

BRICK NOGGING IN THE FIFTEENTH AND SIXTEENTH CENTURIES, WITH EXAMPLES DRAWN MAINLY FROM ESSEX

by

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Most timber-framed buildings constructed up to the early seventeenth century were designed to have the panels infilled with wattle and daub, but some are now infilled with brick. In many cases the bricks are slightly too deep for the frame, or there are other indications that the present infill replaces earlier wattlework, but some buildings were designed to be infilled with brick from the outset. Although much scholarly attention has been devoted to the history and development of timber frames very little has been written about brick nogging, and some of that is misleading. There is a tendency to regard the brick as always a replacement material, and therefore of little interest. Examples will be given of high quality timber buildings of the fifteenth and sixteenth centuries in which brick nogging was used from the outset, and its purpose and design will be considered.

The leading architectural historians have been cautious about dating the introduction of brick nogging. In 1965 Dr. Margaret Wood wrote: 'Brick nogging is late: so far there are no proven cases before the seventeenth century, but it might occur *c.* 1550. Bricks, set diagonally for strength as well as for effect, replaced decayed wattlework in earlier framing; the original presence of wattle and daub can be detected by the V-groove of holes left in the horizontal timbering. But some late houses may have had brick panels from the first, through conservatism in practice, and perhaps bricks were still expensive. However, it must soon have been realised that bricks do not need any timber, but on their own are a sound and fireproof method of construction'.¹ In 1972 Alec Clifton-Taylor described brick nogging as always a replacement infill of the late seventeenth century or later, the date of introduction varying from county to county, and quoted Margaret Wood's statement 'there are no proven cases before the seventeenth century' without her qualification.² In 1971 Dr R.W. Brunskill distinguished between its use as a replacement material and as original infill: 'Brick nogging is in fact quite an old-established practice. Apart from its possible use in medieval town houses, examples are beginning to come to light in the villages', but the earliest examples he quoted were of 1695 and 1712, both in Lutterworth, Leicestershire.³ In 1975 Eric Mercer wrote: 'The nogging was most commonly a secondary feature, replacing wattle and daub or lath and plaster, but the possibility that some framing was always meant to have

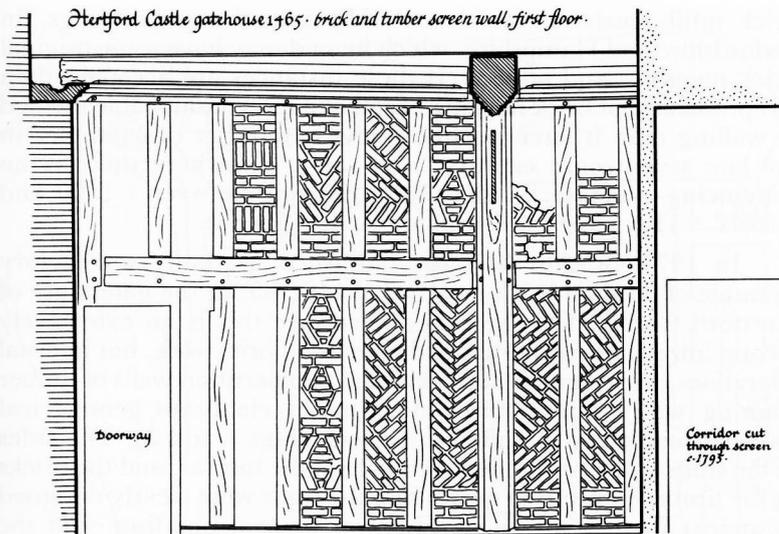


Fig. 1
Hertford Castle, decorative panels in the first-floor timber-framed screen wall (Gordon Moodey).

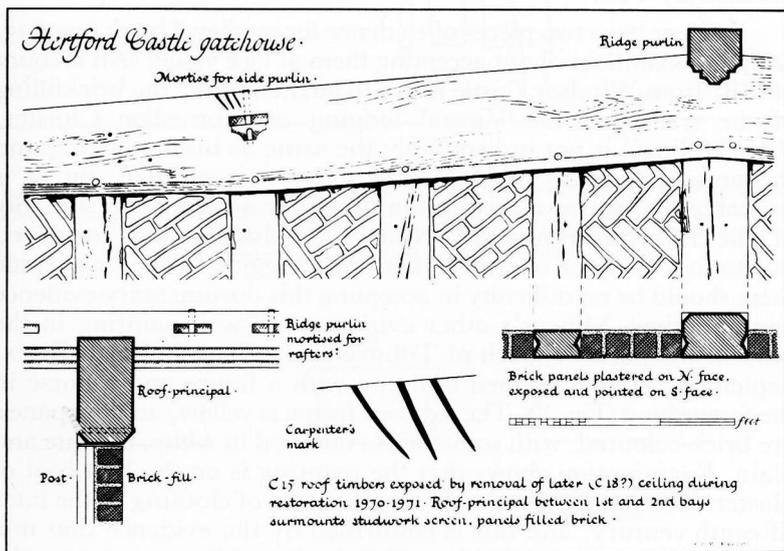


Fig. 2
Hertford Castle, details of the second-floor screen wall (Gordon Moodey).

brick infill must be considered'. He named two buildings, in Oxfordshire and Hampshire, which he said may have some original brick nogging, and added: 'If these instances are accepted then it is probable that brick nogging began as a more fashionable method of walling than it later became', gave a number of examples in the late seventeenth century, and said: 'Elsewhere there is no convincing evidence for the use of nogging between *c.* 1500 and *c.* 1650'.⁴ This paper will provide such evidence.

In 1974 Gordon Moodey published a wholly satisfactory example of original brick nogging of 1462-65, in the gatehouse of Hertford Castle.⁵ On external appearance this is an extensively Georgianized late medieval building of solid brickwork, but internal alterations carried out in 1967 revealed two partition walls of timber framing with original brick nogging in elaborate geometrical patterns, evidently intended to be seen (Figs 1 and 2). The sides of the studs and posts are recessed to hold the mortar, and the bricks fit the timber framing so neatly that the walls were clearly designed to appear as they are now. This was a royal building, and the original building accounts survive, recording all wages paid and all payments for materials.⁶ Moodey has shown that an inscription 'A D II E IIII' is ingeniously included among the carpenters' assembly marks, meaning the second year of the reign of Edward IV, the year ending 3 March 1463. The gatehouse was finished by 1465.

