

# The Aisled Barn, Wycoller, Lancashire

## Archaeological Survey and Historical Analysis of the Building

September, 2000



Report prepared on behalf of

Lancashire County Council

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### 1. Commission

This report has been prepared on behalf of the owners, Lancashire County Council. It has been prepared in accordance with section 6 of the Specification for the Archaeological Recording of the Aisled Barn, Wycoller, Lancashire, prepared by Lancashire County Archaeology Service, but amended by agreement to allow for full archaeological recording to scale on site of the cross-frames, in order to provide accurate, large-scale, drawings which could be digitised and manipulated by computer to reconstruct on paper the previous cruck-framed barn. The Aisled Barn is owned by the Lancashire County Council and is situated in Wycoller Country Park. There are proposals for expanding the use of the Park and the barn will be an integral part of this diversification. The lintels over the later inserted threshing door is badly decayed and probably requires replacement. This survey is being undertaken to provide accurate details and an analysis of the historical development of the barn in advance of these works.

### 2. Site Location and description

The site lies at NGR SD 815 239, to the east of the ruins of Wycoller Hall. Such a relationship is typical of Pennine aisled barns and many large houses had such a barn in close proximity.

### 3. Methodology

The building was recorded in September 2000 by the David Michelmore Consultancy and Conservation for Historic Buildings. The survey team consisted of Vardan Mkrtchyan, Charles G. Lee and Nabaraj Bohara. The historical description has been written by David Michelmore. The plan, external elevations of the stone walls and longitudinal section were surveyed conventionally at a scale of 1:50, but the cross-frames were drawn to scale on site at 1:20 (the smallest scale at which timber structures can usually be satisfactorily recorded) and the resulting field survey drawings were then digitised. The reason for the difference in technique is that the cross-frames were constructed largely of re-used timbers and the digitised record therefore provides a record not only of the existing building, but also of the individual timbers, so that the digitised survey drawings of the timbers could be exploded and the drawings of individual timbers manipulated to produce a tentative reconstruction on paper of the original cruck-framed barn. On the digital version of the surveys of the cross-frames, it has also been possible to record the visible detail on the 'upper' face, from which the frame was drawn, but also the hidden detail on the 'lower' face as different layers on the same drawing.

Robert Howard of the Tree-ring Dating Laboratory, University of Nottingham, took cores from different timbers to provide samples with a view to dating both the building in its present form and the original cruck-framed barn which provided most of the large timbers used in the present building. A separate report will be produced on the dendrochronological dating.

#### 4. Brief description of the Aisled Barn

The Barn lies to the east of the ruins of Wycoller Hall, in the village of Wycoller, and is aligned approximately north-south. Large barns are often misidentified as tithe barns, but true tithe barns (such as the late-medieval single-aisled barn at Horbury, West Yorkshire) are few in number and most aisled barns were farm buildings on larger or smaller landed estates, as in this case.

The barn was constructed in stone and divided into five roughly even bays, with Type III aisled cross-frames, typologically the latest form of the aisled barn tradition in the Pennines.<sup>1</sup> In this type of aisled barn, the aisle ties are sloped and directly support the purlins of the aisle roof. The majority of timbers in the existing structure are derived from an earlier cruck-framed structure. The number of timbers which survive strongly suggest that this was the previous barn on the same site. Not all the timbers used in the present building came from its cruck-framed predecessor; interestingly, the strangely-shaped eastern posts of trusses I and IV appear to be a pair of cambered tiebeams from a timber-framed post-and-truss structure. Both are clearly the two sawn halves of the same tree, but there are few details on these to confirm the details of their original use. Other aisle posts may have their primary use in the aisled barn. The walls of the barn are of coursed rubble, which are part of the original construction, as there are no mortices in the wallplates for braces to former trusses in the position of the present gables. This is confirmed by the numbering of the cross-frames, in a series 1 – IV, which demonstrates that there are no missing frames in the position of the present gable walls. The fact that the barn had stone walls from the date of its original construction reflects its late date, as do the high stone stylobates which support the aisle posts – medieval aisled barns have comparatively low stylobates. The roof is of sandstone slates, which will also have been the original form of roof covering.

