

Report for  
**Barn Grounds, Binfield Heath, Shiplake,  
Oxfordshire**

*Site Code: BIF-A*

*from*

The Medieval Peasant House in Midland England

by

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Fig. 1. View of the barn.

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***Oxbow Books***

BIF-A: BARN GROUNDS, BINFIELD HEATH, SHIPLAKE, OXFORDSHIRE

Grid reference: SU 7395 7933

Survey Date: 18 Dec 1989

By: D. Miles

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1. Drawings of reused timbers

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2. Reconstruction drawing of typical truss

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Note: Letters A-E refer to the present trusses; the Roman numerals (Fig. 1) are used for reference.

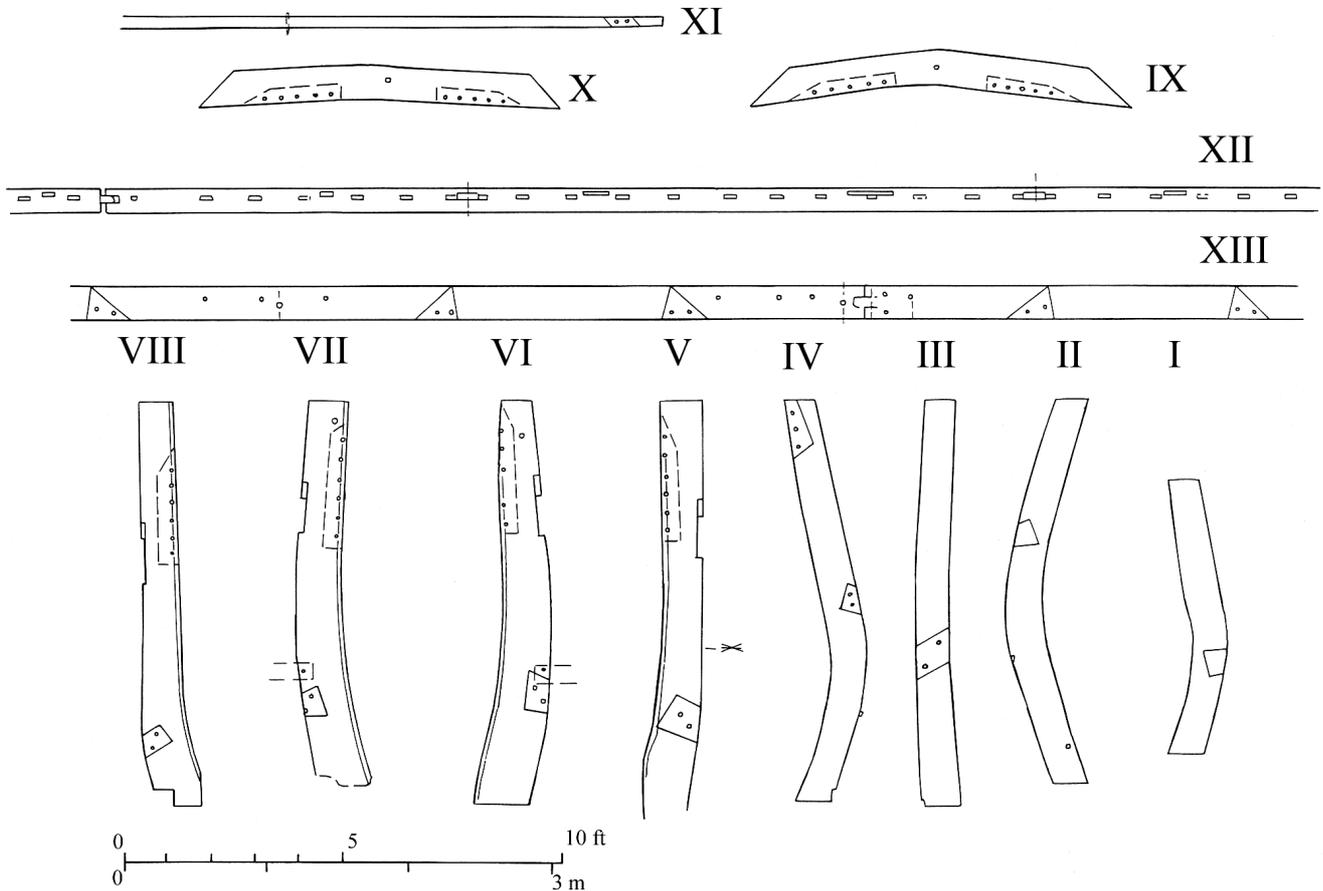


Fig. 1. Drawings of reused timbers.

