

A Tale of Two Barns: Paston and Waxham

by

ANTHONY ROSSI

The great 16th-century barns at Paston and Waxham near the north-east coast of Norfolk were falling into disrepair by the closing years of the 20th century. This article discusses their context, significance and decline, and describes their rescue, in which the author was closely involved.

The late 16th-century manorial barns in the villages of Waxham (north of Great Yarmouth) and Paston (south-east of Cromer) are two of the finest agricultural monuments in Norfolk and this author had the privilege of undertaking the repair of both in the 1990s, extending in the case of Paston until 2008. The complex at Paston is listed grade II* and the barn itself is also a scheduled monument; Waxham barn is listed grade I. Paston barn is dated 1581 and Waxham was until recently thought to be earlier, but tree-ring analysis in 2005 established a timber felling date of 1583/4.¹

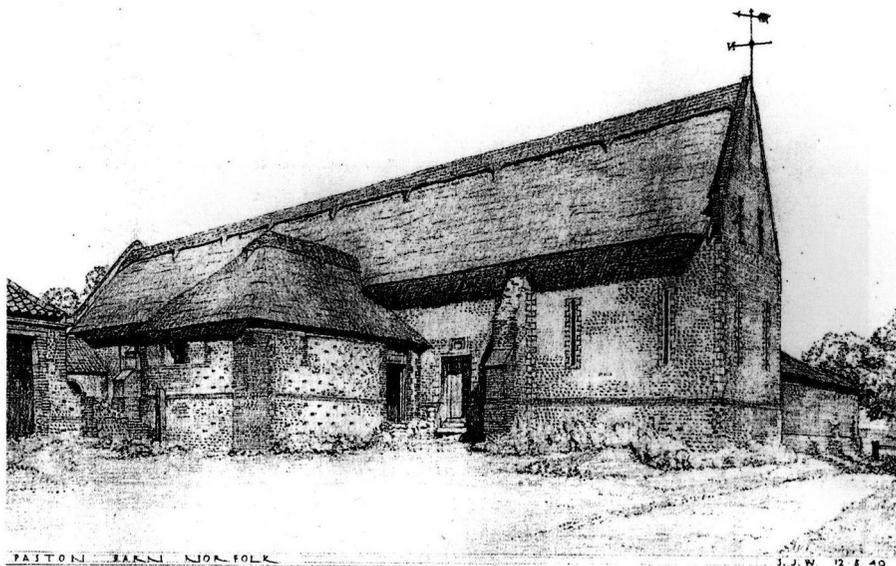


Fig. 1

Paston barn from the south-west; drawing by the late Stanley J. Wearing, August 1949.
S. J. Wearing, Beautiful Norfolk Buildings, III (Norwich 1960), 21

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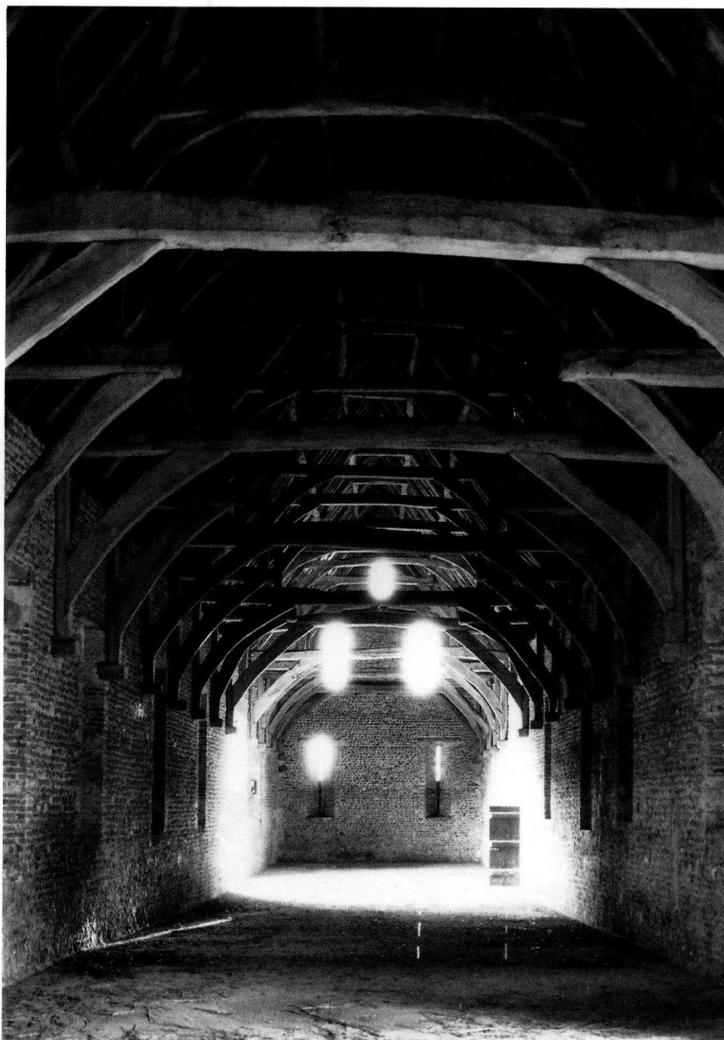


Fig. 2

Paston barn, the interior looking south, in December 1989.

Photograph, David Watt

Both barns are constructed of local flint with freestone and brick dressings, and have fine oak roofs with alternating hammerbeam and tie-beam trusses covered with thatch (Figs 1, 2). Waxham at approximately 180ft (55.4m) is marginally longer than Paston, which is about 164ft (50.5m) long.² At the lost village at Godwick, south of Fakenham, is a smaller brick barn of similar age with a similar roof structure. This is the surviving agricultural wing of a late 16th-century house that has disappeared and it includes a domestic element at one end and a pseudo-domestic architectural treatment on the side, which originally faced the house and forecourt.³

These great barns with their majestic roofs (Fig. 3) are obviously for display as well as function and the families who built them were members of the Tudor *nouveau riche*, whose wealth derived at least in part from the dissolution of the monasteries earlier in the century. There was probably some rivalry between the builders of two such barns a short distance apart and so close in date. They appear to continue the tradition of the pre-Reformation monastic tithe barns, while their roofs in particular echo the carpentry of the late medieval church roofs which are such a feature of East Anglia, including two fine hammerbeam roofs at Trunch and Knapton just a few miles from Paston, and a number with alternating hammerbeams and tie-beams further afield in the county.⁴

Waxham barn retains a recognisable though compromised manorial setting, including hall, gatehouse, boundary walls and church (Fig. 4). At Paston the barn is near the church and the site of the hall, but the original hall has gone and the barn remains more of a stand-alone monument, though with considerable accretions as a result of changes of ownership and later developments in agricultural practice. At Waxham there are also developments but they are less extensive and this barn remained in limited agricultural use until the late 1980s. Paston had ceased to be used for agriculture some years previously and alternative uses had been considered. Towards the end of the 1980s it was acquired by a local industrialist who approached the author regarding its conversion to a prestigious company headquarters. However, his company failed in the recession of the early 1990s and the buildings were subsequently acquired from the receivers by the North Norfolk Historic Buildings Trust. Following this a colony of rare bats took up residence and this led to a repair programme both protracted and intermittent.

