

ISSN 0960-7870

BRITISH BRICK SOCIETY

INFORMATION 133

MAY 2016



OFFICERS OF THE BRITISH BRICK SOCIETY

Chairman Tel: 0115-965-2489 E-mail: pinfold@freenetname.co.uk	Michael Chapman 8 Pinfold Close Woodborough NOTTINGHAM NG14 6DP
Honorary Secretary Tel: 020-8954-4976 E-mail: micksheila67@hotmail.com	Michael S. Oliver 19 Woodcroft Avenue STANMORE Middlesex HA7 3PT
Honorary Treasurer Tel: 01889-566107 E-mail: graeme@gjperry.co.uk	Graeme Perry 62 Carter Street UTTOXETER Staffordshire ST14 8EU
Enquiries Secretary and Liason Officer with the BAA Tel: 01494-520299 E-mail: bricksoc@mh1936.plus.com	Michael Hammett ARIBA 9 Bailey Close HIGH WYCOMBE Buckinghamshire HP13 6QA
Membership Secretary (Receives all direct subscriptions, £12-00 per annum*) Tel: 01243-607628	Dr Anthony A. Preston 11 Harcourt Way SELSEY, West Sussex PO20 0PF
Editor of BBS Information (Receives all articles and items for BBS Information) Tel: 01608-664039 E-mail: kennett1945@gmail.com Please note new e-mail address.	David H. Kennett BA, MSc 7 Watery Lane SHIPSTON-ON-STOUR Warwickshire CV36 4BE
Web Officer E-mail: webmaster@britishbricksoc.co.uk	Richard Harris Weald and Downland Museum Singleton CHICHESTER West Sussex
The society's Auditor is: Adrian Corder-Birch DL Tel: 078616-362607 E-mail: adrian@corder-birch.co.uk	Rustlings, Howe Drive HALSTEAD, Essex CO9 2QL

* The annual subscription to the British Brick Society is £12-00 per annum.
Telephone numbers and e-mail addresses of members would be helpful for contact purposes. but these will not be included in the Membership List.

British Brick Society web site:

<http://britishbricksoc.co.uk>

Contents

Editorial: Chichester Brick in Prospect	....	....	....	....	....	....	2
Obituary: Arthur Percival	....	....	....	....	....	....	11
Roman Roofing <i>Tegulae</i> : an alternative use							
by Terence Paul Smith	....	....	....	....	....	....	12
Brick Building in Kent: The Evidence from Old St Albans Court, Nonington							
by Gareth Daws and Peter Hobbs	....	....	....	....	....	....	14
Washington Square, New York City							
by David H. Kennett	....	....	....	....	....	....	20
What Can We Learn from Bits of Bradford Brick?							
by Derek Barker	....	....	....	....	....	....	22
Book Review: Bricks on the Coffee Table							
by Terence Paul Smith	....	....	....	....	....	....	33
Brick Notice: Strictly Come Building							
by Terence Paul Smith	....	....	....	....	....	....	34
Brick in Print	....	....	....	....	....	....	37

Cover Illustration:

Number 43 North Street, Chichester, one of the many eighteenth-century brick houses in the city. It was originally built *circa* 1700 with the sash windows inserted in the 1730s or 1740s. The oriel window was constructed *circa* 1760. The large shop windows were added in the mid twentieth century.

Editorial: Chichester Brick in Prospect

In 1978, the late Alec Clifton-Taylor presented a series of television programmes entitled 'Six English Towns'; of Chichester, he remarked that it was a city "where rebuilding in brick began shortly before 1700" and continued throughout the eighteenth century when "there must have been a lot of quiet money here". That "quiet money" was invested in fine brick houses and in the refronting in brick of much older, timber-framed properties. Brick was also used for two Anglican churches, one from either end of the nineteenth century.

As with much of Norfolk, the area of West Sussex around Chichester has only a limited supply of building stone and what is locally available is flint. While the cathedral builders had used a variety of different stones, both imported from France and native to other areas of southern England, in its construction, domestic building prior to the final years of the seventeenth century was largely confined to timber-framed structures, which often survive behind later brick façades. Flint, as an expensive alternative to brick, became fashionable for the fronts of houses in Chichester in the Regency period: the city has examples built around 1820. Flint can be knapped or merely coursed. Galletting, the insertion of slivers of flint into areas of wet mortar, is common in Chichester. Flint can be either from the fields or, as is often the case at Chichester, from rounded pebbles from the beach: Chichester is less than 2 miles from the sea. On flint-faced houses, window and door surrounds and quoins are of brick, frequently painted to emphasise them; rear and side walls are often brick.

Flint is the only building now to be seen above ground from the Roman period at Chichester. The town was founded as a regional centre soon after the Claudian invasion of AD 43; Cogidubnus, the ruler of the local tribe, the Regni, was happy to become a cooperative client king of the invading superpower. Unlike his eastern contemporary, Boudicca, the wife and then widow of Prastagnus, king of the Iceni in Norfolk and Suffolk, Cogidubnus had no quarrel with Rome and became a quasi-member of its governing class. Indeed, it was probably for Cogidubnus that the earliest phases of the nearby Roman palace at Fishbourne were built.

The Roman town was named *Noviomagus Regensium*, 'the new great city of the Regni'. The town was an open settlement throughout the first and much of the second centuries and the earliest defences were a simple earth bank with an external ditch. The civilian nature of the Roman town probably accounts for the irregular shape enclosed by the walls; for many years, Chichester was contained within the eleven-sided polygon created by the Roman defences. The original earthen defences probably delineate the limits of Roman settlement. These defences were augmented by a flint wall, probably erected around AD 200, certainly a short while after the earth bank and ditch were cut. Later, in the more troubled third and fourth centuries, the walls were augmented by sixteen bastions, externally also of flint, but without brick or tile bonding courses.

The Roman town provided a basic plan of a major street running east-west and a major north-south street, each of the streets is known by its cardinal orientation. At the end of each street was a gate; three were demolished in 1772 and the East Gate in 1784. Demolition of city gates was common in the 1770s and 1780s throughout England. Curiously the four major roads do not meet at an exact crossing point. The west side of North Street is on the same line as the east side of South Street. This, it has been suggested, may be due to the former Dolphin and Anchor Inn, on the north side of West Street, occupying the site of the Roman forum. West Street is bowed slightly northwards, possibly because the building of the cathedral from 1075 onwards later narrowed the southern side of West Street at its eastern end.

The town became divided into quadrants divided by the four main thoroughfares. William Gardner's plan of the city in 1769 (fig.1) shows how the south-west quadrant was taken up by the Cathedral, the eastern third of the south-east quadrant had been the site of the Dominican Friary (the Blackfriars) and a third of the north-east quadrant had been given over first to the Norman castle, of which the motte survives, and after 1269 to the Franciscan Friary (the Greyfriars). Both areas in 1769 had not been built upon. The Greyfriars had arrived in Chichester in 1225, when they had occupied another site, later the premises of St Mary's Hospital, a still functioning charity; the Blackfriars, on their site before 1283, were given or purchased additional strips of land in the next two and a half decades. Of their buildings, the stone-built choir of the Greyfriars church survives as a civic building, originally as the meeting place of the borough council, and now used for art exhibitions. Nothing survives above ground of the Blackfriars.

Into this essentially medieval town with a strong Roman underpinning the brick buildings of the eighteenth and later centuries were inserted. The south-east quadrant is the most rewarding for the student of brick buildings, although the earliest documented surviving brick house in the city -- 'John Edes House', West Street, built in 1696 -- is on the edge of the north-west quadrant (see below).



Fig.1 William Gardner's 1769 plan of Chichester. Within the city walls, much of the open space was still not built up a century later and only civic buildings were erected on the vacant spaces in the twentieth century.

Within the south-east quadrant is 'The Pallant', a group of four streets, none of which is quite straight. The crossroads where North Pallant, East Pallant, South Pallant and West Pallant meet is not a true one: the principal (west-facing) façade of Pallant House looks down the short West Pallant not at houses on the opposite side of the road.

Pallant House (fig.2) was built as a statement, of worldly success, of wealth, of social prominence, of marital intent; and the original structure can still be read as this, not least because it is one of only two houses in the city set back from the road and raised above street level — John Ede's House on West Street is the other. But even more than Ede's house, the approach to Pallant House is purposely elevated and when built would have seemed grand. There is a low brick wall above the extended semi-basement; the brick wall is topped by railings and each half ends with a rusticated pillar topped by a stone dodo. Joining the two pillars is an iron overthrow in the centre of which is a gilded 'HP', the initials of Henry Peckham (1683/84-1764) who commissioned the house.

Pallant House is of red brick in Flemish Bond, of two storeys and an attic above a semi-basement, the latter for storage of wine, the commodity in which Henry Peckham dealt. Known as 'Lisbon' Peckham from his continental connections, his house was provided with a viewing platform above the attic; adjacent to the north stack, the curious oblong box which is at the top of the back stairs gave access to the platform: the brothers, Nathaniel and Samuel Buck, included this and the wooden balustrade of Pallant House in their 'South-West prospect of the City of Chichester' of 1738. Peckham's house, constructed in 1712 and 1713, was built for his bride, a wealthy widow in her early forties, Elizabeth Albery of London; Pelham was a mere 27 years old when they married on 20 May 1711. Their marriage was not a success and between 1717 and 1720 the two fought a lengthy legal battle to secure a bill of separation.

Part of the trouble between them was the house. Henry Smart (c.1676-1760), a stone mason and son of one of the city's bricklayers, Richard Smart, had provided a "fframe or model" for the house, but this was

rejected by Henry and his wife in favour of “a New Modell ... Drawne at London”. Traces of London influences can be seen throughout the house. The façade is symmetrical, with a 2-3-2 bay arrangement and the centre pushed forward; the corners of the house and of the centre are rusticated brickwork; the columns of the doorcase are embellished with Corinthian capitals. Good quality bricks are used throughout the three visible sides. Placing the attic windows behind a brick parapet complied with the London Building Act of 1707. It was a house where no expense was spared: the final bill exceeded £3,000. Evidence of the quality of the workmanship can be seen in the gauged brickwork of the lintels to the six ground-floor windows: the red rubbers are carved like pelmets, each with an individual central motif: a rose, a thistle, a fleur-de-lys, a harp, a tulip, and an oak leaf. Gauged brickwork as pelmets is found on later properties, such as no.4 East Street, but not the use of motifs as their central feature.

Henry Smart was the first of eight workmen summoned to give evidence to hearings of the separation proceedings. A bone of contention between plaintiff and defendant was the costs of the house and the changes demanded by Elizabeth Peckham, changes which naturally increased the final bill for its construction. The tradesmen included two bricklayers, Edward Lawrence and Richard Moorey but like four carpenters and two joiners, who were also summoned to give evidence, they seem to be no more than names. Not called upon were glaziers, painters, plasterers and plumbers; labourers and apprentices would not have been.



Fig.2 Pallant House was built for Henry Peckham in 1712-13.

After Henry Peckham, Pallant House passed through various ownerships until Westhampnett Rural District Council bought it in 1916 for use as their offices. Local government had been given more systematic form in 1888 and 1894 with the establishment first of county councils and second of urban and rural district councils. Initially, rural district councils tended to be based on the areas of the Poor Law Unions established in 1834-35, frequently with a new, brick-built workhouse constructed within five years. Apart from being a longstanding borough, the City of Chichester, including its suburbs, was also one of the twenty-three Poor Law Unions of Sussex; east of the city, the village of Westhampnett was the centre of another union with the workhouse, a building now partly demolished. By the time of the Great War, it made more sense for rural district councils to have their offices in the local town rather than in a village. In 1936 on the site of the former

no.8 North Pallant, Westhampnett Rural District Council built a discreet, but essentially pedestrian, set of offices in neo-Georgian style using brick. Further local government reorganisation in 1974 amalgamated rural district areas with their urban counterparts, making Pallant House redundant in its then function.

Walter Hussey (1909-1985), Dean of Chichester 1955-1977 had built up a considerable collection of art, both painting and sculpture. Offering his collection to the city in 1974, he insisted that it be shown in Pallant House. After restoration work between 1979 and 1982, Pallant House Gallery opened. Further collections were gifted to the city and found a home at Pallant House, which by the mid-1990s was already outgrowing the available exhibition space when a major bequest came with the large collection of husband-and-wife architects Colin St John Wilson and M.J. Long. In 1997, the gallery was able to purchase the adjacent 1936 offices to the north for a new extension. Following the guidelines of European tendering procedure, after five practices had been interviewed, the gallery trustees choose Long and Kentish Architects in association with Colin St John Wilson and Associates to design the extension; the practices won because of their profound knowledge of the site, the house and the existing collections. The enlarged gallery was opened in 2003.

The south side of Pallant House adjoins East Pallant, a short street with several buildings of interest on its south side: the north side was the gardens and stables of houses on North Pallant. The curve of the street ensures neat breaks between the frontages of the houses: thus no.6 is slightly forward of its western neighbour, no.5; but the latter's other adjoining house, no.4, is pushed forward, whilst no.3 is again recessed (fig.3).

The easternmost of these is number 3, a three-bay, two storeyed house with attics and basements, now covered with stucco: the centre is pushed forward by one brick. The door is set to one side and the windows have prominent cills, with hood moulds on the two ground-floor ones. Its western neighbour, number 4, is a two-storey house with attics; the five bays have a central entrance. It probably was built in the first half of the eighteenth century. Again the brick is disguised behind plaster or stucco.



Fig.3 Numbers 3-5 East Pallant demonstrate the variety of approaches to new houses in eighteenth-century Chichester.

Much grander is number 5, a five-bay brick house of three storeys, probably built in the early 1770s above an existing basement of about 1680. Between 1774 and his death it was the residence of John Bayly (c.1735-1815), from where he carried on his medical practice. This was a house designed to be approached from either the north or the south: there was access to the garden from South Pallant. The street frontage is five regular bays with a central Ionic tetrastyle portico with three steps up to the front door. The brickwork in

Flemish Bond rises to a parapet. The south façade is again five bays, dominated by a central Venetian window lighting the principal stair. The doorcase is simpler than the one at the front and its pediment is somewhat squashed beneath the Venetian window above. The ground floor windows of the two west bays were deepened after Bayly's death. Unlike the north front, there is no parapet hiding the hipped roof.



Fig.4 Number 6 East Pallant is a sixteenth-century with an early chimney stack remodelled in the eighteenth century with brick fronts to both the street and the garden. Like most eighteenth-century brickwork in Chichester the red bricks are laid in Flemish Bond.

Not all Pallant houses were new in the eighteenth century. At some, the brickwork, front and back, hides an earlier timber-framed house. The double-pile house at number 6 is an example of a sixteenth-century house remodelled in the first half of the eighteenth century (fig.4). The five-bay, red brick street frontage in Flemish Bond is not quite symmetrical: the right-hand side is 2 feet (0.61 metres) narrower than the left. The wooden doorway is simple. Windows have pelmet-style lintels beneath hoodmoulds which also serve as the labels for the first-floor windows. The lintels to the first-floor windows are straight and have been covered with white plaster. These features hide the underbuilding of a jetty and the carrying up of the brickwork. The façade ends in a parapet hiding attic dormers. Within the building the main chimney stack was built in very rough brickwork with only limited attempt at a bond, probably in the sixteenth century, and with a tunnel on the ground floor: its dimensions can be judged from its bulk on the first floor while the two attic rooms at the front are separated by it. Whilst there is an attempt at coordination on the street frontage with each of the sash windows being six panes by three, at the rear the fenestration is less uniform, with wider garden access on the ground floor and window on the first floor for the rooms to the east than those to the west. The ground-floor garden doors have arched lintels. The windows to the stairs are placed on half landings: the garden front is far less neat than the street façade.

To the west is the building on the corner with South Pallant. Number 7 is five bays but with the three-bay east part two storeys and an attic behind a parapet and the two west bays raised to a full three storeys beneath a hipped roof. The central door unites the East Pallant frontage where the windows are all under

arched lintels. Given the prominent string course at the division between the ground and first floors, an earlier, timber-framed structure may be suspected.

South Pallant lacked the social cache of the three other streets of the Pallant: it is mainly eighteenth-century and later cottages, rather than the grander dwellings of the middle class.