**ARCHITECTURAL DESCRIPTION**

**SUMMARY AND HISTORICAL DEVELOPMENT**

The buildings at Barn Grounds comprise two eighteenth-century single-aisled barns, formerly associated with a farmhouse (removed since 1913). Barn I (the eastern one), has three primary bays built from reused crucks and other associated timbers which have been dated by dendrochronology to 1453-5. A conjectural reconstruction (Fig. 2) suggests that the fifteenth century building was a five-bay structure approximately 23 feet wide by 70 feet long. The absence of smoke blackening on any of the primary reused timbers indicates a non-domestic origin for the timbers, perhaps as a tithe or manorial barn. The reused timbers are significant to the present study, because they provide clear evidence of carpentry techniques.

The present form of the barns is not discussed here but they have been fully recorded by the Vernacular Buildings Research Section of the Henley-On-Thames Archaeological & Historical Group in Report No. 15. 1984 (copy in National Monuments Record).

**STRUCTURAL FEATURES**

Twenty three timbers, excluding rafters, have been firmly identified as major elements from the 1453-5 structure. These include eight sections of cruck blades, four reused as arcade posts, three as intermediate posts, and one as an intermediate rail, reused a second time in the nineteenth century addition of a fourth,

eastern, bay. Two lengths of purlins with their original splayed, tongued and grooved scarf joints intact, have been reused as purlins, while seven wall plate lengths have been reused, four as wall plates, two as queen struts and one as an aisle tie. Six collars have been reused, four as collars and two as braces from the principal posts to the tiebeams. Fourteen windbraces have been reused as wall braces. None of the timbers weredecorated at all; the present chamfers must have been cut during the eighteenth century reconstruction, as they are interrupted at intersections of the present framing members.