Mercer gave two pieces of evidence for medieval brick nogging, but he was cautious about accepting them at face value: 'An account of 1481 from Windsor Castle refers to payment for "the brickfilling of the walls" of the Vicars' lodging or Horseshoe Cloister. "Brickfilling" is not indisputably the same as brick nogging and the present nogging in Horseshoe Cloister is of 1870, but it is probable that this is a restoration of earlier nogging, presumably of the fifteenth century'.⁷ Now that Moodey has produced satisfactory evidence of even earlier brick nogging in one royal castle there should be no difficulty in accepting this documentary evidence from another. Mercer's other evidence is a wall painting in the nave of the parish church of Tilbury-juxta-Clare in north Essex, depicting a timber-framed building with a figure and a horse in the foreground (Fig. 3). The exposed frame is yellow, and the panels are brick-coloured, with some bricks outlined in white, oblique and plain. Examination shows that the painting is on the first coat of plaster. The painting is datable by the style of clothing to the later fifteenth century, and this is confirmed by the evidence that it is contemporary with the fabric, which the Royal Commission on the Historical Monuments of England said was 'built in the middle or second half of the fifteenth century'.⁸

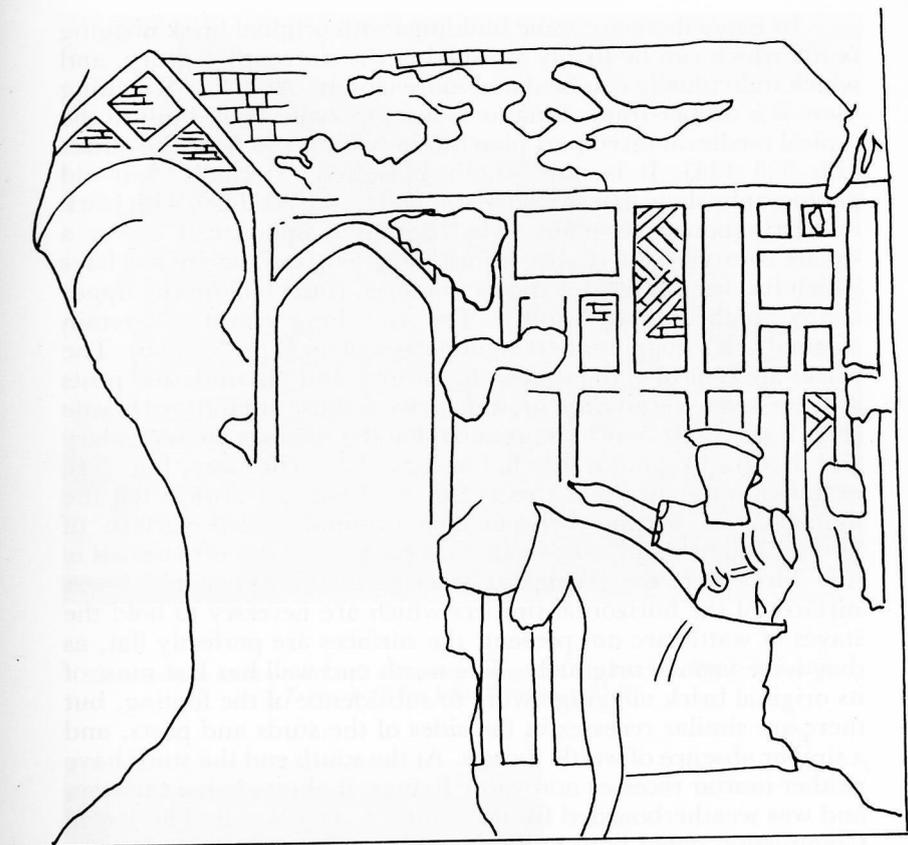


Fig. 3

Painting on the north wall of the nave, parish church of St. Margaret, Tilbury-juxta-Clare, Essex. The exposed timber frame is coloured yellow, the panels of infill brick-coloured, with some bricks outlined in white; the figure is clothed in a darker red, on a white horse. It is in poor condition.

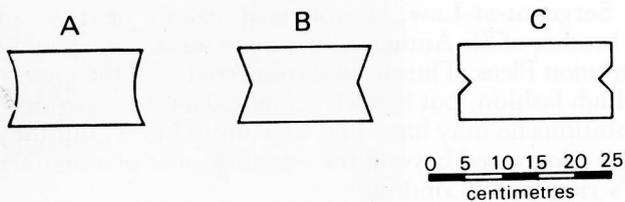


Fig. 4

Sections of studs recessed for original brick nogging. A is the most common form, B was used at Hertford Castle and Poole Farm, Great Yeldham (Fig. 16). C has been observed only at The Manor, Preston Bagot, Warwickshire.

In Essex there are some buildings with original brick nogging *in situ* which can be firmly ascribed to the sixteenth century, and which individually can be dated more closely. At White Roothing there is a timber-framed manor house, Colville Hall, built to the typical medieval three-part plan but in two storeys from the outset (TL 553 134). It is now wholly plastered externally, but old photographs show that the close-studded frame is infilled with brick in herringbone and plain style.⁹ Standing opposite it across a square courtyard is a timber-framed long-jetty building of five bays which has been interpreted as a manorial court hall on the upper storey, with stables below.¹⁰ The two long elevations retain original brick nogging, herringbone and plain (Figs 5 and 6). The bricks are typical of the sixteenth century, and the studs and posts are recessed to receive the mortar, as were those at Hertford Castle (Figs 2 and 4). It may be suggested that the recesses are secondary and that the original wattle fixings have been cut away, but close examination shows that this is not so. One can always tell the difference in texture between the original tooled surface of unseasoned oak and later tooling executed after it has seasoned *in situ*. Moreover, the triangular grooves in the upper and lower surfaces of the horizontal timbers which are necessary to hold the staves of wattle are not present; the surfaces are perfectly flat, as they were formed originally. The north end wall has lost most of its original brick nogging owing to subsidence of the footing, but there are similar recesses in the sides of the studs and posts, and a similar absence of wattle fixings. At the south end the studs have neither mortar recesses nor wattle fixings; it abutted on a cartway, and was weatherboarded from the outset, as it is still. The Royal Commission dated both buildings stylistically as *c.* 1500,¹¹ but the site has no manorial history before 1537. In that year John Browne bought the manor of Merks or White Roothing and established a new seat there, which was described as Browne's Manor at his death in 1550. In 1903 Miller Christy recorded the armorial glass of John Browne in the great west window of the house, although it has gone since. John Browne was the nephew of Sir Humphry Browne, Sergeant-at-Law, of Abbess Roothing nearby, and was the elder brother of Sir Anthony Browne, who became Chief Justice of the Common Pleas. Thus he was connected with the metropolitan world of high fashion, but himself remained a minor esquire. What social ambitions he may have had we cannot know, but they seem not to have progressed beyond the establishment of a manorial seat one day's ride from London.¹²

At New Hall, High Roothing, only 4 km to the north-east, there is a remarkable brick-nogged barn (TL 580 162). The historical context is very similar, a newly established manorial site