West Pallant has three buildings worth mentioning. On the north side, no.5 a five-bay house in red brick laid in Flemish Bond built in the 1760s by the Sanden family, a prominent. The three central bays extend the house forward slightly and are beneath a pediment characterised by a demi-lune window, this like the nine other windows on the street façade has red rubbers above it with a white keystone in the centre. Below both the eaves and the pediment the pediment is a dentil course which also extends across the base of the pediment. The other two buildings are on the south side, both part of the property holdings of the Gruggen family, surgeons and bankers. William Gruggen the elder (1765-1828) rebuilt no.12 in about 1812 but his builders had been setting-out in error: the bay widths reduce from east to west rather than being of consistent width. "Newly built" in 1828 was no.10 West Pallant, a three-storey, five-bay house in red brick but with the door set in bay 4 rather than in the central one.

Beyond Pallant House, North Pallant has other interesting brick houses, all later than that built for Henry Peckham. On the west side, nos.14-17 were developed by a local builder, Charles Cooper, between 1786 and 1814. Directories issued in 1805 and 1811 list Charles Cooper as a "coal merchant", an occupation he is described as following also in a conveyance of 1809, but whilst he probably dealt in coal, his main business activity was as a builder and developer, having been a bricklayer. The first houses Cooper developed were nos.14 and 15, the latter a house of 1717 which he had bought with a stables in 1786. The stables were demolished and a house built on their site; the resulting pair of houses were united behind a stucco front with a paired doorcase. Cooper bought the site of nos.16 and 17 in 1802, and fairly soon afterwards built the two-storeyed no.17. He demolished the plot which became no.16 in 1814 to build himself a grand new house with a stucco front with banded rustication on the ground floor where the windows recessed within arches give the impression of being within an arcade. A three-bay house of three storeys and a parapet shows that like Henry Peckham, a century earlier, Charles Cooper was proclaiming his good fortune.

Although he appears as a "coal merchant" in directories, Charles Cooper was perhaps the most noted of the bricklayers and builders active in Chichester in the first quarter of the nineteenth century. Six men are listed as bricklayers in Seagrave's *Directory* of 1805 and three as builders, one of whom, Thomas Cobden of East Street, was by trade a bricklayer. Of the 1805 cohort, Holden's *Directory* of 1811 lists only Cobden and Cooper but adds William Brooks (*d* 1848) of St Martin's Square as a bricklayer. Brooks was the bricklayer for the Market House on North Street, for which he was paid £60 8s. 2d. in 1807 whilst at St John's Chapel in 1812-13, he was paid £52 11s. 4d. in small sums for "labour and materials" on fourteen different occasions.

St John's Chapel, in New Town, is a curiosity, an octagonal Anglican church, a plan more often favoured by nonconformists in the eighteenth century: examples still in use are to be found in Norwich and in Yarm, North Yorkshire. More importantly, St John the Evangelist, St John's Street, represents the prevailing eighteenth-century concept of worship as practised in the Church of England with the emphasis on the Word not on the Sacrament. Internally, at the east end is a great triple-decker pulpit facing galleries. The church, built in 1812-13, was a proprietary chapel. Eighteen shareholders invested £3,200 and there were numerous donations. The gallery contained 54 enclosed pews. The ground floor, the stalls of the theatre, accommodated less affluent people: the poor in free seats at the back and the servants of the relatively affluent along the north and south walls under the gallery, with the slightly better off inhabitants in the 38 enclosed pews nearer the centre: little here of the proclamation that all persons are equal in the eyes of God. Even in access to the better quality seating upstairs, gradations of wealth and influence ascended by individual stairs entered from separate entrances either side of the central entry.

The exterior of St John's is white brick in Flemish Bond with specials for the 135 degree corners. An attempt was made to distinguish the front by enclosing the doorcase and the round-headed window above it within stuccoed surrounds protruding by half a brick. The side wings are also stuccoed. The architect was James Elmes (1782-1862), editor of *Metropolitan Improvements* and father of Henry Lonsdale Elmes (1814-1847). As the elder Elmes was ill, the building work was supervised by his articled pupil, John Haviland (1792-1852), who later became a designer of prisons in the USA.

The Anglican chapel was not the only establishment which served the religious needs of the future inhabitants of the new area: a Unitarian chapel was nearby on Baffins Lane (now demolished). New Town was built up rather slowly in the early nineteenth century as a 'suburb' within the city walls on the vacant Blackfriars site. Some houses on St John's Street are in 'white' brick, made from a chalkier clay mix but used only on the front elevation. On the opposite side to the chapel, no.14 exemplifies social refinement: this originally detached, double-fronted, three storey house has 'white' brick to the street but side elevations of red

brick. Originally with a flat roof, this house was built in 1811. 'White' brick was used for the street frontages of three houses to the south of it, nos.11-13 St John's Street, built in the late 1820s as a terrace adjoining no.14. These three are the same height as the earlier house but are two bays rather than three with the doors placed at the northern edge of each property (fig.5). Details such as a round-headed doorcase with a fanlight and a string course below the second floor windows echo the earlier house.



Fig.5 The terrace, numbers 11-14 St John's Street, were built in 1811 (no.14) and the 1820s (nos.11-13) and unusual in Chichester in having white brick used for the street façades. The side wall of no.14, originally a detached house, is in red brick.

In the north-west quadrant, the city's earliest brick house, 'John Ede's House', West Street, was built in 1696; a substantial seven-bay house arranged 2-3-2 with the centre recessed, it has long suffered from having excess foliage place in front of it. The wooden mullions and transoms have been restored to the windows of this exercise in red brick with stone quoins and a stone centre.

North Street has several brick buildings of interest, both domestic and civic. Three eighteenth-century civic buildings were erected on North Street. William Stukeley, the antiquary, had drawn a plan of Chichester in 1723 which showed the market house in the centre of North Street, a timber-framed building with space for market stalls beneath the first-floor council chamber. After twice rejecting plans and elevations from Richard Boyle, Lord Burlington (1694-1753), the city council engaged Roger Morris (1695-1749) to design a new building in the local red brick. Stone is used sparingly, principally for the Ionic columns on the façade and to face the panel in the parapet with the inscription. The carved lion on the top is also of stone. This five-bay building stands forward of the general building line of the street, so that the pavement on the street's east side passes through it. At the rear of the early-eighteenth-century building, in 1781-83 the New Assembly Rooms were built to designs by James Wyatt (1746-1813). Wyatt again used the local brick for the external walls. A different, London-based architect, John Nash (1752-1835), was engaged to design a new Market House in 1806. William Brooks and Thomas Cobden, respected local builders, were engaged on 17 April 1807 as joint contractors. They were to be paid £1,522 0s. 0d. for their work. The Market House opened for business on 20 January 1808. The central part of the frontage is a hexastyle Doric colonnade between two stuccoed side chambers; behind was a timber hall. Apart from the colonnade, Nash's work was swept away when the Technical Institute and Art School acquired the building in 1900. The new structure had a stone front to the street, set behind Nash's portico, but the side walls were constructed of brick.

One of the grandest houses on the east side of North Street is 'The Ship Hotel', originally built as a speculative venture by Richard Murray and John Newland in 1804-06, but intended by the former as a home

for his sailor brother, Admiral Sir George Murray, who had been Horatio Nelson's Captain of the Fleet at Trafalgar. The house is of three storeys and four bays in red brick laid in Flemish Bond and was built as a double pile house. When built, the principal rooms were on the first floor: sash windows extending to the floor are fronted by cast iron balconies. Many internal alterations were done when the house was sold in 1938 to become an hotel but the splendid neo-classical staircase and first-floor landing remain. Twentieth-century extensions of the hotel have been in keeping with the original. One could mistake the oval windows on the building's south wall as original features but they were inserted in 1939.



Fig.6 Number 43 North Street is a large house, built *circa* 1700 was remodelled with sash windows in the 1730s or 1740s and the oriel window over the door in the 1760s. In the mid twentieth century the house was used as commercial premises, hence the large ground floor windows. To the left is nos.41 and 42, a pair of seventeenth-century timber-framed houses refronted in brick about a century after they were first built and given unity by the pedimented pair of doors in the centre.

Opposite on the west side of North Street is number 43 (fig.6), a building with a complex history which includes a period in the mid-twentieth century as commercial premises, which explains the large, ground-floor windows on the street façade, somewhat out of keeping with its present domestic use. This large, five-bay house was built in about 1700, but the sash windows were added later, probably in the second quarter of the eighteenth century. In the 1760s, the oriel window to the first-floor room over the door was inserted by a local builder: to accommodate the window, the pediment of the doorcase was sliced through. Number 43 is two-storeyed with extensive cellars and five attic rooms. In plan, it almost looks as though it is in two halves: an L-shaped portion including the entrance hall, one room and both sets of stairs on the ground floor, and two bedrooms, one with the oriel window on the first floor; and a long wing extending back with several rooms on each floor. The latter reduces to a single storey two-thirds of the way back. Four features give the lie to the impression of having been two premises: the cellars are unified and extend over two thirds of the front range and all of the long range to the right, the two sets of stairs are all in one part only, and the attics extend over all the first floor. What clinches the argument that this was built as a single house is that the brickwork of the street frontage is of one date in red brick laid in Flemish Bond. The side wall is covered with plaster.

Adjacent are nos.42 and 41 (left-hand edge of fig.6), a pair of seventeenth-century timber-framed houses refronted in brick when they were about a century or slightly more old. The eighteenth-century builder

put the pair of doors under a single pediment and fitted blind ashes on the first and second floors. Into his brickwork, he fitted sash windows but these are not square.

In the north-east quadrant, no.8 St Martin's Square is a house where almost all of the bricks are laid in Header Bond. Very few stretchers are visible in this three storey, five bay house with a prominent bow window.

It is worth asking why so many eighteenth-century brick buildings, it is worth asking why so many have survived in Chichester. The late-twentieth-century reasons are conservation and civic pride. Chichester's appearance in the twenty-first century is partly due to a lack of industrialisation in the nineteenth century which meant that beyond those industries traditionally associated with a small town with under ten thousand inhabitants, such as brewing or farm and produce markets, there were few large buildings erected in the century after 1820. The principal breweries were built beyond the city walls.

The chief reason for the survival of so many good quality, eighteenth-century brick buildings in Chichester lies in the nature of the town in the nineteenth and early twentieth centuries. It was a cathedral city and county town where nothing happened. In 1857, Lord William Pitt Lennox (1799-1881) wrote: "Those who remember Chichester in its palmy days would scarcely believe the dullness that now prevails there" calling it "this deserted city". Nine years later, in 1866, Charles Swinson (*d.* 1887) concluded that Chichester was "a decayed city" and Dean Burgon wrote his letters from "sleepy Hollow". The quietude of the city appealed to some, not least the novelist Henry James (1843-1916) and the sculptor Eric Gill (1882-1940) who actually lived in the city in late adolescence. The latter compared it favourably with Brighton: "Chichester was what Brighton was not" which had the disadvantage of being overbuilt by "nineteenth-century speculative builders" more concerned with building "as many [houses] as quickly as possible" rather than with "plan and order".

The barrier of a complete circuit of the city walls kept the railway out. Both the railway station and its associated yards and the twentieth-century bus station, an example of a 1930s building type which is rapidly disappearing from town centres, are both south of the town walls. Other major public buildings of the inter-war decades were also built outside the city walls. St Richard's Hospital, Spitalfield Lane, is north-east of the city in neo-Georgian brick. The County Court, now Magistrates' Court, Southgate, was opened in 1940: "sober and symmetrical brickwork" was Ian Nairn's verdict. Like the hospital and the County Buildings, it was designed under the supervision of the County Architect, Cecil George Stillman (1894-1968).

Inside the city, development in the twentieth century was comparatively benign: one large purpose-built cinema (now a supermarket), a bank, a new post office, and the neo-Georgian county council offices were the chief intrusions of the inter-war period into the city's existing fabric. Individual plots on the main streets have been rebuilt with some sympathy towards the existing built environment in the last seventy years but these are comparatively few in number.

Of the principal new public buildings erected since 1945, one is inside the city and the other outside the city walls. Inside the city, Chichester District Council built a low, two-storey office block on vacant land formerly part of the Blackfriars site. In orange brick, part is hidden by the use of a semi-basement. Outside the former West Gate, a new building for the West Sussex Record Office was constructed in 1989. Both repay more than a casual glance on a rapid trip walking round the city.

As this issue of *British Brick Society Information* was being put to bed, the editor came across an piece in 'Country Diary', *The Guardian*, 12 April 2016, in the course of which Rob Yarham remarked on:

The restored 19th-century brick-moulding shed and kiln, which made constructive use of the same heavy clay that I've been struggling through, and the nearby furnace pond, which powered iron working in the 1500s, are both relics of a more industrial past.'

There are two reasons for drawing attention to the kiln. Ebernoe Common is east of the A283 just north of Petworth and members attending the Annual General Meeting in Chichester may wish to include a visit to the site on their journey.

Ebernoe Common is one of a number of restored but unused brick kilns known to the writer. Two are in Northumberland. The estate brickworks of Belsay Hall are by the A696 some 7 miles beyond Newcastle Airport. The kiln for Ewart Park in the north of the county is beside a bridge on a minor road north-east of Wooler. Another estate kiln is that in the woods west of Blickling Hall, Norfolk. In Oxfordshire, the village of Nettlebed is well-known as a brick, tile, and pottery making centre. In the course of the visit following the Annual General Meeting in Ewelme, Oxfordshire, in 1984, members stopped at Nettlebed to view the kiln.

British Brick Society Information, 85, December 2001, is an article on 'The Brick Kiln of the Oxford Canal Company at Fenny Compton, Warwickshire' by John Selby, which members of the society visited in March 2002.

There are more examples, I am sure. It would be useful to have a register of preserved kiln structures.

The Annual General Meeting in Chichester will be the British Brick Society's second event of 2016. The first of the society's four visits took place on Saturday 16 April 2016 when a group of members looked at buildings in Stourbridge, West Midlands, including the Red House Glass Cone, the only one of its type still operating in Britain. A report on the visit will be included in a future issue of *British Brick Society Information*.

Members attending were issued with 'Buildings Notes' for the day; these are being revised and reordered; when this is done, copy will be placed on the society's website. Arising from the visit, an article on 'Brick and its Uses in the Churches, Chapels and Mosques of Stourbridge' is in preparation for the next 'Brick in Churches' issue of *British Brick Society Information*.

The British Brick Society regrets to report the death of a long-standing member, Dr Arthur Percival. A short obituary appears below.

DAVID H. KENNETT
Editor, *British Brick Society Information*,
24 April 2016

OBITUARY: ARTHUR PERCIVAL

Members will remember Arthur Percival, who died on 16 November 2014 aged 81, for his organisation of the British Brick Society's 2012 Annual General Meeting in Faversham, Kent. For the tour on the afternoon of the meeting, he prepared extremely full notes, which were distributed to those who attended. The society can once again express its gratitude for both the organisation and the notes, especially as Arthur was already suffering from Myalgic Encephalomyelitis, the chronic fatigue syndrome which is such a debilitating illness. His cheerfulness on the day was remarkable.

Arthur was born in Wembley and later gained his degree from the University of Oxford, attending Wadham College. After National Service, he worked as a conservation historian, initially for the London County Council and from 1965 for the Civic Trust. He was co-founder of the Fleur-de-Lis Heritage Centre at Faversham, Kent, in 1962 and wrote several of its 'Faversham Papers', being the editor of the series from 1964. His principal book was *Understanding Our Surroundings: a manual of urban identity*, London: Civic Trust, 1979. For the British Brick Society, Arthur wrote 'Dutch Disappointment? Dutch Influence in Sandwich, Kent' in *BBS Information*, 119, February 2012, and, with T.P. Smith, 'A Puzzling Tower Structure at Faversham, Kent' in *BBS Information*, 93, February 2004.

Awarded a D.Litt. by his university, Arthur was a man of extremely wide his knowledge and generous towards his peers and those much younger. A much-travelled man, he had visited Japan more than once; on at least two occasions, he told us of visiting the World Brick Museum at Maizuru, a town on the north coast of Japan's main island, Honshu, north-west of the ancient capital of Kyoto.

Arthur was man of whom that overworked adjective "nice" in the best sense of that word can be said. Earlier tributes have paid him the compliment of being a "true gentleman". If somewhat belatedly, the British Brick Society extends its sincere condolences to his family.