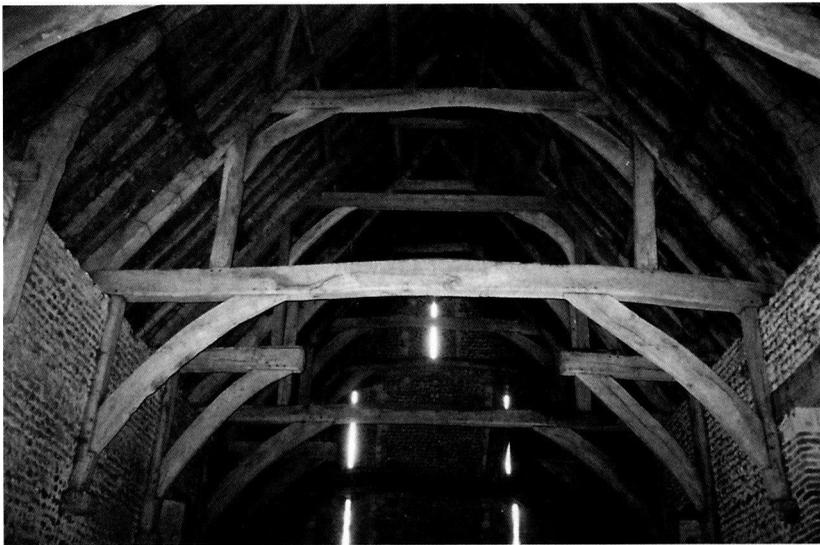


Fig. 3

Paston barn. General view of the roof timbers with alternating tie-beam and hammerbeam trusses regularly spaced; also partly visible at top left and right is one of two arch-braced trusses which occur opposite the threshing doorways.

Photograph, author

HISTORICAL CONTEXT

It has already been stated that the families connected with both barns were prosperous and had benefited from the acquisition of monastic property following the dissolution.

Sir Thomas Woodhouse (or Wodehouse) of Waxham had purchased the property in the mid-16th century and was high sheriff of Norfolk in 1553. In 1546 he had acquired the wealthy Cluniac foundation at Bromholm further up the coast (near Paston) and he or his successors also acquired nearby monastic properties at Ingham and Hickling. He died childless in 1571 and was succeeded by his brother, William, followed by his nephew, Henry, who lived until 1624 or 1625.⁵

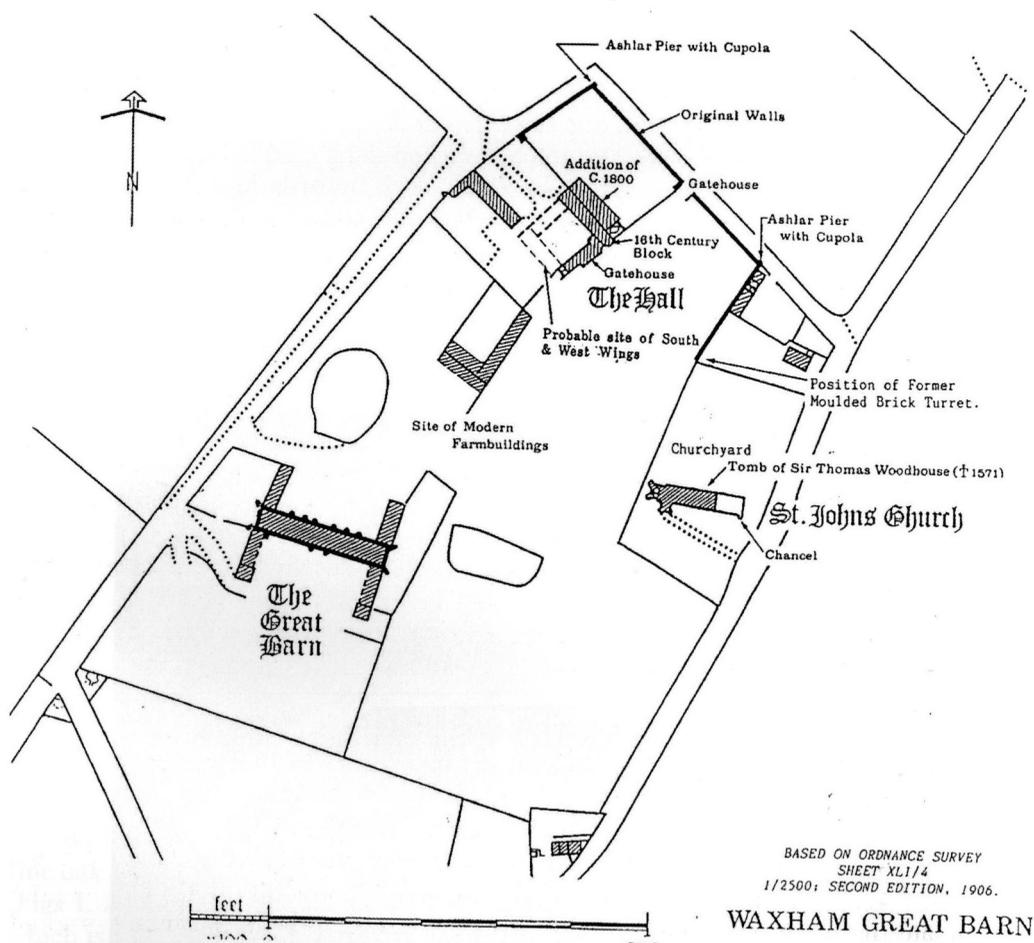


Fig. 4

Waxham. Map showing the barn within its surviving though compromised manorial context of church, hall, gatehouse and boundary walls; also the four later wings attached to the corners of the barn, and the walled yards which relate to them.

