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# EDITORIAL: CARBUNCLES AND CLASSICISM

Towards the end of last year two television programmes dealt, critically, with the state of modern architecture. The Prince of Wales had become well known for his outspoken critiques and was given the chance to illustrate his views with a rapid tour of a London blighted by the 'monstrous carbuncles' which are the modern movement's contribution to the city skyline. Shortly afterwards, the architect Quinlan Terry - who, I suppose, but for his years would count as an archetypal 'young fogey' - was also given the opportunity to argue in favour of a new classicism in place of the carbuncles. Many readers of these pages will be familiar with Terry's work, perhaps through the warm praise given to the new King's Walden Bury, Herts. (1971, with his mentor Raymond Erith) by the late Alec Clifton-Taylor in his contribution to English Brickwork (1977), co-authored with Ronald Brunskill. Despite a few quirks, the building is a fine example of what to do when rebuilding a country house in the Home Counties, and its handmade red bricks are indeed a delight.

Terry's criticisms of many modern materials and his advocacy of traditional materials are vigorous and (with reservations) welcome. Even apparently small matters like the use of lime mortars instead of cement, thus obviating the need for expansion joints at regular and frequent intervals, are important, and members of this Society will surely welcome the emphasis on brickwork and its particular qualities.

All well and good. But Terry wishes to go way beyond this. Classicism, he insists, is the alternative to the modern movement. And by 'alternative' he does not intend merely a different choice. Rather, it is the only style which ought to be used, for buildings of all types. In the television programme, 'classicism' was defined as, broadly, the Five Orders - Doric, Ionic, Corinthian, plus Tuscan and Composite - though the definition was not dwelt upon. Understandably so, since there was an urgent need here for quickness of the tongue to deceive the eye. For shortly afterwards, the term was seen to include not only ancient Egyptian architecture (Well, it's sort of classical, isn't it?), but also the medieval church and the timber-framed houses of Dedham! More important, in terms of Terry's quasi-theological argument, the ancient Temple at Jerusalem was 'really' a classical building: hence classicism is God-given and we need to recover it along with our traditional Christian beliefs. (This, a theme already developed by Terry in a prize-winning essay reprinted in Architectural Review, 173, 1032, February 1983, is an interesting reversal of Pugin, for whom Gothic, or 'Pointed', architecture was truly Christian. Pugin, one would have thought, had the slightly stronger case, though neither is convincing. At least Gothic developed within medieval Christendom - even if it did so a millenium or so after Christianity's beginnings! Terry, on the other hand, has to maintain a discreet silence about quite how polytheistic Greece and Egypt fit into the picture; and of course the Jerusalem Temple was a Jewish, not a Christian, building.) Apart from the historical dubiety of the claim, this kind of architectural theologising also lands us straight in an aesthetical version of Plato's Euthyphro problem. This is not the place for a philosophical disquisition, but basically it comes down to this: if classical architecture should



be followed just because God chose it by divine fiat (not, that is, for its intrinsic qualities) then the choice seems arbitrary: He might have chosen something else. If, on the other hand, God chose it because of its intrinsic qualities, then those very qualities ought to be enough to recommend it without the need for divine command.

The real weakness of Terry's position, however, and the one more relevant to the concerns of this publication, is the severe selectivity of examples chosen. If by 'modern' architecture we mean not that belonging to a particular school or movement (to the 'International Modern', say) but mean by it simply the architecture of recent decades, then it becomes imperative to note that much architecture has been put up in that period which does not belong either to such movements or to the classical tradition. Over the past few years, examples have been mentioned, and sometimes illustrated, in these pages. All, of course, have been of brick: W.M.Dudok's Hilversum Town Hall, for instance, with its progeny in this country at Hornsey, Greenwich, and elsewhere; Sir Giles Gilbert Scott's churches at Northfleet, Kent, Luton, Beds., and Golder's Green, London; Sir Albert Richardson's St Christopher's Church at Luton and his Bracken House in London; Charles Holden's stations for the London Underground; Andrew Darbishire's Hillingdon Centre in London. To these could be added many more: Scott's industrial work, for example, at the Guinness factory in Park Royal or his Battersea Power Station; the 'Expressionist' churches of Welch, Cachemaille Day, and Lander at Eltham and elsewhere; or more recently some of the work of Trevor Dannett, or the firm of Darbourne and Darke, and many more. The latter examples, indeed, remind us that there is the whole vernacular tradition of brick building, revived by such architects as M.H.Baillie Scott or C.R.Ashbee around the turn of the century. Again, there is the Gothic tradition, which may have had its distant roots, via the Romanesque, in (Roman) classicism, but in its exploitation of the pointed arch and its development of window tracery moved in an entirely different direction. In parts of Europe, from the Low Countries to Byelorussia, much of this was in brick, even if in England the number of important medieval brick buildings is relatively small.

The lesson is clear: whether we are concerned with building in brick or in other materials, there are precedents for fine building which lie quite outside the classical tradition: Gothic, vernacular, 'modern'. It is easy enough to point to Ipswich's 'Grand Piano', the new Lloyd's Building, Centrepont, or the Nat-West Tower as examples of what many of us do not want to see repeated. It is quite another thing to insist that a revived classicism is the only - or even the most desirable - alternative to such buildings. There is no experience like experience, and one of the most rewarding is to sit on one of the benches opposite the Hilversum Town Hall on a sunny spring day; it is enough too to shatter any all-out condemnation of modern architecture. By all means let us make full use of traditional materials - and for economic reasons this will normally mean brick rather than stone - but let us also be free to follow the examples of notable architects like those mentioned in the previous paragraph and create buildings which are both pleasant to use and enjoyable to look at but which are not necessarily within the classical tradition. There is a place for classicism, of course, but that place is not everywhere. There is room too for an effective via media between the carbuncles and classicism.

Terence Paul Smith  
Editor

# LOESSIC BRICKEARTH AND THE LOCATION OF EARLY PRE-REFORMATION BRICK BUILDINGS IN ENGLAND — AN ALTERNATIVE INTERPRETATION

*Ron and Pat Firman*

In a thought-provoking paper, Ian Smalley<sup>1</sup> made generalisations about the sources of raw material for early bricks which were so radically different from our own interpretations<sup>2</sup> that we felt compelled to re-examine our notes, revisit the sites to check our original observations, and visit as many additional pre-Reformation brick buildings as possible to improve our data base. After having looked at about 70% of pre-Reformation brick buildings known to us including over 90% of those built before 1450 (see Appendix I), we have modified our previous opinions in the light of new evidence, but our interpretations remain radically different from those of Professor Smalley. He concludes that loessic brickearth 'was the major source of material for early bricks and that its geographical distribution influenced the siting of the early brick industry and the location of early brick buildings', whereas we stand by our previous assertion<sup>3</sup> that most early medieval bricks 'were made from fine grained sticky ... muds and clays', which were certainly not brickearths as Smalley defines the term. Admittedly, some of these sediments may incorporate some primary or secondarily deposited loess but not sufficient to be called loessic brickearth.

