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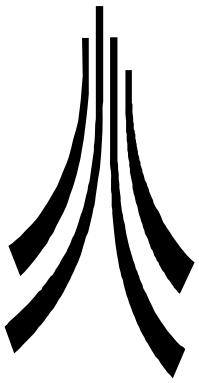

October 1996

RUFFORD OLD HALL

LANCASHIRE

FABRIC SURVEY REPORT

Commissioned and funded by:

The National Trust

Rufford Old Hall
Lancashire

Watching Brief Report

Checked by Project Manager. ..... Date
Passed for submission to client. ..... Date

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October 1996

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ACKNOWLEDGEMENTS

This report was written by Jeremy Ashbee, based on observations carried out during renovation works to the roof of Rufford Old Hall in December 1995. The photographic-based survey of the exposed roof structure was carried out by Malcolm Harrison and Ian Scott. The watching brief phase of the recording programme was under the Project Management of Jamie Quartermaine.

LUAU would like to express our thanks to the staff of the National Trust for their invaluable support and assistance during all stages of the project. Particular acknowledgement must be made of the help of Maureen Dodsworth and Harry Hall at Rufford, and of John Bostock, Susan Denyer and Richard Dean at the National Trust regional office at Grasmere. We would particularly like to thank W John Smith who has provided invaluable advice on the interpretation of the building.

EXECUTIVE SUMMARY

The watching brief was undertaken in conjunction with the roof repair programme, at Rufford Old Hall, which involved the replacement of the slate covering and the renewal of the wooden pegs, battens and plaster-and-lath panels underlying it. These works involved the removal of the complete roof covering simultaneously from the area of the Great Hall. Works also affected other parts of the building: however, the project brief from the National Trust only required archaeological recording of the exposed fabric of the Great Hall and Drawing Room wing. The watching brief followed on from the main recording phase of the project and was undertaken during November and December 1995.

The structure of the uncovered roof timbers was recorded from outside by a combination of photographic techniques, including rectified photography and computer rectification of semi-oblique photographs, based on a previously-established survey control.

The opportunity was also taken to examine areas inaccessible at the time of the original building survey carried out by LUAU in January 1995. These areas included the junction of the Great Hall and Drawing Roof wing roof pitches, the construction of the eaves and coving on the north side of the Great Hall and the sealed room above the coved canopy at the western end of the building. These areas were photographed and, where necessary, the original survey drawings were enhanced with details obtained by hand-measurement.

1. INTRODUCTION

Rufford Old Hall (SD 463160) contains substantial upstanding remains of a fine timber-framed gentry house dating to the late fifteenth or early sixteenth century (Fig1). In the elaboration of its cusped windbraces, quatrefoil panelling and moulded structural timbers, it is one of the finest and best-preserved buildings of the Lancashire and Cheshire school of carpentry.

Material from this early constructional phase is confined to the Great Hall. Later additions to the building included the construction of a brick wing at right angles to the hall in the seventeenth century, the creation of the Drawing Room wing on the site of the former service rooms of the Hall, probably using timbers salvaged in the early eighteenth century from a sixteenth-century building, and further brick buildings to the east of this wing in the nineteenth century. The entire complex has undergone several campaigns of repair and refurbishment, over the past two centuries, most recently and drastically in the 1950s, when the entire Great Hall was dismantled and re-erected, to combat death-watch beetle infestation.

In January 1995, LUAU carried out an instrument-based survey of the building. Plans were made of the Great Hall and Drawing Room wing at ground and roof level, sections were drawn through the north-south axis of the Drawing Room wing, the east/west axis of the wing and Great Hall and across the north-south axis of the Great Hall, showing one of the roof trusses and one wall of the lantern in elevation. At the same time, internal elevations of all four walls of the Great Hall were prepared by rectified photography with a record of the internal roof structure of one bay. A small section of the slate roof covering was removed from a small area of the eaves on the south side of the Great Hall and the arrangement of the laths, felt and battens was recorded by hand-measurement.

This survey was carried out from ground level inside and outside the building and with the exception of the small area of the eaves mentioned above, only features visible on the surface were recorded. For this reason, the record drawings submitted to the National Trust after this first phase of work were incomplete in several areas. The opportunity was therefore taken to amend these drawings in the light of newly-exposed areas of the roof structure.