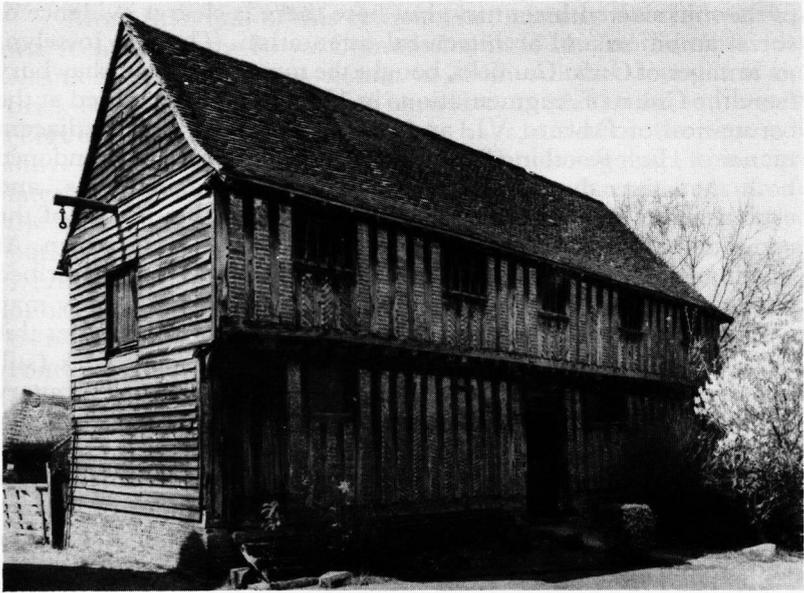


Fig. 5
East elevation of the court hall and stable range at Colville Hall, White Roothing,
Essex, built for John Browne, 1537-50.



Fig. 6
Detail of the courthouse,
Colville Hall. The close
spacing of the studs allows
only simple oblique pattern
or plain nogging.

of the mid sixteenth century, but here there is clearer evidence of social ambition and architectural ostentation. Thomas Josselyn, an armiger of Great Canfield, bought the manor of Broomshawbury from the Court of Augmentations in 1544. He was knighted at the coronation of Edward VI, and in 1554 he bought the adjacent manor of High Roothing from Sir William Stafford. He abandoned both the original manorial sites to become tenant farms, and established a new seat on a splendid site near the middle of the combined estate, from which all the land in view was his own. At the inquisition following his death in 1562 the estate was described as the manor of New Hall Josselyn.¹³ John Norden's county map of 1594 shows only the major houses; it shows this one under this name. In these transactions Josselyn acquired a deer park (still identifiable in field names), and the whole course of a small tributary of the River Roothing; he cut a channel which supplied a new brick-lined moat, and established a new mill, making skilful use of his own stream to avoid disputing existing rights on the main river (Fig. 7). Within the moat he built a manorial complex of E-plan, consisting of a brick-nogged house with a two-storey porch, a chapel and a courthouse.¹⁴ Thus within eighteen years he acquired a knighthood and built up an estate which provided all the traditional symbols of high status, so important to the rising Tudor gentry.

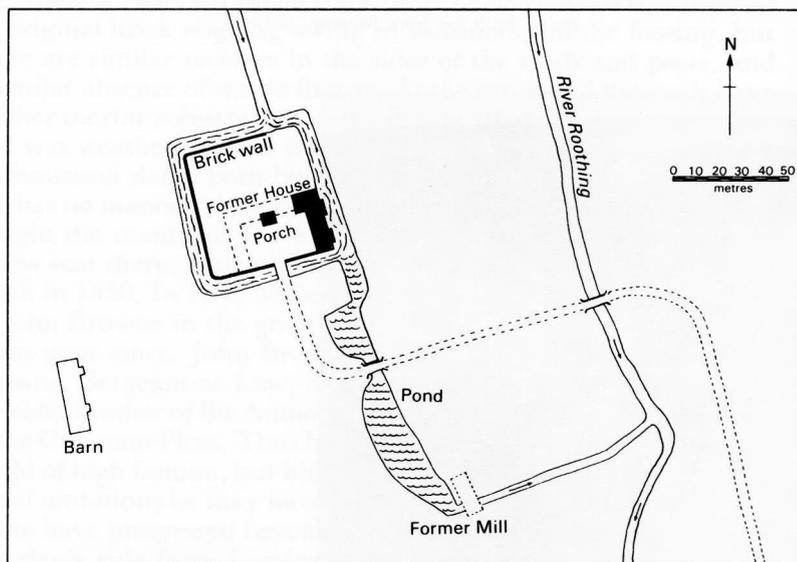


Fig. 7

Site plan of New Hall, High Roothing, Essex. The buildings shaded black were recorded by the Royal Commission in 1914 but were destroyed by enemy action in 1943. The position of the former mill is identified by field names. The original access road east of the river is now a bridleway.

More than half of this complex had already decayed when it was recorded by the Royal Commission in 1914, and the remainder was destroyed by enemy action in 1943. All that remains is the brick-lined moat and the large barn sixty metres to the south-west (Figs 8, 9, 10 and 11). It is of eight bays, aisled on the west side only. The tall east wall retains original brick nogging (with some later repairs), which is carried round the south end, but only to the mid-point of the wall. All the studs and posts of the nogged part are recessed for mortar; beyond the mid-point the frame, now weatherboarded, has standard wattle fixings. There is no evidence of brick nogging elsewhere. The east elevation is now interrupted by two midstreys, but these are later additions; the recessed studding continues over the two great doorways (Fig. 11). One pair of the original doorposts has been removed to widen the access, but the others are present and are rebated on the inside for great doors opening inwards.

The similarities and differences between this barn and the court-house of Colville Hall are illuminating. The barn, which cannot have been built before 1554, is conservative in terms of carpentry, having external tension braces at a time when in domestic buildings the bracing had been moved to the inside of the studding. The roof is of crown-post construction, although exhibiting the signs of the extreme end of this constructional tradition; the plain crown-posts are down-braced on one side only, arranged alternately, and the absence of other mortices shows that there never was any more side bracing; the longitudinal braces to the collar-purlin are so thin as to be ineffective, the hips providing nearly all the support against racking (Fig. 11). Apart from the use of brick nogging this barn is built within the local vernacular tradition, but the design has been influenced by aesthetic considerations which express Josselyn's social aspirations. There is an original partition, dividing it into three and five bays without through access, which retains some original wattle and daub. In functional terms it amounts really to two barns for different cereal crops, each with its own central threshing floor, but architecturally they are combined to form a single building of impressive size. The construction of an aisle on one side only is bad practice structurally, particularly on this sloping site, and it has in fact led to some distortion. The east side was left unaisled to present the largest possible area of brick nogging where it would be seen from the house and the approach road, but this material was not carried round to those parts where it would not make a visual impression. The south end wall was seen so distantly and obliquely from the approach road that it did not matter that it was only half-nogged. Quite why the north end wall, towards the house, was not nogged is not clear, but it may have been screened by another building or by trees originally. The inward-



Fig. 8

The east elevation of the great barn at New Hall, High Roothing, Essex, built for Sir Thomas Josselyn, 1554-62. The two midstreys are later additions. The brick nogging continues only half-way along the south end.