Smalley's hypothesis can be tested in two ways: first, by comparing the known distribution of early brick buildings and brick-yards with that of brickearth; and secondly, by examining the bricks themselves to ascertain whether their physical characteristics are consistent with their having been made from loessic brickearth. Both techniques are fraught with difficulty, the former principally because the extent of loessic brickearth deposits is not fully known and the latter because of uncertainties about the dates of some bricks and because of ambiguities in interpreting the nature of the raw material from the fired brick. In spite of these problems, and the sometimes equivocal deductions which can be drawn from incomplete evidence, we maintain that the overwhelming weight of evidence indicates that loessic brickearth was rarely used prior to 1440 and was an uncommon localised source material for at least a hundred years after that date.

In the following paragraphs we outline the evidence and suggest an alternative explanation for the distribution of early brick.

## Definitions

(i) Brickearth and Brick Clay. Sadly, the terms 'brickearth' and 'brick clay' have been so misused by so many authors, ourselves included, that we now prefer not to use them, substituting wherever possible lithological or stratigraphical nomenclature. For the purpose of this paper, however, we accept Smalley's definition of 'brickearth' and welcome his introduction of the term 'loessic brickearth'. Brickearths whose loessic genesis has been disputed are also discussed in this paper although one of these (the Norwich Brickearth) is omitted from fig.1. The term 'brick clay' is not used, although the many clayey deposits used for brickmaking during the Middle Ages are discussed.

cont./

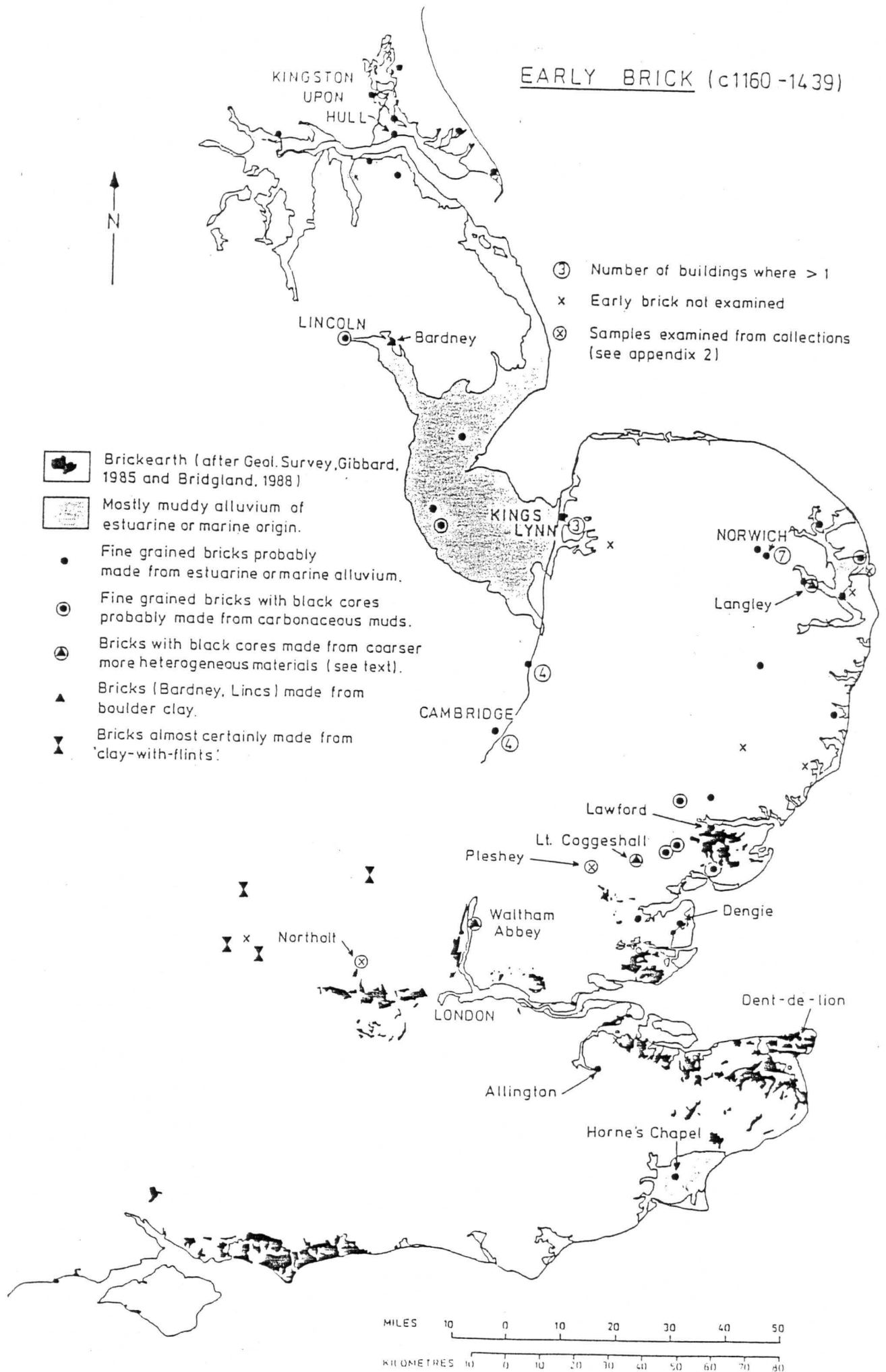


Fig. 1

(ii) Early Brick. If the distribution of loessic brickearth is to be compared with that of 'early brick' it is essential that the latter term be rigorously defined. Like Smalley, we exclude the Roman period from these discussions and concentrate on the medieval period, which for us starts with the Polstead and Little Coggeshall bricks in the latter half of the twelfth century (and not from 1400 as implied by Table I in Smalley's paper). Clearly medieval brick history begins at c.1160, and to ignore the period 1160-1399 and its fifty or so surviving buildings is unacceptable. In contrast, the choice of a date ending the 'early brick' phase is necessarily arbitrary and subjective. In 1967 we suggested that 1440 was significant<sup>4</sup> since thereafter new materials, notably boulder clay (glacial till), began to be widely used, and red-burning raw materials were favoured almost to the exclusion of other colours. After 1440, moulded bricks became more elaborate and diaper work was widespread. 1440 therefore, seems to be a convenient date to mark the beginning of the late pre-Reformation period of English brick. In this article, therefore, the term 'early brick' is restricted to the period c.1160-1439. In a later paper we plan to discuss the raw materials which were used during the late pre-Reformation period 1440-1540.

### The Geographic Distribution of Loessic Brickearth and Surviving Brick Buildings

Fig.1 shows the distribution of brickearth with probable loessic affinities as depicted on the IGS ten-mile map of Quaternary deposits, supplemented by information from Gibbard<sup>5</sup> and various Geological Survey one-inch sheets. Norwich Brickearth is omitted because its loessic origin is disputed. Loessic brickearths in small patches are more widespread than can be shown on a map of this scale or indeed on published GS one-inch maps.

Correlation with the distribution of surviving pre-1440 brick buildings is not as good as might be expected if loessic brickearths were the major source materials. Paradoxically, although both loessic brickearth and early brick buildings are mostly restricted to eastern and south-eastern England, within this region early brick is rare or absent in areas where loessic brickearth is abundant but quite plentiful in areas, such as Humberside and the Fens, where brickearth (whether loessic or not) has not been recorded. Only in Essex and Suffolk (and east Norfolk if Norwich Brickearth is considered) is there a reasonable correlation, though even here loessic brickearth is relatively uncommon whereas early brick is relatively commonplace.