In addition, other information which may be of relevance to the fabric history of Rufford Old Hall has come to light since the completion of the interim report. These findings are summarised here and a provisional statement of their implications given.

2. RECORDING METHODOLOGY

2.1 Watching Brief Project Design

The watching Brief Project Design (Appendix 1) provided for the recording of the Great Hall roof as it was revealed during the re-roofing works. This required the recording, by rectified photography, of the external roof slope timbers, once exposed by the contractor.

A watching brief during the roof stripping provided allowed examination and analysis of exposed historic or archaeological features.

2.2 Photographic Recording

The recording of the external roof structure was carried out primarily by photographic means, and it was decided that a combination of rectified and computer-rectified photographic techniques would be necessary to produce a full record within acceptable tolerances of accuracy. The use of the two techniques was intended to provide adequate recording within the constraints of the scaffolding and a translucent plastic canopy that was constructed over the building to protect it during the renovation programme. The roof of this canopy was set above the top of the Great Hall lantern, with scaffolding lifts at intervals of about eight feet along the side walls. This permitted the establishment of camera positions suitable for the recording of the lower levels of the rafters by rectified photography, but made it necessary to record the areas nearer to the ridge by semi-oblique photographs. The computer-rectification of the semi-oblique photographs was undertaken using ARIEL software, produced by Bradford University, which has been used for a wide variety of applications and is designed to correct the distortion in photographs not taken at right angles to the plane of the surface to be recorded.

The survey control for the photographic survey was established using a Rec Elta 3 Total Station, based on the survey grid established in January 1995. Targets were accurately located in three-dimensions and then two-dimensionally output in the plane of the roof to precisely locate the individual photographs. The detail from the photographs was digitised into a CAD system with respect to the survey control and enabled the production of survey drawings in the roof plane (figs 3 and 4).

2.3 Manual Survey

The removal of the slates and plastered laths also permitted the examination of areas of detail which were inaccessible at the time of the original site survey (LUAU 1995). Where possible, detailed drawings of these areas were prepared by hand measurement and the relevant information was added to the incomplete survey drawings. For reasons of safety, some areas remained inaccessible: these included the 'clay room' above the coving at the western gable of the Great Hall and the junction between the pitches of the Great Hall and the Drawing Room Wing. These areas were recorded by oblique photography only.

3. RESULTS OF THE RECORDING

The exposure of the timber frame of the roof did not generally provide evidence in contradiction of the interpretation of the fabric history of Rufford Old Hall proposed following the first stage of the site survey (LUAU 1995). However, a certain amount of new information did come to light.

3.1 1950's Restoration

In particular, the extent of the repair programme of the 1950s became more fully apparent. Many of the wind-braces and rafters are connected by iron cramps, into which the timbers are bolted (Figs. 3 and 4); there do not appear to be instances in which the cramps are used in addition to the wooden pegs, but always instead of them. The arrangement of which timbers are pegged and which are cramped is eccentric and given that other parts of the hall have been reconstructed using pegs in new timber, no ready explanation can be suggested. However, it should be noted that the metal brackets are particularly concentrated in the central bays of the roof, in the trusses supporting, and adjacent to, the Victorian lantern. It may therefore be the case that the restorers of the 1950s were of the opinion that metal strengtheners would be a more effective means of supporting the additional weight carried by this area of the roof, than the traditional method of pegging the components of the frame together.

3.2 Central Lantern

Comparison of the elevations of the east and west gables with one of the trusses supporting the lantern has shown that the pitch of the principal rafters beneath the lantern is dramatically shallower than at either end of the Great Hall (figs 3 and 4). This suggests that the trusses in the centre of the hall are experiencing deformation under the weight of the lantern. In this area, the timber-framed northern wall has also deviated from the vertical. Hammer-beam roofs place a lateral thrust on the wall-tops and are therefore more common in buildings with stone walls than timber-framed buildings (Lynn Courtenay *pers comm*). This effect is likely to be even more pronounced with the additional load of the nineteenth century lantern. Rectified photographs of the roof pitches also show that the ridge purlin has slumped considerably in the bays immediately east and west of the lantern (figs 3 and 4).