#### 5. The timber frame

The structure of the aisled barn, within the outer envelope of stone walls, consists of four cross-frames. Cross-frames I and II exactly correspond to Type III aisled barns in the published typology,<sup>2</sup> but trusses III and IV lack queen struts on either side of the tiebeam. Although the presence of queen struts is one of the features which distinguishes post-medieval king-post trusses in the Pennines from medieval trusses of the 15<sup>th</sup> and early 16<sup>th</sup> centuries, it is not uncommon for such struts to be omitted. The roof has two tiers of purlins over the aisles and two tiers of purlins over the nave. The original ridge does not survive and the present plank-like softwood ridge is modern. In the northern bay, all the purlins in the nave except the one next to the western arcade plate have been replaced with softwood and the upper purlin in the eastern aisle is also modern.

The carpentry is not of a high quality, which would in fact have been difficult to achieve when so much of the timber used came from an earlier building. There is little discernible difference in the quality of the carpentry of the upper and lower faces of the frames. Timber structures were prefabricated and all the joints cut while the frames were laid out on the ground. Some members are thicker than others and the thinner ones were normally chocked up higher, so that the carpenter was working on a level 'upper' face, on which he could scribe laying-out marks. This is, of course, also the face on which he marked the assembly numbers, normally scribed in a medieval building but cut with a chisel in the post-medieval period, as at the aisled barn at Wycoller. The framing of the aisled barn at Wycoller is not

as precise as would have been the case in a medieval building, which explains why there is less difference between the upper and lower faces and why the carpenters who built it did not think it necessary to number every joint. Each cross-frame has aisle posts of different lengths, with the eastern post being shorter than the western post. Although this reflects the slope of the floor, it also shows the lack of concern to achieve a high quality of carpentry by the original builders. All the lever holes at the feet of the aisle posts are round, demonstrating that an iron bar was used to adjust the positions of the posts when the stylobates were constructed underneath or during repair. In a medieval building, there would have been a rectangular mortice to hold a timber lever.

#### 5.1 Cross-frame I (upper face on the south side)

Cross-frame I exactly corresponds to a Type III aisled barn, with a truss with king post and two queen struts on either side and sloped aisle ties supporting the aisle roofs. The joint between the king post and tiebeam is numbered 'I' and represents the truss number, but most of the joints on the western side are numbered 'Λ' and those on the eastern side '↑', although this system of numbering is not completely consistent. These marks appear to represent 'left' and 'right' rather than a number '5' – the number 'I' on the king-post/tiebeam joint represents the number of the cross-frame. The eastern aisle post may be re-used from a tiebeam and is one of a pair with the eastern post of cross-frame IV. Both the principal rafters are re-used sections of crucks, as are the aisle ties. The tiebeam itself is a re-used purlin from the cruck-framed building and has been repaired with resin at the western end. There are a number of notches on the foot of the western aisle post, the purpose of which is unclear but which may be fixings for cow stalls which formerly occupied the aisle. Aisle posts adjacent to a threshing floor can sometimes display evidence of temporary cloth or other screens to retain the flying grain inside the paved area of the floor while hand-flails were being used.

#### 5.2 Cross-frame II (upper face on the south side)

Cross-frame II has timbers conventionally numbered within it. Most joints are numbered 'II', but the joints for those on the left this is represented as 'H', except for the joint at the head of the aisle post. The arch brace between tiebeam and eastern aisle post also has a joint numbered 'H', but this probably means that it was originally intended to use this brace on the opposite side of the nave. Both principal rafters are re-used from sections of cruck blades, which also appears to be the case for the massive brace archbrace on the eastern side of the nave. The opposite brace is also probably part of a cruck, but lacks diagnostic features. Both aisle ties are re-used crucks; the tie over the western aisle has been repaired, presumably in the 1980s, using a piece of the same timber which was used for a replacement aisle tie in cross-frame III. The tiebeam is a re-used purlin from the cruck-framed building. The eastern aisle post has a diamond-pattern of shallow drill-holes near the foot. There is a rush-light burn half-way up the same post.

