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\* The annual subscription to the British Brick Society is £12-00 per annum. There are now no concessionary subscriptions.

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>

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## *Cover Illustration:*

Tattershall Castle, Lincolnshire: an engraving by Bartholomew Howlett  
after Thomas Girtin, 1799

## Guest Editorial: A Letter from the Chairman, regarding the Finances of the British Brick Society

Firstly, may I take this opportunity to thank all of you for renewing your membership of the British Brick Society for 2021 and continuing to support the Society in what has been an exceedingly difficult and uncertain time for us all and continues to impact on our activity planning. Whilst it is hoped to arrange some activities for later in the year, the one incredibly positive aspect has been the continuing publication of our journal, *British Brick Society Information*.

In recent years, and whilst we have been fortunate to attract new members, there has been a gradual decline in membership, with most of this loss, sadly due to members passing away, as will be seen from the Obituary opposite. This decline has resulted in our sole income stream from members' subscriptions being reduced, with our funds not covering our only expense which is the publication of *BBS Information*.

With the positive volume of available articles and notes, the Editor seems always to have sufficient material to produce the three publications each year. The most significant change in recent years has been the introduction of colour printing for editions where the articles and accompanying photographs would enhance the overall copy and were sufficient to justify the expense. However, the printing costs of an issue using illustrations in colour is *double* the charge made for an issue with only black-and-white photographs.

It should also be noted that the postage cost per individual mailing has doubled since 2015; as will be seen from the stamps on the envelope, following the somewhat unprecedented January increase in postage costs, it is now £1-53 per copy posted to an address in the UK.

For many years, all the costs associated with the publication of the journal were generously met by the Brick Development Association, the BDA. However, this changed just over twenty years ago, leaving the Society to fund its publication through subscription. Last year, whilst maintaining the three copies, it was necessary to use the reserve fund to cover the excess costs; clearly a situation that is not sustainable.

To effectively manage our costs and income, only two issues of *British Brick Society Information* are planned for 2021, both maintaining 52-56 pages and with the second one containing colour images.

As our journal is the mainstay of the society, we are very anxious to return to three issues per year in 2022, with the editor having sufficient material to incorporate, maintaining each issue at 52 or 56 pages. Two black and white and one colour copy are envisaged.

To ensure that the Society's finances are returned to a stable and sustainable level, it is proposed to table a resolution at the 2021 AGM to raise the subscription level from the present £12-00 to £16-00 (sixteen pounds), with this taking effect from January 2022: this being the first increase 2012.

Whilst any cost increase is unwelcome, it is hoped that this proposal will receive your support and allow the Society to return to a sustainable position going forward.

Best Wishes  
MIKE CHAPMAN  
Chairman, British Brick Society



## Obituary: Patricia Mary Ryan, 1930-2020



Fig.1 Patricia Ryan in her garden.

Pat Ryan, pioneer stalwart of the study of brick in Essex and one of the earliest members of the British Brick Society, died in October 2020 after a long and fruitful life, examining bricks and the history of Essex localities.

Growing up in Leytonstone and Woodford Green, both in the 1930s villages firmly in Essex (but now suburbs of Greater London); after war-time evacuation to Ireland, Pat subsequently trained as a teacher, pursuing her career teaching in infant schools in Leytonstone and Harlow, before moving with her husband John and her family to Danbury, outside Chelmsford, her home for the rest of her life.

Pat had been specialised in Geography during her teacher training, but would have preferred to have studied History. Discovering the earthworks of Woodham Walter Hall, led her to undertake first the University of London extra-mural Certificate and then the university's Diploma in Local History. To widen her knowledge, Pat undertook the University of Cambridge Certificate in Landscape History and Field Archaeology. For the latter she wrote a study of the Tudor buildings of Ingatestone comparing a map of 1601 with a survey made in 1556 using particularly the evidence from the surviving buildings; it formed the basis of her publication in 2000. Later she was awarded a University of Essex MA in Local and Regional History, for which Pat examined the history and uses of brick in Essex, research which later became her two self-published books on the subject (Ryan, 1996; Ryan, 1999).

Pat was an active member of several archaeological, historic buildings, and historical organisations in Essex, including the Essex Historic Buildings Group, the Essex Society for Archaeology and History, of which she was Excursions Secretary for a number of years, and the Maldon Archaeological and Historical Group. Pat was a regular contributor to *The Transactions of the Essex Society for Archaeology and History*. She combined the skills of a building recorder and an archaeological finds specialist in ceramic building materials with those of a documentary historian, one deeply entrenched in the archives held in the Essex County Record Office, not

least in the records of the late-seventeenth-century Hearth Tax. Apart from the buildings of Ingatestone, amongst the specific Essex buildings which benefitted from the range of her expertise were Beeleigh Abbey near Maldon, the barns at Cressing Temple, Pleshey Castle, and St Michael's church, Woodham Walter. When the British Brick Society visited Woodham Walter church in July 1998, Pat was the guide.

For the British Brick Society, Pat produced an index of *British Brick Society Information*, issues 1 to 81 — in part from the Compilation Volume of issues 1 to 25 — which appeared in October 2000.

Pat had accumulated a collection of over 800 bricks from sites in Essex and beyond. Becoming very frail in July 2020, she was pleased to know that the collection and its accompanying documentation was able to find a good home at the Bursledon Brickworks Museum, to which it is gradually being transferred from the Chelmsford home of her daughter and son-in-law, Jenny and John Clemo.

DAVID H. KENNETT

incorporating material supplied by DAVID ANDREWS through the good offices of MICHAEL HAMMETT

## PATRICIA MARY RYAN: PRINCIPAL PUBLICATIONS

- 1986: *A Village History: Woodham Walter*, Maldon: Plume Press
- ‘Fifteenth-century Continental Brickmasons’, *Medieval Archaeology*, **30**, pages 112-113.
- 1996: *Brick in Essex from the Roman Conquest to the Reformation*, Chelmsford: Pat Ryan
- 1999: *Brick in Essex: The Clayworking Craftsmen and a Gazetteer of Sites*, Chelmsford: Pat Ryan
- 2000: ‘The Buildings of Rural Ingatestone, Essex, 1556-1601: ‘Great Rebuilding’ or ‘Housing Revolution’?’, *Vernacular Architecture*, **31**, pages 11-25.
- 2000: *Index to BBS Information, The Newsletter of the British Brick Society 1973-2000*, Wingfield, Berkshire: British Brick Society
- 2012: Contributor on ‘Essex houses and the Hearth Tax’ and ‘The Development of Vernacular Architecture in Essex’, in C. Ferguson, C. Thornton, and A. Wareham, eds, *Essex Hearth Tax Returns, Michaelmas 1670*, [being *British Record Society, Hearth Tax Series*, **8**].

## Note from the Editor, *British Brick Society Information*

Would members please note the new email address for the Editor of *British Brick Society Information*. It is: [davidkennett510@gmail.com](mailto:davidkennett510@gmail.com). All correspondence and future submission of articles should be to this email address.

If any member submitted an article or note on or after Wednesday 16 February 2021 or contacted the Editor to the former email address, [kennett1945@gmail.com](mailto:kennett1945@gmail.com), please would they re-submit their contribution to [davidkennett510@gmail.com](mailto:davidkennett510@gmail.com), thank you.

# How Many Bricks are there at Tattershall Castle?

David H. Kennett

## INTRODUCTION

The Ancient Monuments Consolidation and Amendment Bill of 1913 was introduced in the House of Lords by the Conservative peer, George Nathaniel Curzon (1859-1925), who between 1911 and 1921 held the title, first Earl Curzon of Kedleston, before being raised to the rank of Marquess in the Birthday Honours (4 June) 1921 in title and style of the Marquess Curzon of Kedleston.<sup>1</sup> Writing about Lord Curzon's sponsorship of the bill which became the Ancient Monuments Consolidation and Amendment Act of 1913,<sup>2</sup> in his column in *The Guardian* on Saturday 2 February 2012, the journalist Ian Jack wrote:

Amongst the most surprising buildings to find in the English landscape is Tattershall Castle, which shoots up straight from the vegetable flatlands of Lincolnshire and could easily be mistaken for a period reproduction, looking new and almost too castle-like, more a Victorian fantasy than a defensible tower built in the 15th century from 700,000 well-laid bricks.<sup>3</sup>

The remark "700,000 well-laid bricks" set the present writer thinking and he turned to the building accounts for Tattershall Castle, the originals of which are in Latin. The Latin accounts were transcribed by the late W. Douglas Simpson and published with an English translation over sixty years ago, in 1960 and re-issued in 2010.<sup>4</sup>

Close examination of the accounts reveals how many bricks were produced in certain specific years (Table 1), were retained from previous years and were held at the end of some years (see Table 2), and the number of bricks used on specific elements of the castle or sold or given away in particular periods (Table 3). The major references to bricks in each accounting period are reproduced from the published Latin and an English translation given in parallel in Appendix 1.

## THE CASTLE AND ITS BUILDER

As the quotation above implies, Tattershall Castle (figs.1-3 and cover)<sup>5</sup> is a major late medieval brick building in Lincolnshire.<sup>6</sup> The surviving structure is a tower house, although the building accounts refer to it as "the donjon".<sup>7</sup> Its principal function was as a solar tower;<sup>8</sup> its upper floors were the private quarters of the man for whom it was erected, Ralph, the third Lord Cromwell (1394-1456).<sup>9</sup>

In the introduction to his publication of the building accounts, W. Douglas Simpson gives the external dimensions of the solar tower as 62 feet by 48 feet (18.9 m by 14.65 m) and its height to the coping of the merlons as 118 feet (36 m). The basement walls are 12 feet (3.66 m) thick.<sup>10</sup> Above the basement are four floors, the upper three of which have a single large room on the west side. On the first and second floors there is a corridor on the east side; which on the third floor is replaced by a series of intra-mural rooms. At the top is a parapet walk. The raised ground floor is referred to in the accounts as "the parlour" (see below) and is self-contained and without access to the floors above; on the basis of its magnificent fireplace, Simpson suggested that it functioned as the court room of the manorial estate.<sup>11</sup> Access to the upper floors was provided by a spiral stair in the south-east turret entered separately from the open grounds within the castle. The first floor contained the lord's private dining room and was connected by a passage to a now demolished kitchen. The second floor was an audience chamber approached by a long corridor taking up the full length of the east side on the tower and contained within the inner and outer parts of the original basement wall. The third floor contained the lord's private bedroom. Garderobes, accessed through the north-west turret, were provided on the north side of the first and third floors but on the south side of both the parlour and the second floor; for the latter access was available through the room in the south-west turret. There was also a garderobe off the room in the north-east turret on the second floor for the use of supplicants prior to their interview with Cromwell.

This was not a new site. Licences to fortify and crenelate were granted in 1231 and 1239 to Robert de Tateshale, the then owner and a fourth generation descendent of Sir Eudo Fitzspirewic, a king's knight recorded in Domesday Book. Buildings on a moated platform included hall, solar, kitchen, and chapel, all of stone. In the fourteenth century, Eudo ceased to have male descendants; the heiress, Mary Barnack (*d.*1419) had married Ralph, the first Baron Cromwell (*d.*1398); they were the grandparents of the man who built the brick tower.

The East Prospect of Tattershal-Castle near Boston, in the County of Lincoln.

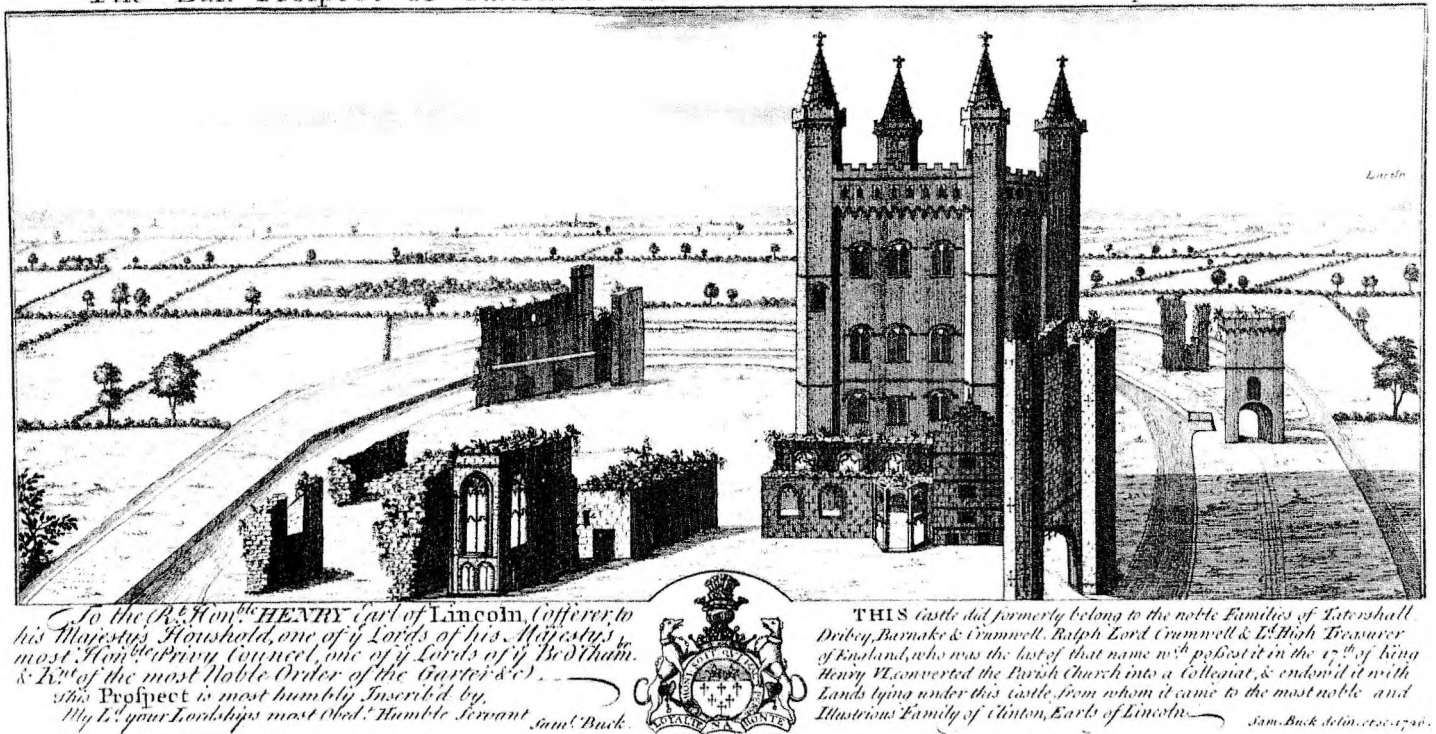


Fig.1 Samuel Buck's engraving of Tattershall Castle from the east of 1726, showing buildings no longer extant and all four cappings to the towers.

The first baron Cromwell had come into possession of Tattershall Castle in 1367, which can be presumed to be the date of his marriage.<sup>12</sup>

In addition to the tower, within the platform surrounded by its moat the site included a kitchen, now marked by its foundations; a chapel; and a hall block. This inner moat was reinforced by walling on its inner (platform) face and there was a gatehouse at the north-west corner. The gatehouse was matched by another on the other side of the inner moat; the two gatehouses were originally connected by a drawbridge. In the area between the inner and outer moats were various other brick buildings including a stable, which is noted in the accounts (see below).

To set the castle in context, beyond the eastern outer moat is Holy Trinity church, which was enlarged and sumptuously rebuilt using the finest Ancaster limestone, after Cromwell's death on 4 January 1456 by his executors, chief amongst whom was William Waynflete (c.1494-1486), Bishop of Winchester from 1447, and another man who built in brick.<sup>13</sup> At Tattershall, the small town and its market place are to the north of the church. Adjacent to the churchyard are a series of brick buildings endowed by Cromwell, a bedehouse (almshouse), a chantry college for seven chaplains, and a school.

Ralph, Lord Cromwell, was the grandson of Ralph, the first Baron Cromwell (d.1398). The latter was first summoned to the parliament as a baron in 1375. He belonged to a family with long associations in Lincolnshire and Nottinghamshire. His ancestor was Alden, a king's thane whom Domesday Book (1086) records as holding part of a knight's fee at Cromwell, Notts. Ralph, the first Baron Cromwell had married Maud Barnack (d.1419), probably in 1367. Two children from this marriage are known: a son, Ralph, second Lord Cromwell (d.1416), and a daughter, Amice (d.1421), who married Thomas Bardolf, the fifth Lord Bardolf (1369-1408) and whose marriage produced two daughters, Anne and Joan. Ralph, the second Baron Cromwell married a lady called Joan, whose surname is not recorded; their progeny included Ralph, the third baron, and at least one daughter, Maud, who became Ralph Cromwell's heir-at-law. Sometime before 1422, Ralph Cromwell, himself, had married Margaret Deincourt (d.1454) but their marriage appears to have been childless.<sup>14</sup>



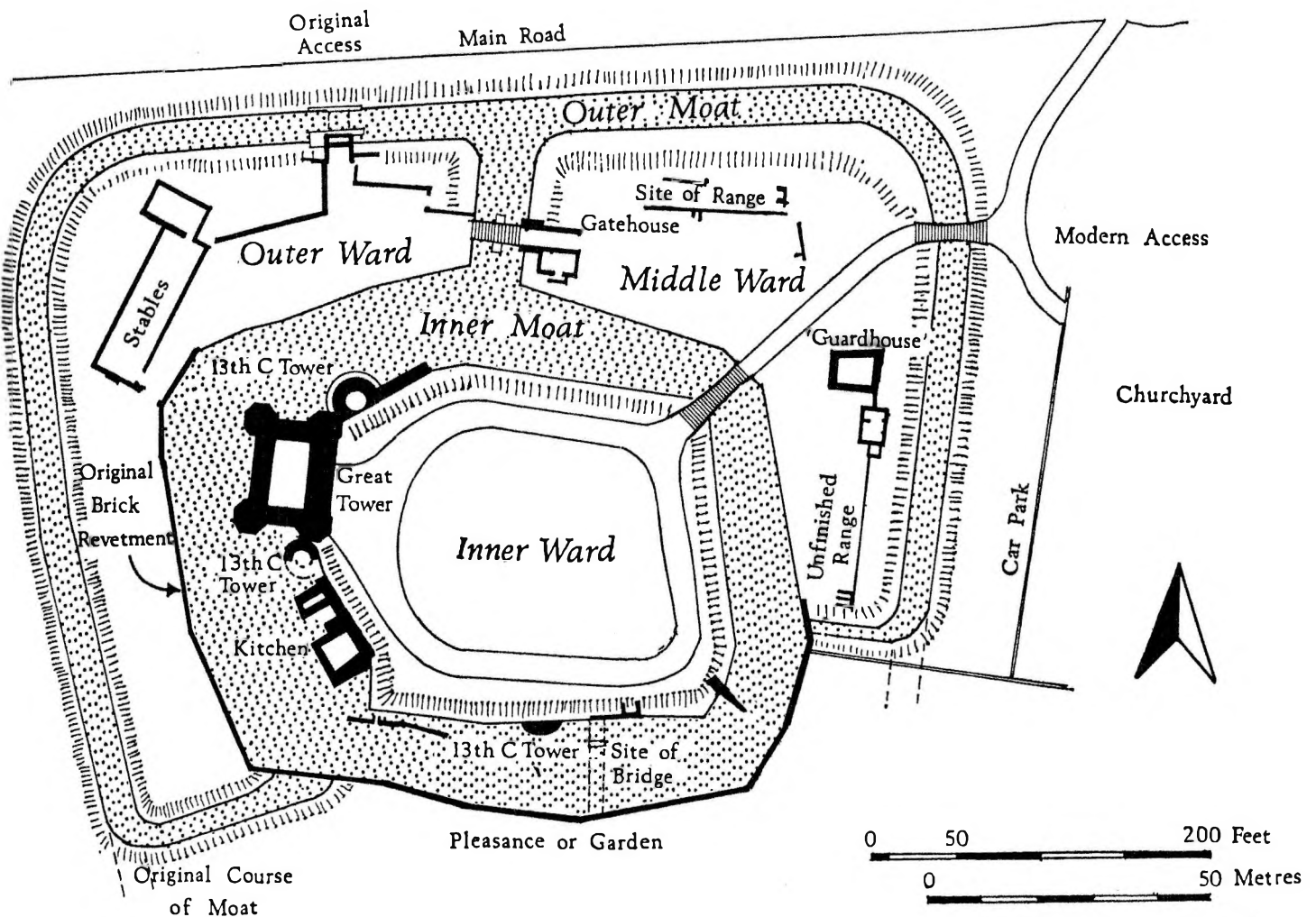


Fig.2 Plan of Tattershall Castle as existing in 1914.  
(after Thompson, 1988)

By 1422, Ralph Cromwell had spent almost a decade in France: first recorded there in August 1412, he was one of the knights who fought at Agincourt on St Crispin's Day (25 October) 1415. Between 1417 and 1421 he was engaged in administrative and diplomatic tasks in France.

On 11 August 1433, Cromwell replaced John, Lord Scrope of Marham as Lord Treasurer of England; held the post for almost ten years, being replaced by Ralph Boteler, Lord Studley (*d.* 1473) on 6 July 1443, in one of the myriad twists and turns of mid-fifteenth-century politics. Although holding other offices at various times after 1443, Cromwell was never again influential in national politics.

One of the pieces of legislation put through by Cromwell during his time as Lord Treasurer was the 1436 income tax.<sup>15</sup> Cromwell assessed his own income for the year at £1,007, which net of annuities is not dissimilar to other estimates of his income in the late 1420s and mid-1430s. In 1429, he had a net income of £1,020, whilst in 1436 his gross income was £1,100. However, during his period as Lord Treasurer and afterwards, Cromwell's wealth and his annual income increased considerably, so that by the time of his death it was two-and-a-quarter times what it had been twenty years before: the figure of £2,263 is recorded as his income in 1455.<sup>16</sup> Indicators of his wealth abound: he was able to lend the crown over £4,000 during the 1440s and early 1450s; he left over £21,000 in goods and money at his death on 4 January 1456; and after Cromwell's death, his executors returned lands worth £5,500 to their rightful owners.<sup>17</sup> Two unquantified indicators of Cromwell's wealth are first the wardships, reversions, and patronage he was able to accumulate during his time as Lord Treasurer and second his building projects. Apart from Tattershall Castle and the other projects in Tattershall, the parish church at Lambley, Notts.,<sup>18</sup> where his parents and grandparents are buried, was rebuilt by Cromwell's executors after 1456, and three other major housebuilding projects are known: houses at Colleyweston Manor, Northants.,<sup>19</sup> and at Lambley<sup>20</sup> have both been demolished but the ruins of South Wingfield Castle, Derbys.,<sup>21</sup> still loom dramatically and a trifle menacingly over a cutting on the Derby to Sheffield railway line.

## THE ACCOUNTS

Separate accounts have survived for four distinct periods in the building of Tattershall Castle. The first and most detailed account covers 15 February 1434 to 2 May 1435.<sup>22</sup> The second and third sets of accounts are for two continuous periods: from Easter (13 April) 1438 to 31 May 1439,<sup>23</sup> and from 31 May 1438 to Easter (27 March) 1440.<sup>24</sup> The fourth accounting period is from Lady Day 1445 to Lady Day 1446;<sup>25</sup> Lady Day, the Feast of the Annunciation of the Blessed Virgin Mary, is a fixed date, held annually on 25 March, and a day of obligation on which attendance at mass is expected.

These are not continuous accounts, except for the two years from Easter 1438 to Easter 1440, and it is clear that the 1434-35 accounts are not those for the first year of construction nor are the 1445-46 accounts those for the year in which the building was finished. The first entry in the first surviving “year” of the accounts begins with:

*Arrears:* None because there was a surplus in the last account.<sup>26</sup>

This and other information in this “year’s” accounts, particularly under the heading ‘Bricks of smaller size made in the 10th year [*ie* 1431-32]’,<sup>27</sup> discussed below, make it clear that construction of Tattershall Castle had been in progress for several years. And the last extant account ends:

*Bricks:* ... There remain 318,000 whereof 100,000 large bricks and 84,000 small bricks are on the bank of the new ditch; in all 184,000, and in Baldewyn’s hands, arrears of old standing, 134,600. Whereof it is reckoned that 322,000 of the large size will be used will be used in the great tower called le Dungeon and minor works of the castle. ...<sup>28</sup>

Clearly more work was expected to be done throughout 1446 and possibly in the year after.