After S. R. Heywood, public inquiry proof of evidence, February 1989

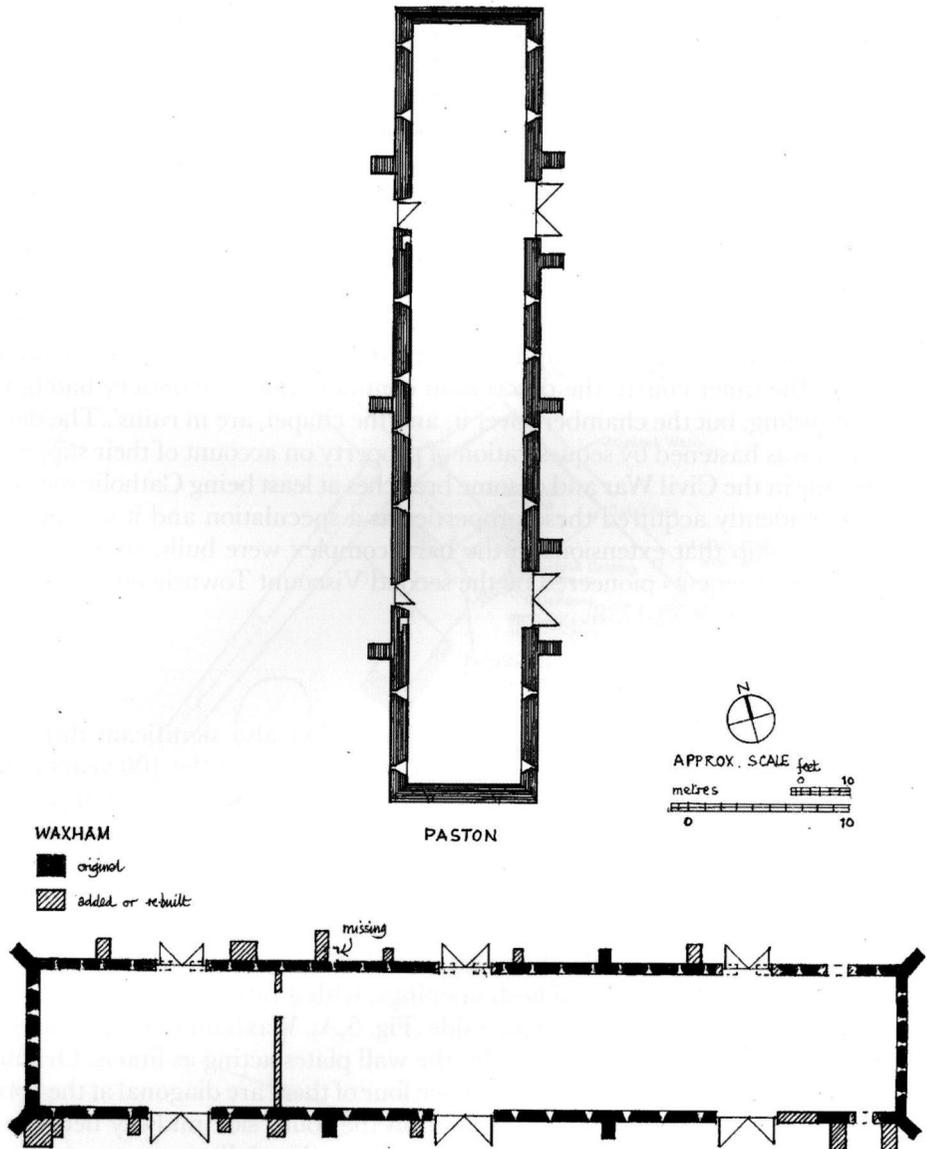
The Pastons, authors in the previous century of the famous Paston letters, had risen over the generations from local yeomanry to one of the most influential families in Norfolk, with connections at court. Commemorative tablets on their barn record that it was built in 1581 by Sir William Paston (1528-1611), who founded the grammar school which bears his name at North Walsham, a few miles from Paston.⁶ In 1597 he inherited from his cousin, Clement Paston, the grand house at Oxnead near Aylsham which Clement had built and which became the main seat of the family until William, second earl of Yarmouth, died bankrupt in 1732 – an event described as echoing ‘through Norfolk like the fall of an ancient oak’. Oxnead and Paston were subsequently sold to Admiral (later Lord) Anson (1697-1762), who in the 1740s had circumnavigated the world and subsequently defeated the French at Finisterre, amassing a considerable fortune. Later the hall at Paston was described as standing ‘near the church’ and having had two courts, with a well in the inner court; the description continues that ‘the buttery hatch, with the hall, is standing, but the chambers over it, and the chapel, are in ruins’. The decline of the Pastons was hastened by sequestration of property on account of their support for the royalist side in the Civil War and of some branches at least being Catholic recusants. Lord Anson evidently acquired these properties as a speculation and it was probably under his ownership that extensions to the barn complex were built, coinciding with agricultural improvements pioneered by the second Viscount Townshend of Raynham (‘Turnip’ Townshend, 1675-1738).

THE BUILDINGS

There are many similarities between the two barns, but also significant differences which have influenced the way the structures have behaved over the 400 years of their existence. Their sites are also different. Waxham is low lying and adjacent to the coast, and the tide is said to influence the water table; at Paston the coastline has cliffs and the barn is further inland, although less far from the sea than when it was built, due to coastal erosion. Waxham is oriented approximately west to east and Paston south to north.

Although the barn at Waxham is marginally larger, the walls at Paston are thicker and are continued on its east side above the two threshing doors, which have lintels. There are buttresses on each side of both openings, with a fifth buttress between them and three more equally spaced on the west side (Fig. 5,A). Waxham has three threshing doors on its south side which are full height, the wall plates acting as lintels. Originally there were eight buttresses as at Paston, but since four of these are diagonal at the corners of the barn, the others are widely spaced and on the south side midway between the adjacent threshing doors and some distance from them (Fig. 5,B).

Dressings at quoins, openings and buttresses are of either brick or recycled stone. At Paston the surviving original dressings of the ventilation loops are brick rendered to simulate the more prestigious freestone, but stone was used for surviving original dressings of doorways and buttresses. At Waxham stone was used sparingly, except on the original buttresses, and brick is something of a feature, the north side (facing the hall) and both gables incorporating a brick diaper pattern, with only the south side, to the farmyard, of plain flint; the gables also have brick copings. In both buildings the stone



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Fig. 5

- Ground plans of the two barns, showing their orientation, principal openings and buttressing.
- (A) Paston has benefited from its thicker walls, fewer large doorways and a better distribution of buttresses.
- (B) Waxham, where significant structural deformation has occurred, especially to the south wall and west gable, and over its life no less than fourteen extra buttresses (hatched) have been added; its plan also shows the widened north doorways and inserted cross wall.

Drawing, author

used is recycled and probably monastic, and considerable quantities of worked stone were incorporated into and even buried within the general walling. Also, carved heads, evidently label stops, were built into the external wall-faces at high levels. At Waxham the west (and more prominent) gable has a pair of such heads and at Paston there is one head above the north threshing doorway and another in the north gable.⁷

Both barns have a significant number of tall narrow ventilation loops regularly spaced on their long sides and set in tiers on the gables, and with splayed internal reveals and wood lintels. Small doorways opposite the threshing doors survive at Paston and probably represent the original arrangement at Waxham, but there the opposite doorways have been widened (see below). The small doorways have niches alongside them, possibly to accommodate lamps. The threshing doorways at Paston (Fig. 15) are of considerable interest, with original frames consisting of jambs which are supported on and braced to extended ground sills, with moulded corbels supporting the heads, which have two more lintel members behind them. The door stiles extend upwards into metal loops fixed to the heads of the frames (see below).

The design of the roofs of both barns, especially the sequence of alternating hammerbeam and tie-beam trusses, is essentially similar, but again there are variations which have affected subsequent performance, and the roof at Waxham is weaker. This barn has twenty trusses and Paston twenty-one, in both cases with a tie-beam truss against each gable (Fig. 6). At Paston the truss spacing is consistent, with five common rafters in each bay, and above the centre of each set of threshing doors there is an arch-braced truss with shorter wall-posts with a tie-beam truss each side of it, giving a total of eleven tie-beam and eight hammerbeam trusses. At Waxham twelve trusses had tie-beams and eight hammerbeams; there is a tie-beam truss on each side of each threshing doorway, but only between the doorways are the trusses closely spaced, with four rafters per bay. Above all three threshing doors the bays have nine common rafters and towards each gable is a pair of bays with seven rafters each.

The design of the actual trusses also differs (Fig. 7). In both cases there are braced wall-posts below the ends of the beams, but at Paston the lower ends of the posts are supported on built-in timber corbels while at Waxham they simply hang without the additional support. Both roofs have queen-struts carried up to the principals and a further horizontal member above, braced at each end. However, at Paston this member is less than halfway up the roof and there is a collar below the ridge: at Waxham it is at a considerably higher level and there is no collar.