#### 5.3 Cross-frame III (upper face on the north side)

This frame is numbered 'III' on the left-hand side of the tiebeam where the jowl of the aisle post is jointed in and 'ØIII' for the corresponding joint on the right-hand side. The truss itself lacks queen struts. Both principal rafters appear to be re-used sections of cruck blades, but have halvings on the reverse face which do not extend across the full width of the timbers. The western aisle tie is a replacement, presumably dating to the 1980s, which has been formed from a re-used timber. Part of the same timber was used to repair the end of the corresponding aisle tie in cross-frame II. The western aisle post has a shouldered mortice for a horizontal rail which was formerly jointed into its western face. This may have

housed the top rail of a cow stall. Below this, there are two rush-light burns on the side of the post, showing that dairy maids or other farm servants sometimes worked in the barn in the dark.

#### 5.4 Cross-frame IV (upper face on the north side)

This frame is numbered 'IIII' on the southern face, but the timbers are not fully numbered within the frame. Those on the eastern side are numbered 'x' while those on the west are numbered 'Λ', indicating 'left' and 'right' rather than the numbers '10' and '5'. The eastern aisle post of cross-frame IV has a long jowl which extends halfway down the post. This post is one of a pair with the eastern post of Cross-frame I and both are halved from the same tree. It appears possible that they may be cut down from the tiebeam of a post-and-truss building. The western end of the tiebeam has been crudely repaired with resin. Both principal rafters are re-used sections of crucks; the western principal has been used upside-down, in contrast to most re-used crucks in the barn, which are used in their correct orientation. Both aisle ties appear to be re-used crucks, although the halving on the western cruck is quite narrow. The braces in the nave are straight, without signs of earlier use.

### 6. The Plan

The barn is a double-aisled structure of five bays, with a narrow, single-storey, lean-to overlapping the two southern bays on the east side of the building. A number of building phases can be discerned.

#### 6.1 The original plan

The original plan of the barn seems to have consisted of a single storage bay at the northern end, a threshing floor in bay I/II and then three storage bays at the southern end. The difference in function is reflected in the width of the bays; the northernmost bay is wider than the equivalent bay at the southern end of the barn and the bay which served housed the threshing floor is also wider than the storage bays. The cross-frames all have their 'upper' faces facing towards the central bay; cross-frames in barns normally face the threshing floor, but nevertheless the other evidence suggests that this was not the original position of the threshing floor at Wycoller. The cattle stalls may originally have been arranged longitudinally in the aisles rather than transversely across the end bays. Bay I/II must have had a recessed entrance on the western side, so that laden carts or sledges did not have to pass under the low wallplate of the aisle, but only under the higher arcade plate of the nave. The aisle will have been omitted for this bay and door D12, which swung inwards into the aisle of Bay II/III, will have provided separate access to the aisle without the need to open the big doors into the barn itself. Such separate doors into the aisles of Pennine aisled barns are probably to be associated with their use for housing cattle. Although the head of the door may be later, door D11 may also have provided similar separate access to the western aisle of the northernmost bay of the barn. The recess to the right of door D12, in the original recessed entrance, may have been for resting a lamp while the milkmaid's hands were full as she opened the door into the aisle in the darkness. There is also incomplete evidence on the aisle posts suggesting the former position of cow stalls arranged along the length of the aisles, of which the mortice for a horizontal rail on the western side of the western post of cross-frame III is the most convincing.