## THE DOCUMENTS

Six individual documents in the manuscripts held by Lord D’Isle and Dudley at Penhurst Place, Kent, have references to the construction and subsequent maintenance of Tattershall Castle were studied by the late W. Douglas Simpson, and published by him. Each of the documents included in his volume, *The Building Accounts of Tattershall Castle 1434-1472*, is different and readers of this paper should be aware of the characteristics of each.<sup>29</sup>

The earliest surviving account covers 15 February 1434 to 2 May 1435. This appears to have been a draft of the summary accounts for this accounting period and not a fair copy. There are many crossings-out and interlineations. All of the financial data for this period is given as interlineations. The other three “annual” accounts are well-written with few corrections. Unlike the other three documents, this one is on paper, not on parchment.

The accounts for Easter (13 April) 1438 to 31 May 1439; 31 May 1438 to Easter (27 March) 1440; and Lady Day (25 March) 1445 to Lady Day 1446, in contrast are well-written and on parchment. Each of these appears to be a fair copy of the original accounts for the period which each covers.

Simpson also extracted items from two other documents. The first is references to the purchase of free stone and plaster of Paris for use at Tattershall Castle in the manorial accounts for Michaelmas (29 September) 1438 to Michaelmas 1439 for Welby in the Parts of Kesteven, Lincolnshire.<sup>30</sup> Again, this is well-written and assumed to be a fair copy. The second is the bailiff’s account for Tattershall for the year ending at Michaelmas 1472 written on paper.<sup>31</sup>

## THE ACCOUNTING PERIODS

It is worth considering the days on which accounts begin and end. From the two years which follow one another, it is clear that the end date for one period is also the start date for the succeeding one. Whilst there seems little consistency in the individual dates chosen for the “accounting years”, there is some logic to the dates. In 1434, Easter Day was 28 March;<sup>32</sup> 15 February 1434 was therefore the Monday following Ash Wednesday, the first day of Lent, which had been celebrated on 10 February. Ash Wednesday is a day of obligation when attendance at mass was expected of all adults. Monday 15 February 1434, the first Monday in Lent, could also represent the date on which work began: the winter of 1433-34 was a harsh one and probably no outdoor building work

was possible before that date.<sup>33</sup> Similarly, in the Middle Ages, 1 May was a religious holiday, a day of obligation, although in 1435 this was a Sunday. In 1435, Easter Sunday occurred on 17 April, making 1 May 1435 also the second Sunday after Easter: Sunday was a non-working day. As the Easter period contained six days of obligation — Maundy Thursday, Good Friday, Holy Saturday, Easter Day, the Monday in Easter Week, the Tuesday in Easter Week — of which two — Good Friday and Easter Day — were high days of obligation, on which non-attendance at mass was on pain of one's immortal soul. Following the first Sunday in Easter in 1434, Monday 25 April was the feast of St Mark, another day of obligation and a religious holiday. Therefore, it seems that Monday 2 May 1434 would have been a convenient, if somewhat variable, point at which to make up a summary account of the previous year's expenditure to around this day. Easter is not a fixed date in the calendar. A high day of obligation was certainly not a working day. It was a day on which religious obligations, including attendance at mass at least once, had to be fulfilled, possibly on pain of one's immortal soul; it became also a non-working day and therefore a holiday. Given overlapping dates, Monday 2 May 1435 was clearly a sensible day on which to conclude old accounts and begin new ones. There is another possible reason for the delay in settling the accounts. In north-west Europe, the winter of 1434-35 was among the ten most severe winters of the last seven hundred years: a very cold period began on 24 November 1434 and continued until 10 February 1435, a total of 79 days. There were severe frosts and it is recorded that the Thames froze as far east as Gravesend. It is highly unlikely that much building work was done in those twelve weeks.

John Southell may have introduced consistency. Lady Day, the Feast of the Annunciation of the Blessed Virgin Mary, on 25 March, is both a day of obligation and an English quarter day: a quarter day is one of the four days of the year on which periodic payments, such as rent, become due and debts should be settled.<sup>34</sup>

## THE ACCOUNTANTS

The first three extant accounts had been drawn up by Thomas Croxby, who is described as 'Supervisor of the works of Ralph, Lord Cromwell at his castle of Tattershall' in 1434-35 and in the same words in the two subsequent accounts.<sup>35</sup> In the 1438-39 accounts of the manor at Welby, Croxby is described as 'Clerk of Works at Tattershall Castle'.<sup>36</sup> In 1445-46, John Southell is noted as 'Clerk of the Works for Lord Cromwell of the Castle and Demesne of Tateshale'.<sup>37</sup> Both Croxby and Southell had financial expertise and acted as supervisors of the work; neither was the architect of Tattershall Castle.<sup>38</sup>

The man who drew up the accounts changes at an unknown date after Easter 1440, probably at Michaelmas (29 September) in that year. When he drew up the accounts on Lady Day (25 March) 1445, John Southell wrote of being owed

£15, the accountant's fee due for four and a half years ending at Easter in the 23rd year of the reign [1444-1445], at £3-6s- 8d. per annum.<sup>39</sup>

As Easter Day in 1445 was 28 March, only three days after Lady Day, it seems probably that the half year referred to by Southell was from Michaelmas 1440 to Easter 1441: Easter Sunday in 1441 was 6 April.

The late Alexander Hamilton Thompson, writing in the first guide produced by the National Trust noted a third agent compiling building accounts, one John Combe in 1451-52.<sup>40</sup> Internal evidence from the 1434-35 account notes an earlier 'overseer of the works of the castle':

To John Warner, 18s. 8d. and to William Peper, 12s. carpenters, in part payment of an old debt due to them by my lord, from the time when Robert Gowshill was overseer of the works of the said castle ...<sup>41</sup>

Thus, some time before the period when Thomas Croxby was in charge, a different man had held the purse strings.

We know little beyond their names of the two men whose accounts we have. Thomas Croxby is probably a Lincolnshire man. There is a village of Croxby in the northern part of the county and Cromwell owned land in the villages around Alford, the local town, and in Alford itself. With John Southell, it could be that the spelling of his surname reflects the local (and customary) pronunciation of the minster town of Southwell, Notts.

For John Combe, even that little can be suggested. There are several places with and without a prefix or suffix called 'Combe' or 'Coombe' in southern England, but not in Lincolnshire or adjacent counties.

TABLE 1  
BRICK PRODUCTION FOR TATTERSHALL CASTLE AND OTHER WORKS  
FOR RALPH, LORD CROMWELL

Year	Edlington Kiln	Boston
1431-32	100,500	of small size remaining 1434-35
1432-33	587,000	remaining over
1433-34	500,000	remaining over
1434-35	500,500	Duty paid on 5,000 bricks at the port
1435-36	400,000	awaiting firing on 2 May 1435
1436-37		
1437-38	247,900	remaining over
1438-39	490,700	8,900
	8,000	
1439-40	4,095,900	
	474,500	24,000
1440-41		
1441-42		
1442-43		
1443-44		
1444-45	284,000 remaining over	
1445-46	383,000 plus 84,000 of small size	
1446-47		

*Source:* Simpson, 1960, pp.6, 16, 19, 21, 25-26, 32-33, 36-37 (in Latin); and pp.46, 54, 56, 60, 65, 73, 76-77 (in English).

In contrast, the career of Robert Gowshill can be more precisely followed from the Tattershall Castle accounts. Assuming that the entries in the accounts for both 1434-35 and 1439-40 refer to the same man as the former 'overseer of the works at the castle', this cleric was promoted by Lord Cromwell to be his 'receiver in the shires of Nottingham, Derby, and Leicester'<sup>42</sup> and to be the Rector of Cromwell, Notts., the place from which the family took its name. Among the sundry items of expenditure incurred by Thomas Croxby in 1434-35 was 1s. 4d. for 'riding on four occasions during the time of this account to Cromwell to obtain money from the rector there'.<sup>43</sup> From his surname, the origins of Robert Gowshill are somewhat obscure. However, if 'Gowshill' is a way of writing 'Goxhill', the possibility of him being a Lincolnshire man are increased. There is a village in north Lincolnshire called Goxhill, about a mile or so north of Thornton Abbey, where the great gatehouse was built of brick.<sup>44</sup> This is a building which predates Tattershall Castle by a generation. By the time of the 1445-46 accounts, Robert Gowshill had been replaced as Lord Cromwell's 'receiver for the shires of Nottingham, Derby, Leicester, and Stafford' by Henry Etwall,<sup>45</sup> who from his surname was probably a man from the Derbyshire village of the same name. In the intervening five years, Robert Gowshill could have retired, been promoted, or died.

#### COMPARISONS WITH OTHER FIFTEENTH-CENTURY BUILDING ACCOUNTS

The individual accounts drawn up for Tattershall Castle are summary accounts, recording the total expenditure in specific areas, such as the purchase of materials and the payment of wages, over the time to which the account refers. In this they resemble the accounts for the first three years of the building of Caister Castle, Norfolk, namely 1433, 1434 and 1435,<sup>46</sup> rather than the weekly accounts which have survived for the construction of Kirby Muxloe Castle, Leicestershire, of 1480 to 1484.<sup>47</sup> However, the Tattershall Accounts differ in their initial consistency from those at Caister Castle, where each year's account begins on the Feast of the Epiphany (6 January), the traditional date of the post-Christmas return to work in the rural economy: traditionally in the medieval rural economy, little work except for feeding animals and milking the cows, ewes, and goats was done over the twelve days of Christmas, the Caister Castle accounts may, therefore, be read as annual accounts.

Even with variable length and being intermittent, the four periods of the Tattershall Castle accounts have a great deal to say concerning the number of bricks used in its building and from where the bricks were obtained.



TABLE 2  
BRICKS FROM EDLINGTON KILN: PRODUCTION AND RETENTION

Year	Retained from Previous year	Produced in this year	Remaining at end of year
1431-32			100,500 small size Mostly used in 1434-35
1432-33			
1433-34		587,550 large size	
1434-35		500,000	779,400
1435-36	779,400	400,000 awaiting firing on 2 May 1435	
1436-37			
1437-38			247,900 large size
1438-39	247,900 large size	490,700	137,600
1439-40	137,600 large size	4,095,900	355,600
1440-41	355,600		
1441-42			
1442-43			
1443-44			
1444-45			274,000
1445-46	284,000	383,000 large size 84,000 small size	100,000 large size 84,000 small size 134,600 old arrears from 1438-39
1446-47	318,600 total		

*Source:* Simpson, 1960, pp.6, 16, 19, 21, 25-26, 32-33, 36-37 (in Latin); and pp.46, 54, 56-57, 60, 65, 73, 76-77 (in English).

## THE BRICKS AND HOW MANY BRICKS

There are various separate pieces of information about the origins of the bricks at Tattershall Castle and the number produced.

To state the obvious, there are a great many bricks in Tattershall Castle. Information on the number of bricks produced for Ralph Cromwell's works at the castle and elsewhere is correlated in Table 1. Ralph Cromwell maintained brick kilns at Edlington Moor and at Boston; he also imported bricks through the port of Boston. Table 1 distinguishes between bricks from Boston and those from Edlington. Table 2 correlates information about the supply, use and retention of bricks produced at Edlington kiln in each year between 1431-32 and 1445-46. Table 3 gives details of the number of bricks available each year, the number potentially used at Tattershall Castle and the number used at projects elsewhere, whether under Cromwell's direct patronage or that of others.

In the accounts drawn up by Thomas Croxby at Easter 1440, there occurs the following information:

And in divers other works at the said castle ... as by estimate in this way and also by sworn testimony of the said carriers 2,095,900 bricks.<sup>48</sup>

At the same time, a total of 4,080,500 bricks is given<sup>49</sup> as having been used for Cromwell's great project at Tattershall Castle and by other building patrons in works for which Cromwell had given orders for bricks to be delivered or sold to other patrons.<sup>50</sup> From Table 2, it is possible to discern that bricks were available from the production of earlier years and that it was deliberate policy to retain bricks for the start of the following year's construction, thus eliminating the need to wait for building materials to become available. We are even told the intended uses of some of the retentions.

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## BRICK SIZES

In 1434-35, Thomas Croxby notes:

The undernoted accountant is answerable for 100,500 bricks of the smaller size called waltile made at my lord's kiln at Edlyngton More in the 10th year of the present king [1431-32] and still unused, that is to say, whereof each was of the size: length 9 inches, breadth 4 inches, thickness, 2 and 4 parts of an inch, as more fully noted in the account preceding. For bricks of this kind for the period of this account he does not answer because he received none of such a form, but only the larger size were made. ...<sup>51</sup>

In a footnote to this entry, W.D. Simpson, records his puzzlement at the size given, stating that bricks which he had measured were  $8\frac{1}{2} \times 4 \times 2$  inches ( $216 \times 102 \times 51$  mm) and for bricks mainly used on the battlements,  $7 \times 3\frac{1}{2} \times 1\frac{1}{2}$  inches ( $178 \times 89 \times 38$  mm).<sup>52</sup> As measured by Simpson, the former does not seem noticeably different from the 'smaller size' given by Croxby. This would be especially so if the Latin for the thickness, '*in spissitudine ij pollicum et iij partium pollicis*' should be read as 2 inches and one fourth part of an inch, or  $2\frac{1}{4}$  inches (56 mm).<sup>53</sup> Bricks of the 'smaller size' were also delivered in 1445-46 but were not used in the final extant accounting period.

Most of the 100,500 bricks of this size were used in 1434-35: 35,400 bricks to the Abbot of Kirkstead, and another 8,000 bricks to the Abbot of Bardney. Of the remaining 68,100 bricks, 53,000 were used in work at Tattershall Castle, but where exactly is not stated in the accounts. The few remaining bricks were 2,300 left at the Tilehouse, and 1,800 at the Meresdyke (see Appendix 1).

The extant accounts also give a size given for 'bricks of the larger size', namely 'length 10 inches, breadth 5 inches, and thickness  $2\frac{1}{2}$  inches' ( $254 \times 127 \times 64$  mm).<sup>54</sup> One may suspect that the 'larger size' were mainly used within the very thick walls of Tattershall Castle rather than as facing bricks and the 'smaller size' were used as facing bricks.

TABLE 3  
BRICKS USED IN INDIVIDUAL ACCOUNTING PERIODS

Year	Total Bricks available	Bricks used at Tattershall Castle	Bricks used elsewhere	Bricks remaining unused
from 1431-32 small bricks	100,500	53,000	Kirkstead, Bardney,	35,400
	in 1434-35			8,000
				4,100
1434-35	1,137,700	343,600	Bardney	12,000
				779,400
1438-39	747,500	countremure	Preestes	1,700
		182,000	Tattershall Mill	25,000
		Stable 236,000	Edlington church	3,000
		Small house	Market house	114,000
		46,000		137,600
1439-40	4,080,500	Stable 28,500	Ussher	1,000
		New wall of house	Rudde	1,500
		48,600	Kirkstead	5,000
		Other 2,095,900		355,000
				including 134,600 from 1438-39
1445-46	84,000 small bricks			84,000 small bricks
	667,000 large bricks	Tower 322,000	the Syncarr	94,000
				100,000
				134,600 old arrears

Source: Simpson, 1960, pp.6, 16, 19, 21, 25-26, 32-33, 36-37 (in Latin); and pp.46, 54, 56, 60, 65, 73, 76-77 (in English).

## FUEL FOR THE BRICK KILNS

Two kinds of fuel were used in firing the kilns at Edlington Moor: faggots and more substantial pieces of timber such as young trees harvested early to allow other trees to grow to a full height. As fuel, faggots are bundles of sticks and twigs bound together, something very suitable for starting the fire in the kiln and keeping it going at the requisite temperature. These would be picked up from beneath the trees of one of his lordship's many woods: wood is a crop just as much as any grain. For example, the sale of six loads of bark, used in tanning hides, is mentioned in 1434-35, raising 12s. 0d.<sup>55</sup> Each of the four years has references to the supply of faggots, both from Lord Cromwell's own woods and purchased. In 1434-35, we find a number of notices beginning with Thomas Croxby writing:

*From the sale of wood and bark from Stikeswold south wode and others of my lord's woods.*

He acknowledges the price of 15,124 faggots, from the wood and underwood cut in my lord's wood above cutting, 23 s. 4d., besides 1,696 faggots assigned to the Prioress of Stikewold in lieu of tithe.

£17 12s. 6d.<sup>56</sup>

Stixwold south wood is approximately 2 miles north of Tattershall Castle. Further details about the faggots from Stixwold south wood and their transport and use are itemised later in the same year's account under 'Special Allowances':

Allowed to the said accountant [Thomas Croxby] for the price of 1,160 faggots from the wood and underwood cut down in my lord's wood called Stikeswoldsouthwode, during the period of the account, but not allowed for above because they have not been used for firing bricks, but remain on the bank of the river Wythom; price 2s. 4d. the 100, as is acknowledged above, together with 7s. 8d. for cutting the said faggots at 8d. the 100

£1 4s. 6d.<sup>57</sup>

Cutting 1,686 faggots belonging to the prioress of Stikeswold, being the tithe of 16,800 faggot cut in the same wood at 8d. the 100

11s. 2d.<sup>58</sup>

Paid to William Rokeray and his mate for the cartage of the said 1,160 faggots from the said wood to the bank of the river Wythom, at 4d. the 100; the total increased by a certain agreement made by John Tailboys

4s. 0d.<sup>59</sup>

Also used as fuel for the kiln were trees thinned out at another of Lord Cromwell's woods, one less than a mile from the castle:

Price of 17 small oaks from the issues of my lord's coppice in Tattershall chase called Thorpe Sheterley for the aforesaid works, price of each 2d.

2s. 10d.<sup>60</sup>

In 1434-35, wood and underwood were also purchased from contractors working in the Abbot of Bardney's wood:

Price of 1 acre of wood and underwood bought out of my lord's coffers from the Abbot of Bardney in the wood of Bardney in the month of March in the twelfth year of the aforesaid works, for the cost of which and felling 130 small oaks valuation was made and estimated according to the value of the adjoining acres amounting to

£4 6s. 8d.<sup>61</sup>

Price of 2½ acres of the same kind of wood and underwood bought of John Hart in the wood of the said Abbot of Bardney and paid from the coffers of my lord in the month of March in the thirteenth year: price £4 6s. 8d. the acre, together with 15s. paid from the said coffers for the felling of the said wood at 6s. the acre

£11 11s. 8d.<sup>62</sup>

Price of 600 faggots out of 1,600 from the cropping and pruning of the wood in the said acres of wood bought from the Abbot of Bardney as above, the price of each 100, 5s., besides 1,000 of these faggots being carried to Tattershall for the said works.

£1 10s. 6d.<sup>63</sup>

Including fuel for the lime kiln (see below), in the margin of his account, Thomas Croxby noted £39 9s. 11d. had been expended on acquiring wood for fuel, of which only 12s. 0d. had been recouped through sales.<sup>64</sup> Later in the accounts for 1434-35, we learn that faggots for fuel also came from a wood owned by Lord Cromwell at Tumby, 2 miles south-east of Tattershall:

Paid to Robert Leper, feller of my lord's wood at Tumby 13s. 4d. for cutting faggots there, also £1 by the hands of John Kighley as in the money received by the said John from William Stanlowe in January of the 13th year:

£1 13s. 4d.<sup>65</sup>

In 1434-35, among the creditors of Lord Cromwell for work connected with the building of Tattershall Castle were various carters and carriers, including

William Forster of Stikeswold for carriage of faggots for my lord's brick kiln, etc.

£1 2s. 2d.<sup>66</sup>

After noting the bricks remaining at the end of the 1438-39 accounts, Thomas Croxby goes on to record further use of faggots from Stixwold south wood:

*Faggots.* 15,260 faggots cut this year in my lord's wood called Stikeswold Southwood for use in my lord's kiln at Edlyngton More as below. From which were given in tithe to the Prioress of Stikeswold, in respect of faggots cut this year, as above 1,530. And felled, as below, for use in my lord's aforesaid brick kiln, on admission and under the oath of the accountant, 13,730.<sup>67</sup>

The faggots for the kiln were priced at 1s. 8d. the 100, so cost £11 8s. 9d. in total.<sup>68</sup>

In the same year, there are references to two men from Wymondham, Norfolk, being recruited to cut wood and underwood for faggots to be used in heating fires at Tattershall; the reference specifically notes a wood called 'Frithkarhage'.<sup>69</sup> They were paid 10s. 8d. for their work done in February and March 1439. Carting the 6,490 faggots at 13s. 4d. the 1,000 cost a further £4 6s. 8d.<sup>70</sup> Making 300 faggots called 'elderkiddes',<sup>71</sup> presumably from elder growing in the same wood cost 4s. but using unspecified workmen.

Thomas Croxby records that different tactics in the acquisition of faggots for fuel for the brick kiln were employed in 1439-40:

For faggots, used this year for hedgerow enclosures and for firing bricks in the kiln, for which there is no receipt, because there was no felling of my lord's faggots, but so many came by purchase.<sup>72</sup>

At the end of that year's accounts, Thomas Croxby records:

FAGGOTS. 9,000 faggots bought this year from the Abbot of Kirksteade, both from Brackenwood (4,000) and from Highawe (5,000), by knowledge of the accountant. 2,200 bought this year from the feoffees of William Ratheby, as below, 880 of such faggots bought this year, as below, as Thorneton Wood, 400 faggots bought from the vicar of Stixwold this year, as below.

Total 12,480<sup>73</sup>

From which have been used in fences between Snawdon and Kirkestede, 5,000; in fuel for my lord's kiln at Edlyngton, more by knowledge and oath of the accountant, 7,480.<sup>74</sup>

Regarding fuel for the brick kiln at Edlington Moor, as he is with everything else, John Southell in 1445-46 is far less forthcoming in giving details, merely noting £86 10s. 6d. as 'Expenses at the brick kiln, with purchase of fuel and carriage thereof by land and water'.<sup>75</sup>



## MAKING THE MORTAR

To successfully lay bricks, mortar is required. Modern mortars tend to be cement-based; medieval and other Victorian and pre-Victorian mortars were lime-based or chalk-based. These require blocks of limestone or, as a substitute, chalk. The hills of Lincolnshire are a limestone ridge; one raw material was thus readily available. But to create lime mortar, the limestone needs to be burnt and crushed to a powder. This requires a kiln and an appropriate fuel, which could any one of wood, charcoal, or coal. All three are mentioned in the Tattershall Castle accounts. The production of lime was on a substantial scale. In 1434-35, Thomas Croxby records:

Price of 74 cartloads of fuel, felled during the period of the account in Tattershall chase for burning in 10 limekilns for the said works, to each kiln 7½ cartloads, less in all one-half cartload, the whole cost of the said carting (price of each cartload in accordance with the aforesaid preceding account being 12*d.*) amounting to

£3 14*s.* 6*d.*<sup>76</sup>

In the same year under 'Cost of Quicklime', Croxby notes

Burning 10 kilns of quicklime for the said time, together with [lime]stones and fuel bought for the said work, as more clearly set forth in the said quire.

£19 18*s.* 7*d.*<sup>77</sup>

It is unclear from the accounts whether there were ten limekilns or whether a single limekiln was in use ten times. Four years later, in 1438-39, Croxby again notes

Cost of making quicklime, including purchase of stones and charcoal, with carriage

£42 16*s.* 5*d.*<sup>78</sup>

No mention of making lime or the lime kilns is made in the 1439-40 accounts by Thomas Croxby, but six years later, in 1445-46, John Southell records

Expenses on the lime kiln, with purchase of coal and fuel

£15 8*s.* 11½*d.*<sup>79</sup>

However, no details were given of the price of the coal or the quantity purchased. Carriage of the coal was part of the £6 5*s.* 11½*d.* expended in 1445-46 on 'Carriage of timber, faggots, stone and coal by water'.<sup>80</sup>

Coal was mentioned twice in 1434-35, once in August 1434 when Thomas Croxby rode to Boston to buy 6 chalders of coal<sup>81</sup> and again among the creditors of the building works: Roger Barker of Boston was owed money as follows:

11*s.* 4*d.* for 3 gaddes of Spanish iron, and £1 4*s.* for the carriage of 6 chalders of sea-coal, with £2 3*s.* for port dues on 12 chalders of the same coal and 2*s.* 3*d.* for port dues on 5,000 bricks, all reckoned together

£3 19*s.* 7*d.*<sup>82</sup>

## BUILDING TATTERSHALL CASTLE: AN ESTIMATE OF THE QUANTITY OF BRICKS USED

In response to Ian Jack's piece, the writer contacted the Readers' Editor of *The Guardian* with a guess that the number of bricks used in constructing Tattershall Castle was nearer 7,000,000 than 700,000. This guesstimate might be an over-estimate but is probably fairly close to the truth.

