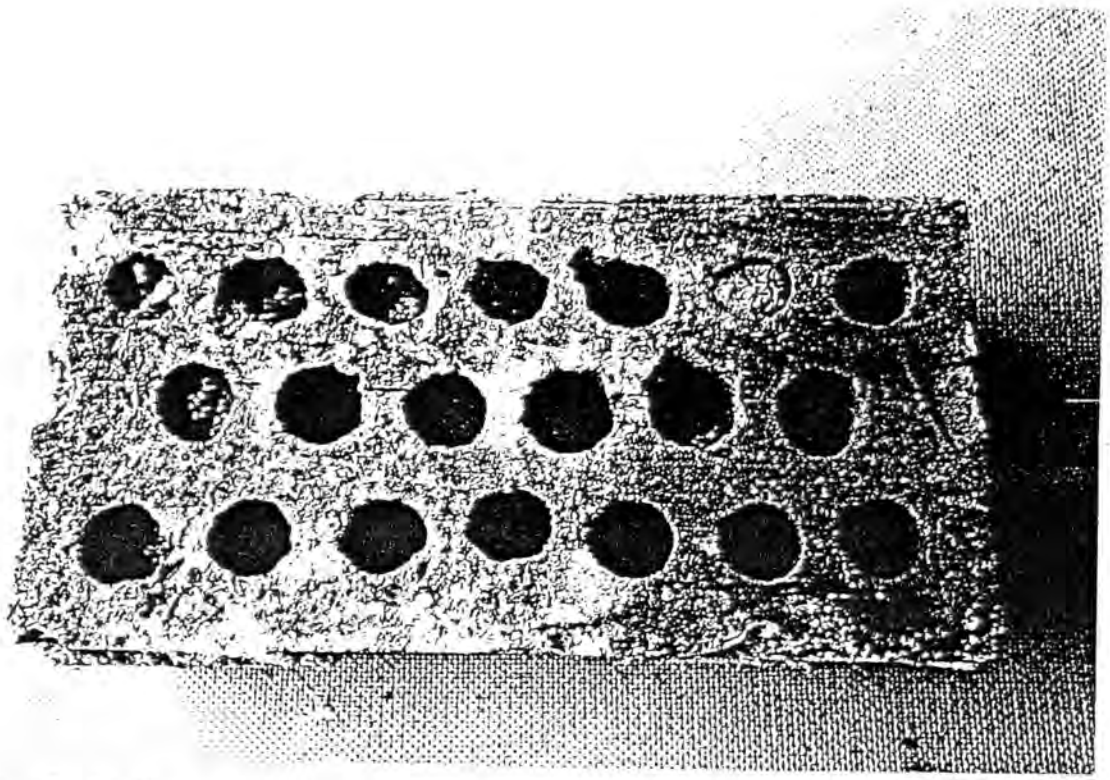


Fig. 7 Perforated brick of type found in National Explosives Company's nitric acid plant.

NOTES AND REFERENCES

1. J.R. Smith, Cornish Bricks and Brickmaking, (privately published, 1987), 4. This booklet is 29 pp. in length.
2. Smith, 1987, Fig. 2, p. 6.
3. R.M. Phillips, 'The Lizard brick and pipe works', The Lizard, 2, 1963, 16-17, esp. 17.
4. D.B. Barton Bradford, The Cornish Beam Engine (1969; cited from Cornwall Books edition, 1989), 172.
5. W.H. Pascoe, C.C.C. The History of the Cornish Copper Company, (Redruth: Dyllansow Truran, 1981), 26 ff.
6. E. Vale, The Harvey's of Hayle, (Truro, D. Bradford Barton, 1966), 26 ff.
7. Pascoe, 1981, 178-179.
8. Vale, 1966, 48-49.
9. Vale, 1966, 69-70.
10. Vale, 1966, 215.
11. Vale, 1966, 323.
12. Pascoe, 1981, 118.
13. Vale, 1966, 312.
14. B. Earl, Cornish Explosives, (The Trevithick Society, 1978), 178 ff.
15. Earl, 1978, 249.
16. A.S. Peck, The Great Western at Swindon Works, (Oxford: Oxford Publishing, 1982), 97.

TABLE 1

BRICK MEASUREMENTS

Original measurements made in inches to the nearest eighth of an inch and based on the average of at least four bricks. Millimetre size in brackets.