A cross-draught for hand-threshing was provided by a door (DE9) in the eastern aisle wall of Bay I/II. The land to the eastern side of the barn rises steeply behind the building and the primary purpose of this doorway was probably for draught rather than access to the

building, which would be provided through the opposing door between the western arcade posts of cross-frames I and II. The back door to the threshing floor was walled up when a new threshing floor was formed in the central bay. The recessed entrance in the west aisle was roofed over when the arched entrance was constructed there, probably in the 18<sup>th</sup> century.

The lean-to was originally divided into two rooms, with a smaller room to the north of Bay III/IV and a larger room to the north of the southernmost bay of the barn. The northern room was later walled off from the main barn, but this wall was removed relatively recently (and replaced with a timber partition) and the door to the outside walled up and converted to a window,<sup>3</sup> when a doorway was formed between the two rooms. The larger room in the lean-to is still walled off from the barn, but the wall appears to be secondary. This room is lit by what was originally a two-light mullioned window (WG8), the mullion of which is now missing. The two lights were very narrow, demonstrating that the window will have been unglazed.

The doorway in the south gable (DE5) is for a door way opening outwards, but there is now no evidence that there may have been an extension at that end of the building – the holes in the wall are putlog holes for scaffolding. The barn as originally built had narrow splay windows, of which four survive asymmetrically placed in each gable (window WG14 in the north gable has been widened). Later alterations have probably destroyed most of the original windows in the aisle walls; one such window (WG2) survives in the front, west, wall and another, now blocked (WG11) in the rear elevation.

## 6.2 Later alterations

The barn has experienced considerable alterations, which probably date to the 18<sup>th</sup> and 19<sup>th</sup> centuries. Some of these were designed to give it a more formal appearance and were probably undertaken by Henry Owen Cunliffe (obit 1818), the last resident squire. The west façade of the barn was given symmetrical appearance by the insertion of two arched doorways (DE1 and DE3) in bays I/II and III/IV respectively. They are probably contemporary with a pair to two-light mullioned windows lighting the west aisle in the two end bays of the barn – WG1 and WG3. The door (DE2) to the new central threshing floor may also date to this period, together with the opposed door in the rear wall (DE8) to provide a through-draught during threshing. The alterations to the west façade appear to be linked with a range of contemporary internal alterations. That the southern arched doorway opened outwards is proved by an external rebate for the doors as well as pintles for the door hinges. A cobbled area inside this door and foundations of a surrounding wall suggest that it may have served as a small coach house, contrived out of the aisle and a small part of the nave in bay III/IV. At the northern end of the barn, internal plaster on the west wall respects the line of a former loft floor. This loft did not extend over the full width of the barn, but covered the west aisle and nave of the northern bay only and was supported on a stone wall, of which the eastern return survived to be recorded in plan by Lancashire County Planning Department in 1980. The loft itself was reached through an external loading door in the north gable, now blocked.

The loft at the northern end of the barn covered cow stalls which seem to have provided space for eight beasts. The feeding walk ran behind and was entered through door DE11, in the north gable. There is evidence for a further set of stalls to the east of the loft. The foundations for these do not exactly align with the foundations of the stalls which stood beneath the north loft and they may have been a separate set, providing space for a

further four animals. Here again the feeding passage runs behind. That these stalls were separate from those beneath the loft explains the need for the inserted door DE10, which provided access to the feeding passage.