Both roofs also have three purlins in each slope. The lowest ones are more substantial and mortised, with discontinuous rafters tenoned to them, the upper rafters being laid over the lighter upper purlins and jointed at the ridge. The middle purlins have small wind-braces at each end and, due to the variable truss spacing, seven of the nineteen bays at Waxham have longer purlins less effectively braced. The trusses in both roofs are numbered in the usual fashion, at Paston south to north and at Waxham east to west (Fig. 6). At Waxham many of the common rafters are also numbered but with scratched rather than chiselled numerals and in no particular order, suggesting that they are recycled from a medieval monastic building.

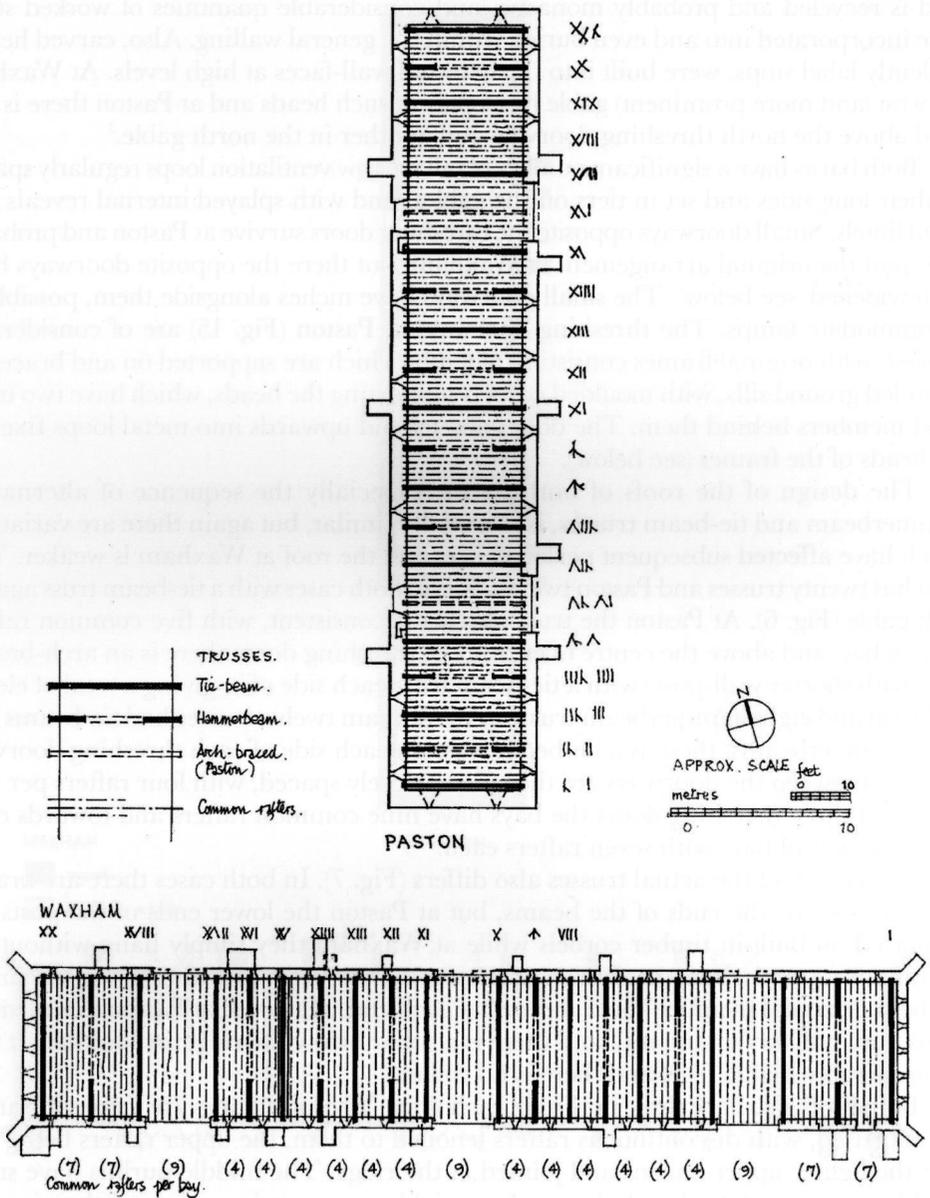


Fig. 6

Plans of the barn roofs: (A) Paston, showing the regular spacing of alternating tie-beam and hammerbeam trusses, with the two arch-braced trusses centred on the large doorways and five common rafters in each bay. (B) Waxham, showing the varied bay widths, with nine common rafters at the doorways, four in each of the bays between them, and pairs of bays with seven rafters at each end of the building.

Drawing, author

While the dating and authorship of the barn at Paston is known from the plaques built into its walls, the date of Waxham remained more conjectural before the timber felling date of 1583/84 was established in 2005. Previously a date of c.1570 had been assumed on stylistic grounds, mainly relating to the brickwork diapering.⁸ It is not impossible, of course, for the building campaigns to have extended over a period: there is a telling vertical line of freestone on the internal face of the west wall at Paston, and at Waxham the death of Sir Thomas Woodhouse in 1571 could have disrupted plans.

LATER DEVELOPMENTS

At both locations there were later developments which illustrate changes in agricultural practice. At Paston, although the later developments are extensive, the original barn remains almost unchanged, apart from alterations to buttresses and the insertion and subsequent blocking of an opening in the west wall to provide a link to a later attached building. At Waxham, however, some significant alterations were made to the barn itself, including the insertion in the 19th century of three wide openings in the north wall, opposite to but lower than the threshing doorways (Fig. 5,B). These openings were evidently to permit loaded carts to be driven in from the south, unloaded within the barn and driven out unloaded, probably because of the use of larger carts which could

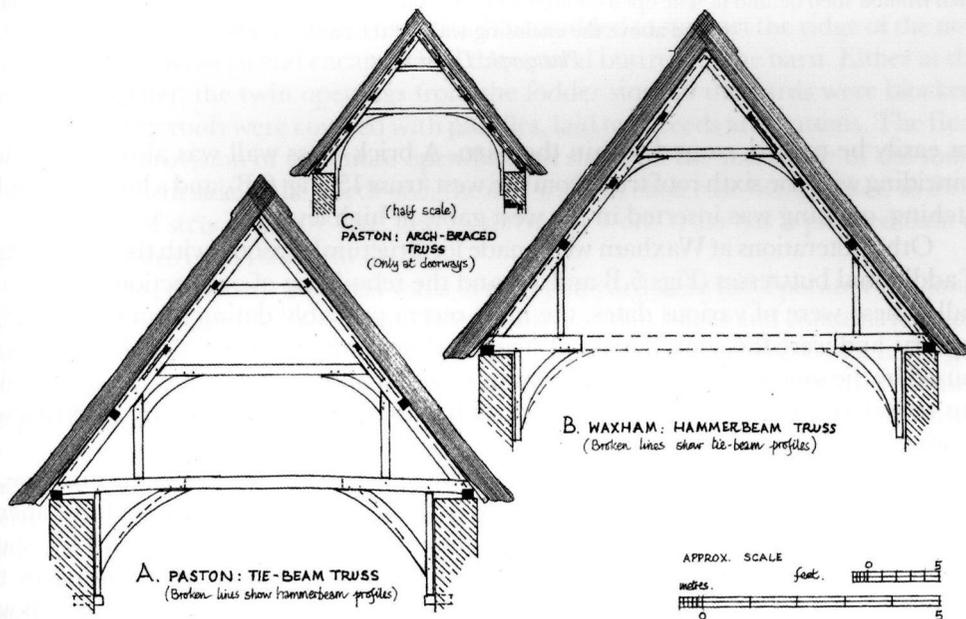


Fig. 7

The roof truss types. Both barns have alternating tie-beam (A) and hammerbeam (B) trusses with pairs of queen-posts and a braced horizontal tie. At Paston (A) this member is lower and there is a high level collar, while the wall-posts are supported on built in timber corbels, resulting in a stronger roof. At Paston there is also an arch-braced truss (C) opposite the centre of each threshing doorway.