T.P. SMITH and D.H. KENNETT

Roman Roofing *Tegulae*: an alternative use

Terence Paul Smith

‘Though originally created for roofing,’ wrote the late Gerald Brodribb in his study of Roman brick and tile, ‘the *tegula* can be used for many other purposes It can be used for flooring, bonding courses, foundation courses for walls, capping for *pilae*, locker bases, steps, wall cavities, draining, base[s] of hearths, capping for tops of walls, ovens, [and] flue dampers.’¹ The present note is concerned with the use of *tegulae* in general walling, either for solid ‘brickwork’ or as bonding courses in rubble or roughly dressed stone walls; in both cases the *tegulae* were used as substitute bricks (fig.1). The purpose of this note is to open discussion on the question of *why* they were sometimes used in this manner. The examples drawn on are from the City of London, but instances are also known from elsewhere in Roman Britain, for example in the forts of the Saxon Shore.²

Accessible to public view are those used in the Roman city wall (c. AD 200) — at this point a thickening of the wall of the original Roman fort (c. 120) — which crosses the gorge of the thirteenth-century mural tower 14, immediately north of the street called London Wall and immediately east of the Museum of London.³ Here the *tegulae* were used as lacing or bonding courses in walling which was predominantly of Kentish Ragstone. The *tegulae* are laid with one orange flange flush with the wallface, so that in the completed wall they would appear as the edges of bricks; the *tegulae* are laid with their flanges upwards.

Buildings excavated by what was then Museum of London Archaeology Service (MoLAS) at the Regis House site, near the Thames waterfront south of Monument Street, and erected after the Hadrianic fire in the early second century, were constructed of ‘unusual materials, with several courses of squared chalk interspersed with double strings [*recte*, bonding courses] of roof tile, laid with their flanges turned upwards to mimic brickwork’; there were also associated piers, some of ‘chalk and tile’ and some built ‘entirely of roof tile’ that is, *tegulae*.⁴

More recently, excavations, also by MoLAS, have revealed a long section of a Roman culvert, with an associated square manhole, running from a site near the Monument towards the Thames. The manhole is of solid ‘brickwork’ — in fact, mostly of *tegulae* imitating bricks, although some bricks proper are also included; most, perhaps all, of the *tegulae* are laid flange uppermost. The walls of the culvert are of rubble stone with bonding courses which include bricks but which are mostly of *tegulae*, again laid with their flanges uppermost. Immediately south of the manhole, the lower part of the wall has bonding of single courses, but elsewhere the courses are double. The semi-circular barrel vault of the culvert also includes *tegulae*, although in this case some have their flanges chipped off so that they form, in effect, thin bricks. The triangular head of the opening between the manhole and the culvert is constructed from corbelled out materials; in the lower courses these are bricks proper but in the upper courses they are again *tegulae*, as is the capping at the top. The jambs of this opening are of bricks, necessary since two adjacent edges were required to form the quoins, and *tegulae*, of course, cannot provide these.⁵

At first glance, the sides of the flanges of the *tegulae* look like the edges of bricks. On closer examination, however, their smoother finish will be apparent, as too will be the presence of cutaways, necessary when the *tegulae* were used for their primary purpose of roofing in order to enable them to overlap one another (fig.1C). Sometimes too the *tegulae* show a distinct curve along their lengths, rarely present in bricks.

But *why* were *tegulae* substituted for bricks in this way? Three possibilities are here suggested for consideration.

First, their use may reflect no more than the greater availability of roofing tiles as compared with bricks. Buildings which were themselves *not* of brick but of timber-framing were nevertheless often roofed with tiles. Certainly roofing tiles (both *tegulae* and *imbrices*) are more common finds than bricks amongst ceramic building materials from Roman London. *Tegulae* were often used in lieu of bricks because they were, so to put it, *there*.

Second, they may have been used because, when laid with their flanges uppermost — as seems nearly always to have been the case — they provided a good mortar key. The result would be a well integrated, solid form of construction.

Third, they may have been preferred by Roman builders because they were easier to handle, being lighter in weight than bricks of an equivalent surface area.

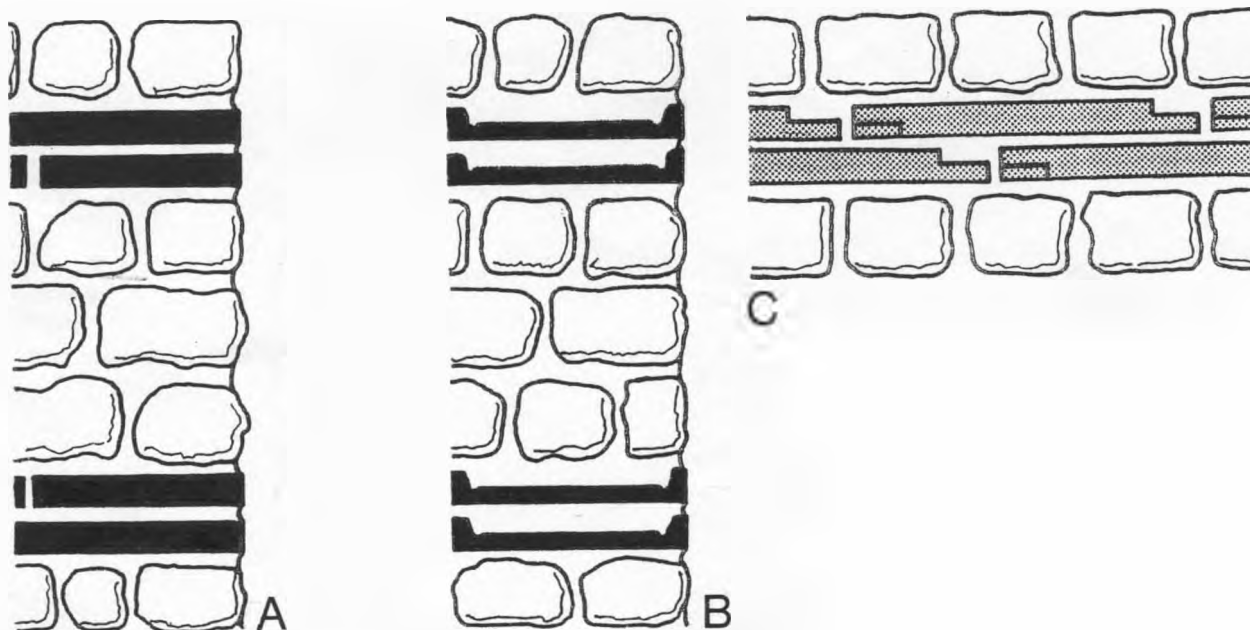


Fig.1 Use of bricks to form bonding courses in Roman rubble stone walling: section (A); and substitution of *tegulae* for bricks in such walling: section (B) and elevation (C).

Understanding the particularities of Roman building construction is hampered by the dearth of contemporary documentary accounts, the few that exist (notably Vitruvius' *De Architectura*, first-century BC) sometimes being less clear than we could wish and often failing to discuss matters about which we would like to know.⁶ We are therefore thrown back on our own resources — having, that is, to establish what seem to us the most likely explanations for particular practices. In the present case, three possibilities have been suggested. But, as stated at the outset, the purpose of this note is to open up discussion on this intriguing issue.

NOTES AND REFERENCES

1. G. Brodribb, *Roman Brick and Tile*, Gloucester: Alan Sutton Publishing, 1987, p.2. Jean-Pierre Adam notes the use of trimmed *tegulae* (that is, *tegulae* with their flanges removed) in walling in the Pompeii region at an early date. 'a use that continued even after the more systematic manufacture of bricks': J.-P. Adam, *Roman Building: Materials and Techniques*, trans. by A. Mathews of *La Construction Romaine: matériaux et techniques*, London: Routledge, 1994, p.139.
2. S. Johnson, 'The Architecture of the Saxon Shore Forts', in V.A. Maxfield, ed., *The Saxon Shore: a Handbook*, Exeter Studies in History, 25, Exeter: University of Exeter, 1989, p.32. [For a recent illustration of the practice see J. Bettley and N. Pevsner, *The Buildings of England: Suffolk: East*, New Haven and London: Yale University Press, pl.5, a colour plate of the walls of Burgh Castle, Norfolk (before 1974 in Suffolk) DHK.]
3. This is well illustrated in H. Chapman, J. Hall, and G. Marsh, *The London Wall Walk*, London: Museum of London, 1985, section 17.
4. T. Brigham and B. Watson, 'Current Archaeological Work at Regis House in the City of London (Part 2)', *London Archaeologist*, 8, 3, Winter 1996, p.65; the site code is KWS94. MoLAS is now Museum of London Archaeology (MoLA) and, somewhat bizarrely, has no connexion with the Museum of London!
5. T.P. Smith, 'The Bricks and Tiles from the Roman Culvert and Manhole at Monument House, Monument Street/Botolph Lane, London EC3 (BPL95)', unpublished archive report, Museum of London, 1998. For the culvert see I. Blair and D. Sankey, *A Roman Drainage Culvert. Great Fire Destruction Debris and Other Evidence from Hillside Sites North-East of London Bridge: Excavations at Monument House and 13-21 Eastcheap, City of London*, MoLAS Archaeology Study Series 17, London: MoLAS, 2007, pp.11-14.
6. Latin text with English translation by F. Grainger, 2 vols, Leob Classical Library, 1934, reissued Cambridge MA and London: Harvard University Press, 1999; the best recent translation is I.D. Rowland and T.N. Howe, eds, *Vitruvius: Ten Books on Architecture*, Cambridge: Cambridge University Press, 1999.

Brick Building in Kent: The Evidence from Old St Albans Court, Nonington

Gareth Daws and Peter Hobbs

Our particular interest is in endeavouring to provide a better but cheap means of utilising brick as an historical dating medium at least in our local area. We cannot afford extensive laboratory work but what can be done inexpensively is to amass information and to process it. It is with this objective in mind that we sought to categorise the bricks at Old St Albans Court, a Tudor Manor with documented seventeenth-, eighteenth- and nineteenth-century changes, and make the information available for a wider benefit.

Old St Albans Court is at Nonington, a collection of three hamlets midway between Dover, Canterbury, and Sandwich where there are substantial deposits of brickearth,¹ material traditionally dug in the Autumn, allowed to over winter and then moulded in the Spring. Evidence of brick making activity has been observed at the western edge of the village by Butter Street and Holt Street farm and the name Brickfield Piece in Fredville Park perhaps is a relic of the construction of the eighteenth-century manor house there.² Similar remains have been observed near Beauchamps Lane at the eastern end of the village³ which adjoins Old St Albans Court. The earliest brickmaker so far discovered is William Knowles who is recorded as standing surety at the 1600 Quarter Sessions⁴ but he was probably one of a number as the later census reflects a continuing activity. The 1841 census contained seven builders and bricklayers; the 1851 census ten; eight in 1861; twelve in 1871; sixteen in 1881 and ten in 1891



Fig.1 The medieval manor house at Old St Albans Court, Nonington, Kent, with the 1556 brick tower and chimneys after architect George Devey had removed all later additions *circa* 1878.

and 1901. This was in a total working male population of approximately two hundred and fifty, the vast majority of whom worked in agriculture.⁵

Old St Albans Court itself, named locally after its owners, the Abbey of St Albans from 1096 until 1540,⁶ probably started as an open hall, perhaps a Wealden type structure⁷ in the early 1300s. A wing was added with a stone-lined garderobe at the far end somewhat later⁸ but the whole was rebuilt substantially in brick in 1556.⁹ A large excavation, first recorded in a 1501 Abbey Rent Roll, is shown close to the house on a 1629 Estate Map¹⁰ which is assumed to have been the source of the brickearth and there is leasing evidence of brick kilns close by in 1665.¹¹ We know that there was a further rebuilding and reshaping of the house in 1663¹² and it seems highly unlikely that any other than these sources would have been used. Further substantial work in brick was undertaken in 1790.¹³ All this is in documentary records as well as confirmed by archaeological excavation where the bricks in situ have been revealed by archaeologists.¹⁴ The same applies to work carried out in 1869 by George Devey in rebuilding the Stable block and in 1876-8 when he built the (Grade 1 listed) new St Albans Court for William Oxenden Hammond on a rise above the ancient manor house.¹⁵ In addition to the evidence of brick kilns on the estate from the seventeenth century onwards, brick making was carried on in the nearest hamlet of Easole into the twentieth century.¹⁶

Our process has been to record the sizes, shapes and colours of the bricks in situ at the relevant times, and also to analyse the mortar. The tables are not set out here but are available online and in print in *Archaeologia Cantiana*, 136, 2015, pages 281-293.



Fig.2 Major extensions to the medieval manor house were built in 1666, extended in 1790, and demolished *circa* 1878.



Fig.3 George Devey's 1869 stables at Old St Albans Court, Nonington, Kent, with diaper brickwork.

Obviously, where they are still in situ, only the visible dimensions of the bricks can be recorded. Since this is, in effect, raw data, we have drawn a few conclusions against national standards and made some observations on our own bricks but any wider context by definition will require more information.

The first conclusion, something of a surprise but understandable by hindsight, was that the bulk of bricks used by Devey in his works were handmade presumably locally half a mile down the road in Easole by Henry Maxted, 'Builder and Brickmaker', and his eight strong workforce recorded in the census. The nearest railway station at that time was about three miles away over country lanes at Adisham and we know the stone for Hammond's new Pulham garden ¹⁷ came via that route as probably did the heavy duty engineering bricks but since the skills and materials were effectively on site, it was clearly more economical to take advantage of that for the bulk requirements even though the extensive manufacturing capacity of the Sittingbourne brickworks was less than an hour down the main railway line to London.

On the other hand, Devey was clearly intrigued and excited by the different forms and shapes that brick could provide and his exuberance is well displayed in a number of architectural details known to be typical of his style.¹⁸ Evident in the stable block are ragstone footings rising unevenly into brickwork to invite belief it is built upon medieval ruins; a battlemented tower is decorated with diaper work and ringed with corbelled machicolations, both of which also feature in the adjoining gated entrance to the courtyard, the gate itself outlined with a hood mould of brick; tumbled-in bricks form gable end eave slopes; and a Dutch triangular pedimented gable sits above the courtyard clock.

Secondly, local manufacture was far from the machine accuracy of the bricks pouring out of those extensive brickworks around Sittingbourne from the mid nineteenth century onwards: of the 1869 and later bricks

measured, the length could vary by up to ½ inch either way and the breadth and thickness by up to ¼ inch. Local mould making was clearly not a precise business but differences of six percent and more on all the dimensions against a hundred-year-old standard suggest that this was not a priority for architects engaged on country work, at least in our part of Kent. George Devey was a man with a national reputation but there is some evidence that he was impatient of this sort of detail although, as we indicate above, he was very conscious of the overall impact of his work.

Thirdly, the 1790 bricks had an even greater variation from the standard with length varying from ½ inch under to 1¼ inch over. However, as with the 1870s brick, they look solid and well-made and have stood well the test of exposure and time. We judged from what we measured that there was no discernible impact from the Brick Tax which might reflect that economies in cost did not figure as significant in the eyes of the owner, William Hammond, and the conservatism of the brickmakers and more likely the facility for the bricklayers precluded any significant change.

Fourthly, the earlier Tudor and Stuart bricks have a different consistency, being softer than their later counterparts and also not such a strong red as the 1870 brick. This may be a function of time but more likely is due to firing techniques. The local brickearth does not appear to vary but that is not a scientifically supported observation. On the other hand, the blue headers always seem to have been well burnt whatever the period. The variation in length is not as great as in later bricks although bricks up to 10 inches long are not uncommon, a trait which was still evident in 1790. The width, however, could be up to 5½ inches but not less than 4¼ inches. With a depth between 2 and 2½ inches, these bricks appear recognisably wider and less thick than later products.

Fifth, the stone wall backing the garderobe noted in the first major enlargement of the house contained a few small yellow bricks, uniquely so, since none have found elsewhere in the visible fabric of the house or on the excavated site. These appear to match bricks being excavated currently by the Dover Archaeological Group under the direction of Keith Parfitt from what appears to be a substantial and rich manor house provisionally dated to the first half of the fourteenth century, built on a rise about half a mile to the west and called Beechams or Beauchamps. No evidence exists of any yellow brick being made in the Nonington area at any time but they appear in colour to be similar to the earliest bricks used in Sandwich and therefore would have come by road from Sandwich.¹⁹

These particular bricks were most probably brought the short distance down to Old St Albans Court from the Beauchamps site by the Hammonds who bought it in 1556 having previously rented it. However, the provisional dating of the site where they are in situ is early 1300s, a century and a half before brick making is known in Sandwich, so these may well be Low Country imports. Potentially, this could be evidence for what may be some of the earliest medieval building in brick in East Kent but to date, archaeology although still in progress has not yet uncovered their point of use on the site itself.