To some extent fig.1 gives a false impression in that only surviving buildings are shown. For example, in the Thames Valley pre-1440 brickwork in Eltham, Greenwich, and Shene palaces, known from excavations or from documentary evidence, was situated where loessic brickearth was locally available. But even if buildings now destroyed are included, the correlation between loessic brickearth and early brick does not provide compelling evidence of major use of such brickearth before 1440.

### Evidence from the Bricks Themselves

The case is further weakened by detailed studies of the surface features, colour, internal structure, texture, and mineralogy of pre-1440 bricks. As Smalley<sup>6</sup> points out, loessic brickearths have the advantage of a 'high proportion of quartz silt and this tended to give the bricks dimensional stability - the shrinkage problem was avoided'; but if there is one feature which characterises almost all pre-1440 bricks it is their lack of 'dimensional stability'. The finer textured, more homogeneous, bricks usually show evidence of having distorted under their own weight when drying and further



distortion frequently occurred during firing, resulting in many mis-shapen and cracked bricks.

There are, however, other substantive reasons for claiming that none of the surviving pre-1440 bricks which we have examined were made from loessic brickearth. First, the coarser, more heterogeneous bricks (fig.1) are a very varied group, none of which could be made from loessic brickearth unless a large amount of coarse sand and in some cases pebbles (!) were added. Furthermore, several of these heterogeneous bricks (including those at Waltham Abbey, close to the extensive Lea Valley brickearths) have black cores, virtually ruling out loessic brickearth as the basic ingredient. Secondly, the fine-grained bricks, though superficially resembling some brickearth bricks, have many features which distinguish them from this group, including:

- (i) generally finer grain size matrices indicative of clay rather than silt;
- (ii) frequent occurrence of laminations typical of tidal mud;
- (iii) lack of sand grains adhering to the surface suggesting that water rather than sand was used during moulding (i.e. they were slop moulded rather than pallet moulded) as with brickearth bricks;
- (iv) abundant deep impressions of straw, etc. acquired during moulding and drying indicative of much stickier clays than brickearths;
- (v) indications from the shape of the bricks that clay frequently oozed out from under the mould or frame in a way that brickearth does not;
- (vi) frequent 'cut marks' on stretchers showing that rugosities had to be cut off the green bricks when they were 'leather hard' - a feature not observed in brickearth bricks;
- (vii) internal fabrics indicative of much greater plasticity than brickearth.

Additionally, a few of these fine-grained early bricks also have black or brown cores, even when well fired, a feature entirely absent from brickearth bricks because of the paucity of organic carbon, pyrite, or both. Early fine-grained bricks also tend to be harder, denser, and less porous than brickearth bricks although without laboratory tests this is a more subjective judgement. Finally, it is worth reiterating our 1967 observation<sup>7</sup> that many pre-1440 bricks exhibit colours which range from reddish brown when underburnt through yellowish-orange to greenish yellows on vitrification. Whatever the source of these bricks, they were certainly not red-burning brickearths as suggested by Smalley.

#### What Were pre-1440 Bricks Made of?

Dobson's account of mid-nineteenth-century brickmaking<sup>8</sup> shows that, although sophisticated techniques were used locally, most brick-makers were utilising methods which were little different from those in the Middle Ages. Geological Survey memoirs published in Victorian times indicate a great variety of superficial sediments which were still being dug, tempered, and moulded by hand. Among these deposits were late glacial to recent marine, estuarine, and lacustrine alluvium; interglacial fine-grained sediments; clay-with-flints; boulder clay (glacial till); silts and muds dredged from rivers and meres and a wide range of solifluction products overlying older formations, such as the London and Kimmeridge Clays, any or all of which could have been used for early bricks. Various lines of evidence, outlined below, suggest that in fact all were



used before 1400, particularly muddy alluvium which appears to have been the most popular.

As shown on fig.1, the surviving fine-grained homogeneous early bricks are in buildings on or near the muddy alluvium which characterises much of Humberside, the Fens, salt marshes, and tidal rivers in Eastern England. Those furthest from a suitable marine or estuarine alluvium are either further upstream (as at Cambridge) or near to clayey lacustrine alluvium (e.g. in the Vale of York and at Marks Tey west of Colchester).

In addition to this strong geographical correlation, the physical characteristics of these bricks are consistent with local muddy alluvial sources. Also at Hull,<sup>9</sup> Boston,<sup>10</sup> Caister Castle,<sup>11</sup> St Olave's Priory,<sup>12</sup> and Leiston Abbey,<sup>13</sup> etc. there is supporting documentary or other archaeological evidence which indicates that the raw material was dug from nearby fens, river banks, and marshes where alluvial clay abounds.

Most of the superficial deposits, other than brickearth, which were worked in the last century were clays, not silts or loams.<sup>14</sup> Few modern grain size analyses have been published, but that at Broomfleet, west of Hull,<sup>15</sup> illustrates how different such clays probably were from loessic brickearths. Whereas the latter, by definition, have less than 30% by weight of clay minerals and a characteristic particle-size of 20-60  $\mu\text{m}$ , the Top Red, currently worked at Broomfleet, has about 41% clay and virtually no particles in the range 30-60  $\mu\text{m}$ . Remarkably, 80% by weight has a grain size below 10  $\mu\text{m}$  with a further c.18% bigger than 60  $\mu\text{m}$ . On weathering, this natural mixture of clay and fine sand is near ideal for moulding, illustrating that clays can be just as suitable (or better) for moulding as brick-earth. No doubt, similar clays were dug from the banks of the Humber when brickmaking was first established in the early years of the fourteenth century at Hull.

Similarly in the Fens, red-burning superficial 'buttery clays' were widely dug in Victorian times and were likely to have been used earlier. These clays were, however, more plastic than those of Humberside, possibly because they were richer in smectites (the most plastic group of the clay minerals) derived from the Jurassic clay hinterland. Many of these 'buttery' clays also frequently contained high concentrations of dispersed organic carbon<sup>16</sup> making them easier and cheaper to fire than their loessic brickearth counterparts.

Throughout Humberside and the Fens surviving early brick is dominantly red, but on the eastern margin of the Fens at Ely, and to a lesser extent King's Lynn, yellow bricks occur in fourteenth- and fifteenth-century contexts, suggesting that weathered Kimmeridge Clay was beginning to be used. Subsequently this formation supplied most of the yellow bricks from which much of Ely is built.

In contrast to the uniformity of Humberside and the Fens, fine-grained early bricks in East Anglia, Essex and South-East England are very varied in colour, suggesting chemically varied localised sources. Eighteen unpublished analyses of medieval bricks from Norfolk<sup>17</sup> confirm this variability. For example, the weight percentage of CaO ranges from 1-22% with one sample (Drayton Lodge, 1437) being as high as 30%. Locally high concentrations of lime may result from the incorporation of chalk in head deposits, calcareous fossils, or precipitation of calcium carbonate from water draining the chalk. These clays produced bricks which are dominantly yellowish in hue, flux easily, and have a small vitrification range, resulting in many distorted bricks of varied colours. By no means all the sources of raw materials used have been identified but, of those that have, muddy alluvium is the most common. Possibly some of the yellow bricks in South East England may have been made from a natural mixture of loess and soliflucted chalk found in hollows in the chalk formation.