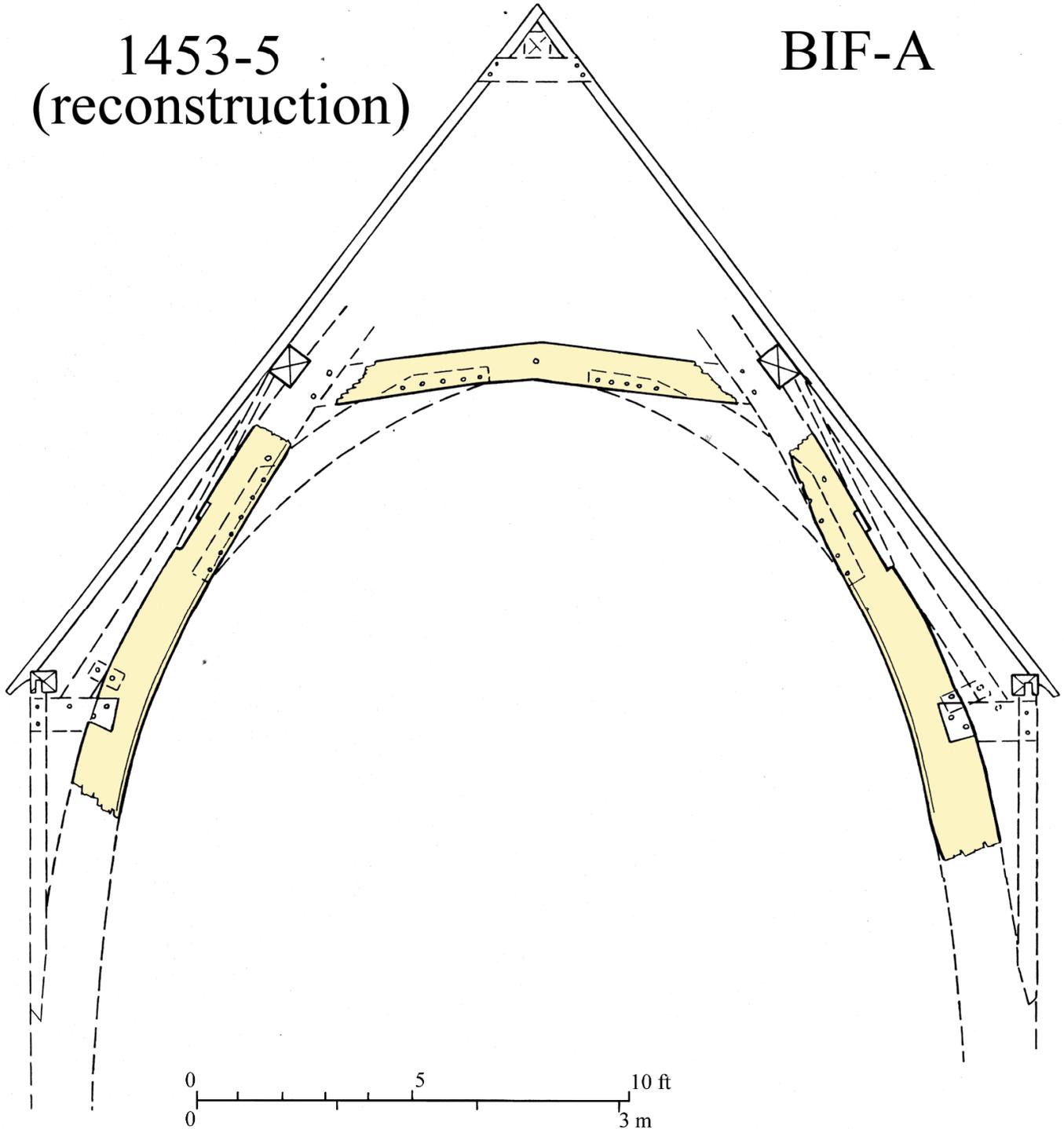


Fig. 2. Reconstruction drawing of typical truss.

The cruck blades fall into three categories. Four blades (V-VIII) are 8in thick and have mortices for arch-braces. Three other blades (I, II, IV) are thinner, about 6in in thickness, and one of these has a housing for the arch brace which is halved rather than morticed. These components appear to have belonged to two cruck trusses which had halved braces. All of the blades from these groups have dovetail

housings for cruck spurs. The last cruck blade (III) has a trench across the whole width of the timber probably for a tiebeam rather than a cruck spur and so may well have belonged to an end truss. Each of the four principal cruck blades has trenches on the back for two windbraces. This arrangement is confirmed by the purlins which show that at least the middle three bays had windbraces. A cruck blade of the second type has peg holes for at least one windbrace (on the fair face) but this was not trenched.

The collars also fall into three categories. Two collars (e.g. IX), 6½in thick by 10½in high, are slightly cranked, one twice as much as all the others. They carry mortices for arch braces and clearly relate to the first group of four cruck blades. The second pair of collars (e.g. X) (reused as braces either side of the main door) have halvings for the arch braces. The latter pair were thought to have been made from a single collar, later cut down the middle, however on close inspection it was found that the surfaces presumed to have been sawn in the eighteenth century were considerably deformed; this must have occurred in the initial seasoning of the timber, proving that it was sawn when green. Also, the backs of the halvings do not contain auger holes, which would have been present if they had originated as mortices. Finally, two collars (not drawn) have no arch braces, but have central stud mortices with stave holes at similar intervals to those in the wall plates. These, together with the last cruck blade, must have been used in the closed end truss of the original barn. One feature all six collars have in common is a large 1¼in diameter hole in the very centre of the face of each collar, a feature common in cruck buildings.

The purlins are of 8 by 10in in section and have peg holes for the rafters as well as larger peg holes for fixing to the back of the cruck blades. One part of the lower rear purlin (XIII) exceeds 20 feet in length with original scarf joints at each end. This is still jointed, or re-jointed, at the western end to another length of purlin, while at the eastern end a piece of timber was been jointed onto the original in the eighteenth century, replicating the other half of the original scarf joint. In contrast, the purlins at the front of the barn are all clearly eighteenth century, employing bridled joints. The peg holes show that the length of each bay was 13ft 10½in centre-to-centre, originally with nine rafters in each bay. The purlins also have tapering trenches in the backs for windbraces, each double-pegged. The re-used windbraces measure 9-10in wide by 2½in thick and were at least 6ft 4in long.

The wallplates (XII) measure 6in by 7in and have, at 13ft 10½in centres, unpegged mortices for cruck studs which probably measured 6½in wide by 4in deep. Between these, each bay had 12 staves (3-4in by 1in), equally spaced apart along the length of the plate. Occasional oblique holes on the outer corners of the plates show where rafters were pegged down. An unusual feature of these plates is a series of V-shaped grooves which vary from 4in to 12in long and are placed about a quarter of the way in from each truss position, situated underneath and just outside the stave holes. The rear wall plate has been scarfed with a bridled joint; this however appears to be a re-assembled original joint as the centres between truss positions remains the same. No rafter sockets were noted.