3.3 Timber Marks

The evidence would suggest that in most cases the timbers were re-erected in their correct locations after the repairs of the twentieth century. However, the backs of several of the common rafters bore incised or chalked marks in arabic numerals. The numbers run from 2 to 8, on the north side, and 10 to 16 on the south, the numbers running in sequence from west to east. This only accounts for the western end of the building, coincident with the extent of repairs made during the re-erection of the east gable wall in 1949 (as shown in the photograph featured in *Country Life* in September 1950). It is therefore believed that these marks were made during this programme of

works and not during the more comprehensive repairs of the following decade. No evidence was observed for medieval carpentry marks.

3.4 Easternmost Bay

It was noted that two of the common rafters of the easternmost bay (above the cross-passage) on both the north and the south side of the building contained rectangular mortices close to the apex, while the irregularity of the rafters did not suggest that these were modern timbers (figs 3 and 4). It is possible that rafters from this site or elsewhere were salvaged for use in the construction of the Great Hall in the fifteenth or sixteenth century; however, an alternative hypothesis is that parts of the roof were remodelled in the post-medieval period. This bay contains four common rafters between the principals, as opposed to the three in all other bays. This arrangement has made it necessary for the decorative panels to be bolted at the four corners directly onto the rafters, rather than secured at the centre onto the central rafter, as in all other instances. The panels, however, are likely to be modern replacements.

The mortices are difficult to interpret; however, the fact that they exist for both north and south rafters of two individual couples suggests that they represent a removed architectural feature, either *in situ* or more probably removed. Given the location of the timbers adjacent to the Drawing Room wing, it is tentatively suggested that they may have been installed in their present locations at the time of the construction of the wing in the eighteenth century, an operation which would have caused considerable disturbance to this part of the building. The fact that these are common rafters, rather than principals, makes the function of the mortices particularly difficult to interpret. However, a possibility is that these represent the only surviving evidence for the existence of a smoke louvre in the ridge of the Great Hall roof; this would formerly have been in the position presently occupied by the nineteenth-century lantern and would have been made redundant by the construction of the present fireplace in the sixteenth century. On such scanty evidence as this, and in the apparent absence of carpenters' assembly marks on the rafters, this hypothesis must necessarily remain conjectural.

The form of the eaves on the north side of the Great Hall was examined for the first time and the information added to the cross-section record drawing prepared for the Great Hall in January 1995. It was shown that the principal rafters rest on the hammer-beams which are set in trenches in the wall-plate. As on the south side, the hammer-beams project slightly beyond the wall-plate and have dovetailed soffits. The common rafters have been the subject of extensive repairs and many of their ends are in new timbers. They are extended beyond the main wall-plate and meet the curving timbers of the coved eaves in an outer wall-plate of purely cosmetic function; this timber appears to be of nineteenth century date, but may replace an earlier timber. Where the main trusses meet the wall plate, the coving is connected to the back of the panelling by short tie-beams.

3.5 Drawing Room / Great Hall Junction

The junction of the Great Hall and Drawing Room Wing was exposed during these works. It was evident from their regularity and scantling that the rafters in this area are not from the original structure but are relatively recent in date (figs 3 and 4). However, peg-holes in the principal rafter of the eastern closed truss of the Great Hall showed that the purlins continued east of the hall; the purlins that are still in place do not appear to be new timber and may have been the originals.

It was hoped that the works would expose the timber-frame of the sixteenth century building of the Drawing Room wing, encased in nineteenth century facing. However, these timbers were concealed under the laths of the wing and by waterproof covering in the area where it is presumed the wall-plate runs behind the east gable wall of the Hall.

3.6 Bay Window Roof

The exposure of the structure of the Bay window roof showed that all of the faces are supported by a central kingpost (fig 3). The timbers of this part of the building did not appear to be of any great antiquity and may possibly be of nineteenth or twentieth century date.

3.7 Clay Room

The 'clay room', a blind chamber, was exposed for the first time since the restoration of the west gable in 1949. This room was found to be completely empty and stripped of all decoration; the floor had been removed and the back of the coved canopy was visible. Photographs taken during the renovation of the gable wall show that the canopy remained in place during the operation, supported by scaffolding (Country Life 1950). During the reconstruction, this was reinforced with metal supports running behind the curved timbers visible inside the hall. All surfaces of the infill panels have been covered with a fireproofing agent, presumably dating from the rebuilding programme of the 1950s.