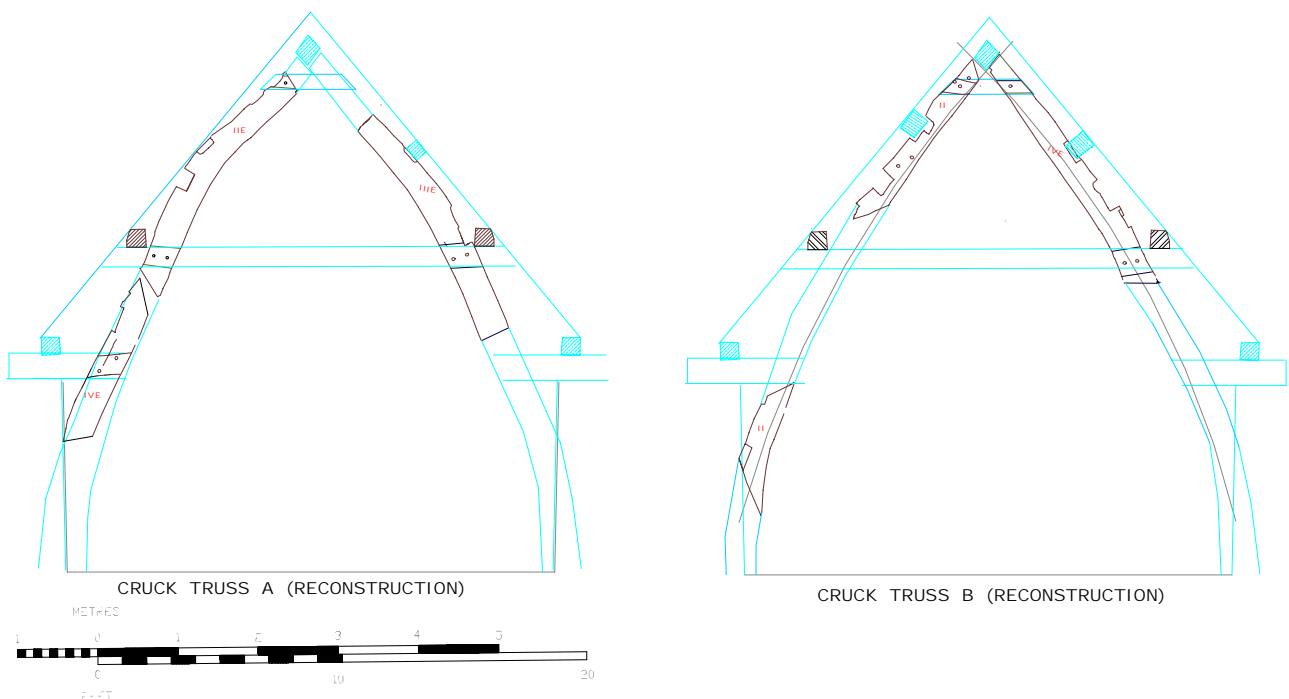
A line of cobbles running transversely across the east aisle and nave of the barn in bay I/II and returning against aisle post IIW might possibly define yet a further set of cattle stalls with a feeding walk behind, with the animals facing towards the central threshing floor, although some of this area of cobbling dates to the 1980s, as there was previously an area floored with broken stone flags in the western half of bay I/II. Alterations and repairs to the stone-flagged areas in bays II-IV were also made during this period.

At the southern end of the barn there were a further set of transversely arranged cow stalls (which still survive), broken by a gap in the middle to provide access to door DE5 in the gable. As these exist at the moment, there is room for nine animals, but it is possible that this series of stalls once ran right across the barn into the eastern outshot, which would have provided space for a further two. If this is the case, then a feeding passage ran behind right across the building, entered from door DE6 on the east and door DE4 (now blocked) on the west.