Drawing, author



Fig. 8

Paston, the farm buildings from the south-east, December 1989, prior to repair. The original barn with its long roof is behind, the 18th-century thatched fodder shed in the foreground and the slightly later open fronted shed behind it. The open-fronted sheds at each end are late 19th-century, with their gables raised above the enclosing walls of the earlier yards.

Photograph, David Watt

not easily be turned around within the barn. A brick cross wall was also constructed, coinciding with the sixth roof truss from the west (truss 15; Fig. 6,B), and a larger, probably pitching, opening was inserted in the west gable at high level.

Other alterations at Waxham were made for structural reasons, with the construction of additional buttresses (Figs 5,B and 17) and the rebuilding of one section of the south wall. These were of various dates, the most recent probably dating from the mid-20th century, and were the consequence of structural movement especially to the south wall, caused by the southern aspect, high water table and shallow foundations.⁹ This instability was reflected in movements elsewhere which had to be addressed when the building was repaired (see below).

Earlier repairs to the roof had included the renewal of three tie-beams in pine, at truss 15 above the inserted cross wall and at trusses 8 and 13, using slightly tapered circular poles which are probably recycled ships' masts (Fig. 10). At truss 19 the south hammerbeam was missing and a pine member had been inserted spanning to the hammerbeam opposite. During the repair programme this inserted member was removed and the missing hammerbeam reinstated.

Later developments at Waxham included the construction of four low wings extending northwards and southwards from the east and west ends of the original barn,

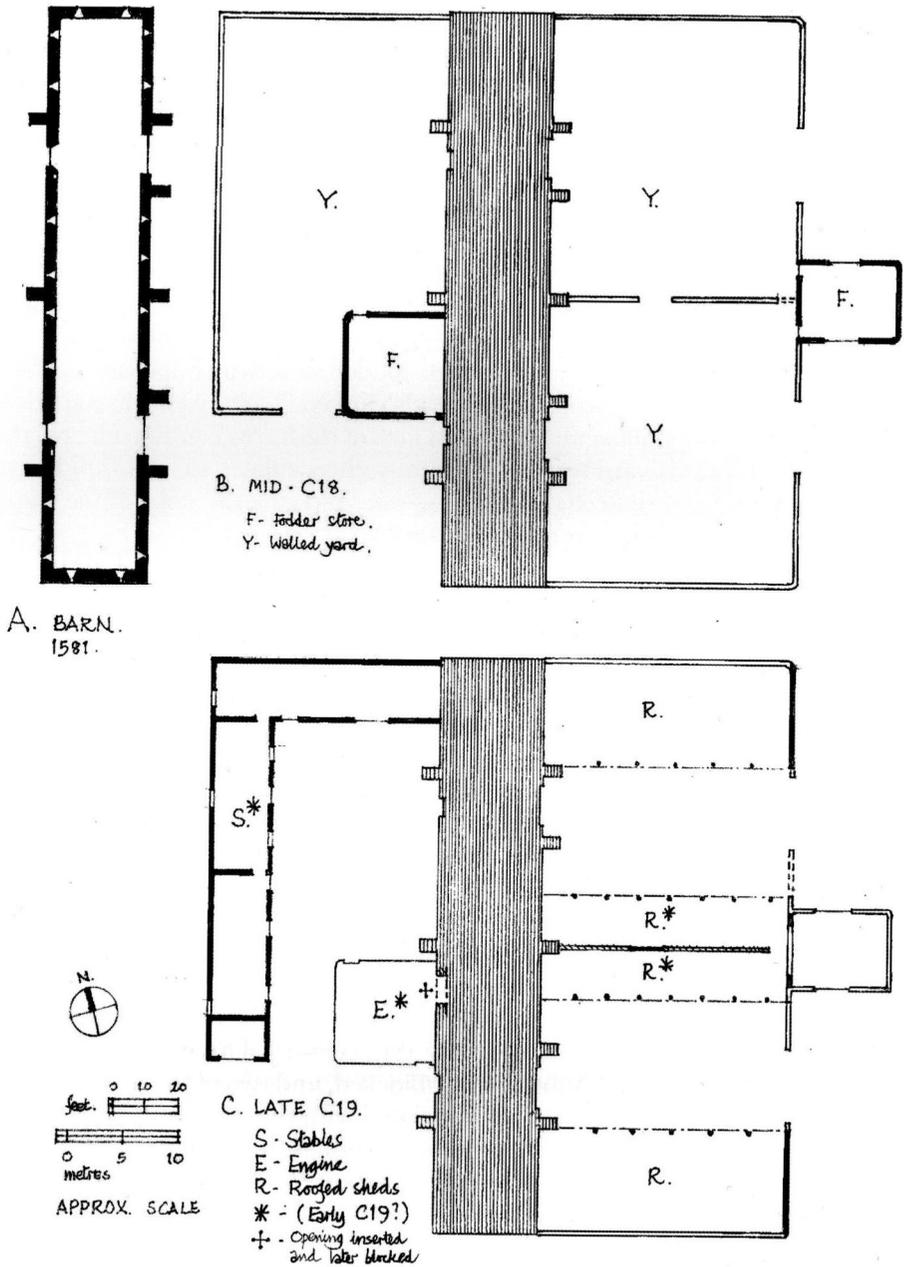
with walls linking the ends of the wings to form enclosed yards (Fig. 4). On the south side each wing ended in an enclosed and roofed space with access from outside the yard, and the remainder were also roofed but open-fronted, an arrangement clearly relating to fodder storage and over-wintering of cattle, and probably dating from the mid-18th century. It is less clear whether the wings to the north were similar in date and purpose, but they have additional enclosed areas on their outer sides which extend past the ends of the barn.

At Paston additions to the agricultural complex are considerably more extensive than at Waxham and show clear evidence of successive phases (Figs 8, 9). On both sides of the barn enclosed yards and fodder stores were added and this seems likely to have occurred following Lord Anson's acquisition of the Paston properties in the mid-18th century, reflecting the changes in agricultural practice then being introduced. To the east, twin yards were created with a detached fodder store which had an opening to each yard (Fig. 9,B); the yards themselves were also linked. To the west was a single yard with another fodder store built against the west face of the barn (Fig. 16). The north and west enclosing walls of this yard were subsequently encapsulated in later buildings, but the coping line can be clearly seen, on the west side following the slope of the site. The roofs of both these fodder stores were hipped and thatched.