Sixth, there is a garden wall with an incised 1849 brick in situ. Bricks similar to these appear in the south eastern front of the house and from their position suggest that they date the removal of the external wall which had formed the last vestige of what had been the hall of the medieval house and its replacement in brick.

Finally, the only frogged bricks at Old St Albans Court look machine made and are in the excavation exposed foundations for the additional tower and bay added in 1869 at the front of the house which were then removed together with everything post medieval in the old manor house after the completion of the new manor house by Devey in 1876.

The mortar analysis was not conducted under microscopic laboratory conditions. After weighing, the sample was crushed, not ground, and examined by eye for its description. Hydrochloric acid was added to it diluted slightly (about 1:3) with distilled water in a glass beaker to dissolve the lime binder. The chemical reaction, dispersion, was studied to determine whether it was a lime rich mix. The sample was then left for 48 hours for the aggregate to settle and drained off carefully, then washed in distilled water and separated by pouring through a paper filter and left to dry. This dry sample was weighed so it could be compared to the original weight and thereby the proportion of lime binder calculated. Then the original gauge, or mix ratio, was established.

Fourteen mortar samples were taken of all phases of brickwork from the 1556 Tower interior through to the foundations of the 1666 work to the Devey 1876 restoration. Their dry weight ranged from 2.5g to 15g dependant on the accessibility and availability of each sample.

Every one of the samples was of lime mortar. Slightly surprisingly, no cement at all was found in the later nineteenth-century samples.

The earlier building from 1556 to 1666 had strong lime rich mix ratios on average of 1:2 (1 lime: 2 sand), using a very soft sand of rounded grains, not well graded, light grey/brown in colour. Perhaps the strong gauge was used as it was known the sand did not contain any larger grit fragments for strength, as is the case with modern sands (i.e. sharp sand used in many conservation repair mortars). Maybe river sand was used. This gauge (1 lime:2 sand) may also suggest the mortars were “hot-mixed lime” whereby quicklime (calcium oxide) is mixed with damp

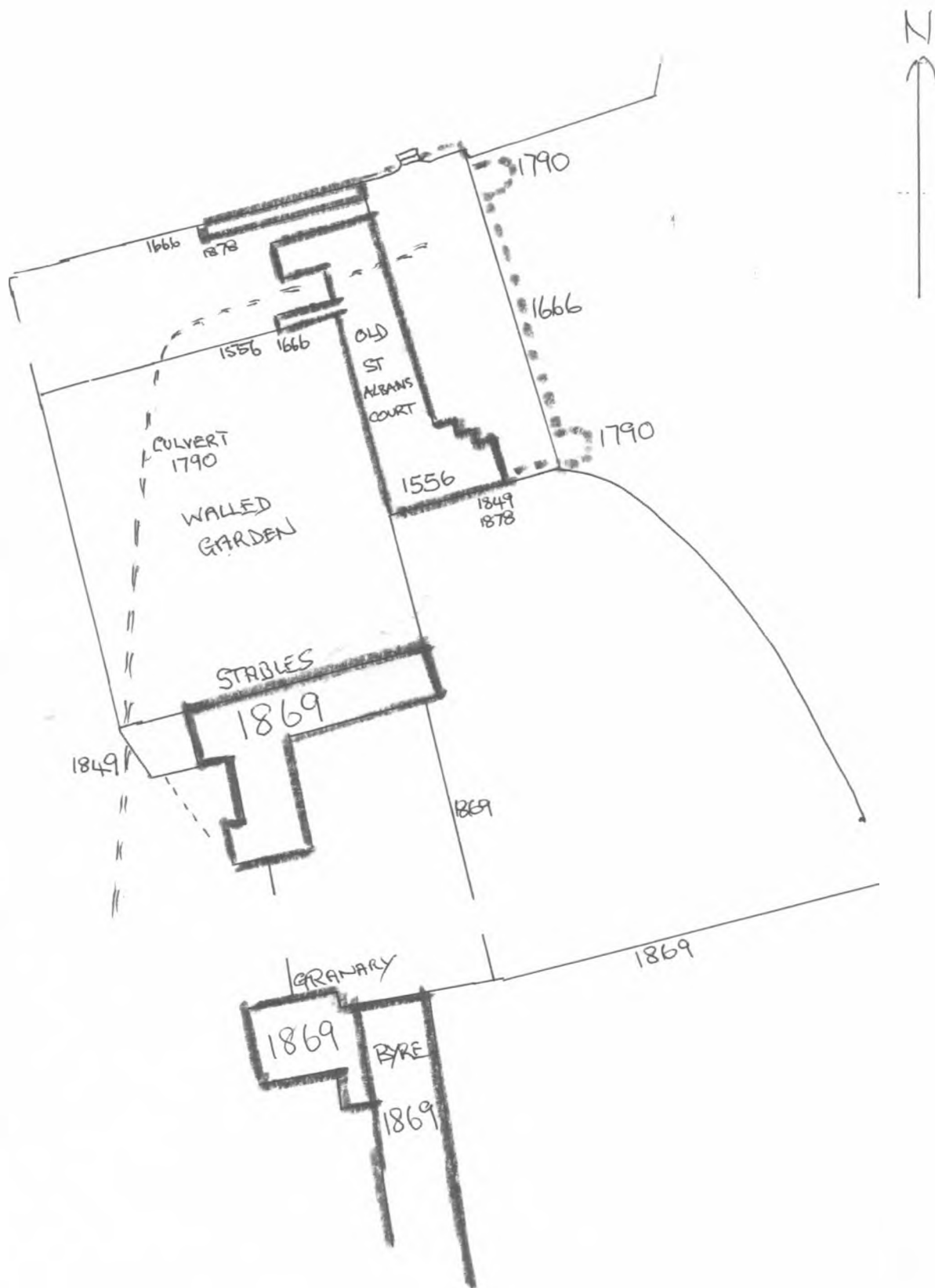


Fig.4 Identified bricks at Old St Albans Court, Nonington, Kent.

sand/aggregate rather than slaked with water to a putty (calcium hydroxide) first, and then mixed with the aggregate. A standard gauge for “hot-lime” mixes is 1 quicklime: 3 aggregate which gives an equivalent gauge strength of at least 1:2 (1 lime: 2 aggregate) once the mortar has fully matured and carbonated.²⁰

Of the four 1790 building samples, all were different in their mix ratios. The culvert samples ranged from 1:1 to 1:4, and were different in appearance as were the aggregates used which may be because this was a culvert, and out of sight, so appearance was of no importance.

The three Devey restoration samples had an average mix ratio of 1:3, with two of them containing red angular fragments, possibly brick dust used as a pozzolan (a strengthening additive possibly as an alternative to cement), and the other with black/grey aggregate indicating the use of burnt coal ash or charcoal for colouring.

Finally, in terms of the brickwork itself, we should record that the 1556 brickwork is in English Bond with alternate courses of headers and stretchers. There is no extant 1666 walling in place that we can identify with certainty, or 1790 above ground work. However, we do have culverts and cisterns of the 1790s which display a fairly regular English Bond clearly designed for strength underground. The 1869 and 1876 Devey brickwork is English Bond and we have commented earlier on his elaborate use architectural decoration. Interestingly, the face work he applied to the existing outbuildings on the NE boundary of Old St Albans Court is in Flemish Bond with each course consisting of alternate headers and stretchers. This raises the question of whether Devey or the builder decided this!

NOTES AND REFERENCES

1. J.G.O. Smart, G. Bisson, and B.C. Worssam, *Geology of the Country around Canterbury and Folkstone*, London: HMSO, 1966, p.236.
2. Observations recorded by Clive Webb on the Nonington Village Website, 2009.
3. Webb, 2009.
4. *Kent Quarter Sessions*, 3 July 1600.
5. Census Returns for Nonington, 1841-1911, London: National Archive Office (Public Record Office); occupational statistics for individual parishes available *The National Census: England*, London: HMSO.
6. E. Hasted *The History and Topographical Survey of Kent*, 2nd edition, London, 1791-1801, volume IX, pp.251-262; the volumes reprinted Wakefield: EP Publishing, 1974.
7. K. Parfitt, H. Jones, and P. Hobbs, ‘Investigations at Old St Albans Court, Nonington, *Kent Archaeological Review*, 146, Winter 2001, p.134.
8. Parfitt, Jones, and Hobbs, 2001.
9. P. Hobbs, ‘Old St Albans Court, Nonington’, *Archaeologia Cantiana*, 125, 2005, pp.273-287, endnote 50.
10. KHLC, U442 P30.
11. KHLC, U471 T511.
12. *Topographical Miscellanies*, London, 1792, vol. 1, London and Kent: ‘St Albans Court’.
13. Mss Family History; Hobbs, 2005, endnotes.
14. Howard Jones, ‘The Architecture of Old St Albans Court’, unpublished article, 2002.
15. J. Allibone, *George Devey, Architect, 1820-1886*, London: British Architectural Library, 1991, pages 56-57, and 22, 28, 43, 98, and 111.
16. C. Webb, 2009; David Lewis, personal communication; Census Returns; about 65% of the male working population of Nonington were engaged in agricultural activities but 20% of the remainder were involved with bricks in 1891.
17. Ian Sayer, personal communication. Ian was the last head groundsman for Nonington College and his grandfather worked for the St Albans Court estate and is recorded in the official obituary as having prepared the mausoleum at the funeral of William Oxenden Hammond, who commissioned the new St Albans Court in 1876.
18. Allibone, 1991.
19. The road from Sandwich to Nonington was straightforwardly via the Woodnesborough Gate and, for example, the Crown assembled no less than 6,000 carts in Sandwich as well as a mass of miscellaneous other supplies for the 1359-60 campaign in France, so nobody would have minded or even noticed a few day trips down the road to Nonington, particularly when ordered by the commanding general. H.J. Hewitt, *The Organisation of War under Edward III, 1338-62*, Manchester: Manchester University Press, 1966. In the author’s experience, similar practices were alive and well in the latter half of the twentieth century.
20. N. Copsey and B. Gourlay, in *The Journal of the Building Limes Forum*, 22, 2015, pp.70-72.

Washington Square, New York City

David H. Kennett

Washington Square, the name evokes the eponymous novel by Henry James (1843-1916), who, indeed, spent much of his childhood there and in the novel recalled some of his earliest experiences:

It was here ... that you had come into a world which appeared to offer a variety of sources of interest; it was here that your grandmother lived, in venerable solitude, and dispensed a hospitality which commended itself alike to the infant imagination and the infant palate; it was here that you took your first walks abroad, following the nurserymaid with unequal step, and sniffing up the strange odour of the ailanthus trees which at that time formed the principal umbrage of the Square, and diffused an aroma that you were not yet critical enough to dislike as it deserved; it was here, finally, that your first school ... enlarged the circle both of your observations and your sensations.¹

Moreover, he based the house of Doctor Sloper and his daughter Catherine on the home of his grandmother, Elizabeth Walsh, at No. 18 Washington Square, a now demolished property in a substantial row on the part of the north side of the square to the west of Fifth Avenue. In 1881, Henry James described the house as providing:

The ideal of a quiet and of genteel retirement, in 1835, was found in Washington Square, where the doctor built himself a handsome, modern, wide-fronted house with a big balcony before the drawing room windows, and a flight of white marble steps ascending to a portal which was also faced with white marble. This structure and many of its neighbours, which it exactly resembled, were supposed, forty years ago, to embody the last results of architectural science, and they remain to this day very solid and honourable dwellings. ... this portion of New York appears to many persons the most delectable. It has the kind of established repose which is not of frequent occurrence in other quarters of the long, shrill city.²

Whilst some of the original houses on that part of the north side of the Square west of Fifth Avenue have been demolished, all of those to the east of Fifth Avenue survive, or at least their façades do. Numbers 1-13 are, or in the case of nos. 7-13 were,³ substantial houses of four storeys with basements and attics, each three bays wide (fig.1). The principal material for the continuous façade is red brick for the raised ground floor, the first floor and the second floor. The basement frontage is stone, designed to be easily cleaned. The third floor is faced in white stucco. The steps to the front door are stone, the portico with Ionic columns is marble, just like Dr Sloper's house.

There is one significant difference: there are no balconies to the first-floor drawing rooms of the houses on the east part of the north side of the Square. As Henry James' novel makes clear, the ground floor reception rooms were the front parlour and the back parlour; the drawing room and the doctor's consulting rooms and study were on the first floor.⁴ Family bedrooms were on the second floor with guest rooms on the third floor and servants' quarters in the attic. The kitchen and other service facilities were in the lower ground floor, a semi-basement with an open space at the front of the property and access to a drying yard at the rear.

The north side of the square was built in stages as building lots were let by Sailor Snug Harbor,⁵ a charity founded in 1801 by Capt Robert Richard Randall to provide an almshouse and support for aged seamen: Capt Randall's endowment was 21 acres of land around and to the north of Washington Square. An individual house was built first, number 20 in the centre of the west half of the north side; the unknown architect-builder used the Federal style for this large house constructed in 1829. The houses in figure 1, those numbered 1-13 on the north side of the square from University Place to Fifth Avenue, were the first row to be built. The row was constructed in 1832 and 1833. They have been described as 'the most important and imposing block front of early Nineteenth Century town houses in the City' of New York. Immediately west of Fifth Avenue, the demolished numbers 14-18, in the final one of which lived Mrs Walsh, appear on Henry James' evidence to have been built in 1835 or thereabouts. Numbers 19 and 21-26 were erected between 1836 and 1839, in a Greek Revival style; these took note of the existing house, number 20.⁶

Many in the late nineteenth century and the first half of the twentieth found Washington Square to be "the most delectable" portion of New York City. James was highly accurate in his description of Dr Sloper's neighbours and medical patients. In the late 1830s and 1840s, they included bankers and merchants; for several

years, the official residence of the Mayor of New York was no.8 Washington Square. Later the group of houses in figure 1 attracted a more diverse group of residents, including the celebrated architect, Richard Morris Hunt, who lived at no.2 from 1887 to 1895. In the twentieth century, these houses were home to artists like Edward Hopper and Rockwell Kent and *Manhattan Transfer* was written by John Dos Passos at no.3.⁷



Fig.1 Washington Square, New York City, houses on the east half of the north side.

NOTES AND REFERENCES

1. Quotations from chapter 3 of H. James, *Washington Square*, 1881; the 'Penguin Popular Classics' edition has been used; the first appears on pp.16-17; the second earlier on p.16.
2. James, *Washington Square*, edition cited, p.16.
3. Number 7-13 have been converted into multiple dwellings; see subsequent comments.
4. English not American usage is employed in regard to distinguishing floors.
5. Some details of Sailor Snug Harbor may be followed in N. White, E. Willensky with F. Leadon, *AIA Guide to New York City*, Oxford and New York: Oxford University Press, 5th edn. 2010, pp.129.
6. Construction details for Washington Square have been taken from White *et al.*, 2010, p.129.
7. Residents in Washington Square are noted White *et al.*, 2010, p.131.

What can you learn from bits of Bradford brick?

Derek Barker

The city of Bradford, West Yorkshire is famous for its sandstone, not brick, buildings but in the past it did have a vigorous hand-moulded and machine-pressed brick industry: a previous issue of *British Brick Society Information* has published an article of mine on this subject.¹ I should like to extend my report with an account of some recent developments. I will also discuss what has now become my main interest, encouraging local historians and industrial archaeologists to incorporate evidence obtained from bricks into their projects. The bricks concerned are frequently recycled and may be in a fragmentary state. Is it possible that, even in this condition, they can be analysed to deliver useful information? I have tried to derive a method of logically dealing with single bricks or brick portions while using no equipment more specialised than a hand lens. It goes without saying that I would welcome constructive criticism from British Brick Society members, many of whom will have far more experience in this field than myself.

MACHINE-PRESSED BRICKS

Extractive industries were once common in the Bradford area. The local solid geology is a series of rocks known as the Coal Measures and beneath this Millstone Grit. Mudstones from these formations were quarried or mined, and then ground up to supply brick presses. Coal seams provided fuel. Several local coal seams have fireclay as the seat-earth and in the latter half of the nineteenth century firebricks and other fireclay products were made from this mineral. The exact date of the first brick-making machines is the subject of some debate but common bricks produced by machine-pressing start to appear after 1860, although the production by wire cutting may have begun twenty years earlier.² Certainly by the last decades of the nineteenth century mechanical presses came to dominate brick production. There were small hand-operated brick presses and large steam powered machines of various patterns. The common factor was that their use avoided the need to employ skilled brick-makers at a time when the demand for their products was rapidly increasing.