Fig. 9

Detail of the barn at New Hall. In the upper row of panels vents in alternate panels have been blocked with later bricks, but five patterns of original brick nogging are identifiable. In the lower row most of the original infill has been replaced by later bricks.

opening great doors must have been inconvenient in agricultural terms; the only possible explanation is in aesthetic or social terms. Josselyn was using an expensive infill material where it would be seen to best advantage, and evidently he did not want substantial areas of it to be covered whenever the great doors were left open for threshing.

By comparison the court-house at Colville Hall is advanced in style and workmanship, an essentially metropolitan intrusion into the rural scene. The wall bracing is inside the studs, and takes the form of rising arched braces, which were to become common in Essex later in the century. The roof is of clasped purlin construction, a form long established in the Midlands, but which impinged on Essex buildings mainly in the second half of the century. The common joists are of near-square vertical section, presaging the changeover from horizontal to vertical which had not yet occurred in more vernacular buildings. It seems likely, therefore, that Josselyn engaged local carpenters to build his barn but specified the use of an expensive infill material where it would make the most impression, while Browne engaged a London firm to build his more sophisticated court-house.

Place House stands in the High Street of Great Bardfield (TL 674 303). Only a small section of the timber frame is now exposed; this has a carved corner post supporting two adjacent jetties, and close studding with original brick nogging arranged in opposed triangles (Fig. 12). The post is ornamented with a floral design in high relief and the legend 'W.B. mense Aprilis A. Dni. 1564'. The initials refer to William Bendlowes, 1516-84; some of his armorial glass remains in the window above, although damaged by enemy action in World War II. He was described by his biographer as 'an Elizabethan self-made man of law'. He was born in Great Bardfield, read law at Cambridge, was called to the Bar in 1539, and had a distinguished legal career in four reigns. He became a Bencher of Lincoln's Inn in 1546, was elected Autumn Reader in 1549, and Double Autumn Reader and Member of Parliament by 1555. His career prospered under Queen Mary, and he was appointed the first Recorder of Thaxted. At the beginning of the reign of Queen Elizabeth he was the only Sergeant-at-Law in the county, but he remained a Roman Catholic, and although he was sufficiently trusted to retain his office he received no further advancement. He endowed almshouses in twenty villages and a school in his own.¹⁵ Place House had belonged to his father, and in his time had been a typical hall house with one cross-wing, similar to several others in the village. William Bendlowes rebuilt the former service end as a major reception wing, making it the most conspicuous house in the parish; the carved corner post and exposed brick nogging are in this wing.



Fig. 10
Detail of the barn at New Hall. In the upper row of panels vents have been blocked with later bricks; in the lower row one panel has been filled with later bricks in reversed blocks pattern, and one with plain nogging. The others are mainly original.

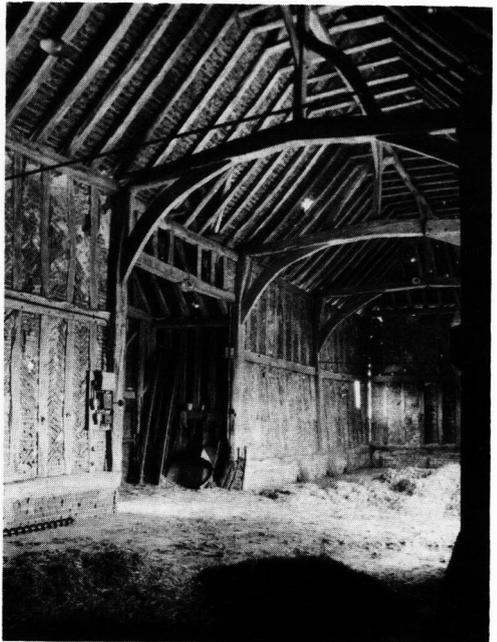


Fig. 11
Looking south-east in the barn at New Hall. The posts and studs are recessed to receive the mortar, and the recessed studs continue over the great doors.



Fig. 12
Part of the north-east wing
of Place House, Great
Bardfield, Essex, built for
William Bendlowes in 1564,
with the carved corner post
and original brick nogging in
opposed triangles pattern.

Moyns Park, Steeple Bumpstead, is a major country house in a large park (TL 695 406). In its present form it was built by Thomas Gent, another lawyer who became a Sergeant-at-Law in 1584, a Baron of the Exchequer in 1588, and who died in 1593.¹⁶ It is of half-H plan, consisting of a three-storey main range of solid brickwork with limestone dressings facing north-west, and two rear wings of two storeys which are timber-framed and brick-nogged. The main range was dated stylistically by the Royal Commission as *c.* 1580, although in the context of Gent's career it could be a little later.¹⁷ The north-east wing has been much restored; the south-west wing incorporates part of an earlier house of *c.* 1500, but it has been extended and elaborately restyled with all the mannerisms of the late sixteenth century—projecting gables, pendants, hanging brackets, bresssummers and bargeboards carved with serpentine designs and grotesque beasts (Fig. 13). The courtyard elevation is brick-nogged in elaborate geometrical designs, and the studs and posts of the late sixteenth century parts are recessed for mortar.

A very well-known building is left until last, Paycocke's at Coggeshall (TL 848 225), property of the National Trust, and much illustrated in guide books (Figs 14 and 15). It is a complex of buildings of various dates, but the main range has an elaborately



Fig. 13

The courtyard elevation of the south-west wing of Moyns Park, Steeple Bumpstead, Essex, adapted by Thomas Gent *c.* 1588 from an earlier house. Seven patterns of contemporary brick nogging are identifiable, and some minor alterations. Some of the first-floor windows have been blocked with plain nogging.



Fig. 14

Detail of Paycocke's, Coggeshall, Essex, built for Thomas Paycocke *c.* 1505. the three panels of opposed triangles nogging are original. The panel to the right has been disturbed by the construction of a new oriel window, and filled with modern bricks in stacked blocks pattern.



Fig. 15
Paycocke's, the right end of the main elevation. All the panels of opposed triangles are original; the parts disturbed by the construction of new windows and the doorway have been infilled with modern bricks in rectangular patterns.

carved bressummer and main joists incorporating the initials T.P. and M.P. and the merchant mark of the Paycocke family, a two-stemmed clover or ermine tail. These can only be reconciled with Thomas Paycocke, who died in 1518, and his first wife Margaret; it is usually dated *c.* 1505.¹⁸ It is a long-jetty house of five bays, close-studded and brick-nogged. It underwent a major restoration in 1910, and all of the present windows, some alterations to the timberwork, and some of the nogging can be shown to date from that operation. However, many panels of brick infill have never been disturbed. They are composed of typical early handmade bricks and lime mortar, arranged decoratively, mostly in opposed triangles, and are shown in photographs taken during the restoration, when the plaster was first stripped from the exterior.¹⁹ The bricks are cut to an angle of forty-five degrees where they abut on the timber frame, and the studs and posts are recessed for the mortar. Where the infill has been disturbed for alterations to the adjacent timberwork modern bricks of a quite different quality are used, and these are all arranged vertically and horizontally.