There are two ways of looking at the number of bricks used in constructing Tattershall Castle: first from the annual production of bricks at Edlington kiln and, second, from the recorded number at the end of the accounts for 1439-40 of the 2,095,000 bricks used in one year in building Tattershall Castle.

It seems fairly clear from the accounts reproduced in Appendix 1 and summarised in Table 1 that between 1434-35 and 1439-40, annual brick production at the Edlington kiln was in the order of 500,000 bricks, slightly less in some years and a little bit more in others (Table 1).

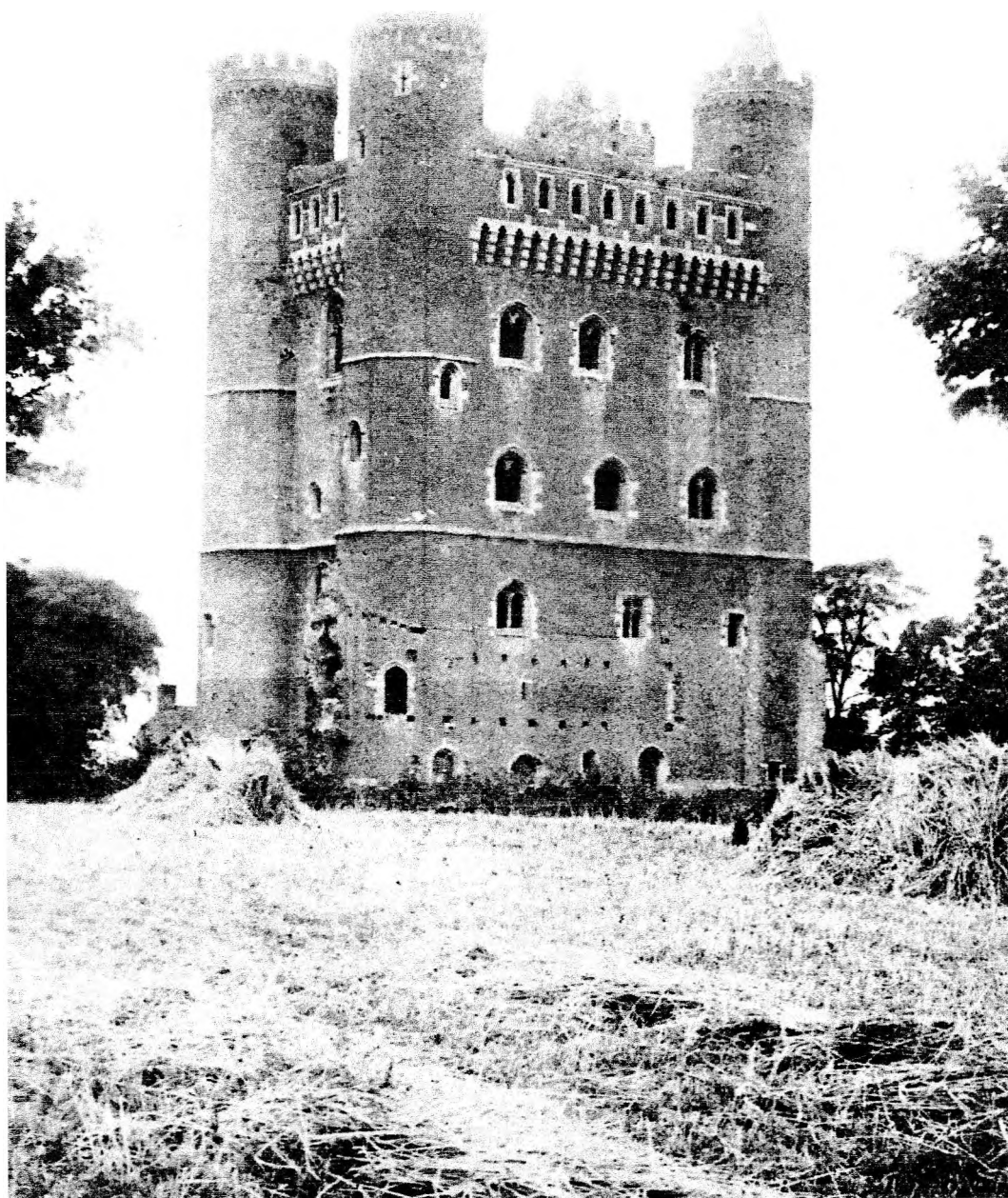


Fig.3 The east front of Tattershall Castle in 1880 when the site was a hayfield. Two cappings remain on the towers on the north face of the tower.

However, in 1439-40, a total of 4,080,000 bricks had been produced in that year of which 2,095,900 were employed on building works at Tattershall Castle (Table 2).

From an approximation of 500,000 bricks produced each year at Edlington kiln, it is possible to suggest that by 25 March 1446, around 7,000,000 bricks had been produced at the kiln for work being undertaken for Ralph, Lord Cromwell, at Tattershall Castle and elsewhere or being sold or given away by him to projects sponsored by other people.

The entry in 1434-35 that 100,500 bricks of small size made in 1431-32 had still not been used implies that by 27 March 1440 there had been at least nine building seasons when bricks had been delivered and presumably used. But 1431-32 may not have been the first building season. The need for 'bricks of the small size' seems to imply a special use, perhaps as part of door and window jambs, perhaps for some other specialised use. One may calculate from evidence produced above for subsequent years that in 1431-32 work concentrated on the lowest stages of the donjon *above ground*. There would have been no need for small-sized bricks in the

basement area. Building the basement area perhaps took as much as five years, which would take one back to 1427-28 or, perhaps, even 1426-27. If that is the case, before the end of the 1439-40 accounting period, construction work at Tattershall Castle had already involved no fewer than fourteen building seasons.

But in 1445-46, the accounts predict that 322,000 of the bricks made that year 'will be used in the great tower called le Dongeon<sup>83</sup> and other, minor, works'.<sup>84</sup> Minor works could be intensive in their use of bricks: at the end of 1438-39, it was estimated that Mathew Brekeman and his mates would use 182,000 bricks in constructing the revetment wall ['countremure'] of the moat of Tattershall Castle, and Godfrey Brekeman's gang would need 236,000 bricks to construct the woolhouse at the end of the great stable as well as another 46,000 bricks to construct a 'small house' on stone foundations between the woolhouse and the stable. That implies that around 464,000 bricks would be needed for three minor works.<sup>85</sup>

The present writer would favour the latter given that just under half the bricks produced at the Edlington kiln in 1439-40 were not used at Tattershall Castle but that just over half were. However, if the majority of the 500,000 bricks produced annually at Edlington Moor were used to build Tattershall Castle, as the written evidence implies, then the estimate of 7,000,000 bricks is a highly probable figure for the total number of bricks used in building Tattershall Castle.<sup>86</sup>

## NOTES AND REFERENCES

### ABBREVIATIONS

Curzon and Tipping, 1926

Marquess Curzon and H. Avery Tipping, *Tattershall Castle, Lincolnshire*,

Emery, 2000

A. Emery, *The Greater Medieval Houses of England and Wales, volume II East Anglia, Central England, and Wales*, Cambridge: Cambridge University Press, 2000.

ODNB Colin Matthews and Brian Harrison (later David Cannadine) eds. *Oxford Dictionary of National Biography*, Oxford, Oxford University Press, 2004, also available online at <https://doi.org/10.93/ref.odnb/> followed by a number. Access individual biographies by typing the name in space provided. The online edition, available without a paywall at most public libraries, can have post-2004 revisions to the entries and also new entries, eg William Pykenham builder of Hadleigh Deanery Tower, missed in the original trawl through persons of importance.

Pevsner and Harris, rev. Antram, 1989

N. Pevsner and J. Harris, revised N. Antram, *The Buildings of England: Lincolnshire*, London: Penguin Books, 2nd edn, 1989.

Roberts, 2018

D.L. Roberts, *Lincolnshire Houses*, Donnington: Shaun Tyas, 2018.

Simpson, 1960/2010

W.D. Simpson, ed., *The Building Accounts of Tattershall Castle 1434-1472*, [being *Lincoln Record Society*, 55, 1960] reprinted Woodbridge: The Boydell Press, 2010.

Thompson, 1928

A.H. Thompson, *Tattershall: the Manor, the Castle, the Church*, London: National Trust, 1928.

Thompson, 1985

M.W. Thompson, *Tattershall Castle, Lincolnshire*, London: National Trust, 1985.

White, 1856/1970

White's *Directory of Lincolnshire, 1856*, reprinted New York: Augustus Keeley, 1970.

Wight, 1972

J.A. Wight, *Brick Building in England from the Middle Ages to 1550*, London: John Baker, 1972.

### PRELIMINARY NOTE

Throughout the research into the number of bricks used in building the great tower at Tattershall Castle, Douglas Simpson's translation of the accounts into English has been used as the primary source, obviously with reference back to the Latin transcript (made by Miss Lucy Drucker in 1943 at the London offices of the Historical Manuscripts Commission): I have not seen the original documents and suspect that my very rusty palaeography would be totally inadequate to read the originals. As the writer initially worked from the English translation, the references have been given first to the English translation and then to the Latin, with the latter reproduced where appropriate. The entries on bricks have been reproduced in both Latin and English as Appendix 1. Given the restrictions on the use of large reference libraries during the pandemic lockdowns, reference to the *Oxford Dictionary of National Biography* have only been given to the online version, where articles may be updated from the print version of 2004.

## APPENDIX 1

## ENTRIES IN THE TATTERSHALL ACCOUNTS REGARDING BRICKS

## 1434-35 LATIN

[Page 6] *Empolo et factura tegularum voractarum Waltile*

Et in custu apposito super factura [et] combustura et cariagio D<sup>mi</sup> tegularum vocatarum waltile hoc anno factarum apud torale tegulinum domini super Edlyngton More una cum xj<sup>li</sup> solutis in plenamolucionem DC<sup>ma</sup> huiusmodi tegularum anno precedente factarum ut in sodem quarterno particulariter patet

cxv<sup>li</sup> xiijs vjd

Et in huiusmodi custu apposito super empcone et acciagio tegularum vocatarum waltile proveniencium de existo consimilis toralis tegulini domini apud Boston ut in eodem quarterno plens aparet.

cxv<sup>s</sup> iiij<sup>d</sup>

[Pages 18-19] *Tegule minoria forme facte anno x<sup>mo</sup>*

Infrascriptus computans respondet de C<sup>mi</sup>D tegulis (minoris forme) vocatis waltile factis apud torali domini tegularum super Edlyngton More anno Regis nunc x<sup>mo</sup> de remanentia (ut) quarum qualibet formatur in longitudine ix pollicum, latitudine iiij pollicum dimidii et in pissitudine ij pollicum et iiij partium pollicis ut in tegulis (proximo) computo precendnte plenis annotatur. De huiusmodi tegulis per tempus compoti non respndet quia nulle de consimili forma set de maiori facta fuerunt ut infra,

Summa C<sup>mi</sup>D De quibus

*Abbas de Kirkstede*

Idem computat fore (dat') liberatum Abbati de Kirkestede de parte maioris numeri sibi per dominum (dat) assignati ut asseritur per eundem computantem sine warranto, xxxv<sup>mi</sup>cccc.

*Abbas de Bardney*

Et liberatum Abbati de Bardney ex huiusmodi (dono) assignati domini in partem (maioris numeria vii<sup>mi</sup>) xx<sup>mi</sup> per litteram de warranto viij<sup>mi</sup>.

Et exponunt super diversia operibus Castri de Tatersshale per scrutinium quarterni ipsius computantis liij<sup>mi</sup>

Summa misa iiij<sup>xx</sup>xvj<sup>mi</sup>cccc. Et remanent m'm'm'm'c,

Tilehous m'm'ccc. Mersshdike m'dccc



## 1434-1435 ENGLISH TRANSLATION

### [Page 46] *Purchase and making of bricks called Waltile*

Cost of making, firing, and carriage of 500,000 bricks called waltile made this year at my lord's kiln at Edlyngton More, together with £11 paid in full settlement for the making of 550 of the same kind of bricks last year, as detailed in the same quire  
£115 13s. 6d.

Cost of the purchase and carriage of bricks called waltile obtained from the issues of my lord's similar kiln at Boston, as detailed in the same quire.

£5 15s. 4d.

### [Pages 56-57] *Bricks of the smaller size made in the 10th year*

The undermentioned accountant is answerable for 100,500 bricks of the smaller size called waltile made at my lord's brick kiln at Edlyngton More in the 10th year of the present king [1431-22] and still unused; that is to say whereof each was of the size: length 9 inches, breadth 4 inches, thickness 2 and two fourth parts of an inch, as is more fully noted in the account immediately preceding. For bricks of this kind of the period of the account, he does not answer because he received none of such a form, but only those of the larger size were made as below.

Sum total, 100,500 whereof:

#### *Abbot of Kirkstead*

The same accountant reckons there are due to be allowed to the Abbot of Kirkstead in respect of a greater number assigned to him by my lord, as the said accountant assets without warrant 35,400.

#### *Abbot of Bardney*

And delivered to the Abbot of Bardney on the like assignation of my lord, in part of 20,000 by letter of warrant, 8,000.

And there have been laid out on divers works at the castle of Tatershale, by scrutiny of the books of the said accountant, 53,000

Total sent 96,400. There remain 4,100, of which at Tilehouse 2,300, at Mereshdike 1,800.

[Page 19] *Tegule maioris forme facta annis xjmo et xijmo. Respondet dictis Abbas de Bardney*

Et respondit de D<sup>m</sup>iiij<sup>xx</sup>vij<sup>mi</sup> (huiusmodi) tegulis vocatis waltile maioris forme factis annis xjmo (ut) de remanentia quarum qualibet formatur in longditudine x pollicum, latitudine v pollicum, et spissitudine ij pollicum dimidii ut in dicto computo precedente evdenter apparet. Et de D<sup>m</sup>ij<sup>mi</sup> (huius modi) tegulis huiusmodi forme facta per tempus compoti ut patet infra.

Summa xjc<sup>mi</sup> xxxvij<sup>mi</sup>. De quibus.

Idem computans fore liberatum predicto Abbati de Bardney de prestito ex mandato domini ut asseritur per Baldwyn Brekman sine warranto xij<sup>m</sup>

Et exponuntur super operibus castri predicti per tempus compoti ut liquet per examinacionem super computum ccc<sup>mi</sup> xliij<sup>mi</sup> Dc<sup>m</sup>

Summa totalis ccc<sup>m</sup> i lvij<sup>mi</sup> Dc<sup>mi</sup>

Et rmanent Dcc<sup>mi</sup> lxxix<sup>mi</sup> cccc<sup>mi</sup> unde apud Torale tegulinum D<sup>m</sup>xxix<sup>mi</sup> ccc<sup>m</sup> Mersshdike cc<sup>mi</sup> l<sup>mi</sup>.

[Page 57] *Bricks of the larger size made in the 11th and 12th years*  
[1432-33, 1433-34]

The accountant is answerable for 587,000 bricks called waltile of the larger size made in the 11th year, from those left over, whereof each is in size: length 10 inches, breadth 5 inches, and thickness 2½ inches, as appears in the previous account; and of 550,000 bricks of this size made during the time of the account, as appears below: total 1,137,700, whereof:

*The said Abbot of Bardney acknowledges,*

The same accountant reckons that there are due to be allowed to the Abbot of Bardney on payment of the lord's order by Baldwyn Brekeman as is asserted without warrant, 12,000

And these have been expended upon the works of the said castle, for the account, as appears by examination of the account, 343,600.

Total dispatched, 357,600

Remaining, 779,400, of which at the Tilehouse 529,400; at Mersshdike, 250,000.

## 1438-39 LATIN

[Page 21] (no heading)

... custus facture cccc<sup>mi</sup> iiij<sup>xx</sup>x<sup>mi</sup> vij<sup>c</sup> t[egularum] vocatarum waltile factarum per Foys Brekmaker lxix<sup>li</sup> v<sup>s</sup> j<sup>d</sup> ob. Denariis persolutis Baldwyno Brekmaker super custu facture viij<sup>mi</sup> huiusmodi tegularum xvij<sup>li</sup> xvj<sup>s</sup> iiij<sup>d</sup>. Cariagio dictarum tegularum factarum per Foys Brekemaker xxi<sup>li</sup> x<sup>s</sup> x<sup>d</sup> ob. Empcione huiusmodi tegularum ad thorale domini apud Boston cum cariagio eardundem iiij<sup>li</sup> x<sup>d</sup> ob.

[Page 25] (*tegulis*) maioris

Idem respondit de cc<sup>m</sup>xlvj<sup>mi</sup> ix<sup>c</sup> tegulis maioris forme receptis de remanentia anni precedentis. Et de iiij<sup>c</sup>iiij<sup>xx</sup>x<sup>mi</sup> vij<sup>c</sup> tegulis huius forme factis hoc anno ut infra per Foys Brekmaker ad equivalenciam precii. Et de viij<sup>mi</sup> ix<sup>c</sup> tegulis huius forme emptis hoc anno ut infra Johanne Chamberleyn firmerio thoralis domini apud Boston hoc anno tam de arreraggiis quam exitu firme sue.

Summa vij<sup>cm</sup>xlvij<sup>mi</sup>D

De quibus computat fore operatum super muracione de Countre mure infra Castrum de Tateshale operata per Matheum Brekman et socios suos ut infra ciiij<sup>xx</sup>ij<sup>mi</sup>. Et expenduntur super nova edificacione unius magni stabulii infra castri ad finem occidentalem de le Wolhous per Godfridum Brekman et socios suos infra tempus comptoti ut infra ccxxj<sup>mi</sup>. Et expenduntur in fundamento unius parve domus inter ipsum stabulum et le Wolhous operato per dictum Godfridum Brekman et socius suos ut infra, xlvj<sup>mi</sup>. Et in verdicione ut infra Rogero Preestes de Horncastr de tegulis domini in Edlyngton mora m<sup>i</sup>Dcc. Et expenduntur in opere cementario molendinarum domini apud Tatershale xxv<sup>mi</sup>. Et dantur ex elemosina domini super operibus fabrice ecclesie de Edlyngton m<sup>i</sup>m<sup>i</sup>m<sup>i</sup>. Et expenduntur in diversis aliis operibus infra idem castrum ut in refeccionibus parietum caminorum partietum domus mercati operatis per dictum et non per millenam, per estimacionem per easdem dietas c xiiij<sup>mi</sup>. Et expenduntur in caminis et fenestris dicti stablii de tegulis operatis vocatis hewentile m<sup>i</sup>m<sup>i</sup>cc<sup>mi</sup>

Summa Dcix<sup>mi</sup>Dcccc.

Et remanent cxxxij<sup>mi</sup>vj<sup>c</sup> m unde in disposicione Baldwyni Brekman de totis tegulis deficientibus ad thorale de parte tegularum ibidem annotatarum fore remanentium anno precedente cxxxiiij<sup>mi</sup>Dc et infra castrum iiij<sup>mi</sup>.

## 1438-39 ENGLISH TRANSLATION

### [Page 60] (*Brickwork*)

... 490,700 [bricks] called waltile made by Foy's Brekmaker £69 5s. 1½*d.* Cash paid to Baldwyne Brekmaker for making 8,000 of such bricks £17 16s. 4*d.* Carriage of the said bricks made by Foy's Brekmaker £21 10s. 2*d.* Purchase of such bricks at my lord's kiln at Boston, with their carriage, £4 0s. 10½*d.*

### [Page 65] *Large (Bricks)*

Receipt acknowledged of 247,900 large bricks, remaining over from the preceding year; also of 490,700 large bricks made this year at the same price; and of 8,900 similar bricks bought this year, as below, from John Chambereyn, 3ease of my lord's kiln at Boston, both due in arrears and in payment of his rent.

Total: 747,500 bricks.

From the foregoing bricks, it is estimated that there will be required for the masons' work of the countremure within the Castle at Tattershall, made by Matthew Brekman and his mates as below: 182,000 (bricks). On the new building of a large stable within the castle at the west end of the Woolhouse by Godfrey Brekman and his mates, within the period of this account, as below: 236,000 (bricks). On the foundations of a small house between the aforesaid stable and the Woolhouse, made by the said Godfrey Brekman and his mates: 46,000 (bricks). Sold, as below, to Roger Preestes of Horncastle, from my lord's bricks at Edlyngton More: 1,700 (bricks). On the mason work of my lord's mills at Tattershall: 23,000 (bricks). Given from my lord's alms for the works on the fabric of the church of Edlyngton: 3,000 (bricks). Used in various other works within the said castle, such as the repair of partitions within the chimneys and in the market house, delivered by the day and not by the thousand, by estimate of the number of days' work: 114,000 (bricks). For the chimneys and windows of the said stable, of the worked bricks called hewentile: 22,000 (bricks)

Total: 619,900 bricks.

[*recte* 627,700 bricks]

There are left over 137,600 bricks, whereof at the disposal of Baldwyn Brekman there remain to be accounted for, at the kiln, out of the whole amount of bricks unaccounted for there last year, 134,600; within the castle, 3,000.

## 1439-40 LATIN

[Pages 32-33] [Teg]ule

Infracriptus computans respondit de cxxxvij<sup>mi</sup>Dc tegulis maioris forme receptis de remanentia anni precedentis. Et de cccc<sup>m</sup>lxxiiij<sup>mi</sup>D tegulis factis hoc anno per Baldewynum Brekmaker ad equivalenciam precii. Et de xxiiij<sup>mi</sup> tegulis huius forme emptis hoc anno ut infra de Johanne Chamberleyn, firmario thoralis domini apud Boston tam de arreragiis quam de exitu firme sue huius anni,

Summa Dcxxxvj<sup>mic</sup>.

De quibus computat fore operatum super le pavying magni stabuli et edificacione de lez ponyons eisdem ad ij vices tam per dietas quam per millenas ex testimonio carectariorum xxviiij<sup>mi</sup>D. Et expenduntur super novo edificacione parietum unius domus scituate inter stabulum et donum molendini tam per dietas quam per millenas ex huiusmodi testimonio super hunc compotum — xlviiij<sup>mi</sup>Dc. Et expenduntur in diversis aliis operibus domini infra castrum predictum ut in refeccionibus perietum exaltacione de le ij galeries ac eciam parietum castri as finem coquine et caminorum et alias pluribus operibus per dietas tamen prout tam estimantur per huiusmodi dietas quam testimonium et sacramentum predictorum carectariorum ciiij<sup>xxv</sup><sup>mi</sup> ix<sup>c</sup> Et in vendicione ut infra Edmundo Ussher mi et Thomas Rudde miD de tegulis domini super Edlyngton More m<sup>m</sup>miD. Et dantur Abbati de Kirkwood ex mandato domini hoc anno v<sup>mi</sup>.

Summa cciiij<sup>xx</sup> mi D

Et remanent ccclv<sup>mi</sup> unde disposicione Baldewyni Brekmaker cxxxiiij<sup>mi</sup>Dc et super novum fossatum iuxta castrum ccxxj<sup>mi</sup>.



## 1439-40 ENGLISH TRANSLATION

### [Page 73] *Bricks*

The undermoted accountant accounts for 137,600 large bricks from last year's surplus; also for 474,500 bricks made this year by Baldwyn Brekmaker at the same price, likewise of 24,000 large bricks bought this year, as below, from John Chamberleyn, lessee of my lord's kiln at Boston, both in respect of arrears and as his rent for the current year.

Total: 636,100 bricks.