BRICK NUMBER	FIGURE NUMBER	BRICK MARK	LENGTH	WIDTH	THICKNESS
1	2	"GWR" (standard brick)	8.875 (225)	4.25 (108)	2.625 (67)
2		"TRADE MARK/METALLINE"	9.0 (229)	4.25 (108)	2.875 (73)
3		"HANCOCK & CO/HAWARDEN"	8.875 (225)	4.25 (108)	2.75 (70)
4	3	"OBSIDIANITE/REGD/ACID PROOF"	8.875 (225)	4.5 (114)	3.0 (76)
5	4	"C. DAVISON & COS/ADAMANTINE"	8.75 (222)	4.375 (111)	2.75 (70)
6	5	"GARNKIRK"	9.0 (229)	4.0 (101)	2.375 (60)
7	6	"THOMAS & CO/WELLINGTON"	9.0 (229)	4.25 (108)	3.0 (76)
8		"BROWN & CO/BRIDGWATER"	8.75 (222)	3.875 (98)	2.75 (70)
9	7	Perforated Type (no mark)	8.875 (225)	4.375 (111)	2.625 (67)
10		Hayle Viaduct (no mark seen)	8.875 (225)	4.25 (108)	2.875 (73)
11		Logans Bridge (no mark)	8.75 (222)	4.375 (111)	2.875 (73)
		"GWR" (stack bricks):			
12		(i) curved stretcher	9.0 (229)	4.25 (108)	2.75 (70)
		back face length –	8.0 (209)		
		width in centre –	4.625 (117)		
13		(ii) wedge-shaped header	9.0 (229)	4.5 - 3.0 (114-76)	2.75 (70)

17. B.J. Murless, 'Somerset Connections', BBS Inf., 56 (July 1992), 4-6 with fig. 1.

18. In all descriptions of brick marks the use of "/" indicates a new line.

19. Earl, 1978, 249.

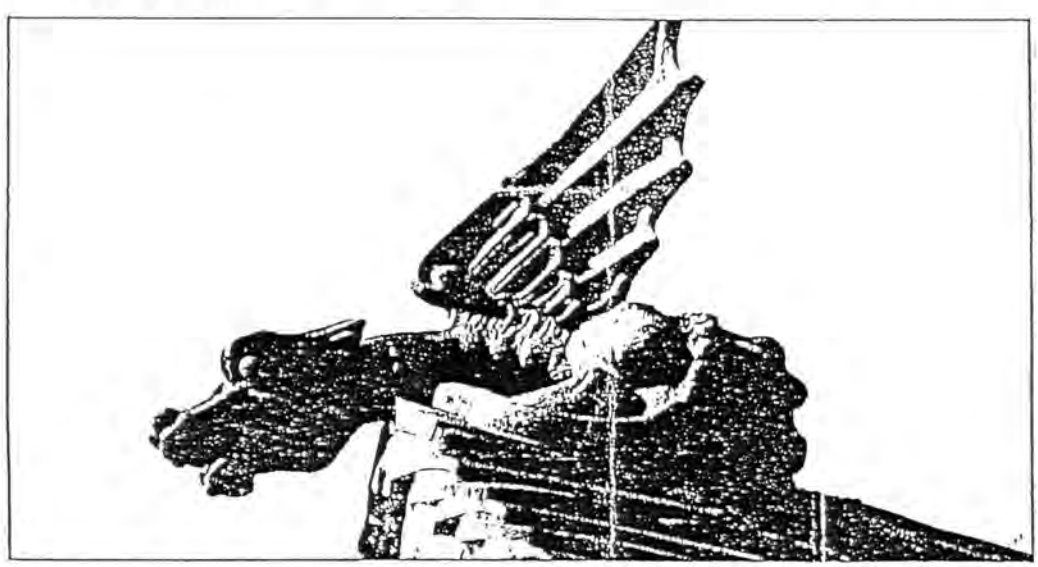
20. R.W. Brunskill, Brick Building in Britain, (London: Victor Gollancz, 1990), 197. Appendix III: Brickwork in Scotland.