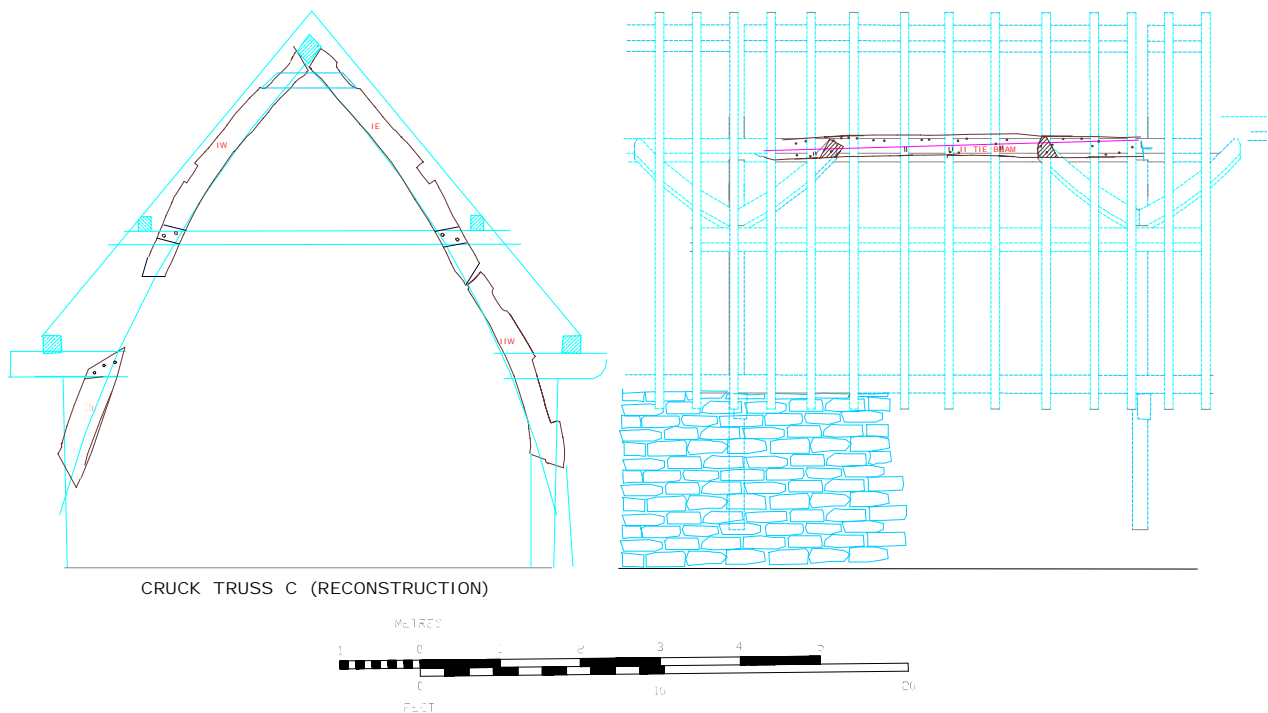
The present cobbled and stone-flagged walking surfaces in the barn relate to the later phases and not to the original phase, when the threshing floor occupied bay I/II.

## 7. Cruck-framed phase

A large proportion of the timbers used to build the aisled barn are re-used from an earlier cruck-framed building which was probably the previous building on the site. From the weathered state of the timbers, it appears that the earlier building may have been partially derelict at some time before it was dismantled. No less than eleven parts of cruck blades can be identified as re-used in the later building and have been used in the reconstruction



drawings. Cut-down sections of crucks were re-used as aisle ties and as principal rafters in the king-post trusses of the present building. In addition, two purlins and the western arcade plate in bay II/III in the aisled barn have visible halvings demonstrating their earlier use as purlins in the cruck-framed building, but purlins from the cruck-framed barn were also re-used as tiebeams in the aisled barn, at least in cross-frames I and II. The braces in



cross-frame II are sections of massive timbers which also seem to be short sections of cruck blades, but they do not appear to relate to any of the cross-frames which have been tentatively reconstructed. Undoubtedly other timbers in the present building are re-used from its cruck-framed predecessor, but may not be immediately identifiable, because they have been shortened or because the relevant details are concealed.