From which he reckons will have been used for the paving of the great stable and building the supports thereof on two occasions, both by days and also by thousands as vouched for by the carriers, 28,500 (bricks). Also used in the new building of a wall of one house situated between the stable and the mill-house, both as above, and also by thousands as vouched for above in the present account, 48,600 (bricks). And in divers other works at the said castle, for example renewing the walls, raising the two galleries and likewise the walls of the castle at the end of the kitchen and chimneys, and elsewhere in many works carried out on a daily basis, as by estimate both this way and also by sworn testimonies of the said carriers: 2,095,900 bricks. Sold, as below, to Edmund Ussher (1,000) and Thomas Rudde (1,500) from my lord's bricks at Edlyngton More. Given to the Abbot of Kirkstead, on my lord's order, this year, 5,000 (bricks).

Total: 4,080,500.

There remain 355,000 bricks, whereof 134,600 are at the disposal of Baldwyn Brekmaker and 121,000 for the new ditch at the castle.

## 1445-1446 LATIN

[Pages 34-35] *Custos edificiorum*

... Custu thoralis tegulini ecum empcone focalis super combustura tegularum et cum cariagio earundem tam per terram quam per aquam  $\text{iiij}^{\text{xx}}\text{vj}^{\text{li}} \text{x}^{\text{s}} \text{v}^{\text{d}}$ .

[Pages 36-37] *Tegule*

Infrascriptus Baldewynus Brickmaker de  $\text{cclxxiiij}^{\text{mi}}$  tegulis receptis de remanentia anni precendentis. Et de  $\text{cciiij}^{\text{xx}}\text{iiij}^{\text{mi}}$  tegulis maioris forme factis hoc anno per eundem Baldewynum ad equevalenciam precii liberatis super operibus castri et reparacione tenementorum domini Tatsshale et alio modo per tempus compoti. Et de  $\text{iiij}^{\text{xx}}\text{iiij}^{\text{mi}}$  tegulis minoris forme factis per eundem Baldewynum et liberatis hoc anno ut supra.

Summa  $\text{Dccxli}^{\text{mi}} \text{Dc}^{\text{m}}$ .

De quibus computat fore operata in magno turre vocato le Dongeon et aliis minutis operibus Castri de tegulis maioris forme per talliam  $\text{ccc}^{\text{m}}\text{xxij}^{\text{mi}}$ . Et expenditur super facture unius novi countremure ex avissamento domini in capite de le Syncarr de tegulis maioris forme similiter per tallium  $\text{iiij}^{\text{xx}} \text{xiiij}^{\text{mi}}$ . Et venduntur ut infra Gardiano ecclesie Collegiate de Tateshale pro novo facture unius domus infra tenementum in quo Johannes Warner manet de tegulis maioris forme  $\text{m}^{\text{i}}\text{m}^{\text{i}}$ . Et dantur per dominum preposito ecclesie de Edlyngton super novo edificio eiusdem ecclesie de tegulis maioris forme  $\text{v}^{\text{mi}}$ .

Summa  $\text{ccccxxiiij}^{\text{mi}}$ .

Et remanent  $\text{cccxviiij}^{\text{mi}}\text{Dc}^{\text{m}}$  unde super ripam novi fossati de tegulis maioris forme  $\text{c}^{\text{mi}}$  et minoris forme  $\text{iiij}^{\text{xx}}\text{iiij}^{\text{mi}}$ : (summa)  $\text{ciiij}^{\text{xx}}\text{iiij}^{\text{mi}}$  et in minibus ipsius Baldewyni de antiquis arreragiis suis  $\text{cxxxiiij}^{\text{mi}}\text{Dc}^{\text{m}}$

## 1445-1446 ENGLISH TRANSLATION

### [Page 75] *Building Costs*

... Expenses on the brick kiln, with purchases of fuel and carriage thereof by land and water £86 10s 6d.

### [Pages 76-77] *Bricks*

The undermentioned Baldewyn Brickmaker for 274,000 bricks received from the remainder of last year, 383,000 large bricks made this year by the said Baldwyn of the same value as the last lot supplied for the works of the said castle and the repair of my lord's house in Tattershall and otherwise during the period of the account, 84,000 small bricks made by the said Baldwyn and supplied this year as above.

Total, 741,600 (bricks).

Whereof it is reckoned that 322,000 of the large size will be used in the great tower called le Dongeon and other minor works of the castle. For making of a new countmure on my lord's instructions at the head of the Syncarr, 94,000 large bricks. Sold to the Warden of Tattershall College for the new-making of an apartment in the house of John Warner, 2,000 large bricks; given by lord to the Provost of Edlyngton church for its rebuilding, 5,000 large bricks.

Total: 423,000 (bricks).

There remain 318,600, whereof 100,000 large bricks and 84,000 small bricks are on the bank of the new ditch: in all, 184,000 (bricks); and in Baldwyn's hands, arrears of old standing, 134,600.

1. For Lord Curzon see, initially, the account in *ODNB* by David Gilmour, <https://doi.org/10.1093/ref.odnb/32680>, with references there given [accessed January 2021].
2. S. Thurley, *Men from the Ministry: How Britain Saved its Heritage*, New Haven and London: Yale University Press, 2013, pp.74-79.
3. *The Guardian*, 2 September 2012.
4. Simpson, 1960/2010, *passim*. The original accounts in Latin are printed *ibid.*, pp.1-39, with translation pp.41-78. There is a lengthy introduction on pages xi to xxxii, followed by various illustrations, figures 2-8, with a site plan (Fig.1) as the frontispiece. References to bricks in the Latin with a parallel English translation are printed herein as Appendix 1.
5. Modern accounts of Tattershall Castle begin with Thompson, 1928, and Curzon and Tipping, 1929, and continue with Thompson, 1985, and Emery, 2000. Pevsner and Harris, rev. Antram, 1989, pp.745-749 with pls.64-66 provides an introductory summary.
6. D.N. Robinson, *Lincolnshire Bricks: History and Gazetteer*, Heckington, Lincs.: Heritage Trust of Lincolnshire, 1999, *passim*, for the local context of the brickwork of Tattershall Castle.
7. One can interpret 'dungeon' as being one way of writing 'donjon', meaning great tower.
8. The present writer is working on a paper, 'The Brick Solar Tower: a Fifteenth-Century Lincolnshire Building Type', for a future issue of *BBS Information*. For an approach to these buildings see ch.8 'Politics, Society, and Defensive Tower Houses in Fifteenth-Century England', in Emery, 2000, pp.192-201.
9. For Lord Cromwell see the account in *ODNB* by Compton Reeves, <https://doi.org/10.1093/ref.odnb/6767>, [accessed January 2021 but print version extensively noted in 2010] and the account in Emery, 2000, pp.312-315, including map of Cromwell's landholdings. *ibid.*, fig.82 on p.314.
10. Simpson, 1960/2010, p. xv.
11. Simpson, 1960/2010, pp. xix-xx. Since writing the sentence about the 'parlour', the writer has been reminded that the Roman Catholic gentry of Yorkshire's North Riding in the eighteenth century used the 'Business Room' of the house, which had a external door, as the chapel for themselves, their tenants, and other local Catholics for the celebration of Mass on Sundays.
12. Details of Cromwell's family history are taken from Simpson, 1960/2010, p. xii, the *ODNB* entry by A. Compton Reeves, available at <https://doi.org/10.1093/ref.odnb/6767>, and Emery, 2000, as in note 9 *supra*.
13. For William Waynflete see the entry in *ODNB* by Virginia Davis, at <https://doi.org/10.1093/ref.odnb/28907> [accessed January 2021; print version in 2008] and V. Davis, *William Waynflete: Bishop and Educationalist*, Woodbridge: The Boydell Press, 1993; see *ibid.*, pp.99-116 for building activities. A useful paper could be written summarising Waynflete as a builder: in brick there is Eton College, Esher Palace, Farnham Castle, Bishop's Waltham Palace, and Wainfleet school; buildings of stone include Eton College Chapel, his chantry in Winchester Cathedral, and the churches as Cromwell's executor at Tattershall and Lambley, Notts.
14. That Lord Cromwell's heir-at-law was his niece suggests a childless marriage. Other magnates active in building in brick in the second quarter of the fifteenth century whose marriages were childless include Sir John Fastolf (1382-1459) at Caister Castle, although his wife, Millicent Tiptoft (*d.*1446), had had a son, Stephen Scrope, by her first husband, Sir Stephen Scrope; and Sir John Wenlock (later Lord Wenlock of Someries) (*c.*1400-1471) but his (first documented) wife, formerly Elizabeth Peyton (*c.*1395-1466), whom he married in 1441, was probably over the age of menopause. Elizabeth Drayton was over 21 when her father died in 1417 and was both his co-heiress (with her sister) and by then had married Christopher Drayton of Kempston Draytons, a substantial Bedfordshire manor, income from which probably doubled John Wenlock's landed income; this manor did not pass to Thomas Rotherham (1423-1500), then Bishop of Rochester and Lord Privy Seal, when he purchased much of Wenlock's lands in June 1471. The present writer gave a paper, 'Buying for Posterity: the provision of funerary chapels by some fifteenth-century magnates' to the South-East Medieval Association conference at Agnes Scott College, Decatur GA, USA, in September 2011; the paper has yet to be revised for publication.
15. H.L. Gray, 'Incomes from Land in England in 1436', *English Historical Review*, 49, 1934, pp.607-639, and T.B. Pugh, 'The Magnates, Knights and Gentry' in S.B. Chrimes, C.D. Ross and R.A. Griffiths, eds, *Fifteenth Century England 1399-1509*, Manchester: Manchester University Press, 1972, reprinted Stroud: Alan Sutton, 1995, pp.86-128. Analysis of the incomes of those who built in brick can be found in D.H. Kennett, 'Early Brick Houses in England: Patrons and Incomes', *BBS Information*, 98, 2005, pp.6-13. The listing, *ibid.*, pp.8-9, omits those magnates who did not build in brick. See also the summary given D.H. Kennett, 'Patrons and Incomes: Builders of Brick Houses in England before 1461', *AVISTA Forum Journal*, 15, Fall 2005, pp.41-43.
16. Details of Cromwell's income at various dates are taken from Gray, 1934, and Pugh, 1972/1995, cited in the previous note.
17. Return of lands to rightful owners is noted by A.C. Reeves in *ODNB*: see: <https://doi.org/10.1093/ref.odnb/6767>.
18. For Lambley church see C. Hartwell, N. Pevsner, and E. Williamson, *The Buildings of England: Nottinghamshire*, New Haven and London: Yale University Press, 2020, pp.289-291.
19. Collyweston Manor, demolished in 1640, is briefly mentioned B. Bailey, N. Pevsner, and B.K. Cherry, *The Buildings of England: Northamptonshire*, New Haven and London: Yale University Press, 2013, p.184.
20. Lambley manor house has disappeared; brief note, C. Weir, 'The site of the Cromwell's medieval manor house at Lambley, Nottinghamshire', *Trans. Thoroton Soc.*, 85, 1981, pp.75-77.

21. M.W. Thompson, 'The Construction of the Manor at South Wingfield, Derbyshire,' in G. de G. Sieveking *et al.*, eds, *Problems in Economic and Social Archaeology*, 1976, pp.417-438; A. Emery, 'Ralph Cromwell's Manor at Wingfield, 1439-1450: its construction, design, and influence', *Archaeological Journal*, **142**, 1985, pp.276-339; Emery, 2000, pp.449-459; C. Hartwell, N. Pevsner, and E. Williamson, *The Buildings of England: Derbyshire*, New Haven and London: Yale University Press, 2016, pp.594-597 with plan and pl.37.
22. Simpson, 1960/2010, pp.41-57 in English, translating the Latin, *ibid.*, pp.1-19. Even if no other account had survived for over five centuries when Simpson prepared his edition of the accounts, the detail available in this "year's" account would have been extremely valuable, comparable to the single year, 1442-43, available for South Wingfield Manor, on which see Thompson, 1976, cited note 21, *supra*.
23. Simpson, 1960/2010, pp.58-66 in English translating the Latin, *ibid.*, pp.20-26.
24. Simpson, 1960/2010, pp.67-73 in English translating the Latin, *ibid.*, pp.27-33.
25. Simpson, 1960/2010, pp.74-77, in English translating the Latin, *ibid.*, pp.34-37. Careful readers of these endnotes will have noticed that the 'final copy', which these last three available years are, is so much shorter than the 'rough copy' available for 1434-35.
26. Simpson, 1960/2010, p.41 (English). The Latin on p.1 reads, '*Arreragia: Nulla quia in superplusagio ultimi compoti*'.
27. Simpson, 1960/2010, p.56 (English). For the Latin in Simpson 1960/2010, p.18, see note 51 *infra*.
28. Simpson, 1960/2010, pp.76-77 (English). The Latin on pp.36-37 reads, *Tegule*.
29. Simpson, 1960/2010, p. xxxii, 'Notes on the Manuscripts' for most of the comments in this section.
30. Simpson, 1960/2010, p.26 (Latin) and p.66 (English translation).
31. Simpson, 1960/2010, pp.38-39 (Latin) and p.78 (English translation).
32. Dates of religious festivals dependent on a lunar calendar are taken from C.R. Cherny, *Handbook of Dates*.
33. H.H. Lamb, *Climate, History, and the Modern World*, London: Methuen, 1982, Table 8 on page 346, citing C. Easton, *Les hivers dans l'Europe occidentale*, Leiden: Brill, 1928. Unfortunately, the inter-library loan service was unable in 2019 to borrow a copy of Easton, 1928. J.M. Stratton, ed. R. Whitlock, *Agricultural Records*, London: John Baker, 2nd ed., 1978, p.35 under 1434 gives the dates of the frost and the comment about Gravesend.
34. See above p.7 for note on religious importance of Lady Day. Lady Day, 25 March, was also one of the four quarter days: the others are 24 June, Feast of St John the Baptist; 29 September, Michaelmas (the Feast of St Michael and All Angels); and 25 December, the Feast of the Nativity. In Lincolnshire, St John the Baptist was replaced by the Feast of St Botolph, 17 June. St Botolph was the evangelist of Lincolnshire, hence the dedication of Boston parish church.
35. Simpson, 1960/2010, in English pp.41 (1434-35), 58 (1438-39), and 67 (1439-40). In Latin, pp.1, 20, and 27. The Latin reads, 'Thomas Croxby supervisoris operum Radulphi Domini Cromwell castri sui de Tateshale ...'. In each case the appropriate dates follow.
36. Simpson, 1960/2010, p.66 in English and p.26 in Latin. The Latin reads, 'Thomas Croxby Clerici operum Castri de Tateshale ...'. This is followed by the appropriate dates for each accounting period.
37. Simpson, 1960/2010, p.74 in English and p.34 in Latin. The Latin reads, 'Johannis Southell Clerici operum Domini Cromwell Castri et domini sui de Tatershale ...'. This is followed by the appropriate dates.
38. One possible architect of the great tower at Tattershall Castle may have been John Cowper.
39. Simpson, 1960/2010, p.75 in English and p.35 for the Latin original.
40. A.H. Thompson, 1928,
41. Simpson, 1960/2010, p.52 in English and p.13 for the Latin original. The relevant comment in the Latin reads, '... de tempore quo Robertus Gowshill (clericus) extitit (clericus) supervisor operum castri ...'.
42. Simpson, 1960/2010, p.41 in English and pp.1-2 in Latin.
43. Simpson, 1960/2010, p.53 in English and p.14 in Latin.
44. For the brick gatehouse at Thornton Abbey see Pevsner and Harris, rev. Antram, 1989, pp.757-759 with pl.59. Wight, 1972, pp.304-305 with pls.14-16 provides an alternative account. The sheer size of the building is brought out in Wight's photographs.
45. Simpson, 1960/2010, p.74 in English and p.34 in Latin.
46. H.D. Barnes and W.D. Simpson, 'The Building Accounts of Caister Castle, AD 1432-1435', *Norfolk Archaeology*, **30**, 1952, pp.178-188. Modern consideration of Caister Castle begins with H.D. Barnes and W.D. Simpson, 'Caister Castle', *Antiquaries Journal*, **32**, 1952, pp.35-51, supplemented by Wight, 1972, pp.116-122 and 320 and Emery, 2000, pp.56-61. Subsequently, A. Hawkyard, 'Sir John Fastolf's "Gret Mansion by me late Edified": Caister Castle, Norfolk', in L. Clark, ed., *The Fifteenth Century V Of Mice and Men: Image, Belief, and Religion in late Medieval England*, Woodbridge: the Boydell Press, 2005, pp.29-67; T.P. Smith, 'Picturing the Past: A Demolished Medieval Brick Castle in the Netherlands, its Seventeenth-Century Depiction, and its Relevance to England', *BBS Information*, **134**, September 2016, pp.6-12; and D.H. Kennett, 'Contrasts in Procurement, Contrasts in Transport: Caister Castle and Cow Tower', *BBS Information*, **125**, September 2016, pp.13-28.
47. A.H. Thompson, 'The Building Accounts of Kirby Muxloe Castle, 1480-1484', *Trans. Leicestershire Archaeological Society*, **11**, 1913-20, pp.193-345. An unsigned note describing the building (probably written by Hamilton Thompson) is *ibid.*, pp.109-114 with pre-Great War photographs of its condition.
48. Simpson, 1960/2010, p.73 in English and p.32 in Latin. The Latin reads 'Et expenduntur in divers aliis operibus domuni infra castrum ... tam estimantur per huiusmodi dieta quam testimonium et sacramentum predictorum ciiij<sup>xx</sup> xv<sup>m</sup>ix<sup>c</sup>'.

[tegule]. The Latin could be read as meaning that 2,095,900 bricks were used on buildings at the castle other than on the donjon, although the writer now doubts this. See p.11 with notes 51-53 for discussion of this passage.

49. Simpson, 1960/2010, p.73 in English, and p.32 in Latin. The Latin reads, 'Summa cciiij<sup>xx</sup><sup>mi</sup>D'. However, the exact meaning of this total is unclear.

50. See also Appendix 1. The writer has copied out (he hopes accurately) the Latin from Simpson, 1960/2010, and checked the translation given by Simpson; some obvious misreadings of the Latin figures have been corrected. [The decision to add the full Latin text about bricks and an English translation was taken late in the production of the paper. (Ed.)]

51. Simpson, 1960/2010, p.56 (English); the Latin on p.18 reads, '*Tegula minoris forme facte anno x<sup>mo</sup>*: Infrascriptus computans respondet de c<sup>mi</sup>d tegulis (minoria forme) vocatis waltile factis apud torale domini tegulinum super Edlyngton More anno Regis nunc x<sup>mo</sup> de remanentia (ut) quarum quolibet formantur in longitudine ix pollicum latitudine iiij pollicum dimidii et in spessitudine ij pollicum et iiij partium pollicum ut in (proximo) compoto precedente plenius annotator. De huiusmodi tegulis per tempus compoti non respondet quia nulle de consimilli forma set de maiori fecta fuerunt ut in[fra]. Summa c<sup>mi</sup>d.

52. Simpson, 1960/2010, p.56, note 1.

53. Roberts, 2018, p.111. The conclusion given by this writer was independently reached long before the publication of the late David Roberts' book.

54. Simpson, 1960/2010, p.56, note 1.

55. Simpson, 1960/2010, p.42 in English, and p.2 for the Latin original.

56. Simpson, 1960/2010, p.42 in English, and p.2 in Latin.

57. Simpson, 1960/2010, p.52 in English, and p.13 in Latin.

58. Simpson, 1960/2010, p.52 in English, and p.13 in Latin.

59. Simpson, 1960/2010, p.52 in English, and p.13 in Latin.

60. Simpson, 1960/2010, p.43 in English, and p.3 in Latin.

61. Simpson, 1960/2010, pp.42-43 in English, p.3 in Latin.

62. Simpson, 1960/2010, p.43 in English, and p.3 in Latin.

63. Simpson, 1960/2010, p.43 in English, and p.3 in Latin.

64. Simpson, 1960/2010, p.42 in English, and p.2 in Latin.

65. Simpson, 1960/2010, p.54 in English, and p.15 in Latin.

66. Simpson, 1960/2010, p.56 in English, and p.17 in Latin.

67. Simpson, 1960/2010, p.66 in English, and p.26 in Latin.

68. Simpson, 1960/2010, p.58 in English, and p.20 in Latin. In both cases this item is noted under sales not purchases.

69. Simpson, 1960/2010, p.62 in English, and p.23 in Latin. Douglas Simpson, *ibid.*, p.62, note 4 records this wood as 'Unidentified'. This writer's knowledge of the local topography and the local place names around Tattershall is insufficient to identify this wood.

70. Simpson, 1960/2010, p.62 in English, and p.23 in Latin.

71. Simpson, 1960/2010, p.63 in English, and pp.23-24 in Latin. I agree with Simpson regarding the meaning of 'elderkiddes'.

72. Simpson, 1960/2010, p.67 in English, and p.27 in Latin.

73. Simpson, 1960/2010, p.73 in English, and p.33 in Latin.

74. Simpson, 1960/2010, p.73 in English, and p.33 in Latin.

75. Simpson, 1960/2010, p.75 in English, and p.35 in Latin.

76. Simpson, 1960/2010, p.42 in English, and pp.2-3 in Latin.

77. Simpson, 1960/2010, p.46 in English, and p.7 in Latin.

78. Simpson, 1960/2010, p.60 in English, and pp.21-22 in Latin.

79. Simpson, 1960/2010, p.75 in English, and p.35 in Latin.

80. Simpson, 1960/2010, p.75 in English, and p.35 in Latin.

81. Simpson, 1960/2010, p.53 in English, and p.14 in Latin.

82. Simpson, 1960/2010, p.56 in English, and p.17 in Latin.

83. Simpson, 1960/2010, p.76 in English, and p.36 in Latin.

84. Minor works anticipated in 1446-47 are unspecified.

85. Simpson, 1960/2010, p.65 in English, and pp.25-26 in Latin.

86. The present writer is attempting to use the full accounts, giving details of other building materials purchased and wages paid to different groups of workmen to assess how the individual 'accounting years' relate to actual construction on the various floors of Tattershall Castle. The paper is intended for a future issue of *British Brick Society Information*.



# London Stock Bricks: from Great Fire to Great Exhibition

Ian Smalley

The earth about London, rightly managed,  
will yield as good Brick as were the Roman bricks  
... and will endure, in our Air, beyond any Stone our Island affords...  
Christopher Wren

## INTRODUCTION

Much of London was built with London Stock bricks, which were made from the brickearth which was widespread in the Thames basin. The brickearth was remarkable material, the western fringes of the great loess deposits which were spread over Europe in Pleistocene times. This English loess was slow to be appreciated because by the time that geology had assimilated the idea of loess, and decided what loess was, and accepted the idea that brickearth was loess, most of the English loess had been converted into bricks. By the time of the Great Exhibition in 1851 most of the good quality brickearth had disappeared and London had spread over the disused brickpits. Vast amounts of stock bricks were made after 1851 but the Great Exhibition marked the beginning of the time of machines and the dominance of the machine-made brick and the slow decline of the hand-made brick in the London basin brickfields.

Alan Cox<sup>1</sup> has described the London Stock bricks: "The London stock is a type of brick the manufacture of which is confined to London and south-eastern England (particularly Kent and Essex). It is made from superficial deposits of brickearth overlying the London Clay, which are easily worked and produce a durable, generally well-burnt brick. This durability actually increases, since the London stock brick has the fortuitous advantage of hardening with age and in reaction to the polluted London atmosphere.

Other characteristics of the London stock result from its method of manufacture, two stages being especially important. The first of these is the practice of mixing the clay with what has been variously known as spanish, soil, town ash, or rough stuff- that is London's domestic rubbish which contained a large amount of ash and cinders. The addition of this sifted ash provided a built-in fuel when the bricks were fired."

The disappearance of the brickearth meant that we were slow to appreciate what a remarkable material it was; we certainly need to reassess the geology of the brickearth because it appears that it presents problems in loess sedimentology which are not encountered in the larger and better-known loess deposits of mainland Europe.

The etymology has caught up with the science; the *Oxford English Dictionary* (OED) defines brick earth:

Brick earth n. Earth or clay suitable for making bricks.

Geology: Now chiefly in form brickearth, a fine-grained silty deposit consisting of or derived from loess, occurring in the Thames basin and other parts of southern England.