The wall plates have only single mortices for cruck studs at truss intervals which means the cruck spurs would have been tenoned into the cruck studs immediately below the plates. On two of the cruck blades (VI, VII), mortices immediately above the halving for the cruck spurs run upward at about 30°. These apparently carried slip tenons set into packing pieces. However, the packing pieces would be expected to be tenoned into the top of the cruck spurs immediately below this slip tenon and the extra restraint was apparently redundant; it may be that on these trusses, the mortices into the spur were absent, possibly because the packing pieces were too short. No other parallels for this feature have been identified.

In addition to the principal timbers, approximately sixty of the original rafters have been reused in the main roof with probably another twenty in the aisles. They have not been kept together as pairs, but have been bridled at the top and given new assembly marks, cut with a saw, and running from east to west. All these rafters have central pegholes, 1in diameter, which were originally used to peg them to the purlins. There is no evidence of original assembly marks, nor of any original bridle joints, suggesting that the rafters were not paired originally but were pegged individually to the ridge piece, as often found in cruck roofs.

Seven of the rafters (e.g. XI) have half laps for yokes within eight inches of their ends. The rafter ends of these beyond the yoke position have been slightly trimmed, clearly to fit to the top arris of the ridge. This feature would tend to indicate that the ridge was carried by these paired rafters and not by full crucks, suggesting that the crucks terminated above the collars with type ‘W’ apexes. The rafters with halvings for yokes are between 5in and 7in wide, while the others are between 4½in and 6in. All the rafters are 3in thick. The original peg holes are about 8ft away from the halvings in those with yokes, while in the common rafters the peg holes are between 8ft and 9ft 6in away from the present tops of the rafters.

By drawing out the truncated sections of cruck blades to scale, along with the collars and rafters, a conjectural reconstruction of the truss section can be made (Fig. 2). The width was substantial, at least 23 feet, with an eaves height of at least 8 feet. The roof had a pitch of between 50° and 55° with a rafter length of approximately 20 feet. The purlins were positioned near the top of the collars, as is typical.

The evidence of the collars and the cruck blades taken together indicate the presence of six trusses. The original structure probably had two central trusses with morticed arch-braces on each side of the entrance; beyond these were two trusses of lower quality construction, themselves flanked by the closed end trusses. The use of halvings on the second type of truss is highly unusual.

The walls would have had little if any fenestration, as the underside of the wall plates show no gaps in the series of stave mortices for openings. The surviving sections of plate make up seven and a half bay lengths, thus four bays certainly had no openings. The missing pair of plate sections probably came from the centre bay where the door openings would have been. It is probable that the walls were of woven oak laths and staves such as in the reconstructed Arborfield Barn (cruck) at the Chiltern Open Air Museum. With an openwork cladding system of this type, it is perhaps not surprising that little remains from either the end trusses or the feet of the cruck blades.

## DENDROCHRONOLOGY

For dendrochronology abbreviations see page facing Introduction.

*Sampling Comments:* Nine samples were obtained through coring by Robert Howard on 18 December 1989. Seven cruck blades were sampled, of which six dated; a rafter was sampled and dated but a sample taken from the wall plate had too few rings to date.

### TREE-RING SAMPLE RECORD AND SUMMARY OF DATING

Sample Code	Sample Location	Total Rings	Sapwood Rings	FMR Date	LHR Date	LMR Date	Date Cat
BIF-A01	Cruck blade as arcade post 4A	81	HS	1353	1433	1433	1
BIF-A02	Cruck blade as arcade post 2A	37	HS	1406	1438	1438	1
BIF-A03	Cruck blade as arcade post 3A	45	06	1405	1443	1449	1
BIF-A04	Cruck blade as arcade post 1	57	HS	1380	1436	1436	1
BIF-A05	Cruck blade as main post 1A	79	18c	1374	1434	1452	1
BIF-A06	Cruck blade as post	63	HS	—	—	—	—
BIF-A07	Cruck blade as bay I front post	57	HS	1379	1435	1435	1
BIF-A08	Wall plate bay II, rear	40	HS	—	—	—	—
BIF-A09	Rafter	54	HS	1376	1429	1429	1

BIF-A Site sequence: (composed of samples 1, 2, 3, 4, 5, 7, 9), 100 rings long dated 1353–1452 with *t*-values 9.4 (OXFORD), 5.8 (E.MID).

Estimated felling date: (sample 5, with the last dated ring, but 1 or 2 sapwood rings lost), **1453-5**.