Two further phases of development can be identified on the east side of the barn (Fig. 9,C). First, back-to-back covered open-fronted sheds were provided with a shared roof spanning over the dividing wall between the yards, and a hipped end forming a valley with the fodder store. The dividing wall was raised and the opening within it blocked, and above the wall a row of rather flimsy studs was added to support the ridge of the new roof, which at its western end encapsulated the central buttress of the barn. Either at the same time or later, the twin openings from the fodder store to the yards were blocked. This and all later roofs were covered with pantiles, laid over reeds and battens. The final phase was the provision of two more open-fronted sheds on the south side of the south yard and the north side of the north one, the end walls in each case being raised to form gables. The roof structures are late, and in softwood – one truss has a painted date of 1880, which there is no reason to doubt.

To the west, the north and west walls of the open yard were incorporated in a long, low L-shaped building which may have been constructed in stages and contains remains of stable fittings (Fig. 9,C). It seems this was associated with the provision of a horse gin in the former fodder store, perhaps in the early 19th century. This explains the opening made in the wall of the barn and subsequently blocked, and two of the tie-beams within the barn have a series of notches possibly associated with the installation of a threshing machine which was later removed. The external openings in the fodder store have been altered but this was done much more recently, as Stanley Wearing's drawing of 1949 shows the original arrangement (Fig. 1).

One other building, on the southern boundary of the site completes the complex at Paston. This is a long narrow range, the larger eastern section of which is open-fronted, the shorter western portion having two cart sheds above which is a loft approached by a stair within the open-fronted section. The roof is pantiled and has a relatively shallow pitch, but some timbers in the western section are substantial and of oak and the individual



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Fig. 9

Paston, the development of the farm buildings: A, the original barn; B, the (assumed) mid-18th-century additions of walled yards and winter fodder stores; C, the 19th-century provision of covered sheds on the east and the L-shaped stable block to the west, probably coinciding with the provision of a horse-gin in the former fodder store. (Note: this drawing omits the separate building on the south boundary of the site).

Drawing, author

steps of the stairs are worked from the solid; all of which tends to suggest an earlier date than some of the other buildings. On this building the open frontage had been supported by piers of faced Fletton brick linked by pre-cast concrete beams, probably an alteration after the second World War and perhaps representing the last stage of agricultural use of the complex. However, when the barn roof was under repair two renewed principals were found in its west slope, dated 1975, only just prior to its complete cessation.



Fig. 10

Waxham barn, interior in January 1989, looking west from the collapsed east end, following the great gale of 23 October 1987. The truss in the foreground (truss 8) shows an earlier repair with a slightly tapered pole, probably a ship's mast.

Photograph, David Watt

DECAY AND REPAIR

In the autumn of 1987 the writer was asked by Norfolk County Council to undertake a feasibility study regarding the repair and potential for use of the barn at Waxham, including its likely cost. The building was still in use for calf rearing by the farmer owners, who had a prize winning herd of Ayrshire cattle, but its structural condition had deteriorated to the extent that the County Council was considering compulsory acquisition. There had also been a number of years of fruitless negotiation involving English Heritage and their predecessors. About a year earlier the County Council had served an urgent works repairs notice, involving sheeting of the roof where the thatch had seriously deteriorated, and some propping.

Within days of the writer's appointment came the great gale of 23 October 1987. The wind got under the temporary sheeting and lifted the eastern third of the roof more or less bodily, also bringing down sections of walling including part of the east gable (Fig. 10). As a result the project was almost abandoned, but after careful inspection and sorting of timbers the writer considered that reinstatement was possible with a comparatively small amount of new material and that the historic integrity of the barn would remain. English Heritage were prepared to grant aid both the acquisition and the repair and the County Council bravely, and not without some opposition, decided to proceed. The farmer applied for consent to demolish the barn and appealed against the purchase order, but a public inquiry was held in February 1989 and the decision went in favour of the County Council.

One fiction which emerged from objectors was a suggestion that the hammerbeam trusses had originally had tie-beams and that these had been cut to improve headroom. In fact the bracing of the hammerbeams is consistent and dimensionally different from that of the tie-beams, as it is at Paston (Fig. 7,A-B) and in most cases it is obvious that the grain of the timber between individual pairs of hammerbeams could not be from the same tree. The carpenters who constructed both these fine roofs were only a few generations removed from those who worked on the magnificent late medieval hammerbeam church roofs which are common to East Anglia.

Subsequent to the inquiry the writer advised full scaffolding of Waxham barn to enable a detailed structural survey and the propping of any unstable parts of the structure. The scaffolding was purchased and on completion re-sold, as it was thought, correctly as it turned out, that with an indefinite time scale this would cost less than hiring it.

Much of the walling, including added buttresses, was sound apart from localised cracking and face collapse, but as mentioned above the south wall had over a long period become seriously distorted and the roof, and to a lesser extent the north wall, had followed it. The roof was also racked from west to east and had dragged the gables with it so that their upper parts were seriously out of the vertical, in addition to which the recent gale had brought down some of the east end including part of the gable.

An opinion was sought from a sympathetic structural engineer, Brian Morton, who broadly agreed with the writer's diagnosis and advised the insertion of reinforced brick beams to aid stability. In most cases it was possible to insert these by cutting pockets in the internal wall faces and building the beams in short lengths, which were subsequently linked by the reinforcement, leaving the external wall faces undisturbed. Thus a complete



Fig. 11

Waxham barn. Insertion of a concealed brick beam within the wall thickness of the barn, with overlapping reinforcement to permit installation in small sections; this forms a continuous ring around the building and includes short piers to anchor the wall-plates (seen above).

Photograph, author

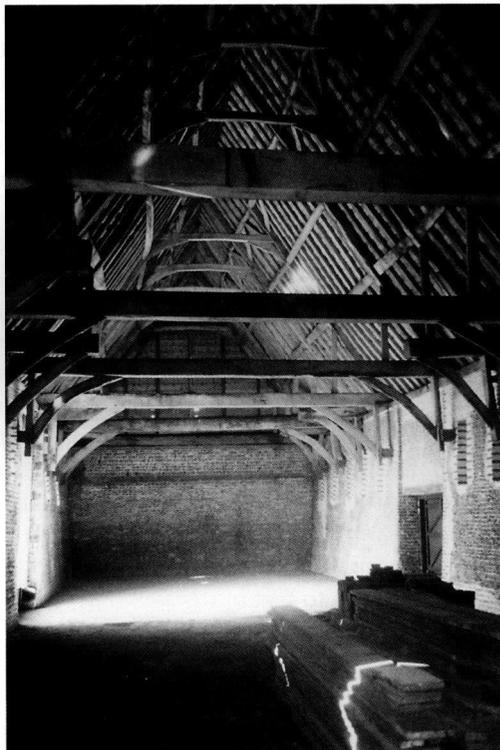


Fig. 12

Waxham barn. The interior of the barn after repair, looking west towards the inserted cross wall; note the wall-posts floating clear of the wall face, the varying numbers of rafters in individual roof bays, the widened north doorway and the previously replaced tie-beam near the cross wall.

Photograph, author

ring was provided just above the heads of the ventilation loops, with short piers at intervals rising to the wall-tops and anchoring the wall-plates (Fig. 11). The beams were inserted at this level as it was considered that if they were higher and movement continued, they would be less stable, though the wall-plates had to be tied over the full height south openings. The leaning upstanding sections of the east and west gables were additionally reinforced with grids of beams, including raking ones following their triangular shapes, and when the roof was repaired this too was braced with diagonal boards between the thatch underlay ('fleaking') and the main covering. All of this work was invisible on completion. While strengthening the walls, significant quantities of recycled and worked stone were found built in and are now on display at the site.