21. Paper completed January 1994.

EXIT THE DRAGON

I am indebted to our member, Mrs Barbara Hurman of Aylesbury, for a cutting from the Star, a local newspaper in south Buckinghamshire. The newspaper account is reproduced verbatim from the issue of Friday 15 April 1994:

> A flying dragon which has presided over a street for more than 300 years has been stolen.
>
> The brightly coloured gargoyle worth £5000 was taken from the roof of a shop in West Street, Marlow, over the Easter weekend. The 16-inch terracotta dragon has been featured in postcards of the town dating back to the 17th Century.
>
> It was taken by thieves who climbed on to the roof of the shop between midday on Saturday and Easter Monday morning.
>
> Sargeant Phil Turner said: "It seems a shame that someone should decide to steal something which has been a feature of Marlow for so many years".
>
> Police are unsure whether the theft was a spur-of-the-moment prank or planned, but Phil added: "We have had things happen to other well known landmarks like the red lion in High Wycombe's High Street which was once painted green."



The beast is reproduced above.

This reminds me of the story of the School of Art at Bolton. When built, as the Pupil Teacher Centre in 1903 at a cost of £12,500, the central bay was given a parapet. This parapet was topped by four splendid heraldic lions each holding an oval shield. When first seen in October 1993, two lions only remained. When members of the British Brick Society saw the building on 21 May 1994 only one remained.

CANALETTO AND BRICKS

The excellent, recent, exhibition on 'Canaletto and England' held at the new Birmingham Gas Hall Exhibition Gallery included am interesting oil-painting by William Marlow depicting The Adelphi, London, under construction 1771-72 (lent by The Museum of London). It shows the building site on the foreshore of the Thames. It is not entirely clear exactly what is going on but, as well as a great deal of stone lying about ready to be worked, there appears to be tall, squarish stacks of bricks, with the bricks in the rows arranged alternately as headers and stretchers, with gaps in the header rows. At the top of each stack a 'parapet'of bricks, only one brick thick, supports what would seem to be a wooden board laid to provide a mono-pitched temporary roof.

This seems to be a very elaborate way of just stacking bricks brought in by river and awaiting use on site. Yet the stacks are much higher than a drying-hack (and the colour suggests they are burnt bricks). And, while they have some similarities with clamps, the outer walls are not battered to allow for the intense heat at the base of a clamp, nor have I ever seen clamps which are so square in plan.

A coloured illustration of the painting is included on page 144 (catalogue number 74) of the catalogue of the exhibition, edited by Michael Liversidge and Jane Farrington, entitled Canaletto & England, published by Merrell Holberton Publishers Ltd., London (1993).

It would be interesting to hear what other members think these stacks might be be for.

ALAN COX

BOOKS AND BRICKS

Molly Beswick, Brickmaking in Sussex A History and Gazetteer, Midhurst, West Sussex: Middleton Press, 1993
ISBN 1-873-793-197
vii + 241 pages; 49 illustrations. Price £12-95 direct from Molly Beswick, Turners House, Turners Green, Meathfield, East Sussex TN21 9RB; bookshop price £14-95.

This learned, thoroughly researched work by our member Molly Beswick pays tribute to the brick industry in Sussex over the last 2,000 years and the still significant part the industry plays today in the economy of East Sussex and West Sussex. The first part of the book, 111 pages, with five pages of references, is set out in eleven chapters covering the general history of brickmaking in Sussex under the titles: Raw Materials, Early Bricks and Tiles, The Reintroduction of Brick, Small Country Brickyards, Rural Occupations, Coastal Developments in the 18th and 19th Centuries, The Impact of the Railways, Victorian Bricks, Tiles and Terracotta, Brickmaking: A Family Business, Fluctuating Fortunes 1900-1940, and Reconstruction and Reorganisation. The text is well-written and the variety of aspects covered from the history to the technical to the human family history side involved make it a most readable book. This section of the book is illustrated with twenty-two photographs, all black and white, seven maps and drawings, and twelve miscellaneous illustrations including advertisments for individual yards. The five pages of references which conclude the first part of the book provide the reader with ideas for their own research.

As in the Cox tradition (1) the second part of the book is a gazetteer of 750 brickyards in alphabetical order for East Sussex and then for West Sussex. Each entry uses the parish name and lists the yards with a description of the site and its location; a six-figure National Grid map reference; the approximate dates when it was in operation; the names of the operators, if known; products; present condition; geology; further information and references. Each individual entry may have details for all these headings but in other entries details may only be available for a few headings. The gazetteer occupies 110 pages. Once again the final sections of part two may stimulate the reader's own research from two pages of bibliography and an excellent index enabling the reader to look up things, places, or family history for the new breed of family historian.