One could go on describing buildings with original brick nogging, but not all are as datable as the examples given, and less is known about their original owners. Six examples from one county should suffice to prove that brick nogging was practised in the

sixteenth century; other examples are given in the Appendix. Why was brick nogging adopted? Here it is necessary to consider the reasons advanced by other writers.

Margaret Wood said that bricks were used in a timber frame through conservatism, and that 'it must soon have been realised that bricks do not need any timber, but on their own are a sound and fireproof method of construction'.²⁰ There were buildings of solid brickwork in Essex from the twelfth century, and plenty by the fifteenth century.²¹ The structural merits of solid brickwork were appreciated long before the earliest evidence of brick nogging. Clifton-Taylor said: 'The old craft of daubing was a specialised one, and as brick became progressively more general for new houses, the need for daubers declined', and that it became easier to find a good bricklayer than a good dauber.²² This argument may be tenable as an explanation of the replacement nogging executed in the late seventeenth century and later, but it does not fit the economic facts of the fifteenth and sixteenth centuries. Outside London daubers were paid at the unskilled rate; daubing was merely one of the useful accomplishments of the general labourer. In London the rate was consistently higher, aligned with the wages of other building craftsmen, indicating that there it was a full-time occupation.²³ Daubers were easier to find and cheaper to employ than brickmasons. Mercer said that 'it is probable that brick nogging began as a more fashionable method of walling than it later became', but he was unable to develop the argument further for lack of examples.²⁴ In all the instances given here brick nogging was used by clients who were in close touch with the most advanced architectural styles of the capital; they used it precisely because it was fashionable and ostentatious. This raises another question: why was it considered desirable?

Roger Fry and Sir Nikolaus Pevsner have drawn attention to the traditionally English liking for surface pattern—'our national mania for beautiful surface quality'—rather than sculptural depth.²⁵ In timber-framed buildings the frame itself was treated as a form of surface ornament; curved braces were arranged in matching pairs, sometimes with reversed double curves which emphasized pattern at the expense of structural efficiency, sometimes with all braces concealed to produce a regular grid pattern of close studding. Where original wattle and daub infill survives it is often found to be incised with combed geometrical or serpentine designs.²⁶ The more opulent stone buildings too are enriched with pattern. The local form of it in the fifteenth and early sixteenth centuries was flint flushwork; there are particularly flamboyant examples at the gatehouses of St. Osyth's Abbey and St. John's Abbey, Colchester. Brick buildings of the period are

enriched with diaper patterns executed in blue flared headers on a red ground.²⁷ However, the decorative elaboration of solid brickwork could not be taken very far, mainly owing to the irregularity of the bricks. They were accurately formed when 'green', but owing to the lack of uniformity in firing conditions they shrank unevenly, and emerged from the clamp highly variable in size and shape. Much brickwork of the period is in random bond, and even when it takes up a recognizable bond it is made up with wide mortar joints. The more elaborate bonds which might have yielded more attractive surface patterns were not possible at this time, and did not become practicable until the improved firing methods of the late seventeenth century produced bricks of consistent size. Brick nogging allowed the possibility of elaborate geometrical patterns, more decorative than anything attainable in solid brickwork of the period.

When the aesthetic attraction of brick nogging is admitted, its use and distribution become perfectly clear. Two centuries before it was used for practical reasons as replacement for decayed wattle and daub it appeared as ostentatious ornament in the houses and prestige buildings of the leaders of architectural fashion. It is no accident that the two earliest examples we know about were in royal residences. Arranging the other examples quoted here in chronological order, Paycocke's of *c.* 1505 was the house of the wealthiest merchant of one of the wealthiest cloth towns of Essex; a merchant had to work harder at acquiring the external manifestations of status than one who was born to high social rank. Colville Hall, the manor house and court-house, 1537-50, and New Hall, the demolished manor house and surviving great barn, 1554-62, were both newly established manors of rising gentry. Place House, 1564, was the house of a very successful lawyer, the local man of modest origins who returned to his birthplace and distributed his wealth in such a way as to make the maximum impression on those among whom he grew up (it is not difficult to think of equivalents in our own century). Moyns Park, *c.* 1588, the great house of a Baron of the Exchequer, displayed an even more architecturally advanced style to the front (limestone dressings have to come a long way to be used in a county which has no usable stone), and relegated brick nogging to the rear wings. In each building, too, the aesthetic significance of the material accounts for its position in the building. In the royal castles the outer walls had to be thick and strong, but internal partitions and walls of a cloister could be lighter and more decorative. At Colville Hall the whole of the house was nogged; the front of the court-house was patterned more decoratively than the rear, but weatherboarding would suffice for inside the cartway, and wattle and daub for an internal partition. At the New Hall barn only the most prominent

long wall and part of a less visible end wall were brick-nogged; inferior infill would suffice elsewhere. Photographs of the house taken immediately after the war damage show that bricks were present under the later plaster, but it is not possible to reconstruct the patterns.²⁸ At Place House only a little nogging is now exposed to view, but the consistent use of the opposed triangles pattern suggests it was probably the same all over those parts of the new wing which were visible from the street. Contrary to the theory advanced by Margaret Wood, brick nogging and solid brickwork were used simultaneously in some of these examples—certainly at Hertford Castle, New Hall (solid brickwork is shown in photographs taken by the Royal Commission in 1914), Place House (which has a two-storey porch of solid brick), and Moyns Park. In Oxfordshire John Steane has observed that solid brickwork and brick nogging were introduced simultaneously, in the fifteenth century.²⁹

A prominent Spaniard who visited England in the time of Queen Mary said that the English had their houses built of sticks and dirt.³⁰ The Englishmen who were most aware of the architecture of foreign capitals became increasingly apologetic about the native style of building, and either rebuilt their houses in Renaissance style, or covered them with plaster to imitate stone. As Sir Nikolaus Pevsner has commented, 'None of the other nations of Europe has so abject an inferiority complex about its own aesthetic capabilities as England'.³¹ By the 1580s the lavish display of timber which had been a sign of wealth and status earlier was going out of fashion among the highest in the land; at Moyns Park a brick-nogged timber frame was thought good enough for the rear wings, but the main range was built in advanced Renaissance style. By the seventeenth century the external display of timber framing had become a provincial style, still common in the west Midlands, but rapidly disappearing from the counties nearest to the capital. Brick nogging was affected by the same change of taste; at the highest social level it was already old-fashioned by 1600, and in the major houses the external display of brick nogging was discontinued.