Alluvial clays, both lime-rich and lime-poor, were not the only

materials used before before 1440, for in Oxfordshire clay-with-flints was almost certainly used for tile-making as early as 1312 (near Watlington) and for bricks at Shirburn Castle about 1377. Documentary evidence of tileries in the parish of Nettlebed (including Crocker End) occurs in accounts for Wallingford Castle (1365) and Abingdon Abbey (1422-3, 1428-9, and 1436-7). 'Brykes' for Stonor House were recorded in accounts for 1416-17.<sup>18</sup> Elsewhere in the Chilterns the heterogeneous texture of several early bricks (fig.1) suggests the early use of 'clay-with-flints'.

Less certainty exists about the even earlier, but very sophisticated, moulded bricks at Little Coggeshall, Essex (c.1160-1220). Gardner<sup>19</sup> suggested that they were made at Tilkey, on the outskirts of Coggeshall. The kiln discovered here in 1845 is, however, on London Clay, whereas texturally Little Coggeshall bricks are consistent with their having been made from a mixture of London Clay and the overlying Kesgrave Sands. Since nearby solifluction deposits (i.e. head) consist of natural mixtures of these materials this seems a more likely source. This does not, however, explain the black cores which typify most Little Coggeshall fully fired bricks. Although too rapid drying and heating can cause black cores, an organic-rich carbonaceous deposit is the most common cause and, paradoxically, most head deposits contain little organic matter. If dispersed carbonaceous matter is the cause of the black cores in these bricks then it seems most likely that the raw material was dug from the nearby valley bottom where the head has been resedimented in stagnant anaerobic conditions. A similar source might account for the later brick (c.1370) at Waltham Abbey where geological mapping has shown an abundance of head resting on London Clay. More research is needed to identify the source of bricks at Langley Abbey, Norfolk (fig.1), but here again soliflucted material seems most likely.

Finally, towards the end of this post-Conquest early brick period, boulder clay (glacial till) began to be used, the earliest documentary record being at Edlington Moor, Lincs., where it was used to make bricks for Bardney Church in 1434,<sup>20</sup> for Tattershall Castle,<sup>21</sup> and for other buildings completed after 1439.

### Indigenous or Imported?

Evidence that some bricks were imported from the continent is well documented but doubt exists about the importance of this trade and the countries involved. Some of the bricks we have examined, particularly small bricks close to continental sizes (e.g. Horne's Place Chapel, Kent) may have been imported, but if so they - like the indigenous English bricks - were not made from loessic brickearth.

### Why Were Loessic Brickearths not Extensively Used before 1440?

In answer to this question we stand two of Professor Smalley's arguments on their heads, by asserting that most English brickearths were far from ideal for the medieval brickmaker and that continental immigrants were largely unfamiliar with loessic brickearths.

Although they had the advantage of not shrinking excessively during drying and firing, many English brickearths were often insufficiently plastic and lacking in both inbuilt fuel and fluxes compared with the more clayey alternatives. As noted by Dobson,<sup>22</sup> 'the loams are often so loose that they could not be made into bricks without the addition of lime to flux and bind the earth'. Consequently it was not until sophisticated techniques such as adding chalk slurry, and ashes, were developed in the late seventeenth and early eighteenth centuries that loessic brickearths began to be extensively exploited.

A further reason for the comparative lack of early bricks made from loessic brickearth could have been a lack of experience in seeking and using this material amongst both immigrant and indigenous brickmakers. Although it is true that loess has been widely used for

brickmaking on the continent there is no evidence that it was a major source for early bricks. Independent brick technology was revived in the eleventh and twelfth centuries, principally in the Po Valley in northern Italy, where there is an abundance of alluvial clay and a relative paucity of loess. From here it spread to northern Europe, where both loess and alluvial clays were available. Unfortunately, as far as we are aware, no study comparable to ours has been attempted on the continent and only Dr Hollestelle has produced detailed documentary evidence of the brickmaking materials used during the Middle Ages. Her writings suggest that in the Netherlands at least loess was of comparatively minor importance, being dug only, as today, in North Brabant and Limburg in the south of the country.<sup>23</sup> As now, a variety of other materials was used, including in 1290 Pleistocene clay at Staverden and later in Hardevijk;<sup>24</sup> 'ebb-tide mud' at Gorinchem in 1394,<sup>25</sup> and 'old blue sea clay' dredged from the bottom of meres near Alkmaar in 1514.<sup>26</sup> Neighbouring East Friesland with its two hundred or so medieval brick churches has a similar range of superficial sediments which could have been used for brickmaking, but Dr Robert Noah cites only 'alluvial clay from the marshland' and 'glacial moraine loam' (presumably glacial till, not loess) as the raw materials used.<sup>27</sup> Similarly in Belgium, Flanders, the North German coastal plain, Denmark, Poland, and Lithuania, all of which have important examples of early brick buildings, marine and estuarine alluvial clays were at least as abundant as loessic brickearths. Many immigrant brickmakers from Europe, therefore, may well have been unfamiliar with loess as a potential brickmaking material and would have sought suitable sources amongst the environments such as marsh, flood plains, and meres etc. from which the raw materials for bricks were extracted in their countries of origin.

Similarly, itinerant indigenous brickmakers would be familiar with the environments in which tile clays occurred (tile manufacture having a longer history in medieval Britain than brick) and would not have been tempted to experiment with materials such as loessic brickearth and boulder clays which, by and large, were unsuitable for tile-making.

### Conclusions

Smalley<sup>28</sup> draws a geological parallel between the distribution of European loess and the distribution of early brick, commenting that 'it is possible to regard eastern England as the westernmost extension of the European loess region,' and furthermore, like early brick buildings 'in England, the loess occurs as isolated deposits rather than as [a] continuous cover'. This superficially attractive analogy fails to note that the whole of European early brickwork is mostly peripheral to the main European loess region, the majority of continental brick buildings occurring, as in Britain, where loessic brickearths are either absent or crop out as isolated, thin, relatively uncommon deposits. As in England, the earliest bricks were not made from loess, and the distribution of early continental brick correlates better with the distribution of easily available alluvial clays than it does with loessic brickearth. A good correlation also exists in Europe between the distribution of early brick and the paucity of freestone but, as in England, exceptions do occur where the whim of the builder or his client, or both, demanded brick.

Undoubtedly loessic brickearths were used on the continent earlier than in Britain but the dates of their first use in European countries is known only for England, where our researches, summarised in this paper, demonstrate that almost three centuries (c.1160-1440) had passed before loessic brickearths began to be used. As we shall show in a subsequent paper, even after 1440 it was not loessic brick-

earths but glacial tills (boulder clays) which dominated the new materials used by the English pre-Reformation brick industry.