Many machine-pressed common bricks are impressed with names, places or trade-marks. Consequently, today it is reasonably easy, for those taking a little trouble, to identify their manufacturers and approximate ages. Machine-pressed common bricks are the natural targets for brick collectors and it is a pleasure to record how much assistance I have always had from dedicated enthusiasts. As an example I might mention the positive identification of an unknown brick from two impressed letters and the partial shape of a frog. Many manufacturers varied their marks from time to time, opening the possibility of stylistic dating of their products. Collectors with an intimate knowledge of local bricks, and local trade directories, can be of enormous help in this respect. When confronted with 'out of area' bricks I have found that the Penmorfa website has now developed into a most useful identification tool.³

I have no wish to revisit my earlier account in detail but I am glad to be able to record that previously unrecorded brick finds continue to be made. A common brick marked LOW.MOOR was identified in a north Bradford woodland last year. Thomas Taylor, a contractor of Low Moor, was advertising bricks (hand-made, machine pressed and engineering) for sale from his Oxley Place brick-works, Low Moor in 1875. I have not yet seen these premises mapped, but the 1852 Ordnance Survey map places a 'brick field' at this site. An alternative source for the brick would be the famous Low Moor iron works. This noted producer of 'Best Yorkshire Iron' would certainly have produced bricks in large numbers but would, I think, have been more likely to have impressed them with the full company name. As a demonstration that there are no longer two cultures, a noted local poet, knowing my interest, photographed a brick marked E. GITTINS which I had never seen before. Edward Gittins was a Leicestershire businessman and wool stapler who was active in Bradford around 1854-1881. He mined coal and fireclay, also operating a brickworks which employed fourteen men and two boys. He was advertising in the *Bradford Observer* as early as 8 July 1854 describing his premises as 'Bowling Brickworks, Wakefield Road' and offering Beart's Patent Perforated Bricks for sale. This seems very early since Robert Beart only commenced his business at Arlesey in 1852.⁴ I assume that these perforated gault bricks were wire cut but I have not seen a local example as yet. A prosecution of Gittins for 'smoke nuisance' was reported in the local newspaper.⁵ The report revealed that he had an open (Scotch) kiln which 'only very careful firing would mitigate nuisance'. Gittins was clearly a go-ahead man since he was applying for patents for 'improvements in kiln burning of brick' in November 1876.⁶

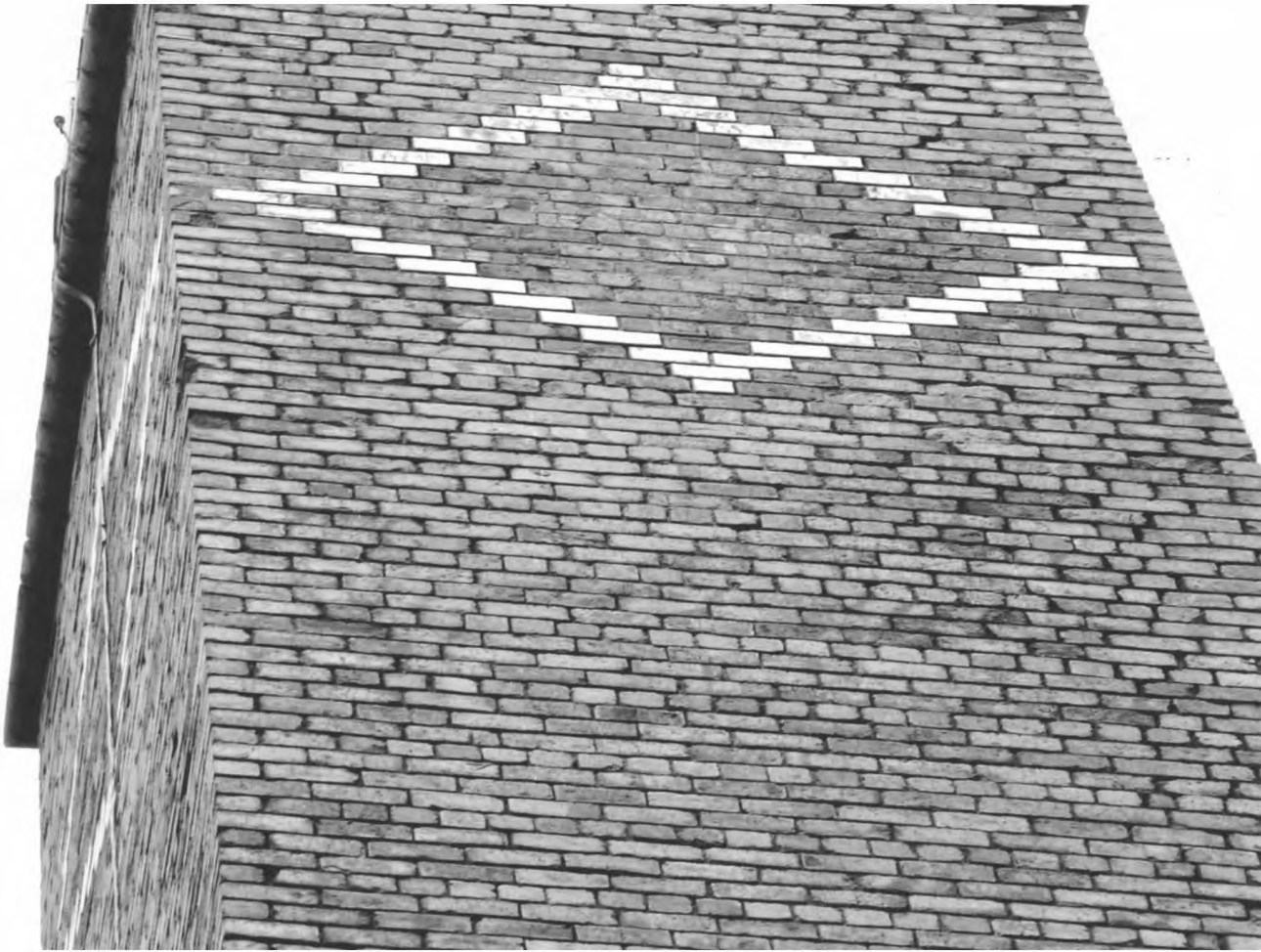


Fig.1 A detail of the Eldwick brickworks chimney.

Soil Hill pottery, on the Bradford-Calderdale border, is famous for the lovely, hand-made, earthenware pottery it once produced. To the best of my knowledge the modern pottery was opened there in 1898 by Isaac Button snr. who was a potter from Liversedge. After Isaac's death Soil Hill was managed by his sons, and then by his grandsons, Arthur and Isaac jnr. At one time there were trainees and apprentices but eventually, after his partnership with Arthur was dissolved in 1955, Isaac Button worked on alone. He dug the clay (red for the pots and buff for slip), prepared the clay, threw the pots and fired the kiln, finally retiring in 1964. I had not appreciated that Soil Hill was ever a source of brick production until a small exhibition entitled '*Thornton from the Ground Up*' was held locally in 2013. McGarva had stated 'this first Isaac seemed to have been something of a pioneer potter; having bought the near-derelict works, he started work at the site by producing hundreds of bricks, which were clamp-fired. He had started out as a brick maker before changing careers to become a potter. With these bricks an entirely new pottery works was built further down the hill and the old building demolished'.⁷ My difficulty was to believe that the first Isaac could have made and clamp-fired the machine-pressed common brick which was on display at the exhibition and which bore the mark BUTTON. Subsequently I obtained oral testimony which indicated that the Button family were indeed brick-makers on a small scale. There was complete agreement that when Isaac Button snr. obtained the site he started making clay bricks for the kiln and the accompanying building, firing them in clamps. The poorly fired outer bricks were left as a temporary kiln and 'green' bricks were added to the central part of the clamps. Later, a hand press was acquired. Isaac and Arthur Button had intended to produce bricks commercially. Apparently the two men had a disagreement over the number of bricks they proposed to make and as a result the whole project fell through, but not until they had produced a quantity of machine-pressed bricks as an

experiment.⁸

Sadly, the district lost one of its few brick-related standing remains when the chimney of the old Eldwick brickworks was felled in 2015 (fig.1). This landmark chimney was visible for miles but public esteem could not save it. The works was originally owned by William Barron and in 1889 his business was incorporated as the Bingley Sanitary Tube & Lime Company. Its bricks were marked BST&L Co.⁹

HAND-MOULDED BRICKS

Hand-moulded bricks were produced using techniques that had evolved little since the Middle Ages. The earliest local brickmaker I know by name features in the Eccleshill parish records of 1714. The oldest individual bricks which I can reliably date are the examples illustrated in figure 2. These narrow bricks are incorporated into an arched recess along the Shipley to Bingley section of the Leeds-Liverpool canal which opened in 1773. Hand-moulded bricks presumably survived the spread of mechanical brick-presses because their production required little capital expenditure. Seemingly hand-moulding was long the technique of choice for creating porous firebricks. Encouragingly hand-moulded bricks are still being made today for conservation projects. It goes without saying that the term 'hand moulded brick' would have no meaning whatever prior to the mid-nineteenth century since up to then it was the sole method of production. To the best of my knowledge no account of this style of brick-making in the Bradford area has ever been published, and in fact very little has been written on any type of local brick-making. General descriptions of the Victorian industry exist but it is perfectly possible that there were regional variations which may not be reflected in such accounts. The want of local knowledge is particularly felt when we are trying to extract information from an examination of the bricks themselves.



Fig.2 Early hand-moulded brick arch adjacent to the Leeds-Liverpool canal.

EARLY BRICKFIELDS

Map evidence strongly suggests that *Brick Fields* or *Brick Kiln Closes* preceded established brick works. There probably were not permanent premises on such sites. In Cleveland it is recorded that brick fields were leased by

their owners for short periods to itinerant brick-makers who dug clay and fired hand-moulded plain bricks either in clamps, or alternatively temporary open Scotch kilns.¹⁰ It is astonishing to learn that a single close clamp could fire from 100,000 to in excess of 2,000,000 bricks.¹¹ I assume that if smaller clamps were simultaneously being created, fired, cooled, and disassembled then a virtually continuous production process could be established. Moving the product from brickfields to construction site must have represented a considerable logistical problem when a horse and cart could only manage a load of 500-750 bricks.¹² Some Bradford brickfields survived long enough to be mapped in the mid-nineteenth century but others had by then been abandoned or replaced by more permanent works. The local clay used in this type of brick-making was alluvial in origin.¹³ Glacial deposits, boulder clays, are not usually described as alluvial and would, I imagine, contain too many stone cobbles for brick-making to be an easy possibility. I assume that early Bradford bricks were made from lacustrine deposits, which formed in a series of glacial lakes once located in the area. Although there may well also be unrecorded sites I am confident that there were brickfields at: Fagley Lane, Bowling Back Lane, Low Moor, Frizinghall, Manningham. Leeds Road area, Manchester Road area, Bolton, Undercliffe, Shipley, Eccleshill and Wilsden. Brickfields are frequently mentioned in nineteenth-century local newspapers but sadly only when they are the locations of thefts or fights. No information is provided concerning their ownership or the methods of production. There is not sufficient space to describe all the brickfields in detail but I should like to give two illustrative examples.



Fig.3 A skin of hand-moulded brick applied to a farm building in Frizinghall.

There is an area of Frizinghall close to the site of the present railway station in Frizinghall Road. It had been known as the Ryalls or 'Brick Kiln Close' since the late eighteenth century, and is recorded by this name on an 1840 map. I imagine that hand-moulded bricks made, and fired, at this location are still part of the visible structure of an adjacent farmhouse known variously as *The Old Barn* or *The Poplars* (fig.3). There bricks show no regular bonding pattern and examination suggests that a single skin was mortared to a pre-existing stone wall. Secondly, Sheeran

notes that 100,000 bricks were made at an uncertain location in Shipley between 1771 and 1772.¹⁴ This is not a huge number since two brick-makers and their lads could turn out between 2,000 and 3,000 bricks per day, and the accumulated total could have been fired in a single clamp.

Changes in city boundaries, in brickworks ownership, and the use of more than one mark by a single operator all contribute to uncertainty over the exact number of brickworks that operated within, or in the immediate vicinity of, the Bradford Metropolitan District. A reasonable estimate would be 32 works with a known mark producing machine-pressed common bricks, and a further 26 whose marks are unknown and who may have hand-moulded exclusively. I also know of four unattributable marks. If I am correct that gives a approximate total of 64 works together with additional imports from Halifax, Leeds and Wakefield. It is likely that these works were preceded by at least ten active brick fields. Am I right to be surprised that a city which is not widely known for clay industries had such an extensive brick manufacturing base?

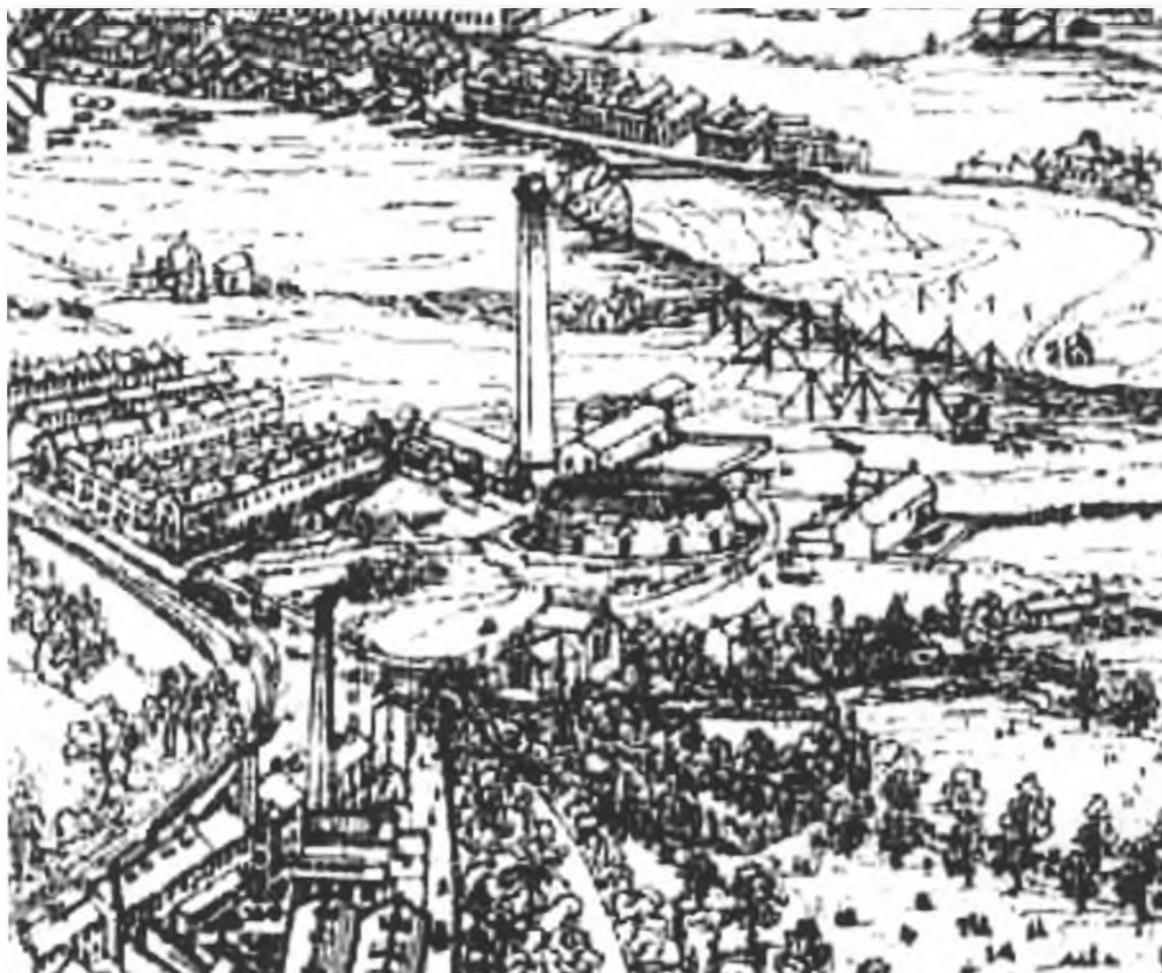


Fig.4 A drawing of the circular Hoffman kiln in the brickworks of Daniel Riddiough.