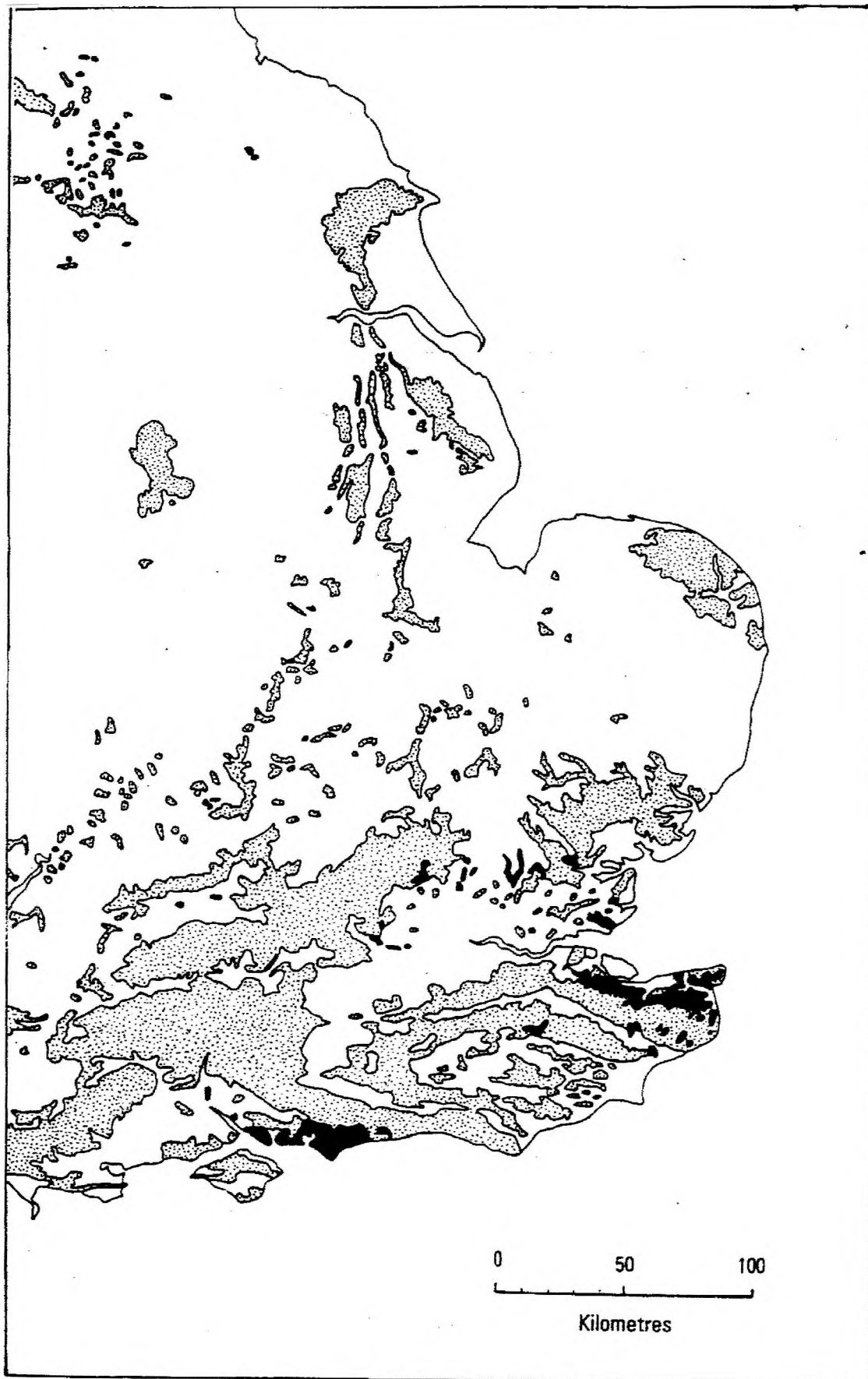
This OED geology definition is perceptive and accurate, it locates and limits the brickearth to the correct region and identifies it with loess. Brickearth is a specific material and can be carefully defined.

The OED does not do so well with 'Spanish' defining it as 'Earth or clay unfit for brick making'. The dictionary makers were misled by their choice of quotations which emphasised the bad results of using too much Spanish:

1725 Several persons continue to make bricks of bad stuff and unsizeable dimensions, and do not well burn the same, and in making thereof mix great quantities of soil called Spanish.

'Spanish' should be defined as 'a useful admixture of cinders and ashes used in the firing of bricks made from brickearth.' It is a benevolent admixture and a key and useful contributor to stock brick manufacture. Any study of stock bricks needs to give equal weight to brickearth and to Spanish.

Fig.1 (Opposite) Distribution of loess in England. There is a large concentration of material in the south-east; much falls in the Thames basin and the Weald. Dark shading ~3m; light shading ~1m thickness.



## BRICEARTH

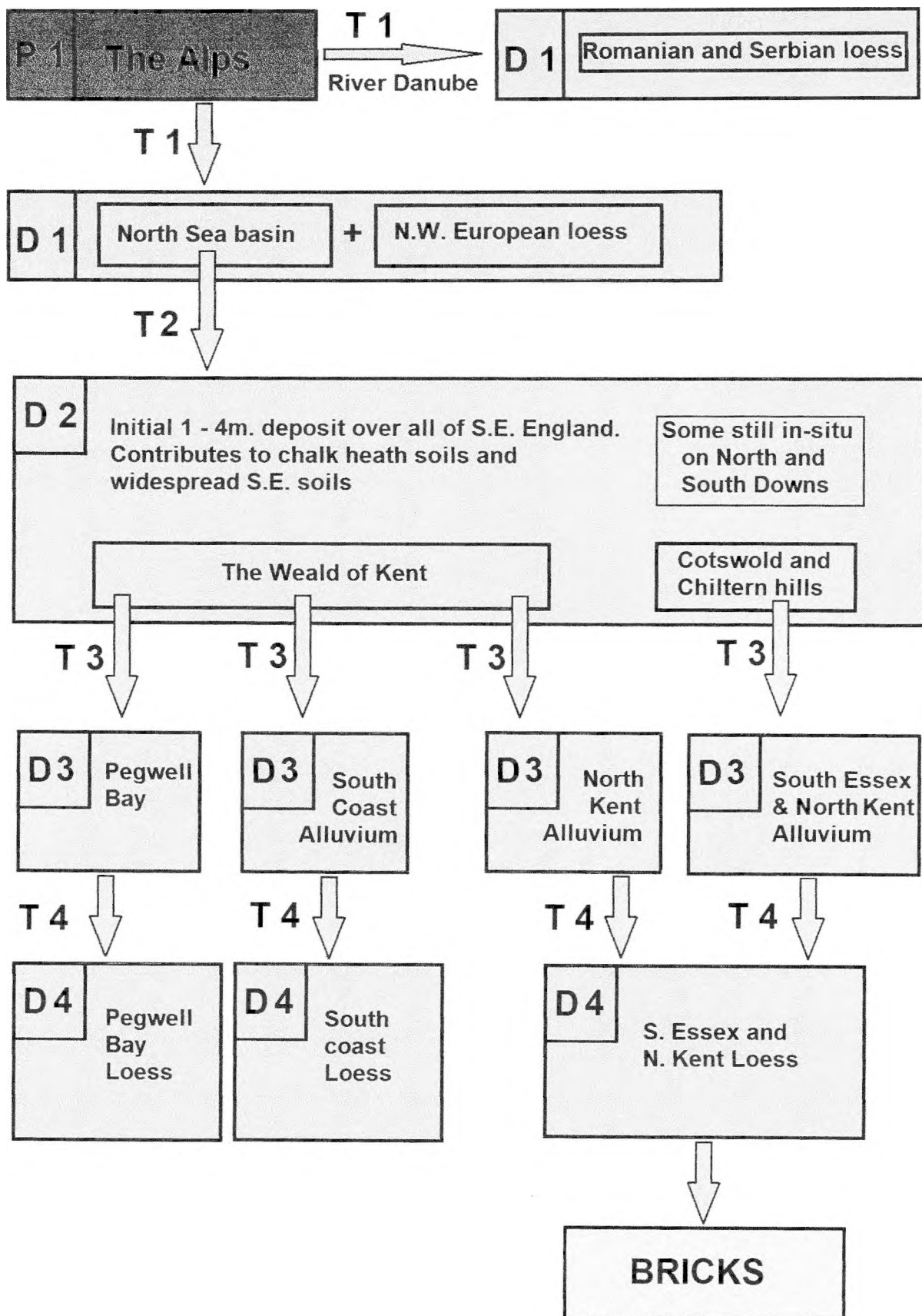
The brickearth was there, in the natural landscape (fig.1), it arrived in two major episodes, very (very) roughly around 20,000 years BP; it was replaced as the city landscape grew and spread, from ~1666 onwards. The brickearth disappeared and the bricks appeared; bricks replace brickearth. Since the brickearth was everywhere the moving interface earth/buildings meant that local bricks supplied local buildings. The nature of the brickearth was such that it favoured local, small scale brick production- and with the addition of 'spanish' provided strong and economical bricks. Cox<sup>2</sup> has provided a list of locations of the major brickworks which developed to service London: In Kent the stock brickworks were concentrated along the Medway and the Swale at Halstow, Rainham, Milton, Conyer, Faversham, and most importantly at Sittingbourne, while closer to London there was Crayford.<sup>3</sup> On the Essex side of the Thames the main centres were Ilford, Rainham, Dagenham, Grays Thurrock, Pitsea, and more especially around Southend at Eastwood, Prittlewell, Southchurch, and the Shoeburys. One of the most recent investigations was at Ospringe brickworks, near Sittingbourne, in Kent.<sup>4</sup>

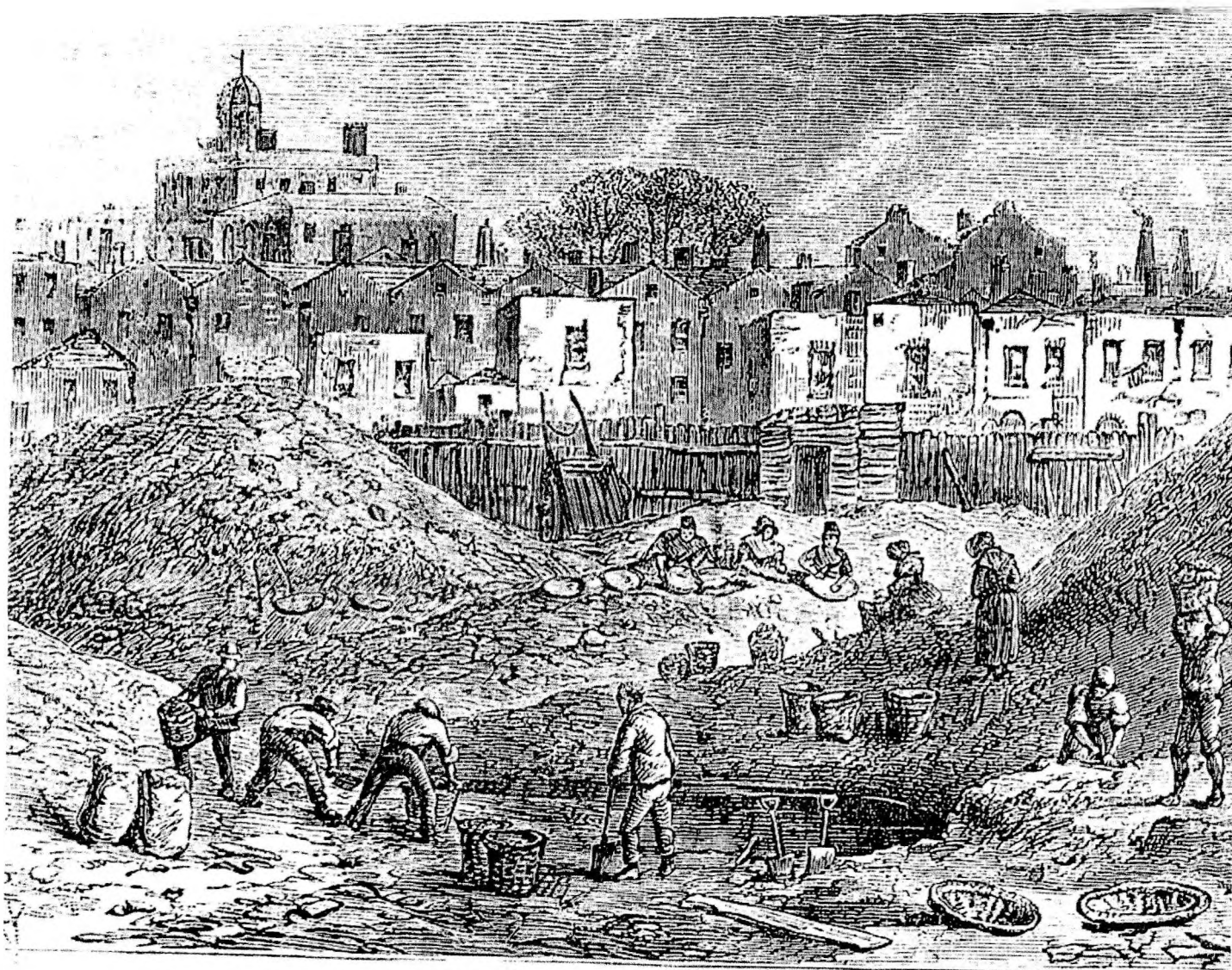
A remarkable set of geological processes placed the brickearth in the London basin- these, of course, contributed to the remarkable nature and properties and rendered it close to ideal for brick making. A discussion of the origins of brickearth is closely bound up with a discussion on the origins of loess. The discussion on the origins of loess has rattled around in the corridors and common rooms of the geo-world since Charles Lyell first promoted the idea of loess in volume 3 of his great work *The Principles of Geology* in 1833. In Lyell's world, loess was essentially concentrated in the Rhine valley and located in the Rhine basin. For a long time, the OED definition emphasised the Rhine valley connection, but now takes a world-over view.

Brickearth/loess is a silty deposit,<sup>5</sup> it is not really a clay at all, the clay mineral content is low but the modest amount of clay that it does contain has a considerable effect on the properties. Clay minerals have, by and large, a negative electrical charge, and this, combined with the presence of useful cations in the ground systems gives the property of plasticity- which we associate with clay materials. The presence of a small amount of clay mineral material in brickearth gives rise to a modest plasticity which enables it to be worked and shaped. We need to focus a bit less on the clay and a bit more on the silt when discussing brickearth and consequent bricks. The brickearth handles well, it suits hand brickmaking and the silty material forms a good brick with good arris structure. The silt particles form a random packing with great dimensional stability but with a useful porosity. The nature of the silt brick promotes good firing characteristics and it resists deformation and warping, it contains a solid structure and thus has high strength, and the combustion products from the dispersed Spanish particles can escape.

Loess is defined as an aeolian deposit largely consisting of quartz silt.<sup>6</sup> It was argued over for many years, one of the great geological controversies concerned the mode of origin of loess deposits. Discussion of loess echoed with controversy for most of the twentieth century.<sup>7</sup> There are in fact two problems: the question of the mode of formation of the actual deposit- the loess deposit in the landscape; and the formation mechanism for the dominant silt particles. Making silt requires a lot of energy and there are not that many energetic geo-processes available. For a long time, it was thought that silt particles were produced in hot sandy deserts (despite the lack of loess around the Sahara) and this confused the discussion. Many Russian pedologists argued that loess was simply formed by normal horizonation processes as observed in many forms of soil formation, but this explanation failed to account for the vast thicknesses of loess observed in some locations. The silt producing mechanism which allowed the formation of vast amounts of loess had to be efficient and geomorphologically acceptable. The amount of silt in the Thames basin which goes to make the London Stock bricks was very large. Nineteenth century scholars and writers reported thicknesses of up to 100feet on the Kent side of the estuary. Smeed Dean in Sittingbourne was the largest brickworks in the world in 1881; in 1877 60 million bricks were made from the local brickearth.

Fig.2 (Opposite) From brickearth particle formation to brick production. A speculative chart of events and activities relating to the English brickearth. The geology is quite complex, involving two episodes of loess formation.





THE DUST-HEAPS, SOMERS TOWN, IN 1836.

Fig.3 Dust heap. Somers Town 1836; this could be the great Kings Cross heap which is frequently mentioned. The building with the small dome is the smallpox hospital; top right of the picture are structures in the local tile-yard.

So where did the Thames basin brickearth come from? More controversy: is it of northern origin, probably associated with the northern glaciers of the Pleistocene cold phases, or did it come from the south, was the material made in the Alpine regions and delivered after a long transportation to north-west Europe and blown across for aeolian deposition in the Thames basin and the Weald and neighbouring regions. The chart in figure 2 represents a southern opinion with the emphasis on coverage of all of southern England, but very recent (2020) observations on zircon particles in the English loess are suggesting a northern origin. The zircons are very(!) old and suggest an origin the old northern rocks of Scandinavia. The northern glaciers ground up the rocks and the very old zircons were incorporated into the relatively recent loess.

#### 'SPANISH'

Spanish was the partially combusted material which was added to the brickearth as a firing aid; it came largely from the dust heaps of London; it was not a mere afterthought to brick production- it played a key role. There



are pictures of dust heaps (see fig 3),<sup>8</sup> and there is some dust heap literature; a key item is the piece by R.H. Horne which appeared in Charles Dickens' journal *Household Words* in 1850:<sup>9</sup>

... A dust-heap of this kind is often worth thousands of pounds. ... The principal ingredient of all these dust heaps is fine cinders and ashes. ...

And the next sort of cinders, called breeze because it is left after the wind has blown the finer cinders through an upright sieve, is sold to the brickmakers. ...

Their chief value, however, is for the making of bricks. The fine cinderdust and ashes are used in the clay of the bricks, both for the red and grey stacks [*typo for stocks?*]. Ashes are also used as fuel between the layers of the clump [*another typo? clamp?*] of bricks which would not be burned in that position without them.

In the brickfields at Uxbridge, near the Drayton Station, one of the brickmakers alone will frequently contract for fifteen or sixteen thousand chaldron of this cinder-dust, in one order.

This article by Horne is thought to have provided material, and perhaps inspiration, for the last completed Charles Dickens novel *Our Mutual Friend* (1864). A great dust-heap has a part to play in this novel; it is believed to be the large dust heap near Kings Cross, at Battle Bridge.

The remarkable brickearth was the key to the quality of the London bricks but an important role was played by the combustion-assisting admixture once known as 'Spanish'.

... the brickmakers all about London, do mix sea-coal ashes, or laystalstuff, as we call it, with the clay of which they make the bricks, and by that shift save eight chaldrons of coals out of eleven, in proportion to what other people use to burn them with, and these ashes they call Spanish.

Daniel Defoe, *The Complete English Tradesman*, 1726

The Dust-heaps were impressively large; the removal of part of a dust heap is described in *Our Mutual Friend*. It is not a spectacular process but it takes a long time and much steady labour to shift the material. The most famous shifting was the sale of the Battle Bridge heap to Moscow where the material was used to assist in the rebuilding of that city. A tentative deduction would suggest that the brickpits near Moscow gave access to loess and that Moscow ground was similar to London ground. The heap was bought for £40 000, a considerable sum now, a fortune in 1848. Sending the London dust heap material to Moscow to help make loessic bricks makes sense, but it is possible that the whole episode is an urban myth (7):<sup>10</sup>

The train of carts and horses came and went all day from dawn to nightfall, making little or no daily impression on the heap of ashes, though, as the days passed on, the heap was seen to be slowly melting."

Charles Dickens, *Our Mutual Friend*

## THE BRICK

OED stock-brick n. a hard solid brick, pressed in the mould.

1683 J. Houghton. We make two sorts of Bricks, viz. Stock-Bricks and Place-Bricks; the Stock-Bricks are made solid, strong, and ... hard.

1703 R. Neve. Stock-bricks, are made upon a Stock, viz. The mold is put on a Stock, after the manner of Molding, or Striking of Tiles.

Ian Freeman, at the Building Research Station in Garston, did some mineralogical analyses on ten British brick clays and he gave us one of the few analyses of the material of a London Stock brick.<sup>11</sup> His sample 63AH he described as London Stock Brick mixture. He carried out thermogravimetric (TG) analyses using a Stanton-Redcroft TRO1 thermobalance on a sample containing 75% Kentish brickearth, 10% estuarine mud, 10% washed chalk, 5% sifted town refuse ('Spanish').

More TG analyses have been carried out by Grenville Lill, using a TRO2 thermobalance, on clays from Essex, in particular from Star Hill and Cherry Orchard Lane brickworks. All the analyses point to the



relatively low clay mineral content of the brickearth and the stock brick mixture. The mineralogy is totally dominated by the quartz content, the large content of quartz silt indicating the loessic provenance.<sup>12</sup>

The predominant quartz silt (mode size about 30  $\mu\text{m}$ ) forms a particle packing which gives dimensional stability and a certain degree of porosity. The original loess is highly porous but a large amount of reworking occurs before the material arrives in the brick making mould, but the nature of the quartz particle packing delivers a greater porosity than in a brick with a higher clay mineral content. This strong inert particle framework gives the brick dimensional stability, it resists deformation and warping on firing and gives great fired strength. Combustion of the Spanish particles dispersed through the mixture is facilitated by the primary mineral structure, gases can move through the relatively open structure. The relatively low clay mineral content is sufficient to provide enough bonding material on firing; binary and ternary eutectic systems are formed which provide efficient bonding systems in which the bonding action can be concentrated at primary mineral particle contacts. A very satisfactory brick is produced. The heating of a brickclay can be demonstrated by the results of TG tests. Figure 4 is a brickearth from the Star Lane brickworks (in the vicinity of the Shoeburys). A relatively simple thermal history with four main events A B C & D; A is loss of adsorbed water, B is oxidation and loss of organic matter, C is dihydroxylation of the clay minerals, the hydroxyl ions OH are driven off, and D is the carbonate reaction, CaO is produced from  $\text{CaCO}_3$ , weight loss via  $\text{CO}_2$  emission. This sample was clay-sized material and shows a notable concentration of carbonate in the finer fraction.

## HISTORY

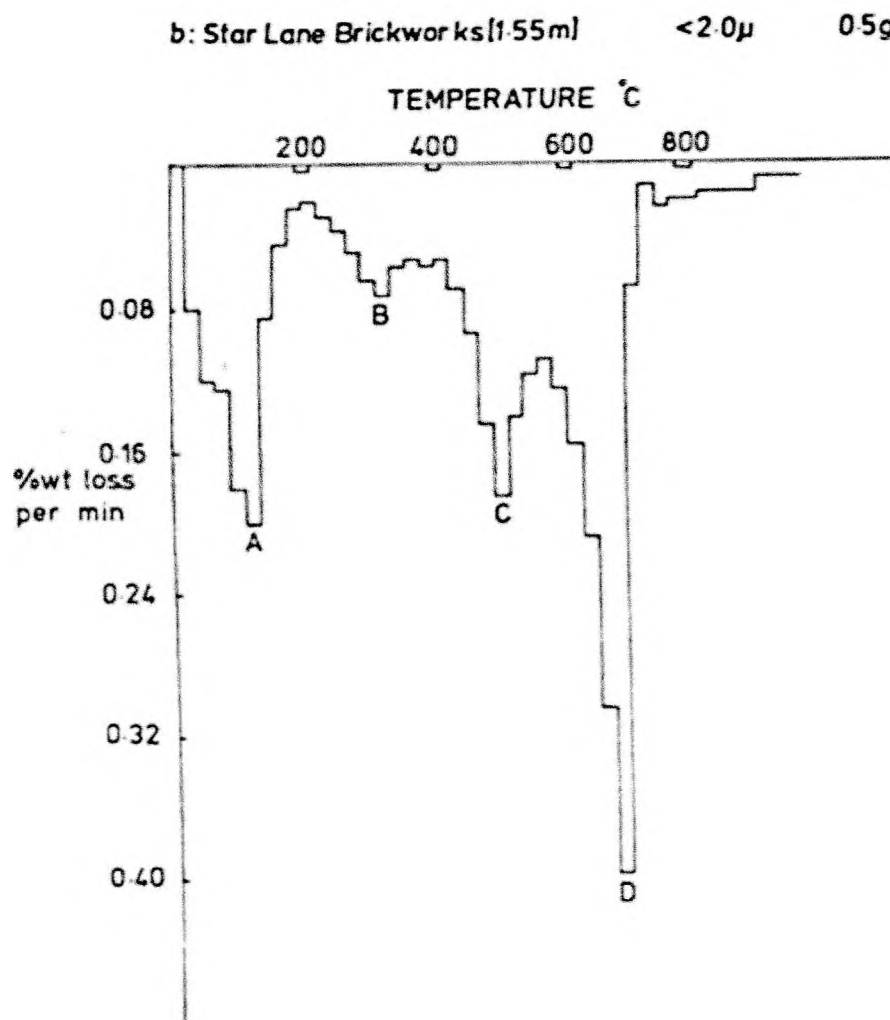
The London Stock brick appears to have been invented, by accident, soon after the Great Fire of 1666. According to the Company of Tylers and Bricklayers the practice of using ashes commonly called Spanish was begun around the early 1670s “occasioned by digging up several fields contiguous to the city after the great fire which fields having been much dunged with ashes it was observed the bricks made with earth in those fields would be sufficiently burned with one half of the coles commonly used”.<sup>13</sup>

This seems like an acceptable genesis story for the London Stock brick- the accidental addition of cinders and ashes improves the firing of the bricks, saves on expensive fuel, and the practice is widely adopted. The saving was considerable; it appears that a 50% reduction in fuel usage could be obtained –to great economic advantage.