Unlike loessic brickearths, the deposits actually used before 1400 are not restricted to eastern England, although they are most plentiful thereabouts. Factors other than the distribution of suitable raw materials must, therefore, also have controlled the geographical distribution of the brick industry. Amongst these factors a relative lack of comparable building materials, the influence of continental immigrants and where they settled,<sup>29</sup> and 'keeping up with the Joneses' (or in this case our continental cousins) were important, as well as the availability of raw materials for, and expertise in, making bricks. We leave evaluation of these factors to others more expert than ourselves, but stress that our evidence indicates that the distribution of loessic brick-earths had virtually no influence before 1440 and was of only local importance for at least the next hundred years.

## Appendix I: Buildings with Significant Quantities of Pre-1440 Brickwork

Note that this list is based on Jane Wight's very convenient gazetteer in her Brick Building in England from the Middle Ages to 1550, London, 1972, pp.222sq. Additions to Wight's gazetteer are indicated by an asterisk (\*); those omitted because, on inspection, they proved to be later than 1440 are listed separately. All except those in brackets have been visited by one or both authors. The regional sub-divisions are those used in the main text of the paper.

### Humberside

- 1303 Earliest record, municipal brickyard, Hull.  
1320 Hull: Holy Trinity Church.  
1335 (Beverley Minster, brick infill to nave vault.)  
1346 Sutton: Parish Church.  
Mid-C14 Roos: Parish Church, clerestory.  
1382 Thornton Abbey.  
Late C14 Brandesburton: Parish Church, clerestory and porch.  
C14 ? Easington: timber-framed tithe barn; though brick infill may be much later.  
Between 1406 and 1437 Howden: gateway and part of brick curtain wall.  
1409 Beverley: North Bar.  
C15 Barton-on-Humber: St Peter's Church, north porch.

### The Fens and Adjoining Areas

- 1335 Documentary evidence of brickmaking near Ely.  
Mid-C14 Cambridge: St Mary-the-Less Church (bricks painted).  
C14 (West Acre: Priory Gatehouse, vault.)  
C14 Lincoln: Exchequer Gateway, brick vault.  
Late C14 (King's Lynn: Carmelite gateway).  
Late C14 King's Lynn: Greyfriars, lantern tower.  
Late cl4, C15 (King's Lynn: Clifton House, undercroft.)  
C14 Ely: brickwork in C14 buildings (but not necessarily C14 brick) includes: (Lady Chapel parapets\*); Prior's House\*; Walsingham House\*; and Great Barn\*.  
c.1400 Cowbit: Parish Church, Lincs., nave.  
1406 (King's Lynn: Guildhall of St George.)  
1417 (King's Lynn: St Nicholas' Chapel\*.)  
1420 Spalding: Ayscoughfree Hall.

- Early C15 Boston: Guildhall of St Mary.  
1430 Cambridge: Old Schools.  
1430 Cambridge: Magdalene College.  
1434 Cambridge: Peterhouse.

### East Norfolk, Suffolk, and Essex

- 1160 Polstead: Parish Church, arcade.  
1160-1220 Little Coggeshall: Abbey buildings and St Nicholas' Chapel.  
1270-80 Little Wenham Hall, Suffolk.  
C13 Ashby, Suffolk: Parish Church.  
1300 Herringfleet, Suffolk: St Olave's Priory.  
1300 Norwich: Guildhall, undercroft.  
1307 Norwich: Blackfriars, undercroft.  
1307-10 Norwich: Becket Chapel.  
Early C14 Norwich: some brick in City Walls including the (? later) Black, Bullclose Road, Queen's Road, and St Stephen's Street towers.  
1320 (Butley, Suffolk: Priory gatehouse.)  
1325 Norwich: Bridewell, undercroft.  
1325 Norwich: Stranger's Hall, undercroft.  
1339 Claxton Castle, Norfolk.  
Mid-C14 Wingfield Parish Church, Suffolk.  
C14 Dengie Parish Church, Essex.  
C14 Lāwford Parish Church, Essex.  
C14 Purleigh Parish Church, Essex.  
C14 (Great Yarmouth: town walls.)  
C14 (Little Waldingfield 'Priory' Gatehouse, Suffolk.)  
C14 Dovercourt Parish Church, Essex (no visible bricks).  
C14 Langley Abbey, Norfolk.  
1369 (Beccles: Parish Church, charnel.)  
1370 Waltham Abbey Gatehouse.  
1380 Norwich: Cow Tower.

} relatively few brick



Late Cl4 Leiston Abbey, Suffolk. Some bricks may have been plundered from an earlier building in 1369 and others specifically produced for rebuilding in 1389.

Late Cl4 (Worsted Parish Church, Norfolk, prominent voussoirs.)

Late Cl4 Stanway All Saints ruins, Essex.

Late Cl4 Thornington Parish Church, Essex.

Cl4/Cl5 Potter Higham Church, walls and font.

Early Cl5 (Pleshey Castle bridge, Essex) - see Appendix II, infra.

1430 Caister Castle.

In addition minor amounts of brick are used in many East Anglian churches, particularly in and around Norwich, as voussoirs to windows and sometimes to doors. Some of these bricks may also be earlier than 1440. All that we have examined seem to be made from muddy alluvium.

#### The Chilterns and Adjoining Areas

1377 (Shirburn Castle, Oxon\*.)

Cl4/Cl5 Long Crendon, Bucks.: Court House, but brick infill to timber-framed building may be later.

Cl4 Flamstead Parish Church, Herts., sacristy. Only a few bricks.

1414 Stonor House, Oxon.

1436-7 Ewelme, Oxon.: Almshouses and School.

#### South-East England

Late Cl3 Allington Castle, Kent: vault.

1366 Appledore, Kent: Horne's Place Chapel.

1378 (Gillingham, Kent: Grench Manor. Relatively few bricks.)

Early Cl5 Margate, Kent: Dent-de-Lion Gatehouse - bricks used for coursing with flints.

#### Deletions from Wight's list include:

Rotherfield Greys Castle, Oxon. Although sometimes claimed to be the earliest bricks in the county (c.1348), they have the dimensions of tiles and are regarded as tiles rather than as bricks in the present paper.

Latcombe Bassett, Berks. Bricks in the lower part of the church tower are claimed to be Cl4 but all appear to be Cl8, though rendering may cover older bricks.

Waltham St Lawrence, Berks. Top of church tower claimed as Cl4 but evidence for this assertion is not given.

Ely. Prior's Gateway listed as 1396, but not described in Wight's gazetteer. Reference may be to the Long Barn south-east of the Ely Porta Gateway, which was also built in the late Cl4, partly of brick.

Levington, Suffolk. Parish Church claimed as late Cl4, but the brick windows are Tudor and the brick tower was built in 1636.

Trimley St Martin, Suffolk. North Chapel claimed to have been built shortly after 1405 but architecturally appears to be early Cl6, as suggested by Pevsner. If a date near to 1405 is confirmed then this is one of the earliest examples of bricks made from boulder clay.