Although the reconstructions of cross-frames of the cruck-framed barn have been derived from relatively short sections of timbers, it has nevertheless been possible to reconstruct the form of the original building with reasonable accuracy. The apex type used was Type F2 in the published typology;<sup>4</sup> the recorded northern distribution of this apex type is concentrated in Lancashire, but in the east of the county rather than in the Pennines.<sup>5</sup> The cruck-framed barn at Wycoller had a diagonally set ridge supported by the junction of the heads of the cruck couples, which were joined a short distance below by a collar halved over the face. In order to avoid the impediment of a low tiebeam, which would restrict access when storing and retrieving crops, the crucks were joined by a relatively high-set tiebeam, while the link to the walls was provided by spurs which will have supported the wallplates. It has not been possible to determine whether the cruck-framed barn had stone walls or timber-framed walls, but a date of 1533, which it is understood will be suggested by the dendrochronology, could suggest that the latter will be more likely. If the building was timber-framed, the gable frames may have been of a different form from

those illustrated cruck frames, with a continuous tiebeam at low level.

## 8. Discussion

Although a small number of cruck-framed houses in the Pennines probably date to the 15<sup>th</sup> century, such as the house at Upper Oldfield, West Yorkshire, the recorded barns appear to be post-medieval in date. One of the largest – Thorpe Barn, Almondbury, West Yorkshire, has recently been dated by dendrochronology to spring 1594.<sup>6</sup> A date of 1533 for the cruck-framed barn at Wycoller is therefore of some interest, as it will have been one of the earliest in the region so far securely dated, although in this instance it is the timbers which have been dated rather than the standing building.

Aisled barns were once thought to have been typical of South East England rather than the north.<sup>7</sup> However, a wide distribution was soon recognised in the Pennine region of Yorkshire and Lancashire, with outlying examples in the Vale of York and elsewhere in the Yorkshire lowlands.<sup>8</sup> Although the earliest of these, the Manorial Barn at Whiston, South Yorkshire, dates from c. 1225 and is contemporary with the better-known Barley Barn at Cressing Temple, Essex<sup>9</sup> - and is therefore one of the earliest such structures in England - most Pennine aisled barns date from the late Middle Ages until the mid 18<sup>th</sup> century. The medieval and sub-medieval aisled barns of the region, of which the Stank Hall barn (near Leeds) and the Gunthwaite barn (near Barnsley) are the finest examples, are like those of the south east in that their principal function was the storage of crops. In such barns the nave is always significantly wider than the aisles. The reason that the type became so widespread in the Pennines in the post-medieval period is almost certainly because the aisled structure provided a large floor area which could serve a multi-purpose function, incorporating both a storage area for hay and crops and stalls for cattle. Such barns typically have wide aisles, often nearly as wide as the nave, achieved by the use of relatively low-pitched roofs, and often separate doorways into the areas where cattle were stalled. The Wycoller barn shows all these features, although the latest phase, with cattle stalls in the two end bays, may not represent the original plan and door D12 into one of the cart entries suggests that the cattle stalls may originally have been in the aisles, such as survived in a single-aisled barn at Farnley, Leeds, West Yorkshire, dismantled in the 1980s. It is also not unusual that the aisled barn should have replaced a cruck-framed predecessor.

## 9. Dendrochronological dating

The full dendrochronological report will not be available until November 2000. However, preliminary results indicate that the timbers have proved difficult to date, perhaps because they were locally felled and the valley in which Wycoller is situated has its own microclimate. It seems, however, that the cruck-framed barn was probably built in 1533. Dendrochronology has not provided a date for the aisled structure which replaced it. The aisled barn must therefore be dated on typology; as a Type III aisled barn with original stone walls, it is likely to be late and perhaps dates to the late 17<sup>th</sup> century.