## COMMENTARY

We need to be a bit pernickety; a bit more careful in our terminology. We are trapped into an overgenerous use of the term ‘clay’. Clay minerals are truly remarkable materials, they are weathering products and the weathering process has ensured that most of them carry a negative electrical charge. This, and the remarkable fact that the water molecule is polarised, has allowed the development of the whole craft and industry of ceramics and permitted the making and appreciation of bricks. Mud is a consequence of negative electrical charge and water polarization. Clay is one of the components of ground which means that it transmits its remarkable properties to the whole ground. The small clay content in brickearth transmits to the brickearth the necessary plasticity which is exploited by the maker and the bonding action which is required on firing the produce the sintered aggregate which is the brick made essentially of quartz silt particles glued together. The quartz silt gives the brick its dimensional excellence and strength, the added Spanish gives it firing efficiency and the clay mineral content provides the important bonding phase.

In a total digression we might note that bricks in the Shire region of Middle Earth were largely made at a place called Stock. They were Stock bricks- a strange coincidence.<sup>14</sup> Also, the ideas of a river basin loess deposit largely controlling urban construction can be applied to the ancient societies in the Indus valley.<sup>15</sup> The buildings in Harappa and Mohenjo-Daro were built of fired loess bricks made from abundant local brickearth. The buildings in London were built, in a large part, from abundant local brickearth. The archaeologists of the future will be impressed by the amount of brick construction in London- and by the quality of the bricks. We hope that they make the connection to the Pleistocene brickearth.



TQ 935870

Fig.4 Thermogravimetric analysis of an Essex brickearth. The results are presented in a derivative form; Lill (note 12) uses the histogram form of the DTG curve to present the four major reactions; rate of weight loss in the sample is plotted against temperature. This is the clay size fraction of the material; note a substantial carbonate reaction [D].

#### ACKNOWLEDGEMENTS

The Stock brick project began with the Experimental Firing Group at Leicester University and continued with the UK Loess Project in the School of Geography, Geology and the Environment.

Acknowledgements to Ann Woods and Ken O'H. Dhand. Mineralogical studies were carried out on the TR02 thermobalances at Leeds University, Department of Civil Engineering. Ospringle investigations were supported by NERC and the British Geological Survey at Keyworth. Email: [ijsmalley@gmail.com](mailto:ijsmalley@gmail.com) or [ijs4@le.ac.uk](mailto:ijs4@le.ac.uk). Archival material at Loess Letter Office, Tin Drum Books, 68 Narborough Road, Leicester LE3 0BR.

## NOTES AND REFERENCES

1. A. Cox, 'A vital component: Stock bricks in Georgian London', *Construction History*, **13**, 1997, pp.57-66
2. A. Cox, 'Bricks to build a capital', in *Good and Proper Materials*, ed. H. Hobhouse and A. Saunders, [being *London Topographical Society Publications*, **140**], 1989, pp.3-17.
3. A.S. Kennard, 'The Crayford brickearths', *Proceedings of the Geologists Association*, **55**, 1944, pp.121-167.
4. A.E. Milodowski, K.J. Northmore, S.J. Kemp, D.C. Entwisle, D.A. Gunn, P.D. Jackson, D.L. Boardman, I.J. Smalley, M. Clarke, 'The mineralogy and fabric of brickearths and their relationship to engineering properties', *Bulletin of Engineering Geology and the Environment*, **74**, 2015, pp.1187-1211.
5. I. Smalley, 'The nature of 'brickearth' and the location of early brick buildings in Britain', *BBS Information*, **41**, 1987, pp.4-11; I. Smalley, 'Loess bricks in Britain', *Bulletin of the Experimental Firing Group*, **4**, 1985/6, pp.55-66, reprinted in *Loess Letter*, **70**, 2013, pp.4-15, [www.loessletter.msu.edu](http://www.loessletter.msu.edu)
6. I.J. Smalley, S.B. Markovic, Z. Svircev, 'Loess is [almost totally formed by] the accumulation of dust', *Quaternary International*, **240**, 2011, pp.4-11; I. Jefferson, I.J. Smalley, K.J. Northmore, 'Consequences of a modest loess fall over southern and eastern England', *Mercian Geologist*, **15**, 2003, pp.199-208.
7. See the views presented in the papers cited in note 6.
8. The Great Dust Heap at King's Cross is reproduced in black-and-white on the cover of *BBS Information*, **137**, November 2017, and in colour on the cover of *BBS Information*, **146**, October 2020.
9. R.H. Horne, 'Dust; or ugliness redeemed', *Household Words* **1**, 13 July 1850, pp.379-384, reprinted R. Cox *et al.*, *Dirt: The Filthy Reality of Everyday Life*, London: Profile Books in association with the Wellcome Collection, 2011, pp.178-182, with colour representation of the 'Great Dust Heap at King's Cross next to Battlebridge and the Smallpox Hospital' on p.178 and 'the Dust Heaps Somers Town, 1836' on page 183.
10. A. Cox, P. Hounsell, S. Kempsey, D.H. Kennett, S. Worthy, 'London's dust mountains and bricks to rebuild Moscow after 1812', *BBS Information*, **137**, November 2017, pp.9-34.
11. I.L. Freeman, 'Mineralogy of ten British brick clays', *Clay Minerals Bulletin*, **5**, 1964, pp.474-486.
12. G.O. Lill, 'The nature and distribution of loess in Britain', unpublished PhD thesis, University of Leeds (1978) [etheses.whiterose.ac.uk](http://etheses.whiterose.ac.uk)
13. T.P. Smith, "Upon an adventure with others" John Evelyn and brickmaking after the Great Fire of London', *BBS Information*, **103**, 2007, pp.10-15.
14. I. Smalley, S. Bijl, 'Bricks and brick making in the Shire', *Amon Hen*, **128**, 1994, pp.18-19; upload to *Scribd.com*
15. 'Loess and society: the Indus Valley civilizations ~3000 BCE- ~1500 BCE', *Loess Ground blog* 20 Dec. 2018, [www.loessground.blogspot.com](http://www.loessground.blogspot.com).

# Eighteenth-Century Accounts of Firing Bricks and Burning Lime in the Same Kiln

Brian J. Murless

## INTRODUCTION

This note is partly for information and partly to elicit further examples of the practice burning bricks and lime together recorded by Sir Joseph Banks, as a young man of 24 when travelling round England in 1767/68 before joining Captain James Cook's expedition to Australia, which I was sent as a query by Dr Peter Stainer, a geologist. I have found a similar description by the Swedish traveller, Petr Kalm written in 1748.

## THE COMMENTS OF JOSEPH BANKS

*Some footnotes for Joseph Banks's travel Journal written in 1767-8 when he was 24, before he went to Australia with Cook. [p120 28 January 1768]<sup>a</sup>*

[Visits Shotover Hill and surroundings near Oxford]

the stone itself seems perfectly flat at least the dip of it is so small as to be scarcely perceivable // it is a congeries of Shells of many Kinds but mostly melted away // the soft parts of it work very freely rising in Bedds & cleaving Easily into peices of any size by wedges which are drove in between two flat Plates of Iron in holes cut for that purpose // the harder are separated for Limestone & are burnt in this manner // they build a Killn about 15 feet deep 10 of which is below the ground & 5 above it in this shape [*image/illustration appears*]

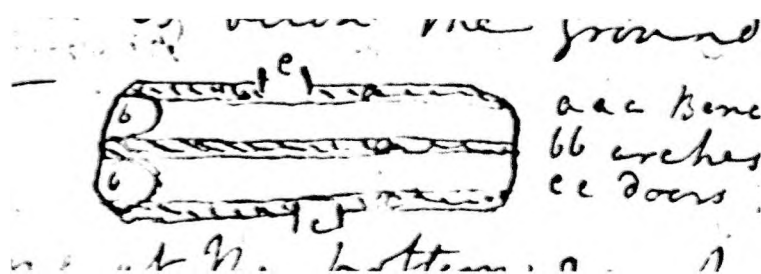


Fig.1 Illustration of the kiln in Joseph Banks' notes.

- a a a Benches for the arches
- b b arches through the wall
- c c doors through the side walls

making at the bottom 2 arches which Communicate with the air and at the top two doors one on Each side through the wall which is above the ground // on the Bottom of all are left 3 benches one on Each side & one in the middle which serve as foundations for arches which are turnd with the Limestone to be burnt immediately against the mouths of those that go through the wall & of the same size about two feet high these arches being turnd with pretty Large stones // the rest of the limestone is thrown in broke in smaller ones till it comes up to the surface of the ground // the wall which is above the ground is then filld up with Bricks to be burnt // the doors are then stoppd up by double Courses of Bricks & sand between & the bricks being Coverd with sand or old shards // fire is put under the limestone arches which is supplyd With furze Kidds till bricks & lime are sufficiently burnt which takes 7 or 800 at 70<sup>b</sup> to a waggon Load // this is done with great Ease & safety as the whole Kiln is under cover therefore not subject to any inconvenience from weather & both brick & lime are of an Excellent Quality // care must however be taken that if the Limestone is wet it is dryd by burning a few Kidds under it before the Bricks are put on which would otherwise be spoild<sup>c</sup>

## COMMENTARY ON JOSEPH BANKS' DESCRIPTION

- [a. Banks did not use capital letters or full stops in his original text. Brian Murless informs me that he has added // everywhere he thinks there is a new sentence, in the hope that it makes it easier to read. The original selling has been retained. (DHK)]
- b. One may query the transcription here, perhaps this could mean a time such as 7 or 8 days and a weight of a wagon load.
- c. This is a rare description of a combined brick and lime kiln. Bricks and lime were usually burned in separate kilns depending on the type of clay used, the firing of the bricks usually requires a temperature 100-200 degrees higher than the burning of the lime. However, shared kilns are not unknown (see the extract from Pehr Kalm, *Kalm's account of his visit to England on his way to America in 1748*, Translated Joseph Lucas, London, 1892, pp.304-305. Kilns were often partly buried below ground in order to conserve heat. Gorse or furze, *Ulex europaeus* L., was made up into long bundles or faggots known as *kids*, popularly used in districts where wood was scarce.

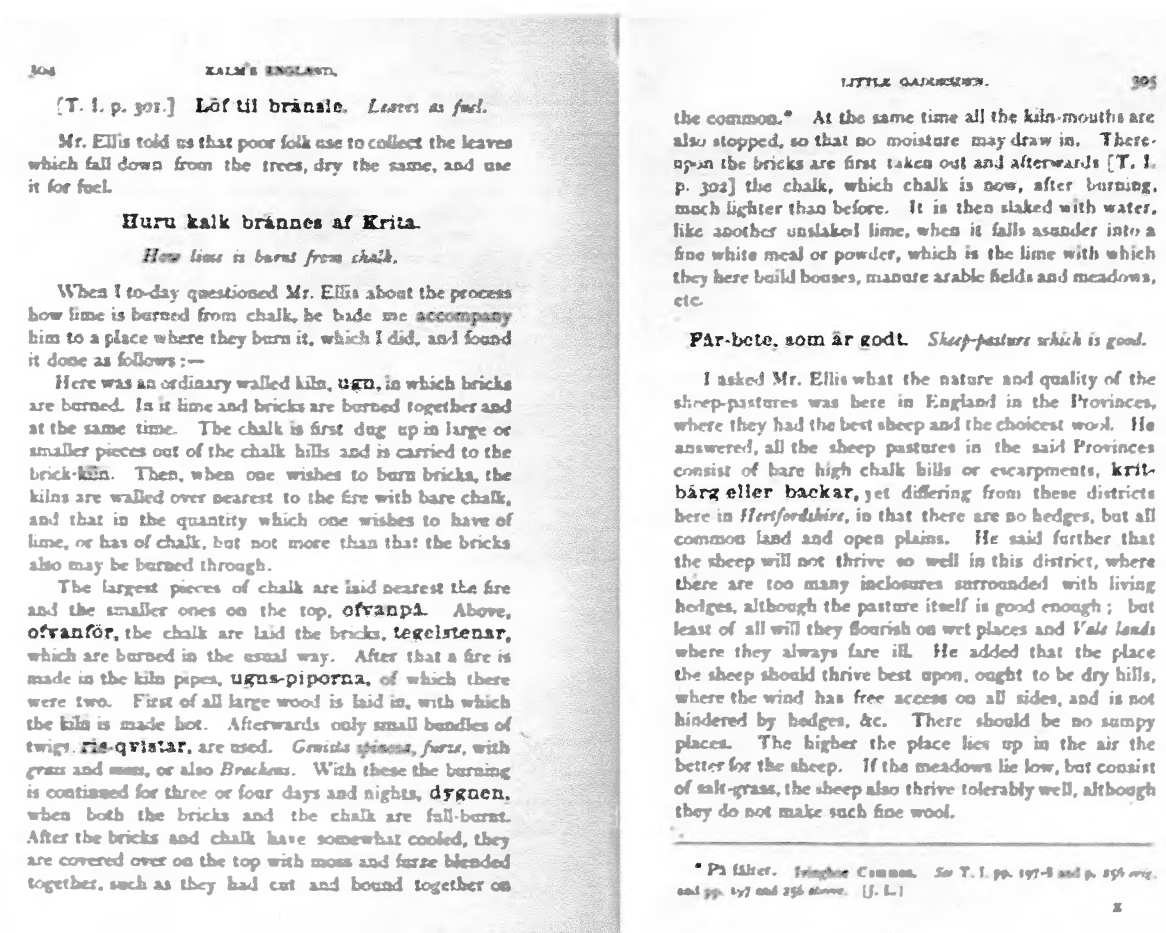


Fig.2 Petr Kalm, *Kalm's Account of his Visit to England in 1748*, Translated by Joseph Lucas, London, 1892, pages 304 and 305, with the account of bricks and lime being burnt together at Ivinghoe Common, Buckinghamshire.

## PETR KALM ON 'HOW LIME IS BURNT FROM CHALK

The extract from pages 304 and 305 of Pehr Kalm, *Kalm's Account of his visit to England*, is reproduced in figure 2 and is transcribed below, without the insertion of the words in Swedish which Joseph Lucas retained in his published translation of 1892.

When I, today, questioned Mr Ellis about the process how lime is burnt from chalk, he bade me accompany him to a place where they burn it, which I did and found it done as follows: -

Here was an ordinary walled kiln, in which bricks are burned. In it lime and bricks are burned together and at the same time. The chalk is first dug up in large or smaller pieces out of the chalk hills and is carried to the brick kiln., then one wishes to burn bricks, the kilns are walled over nearest the fire with bare chalk, and that in the quantity one wishes to have of lime, or has of chalk, but not more than the bricks also may be burned through.

The largest pieces of chalk are laid nearest the fire and the smaller ones on the top. Above the chalk are laid the bricks which are burned in the usual way. After that a fire is made in the kiln pipes, of which there are two. First of all, large wood is laid in, with which the kiln is made hot. Afterwards, only small bundles of twigs are used. *Gemista spinos*, *furze*, with *grass* and *moss*, or also *Brackens*. With these the burning is continued for three or four days and nights, when both the bricks and the chalk are full-burnt. After the bricks and chalk have somewhat cooled, they are covered over on the top with moss and furze blended together, such as they had cut and bound together on the common [Ivinghoe Common, Buckinghamshire]. At the same time all the kiln-mouths are also stopped, so that no moisture may draw in. Thereupon, the bricks are first taken out and afterwards the chalk, which chalk is now, after burning, much lighter than before. It is then slaked with water, like another unslaked lime, when it falls asunder into fine white meal or powder, which is the lime with which they build houses, manure arable fields and meadows, etc.

#### TWO COMMENTS ON PEHR KALM'S DESCRIPTION OF LIME-BURNING

[a. Ivinghoe Common is below the heights of the Chiltern Hills. In the 1960s and 1970s, there was a major chalk quarry producing the raw material for lime, mostly then used for agricultural purposes rather than the production of lime mortar, at Pitstone, the village immediately south-west of Ivinghoe. Ivinghoe Beacon, about a mile east-north-east of Ivinghoe village, is the highest point in Buckinghamshire, crowned by an Iron Age hillfort, and is the start of the Ridgeway Path which terminates at Avebury, Wiltshire. (DHK)]

[b. Ivinghoe is about 20 miles from Oxford (DHK)]

#### BRICKS BEING BURNT WITH LIME: A COMMON PRACTICE OR NOT?

Both Peter Stainer and Brian Murless would like to know if the practice of burning bricks in a kiln on top of lime is a common practice or not. Ivinghoe village is immediately below the Chalk of the Chiltern Hills and Shotover Hill, near Oxford is an outlier of the same hills.

Brian Murless may be contacted at [brian.j.murless@btopenworld.com](mailto:brian.j.murless@btopenworld.com). He will then be able to pass the comments on to Dr Stainer.



Brick Query:  
The Meaning of 'Case'? A Regional Word?

up the Clay - John Jackson to be paid Three  
Shillings per Thousand for Building the Cases  
or Kilns and to be paid for making the Bricks  
used therein the same as for others - The Cases  
or Kilns to be the property of the Company - If it  
is found necessary to Vary the Size of the Mould  
then the Price to be regulated in Proportion  
to the Size and Price above mentioned -

Fig.1 Part of the agreement between John Jackson and the Liverpool and Leeds Canal Company.

In the course of work towards my PhD, I have been examining canal company minutes. For the Leeds & Liverpool Canal, John Jackson of Tettenhall, near Wolverhampton, supplied the bricks. In the agreement the canal company mention the building the 'case or kilns' (see fig.1). The agreement reads:

John Jackson to be paid Three Shillings per Thousand for Building the Cases or Kilns and to be paid for making the Brick, used therein the same sum as for these — The Cases or Kilns to be the property of the Company — If it is found necessary to Vary the Size of the Mould then the price to be regulated in proportion to the Size and Price above mentioned —

The long dashes replace full stops.

I presume by 'case' they mean a brick clamp as Brunskill refers to as casings being the burnt bricks forming the clamp.

Is this a regional word? Any advice would be most welcome.

ELIZABETH THOMSON

Replies to

[elizabeth.thomson@bclm.com](mailto:elizabeth.thomson@bclm.com)

## Brick Query: The Bricks at Tower Bridge, London

### INTRODUCTION

The British Brick Society was asked in March 2020 by Iain Stanford of the management of Tower Bridge to elucidate an inconsistency in the supply of bricks to Tower Bridge. The query and an amended version of the response were thought to be of interest to the society's members. Mr Stanford wrote:

I am hoping that members of the British Brick Society will be able to assist us with a question as the supply of the 31,000,000 bricks that make up Tower Bridge. The main contractors involved in the use of bricks during construction were John Jackson who built the piers and the masons Perry & Co. The bricks were Gault bricks from Bedfordshire and Cambridgeshire and also Staffordshire brindle blue bricks. It has been our understanding that the former were supplied by the London Brick Company (founded in 1889); however, construction of Tower bridge started in 1886 and this predates the founding of LBC by three years.

### THE RESPONSE

As Mr Stanford has said, the London Brick Company (LBC) was formed at Fletton, Huntingdonshire, in 1889, three years after construction of Tower Bridge began. However, ultimately LBC amalgamated with various other firms in Bedfordshire and in the Peterborough area, both in the Soke (then in Northamptonshire) and in Huntingdonshire. It also embarked on a series of takeovers.

One of the firms taken over as late as 1928 was Bearts at Arlesey, Bedfordshire. Their principal product was a white gault brick. These would have been the white gault bricks used in the construction of Tower Bridge.

Bearts began in Godmanchester, the southern counterpart to Huntingdon, but it also had a substantial brickworks at Arlesey, Beds., adjacent to the main railway line from London King's Cross to Yorkshire, north-east England, and eastern Scotland. The works at Arlesey was founded in 1852 Robert Beart of Godmanchester. By 1877, it was Beart's Patent Brick Company and from 1898 to 1928, it traded under the name The Arlesey Brick Company (Beart's) Ltd. In 1885, Beart's had amalgamated with the Arlesey Brick and Lime Co. Ltd., who also produced yellow gault bricks. Beart's plant was on the west side of the railway line, south-west of Arlesey Station, while the Arlesey Brick and Lime Company's works was east of the main railway line. Also producing yellow gault bricks in the late nineteenth century was the Arlesey Station Gault Brickworks, in operation from October 1882 to before 1907.

As noted, the London Brick Company was an amalgamation of firms in the Peterborough area in 1889 and in the 1920s taking in several firms in central Bedfordshire. One principal Bedfordshire component of the firm, an amalgamation of 1923, was B.J. Forder & Son Ltd., since 1900 led by the formidable Sir Halley Stewart. Forders had opened brickworks both at Wootton Pillinge (now Stewartby) and at Elstow in 1897, specifically to produce Fletton bricks, self-firing due to the presence of considerable organic material in the brick clay. The Oxford clay, the source of the raw material for the bricks, runs in a belt diagonally through south Oxfordshire, central Buckinghamshire, mid Bedfordshire and north Huntingdonshire.

DAVID H. KENNETT

### BIBLIOGRAPHICAL NOTE

The full story of the amalgamations which ultimately formed the London Brick Company is set out in Alan Cox, *Brickmaking: A History and Gazetteer*, [being *Survey of Bedfordshire*, 1] Bedford: Bedfordshire County Council, 1979. See also L.J. Collier, 'The World Largest Brickworks', *Bedfordshire Magazine*, 9, no.55, Summer 1963, pages 18-20, which is a brief summary of Dr Collier's University of London PhD thesis, available University of London, Senate House.

## BRICK IN THE NEWS: BLUE PLAQUE AT PETERBOROUGH TO THE LONDON BRICK COMPANY

Peterborough Civic Society have recently installed 15 new blue plaques around the city making a total of 36 blue plaques to date. Details can be accessed online at <http://www.peterboroughcivicsociety.org.uk/doc/BluePlaqueBooklet2.pdf>. The comments in this note are derived therefrom.

The final plaque noted in the booklet commemorates the association of the London Brick Company with the city. The plaque has been placed on Phorpres House, a landmark building on London Road, at the south side of its junction with Victoria Street. Phorpres House (fig.1) was the District Offices of the London Brick Company, makers of the famous Fletton bricks manufactured using a 'four-press' method. For about one hundred years from the 1880s the Peterborough area was the hub of the local Fletton industry. By the 1930s, London Brick Company's annual output had reached 1,750 million bricks from works spread from Buckinghamshire and Bedfordshire to Whittlesey, south-east of Peterborough. Workers were recruited from near and far, especially during the post-World War II reconstruction boom. Employment of prisoners of war and refugees from Eastern Europe was followed by annual recruiting drives in southern Italy. Over 2,000 Italians came to work in the Fletton industry, many remaining to make England their home.