It re-appeared in the later seventeenth century at a lower social level, and for more practical reasons. By this time brick was the normal material of new construction for town houses, and brick was becoming readily available in most lowland areas. At vernacular level in the provinces new timber-framed houses were infilled with brick from the outset, and in older buildings it became socially desirable to replace decaying wattle and daub with new brick infill. As Clifton-Taylor argued, the older craft of daubing was dying out because it was not much required. In square-framing areas

particularly the geometrical patterns possible in brick were much exploited; there are many flamboyant examples in Hampshire and Buckinghamshire. Mercer found documentary evidence of new buildings with brick infill from *c.* 1650, and standing buildings and small additional features from the later seventeenth century. Barley quoted a Buckinghamshire report of *c.* 1705: 'The house is a timber frame and the lath and plastering being decayd I have brick panneld it all over'.³² In 1792 Richard Woods wrote to a client: 'I recommend that all the buildings framed with wood should be filled up with brick knogging, that not only making the house warmer it also prevents the rats from having their nests there; and to be roughcasted on the outside and lathed and plaistered on the inside'.³ That is, by this date the nogging was not even to be exposed to view; its former aesthetic attraction had been wholly replaced by its functional qualities. Penetration of the infill of timber buildings by rats was a new problem in the eighteenth century. The black rat, *Rattus rattus*, had been common from the thirteenth century; in its natural habitat in India it lived up trees, and it transferred this practice to civilization by climbing buildings and living in the thatch, but it did not gnaw through the walls. The brown rat, *Rattus norvegicus*, was first reported in England in the early eighteenth century, and was first reliably identified in 1768. This is the rat which is now ubiquitous; it was by nature a burrowing animal, and it could easily gnaw through wattle and daub infill.³⁴

There should be no difficulty in distinguishing between original brick nogging of the fifteenth and sixteenth centuries and its later use as replacement for decayed wattlework:

- (1) If original the studs must be deep enough to receive the bricks without allowing them to project to front or back, typically four and a quarter inches (108 mm), and the studs and posts will have shallow recesses in the sides, throughout their height, to receive the mortar—usually of rounded concave shape, sometimes of wide V-shape (Figs 2, 4 and 16). These recesses were cut while the timber was still green, so that the tooled surface is smooth. Even where the infill is well maintained it is usually possible to insert a thin feeler gauge between the mortar and the stud; if it stands out at an angle, this indicates the shape of the recess for original brick nogging. Where wattlework was present earlier there will be narrow V-shaped grooves or auger holes in the horizontal timbers, and other fixing slots in the studs and posts. Both treatments may be present in different parts of the frame, as in the New Hall barn, the wattle fixings being in the less prominent walls.
- (2) If original the bricks will be of the size and texture characteristic of the period in the particular region. Size alone

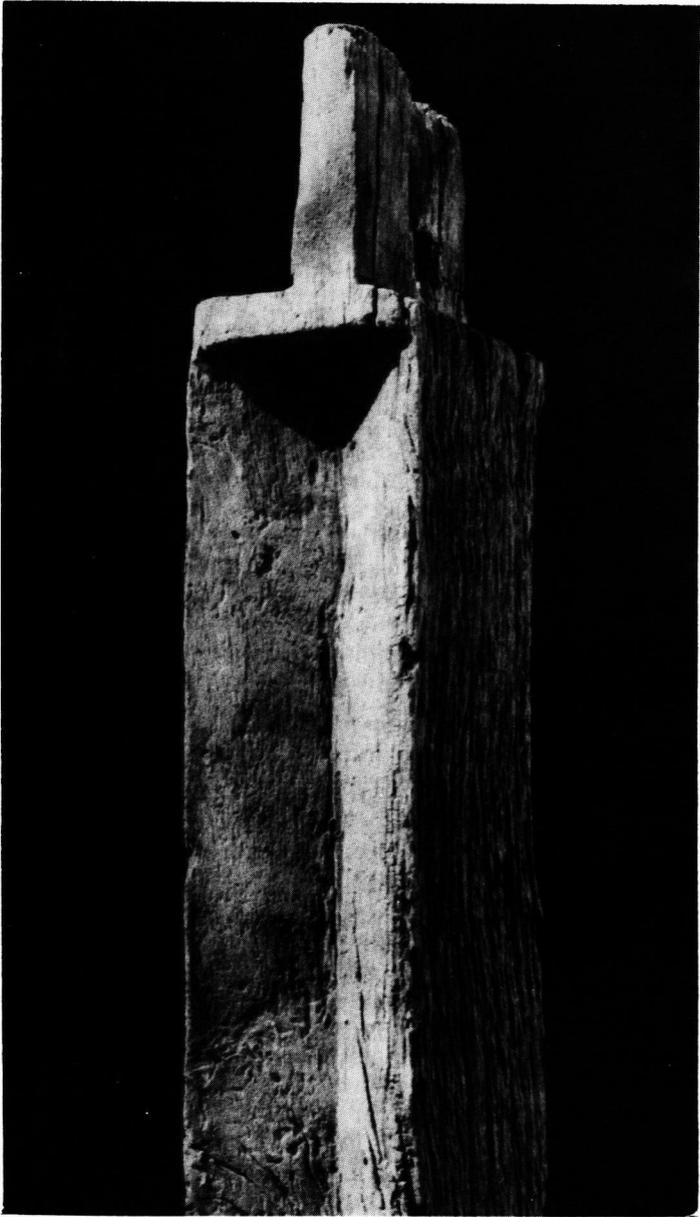


Fig. 16

A stud from the demolished manorial courthouse at Poole Farm, Great Yeldham, Essex, originally nogged in exposed face pattern. Note the smooth texture of original tooling in the V-shaped recess for mortar.

is not a reliable indication of date, but considerable variation in size from brick to brick is more diagnostic. Visible folds in the clay, and the inclusion of small stones, are typical of early bricks, as are differences in the degree of firing; although it can be assumed that the bricks used to nog a conspicuous part of the building were selected as the best of the batch, and would exclude the more extreme variations. Replacement infill in an earlier timber frame is usually of bricks which are smoother in texture and more even in size, and often slightly too deep for the frame.

- (3) If original the bricks will be arranged in decorative patterns, at least in the most conspicuous elevations. These patterns exhibit a consistency which is easily distinguishable from the use of oblique bricks to fill an awkward space.

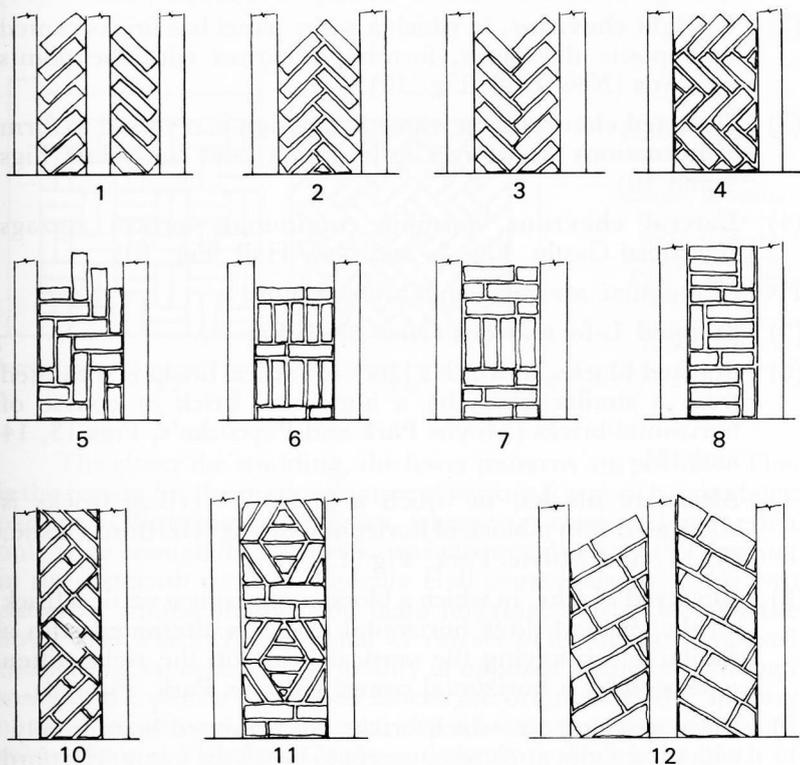


Fig. 17
Common patterns of brick nogging in close studding.