Molly Beswick has been the first of our members to follow in the footsteps of Alan Cox and she certainly makes me feel guilty that I have not done the same for my corner of Yorkshire. Molly Beswick acknowledges the assistance of the Sussex Industrial Archaeology Society Brick Study Group who worked between 1978 and 1986 but no one can deny the work and dedication that have resulted in this fine, interesting, and useful book.

Note

1. A. Cox, Survey of Bedfordshire: Brickmaking - A History and Gazetteer, London: Royal Commission on Historical Monuments, and Bedford: Bedfordshire County Council, 1979.

W. ANN LOS

Graham Douglas and Miles Oglethorpe, Brick, Tile and Fireclay Industries in Scotland,
Edinburgh: Royal Commission on Ancient and Historical Monuments in Scotland, 1993
ISBN 0-7480-0697-4
95 pages, 39 figures, 39 black and white plates
Price £5-00, plus self-addressed envelope A4 size, with 96p postage (first class)
Available from Mr Miles Oglethorpe, R.C.A.H.M., John Sinclaire House,
16 Bernard Terrace, Edinburgh, Scotland, EH8 9NX

The preface of this book by John Hume details the vast amount of work since the 1970s that has resulted in this excellent work of reference today. The 39 figures form a major part of the book and include, maps, brickmaking machines, excavators, site plans, numerous sections of kilns, and illustrations of brick products, pipe products, chimneys, and sanitary ware. The latter perhaps stands out with the illustrations of water closets made by J. and M. Craig of Kilmarnock, 1909, no 453, "The Silent", pedestal wash-out with P-trap. The first twenty pages of text and illustrations give brief accounts of the three industries followed by twenty-two pages devoted to the kilns that were surveyed and recorded. The gazetteer section gives details of 233 sites, including name grid reference, period of operation, condition when visited, kiln details, and NMRS number. The last-named is the National Monument Record of Scotland where the major part of this book may be found. The book is really a key to the archive material, collected during the survey work; it includes historical information, product catalogues, machine manuals, text books, and other reference books, indicies and notes. The book concludes with 39 black and white plates of various works taken mainly in the 1970s. It is a fitting end to inspire the researcher to visit the archives and delve into the reference material for the works rescued for future historians and archaeologists, a taste of which is available from the two pages of references and bibliography.

Brick, Tile and Fireclay Industries in Scotland is a pleasure to use not least because of the high quality of the numerous drawings and illustrations in an excellent reference work.

W. ANN LOS

Michael Dumbleton, Brickmaking: A Local Industry
Bracknall: Bracknall & District Historical Society, 1990, second edition
24 pages, 10 illustrations, maps, bibliography
ISBN 0-9515825-0-X, price £1-00, plus 30p postage & packing

First published in 1978, this is a revised edition. The booklet describes traditional brickmaking methods around Ascot, Bracknell, and Wokingham. Bricks were provided for Westminister Cathedral, Madam Tassaud's, work at Eton College, and restoration at Hampton Court Palace and Downing Street, Westminister.

There is a useful map showing 34 brickwork sites by numbers, which can then be related to an alphabetical list of brickworks providing a brief histry of each site. The map also shows geological formations, so important to the location of brickworks.

The booklet can be obtained from Bracknall & District Historical Society c/o 25 Warfield Road, Bracknall, Berkshire RG12 2JY.

reprinted from notice in Local History Magazine 36.

Andrew Plumbridge and Wim Meulenkamp, Brickwork: Architecture and Design,
London: Studio Vista, 1993
ISBN 0-289-80087-0
224 pp., many colour photographs and line illustrations
Price £25-00

This is an attractively produced, large-format book, its colour photographs, some taking up a full page, being most enticing: p.153, for example, is a detail of Walter Ritchie's tenderly beautiful Mother and Child from his Creation series at the Bristol Eye Hospital. Sadly, many of the illustrations are not identified: this is always irksome, but especially so in a book which aims to cover the whole world. The aims of the book are ambitious indeed and are stated in the Introduction, where the authors set themselves "to cover all aspects of brick" (p.7). Such an ambition of course is not achieved. Nor could it be. The subject is far too vast. It would be tedious to list matters which are not included, but they are many.

The authors complain that 'From the late 19th century onwards literature on brick has frequently been nationally biased, with each country presenting their (sic) own architecture as the epitome of brick building" (p.7). Doubtless my own reading has been inadaequate, but I have not come across such bias: most books are, naturally, nationally based, but that is a different matter. Somewhat ironically, in view of my complaint, the Dutch and Britich co-authors draw many of their examples from the Netherlands and Britain (!), although the U.S.A. is well represented, Germany, France and Italy a little less so, other countries more sparsely, and some not at all. This is not to criticise the inevitable but to call for a more modest introductory claim.