FIREBRICKS

Fireclay as mined was a hard, rock-like material consisting principally of kaolinite, hydrous mica (illite), and quartz. The proportions of these constituents, the grain size, and the presence of minor constituents such as iron minerals and alkali metal oxides, determined the final ceramic properties of a fireclay brick. There are contemporary accounts of their manufacture.¹⁵ Firebricks were commonly square but could be shaped into many other forms such as bull-heads and wedges. Manufacturers produced a range of products of different quality and composition intended for different service applications. In general fireclay products were not baked in Hoffmann-type continuous kilns; beehive down-draught kilns were preferred because of the intense heat required for baking.

Although no intact down-draught kilns remain in the Bradford area six are still operated by W.T. Knowles & Sons at nearby Elland, West Yorkshire for the manufacture of glazed and unglazed chimney pots and pipes. A reliable nineteenth century Bradford historian, William Cudworth, noted that the introduction of firebrick manufacture to Shipley, Bradford, was due to the efforts of George Heaton in the 1840s.¹⁶ In another book on the town and trade of Bradford, entitled *Worstedopolis*, Cudworth included a large topographical drawing of the city allegedly made from a balloon. It is a source for the topography of several local brickworks including the Undercliffe premises of Daniel Riddiough shown in figure 4. By the date of the publication of *Worstedopolis*, 1888, Riddiough had constructed a circular Hoffman kiln, as evidently had the owners of the other three works illustrated in the drawing.

Although no substantial remains of a firebrick works survive in the city individual firebricks, both intact and as part of foundry waste, can still be found on trackways and in allotment gardens (fig.5). The manufacture of firebricks was a commercial undertaking and consequently makers frequently advertised their products in trade directories, and publications of self-promotion. In this way we know that John R. Fyfe's firebrick works at Shipley claimed to be working a seam of 'the most valuable fireclay in England' and was making firebricks for 'the side-walls and crowns of reverberatory furnaces, Stewart's patent rapid cupolas, Whitwell's patent stoves' and for 'nearly all the makers of the best Yorkshire iron, as well as the Lancashire and the Cleveland district'.¹⁷ Despite this it does not appear that Bradford firebricks reached London.¹⁸



Fig.5 A worn firebrick of the Bolton Woods brickworks used in path surfacing.

THE COMPOSITION AND MANUFACTURE OF HAND-MOULDED BRICKS

Clays consist of various aluminium silicates although, given its chemical stability, quartz is also likely to be present in many brick-making earths. Most UK subsoil clays will make an acceptable brick but some were evidently of better quality, or were more easily exploited commercially. Some clays needed to be exposed to winter freezing before use and occasionally a better quality clay was used to *sweeten* a less effective material. It is exactly these details, explaining how brick-makers making the best of the raw materials available to them, that we completely lack for our local industry. Hand-moulded bricks, like pottery, were made by a plastic process from a mixture of clay and a non-plastic additive called *temper* or *grog*. These were combined with water to create a mixture of the correct consistency.¹⁹ Silica sand, when added to pure clay as a temper, prevents the cracking and shrinking which would occur with clay alone as it dried. I am not sure what the optimum percentage of sand would have been and in any case this may have depended on the silica content of the brick earth as dug.

There are some local considerations to be remembered. Mechanical crushed mudstone (shale) from the Millstone Grit or Coal Measures, the basis of the machine-pressed industry, was not used for hand-moulding. There is no obvious cheap local source of sand to be had without crushing rock, so that our hand-moulded bricks are equally likely to contain some alternative temper, just as crushed coke breeze is used as a sand substitute in local *black lime* mortar. Possible materials would be breeze again, crushed poorly-fired brick, incinerated domestic rubbish or crushed shale. Finally, the technique of *pallet-moulding* made it possible, from the late eighteenth century onwards, to incorporate a mortar recess or 'frog' into the brick. However, the local hand-moulded bricks I have

studied are unfrogged or *plain* suggesting that pallet-moulding was not employed in this area.

The process of manufacturing hand-moulded bricks involved putting the clay, water and temper into a large pit (later an iron container) where it was mixed by a tempering wheel powered by a horse or steam engine. Once the mixture was of the correct consistency, and *plastic*, it was removed and pressed into moulds. Preventative action was taken to inhibit the new brick from sticking to the mould. The process was named *slop moulding* when the mould was dipped in water, and *sand struck* when the mould was coated in sand. Coating the brick with sand gives a better overall finish to the brick but it would appear that *slop moulding* was commoner in northern Britain.²⁰ Each maker would have had his own personal moulds which were basically wooden but lined with brass or iron. In the *slop moulding* process a *warp* or *clot* of the clay mixture would be thrown into the wetted mould and pressed down with a wooden *plane*. The excess clay was scraped off the surface of the mould with a wire bow and further smoothing achieved with a wooden *strike*. The completed brick was turned out onto a wooden pallet for preliminary drying on a nearby *flat*. When dry enough to handle the maker's lad would convey the 'green' bricks in a *hack-barrow* to the main drying floor or *hack* where the green bricks were laid outside to dry by air and sun for some days.

Once adequately dried the bricks were *fired* or burnt in a kiln or clamp.²¹ During this process firstly the water is driven off, next any organic material burns, and finally at a higher temperature around 1000+/-100°C (but well below the melting point of the fabric) the aluminium silicate and quartz *sinter*, or start to fuse, which adds considerably to the hardness and strength of the final brick. The chemical processes are quite complicated but it is not usually necessary to enquire exactly what reactions occur; the term *aluminosilicate minerals* covers the fabric of bricks adequately. At even higher temperatures further melting occurs with, effectively, glasses being produced. Such a brick is more brittle but is almost impervious to water. Naturally one of the skills of the brick-burner was knowing how to achieve the desired result. The iron content of the clay was responsible for the colour of the fired brick and iron minerals were thought to act as a flux, reducing the temperature at which sintering occurred. A clay which burns to a red colour will provide a stronger brick than a clay which burns to white or yellow. Once the bricks were removed from the kiln time was allowed for them to *mature*. Newly fired bricks incorporate water into their fabrics quite quickly and increase in volume as a result. The soils of the Bradford area are acid and the only source of limestone locally available are glacial erratic boulders buried in the Aire Valley. Nodules of lime can be burned to quicklime during firing and any amount of quicklime (calcium oxide) within a brick fabric is detrimental to its quality. For this reason it would have been inadvisable to use crushed limestone as a temper even when it became more freely available with the opening of the Leeds-Liverpool canal.

DATING BRICKS

Finding hand-moulded bricks scattered on the surface in patches of local woodland or waste ground is not difficult. Although the thickness of hand-moulded bricks increased from the seventeenth to the nineteenth centuries the absence of distinguishing marks ensures that obtaining provenance for bricks not incorporated into a building is almost impossible; I have no local hand-moulded bricks with a certain date or origin. The presence of iron in their fabric means that scientific dating of bricks by archaeomagnetism is possible, but not once the bricks have been removed from the kiln or clamp in which they cooled. Fortunately, there is a new scientific method of dating all ceramics called rehydroxylation dating (RHX). This measures the mass of water in chemical combination with the fired clay minerals.²² The incorporation of water into the brick fabric occurs at a fairly constant rate irrespective of the quantity of water in the atmosphere to which the brick is exposed. This constancy of rate means the final quantity of chemically combined water can be used for dating purposes. Care must be taken however; the exposure to bricks to heat, in a house fire for example, re-sets the clock and gives the bricks a spuriously young date. Rehydroxylation would be a highly useful technique it ever becomes routine enough, and cheap enough, for those engaged in community archaeological projects.

BRICK EXAMINATION

Marked machine-pressed common bricks are often straightforward to identify even if incomplete. In those that are unmarked the frogs and screw marks are indicative. I assume that plain bricks which are marked were originally wire cut and had the mark subsequently impressed into them. The upper brick in figure 6 is marked G. HEATON SHIPLEY and the mark is very obviously not parallel to the arris above it. I have taken this to mean that it was stamped by hand. The lower brick is similar but faint traces of screw heads are visible which I assume means that

the mixture was pressed into a mould. An account of the Shipley activities of G. Heaton and J.R. Fyfe has been published.²³ If such bricks can be identified then they can also be dated, at least approximately. Can anything at all be learned from fragments of plain, hand-moulded, unmarked and undecorated brick?

It is possible to identify local firebrick fragments by their pale yellow colour alone. It would be unexpected to find any fabric inclusions that are not derived from fireclay. I know of no evidence that ground-up shale was ever used as the sole raw material for hand-moulded bricks; to do so would have been technically very difficult. The opposite situation, that alluvial clay mixture was sometimes used in a brick-making press cannot be ruled out, indeed if what I have recorded concerning brick production by the Button family at Soil Hill is true then this must be the technique they adopted, using a hand press. I know of no evidence that any type of brick-making press, however powered, was in use before 1860. Unfortunately, there is no date available after which one can say that a local brick must be machine pressed. It is quite possible that a single manufacturer could have produced both hand-moulded bricks and machine-pressed common bricks. By 1864 Archibald Neill, a well-known Bradford contractor, was advertising both *common* and *pressed* bricks for sale. The following comment was made about J.R. Fyfe's company: '*at the Royal Yorkshire Exhibition held at Saltaire in 1887, the firm gave demonstrations of manufacturing sanitary ware by hand and brick-making by hand and machine.*'²⁴

It follows from these points that we might expect to find three types of bricks. Firstly, there will be hand-moulded bricks made from alluvial clay. Secondly there will be wire cut bricks which potential could be made from alluvial clay or shale. Finally, there will be machine-pressed bricks which will probably be of crushed shale. I certainly cannot rule out the possibility of hand-moulded bricks being put in a hand press to improve their shape and density but I cannot guess at how common this method might have been. Alluvial clay can be identified with some certainty. The signs of mixing of clays with different iron content (and consequently of different colours) will usually be visible. This can be seen in figure 7 although the striking visual effect is somewhat lost in monochrome. Inclusions present in the clay or added as temper, such as small stones or pieces of fired shale, will be readily detected.



Fig.6 Two local, plain marked bricks

Rapidly produced hand-moulded bricks did not completely fill the brick moulds with a result that fine creases in the fabric may be visible on the headers and, especially, the stretchers. You would expect the arrises from the bottom of the mould would not be completely sharp, although this would be hard to assess in a worn brick. Analysis should be undertaken on completely dry bricks and it should be possible to record a good deal of information. The fabric of machine-pressed brick is a much more uniform and monotonous product, as would be predicted from its method of production. When recording a brick the following data would appear to be of value.

Dimensions: record the brick's length, width and thickness (in broken bricks record two dimensions). Individual brick-makers would have their own moulds which, after shrinkage in the kiln, would produce bricks of the same size. I have heard it said that it would be possible to identify an individual brickmaker and I would welcome a published reference from his mould. Less controversially we can say that older hand-moulded bricks are generally thinner. Brunskill gives the dimensions of a Tudor statute brick as 9 by 4½ by 2¼ inches, metric conversion gives a thickness of 57mm (to nearest whole number) with the thicker bricks of the seventeenth century having a thickness of 60-67mm.²⁵ The same author suggests that by 1936 the British Standard brick had a thickness of 67mm, but that 73mm was also permitted 'to meet the conventions of the North of England'. Four hand-moulded bricks picked up in my immediate area of north Bradford had thicknesses in the range 55-62mm. A machine-pressed common brick produced by the Bingley Sanitary Tube & Lime Company, who has already been mentioned, is 75mm thick. Presumably the 'thicker bricks in the north' convention was in operation by the late nineteenth century.

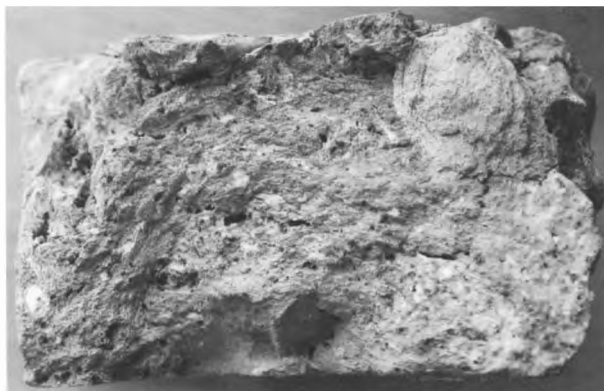


Fig.7 A local, hand-made brick showing alluvial clay mixing.

External Surface Colour: There are only a limited number of colour possibilities: blue-black, brown, purple-red, red, buff, yellow or white. Essentially in my area various shades of red and buff covers everything. No manufacturer local to me seems to have produced the black engineering bricks although plenty are to be found. We should also record whether the brick's colour is uniform. Hand-moulded bricks, especially clamp-fired hand-moulded bricks, show considerable colour variability which many, including myself, find very attractive. It seems to have been less desired by Victorian architects who wanted their bricks to have a uniform colour and sharp arrises. I have never seen a local hand-moulded brick with a grey flared header, nor a brick building with diaper work. I take this to mean that the fuel for brick clamps was not wood but rather coal.²⁶ This is perfectly understandable in a coal rich area.

External Surface: in addition to colour the external appearance of a brick can give a good deal of information. Is it plain, perforated or frogged? A hand-moulded brick is likely to show creases along the stretchers and the hand-moulder's strike may have left marks on the upper surface. The presence of grass marks would indicate that these were 'place' bricks turned straight out of the mould to dry on the ground.²⁷ Local hand-moulded bricks seem to have been plain. It seems like that in this area marking bricks occurred earlier than moulding a frog. Local manufacturers George Heaton, George Hogg and William Woodhead all produced plain marked bricks and all died in the period between 1863 and 1875. In this category would be the recording of any signs of vitrification. I assume that vitrification means that the bricks were originally part of a kiln structure, or were fired in a clamp where careful temperature control was impossible.

Basic internal structure: the non-uniformity of clay colour indicates an alluvial brick. Large hard inclusions also suggest that the source material has not been mechanically ground, nor that the brick has been wire cut. It seems that fire clay intended for a very demanding role, that of the manufacture of glass-house pots, might be hand-picked for stones and other extraneous matter.²⁸ It seems improbable that such an expensive course was followed with house bricks.

* * *

CONCLUSIONS

Bricks, firebricks, tiles, sanitary wares and terracotta form a class of artefacts known collectively as ceramic building materials. A most useful source describing the design and all the aspects of the production of these items is the Royal Commission on Historical Monuments of Scotland survey of the Scottish brick, tile and fireclay industry.²⁹ It is a matter of regret that such a comprehensive account is not available for Wales or the English regions. What help can ceramic building materials provide to the local historian or industrial archaeologist?

In a stone-rich area like Bradford a nineteenth century brick building may well indicate the presence of a local brickworks. I have recently helped to date a building by approximately dating the bricks from which it was made. As described Bradford firebricks have not seemingly travelled very far from their places of production but a local geologist and myself identified a Newcastle firebrick when contacted by a Norwegian industrial archaeologist. It may be possible to use brick and firebrick fragments to date a trackway surface, although not of course the trackway itself. A perfect example of 'brick awareness' is the account given by Cranstone of the bricks and marked firebricks recovered and identified during the excavation of the Derwentcote steel furnace.³⁰

ACKNOWLEDGEMENTS

It is a pleasure to note the contribution to brick studies of Dave Sallery, the webmaster of the Penmorfa site. Tony Woods, who shares my enthusiasm for local industries, read the manuscript and has given me much useful reference material. My thanks are also due to: Bruce Barnes, Chris Bateman, Maggie Fleming, David Greenwood, John Hudson, Ken Kenzie, Phillip Rothery, Mary Twentyman, Alison Tymon, Michael Wilkinson, Steven Wood and Colin Wright.