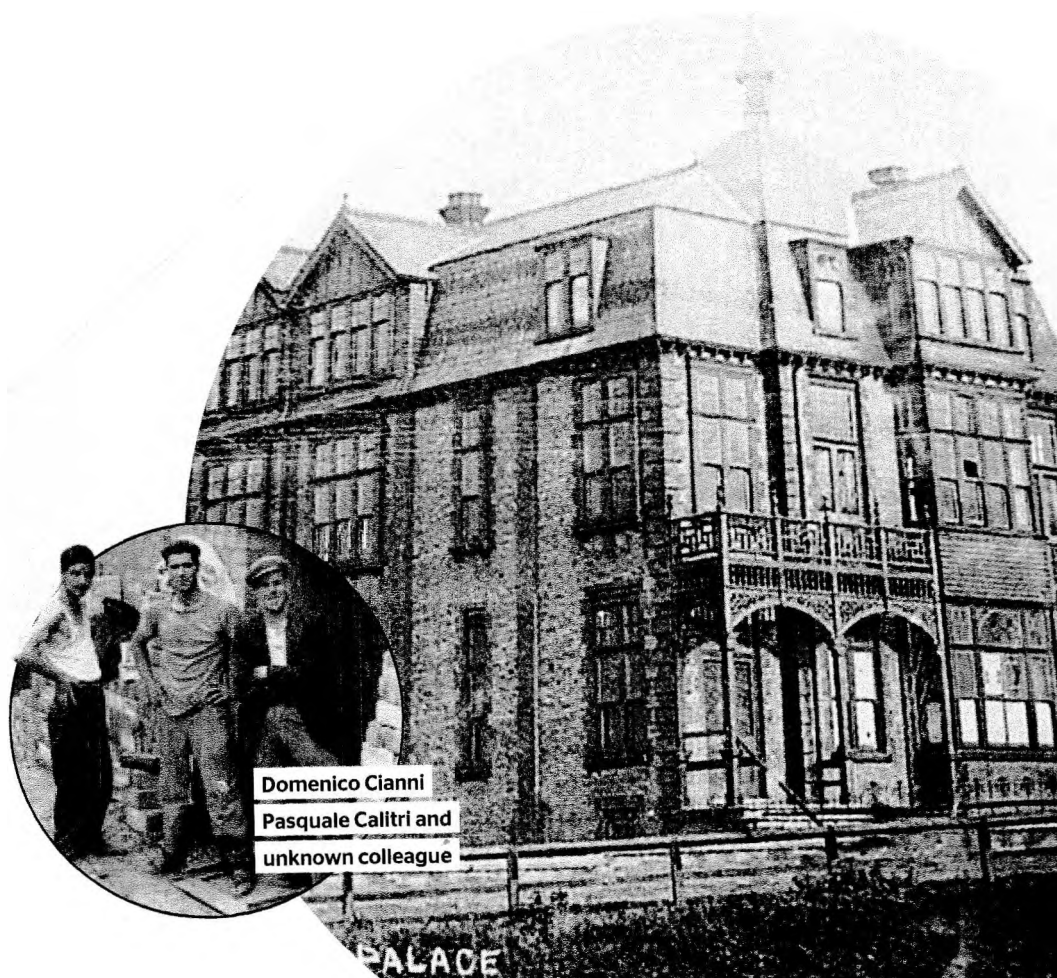


Fig. 1 Phorpres House, London Road, Peterborough, the former local headquarters of the London Brick Company, with inset showing three of the Italian workers of the company.

Similar recruitment drives took place for the London Brick Company's works south-west of Bedford, hence the substantial Italian community in that town, where there is both a Roman Catholic church for the Italian community, St Francesca Cabrini, Woburn Road (1963-65: Peter Dunham, Widdup & Harrison), and one for the Polish community, dedicated to the Sacred Heart of Jesus and St Cuthbert, the former Anglican St Cuthbert's church (1844-47: J. Woodroffe).

The Peterborough Civic Society blue plaque on Phorpres House reads:

This building  
housed the former  
London Brick Company  
District Office

This plaque acknowledges the  
contribution made to the rebuilding  
of Britain after World War Two  
by the company's workforce  
including many members of  
the Italian community.

The British Brick Society is obliged to Toby Wood of the Peterborough Civic Society for information on the blue plaque and the Italian community in the Peterborough area. Phorpres House does not rate a mention in the entry on Peterborough in C. O'Brien and N. Pevsner, *The Buildings of England: Bedfordshire and the County of Huntingdon and Peterborough*, New Haven and London: Yale University Press, 2014, pages 627-632.

## WOMEN MOULDERS

In his review of Caroline Haynes *Brick: A Social History*, in *British Brick Society Information*, 146, Peter Hounsell expressed some doubt about her statement that the role of the brick moulder was 'often undertaken by a woman'.<sup>1</sup> He was not aware of 'substantial evidence for the widespread employment of woman moulders.' Documentary evidence is rare and certainly not 'substantial' but there are a few references. The Ingestre (Staffordshire) estate cash book of 1724 lists the employment of women, there Mary Hackett moulded 18,000 bricks between 4th June and 29th July 1724. She was paid at exactly the same rate as the male moulders, *i.e.* 2s 6d per thousand.<sup>2</sup> Such a level of payments was high for both men and women, Richard Neve noted in 1726 that 'in the country, their usual Price is 6d per 1000 for the Molder'.<sup>3</sup> Perhaps more importantly in terms of 'substantial evidence' is the comment in 1803 by the Swedish industrial spy Eric Svedenstierna who recorded that in Birmingham brick moulding was the work of 'only invalids, women and girls'. On girl asserted that with another girl and a boy to wheel the bricks to the kiln they could mould 3,000 per day.<sup>4</sup>

MICHAEL KINGMAN

## NOTES AND REFERENCES

1. P. Hounsell, 'Book Review: An Introduction to the Study of Brick', *BBS Information*, 146, October 2020, pp.5-7.
2. Staffordshire Record Office, D240/E/F/1/2.
3. Richard Neve, *City and County Purchaser and Builder's Dictionary*, London, 1726, p.44.
4. E.T. Svedenstierna, trans. E.L. Dallow, *Svedenstierna's Tour of Great Britain, 1802-3*, Newton Abbot: David and Charles, 1973, 87.

## Book Review: *Experiencing Buildings*

Edward Gillin and H. Horatio Joyce, editors,  
*Experiencing Architecture in the Nineteenth Century*,  
London: Bloomsbury, 2020, re-issued in paperback, 2020,  
xiii + 250 pages, 28 black-and-white illustrations,  
ISBN 978-1-3501-5970-9, price, pbk, £28-99.

A volume of twelve essays, contributions to a conference held at St John's College, Oxford, in Spring 2016, the book is divided into five parts: Defining Experience (pages 13-28), Producing Experience (pages 29-86), Designing Experience (pages 87-129), Audiences and Experience (pages 131-172), and Epilogue (pages 173-191). The contributors (noted on pages xi-xiii) are all professionally involved in the study of architectural history: three are from the USA and the others from different universities in Great Britain. Ten essays examine a single building type, while the opening chapter, 'Architecture and Experience: Regimes of materiality in the nineteenth century', by William Whyte (pages 15-28) and the final one, 'Material Movement, and Memory: Some thoughts on architecture and experience in the age of mechanization', by G.A. Bremner (pages 175-191) cover a wider range than a single building or building type.

Three essays — 'Architecture of the mind: Imparting Californian identity through architectural experience on the early Stanford University campus' (pages 45-60) by David Frazer Lewis; 'New York's Harvard House and the origins of an alumni culture in America' (pages 89-100) by H. Horatio Joyce; and 'Building Student Bodies: College gymnasias and women's health in nineteenth-century America' (pages 160-172) by Caitlin DeClerq — examine ways in which educational buildings were experienced. These buildings were of stone or of concrete.

In contrast, the majority of nineteenth- and early-twentieth-century art schools built in Britain were of brick. Thus, Geoffrey Tyack's essay, 'The Architecture of Art Education: Provincial Art Schools in Britain, 1850-1914' (pages 61-74), will be of far greater interest to members of the British Brick Society. In contrast to the most famous, C.R. Mackintosh's Glasgow School of Art, the majority are brick buildings. On page 69, Tyack illustrates the Birmingham School of Art, a brick building extended less than a decade after it was first constructed (1884 and 1891: Chamberlain & Martin), with the long north-facing wing on Cornwall Street with the substantial north-facing windows on the gabled top floor and large windows to the tall studios on the raised ground floor. Ideally any school of art should have its principal studios facing north. This was certainly the case in the now disused Yarmouth School of Art (1912: J.W. Cockerill) but might not be the case when an existing building is pressed into service as with the brick building used for Bolton School of Art; originally this was the Bolton Pupil Teachers' Centre and the rooms with large windows face almost due west. The art schools in Birmingham and Great Yarmouth were brick-built, as was the Bolton Pupil Teachers' Centre.

Most big towns had a pupil teacher centre. In Luton, the brick-built Higher Grade School on Waller Street, erected in 1892, was used from 1908 to 1922, when this system of teacher apprenticeship was abolished: in the last cohort of pupil teachers was John Dony BSc (Econ), PhD, Hon FLS who for 23 years was the senior history master at Luton Grammar School. The Pupil Teachers' Centre in Oxford was newly-built and attached to the 'Girls Central School' on New Inn Hall Street (1901: Leonard Stokes) and faced in rubble stone with dressed stone quoins. The U-shaped building is now part of St Peter's College. Pupil Teachers' Centres would make an interesting subject for an essay.

Two papers on the House of Commons in the Palace of Westminster — 'Powers of Politics, Scientific Measurement, and Perception: Evaluating the performance of the House of Commons' first environmental system, 1852-4' (pages 115-129) by Henrik Schoenefeldt and Edward Gillin's "'The fullest fountain of advancing civilization": Experiencing Anthony Trollope's House of Commons, 1852-82' (pages 145-159) — are relevant to the present-day concerns about the viability of the building and the same may be said of 'Architectural Acoustics: Thomas Roger Smith and the science of hearing buildings in nineteenth-century Britain' (pages 101-114) by Graeme Gooday, although the House of Commons is not specifically examined in this paper. Smith (1830-1903) was an architectural polymath but his work on acoustics deserves to be better known. Professor of Architecture at University College, London, from 1880 to his death, Smith approached the problems of ensuring people could hear from an experiential position without regard the later development of a science derived from the physics of sound, the pioneer of which was Wallace Sabine (1868-1919), a

Physics professor at Harvard, whose work was strongly advocated by the English architect Hope Bagenal (1888-1979), a man whose first degree was in Engineering. Strangely, the essay does not mention the work of another American architect and engineer, Dankmar Adler (1844-1900) who by experiential perceptions guided the acoustics not only of Chicago's Auditorium Theatre (1887-89: Adler & Sullivan) but also New York's Carnegie Hall (1891-97: William B. Tuthill), the latter being more noted for its acoustics and its performances than for its façade on West 57th Street.

One of the most interesting essays in the volume is Emma Anderson, 'Publicity and Exclusivity: The experience of the public rooms of the London 'grand hotel' at the end of the nineteenth century' (pages 133-144). It is also one of the most successful of the essays, considering a building type first associated with London's railway termini, particularly those where trains arrived from the north. They began at Euston (1835-37: R. Stephenson and P.C. Hardwick; demolished) but the majority were erected between 1851 and 1865: the Great Western (1851-54: P.C. Hardwick) at Paddington; the Great Northern (1854: Thomas Cubbitt), at King's Cross; the Grosvenor (1862: John Knowles) at Victoria; and the Charing Cross Hotel (1863-65: E.M. Barry). Three more opened in the last quarter of the nineteenth century: the Midland Grand Hotel (1873-76: G.G. Scott) hiding the train shed at St Pancras; the Great Eastern (1880-84: Charles and C.E. Barry, and 1899-1900: Col. R. Edis) an afterthought at Liverpool Street; and the Great Central (1900: Col. R. Edis) detached from the front of Marylebone Station.

The first 'grand hotel' not associated with a railway company seems to have been the Westminster Palace (1858-61: W. and M. Moseley) in Victoria. Three hotels in high-class residential districts opened in the 1860s: the Buckingham Palace Hotel on Buckingham Gate (1860-61: James Murray); the Coburg in Mayfair (1861); and the Langham on Portland Place (1863-65 and 1871: Giles & Murray). The cutting of Northumberland Avenue in 1873-76 across the site of the brick Jacobean Northumberland House led to the construction of two hotels designed by the temporary partnership of the brothers F. and H. Francis & J.E. Stephens: the Grand opened in 1880 and the Metropole completed in 1885. The buildings survive but neither is now an hotel as is also the case with the Buckingham Palace Hotel. In 1888, the first phase of the Savoy Hotel opened with façades to both the Strand and the Embankment (Collins B. Young with Richard D'Oyly Carte and with H.H. Mackmurdo). It was extended in 1903-04 (T.E. Colclutt) and in 1910 (Colclutt & Hamp).

The Coburg was completely refurbished, almost completely rebuilt, in 1896 (Isaacs & Florence); it became the Connaught and as Ms Anderson remarks, with less than one hundred bedrooms it is one of the smaller 'grand hotels' in London; it was also the first of these hotels to boast a high ratio of bathrooms to bedrooms. In the aftermath of the Jabez Balfour scandal, the Hotel Cecil (Perry & Reed) finally opened in 1896. In 1898, Claridges (C.W. Stephens with Ernest George & Yeates for the interiors) opened on Brook Street. It began a small flurry of similar establishments: on Southampton Row, the Hotel Russell (1898: C. Fitzroy Doll) and the Imperial Hotel (1900: C. Fitzroy Doll; demolished); and on Haymarket, the Carlton (1899: Isaacs & Florence with interiors by Mewès & Davis; demolished). Caesar Ritz, who already had connections in London, had Mewès & Davis design the Ritz in about 1904; the ultimate 'grand hotel' on Piccadilly opened in 1907.

One feature of many of these hotels is the grand staircase: Ms Anderson illustrates that at the demolished Hotel Cecil (page 140). The former Auditorium Hotel, South Michigan Avenue, Chicago (1887-89: Alder & Sullivan) likewise had a grand staircase, sufficiently wide for two couples to pass without touching the other. Whether in Chicago, or London, or New York, as at the Palais Garnier in Paris, here was where the fashionable or the merely rich, particularly 'new money', wanted to be seen. A more modest establishment, such as the smaller, Berners Hotel, Berners Street, London (1908-10: John Slater), might also have a grand stair opening into the principal reception area, a place where a man might await his wife: Berners Hotel catered for families.

However, the grand stair was not always a feature which survived the Great War. With improved lifts and greater emphasis on fire safety, after the Great War, stairs became relegated to within sealed units, often built round a lift shaft.

One feature of Ms Anderson's paper draws attention to bathroom provision. Originally, hotels would have provided an enamelled bath tub in the dressing room of a suite, which some poorly-paid chambermaid would be deputed to fill with hot water, often carried up several flights of stairs. Even the Savoy, when it opened, had only 67 bathrooms for 400 bedrooms. Today, the *en suite* bathroom is standard accoutrement of even the lowest grade of hotel, let alone those seeking to be 'grand' and 'the height of luxury'.

Apart from drawing particular attention to the chapter on art schools, members of the British Brick Society might wish to consider a quotation from the final chapter. After discussing the mechanization of the

production and distribution of stone, G.A. Bremner writes:

The same may be said for the humble brick. Cheap coal, in conjunction with fast and efficient transportation, led to the production and distribution of bricks on a previously unprecedented scale. Steam-powered equipment, such as pressing machines, along with coal-fired kiln technology, meant a more consistent, reliable, and cheaper product that could be transported with relative ease wherever needed, leading to faster and more cost-effective construction.

Indeed, this is a scenario that could be applied to any number of common building material and processes from the Victorian period, such as encaustic tiles, plate-glass, terracotta, or slate roofing, to name but a few. All required unprecedented inputs of energy and processing, either in their making or procurement, to attain the necessary tolerances in quality pertaining to their product-level status. Again, the key factor connecting all these various processes and procedures was movement, or more precisely *mechanized* movement (pages 183-184, italics in the original).

Members of the British Brick Society should ponder these statements. The 1939 house in Luton where I lived until just after I began my secondary education at Luton Grammar School in 1956 was built by a small-scale builder using 'Luton Greys': the bricks almost certainly sourced from a small brickyard in either Stopsley or Caddington. In contrast, the outer walls of the late 1950s bungalow in a village outside Great Yarmouth, which I inhabited in the 1980s, were constructed using London Brick Company facing bricks, but again constructed by a small-scale builder.

DAVID H. KENNETT

### *Book Review:*

#### *Finding an Artistic Expression for the Christian God circa 1900*

Roger Button, *Arts and Crafts Churches of Great Britain: Architects, Craftsmen and Patrons*, Settle, North Yorkshire:2QT (Publishing) Limited, 2020, 279 pages, 6 plans and numerous colour photographs, ISBN 978-1-913071-49-3, price, paperback £19-50.

Alec Hamilton, *Arts and Crafts Churches*, London: Lund Humphries, 2020, 352 pages, numerous colour photographs, ISBN 978-1-84822-321-9, price, hardback £45-00.

The Arts and Crafts Movement was a peculiarly British, perhaps more accurately English, phenomenon of the generation before the Great War, although it does have an analogy in some buildings in the USA, particularly in the west coast states of California, Oregon and Washington State. The Arts and Crafts Movement was a phenomenon covering architecture, decoration, and craftsmanship. But it may be questioned as to whether it was ever truly a style rather than a loose grouping of members of the Art Workers Guild, the exhibitors at the Arts and Crafts Exhibition Society, and the Northern Art Workers Guild. The members learnt from each other and from their theoretically-mined, nineteenth-century predecessors like John Ruskin and William Morris.

Two books have now appeared on what has been hitherto a rather neglected aspect of Arts and Crafts buildings and their art work, the churches. Both books are the product of long years of study: Hamilton since before 2004 to when he presented his DPhil thesis in 2016 and Button, it would seem from his preface, from a lifetime's interest, the hinterland which all need when pursuing a successful career.

The authors each have a very different approach. Hamilton is concerned as much, if not more so, with decoration and furnishings than directly with structure, although most of the entries in his gazetteer mention building materials. Button, a civil engineer by profession, takes as his starting point structure and construction materials. Hamilton claims to have considered 220 churches, Button confines himself to 53 places of worship, of which 32 are in England including three meeting houses for the Society of Friends (the Quakers), with



fourteen in Scotland, and seven in Wales. Hamilton's final total is made up of the 145 buildings he considers directly; of these, 117 are in England, fifteen in Scotland, and thirteen in Wales. Another 75 are noted in his 29 page-length inserts, of which five are a double-page spread and one takes up three pages. In addition, Hamilton has long lists of 'Other Churches' for each of his twelve regions of England, plus ones for Wales and Scotland as individual countries. Hamilton also notes an architect's other church work in considering one of his churches: for example, when discussing Long Street Methodist church, Middleton, Lancashire (1899-1901: Edgar Wood), mentions five others, including Old Road Unitarian church, Middleton (1892) and St Aidan's mission church, Marland, Rochdale (1897), demolished in 1965 and 1960 respectively. Buildings surviving when Hamilton wrote were Temple Street Baptist church, Middleton (1889), now a children's nursery; Silver Street chapel, Rochdale (1893) then closed and up for sale; and the ill-fated First Church of Christ Scientist, Victoria Park, Manchester (1903-07), now in the care of the University of Manchester.

Of Button's examples, only thirty appear in Hamilton's book. Of these thirty, eight in England are brick-built and in the same country a further four are brick under the render. One in Scotland, St John, Easttrigg, Dumfries and Galloway, has brick arches in the arcades, but none of those in Wales appears to use brick. In total, 25 churches, chapels, or meeting houses directly considered by Hamilton have brick walls and of his inserts, nine include illustrations of brick buildings. Under a single-page discussion of the architect's work, Hamilton illustrates (page 320) St Sophia, Galston, Kilmarnock, (1884-86: Robert Rowan Anderson), a striking interpretation of Hagia Sophia in brick for a Roman Catholic church paid for by the third Marquess of Bute.

No book can ever be totally comprehensive of its subject, but it is worth drawing attention to two pieces of stone local to the writer: the War Memorial on the outside of the churchyard of St Edmund, Shipston-on-Stour (1920: Edward Adams) and the lychgate (1911: E. Adams) at St Martin, Barcheston, where there is also a 1939 memorial in the Arts and Crafts style in stone to the seventeenth-century village's tapestry weavers, led by Richard Hyckes, whose son, Gilbert, is commemorated in the north aisle of Shipston-on-Stour church.

Henceforth, this review will concentrate on the brick buildings.

To return to Edgar Wood (1860-1935), Button provides the drawings for Royal Academy Exhibition in 1904 of both Long Street Methodist church and the First Church of Christ Scientist. There is also a re-drawn plan of the latter, noting original and subsequent uses of rooms. Button devotes pages 132-134 to the Middleton church and pages 162-168 to the Manchester one. Hamilton includes neither plan nor the architect's perspective of either building but does provide a full-page colour photograph of the front of the Manchester church on page 218. The emphasis in his approach is seen from the photographs provided for each building; the stone pulpit and some internal glass for Middleton, and the surviving door plates at Victoria Park. Both authors tell the sorry tale of First Church's decline but both accounts need to be read to comprehend all the details.

A Dorset church considered by both authors is St Michael and All Angels, Colehill, a village which is now the favoured place of residence for the economically successful in the small town of Wimborne Minster. Colehill church (W.D. Caröe: 1892-93) is a brick structure with selective use of timber-framing which has rendered infill, a combination not exactly to be expected in Dorset.

Earlier by more than a decade is St Chad, Hopwas, near Tamworth, Staffs. (1879-81: John Douglas), with the same combination of materials but more original in their use. John Douglas (1830-1911) was a Chester architect who excelled in the use of black timber-framing and white infill for contemporary houses and the Chester rows. As Button points out, the church at Hopwas was meant to be *of* the new community rather than imposed *on* it. Hamilton puts Hopwas church in his 'Other Churches' category for the West Midlands but chooses to prioritise St Luke, Tittensor, Staffs. (1880-82: Thomas Roberts) as a midland example of using these two apparently contradictory materials for the external finish of walls.

By the time the Arts and Crafts Movement got going, the great chapel building programmes of the nineteenth century were winding down: they continued in a muted form to the Great War but scarcely beyond. Apart from the Long Road Methodist church at Middleton, Lancs., already noted, of churches the mainstream denominations, Button considers only the that of the Baptists at Chorleywood, Bucks., although he singles out the Society of Friends (the Quakers): the meeting houses at Bourneville, the Quaker-financed suburb south-west of Birmingham, Hampstead in north London, and Letchworth Garden City, Herts., all merit good entries



in the main text. Of the Quaker buildings, the first is brick, just like the one in Hall Green on Stratford Road, Birmingham, but the second two are brick with much render, as is the church at Chorleywood.

A final church shows each author's attitudes to architectural style in Edwardian England. St Mary the Virgin, Great Warley, Essex, by Charles Harrison Townsend has interior decoration by William Reynolds-Stephens; completed in 1904, it was under construction for two years. Harrison makes much of this church, built of brick but with the exterior heavily cemented and the interior rich in expensive materials: aluminium cost as much as silver when the twentieth century opened. Hamilton calls it 'a church of the material world'; commissioned by a stockbroker, Evelyn Heseltine; it was seen as 'a triumph of the Arts and Crafts spirit' by Peter Davey in *Arts and Crafts Architecture*, London: Phaidon, 1995. But Roger Button regards the church as firmly in the category of 'Art Nouveau', in western Europe, a largely Franco-Belgian movement with limited influence in England, even if in Scotland, some of the mature work of Charles Rennie Mackintosh (1868-1928) may just be seen as on the fringe of being 'Art Nouveau'. Mackintosh's St Matthew, Queen's Cross, Glasgow, designed in 1898 could be 'Art Nouveau' but equally, it could be inspired by the Arts and Crafts Movement: Hamilton illustrates Mackintosh's perspective drawing of the church from the south-west exhibited at the Royal Glasgow Institute of Fine Arts in 1898 and Button gives a re-drawn plan as well as seven photographs. Mackintosh was a one-off, fully cognizant of contemporary European developments, and trying to tie him to any one contemporary influence is difficult. The same might be said of Charles Harrison Townsend. Perhaps it was fitting that the obituaries of these two highly original architects shared a double-page spread in the *Journal of the Royal Institute of British Architects* in 1928.

One can nit-pick, as all reviewers tend to do. It should be Thomas Geoffry Lucas (1872-1953); the architect came from the Hitchin banking family, practised in his native town, and was recruited to design the churches at Gretna and Eastriggs for the inhabitants of the temporary towns which sprang up in the Great War for the cordite factories.