The first section of the book is an historical survey from the earliest bricks in India and Mesopotamia down to Post-Modernism in our own day. There are some disturbing slips. In England, we are told, "evidence of a revival in brickmaking

dates from around the 10th century, with Saxons modelling their bricks on those found at Roman sites " (p.19). If this rather shakes one's confidence, it is scarcely restored by what immediately follows: "The Abbey Church of St Albans, built by Abbot Ealdred around 900, has Roman-type bricks ...". In fact, St Albans Abbey was built under the Norman abbot Paul of Caen, beginning in 1077 and using Roman bricks from Verulamium. In the Netherlands, we learn, brick started to be used in the 1230s (p.22), although later on the same page there is reference to "Ten Boer, Krewerd, and Leermans (mostly late 12th and early 13th century)". In fact only Leermans fits this date-range; Ten Boer and Krewerd belong to the third and last quarters of the thirteenth century respectively. Moreover, the second author's compatriot, Dr Johanne Hollestelle, has written the best book in any language on early brickmaking, (De Steenbakkerij in de Nederlanden tot omstreeks 1560, 2nd edition, Arnhem, 1976), and this demonstrates that brickmaking and brick building were established in Friesland and Groningen quite by 1175. The error that brick-tiles (mathematical tiles) were a means of avoiding the Brick Tax of 1784 in England is repeated yet again (p.34), although this is not one of the reasons for their use considered in the second section of the book (pp.146, 148).

The author comes into his own with a judicious survey of twentieth-century brickwork. Books of earlier generations, sometimes as much propaganda as history, ignored most examples of brickwork; this section restores the balance by considering the Prairie style in the U.S.A., the Amsterdam School and the work of W.M. Dudok in the Netherlands, German Expressionism and its influences elsewhere, the London Transport stations in England, and other aspects. The survey ends with an appreciation of Post-Modernism brickwork, characterising John Outram's Pumping Station on the Isle of Dogs (1989) as "arguably the finest brick buildin; of the decade" (p.71).

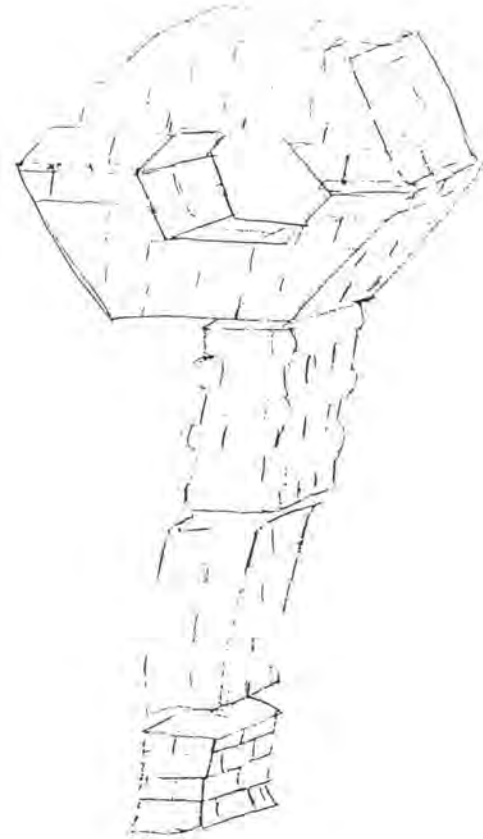
The second section of the book considers the different ways of using bricks. There are a few historical oddities. Louis Sullivan is linked with Walter Gropius as a founder of the Modern Movement, although Sullivan's contribution to brickwork has been considered in the first section of the book; the origins of diaper are located in fifteenth-century France, which cannot be true since it appears much earlier in Poland; and most disturbing is this little muddle: "the Middle Ages when the bricklayer's expertise encompassed the creation of delicate brick detailing such as window aprons and heads, scrolls, Ionic capitals and egg and dart moulding"! (p.142). Any grip on historical understanding has been lost at this point. At p.120, incidentially, there is reference to a non-existent diagram. All that said, this section of the book is the most satisfactory of the three, its survey of what can be done using bricks - though historically vitiated - being both wide ranging and balanced.