NOTES AND REFERENCES

- 1 D.J. Barker, 'Bradford, West Yorkshire: the rise and fall of an urban brick industry', *BBS Information*, **120**, May 2012, pp.15-22.
- 2 L. Hurst, 'The introduction of wire-cut bricks: responses to an on-line enquiry', *BBS Information*, **118**, October 2011, pp.15-25.
- 3 See: <http://www.penmorfa.com/bricks/> (accessed 5 May 2015).
- 4 Beart's Patent perforated bricks were described and illustrated in a BBS information article, see: L. Hurst and D.H. Kennett, 'The building of the new War Office, 1897-1906: the connection with brick-making at Arlesey, Bedfordshire', *BBS Information*, **115**, February 2011, pp.15 and 23.
- 5 *Bradford Observer*, 23 October 1869.
- 6 *London Gazette*, 10 November 1876.
- 7 McGarva, *Country Pottery: traditional earthenware of Britain*, London: A. & C. Black, 2000, p.65.
- 8 It is possible that bricks that had originally been hand-moulded were finished off in a hand-operated press; see R.W. Brunskill, *Brick and Clay Building in Britain*, 2009, New Haven and London: Yale University Press, p.25.
- 9 A. Mirfield, *Eldwick: a new era 1871-1911*, Eldwick: Allan Mirfield, 2015, pp. 95-101. The author gives a full and interesting account of an important local brickworks. As is common today the volume is self-published and is, so far as I know, only available for loan in Bradford Libraries or for purchase at Eldwick Post Office.
- 10 D.W. Pattenden, 'Bricks and Mortar', *Cleveland Industrial Archaeologist*, **16**, 1984, p.10.
- 11 G. Lynch, 'Reviving a wood-fired open clamp at H.G. Matthews' traditional brickworks at Bellingdon, Buckinghamshire, in February and May 2010', *BBS Information*, **116**, April 2011, p.8.
- 12 D. Sloane, 'By ship, by horse and cart, by lorry: transporting bricks in Northern Ireland', *BBS Information*, **125**, December 2013, p.9.
- 13 Alluvium is defined as Quaternary material deposited from water in a non-marine environment but not consolidated into a rock. It contains particles of grit and sand as well as clay.
- 14 G. Sheeran, *Village to mill town: Shipley and its Society 1600-1870*, Bradford: Bradford Libraries, 1984, p.17; his comment is based on a letter to the Lord of the Manor from his agent, WYAS, Calderdale RP:2409 Parker Papers, William Holden to Cyril Jackson.
- 15 A.B. Searle, *Modern Brick-Making*, 1911, London: Scott Greenwood & Son, pp.375-376.
- 16 W. Cudworth, *Round about Bradford*, vol.2, 1876 (reprinted 1968, Mountain Press, Queensbury), p.295.
- 17 Anonymous, *Industries of Yorkshire Part 1*, 1888, Historical Publishing Co.
- 18 T.P. Smith, 'A further firebrick from London', *BBS Information*, **129**, February 2015, pp.12-13.
- 19 A.B. Searle, *Modern Brick-Making*, p.18.
- 20 R.W. Brunskill, *Brick and Clay Building in Britain*, p.24; M. Hammond, *Bricks and Brickmaking*, 2009, Botley: Shire Publications, pp. 11-15.
- 21 R.W. Brunskill, *Brick and Clay Building in Britain*, pp.27-33.

- 22 As an introduction to the technique of RHX dating of ceramics see: <http://www.datingceramic.manchester.ac.uk/index.htm> (accessed 5 May 2015).
- 23 D.J. Barker and T. Woods, 'Cash from the Coal Measures: the extractive industries of nineteenth century Shipley', *The Bradford Antiquary*, 17, 2013, pp.17-36.
- 24 Local Studies Library, Bradford Central Library (LSL), B708 ROY. Royal Yorkshire Jubilee Exhibition 1887. Official Catalogue. The gold medal that the firm was awarded is still in family ownership.
- 25 R.W. Brunskill, *Brick and Clay Building in Britain*, p.37.
- 26 G. Lynch, 'Reviving a wood-fired open clamp at H.G. Matthews' traditional brickworks at Bellingdon, Buckinghamshire in February and May 2010', *BBS Information*, 116, April 2011, pp.6-19. The wood fuel produces the potash glazed 'flared' headers. These were necessary for diaper work but were not seemingly a feature of our local industry.
- 27 L. Hurst, 'Place bricks – their making, properties and use', *BBS Information*, 112, April 2010, pp.20-26.
- 28 M. Kingman, 'A mid-eighteenth century brick clay mill', *BBS Information*, 124, June 2013, pp.6-8.
- 29 G. Douglas and M. Oglethorpe, *Brick, tile and fireclay industries in Scotland*, 1993, Edinburgh: Royal Commission on the Ancient and Historical Monuments of Scotland.
- 30 D. Cranstone, *Derwentcote steel furnace: an industrial monument in County Durham*, 1997, Lancaster: Lancaster Imprints, pp.85-92.

BRICK MARK 'GISCOL'

In the miscellaneous collection of bricks in my garden is one with the mark GISCOL. At one time my neighbour had a pile of more than twenty bricks similarly marked.

The bricks have a red exterior except on one stretcher face which shows a rectangular black core, seemingly of a consistent hue, but with rounded corners to the core. The bricks are without a frog and the mark is impressed into the upper bedface of the brick.

Before the society's meeting in north-east Buckinghamshire in July 2015, I asked those present if anyone could enlighten me as to the manufacturer. Our Chairman, Mike Chapman, kindly informed me that GISCOL mark of the Glasgow Iron and Steel Company Limited, who were a major brick manufacturer in post-Second World War Britain.

Michael Hammett kindly gave me further references, one of which informed me that the company used blaes, a hardened clay which mixes shale clays with more pliable ones, thus producing a brick which is more weather resistant, particularly to winter conditions. Because of their hardness, common bricks produced by Glasgow Iron and Steel Company were often used as facing bricks.

In 1997 there had been a management buyout of the company, adopting the name 'Caradale Brick', which combined elements of the names of both places where its works were. Unfortunately, this company went into liquidation in November 2012 and ceased operations the following month. From David Salley's website, <http://performa.com/bricks/scotland.html>, we learn that the Glasgow Iron and Steel Company was registered in 1888 and operated the Etna brickworks at Armadale, West Lothian, and the Mayfield works at Carluke, Lanarkshire. At one point, the Etna works had four Hoffman kilns, two built in 1897 and one in 1898, and a fourth kiln, constructed in 1964. Two of the earlier kilns had ten chambers and one was larger with sixteen chambers. Two of three were demolished in 1984 and the third shortly afterwards. A larger, 1964 Hoffman kiln had 24 chambers and continued in use until production ceased but at the end of 2012, it was in the process of being demolished.

Michael Hammett also told me that in early December 2015, the only brickmaker operating in Scotland was Raeburn Brick at Blantyre, near Glasgow.

D.H. KENNETT

Book Review: *Bricks on the Coffee Table*

William Hall, editor, with an essay by Dan Cruickshank,
Brick,
London and New York: Phaidon, 2015,
224 pages, numerous unnumbered illustrations, mostly in colour,
ISBN 978-0-7148-6881-3, price hardback £29.95 (US \$49.95; €39.95).

'Credit where credit is due, the illustrations are superb,' the late Stuart Rigold once began an otherwise scathing review. The illustrations in this essentially 'coffee-table' book — though how many coffee tables will it actually grace? — are indeed superb, sometimes stunning. That granted, commentary need not be scathing, but it must express misgivings.

Dan Cruickshank's introductory essay (pp.9-13) is entitled 'The First Cities', an odd topic for a book covering brick buildings from some of the earliest to others from the twenty-first century AD. And in fact pages 12-13 follow the story, albeit in pemmican form, down to the present. It is a moderately interesting contribution, but hardly the 'brilliant essay' claimed by William Hall at page 234. (Some of us are old enough to remember the scholarly Cruickshank before he became a 'celeb'!)

The book is arranged under eight headings: Form, Texture, Juxtaposition, Landscape, Light, Mass, Presence, and Scale. It all seems rather arbitrary, with buildings appearing in one category which might equally have been placed in another: to give examples would be tedious since their name is legion.

Comparison with James W.P. Campbell and Will Pryce, *Brick: A World History*, London: Thames and Hudson, 2003, seems unavoidable. (I am told that rivalry between the two publishing houses is not just commercial — which is to be expected — but *bitter*.) With some exceptions — and it has to be remembered that Pryce's occasionally inferior photographs (e.g. pp.158, 221) were taken on a three-month, whistle-stop world tour — the illustrations in both volumes are of comparable quality.

As regards texts, James Campbell's is far superior. Apart from that disappointing essay by Dan Cruickshank, all the Phaidon volume offers is a series of brief comments on each of the illustrations. From Campbell one obtains a considered account of the development of brick in its many manifestations throughout the ages and throughout the world. Hall offers a series of unconnected pictures from which a reader will obtain no coherent understanding of the use of the material.

More positively, Hall's compilation, apart from being a dozen years more up-to-date than Campbell and Pryce, does illustrate some far from familiar brick buildings, such as the striking coke-production towers of 1958 at Lauchhamer, Germany (pp.20-21,23). It is such pictures — and there are many others — that make this publication worth the cost of just under £30 (moderate enough by today's standards for an extensively illustrated hardback), its visual delights compensating for the lack of an agglutinate text — perhaps.

TERENCE PAUL SMITH

Received for Review

Terry Moyle, *Art Deco Airports: Dream Designs of the 1920s & 1930s*,
London, Sydney, Auckland: New Holland Publishers Pty Ltd, 2015
272 pages, numerous illustrations in colour and black-and-white,
ISBN 978-1-1742577-82-1, price, hardback, £16.99.

A review of this work will be included in a future issue of *British Brick Society Information*.

Brick Notice: Strictly Come Building

Various Authors, 'AR House Awards'
Architectural Review, 1421, July 2015, pages 38-95

This issue of *AR* is devoted to the journal's 'House Awards'. Six houses are illustrated and assessed and a further six ('Best of the Rest') illustrated only. Of those twelve — from Croatia, Japan (six of them), Slovenia, Spain, Sweden, the United Kingdom, and Vietnam — only the three constructed of brick can justifiably be considered here: all are from the assessed examples.

They include the winner, Fayland House in the Chilterns, north of Henley-on-Thames, Oxon., by David Chipperfield Architects (DCA), assessed by Ellis Woodman ('Quietly Subversive', p.40-53). This single-storey but extensive home for clients with more money than ... well, more than most of us can even dream of, sits (fairly) comfortably in its greensward background (fig.1) and is of 'custom-produced white Hebrók [Lower Saxony] brick bedded in lime mortar of a similar tone'; the latter is smeared over the surfaces, inside and out, the 'resultant sfumato effect ... inviting a reading of the building as an outcrop of the chalk on which it stands, (p.48); which comment only goes to show how critics can get carried away by their own imaginings. Of course, it looks *nothing like* a slash in grass-covered chalkland, as I know, having enjoyed many a boyhood ramble in just such countryside.

Woodman implicitly acknowledges this — and thus subverts his own literary conceit — when he refers to the building's 'vestigial classicism' (p.52). A building can hardly resemble both a serendipitous chalkland gash *and* a composed Classical edifice. In fact, such Classicism as is present is mediated via 1930s Modernism, but with architectural solecisms that no Classicist or Classically-inspired Modernist would have perpetrated: in particular, the widely-spaced and oversized columns — 1 metre across — with virtually nothing to support; as Woodman himself expresses it, the 'considerable size' of the 'columns' 'is left all but unanswered by the minimal concrete slab that rests on top' (p.52). Sir John Soane (1753-1837) might get away with such quirkiness. But without his genius it becomes just more PoMo japery.



Fig.1 Fayland House, Oxfordshire.

From a distance, the building appears to be of concrete (rather than chalk). Building in one material but disguising it as another may distress purists but has good precedent both in Classical and in Modernist architecture. What is more disturbing is that the brickwork (as drawings and photographs show) is in Cross Bond. The pleasure of this is that it creates a muted diagonal mesh pattern across the surfaces, as in some of the Underground stations by Charles Holden (1875-1960). It seems perverse to go to the extravagance of laying expensive bricks from Niedersachsen in this (or any other) bond only to obliterate the effect by slopping mortar across them: as well use cheap Flettons and not bother with bonding patterns.

In fine, this building, from a practice which previously I have admired, is pretentious in both senses of the term. But then, nothing exceeds like success, as with, say, late Seamus Heaney or — dare one voice the heresy? — Shakespeare's last plays. And it is hard to understand why *AR*'s judges — Adam Cooper, Pippo

Ciorra and Sofia von Ellrichshausen — were so beguiled as to award it first place in what, anyway, I regard as a puerile exercise. (Cf. the remarks in my final paragraph, *infra*.)

Within that exercise, the one ‘highly commended’ project is Rebirth House, Ibaraki, Honshu, Japan, by Ryo Matsui Architects, assessed by Christine Murray (‘Modern Memory’, pp.54-61). A 120-year-old storehouse was destroyed in the 2011 earthquake. Too seriously damaged for restoration, it was rebuilt — as a dwelling — using salvaged materials from the original augmented by some new ones. The ‘house’ (fig.2) comprises a subterranean wine-cellar and bar topped by a single large room with a raised bed-loft reached by a vertical ladder.

The house is of perforated bricks laid on edge, so that the perforations show, and in Stack Bond; they are painted white. Apart from the doorway, the only apertures apparent externally during the day are two windows. (There *are* two, not the ‘single window’ mentioned at page 57.) But other windows are concealed behind the brickwork perforations: at these points the interior walling is left uncovered by the ‘daub’ used elsewhere and glazing takes its place, so that light enters through the perforations. At night when the lights are on, these windows show externally as slightly lighter rectangles against the rest of the wall-faces. It is an inventive device (‘A cunning plan,’ as Baldrick might say): but of course it comes at a price — literally: perforated bricks cannot admit *much* illumination, so that lights will need to be switched on except on the brightest of days.



Fig.2 Rebirth House, Ibaraki, Honshu, Japan

A further inconvenience is that services (kitchen, bathroom, etc.) are in a separate building: see plans at page 57 and the photograph across pages 58 and 59. Just to go to the loo from the sunken wine-bar involves climbing a staircase, negotiating some quite tightly arranged furniture to find the exit, and following a sinuous route to that other building. Perhaps it acts as an incentive not to drink too much. As for the bed being so far from the kazi — well, at my age ...!

The third brick project (under ‘Finalist[s]’) is Termitary House in Da Nang, Vietnam, by the Tropical Space practice, assessed by Manon Mollard (‘House for Typhoons’, pp.86-93). This is the ‘brickiest’ of the three brick houses, its red bricks not painted white or smothered with mortar. The project involved encasing the concrete slab of an earlier residential building with ‘a perforated grille of brickwork’ (p.88) to create a (very large) house for a family of three. The name, we are told, derives its inspiration from ‘the collective living of termites and the spatial configuration of their mounds’ (p.88). How can a reputable journal endorse such rhetoric? The orthogonal building as much resembles a termite mound as a shoe-box looks like a traffic-cone! And how on earth can a family of three possibly be compared to a termite colony?

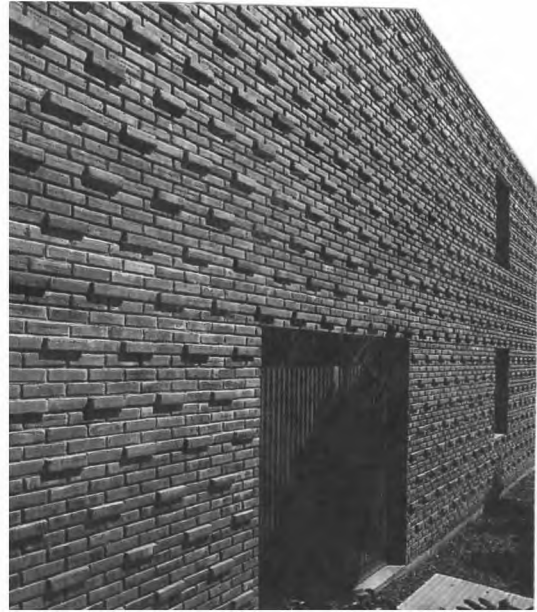
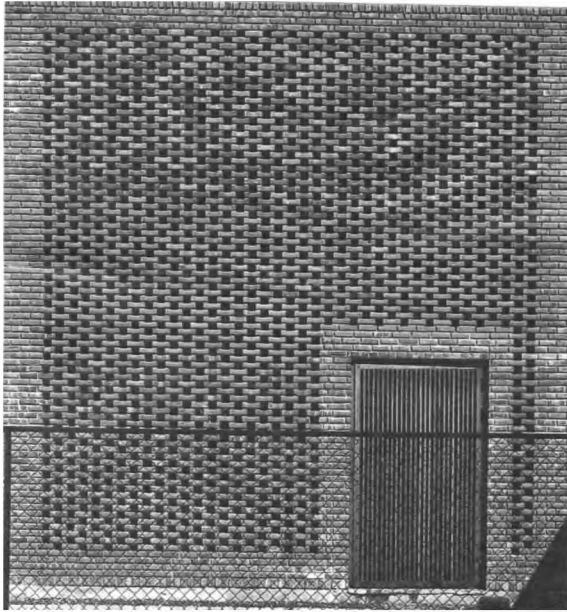


Fig.3 (left) Termitary House, Da Nang, Vietnam: honeycomb brickwork.