## Appendix II

In addition to the bricks examined on site, individual bricks from the (then) Ministry of Public Building and Works collections have been studied. In the present context the most important of these are as follows:

c.1350 Northolt, Middx.: Cellar. From its fine-grained, somewhat heterogeneous texture, indications of carbonaceous spotting, and fresh-water gastropods it is concluded that the source material was clayey silt deposited in still or very slowly moving, weedy, hard water. Probably a modern marsh or lake, but redeposited loess is possible since similar assemblages of gastropods have occasionally been reported in brickearths in this part of the Thames Valley. The 7 samples included both red and yellowish bricks. Sunken margins occur on 5 of the 7 samples, so possibly the material was difficult to mould.

Early Cl5 Pleshey Castle, Essex: Bridge. Both samples examined were made from boulder clay. This may, therefore, be the earliest example of bricks made from this material if a date near 1400 is confirmed.

Cl4 ? Great Yarmouth. Precise provenance uncertain but probably from the town walls. Texture and straw marks confirm that these, like the nearby St Olave's Priory bricks, were made from very sticky clays.

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D.R.Bridgland, 'The Pleistocene Fluvial Stratigraphy and Palaeogeography of Essex', Proceedings of the Geological Association, 99, 1988, 291-314. This paper was received after the editor had prepared our own for publication. It shows extensive brickearth in north-east Essex in areas formerly mapped by the Geological Survey as boulder clay. Fig.1 has been amended accordingly. Important though this information is, it does not materially affect our arguments about the geographical distribution of loessic brickearths and early bricks, since the buildings nearest to these deposits (Dengie, Lawford, and Purleigh churches) contain very few bricks. Their textures and yellowish colours are consistent with a calcareous clayey silt source which might have been either recent alluvium or brickearth. As elsewhere, there is, therefore, no evidence of red-burning brickearths having been extensively used. Other nearby bricks have black cores (see fig.1) and are consequently not made from loessic brickearth.

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### *One-day Course*

Members may be interested in the following day-course which is being arranged by Timothy Easton for the University of Cambridge Extra-Mural Studies department. It will be held in Cambridge (the precise venue to be announced later) on Saturday 24 June 1989 and will be on the subject of Brickwork and Paint in Buildings of the 15th-17th Centuries. The lecturers will be: T.P.Smith, 'Brickmaking in the Medieval and Tudor Periods'; John McCann, 'Brick Nogging in Timber Buildings'; Timothy Easton, 'The External Use of Paint on Brick' and 'The Internal Use of Paint on Brick and Timber'; and David Stenning, 'The Development of Brick Stacks and Hearths'. For further information please apply to: The Courses Registrar, Board of Extra-Mural Studies, Madingley Hall, Madingley, Cambridge CB3 8AQ.

TPS

# NETHERLANDISH INFLUENCE ON ENGLISH VERNACULAR ARCHITECTURE - SOME CONSIDERATIONS

*Arthur Percival*

This contribution is based on notes which were distributed at the 'Glorious Revolution' day school held at the University of Kent at Canterbury on 3 December 1988. It is not intended as a full, let alone a definitive, discussion, but rather aims to consider some of the problems, with some reference to the (admittedly somewhat sparse) literature. It may be that the thoughts herein will provoke comments from readers.

Without question there are areas of England where a Dutch - or, better, a Netherlandish - influence on vernacular architecture appears strong, particularly in the century between 1625 and 1725. 'Netherlandish' - though not especially euphonous - rather than 'Dutch' may be a better word to describe this influence, since the original idiom concerned characterised not just present-day 'Holland' (that is, more properly, the Kingdom of the Netherlands) but all seventeen provinces of the former (pre-1579) Netherlands or Low Countries.

Elsewhere in England isolated buildings show similar influence. All the buildings concerned possess either curvilinear gables or mannerist details (which latter may also include curvilinear gables).

Moreover, particularly in the sixteenth century, a number of English buildings were built with, or provided with, crow-stepped gables. So too were a number (in fact a 'higher proportion') in Scotland. Some - for example the former Sir Roger Manwood School in Sandwich (1564) and the related Manwood's Hospital in Canterbury (1570) - are probably 'Dutch'-influenced; in other cases, the gables may simply represent a common North-West European building tradition.

Although possibly some of the English vernacular buildings showing signs of Netherlandish influence owe this 'indirectly' via publications or English designers who had visited the Netherlands, some others appear to show signs of more direct influence. For example, Ellis (1983) notes that numerical or ornamental tie-bars (the Dutch jaartalankers or sierankers) are features commonly found in association with Netherlandish-influenced buildings, but does not seem to appreciate that they are virtually confined to such buildings in the period concerned. Integral dating of other kinds - e.g. by way of date-stones, inscribed bricks, or numerals constructed from bricks - is also more common on Netherlandish-influenced buildings than on others. Similarly, the 'garbled' details often found on these buildings - e.g. blind arches over windows and doorways, window-arches of elliptical form, and blind oval recesses - seem to owe more to Netherlandish prototypes than to intermediate English ones.

As yet, next to nothing is known about the builders or original owners of most of the Netherlandish-influenced structures in England. The firmest evidence comes from Topsham in Devon. According to Prof. Hoskins (1972), Holland was the largest customer for Devonshire serges, and much of the trade passed through the town, which was in its hey-day as a port. Dutch brick was brought back as ballast and then used in the 'Dutch-gabled' houses on The Strand, which were almost certainly built by local merchants in imitation of houses that they had seen whilst on business in Holland.

Inferences, correct or incorrect, are possible in other cases.