The final section, which shifts from two columns to three (of smaller print) and has line drawings, is the least satisfactory. Entitled 'Materials and Construction Methods', it seems rather too technical for the general reader - for whom, presumably, this essentially coffee-table book is intended - and yet not technical enough to serve as a textbook or site manual - for which, in any case, the format of the book is not suitable. (Strangely, exactly the same may be said of a similar section in another recent, beautifully presented, large-format book: C.J.M. Schiebroek et al., Baksteen in Nederland: de Taal van het Metselwerk, Den Haag and De Steeg, 1991). One wonders who is going to read this final section of the book - other than rather jaded reviewers.

There is a useful glossary, a modest bibliography, and a good index.

T.P. SMITH

BRICK QUERIES COLUMN



THE BRICK QUERY:
A SERVICE TO MEMBERS

From time to time the society receives queries about bricks, brickworks, and brick buildings.

To facilitate the dissemination of information these queries are printed in issues of British Brick Society Information. Some issues will be without a query list, either because none have been received or because the editor has only a single query to be included.

Answers to queries are encouraged.

THE FERRO CERAMIC POTTERY COMPANY

In BBS Information 61 (February 1994) Michael Owens requested information about the site of a ferro-ceramic mine outside Plymouth.

Detail about the site and specifically about the kiln has been passed on to Michael Owens. This includes a patent of 1880 for 'Improvements in Kilns'. David Kennett tells me that he hopes to include the full patent, with its figures, together with the fruits of my researches in Information 64 (February 1995).

Charles Thurlow
12 Hillside Road
St Austell
Cornwall

MACHINERY FOR CLAY WINNING

By way of a hobby, I compile illustrated, general interest books that trace the development of various types of machinery and am currently engaged upon one that covers clay-winning mechanisation from the turn of the century.

My previous publication was Opencast Coal Plant & Equipment which has been favourably reviewed.

To date, progress with research on clay-winning mechanisation has been good: Ceramic Research and the Brick Development Association have both been most helpful. Through the offices of the BBS Secretary, Michael Hammett, I have been put in touch with brick yards and with institutions with photographic files.

Even so, I would greatly appreciate hearing from anyone who may have useful data and/or could loan photographs of any relevant machinery.

Bill Huxley
46 Loomer Road
Chesterton
Newcastle-under-Lyme
Staffordshire
ST5 7LB
Telephone: 0782-566043

GENUINE TERMS OR LOCAL SLANG?

I have been trying to find definitions of some words which are specific to brickmaking, but so far without success. Meanings are particularly requested for the following words:

squint
lews
skintling
splays
side splays
return splays
burrs
tins

These are words which I have found used in books recording the manufacture of bricks around 1900-1910, the type of brick, the number made, by whom and the wages paid, all hand-written in the day/week book of a brickyard, the Littleheath Brickfield/Oxshott Brick Company. Various comments are added.

Perhaps a member could put me in touch with a reference source to use. Not being entirely familiar with a lot of the terminology, I have no idea whether they are genuine terms or local slang.

M.J. Crute
Oakdene
16 Twinoaks
Cobham
Surrey
KT11 2QP
Telephone: 0372-843784

BRITISH BRICK SOCIETY NEWS

Since January 1994, the society has held two Spring Meetings and its Annual General Meeting. The earlier Spring Meeting was a visit to Colliers' Brickworks, Marks Tey, Essex, with an afternoon walkabout examining brick buildings in Colchester. As an innovation, the society held a second Spring Meeting, this time in Lancashire, which took the form of a walk round the brick buildings of Bolton. The AGM was held at Cattybrook Brickworks, Almonsbury, near Bristol, and was followed by a visit to Bridgwater. Reports on all of these will be included in Information 63 (October 1994).

Members are advisied that the Daily Telegraph newspaper has interviewed various officers of the society for a feature in its series on societies catering for unusual interests. This is expected to appear in a Saturday edition of the Daily Telegraph.

Future activities include a visit to Blockley Brickworks followed by a walk round Pershore on Saturday 24 September 1994. Details of this are enclosed in this mailing.

Dates for members' diaries in 1995 are:

Saturday 8 April	visit to St Albans, Hertfordshire
Saturday 13 May	visit to Salford, Lancashire
Saturday 10 June	Annual General Meeting, Lincolnshire including visit to Tattershall Castle

Full details of these in future mailings.

An Autumn Meeting will be arranged. Ideas for this have been mooted, but suggestions including a brickworks, possibly, would be welcome. Possibilities to either Michael Hammett or David H. Kennett.