The dragging of the roof as a result of the distortion of the south wall had left most of the wall-posts on the north side hanging clear of the wall face and some of the dovetailed tie-beam bearings on the wall-plates much reduced, while the south side wall-

plates were seriously out of line. The replacement or insertion of four tie-beams has been mentioned, but only that at truss 19 (a hammerbeam truss) was removed. Otherwise general strengthening was undertaken, including blocking the hanging posts off the wall-faces (Fig. 12). In some ways, once the fallen timbers had been sorted, re-erection of the collapsed third of the roof (from the east gable to truss 8) was more straightforward than the repair of the standing section, and although some renewal was necessary, it remains substantially original.

Repairs to the main barn at Paston, also generously supported by English Heritage, were similar but less extensive. Nevertheless, as work proceeded, considerable strengthening and some renewal of roof timbers was needed due to decay, mainly from death watch beetle, in sapwood and in timbers which had been in contact with masonry or beneath defective thatch (Fig. 13A-B). In both barns original jointing, generally with mortices, tenons and oak pegs, was replicated, but where new timber was joined to old in the same structural member, the scarf joints were made rigid by the use of stainless steel bolts. At Waxham the bolt ends were pelleted with raised pellets to distinguish them from original pegs, but at Paston it was decided, in view of the low light levels, that bolt ends could simply be left exposed without being obtrusive.

The structural walls at Paston were so sound and stable that virtually no repair was needed except to the buttresses, although previously lowered ground at the south end of the barn was reinstated to its original level, which was a visual improvement as well as structurally stabilising. However, the buttresses needed quite extensive repair and some localised rebuilding. Generally these have three stages with a plinth: the upper stages appeared mostly original with stone quoins and cappings and were sound (Fig. 14); whereas the lower stages, for reasons that were not apparent, had been rebuilt or re-faced with later work, generally of brick, and in some instances also to a different profile. This work was not all of one period, but in most cases appeared 19th century and included re-capping the offsets with slabs of Welsh slate, which could have been transported by sea or rail. There was considerable instability and vegetation growth so that re-facing or more radical reconstruction was needed, replicating what was there rather than attempting any 'restoration'; except that where the slate cappings were either missing or unserviceable the offsets were capped with brick, which was felt to be more sympathetic. The slate slabs were not the only evidence of the railway age, since the posts on one of the open-fronted sheds were recycled railway sleepers. It proved possible to obtain additional ones for use in repair.

The threshing doors at both locations consisted of large hinged pairs of doors above lift-out panels, and were probably considerably later than the buildings. However, at Paston, besides the original frames already mentioned, the south set of doors was less recent and of interest with ledges that were nicely tapered and chamfered (Fig. 15). They were in poor repair, but as a result of the skill of the joiner it proved possible to salvage much of the framing and replicate missing members; the interesting door frames were also repaired. The presence of the extended stiles and iron hoops at Paston suggests the possibility of harr-hung doors originally,¹⁰ but as found the hanging arrangements at the lower ends were very makeshift, with inadequate hinges. These were replaced with



Fig. 13

Paston barn: A, decay in the roof timbers; B, roof repairs in progress. Despite appearing superficially sound, the roof timbers needed quite extensive repair because of pockets of death-watch beetle attack in sapwood and where timber had been damp due to leaking thatch or contact with masonry.

Photographs, author

full width double hinges made by a local craftsman blacksmith, Bill Cordaroy, who also supplied the ironmongery for Waxham.

The later buildings at Paston presented different challenges, though only in the L-shaped stable block was extensive masonry repair necessary, requiring complete rebuilding of one section of external wall, rebuilding a number of small face collapses and tying across cracks. The repair of the most recent roof structures, generally softwood, was relatively straightforward, and necessary only where decay had resulted from disrepair or poor design.

The two earlier roofs of the thatched fodder stores presented different problems. That attached to the west wall of the barn was, as already referred to, an insubstantial and incomplete survival but nevertheless of interest. The pitch was also somewhat inadequate for thatch, which had probably hastened decay. The solution adopted was to construct a new roof with a steeper pitch (Fig. 16) above the surviving original members and to suspend the originals from the new using stainless steel cable. The fully hipped roof of the detached fodder shed was virtually intact and serviceable but needed a modest amount

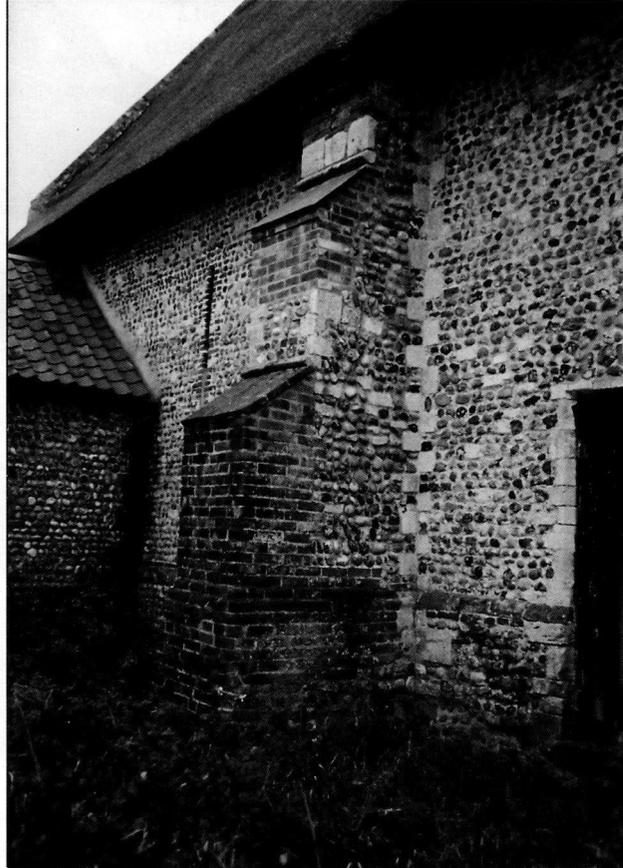


Fig. 14

Paston barn, the north-west buttress following repair. Original stone dressings at offset cappings survived in part on most buttresses but there had also been much brickwork repair, generally of poor quality, necessitating considerable rebuilding. Note the original purpose-made brick plinth capping continuous along the main wall-face and round the buttress, and the stone dressings of the internal angle and doorway (right).

Photograph, author

of strengthening, for the most part achieved with stainless steel angle inconspicuously inserted. The numbering of the timbers in this roof is most interesting, the south-west hip being designated 'W' and the north-east 'E' with the other timbers, whether principal or subsidiary, numbered consecutively, one series along the north and west sides and another along the east and south.

In the later roofs there were places where trusses were too widely spaced and purlin spans consequently excessive. In these cases supplementary support was provided by additional trusses, using oak principals and stainless steel cables to distinguish them from the originals – an elegant solution designed by local structural engineer, Alan Gentry, who advised throughout on general structural matters, including calculating the adequacy of all twenty-one trusses in the main barn.