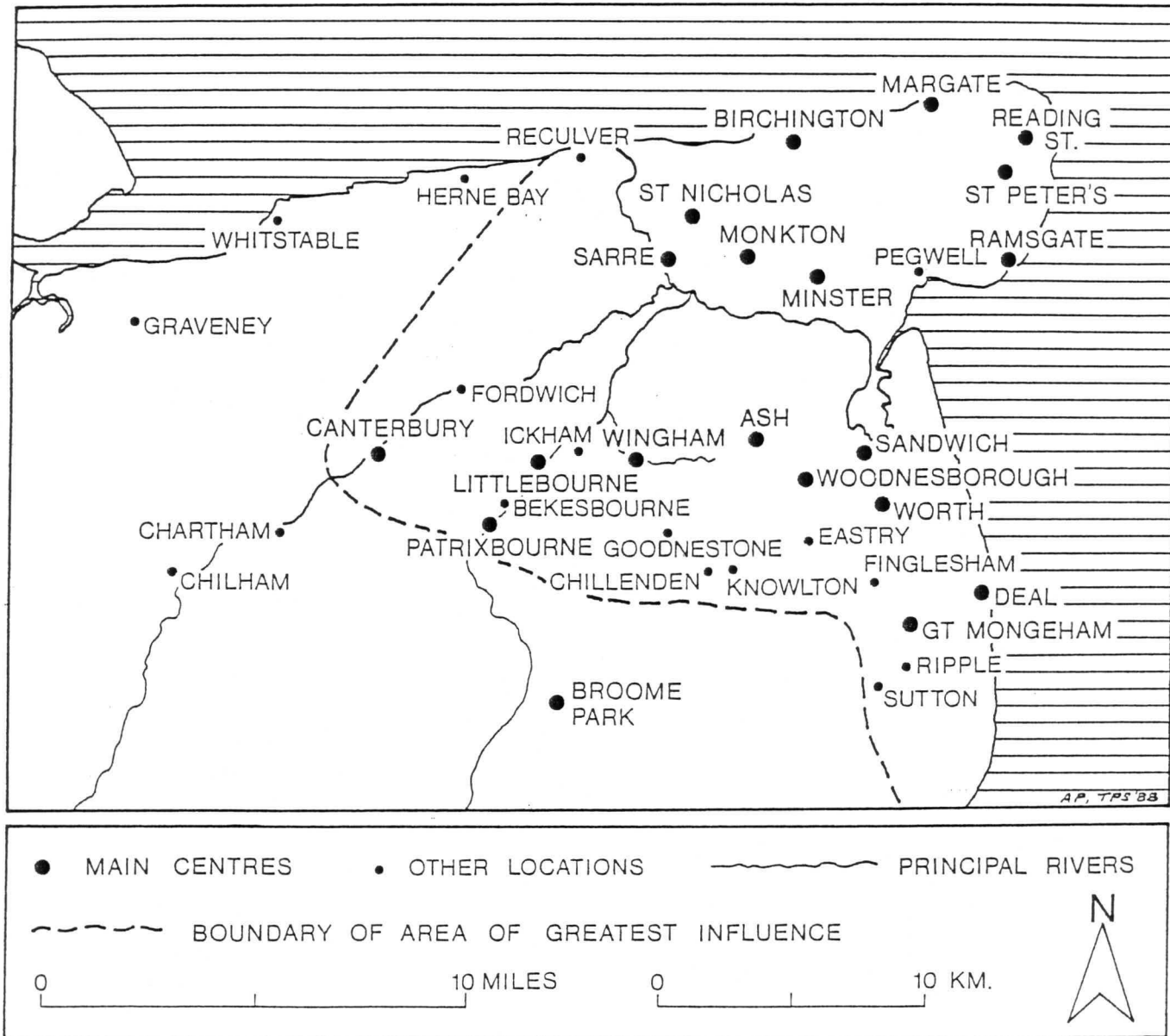


Fig.1 Shaped gables in North-East Kent

For example, Fairfax House in Putney High Street, London (demolished c.1888) had an array of 'Dutch gables'. At one time its owner was Sir Theodore Jansen, grandson of a refugee from the Netherlands, who was knighted by William III. The Old Manor House in Hackney, London had an elaborate pilastered front with a pair of baroque gables. It was the home of the Tyssen family, descended from a refugee from Gent (Ghent) whose son became a prosperous London merchant. It seems possible that in cases such as this, immigrant families may have built houses in an idiom which they cherished as soon as they had established themselves well enough to be able to do so. There are other examples.

However, for the most part, and this needs emphasising, there is as yet little hard evidence one way or the other. It would

certainly be interesting (though possibly puzzling) if it emerged from further research that a substantial number of 'Dutch-gabled' houses were built for and by native English persons who had no connexion at all with the Netherlands.

What does seem clear is that the houses concerned are heavily concentrated in areas along the coastline or close to navigable rivers from which maritime access to the Netherlands was relatively easy (see fig. 1 for north-east Kent). In some cases, specific resemblances may be noted, as with some Suffolk houses. Sandon (1977) cites the 'brick gables of the town hall at Zierikzee in the province of Zeeland (1555), and another at Nes, on the island of Ameland (1625), [which] are not unlike Red House, Knodishall, and Mock-beggars Hall, Claydon, respectively.'

An element of caution is needed here, however (as Sandon also insists), because the areas concerned are all ones where in the seventeenth century brick was beginning to take over from timber-framing as the standard form of house-building construction. Perhaps all the early brick houses were in this style (undiluted or diluted) and perhaps it was just the English building idiom which happened to emerge. Studies of the seventeenth-century buildings in towns like Deal and Ramsgate are needed to see how many do not show signs of such influence. (An added complication as T.P.Smith reminds me, is that