- (4) Original nogging can be distinguished from restoration work of the nineteenth and twentieth centuries in the same way that the real can always be distinguished from the imitation. Modern bricks are smooth and even, lacking the evidence of exposure to the weather and of piecemeal repair, even if they are of the right size. Both kinds can be seen at Paycocke's (Figs 14 and 15).

Patterns of brick nogging

Herringbone is too simple a term, for it includes four distinct arrangements of bricks (Fig. 17):

- (1) **Simple oblique**, in which a narrow panel of bricks all canted the same way is juxtaposed with another panel of bricks canted the opposite way (Colville Hall and Moyns Park, Figs 6 and 13).
- (2) **Upright chevrons**, in which a wider panel has bricks canted in opposite directions, forming chevrons with the points upwards (New Hall, Fig. 10).
- (3) **Inverted chevrons**, in which this design is reversed to form V-formations (Hertford Castle, Fig. 1, and New Hall, Figs 9 and 10).
- (4) **Lateral chevrons**, forming continuous vertical zigzags (Hertford Castle, Fig. 2, and New Hall, Fig. 10).

Five rectangular arrangements are common:

- (5) **Stepped L-formations** (New Hall, Fig. 9).
- (6) **Stacked blocks**, in which a block of vertical bricks is separated from a similar block by a horizontal brick or course of horizontal bricks (Moyns Park and Paycocke's, Figs 13, 14 and 15).
- (7) **Alternate blocks**, in which a block of vertical bricks is alternated with a block of horizontal bricks (Hertford Castle, Fig. 1, and Moyns Park, Fig. 13).
- (8) **Reversed blocks**, in which a block comprising a vertical brick on the left and three horizontal bricks is alternated with a similar block having the vertical brick on the right, often separated by a horizontal course (Moyns Park, Fig. 13).
- (9) **Plain nogging**, in which bricks are arranged horizontally, with no attempt at pattern, except to break the joints (Hertford Castle, Fig. 1, Colville Hall, New Hall, Moyns Park, Figs 5, 10 and 13).

More elaborate patterns are:

- (10) **Opposed triangles.** Bricks canted one way form a triangular block, and bricks canted the other way form an opposed triangular block, continuously alternated all the way up the panel; a very popular design, seen at its best at Place House and Paycocke's (Figs 12, 14 and 15), but mixed with several other patterns at Hertford Castle (Fig. 1), New Hall and Moyns Park (Figs 9, 10 and 13).
- (11) **Diamonds,** formed with four canted bricks (Hertford Castle, Fig. 1).
- (12) **Exposed face,** in which the face of each brick is exposed instead of the stretcher (at Poole Farm, Great Yeldham, demolished; a stud from the building is shown in Fig. 16).
- (13) **Hollow squares of paired bricks, upright** (Fig. 18).
- (14) **Hollow squares of paired bricks, oblique** (Fig. 18).

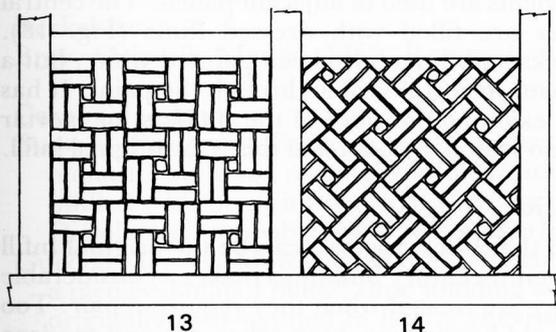


Fig. 18
Hollow squares of
paired bricks,
upright and
oblique, in square
framing at nos
28-32, Church
Street, Sandwich,
Kent. The voids
are filled by
knapped flints.
Now painted.

The closer the studding, the fewer patterns are possible. This is the reason for the predominance of various forms of herringbone pattern in East Anglia and Essex, where very close studding, often only wide enough for one brick, was the prevailing style of framing in the sixteenth century. Colville Hall court-house has only two patterns, simple oblique and plain nogging, and apparently the house also. Place House—what we can see of it—has only opposed triangles. Paycocke's too is mainly of opposed triangles, although some of the panels of stacked blocks are original. Wider spacing of the studs allowed a greater variety, an opportunity grasped with enthusiasm at Hertford Castle and the New Hall barn, each of which has seven different patterns (the latter is further complicated by blocked vents in alternate panels of the upper row, and some piecemeal repair). We may find the disciplined organization of

patterns at Place House and Paycocke's more to our taste, but the extravagance of New Hall is very Tudor in feeling. Fig. 13 shows the least altered part of Moyns Park, with seven patterns of nogging. The other elevation of the same wing was substantially restored before the first World War by Clough Williams-Ellis,³⁵ with much renewed studding; it appears to have been carefully done, for all the same patterns are now present, plus stepped L-formations. In the faint and mutilated wall painting at Tilbury-juxta-Clare only two patterns are identifiable, opposed triangles and and plain nogging.

In the best work oblique bricks were cut to an angle of forty-five degrees where they abut on the vertical timbers, as at Place House and Paycocke's. At Colville Hall the triangular voids are simply filled with mortar; oyster shells have been found elsewhere. In regions where the timber frame forms large square panels a greater variety of patterns is possible. For example, at nos 28-32, Church Street, St. Mary's, Sandwich, Kent, some panels are infilled with hollow squares of paired bricks, repeated many times; upright and oblique arrangements are used in adjacent panels. The central voids of the squares are filled with dressed flints (Fig. 18). Regrettably, the bricks and flints have been painted white, but a strong geometrical pattern is still visible through the paint. It has not been possible to examine the sides of the timbers for mortar recesses, but there is no reason to doubt that this is the original infill.