Both books have a bibliography, called 'Further Reading' by Hamilton, which divides into three sections: 'Arts and Crafts', 'Architects and Artists', and 'Churches'. 'Arts and Crafts' is sub-divided into 'Churches', 'Architecture', 'Objects', 'History and Overviews', and 'Gazetteers'. This is derived from his DPhil thesis and seems to have no books later than 2013: thus, he omits Martin Cook, *Edward Schroeder Prior – Arts and Crafts Architect*, Marlborough: Crowood Press, 2015. Prior was an important architect, whose first and last churches were in Dorset — Holy Trinity, Botherhampton, in 1887, and St Osmond, Parkstone, Poole, with Arthur Grove in 1913-16 (now St Dunstan's Greek Orthodox church) — and who in 1906-07 produced the 'Cathedral of the Arts and Crafts Movement' at St Andrew, Roker, Sunderland. Prior's on-site architect there was Randall Wells, who was, himself, responsible for the stone-built churches dedicated to St Edward the Confessor, Kempley, Glos., in 1902, and St Wilfrid, Halton, Leeds, in 1937-39, and had been the executant architect for W.R. Leathaby at All Saints, Brockhampton, Herefs. Button uses less than three pages for his 'Bibliography' but this produces a book new to this reviewer: Horton Davies, *Worship and Theology in England — From Watts and Wesley to Martineau, 1690-1900*, Grand Rapids MI: Eerdmans, 1996.

The indices to both books are good and lead one easily to the church to be investigated. Button's index is supplemented by his 'Churches Chronology' referencing the chapter where the church is discussed and illustrated. His gazetteer, with name, location giving the postal address, architect and date, notes, and a small photograph, mostly of exteriors, however, lacks this cross-reference: a second edition might usefully insert the information. Both authors give postcodes, without the rest of the address in Hamilton's case. Is this a sop to the seemingly ubiquitous Sat-Nav? But not everyone drives and no-one should have stopped remembering how to read a road atlas or a map. Talking of maps, that is Button is clear if in places a little crowded; those in Hamilton are 'arty', with fancy lettering giving far less clarity.

Both books are enjoyable, although Hamilton is more a work of reference while Button provides a cogent argument for his choice of buildings and context in respect of the architect's wider life and work. Both are essential reading for anyone examining the buildings and not merely the churches of the generation before the Great War.

DAVID H. KENNETT

## **Book Notice:** **Bricks in Reading**

Adam Sowan, *Bricks & Brickwork in Reading: Patterns and Polychromy*,  
Reading: Two Rivers Press, 2020,  
64 pages, 72 (unnumbered) colour illustrations, 4 black-and-white illustrations,  
ISBN 978-1-909747-42-5, price, paperback £15-99.

The 2010 Annual General meeting of the British Brick Society was held in Reading, followed by a town walk led by Adam Sowan in the afternoon. A member of the British Brick Society for many years, in his own words, Mr Sowan has produced

a tribute to a town made unique by its builders, and a bid to inspire you [the reader] to see the beauty of its brickwork yourself.

The book is divided into three sections; I, Bricks (pages 2-18); II, Brickwork (pages 19-52); III, A Walking Tour: Reading Town Centre & Katesgrove (pages 53-63). The second section includes a reprint of Jane A. Wight, 'Decorative brickwork in Reading and the Region: The Victorian Flowering' (pages 39-48).

The first section has comment on terminology; brick sizes; colours; a lengthy aside on chalk, with two of the black-and-white illustrations; and using the unpublished topographical research of Don Macgregor, another BBS member, the story of Collier's brickworks in Reading, complete with a colour photograph of Pell Street, where houses of red brick have white brick accents: a Collier showcase. Mr Macgregor's full account can be consulted in Reading Library.

The section on 'Brickwork' begins with a discussion of back-to-back houses in a former chalk pit. It is followed by notes on crinkle-crankle walls and their locations in Reading. Five pages (25-29) are devoted to explanations and diagrams of different brick bonds with illustrations of buildings where each bond is used. Fearsome dragons look out from pages 30 and 31; the former made all the more threatening by being photographed against the sun. The architect Alfred Waterhouse (1830-1905) lived in Reading and built Foxhill House for himself: it is now part of the Whiteknights Campus of Reading University. The house is in red brick with an all-over grey diaper. Adam Sowan produces a list of Waterhouse's more significant contributions to the buildings of Reading (pages 36-38). The section on 'Brickwork' ends with a note on conservation of bricks and a list of listed buildings in the town (pages 49-51).

Jane Wight's contribution with its illustrations is a valuable account of the impact of the humble brick on one town and the surrounding county.

The walking tour begins with the Hospitium of St John the Baptist and is followed by the Town Hall and the Market Place. It goes along Duke Street, London Road, and Church Street before heading up the hill to Katesgrove Lane and River Road, Berkeley Avenue and Garnet Street; Field Road, Russell Street, Baker Street, and Carey Street, and ascending Castle Hill and Castle Street. Accounts of notable brick buildings on Hosier Street and Düsseldorf Way, Broad Street and West Street follow, before reaching Friar Street, and finally Queen Victoria Street and Station Road. The directions are clear and the pictures indicate notable features of the buildings illustrated.

This is an attractive guide to the brickwork of a single town with a notable brick industry whose buildings show off the products of that industry. While £15-99 may seem a little steep for 64 pages, the number of colour photographs, of good definition justifies the price. Apart from the infuriating use of the ampersand in the title and sub-title, it is well written.

D.H. KENNETT

## BRICK IN PRINT

Between January 2020 and March 2021, the Editor of the British Brick Society has received notice of a number of publications on brick and its uses of interest to members of the British Brick 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 and television programmes may also be included. Unsigned contributions in this section are by the editor.

D.H. KENNETT

Clive Aslet, 'The Wolverton Hall Folly, Worcestershire',  
*Country Life*, 15 July 2020, pages 60-65.

Nicholas Coleridge, retired publisher and businessman, needed a new study, away from the main house, the early-eighteenth-century Wolverton Hall, Peopleton, Worcs., a three-storeyed red brick house with an east front of six bays (p.60) and a south front of seven bays. His 'folly' based on the concept of the details from the Elizabethan garden building at Long Melford Hall, Suffolk, which is a raised single room approached by a long external stair: the lower portion of this building serves as the gardener's shed.

The Wolverton Hall Folly, an octagonal building, was designed for Mr Coleridge, a collateral descendent of the poet. Quinlan Terry designed the two-storeyed building and used local labour for its construction: bricklayers from Evesham and Moreton-in-Marsh, contractors from Broadway, windows produced in Pershore, all places connected by the Oxford to Worcester road (the A44), while the roofers came from Tewkesbury, just south of the county boundary. The brickwork, mostly visible as Flemish Bond, used 24 specials in creating the angles and curves, not least in the polygonal buttressing. The orange-red brick is 2 inches (51mm) in depth not the more recent 3 inches (76 mm).

A stair is wrapped round the back of a chimney for the fireplace in the first-floor study and emerges to a roof-top belvedere with stunning views over the Worcestershire countryside. The ground floor houses an intimate dining room, with hidden kitchen and a discreetly-placed lavatory. Eight photographs by Paul Highnam, who also took the cover photograph, illustrate the article.

For a brief description of Wolverton Hall see A. Brooks and N. Pevsner, *The Buildings of England: Worcestershire*, New Haven and London: Yale University Press, 2007, page 521.

Members of the British Brick Society interested in architectural matters will also find John Goodall, 'Shouldering the Burden' (pp.50-55) of interest. The article is essentially a collection of twelve photographs of caryatids, the first one of which is of four supporting terracotta figures at St Pancras parish church (1819: William and Henry Inwood).

John Blackwell, 'Bricks for Ouse Valley Viaduct',  
*Sussex Industrial Archaeology Newsletter*, 2020, pages 6-9.

An examination of the sources of the bricks used in the Balcombe Viaduct to the London to Brighton railway line, erected between 1838 and 1841. Many of the bricks were made from clay dug near to the viaduct, but some were shipped from elsewhere in East Sussex. Using local newspapers, via the on-line *British Newspaper Archive*, the author makes a strong case for local manufacture and suggests that shipment from slightly further afield in Sussex utilised the recently canalised River Ouse; the river is crossed by the Balcombe Viaduct. A wharf was established near to the viaduct as is reported in the *Brighton Gazette* in September 1841 and June 1842, the latter recording two barges, the *Navigator* and the *Oliver*, used to transport the bricks. The author thus disputes the claims that have been made that bricks for the viaduct were imported from Belgium (or the Netherlands). The rate of manufacture is compared with that of the bricks for a viaduct in Essex where 50,000 bricks were moulded over six days from Monday morning to Saturday night in June 1839.

Margaret M. Condon, 'The Date of the Burial of Bridget, Daughter of Edward IV: A Revised Chronology',  
*The Ricardian*, 30, 2020, pages 101-111.

Bridget, the youngest surviving daughter of Edward IV and Elizabeth Woodville in 1484, had been born on 10 November 1480 and took the veil at a comparatively early age in the closed convent of Dominican nuns at Dartford, Kent, the buildings of which after the Reformation were converted into a house for Henry VIII; the latter was partly brick-built.

The date of Bridget's death, however, has been disputed, with both before 1513 and in 1517 frequently noted. But the Account Book of the chamber of Henry VII, a private account reserved for expenditure for non-state purposes, under Sunday 19 December 1507, records the purchase of a marble stone, costing 46s. 8d., a considerable sum for such an article, to be laid in the choir of the nunnery church, a place of honour for a royal nun. Providing a gravestone would clearly date her death, aged 27, to 1507.

The article reproduces an engraving of 1773 of Dartford Priory and manor house.

Matt Davis, 'Some Twenty-First Century Churches on the Isle of Wight'

*The Chapels Society Newsletter*, 76, January 2021, pages 15-22.

David Lloyd's revised edition of *The Buildings of England: The Isle of Wight* was published by Yale University Press in 2006. The four church buildings considered in the article were all completed after that: Cowes Spiritualist church in 2009, the first phase of Newport Congregational church in 2001, and both Freshwater Methodist church and Our Lady and St Wilfrid, Ventnor, for the Roman Catholic Church in 2014. Each chapel is illustrated — that in Freshwater on the front cover — and full consideration is given to both the historical and the denominational contexts. The buildings in Cowes and Ventnor follow problems of subsidence at the previous places of worship of these congregations.

Two of the buildings are of brick. Yellow brick was used at Freshwater for the two-storeyed structure for social activities, the upper floor of which is currently the worship space pending the construction of a twelve-sided chapel in front of the new structure. The red brick building in Cowes has stone quoins and a stone surround to the large window in the tall entrance wing, which abuts the pavement. The worship space is behind this. The outer walls of the buildings in Freshwater and Ventnor have been rendered. The former has a most striking roofline, two mono-pitched roofs with the lower one meeting a wall so as to allow windows to the rooms on the upper floor.

John Goodall, 'Playing at chequers: Chequers Court: Buckinghamshire, Part I',

*Country Life*, 6 May 2020, pages 62-67.

John Goodall, 'An epoch-making idea: Chequers Court, Buckinghamshire, Part II',

*Country Life*, 13 May 2020, pages 68-73.

Chequers Court has been much in the news lately. Most recently, it was where the current prime minister, Boris Johnson, spent his recuperation from Covid-19. A year before, the house was the location for Theresa May to call the cabinet together for a discussion of the prospective arrangements for leaving the European Union, television pictures from which gave a rare glimpse of the interior of the Elizabethan, brick-built house. Actually, what the cameras looked down upon as the cabinet chatted and drank coffee was the infilled central courtyard of the late Tudor house, which had been created as a double-height room by Reginald Blomfield (1856-1942) for the Anglo-American couple, Arthur and Ruth Lee, in 1909-10 (see I, pages 64 and 65, and II, pages 70-71).

Mr and Mrs Lee were originally tenants of the house but were able to purchase it and the accompanying estate in 1913. It was in the year before that the couple, by now clearly going to be childless, conceived the idea of bequeathing the house to the nation for the use of the prime minister. The protracted negotiations for this were accomplished by December 1920 and the house and grounds became the property of the United Kingdom on 1 January 1921, complete with an endowment of £100,000 from Viscount and Viscountess Lee: Ruth's father was a prominent New York banker. (In 2021 money, the endowment would have an equivalent minimum of £35,000,000.)

Using Ruth Lee's diaries, John Goodall's article details the negotiations for the lease in 1909-10, the improvements in 1910-12, and the negotiations for the state to acquire the house. Due to the generosity of Lord and Lady Lee, Chequers Court has served British prime ministers well in the intervening one hundred years.

Jeremy Musson, 'Character, History and Style: Columbine Hall, Suffolk',  
*Country Life*, 29 April 2020, pages 36-41.

The setting is idyllic, a timber-framed manor house on a brick-lined platform within a wide moat. Two major points of brick interest. One is a gabled addition of the 1820s to the fourteenth-century house: its warm orange brick is set off by yellow brick inserts. The other is a massive four-fireplace chimney and accompanying stacks, inserted in the sixteenth century: a perfect example of William Harrison's 1587 observations on change in the century.

Jeremy Musson also examines the descent from manor house, probably of the judge Robert Hotot from 1377 to 1402, via the Tyrells in the early sixteenth century, to tenanted farmhouse from 1754 to 1918 and later, although freehold, remaining a farmhouse for much of the twentieth century. Since 1983, it has been the home of two writers, Huw Stevenson and Lesley Geddes-Brown. Their writing office is illustrated on page 40.

Jeremy Musson, 'Stairway to Heaven: Nithurst Farm, West Sussex',  
*Country Life*, 5 August 2020, pages 76-81

A new house in a rural setting, Nithurst Farm is brick-faced to a reinforced concrete structure. Orientated north-south with the long sides to east and west, it rises in a series of steps to three storeys, the top one with the south-facing master bedroom taking up the full width of the house. The inspiration of this house, set in a deep valley and designed by an architect for himself and his family, is in part an echo of Vanburgh's 1713 belvedere at Claremont House, Surrey.

Much of the interior on the ground floor is exposed concrete but the exterior suggests the use of Diocletian windows, although the interior photograph of the south-facing drawing room makes it clear that the actual glass area is rectangular. The south-facing windows in the drawing room are floor to ceiling, those on the ground floor of the west and east sides are slightly raised. Thermal insulation is enclosed between the concrete and the bricks. The exterior is in buff brick in Stretcher Bond but with the hemispheres of the windows in grey brick in Header Bond. There are wide joints in lime mortar. Each of the two upper floors is stepped back on the long sides by the width of a brick.

Jeremy Musson, "'This enchanting spot": Sheringham Hall, Norfolk, part I',  
*Country Life*, 13 January 2021, pages 46-53.

Jeremy Musson, 'The apogee of English taste: Sheringham Hall, Norfolk, part II',  
*Country Life*, 20 January 2020, pages 68-73.

Sheringham Hall was built for Abbot and Charlotte Upcher to a design of 1812 by John Adey Repton (1775-1860), the son of the landscape gardener, Humphrey Repton (1752-1818) and built between 1813 and 1819: the Red Book, by the father, for the landscaping of the grounds, which are now in the care of the National Trust, was the result of five visits in June 1812. The younger Repton insisted that the house would be a 'Gentleman's House' in the style of a 'Modern Italian Villa', having compared the often wild North Sea to the usually somewhat calmer waters of the Bay of Naples.

Sheltered by a ridge between the majority of the park and the now receding cliffs, the brick house has the garden front (I, pages 46-47) to the south and its entrance front (I, page 48) to the east. A view of the west front (II, page 70) demonstrates the irregular building footprint of Sheringham Hall. The garden front is five bays wide with the three central ones recessed behind a three-bay loggia on the ground floor. The outer bays have hipped roofs. The west front of three bays with the central one pushed slightly forward and capped by a pediment containing the Upcher arms; there is a porch with paired Tuscan columns. The east side of the main block echoes its companion but the central bay protruding further and having a five-light bay window to the ground-floor. Both the Tuscan columns of the porch and the bay window of the library-living room echo features of the south front. The library-living room occupies the centre of the east side of the house.

Despite a thriving brick industry in north Norfolk at the beginning of the nineteenth century, the bricks are pale grey-buff gault bricks from Lincolnshire: they came by sea. The timber used in the 1810s was bought in Hull, and the roof was composed of dark Westmorland slate.

Despite the shell being completed and roofed when Abbot Upcher died in 1819, his wife could not contemplate living in the house and remained in the much smaller house already existing on the estate until her death in 1857. The task of finishing Sheringham Hall to the younger Repton's designs fell to Abbot and Charlotte's son, Henry Upcher, who had married in 1838. The loggia was added for him as were the rosewood bookcases in the library-living room.

Beside the house are a series of buildings required for a 'Gentleman's House' in the age of Jane Austen: coach house and stables and necessary spaces for farrier, garden equipment, and other estate buildings. These was not erected until 1839-40 but employed totally different materials: local knapped and squared flint with local buff brick dressings (I, page 48).

Henry Upcher's great-grandson, Tom Upcher, was the last of his line and in 1970 proposed that the house and grounds be taken on by the National Trust, which it declined. However, with Whilhelmina, Lady Harrod and Mildred Cordeaux strongly urging the estate's acceptance, this was effected in 1986: a subsequent legacy of £1,000,000 from Miss Cordeaux provided the endowment for the upkeep of the estate and gardens.

The second article considers the improvements to and the restoration of features in the house made by the leaseholders since 2008, Paul Doyle and Gergely Battha-Pajor, two men who had made their fortune in the City of London and still work there.

J. Edward C. Peters, 'The Meeting Room, Bank Street, Malvern, Worcs.',

*The Chapels Society Newsletter*, 74, May 2020, pages 6-9.

The Exclusive Brethren built their meeting room on land attached to the house of George Preen (*d.* 1904), of Roselle House, Bank Street. The land including the site of the meeting room had been purchased by Mr Preen in 1845 and Roselle House built about five years later. The meeting room is a two-storeyed brick building, used as a workshop, plain windows to the north, but more elaborate ones to the south: the centre one on this side being larger with a semi-circular head. Among his commercial activities, Mr Preen was furniture broker and this was presumably to allow furniture to be moved in and out. The meeting room was on the ground floor of this building. An extension was built, possibly in 1894 when a new mortgage was taken out, specifically to provide 'a room for religious purposes'. A porch with a boiler house below was also added between 1885 and 1904; the north side of the extension was presumably altered at the same time to provide ingress and egress for the upper floor.

The article has photographs of the north and south sides of the building, reproduces a section of the 1841 tithe map, and gives plans of both the site and the building.

Sue Scott-Buckleuch, 'The Richard III Tower at Carlisle Castle',

*Ricardian Bulletin*, December 2020, pages 23-24.

Geoffrey Wheeler, 'Carlisle and Colyton Boars',

*Ricardian Bulletin*, March 2021, pages 20-21.

When ruling the north of England for his brother, King Edward IV, Richard, Duke of Gloucester (the future King Richard III), attended to the defences of Carlisle Castle, then an important fortress on the West March: among Richard's positions was Warden of the West March. On the west wall of Carlisle Castle a brick tower was built at his instigation. A stone-built basement and a ground floor and a first floor, both mainly of brick, survive, all, however, in a perilous condition. As a volunteer guide, Sue Scott-Buckleuch was given special permission to investigate the state of the tower. Her article examines the present condition of the remains and is illustrated by six photographs, one showing the now largely-eroded boar badge of Duke Richard on the south wall of the tower. The badge was made from a single brick.

Geoffrey Wheeler's follow up article illustrates the decline in the quality of survival of the Carlisle boar. A drawing of 1896 shows the animal distinctly and virtually complete, although the draughtsman concedes it had been mutilated, so the degree of damage is uncertain. Photographs of July 1968, Summer 1978, and 2010 show how the pig had become less distinct.

## ***British Brick Society Information*, 148, September/October 2021**

As there will only be two issues of *British Brick Society Information* in 2021, texts and illustrations of articles and notes for inclusion in *British Brick Society Information*, 148, September/October 2021, should preferably be with the Editor by Friday 23 July 2021 at the latest, so as to send to the printer early in September 2021. It would be much appreciated that sufficient is received so that any prospective article by the Editor should occupy no more than 10 pages out of a 56-page issue.

Illustrations for *BBS Information*, 148, September 2021, will be reproduced in colour if a sufficient proportion of those submitted are colour photographs. Of the four prospective items known to the Editor, three have colour illustrations and one has only black-and-white line drawings.

The Editor of *British Brick Society Information* would welcome notice of any contribution and some indication of its length and the number and type of illustrations on or before the society's AGM on Zoom on Saturday 19 June 2021, which because of current restrictions and the continuing uncertainty of when they might be lifted, is replacing that which had been scheduled to be held on the same day at Bridport, Dorset.

Email contact to [davidkennett510@gmail.com](mailto:davidkennett510@gmail.com) please for all future communications and submissions.

## **Issues of *British Brick Society Information* in 2022 with a Regional Focus**

In view of the impending Annual General Meeting in Lincoln on a Saturday in June 2022, the Editor of *British Brick Society Information* would like to include in one or both of the first two issues of *BBS Information* in 2022 articles about brick in Lincolnshire and adjacent midland counties, without at the present moment being specific as to which of the two issues to use for this purpose. The adjacent midland counties are those which formed the territory of the Five Boroughs — Derby, Leicester, Lincoln, Nottingham, and Stamford. It is probable that a completed article on 'Castle, Court and Prison: Brick Buildings at Lincoln Castle' will be included in one of these two issues: the Lincoln Castle buildings formed the *raison d'être* for suggesting that the British Brick Society hold an Annual General Meeting in the city.

Contributions on Lincoln, Lincolnshire and the adjacent counties are invited. If a member has even the shortest of pieces relating to brick or a brick building in Lincoln, Lincolnshire, and the adjacent counties, the Editor of *British Brick Society Information* would welcome notice of the contribution and indication of its length and number of illustrations, and whether these are in colour or black and white, by Saturday 25 December 2021 and the text with the illustrations by Friday 15 April 2022. Earlier submission is encouraged.

Would members who have contacted the editor with suggestions for prospective contributions, please contact him again at the new email, [davidkennett510@gmail.com](mailto:davidkennett510@gmail.com); thank you.

# BRITISH BRICK SOCIETY MEETINGS in 2021

Saturday 19 June 2021

By ZOOM at 10.30 am

*Annual General Meeting*

Due to uncertainty over the on-going Covid-19 restrictions on movement and hospitality, this replaces the Annual General Meeting scheduled to have been held in the Committee Room, Bridport Town Hall, Bucky-Doo Square, Bridport, Dorset, on the same date.

(Date is before all restrictions on multi-person activities *might* finally be removed.)

The tour of town — Town Hall; rope factory; seaside buildings at West Bay — has been postponed to a later year.

**Contact:** Mike Chapman, [pinfold@freenetname.co.uk](mailto:pinfold@freenetname.co.uk)  
8, Pinfold Close, Woodborough, Nottingham NG14 6DP

Saturday 25 September 2021 (Subject to Covid-19 restrictions not being in place.)

*Autumn Meeting*

Banbury, Oxfordshire

Tour of town: Horton Hospital, Public Library, Commercial buildings with polychrome brickwork, shaped and special bricks on Victorian houses, modern treatment of rear extension to stone-fronted bank, terracotta-faced food store, brickwork of rear of shopping mall.

Possible afternoon visit to view exterior of Hanwell Castle, an early-sixteenth-century brick house.

**Contact:** David Kennett, [davidkennett510@gmail.com](mailto:davidkennett510@gmail.com)  
7, Watery Lane, Shipston-on-Stour, Warwickshire CV36 4BE

Planning for possible visits in 2022 is in progress and dates will be announced in the next mailing: it is hoped to arrange a visit to at least one and possibly both of Alcester and the industrial area of Worcester, and to include two visits to brickworks in the 2022 programme: due to Covid-19 restrictions no brickworks is open for works visits in 2021. Visits to Tewkesbury and Cardiff Bay are being planned for future years.

At the 2019 Annual General Meeting in Ripon it was agreed to hold the next northern Annual General Meeting in Lincoln; this will now be held on a Saturday in June 2022.

All meetings are subject to attendance at the *participant's own risk*. Whilst every effort is made to hold announced meetings, the British Brick Society is not responsible for unavoidable cancellation or change.

*Full details of future meetings will be in the subsequent BBS Mailings*  
*The British Brick Society is always looking for new ideas for future meetings.*  
*Suggestions of brickworks to visit are particularly welcome.*  
*Offers to organize 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.