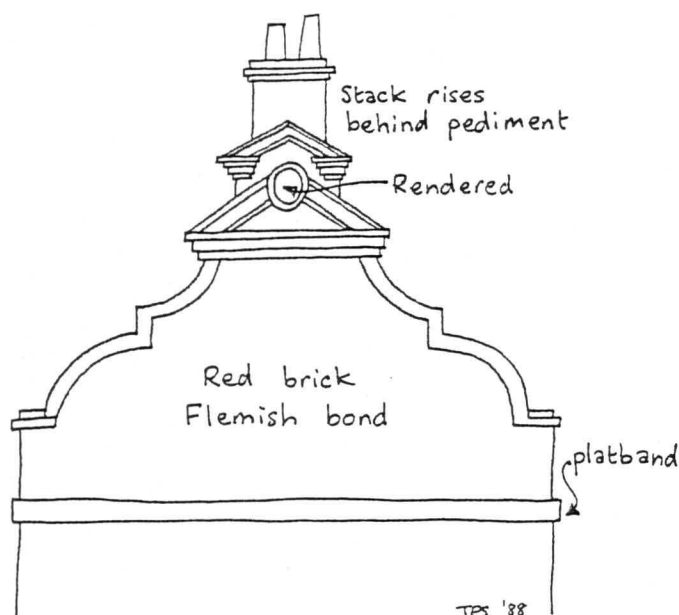


Fig. 2 Littlebourne Vicarage, Kent: mannerist details

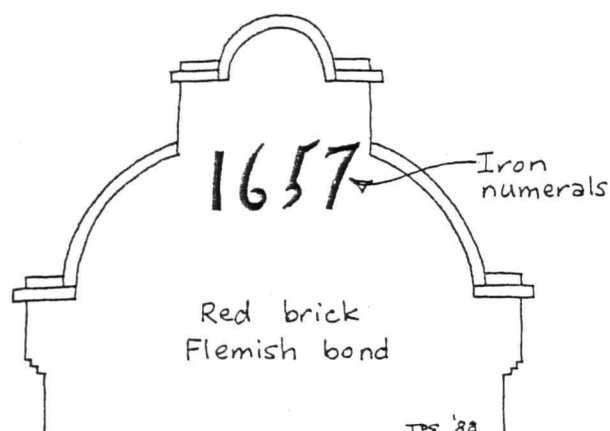


Fig. 3 Smith's Hospital, Canterbury



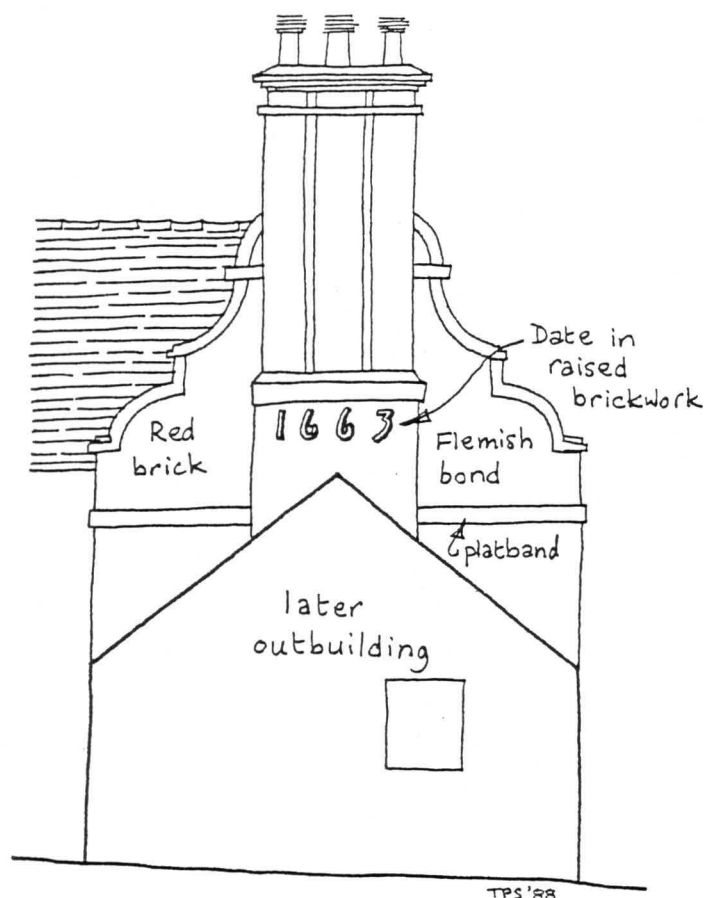


Fig.4 'The Treasury', Ickham, Kent

a number of the Ramsgate examples are of flint with brick trim, not wholly of brick. Moreover, the brick examples are nearly all in Flemish Bond, the Netherlands examples in English Bond, presumably suggesting that English craftsmen were often involved even where the influence on style is from the Netherlands.)

It is almost tautologous, but many of the buildings concerned are concentrated in areas where Dutch/Walloon/Huguenot churches are also found (e.g. Norwich, Canterbury). However, there are some areas where there were such churches (e.g. Southampton) but where there appear to no surviving buildings showing signs of Netherlandish influence. More research is needed here to see whether or not there once were such buildings. (Dover has only one surviving building of the kind, but others have been lost through redevelopment and enemy action.)

Difficulties seem to be inherent in the fact that the Netherlandish influence is strongest (both in East Anglia and in Kent and probably elsewhere in England too) between 1650 and 1725. The Dutch refugee churches (and communities) were established much earlier - e.g. London (1550), Winchelsea (1560), Sandwich (1562), and Southampton (1567). And England was at war with 'Holland' (the United Provinces) between 1652 and 1654

and between 1664 and 1667, when 'Dutch gables' were being built. These difficulties arise if 'Dutch' immigrants are thought to have had a hand in the influence. We do not yet know whether they did, though it seems possible.

However, a small minority of Netherlandish-influenced buildings (e.g., again, the former Manwood's School at Sandwich, 1564, and a group of buildings, now demolished, at the corner of Harnet Street and Delf Street in Sandwich, as well probably as what used to be Mead's in King Street, Sandwich) look likely to have been built by immigrant Dutch craftsmen, if not always for Dutch clients. Beyond this, of course, most of the immigrants would have settled in existing houses - and since Sandwich was decayed at the time new housing would not have been needed for any indigenous inhabitants displaced. Further, it would have taken most immigrants some or even many years to become sufficiently well established to commission their own new houses. Their situation was probably roughly comparable to that of the Russian Jews who emigrated to London after the assassination of Czar Alexander II in 1881. These settled mainly in Stepney, then one of the poorest parts of London, and it was forty or fifty years before they could think of 'moving up the social scale' to better areas like Stamford Hill and Golders Green.

Further, small flows of Protestant immigration probably continued

from the Catholic Netherlands during the later sixteenth century and for much of the seventeenth century, particularly when these were under Spanish sovereignty (that is, until 1598 and from 1621 until 1714). France took control of the three southernmost provinces in 1659 and after the revocation of the Edict of Nantes in 1685 there was heavy Protestant emigration from there to England.

The possibility, if not the likelihood, is that immigrants from the Catholic Netherlands may have made more of a mark on English vernacular architecture than the earlier wave from what were to become the United Provinces. This might explain why the Netherlandish influence is strongest between 1650 and 1725. On the other hand, the simple trade links may have provided a stronger force.

The 'Dutch' influence has also been discounted by some on the basis that the Netherlandish 'prototypes' tend to be much more elaborate. 'Dutch-influenced' buildings in England tend for the most part to have features which are much coarser than the originals on which they are alleged to be based. However, to this point it might be replied that:

- (a) Throughout the Netherlands there are in fact buildings where the motifs have been simplified as they are in England, though the outcome is still less coarse because a smaller module (viz. the smaller Dutch brick) is involved.
- (b) Even if good building stone was not more readily accessible in the Netherlands, owners were more prepared to go to the expense of using it than was the case in those areas of England where stone was not immediately available. And the use of decorative stonework accounts for much of the refinement and/or elaboration of the Netherlands 'prototypes'.
- (c) If English craftsmen were commissioned to build in an idiom with which they were not familiar, and for which they may have lacked the necessary skills, they could only be expected to dilute it accordingly.

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## BRICKMAKING AND FAMILY HISTORY

*Jean Ritchie*

These notes seek to exchange information concerning my ancestors - the Tanner family of Hampshire and Wiltshire - with those who are interested in that family's trade of brickmaking. The Tanner family's first known connexion with brickmaking occurs at Rodbourne, Wilts. in the third quarter of the eighteenth century, documented specifically from a will of 1778 of my great grandfather, whose wife, Mary Tanner, née Lane, inherited the land from a female relative, either an aunt or a sister. The latter is known to have been in possession of the same land in 1740. When my great uncle, Robert Charles Tanner, died in 1956 bricks had been made at Rodbourne by the Tanners for almost two hundred years. The site may have had a slightly longer use for brickmaking, since the document of 1740 refers to pits, and mention of these is unusual in eighteenth-century leases and conveyances.

Robert Charles Tanner of Rodbourne had two brothers who were also brickmakers. Another of my great uncles, Richard Tanner, had a brickworks at Lymore, Milford-on-Sea, Hants. from 1895 to 1907. He subsequently migrated to Australia, where he died.

My grandfather, Edward James Tanner, had a brickyard at Sandleheath, a parish in Wiltshire close to the junction with Hampshire, and Dorset, from 1887 to 1911. He continued to live at Sandleheath until 1915, when he moved to Bristol and thence in 1921 to New Zealand, where several of his children had settled; others were in Australia. A more distant relation, James Tanner, had a brickyard at Luckington, Wilts. from around 1880 until he retired in 1916. The yard passed to his grandson, Alfred Denley. At time of writing - October 1988 - my kinsman, Alfred Denley, is still living. Born in 1895, he is now aged 93 and would be willing to talk to members of the British Brick Society about his brickworks. His works employed about eight people and they are recorded in photographs shown to me by a resident of Luckington.

### Note

Alfred Denley's address is Malcombe House, Malmsbury, Wilts., a nursing home. Mrs Ritchie may be contacted at Glenview Road, Via Mooloolah QLD, Australia 4553. She would be interested to know if any member can explain why Edward James Tanner ceased brickmaking in 1911 and whether anything is still to be seen at Sandleheath or Rodbourne.. This piece has been adapted by David Kennett from a letter from Mrs Ritchie to the Society.