Neither of these challenging and important repair projects could have been brought to fruition without the skill and dedication of the local craftsmen who worked on them. The senior bricklayer at Waxham took such a pride in his work that if a piece of walling had to be rebuilt, he would make a sketch before taking it down in order to ensure that he reinstated it correctly. The foreman carpenter at Paston, who had previously worked with the author on another project, was a quiet, thoughtful Norfolk man who could be relied upon to foresee problems before they arose, and would respond to suggestions that he considered unacceptable with a protracted silence which was a signal that one was obliged to think again. And some of the best carpentry repairs on this site were achieved by a young man who had spent time in prison and had subsequently found his vocation.

The barn at Waxham (Fig. 17) is now periodically open to the public, the Norfolk Historic Buildings Trust having repaired the wings, one of which houses some modest visitor facilities. At Paston, however, public access is restricted because the maternity roost of rare barbastelle bats discovered in 1998 resulted in the designation of the site as a nature reserve of European significance. The presence of the colony also permitted only intermittent phased winter working and led in places to revisions of proposals to facilitate their access and maintain moisture levels and vegetation. Natural England, who now have a lease on the site, also have obligations to maintain the buildings.

The extended programme of repair, which had commenced in the winter of 1997/8, led to the author retiring from the project prior to the repair of the south boundary building and he regrets that the brick piers along its open frontage were subsequently replaced with oak posts. These piers were obviously inappropriate but they represented the final phase of agricultural use and were also structurally stabilising. Their replacement appears to be a case of conjectural restoration which had previously been studiously and deliberately avoided. It does not, as William Morris might have opined when founding the Society for the Protection of Ancient Buildings, leave 'history in the gap'. The oak posts are without doubt more in keeping but every previous decision relating to the repair of both barns had been made with the aim of preserving all the phases of their historical development, unless there was a combination of structural necessity and clear evidence of a previous arrangement.

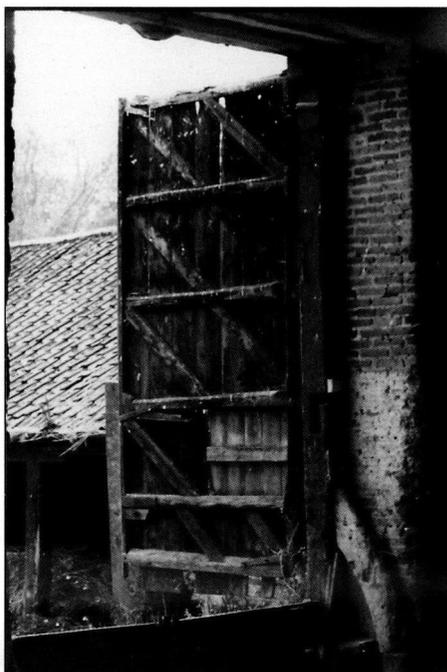


Fig. 15

Paston barn, a threshing door and frame before repair. The jambs have a sill and curved brace at their lower ends and corbels at the upper; the doors, which are probably later, appear to have been harr-hung originally and their hinge stiles extend upwards at the heads into iron retaining hoops.

Photograph, author

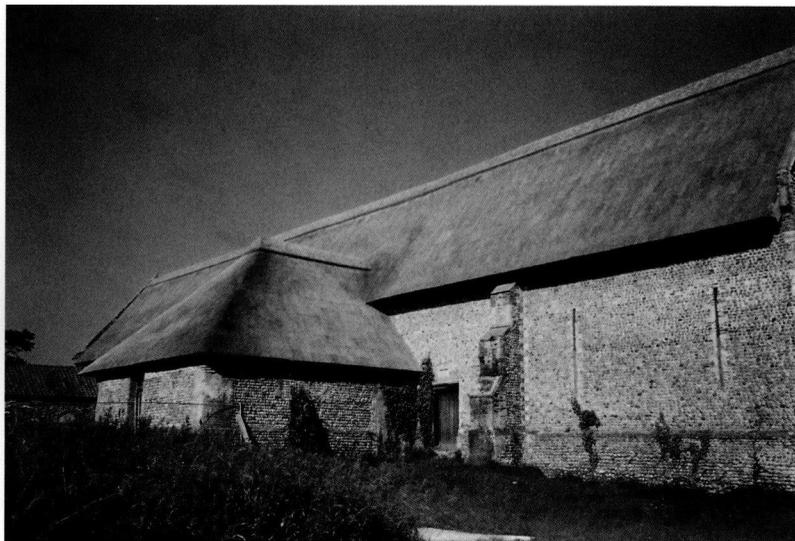


Fig. 16

Paston, the barn and attached fodder store from the south-west, after roof repair and rethatching but before the completion of masonry repairs. The original small doorways, which have been adapted for carts at Waxham, survive here, and the later fodder store is attached and thought at one time to have contained a horse-gin.

Photograph, author



Fig. 17

Waxham barn, the south side of the barn after repair, seen from one of the later wings; two original buttresses can be seen along with four added brick ones.

Photograph, author

ENDNOTES

- 1 The result of the tree-ring analysis is given in *Vernacular Architecture*, 36 (2005), 75.
- 2 There is an earlier barn at Hales Hall in south Norfolk, the length of which is given as 184ft (56.6m) in N. Pevsner and B. Wilson, *Norfolk 2: North-West and South Norfolk*, Buildings of England (2nd edn, Harmondsworth, 1999), 378.
- 3 *Ibid.*, 361, gives a date of 1586. The east wing at Blickling Hall, which is early 16th century, has a similar relationship to the house and evidently served a similar purpose.
- 4 The introduction to N. Pevsner, *North-West and South Norfolk*, Buildings of England (Harmondsworth, 1962) 39, includes a list of church roofs (generally in west Norfolk) with alternating hammerbeam and tie-beam trusses, but this appears to be omitted from the second edition.
- 5 These historical details are largely taken from evidence given by S. Heywood on behalf of Norfolk County Council at the public inquiry in February 1989. F. Blomefield and others, *An Essay towards a Topographical History of the County of Norfolk*, IX (1807), 352-5, includes an incomplete pedigree of the Woodhouse family.
- 6 For comprehensive accounts of the rise and fall of the Paston family and the life of Sir William Paston, see R. W. Ketton-Cremer, *Norfolk Portraits* (London, 1944), 22-57; *A Norfolk Gallery* (London, 1948); and *Norfolk Assembly* (London, 1957), 17-40 and 212-22. The description of the ruins of Paston Hall is in F. Blomefield, *op. cit.*, XI (1810), 58.
- 7 There is another fragment of carved stone at high level on the south gable of Paston barn but it is too weathered to be identified. Waxham barn also has a small terra-cotta plaque built into the east gable internally but this appears later than the barn. The purpose of the label stops is not known – decoration, superstition, warding off evil, crop protection or Catholic devotion? Branches of the Paston family were certainly recusant.
- 8 N. Lloyd, *A History of English Brickwork* (London, 1925), describes and illustrates a range of examples of diaper patterns in brickwork with widely differing dates. Diapers and other patterns of bricks set in flintwork are relatively common in Norfolk.
- 9 The east-west orientation at Waxham, resulting in the relatively unrestrained long south wall, appears to have been a critical factor in the behaviour of the structure, since the sub-soil beneath the wall would have been subjected to wetting and drying, and consequently shrinkage and expansion, aggravated by a high water table and shallow foundations.
- 10 Surviving harr-hung doors are now rare. The hanging stiles were extended downwards to pivot on a bearing surface as well as upwards to be housed in iron hoops. This would appear to preclude the lift-out boarded panels below the doors being part of the original arrangement.