## 10. Features which could be at risk

The aisled barn has been repaired during the last two decades and gives little cause for concern over the structure. However, alterations which may be necessary to develop the building as a visitor centre should be planned in an informed way in order to avoid dimin-

ishing the authenticity and historic value of the building. The timber beam over the entrance to the threshing floor in the west elevation is rotten and is propped; although this is unlikely to be a timber from the early building, re-used crucks were often used as lintels in this position and, if the timber is taken out, it should be carefully examined and recorded rather than just being discarded. Any future timber repairs should be carried out to a proper standard; the repairs executed in the 1980s include unsightly resin repairs and the use of re-used timber to replace parts of the 16<sup>th</sup>-century cruck-framed building; for example, the western aisle tie of cross-frame III was replaced at this time. The floor finishes reflect uses and sub-divisions in the barn during the 18<sup>th</sup> and 19<sup>th</sup> centuries. These surfaces should be preserved as part of the building's history and there should be no ad hoc alterations.

## 11. Summary

The aisled barn at Wycoller is a Type III, five-bay, double-aisled barn, probably constructed in the late 17<sup>th</sup> century. It represents one of the later examples of a large group of aisled barns built on both sides of the Pennines. Typical of the period, the carpentry is not of a high standard. Most of the timbers used came from a cruck-framed barn probably dating to 1533 – probably the previous building on the site, and it is unusual in preserving such a large proportion of a cruck-framed building. The present building underwent a series of alterations in the 18<sup>th</sup> and 19<sup>th</sup> centuries, the earlier of which were probably made by Henry Owen Cunliffe, including altering the western front of the building to achieve a symmetrical façade. Later alterations were connected with alterations to provide ranges of cow stalls in the end bays. The aisled barn is an interesting and important building and it is important that examples of this type of structure can be displayed to the public with meaningful interpretation, as the number of such structures which retain their original agricultural use diminishes day-by-day. Pennine aisled barns were designed to encompass a whole range of agricultural activities under one large roof; much of the evidence for this is preserved within the structure of the Wycoller barn and should be included in the interpretation.

David Michelmore  
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31 October 2000

<sup>1</sup> See Michelmore, D.J.H., 'A preliminary typology for Pennine aisled barns with king-post roofs', *The Brigantian*, 3 (1974), pp. 15-17.

<sup>2</sup> *Ibid.*

<sup>3</sup> See drawings prepared by the County Planning Department, 1980.

<sup>4</sup> N.W. Alcock, *Cruck construction: an introduction and catalogue*, Council for British Archaeology Research Report 42 (1981), p. 96.

<sup>5</sup> *Ibid.*, p. 14, fig. 8.

<sup>6</sup> Pers. comm. Ian Tyers, University of Sheffield.

<sup>7</sup> S.E. Rigold, 'The distribution of aisled timber barns', *Vernacular Architecture*, 2 (1971), pp. 20-1, shows a distribution almost completely confined to this region.

- <sup>8</sup> Clarke, David W., 'Pennine aisled barns', *Vernacular Architecture*, 4 (1973), pp. 25-6; *ibid.*, 'Aisled barns in the Pennines', *The Brigantian*, 3 (1974), pp. 18-20.
- <sup>9</sup> See Cecil A. Hewett, *The development of carpentry, 1200-1700: an Essex study* (Newton Abbot, 1969), pp. 40-7.



1. Symmetrical west facade created in the 18th century



2. Barn and outshot from the East



3. South gable with central door opening outwards



4. North gable, with former door to loft



5. 18th-century window replaced by later door to feeding passage, also blocked



6. Blocked door in outshot probably gave access to feeding passage for cattle



7. Door to former loft over the northern bay



8. One of a pair of 18th-century windows; the south one is now blocked.



9. Blocked door and new window to outshot-  
alteration of c.1980



10. Post possibly re-used from a tiebeam



11. Post-medieval trusses have struts flanking the king post.



12. In Type III aisled barns, a sloped tiebeam supports the aisle roof



13. Possible doorway to original cattle stalls, with lamp recess to the right



14. Cobbled feeding walk behind cow stalls



15. Cow stalls may once have occupied the west aisle



16. Later threshing floor



17. Stalls for cattle survive in the southern bay



18. Feeding walk behind the southern range of stalls