Repair and restoration

The recognition that brick nogging can be the original infill of fifteenth- and sixteenth-century buildings makes a considerable difference to how they are treated when they require repair. Too often in the past the old bricks have been taken out and modern bricks substituted, whether of standard modern size or made to specification, arranged in monotonously repeated patterns, bearing no similarity to the deliberate variety of patterns originally adopted. This is the kind of over-restoration of which William Morris wrote in 1877: 'A feeble and lifeless forgery is the final result of all the wasted labour'.³⁶ One hopes that no conscientious owner would now consider this operation, and that no local authority which has the duty of protecting a Listed Building for posterity would permit it. Still, builders tend to adopt whatever method of working is most convenient for themselves, and wholesale replacement is easier to do than careful repair. A proper procedure would be to record the existing infill with photographs and full-size tracings, to remove as little of it as is absolutely necessary for repairs to the frame, and to replace it as it was, brick by brick, using lime mortar. Repointing should be sufficient where the frame does not require repair. Where

sections of the original infill are missing it is acceptable to fill the voids with modern materials which are visually unobtrusive. Occasionally it may be desirable to reverse a brick, but wholesale reversal of the brick infill gives an ancient building a disconcertingly 'brand new' appearance;³⁷ and, of course, bricks which have been cut to shape cannot be reversed. As with all good conservation, the aim should be to repair the fabric sufficiently to pass it on for another generation to enjoy, but not to try to undo all the effects of time or to try to re-create what we believe it may have been originally; such beliefs are usually shown later to be mistaken. But however carefully the work is done, it is important for future study that the records should be deposited in public archives.

Appendix

The following are some other buildings with early brick nogging, arranged alphabetically in pre-1974 counties. Not all have been examined personally by the author:

Berkshire

Bray. Ockwells Manor. 1465. Restored.

Cambridgeshire

Burwell. Parsonage Farm. An early sixteenth-century long-jetty monastic building, originally infilled with wattle and daub, but infilled with brick in inverted chevrons pattern soon after the Dissolution, probably used as a manorial court-house.

Guilken Morden. Morden Hall. Late sixteenth-century extension to a medieval manor house; close studding with original brick infill, originally over-painted in lateral chevrons pattern.

Essex

Clavering. Pond's Farmhouse. Mid-sixteenth century.

Great Yeldham. The Old Rectory. Only a small section of the nogging is exposed, formerly in an outside wall but now enclosed by an extension. Late fifteenth century.

Poole Farm, manorial court-house, demolished in 1969; photographs in National Monuments Record. See Fig. 16. Later sixteenth century.

Hadstock. Maddings, Walden Road. Jettied building probably of monastic origin with posts and studs recessed for mortar, but rebuilt on the present site with wattle and daub infill.

Little Yeldham. The Red House. Originally brick-nogged, and shown as such in old photographs; nogging now removed.

Maldon St. Peter. Beeleigh Abbey. The post-Dissolution house at the entrance. Mid sixteenth century.

Manningtree. The Old Coffee House. Restored *c.* 1975.
 Roxwell. Newland Farm.
 Steeple Bumpstead. Brick House, The Endway. Mid sixteenth century.
 Toppesfield. Hose's Farmhouse.

Hampshire

Greywell. The Lantern House. Restored.
 Hartley Wintney. Wintney Farm. Large barn, late sixteenth century, in ruinous condition. Simple oblique nogging, with later repairs in plain nogging, survives within a later lean-to extension.
 Mattingley. Parish church, *c.* 1500. The chancel retains original opposed triangles and simple oblique nogging; the remainder rebuilt in the nineteenth century.
 Odiham. Fisher's Cottage. Early seventeenth century, close studded, original nogging in opposed triangles pattern survives in the south-east gable and some upper panels, the remainder restored.

Kent

Fordwich. The Town Hall. Originally built with wattle and daub infill in 1474, brick nogging inserted in the two most prominent elevations in 1544.³⁸
 Sandwich. Nos 19-21, Church Street, St. Mary's.
 No. 22, Church Street, St. Mary's.
 Nos 28-32, Church Street, St. Mary's. See Fig. 18.
 No. 42, Strand Street. Nogging in simple oblique pattern inserted at an early date, in an earlier close-studded frame.

Norfolk

King's Lynn. Coney's House, Saturday Market. Demolished in 1816 but illustrated in V. Parker, *The making of King's Lynn*, 1971, Phillimore, Plate 13b.
 Greenland Fishery Inn, Bridge Street. 1605.
 Hampton Court, Nelson Street. Early sixteenth century.
 Hanseatic Warehouse, St. Margaret's Lane. 1475 and later.
 No. 2, St. Ann's Street. Restored 1986, now all plain nogging.
 Norwich. The Old Barge, King Street.³⁹ Much altered 1984.

Oxfordshire

East Hendred. The Stores. Close studding. Simple oblique nogging inserted at an early date in an earlier frame.
 Ewelme. Almhouses by parish church. In courtyard, restored.
 Stonor. Stonor Park. Nogging mainly concealed, but exposed in kitchen gable.

Suffolk

Suffolk has many early brick-nogged houses and manorial ancillary buildings similar to those reported in Essex, but in addition there are public or institutional buildings such as guildhalls where the same considerations of prestige and aesthetic embellishment apply. The religious guilds were dissolved in 1547, but owing to the climate of insecurity it is unlikely that they built any guildhalls after 1537.

Aldeburgh. The Moot Hall. Early sixteenth century, restored in 1854.

Baylham. Baylham Hall. Stable range, lower storey of brick, upper storey of brick-nogged timber framing, *c.* 1550.

Bentley. Old Hall. Ancillary building behind present house, early sixteenth century.

Cockfield. 'Cottages' by parish church, probably a guildhall.

Crowfield. House by parish church, fragments only, *c.* 1500-1520.

Debenham. Nos. 1-5, Gracechurch Street.

No. 3, High Street. Mid sixteenth century two-storey porch added to earlier Wealden house.

Ulverston Hall. Four bays remain, in two isolated sections, of a six-bay ancillary building, probably a manorial court-house.

Earl Stonham. Weylands Cottages, Wicks Green. Mid sixteenth century.

Framlingham. Parham Hall.

Framsden. Boundary Farmhouse. Mid sixteenth century.

Framsden Hall. Early sixteenth century. Also barn of same.

Fressingfield. The Guildhall.

Hadleigh. Sun Court.

Hawkedon. Swan's Hall.

Helmingham. Helmingham Hall, the Gatehouse, restored.

Old Hall Farmhouse. Late sixteenth century.

Ipswich. Nos. 80-84, Fore Street. Warehouse of merchant complex by quay.

Lavenham. Corpus Christi Guildhall.

De Vere House, Water Street.

Laxfield. The Guildhall.

Nayland. Alston Court. Front restored, sides retain original nogging.

Needham Market. No. 101, High Street. Mid sixteenth century.

Stoke-by-Nyland. Gifford's Hall.

West Stow. West Stow Hall.

Wherstead. Barn illustrated in C. Jennings, *The identity of Suffolk*, 1980, p. 106, dismantled and re-erected in Surrey.

Winston. Green Farmhouse. Mid sixteenth century.

Witnesham. The Red House. Late sixteenth century.

Surrey

Lingfield. Pollard House. Sixteenth-century shop extension in front of earlier Wealden house. Opposed triangles and simple oblique patterns, restored.

Warwickshire

Preston Bagot. The Manor House. See Fig. 4 and Note 37.

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