Fig.4 (right) Termitary House: Stretcher Bond enlivened by slightly projecting alternate bricks in every fifth course.

That said, it is a fascinating building, its brickwork presumably influenced by that of the Chinese architect Zhang Lei, as in his two brick houses in Nanjing of 2006-07 and his Three Courtyard Community Centre in Yangzhou of 2009 (see P. Jodido, *Architecture Now! Houses/Hausen/Maisons*, Köln, London, Los Angeles: Taschen, 2009, pp.300-307; and W. Hall, ed., *Brick*, London and New York: Phaidon, 2015, pp.88 and 89). The ‘grilles’ are created by omitting headers from the brickwork in Flemish Bond (fig.3). Internally, some walls — or rather their upper halves — show the same honeycomb brickwork, though the hollows do not pass through the thickness of the walls, thus appearing as dark voids. Elsewhere, internal brickwork is in Stretcher Bond. This is used also for the *non-perforated* external walls; but here patterning is created by slightly projecting alternate bricks in every fifth course (fig.4).

All the houses, and the nine non-brick examples, are intriguing in their different ways. Whether I should care to live in any of them — with the possible exception of the vernacular-inspired Hiza House, Kumrovec, Croatia, by the Proarh practice — is another matter. Apart from anything else, they seem to need to be kept *tidy* —and like a musical hero, Ludwig van Beethoven, I’m none too good at that!

And why, as all too often, must such projects be celebrated not for their own sakes but within *competitions*? As another musical hero, Charles Ives, once grumbled when (belatedly) offered an award: ‘Prizes are for boys: I’ve grown up’, Or perhaps it’s just grumpy old me: Strictly Come Moaning!

TERENCE PAUL SMITH

BRICK IN PRINT

Between December 2015 and April 2016, the Editor of the British Brick Society received notice of a number of publications of interest to members of the society. 'Brick in Print' has become a regular feature of *BBS Information*, with surveys usually two or three times a year. Members who are involved in publication or who come across books and articles of interest are invited to submit notice of them to the editor of *BBS Information*. Websites may also be included. Unsigned contributions in this section are by the editor.

D.H. KENNETT

1. Clive Aslet, 'School of Life: McCrum Yard, Eton College',
Country Life, 20 April 2016, pages 96-98.

Eton College has two new brick-built buildings, facing one another across a green sward (photograph on pp.96 and 97). One is a new gallery from the college's substantial antiquities collections combined with a large debating hall: preparation for the bear pit of the House of Commons, perhaps. The other, with the upper floor raised above a cloister, a useful device for keeping the young dry as they walk from one teaching block to another, provides classrooms for theology, languages, economics and politics. One wonders if this is an attempt to serve God, be useful, offer obeisance not merely to the dismal science but also to Mammon, and predict a failure to succeed at the young blade's first chosen sphere, respectively, and all in the same place.

The brickwork is clean, in both buildings in executed in Flemish Bond, but from the photograph a much lighter, almost pinkish red is used in the museum and debating hall but a deeper red on the first floor of the classroom block. Facing the yard, the cloister is stone but has bands of stone alternating with multiple courses of brick on its inner face.

As Clive Aslet comments, "the McCrum Yard not only provides Eton with new teaching space in a highly civilised environment, but may serve as an education in itself, subliminally influencing the sensibility of the boys who use it and encouraging curiosity about the visual references it contains". These references are from the classical world, primarily second century BC Greece and its colonies: the museum is strong on Greek and Egyptian artefacts and classical languages figure large in Eton's curriculum.

There is a sting in Aslet's comment: the seven percent of children educated at fee-charging schools easily gain such an appreciation and have access to a wider range of European languages than the state school's obligatory boredom of French. How far, one may ask, is Aslet's comment true of the ninety-three percent not so privileged children whose schooling is through the state system? My fellow reviewer and I were fortunate to go to a school whose building provided a different but equally stimulating architectural environment and I, for one, have never taught in a building as well designed as the one I attended as a pupil from September 1957 to July 1963. On the other hand, I have taught in some fairly dismal buildings.

One has no doubt that John Simpson's buildings round McCrum Yard at Eton College provide high quality teaching spaces allowing boys to learn in an atmosphere free from excessive cold, irritating heat, and radiator noise, even if they do have to endure closed windows due to the flight path into London Heathrow.

2. Robert Clark, 'Is this the real Mansfield Park?',
Country Life, 2 September 2016, pages 52-55.

Mansfield Park, Jane Austen's third novel, was set in Northamptonshire, a county of which she had no real personal knowledge. But research has shown a distant relationship. Her brother James rode with the Vyne Hunt, based at The Vyne, the sixteenth-century brick house near Basingstoke, and the seat of William Chute; Elizabeth, his wife, was the sister of the Marchioness of Northampton. One of the Comptons' houses was the stone-built Castle Ashby in Northamptonshire; another was the brick-built Compton Wynyates, Warwickshire. It is suggested that Castle Ashby was the model for Mansfield Park, the house.

The article also includes a good photograph of The Vyne (p.55) as well as an explanation of the Evangelical and political context of the novel *Mansfield Park*.

3. Alan Cox, 'A Village Industry: Brick and Tile Making in Ravensden 1850-c1914',
Colmworth and Neighbours History Society, 3, November 1914, pages 36-44.

After outlining the development and importance of brickmaking in the north Bedfordshire village of Ravensden during the nineteenth century, the history is traced of each of five brickworks set up in that period. Details of

the individuals and the sometimes complex inter-relationships of different families involved in the local industry are discussed, based upon census returns and other genealogical sources.

AUTHOR (adapted)



Fig.1 Hollymount Primary School, London SW20

4. David Grandorge, 'The Need to Build',
Architecture Today, 260, July/August 2015, pages 54-60.

This article assesses two school projects by the east London practice Fielden Fowles, whose (rather vapid) 'manifesto' is 'the need to build' (p.55). The Ralph Allen School, Bath, a comprehensive founded in the 1950s, has been given striking and in places beautiful new buildings. But they do not use brick and so cannot be considered here.

Hazlegrove Preparatory School, Bruton, Somerset, was discussed in *British Brick Society Information*, 131, September 2015, page 42 (with illustration at p.41). There, I noted that the new building, largely of brick, has a so-called 'cloister' — more properly a *verandah* or *stoa*. Here, with breathtaking recklessness, David Grandorge claims that cloisters are 'an a priori component of successful learning environments' (p.59). Gosh, what might be achieved if all schools had them! (The grammar school which educated our editor and myself lacked one. Discuss!). Quite apart from the facts that *a priori* is misused (*sine qua non* is obviously intended: if you are going to use Latin tags it is as well to get them right) and that Hazlegrove Prep has only an *ersatz* cloister, does the author really believe his own contention: that cloisters cultivate clever kids? As the kids themselves might say: Get real!

The article, which is warmer in its assessment of Bruton Prep than my own, does add some further information: the new building is known as the Fitzjames Teaching & Learning Centre (Richard Fitzjames, Bishop of London 1506-1522, who built the brick ranges at Fulham Palace, was born in Bruton); the bricks are handmade; and the Flemish Bond brickwork includes occasional blue-glazed headers, 'echoing the composition [appearance? I doubt it was *composed*] of an old wall nearby' (p.59). But the photograph at page 58 does nothing to reconcile me to those gawping and ill-placed windows complained of in my own appraisal.

These, and other infelicities, are absent from the Ralph Allen School: less mannered, and therefore better mannered as one might put it. The photographs, moreover, show that Ralph Allen has no school uniform — a non-architectural reason for approving it!

T.P. SMITH

5. Michael Hall, 'Poetry in Brick and Stone: Standen, West Sussex',
Country Life, 2 December 2015, pages 44-49.

Philip Webb died on 17 April 1915; Standen is one of the two surviving country houses to his design which have survived fires, abandonment, and demolition: the other is 'The Red House', Bexleyheath, for William

Morris in 1859. Both Standen and 'The Red House' have been visited by the British Brick Society.

Standen was designed in 1892 as the country house and eventual place of retirement for James Beale (1840-1912) and Margaret (1847-1936), his wife; he a London-based solicitor and keen golfer, she a keen gardener. The money to buy the three farms where the house was built came from Beale's involvement with the London extension of the Midland Railway in the 1860s; even so the finance was insufficient for Webb's first design; yet his second design, as built, cost £18,000, but the client had not made sufficient allowance for either a billiard table or a grand piano, necessitating an extension soon after the house was complete. The exterior of the L-shaped Standen was constructed using many materials: red Keymer bricks and clay tiles, weatherboarding, greyish-yellow Horsham bricks in very subtle tones and local buff-coloured sandstone, with Portland stone employed where additional protection from the effects of the weather was required.

When Helen Beale (1885-1972), the youngest of the seven children of James and Margaret died, she bequeathed the house to the National Trust, who maintain it, thanks to the endowment given by Arthur Grogan (1924-2011), the house's first curator.

Standen is a much discussed house. Among the many accounts are O. Garnett, *Standen*, London: The National Trust, revised edition, 1996, with subsequent reprints (the guide book); M. Girouard, *The Victorian Country House*, New Haven and London: Yale University Press, 1979, pages 381-389; and S. Kirk, *Philip Webb: Pioneer of Arts and Crafts Architecture*, Chichester: Wiley-Academy, 2005, pages 150-160.



Fig.2 Ebbw Fawr Learning Community, Ebbw Vale, Blaenau Gwent, Wales

6. [Ibstock Brick], 'The Art of Brickmaking: Texture and Pattern', *Architecture Today*, **260**, July/August 2015, pages 64-67.

This contribution to *AT* is a 'sponsored feature' — in other words, an *advertisement*. Despite the title, one may note, the 'feature' is concerned more with bricklaying than brickmaking; and, though unashamedly promoting its own products — that, after all, is what Ibstock is paying for — the contribution avoids corporate narcissism by illustrating ways of using bricks which are, but do not have to be, the company's own.

After a brief introduction, brick bonds are considered, with alternatives to the near-ubiquitous Stretcher Bond. Also mentioned are recessed and projecting bricks — another means of relieving the potential monotony of Stretcher Bond. Amongst several buildings used to illustrate these points is the accomplished Holmymount Primary School, Wimbledon, London SW20, by the Haverstock architectural practice. At the far left of figure 1 the gabled portion has unrelieved Stretcher Bond, imparting a certain strength. A lighter note is struck immediately to the right by a stretch of brickwork with tall slit windows and the Stretcher Bond relieved by projecting courses of stretchers. This is separated by a section of honeycomb brickwork (achieved by omitting the headers from Flemish Bond) from further Stretcher Bond minimally relieved by projecting (at top) and recessing (at base) panels of vertically laid bricks, all beneath vertical timber siding.

Other techniques are illustrated by another school, the Ebbw Fawr Learning Community, Ebbw Vale (Glynebwy), Blaenau Gwent, in south Wales by BDP architects. To the left of figure 2, panels of sawtooth red

brick relieve otherwise plain red brickwork. The latter also appears at the far right. In between is rusticated walling of (appropriately) slate-coloured bricks. It is interesting but perhaps a little too earnest, lacking the *joie de vivre* of the Hollymount School: if you were a schoolchild, which would *you* prefer?

'Patterns and lettering' are illustrated by a 'sign' (location not stated) using precision-cut grey bricks and brick slips. Unfortunately, the close-up photograph at page 67 does not allow the motif to be discerned.

Throughout, the illustrations are fascinating; but explanations are sometimes obscure, as in the paragraph on 'Cut and turned bricks' (p.66), where even the illustrations do not help to elucidate the gnostic descriptions. But some of the buildings shown — and the two schools in particular — are intriguing.

One may therefore welcome this 'sponsored feature' — though I am old enough to remember the more straightforward, less mealy-mouthed, term 'Advertiser's announcement'.

T.P. SMITH

7. 'Piloti', 'Nooks and Corners',

Private Eye, 1398, 7-20 August 2015, page 17.

In the third grouse of three in this issue of the irreverent magazine, 'Piloti' (aka Jonathan Glancey) draws attention to Marlborough Road Primary School on a full width site between Sloane Avenue and Draycott Avenue London SW3. It is an 1878 building by E.R. Robson (1836-1917), architect to the London School Board, with later sympathetic additions, one with a date-stone: 'A.D. 1902'. I am grateful to 'Piloti' for enticing my own visit to the building.

Why does it feature in the issue? Well, the Royal Borough of Kensington and Chelsea has approved demolition, with replacement by a new school 'and a much larger volume of commercial and retail space'. To be realistic, a smaller primary school is probably desirable in this part of London. But surely one of the least financially-strapped boroughs can come up with a more imaginative, less draconian solution — and one less in hock to Mammon?

Inexplicably omitted from 'Pevsner' (*London 3: North West*), the building, like other London board schools, is in the mis-named 'Queen Anne' style, showing characteristic tall sash windows with small lights, decorative brickwork, and prominent gables. It is of yellow/brown London Stocks with red brick trim, including moulded specials for strings, cornices, console-brackets, triglyphs, and other features. There is also some banding with white stone, more prominent in the additions, where the London Stocks are less evident. Throughout, the brickwork is in English Bond.

Stone entrances in both streets — where they are of different designs — reflect the segregation practised in all such schools: the south-eastern entrance in each street bears the carved wording "GIRLS & INFANTS"; on Draycott Avenue the north-western entrance reads "BOYS" whilst its equivalent on Sloane Avenue reads "BOYS' ENTRANCE"; here too is a third entrance further north-west with no lettering but a simple floral pattern: was this the entrance to the master's house?

With ever fewer pupils, such elephantine schools may well have outlived their original purpose; but, as 'Piloti' comments, they are 'eminently adaptable'. This one should certainly be preserved — albeit with the school moved elsewhere. Many petitioners think so, including not only local residents, parents, and 'even some school governors', but also Julian and Andrew Lloyd Webber, Bill Wyman, Edna O'Brien, and, as 'Piloti' ruefully adds, 'a number of celebrities I have never heard of'!

'Good luck to them,' he adds. Amen to that, but to save this building will require more than *luck*. I'm glad I went to see it, for I fear it won't be with us for much longer. I did hope I was wrong.

Sadly, this is not the case; the primary school has moved into what had been an industrial building on the west side of Draycott Avenue. Its former location is now encased in high, boarded fencing enclosing a building site dominated by a large crane.

T.P. SMITH

BRITISH BRICK SOCIETY MEETINGS in 2016

Saturday 21 May 2016

Annual General Meeting

Chichester

To be followed by tour of the brick buildings of the town, many of which are Georgian (see 'Editorial', this issue of *BBS Information*).

Saturday 18 June 2016

London Meeting

Chelsea

A walk from Sloane Square Underground Station to the Chelsea Royal Hospital and then along Chelsea Embankment and Fulham Road and the Michelin Building, finishing at South Kensington Underground Station. Walk includes the Chelsea Hospital, Tite Street, Cheyne Walk, and Old Church Street as well as municipal buildings on King's Road.

Saturday 16 July 2016

Summer Meeting

Derby

Railway buildings including the Roundhouse, new station, warehouses, and the first railway hotel; the Silk Mill and other early industrial buildings; late 1930s County Hall; Victorian Market Hall; big nineteenth-century hospital partly being replaced; Royal Crown Derby works in former workhouse buildings.

Saturday 1 October 2016

Brickworks Meeting

Wienerberger, Kingsbury Works, Staffordshire

The works adjoins the Birmingham to Derby railway line, and is near Wilnecote Station between Tamworth and Burton-on-Trent. It is one of only two works still producing Staffordshire Blues.

Details of the Annual General Meeting, the London Meeting and the Summer Meeting are enclosed with this mailing.

Full details of the Brickworks Meeting will be in the next BBS Mailing

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

Suggestions of brickworks to visit are particularly welcome.

Offers to organise a meeting are equally welcome.

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

Changes of Address

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

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