It should be noted that this room is extremely small in size and particularly low. If it was accessible from the former west wing (LUAU 1995, 15), it cannot have been a room of any status and may have been the attic accommodation of servants, as suggested by documentary references to garrets at the western end (National Trust 1991, 14). The popular belief that this was a priest's hole, though apocryphal, cannot be entirely dismissed.

4. CONCLUSION

The survey has clearly identified that the building and particularly the roof have been subject to considerable rebuilding in the 1950's; timbers have been moved and replaced, many of the original peg fixings have also been replaced with metal brackets. As a consequence of this drastic programme of repair, it is likely that considerable amounts of evidence for the structural development of the Great Hall have been irretrievably removed. The knowledge that the roof has been completely reconstructed without strict adherence to the previous form, means that it is not possible to interpret the construction of the original roof, with any confidence, on the basis of the present configuration and form of the roof structure. This has limited the extent and detail of the analysis on the roof structure in particular, although there are also considerable limitations imposed on the other elements of the building.

5. BIBLIOGRAPHY

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APPENDIX 1
WATCHING BRIEF PROJECT DESIGN

ILLUSTRATIONS

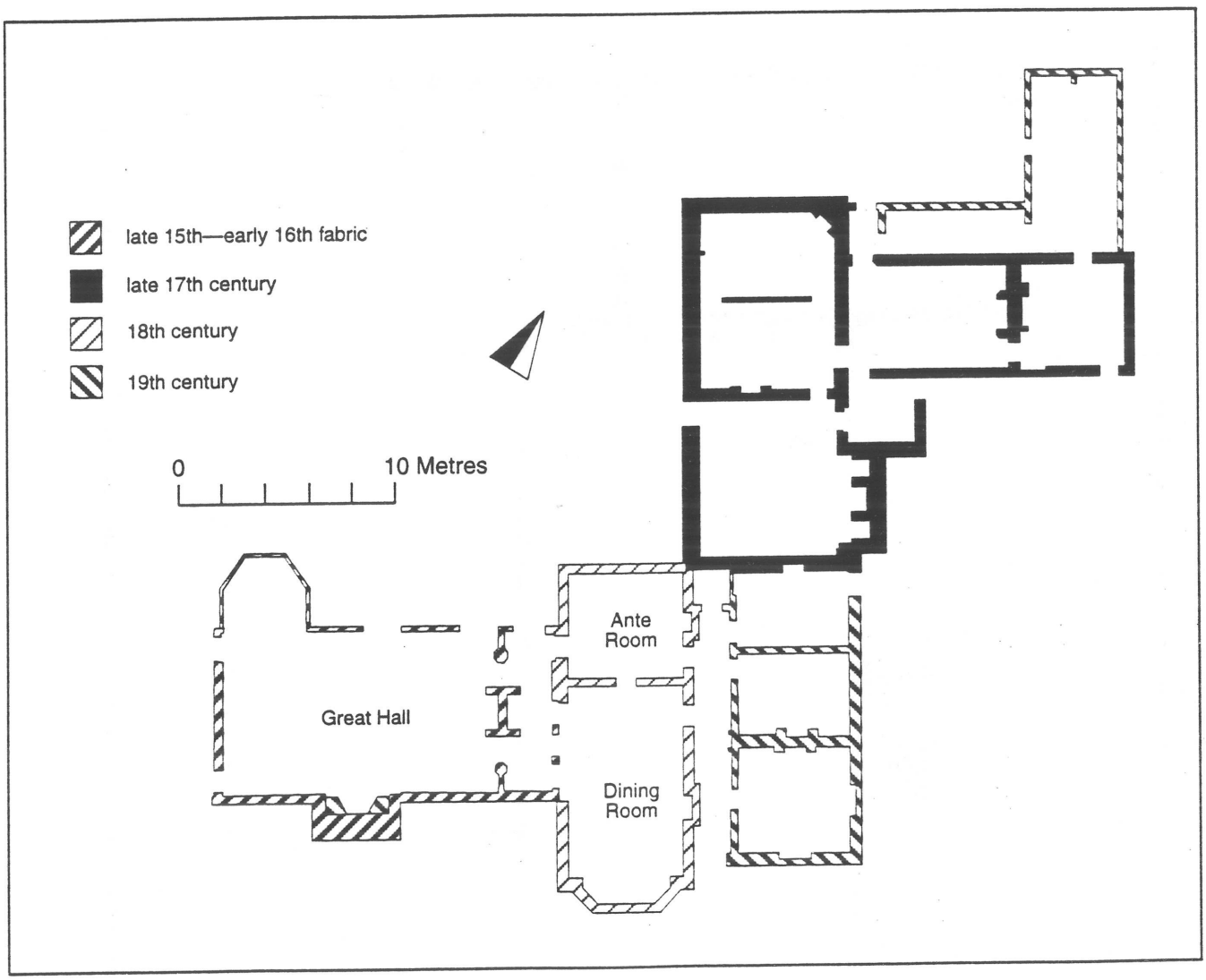


Fig 1 Ground floor plan of Rufford Old Hall

Rufford Old Hall

Drawing Key for Roof Plans

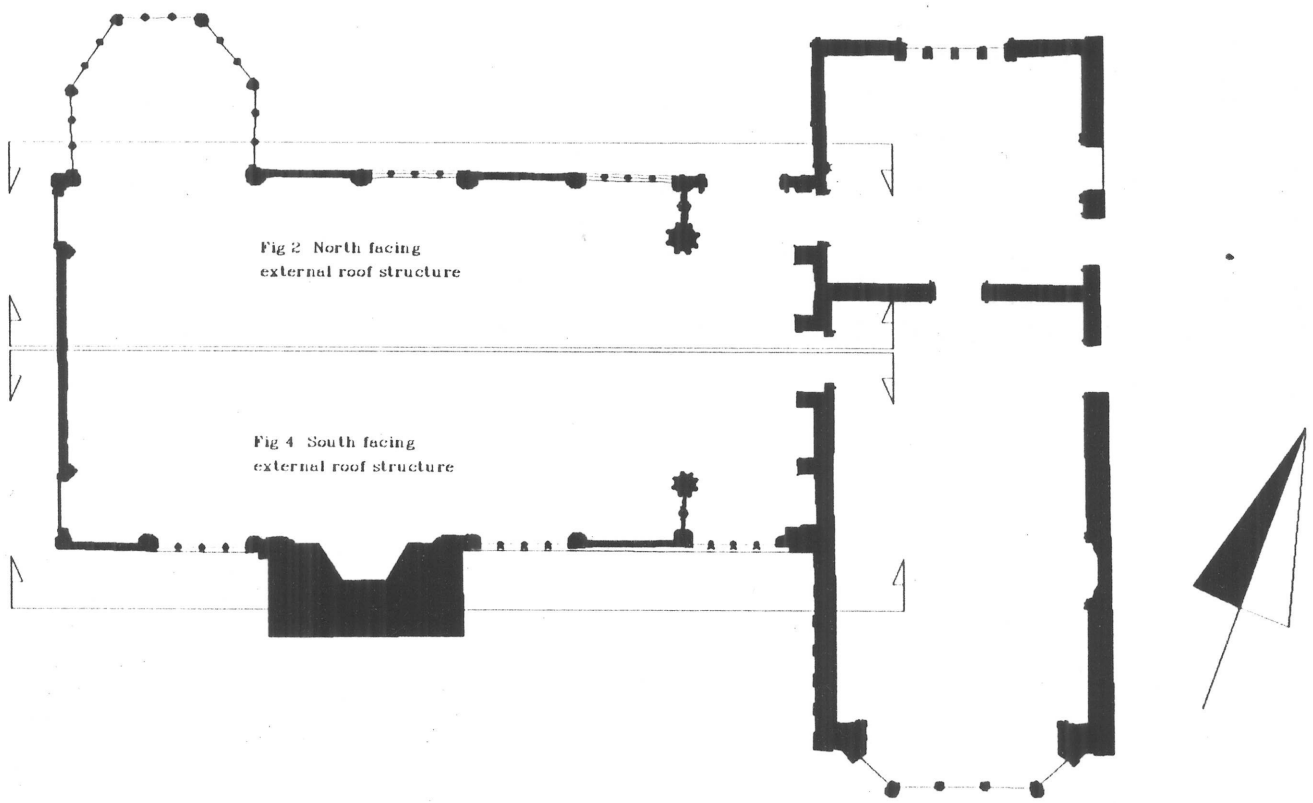


Fig 2 Drawing key for external roof plans

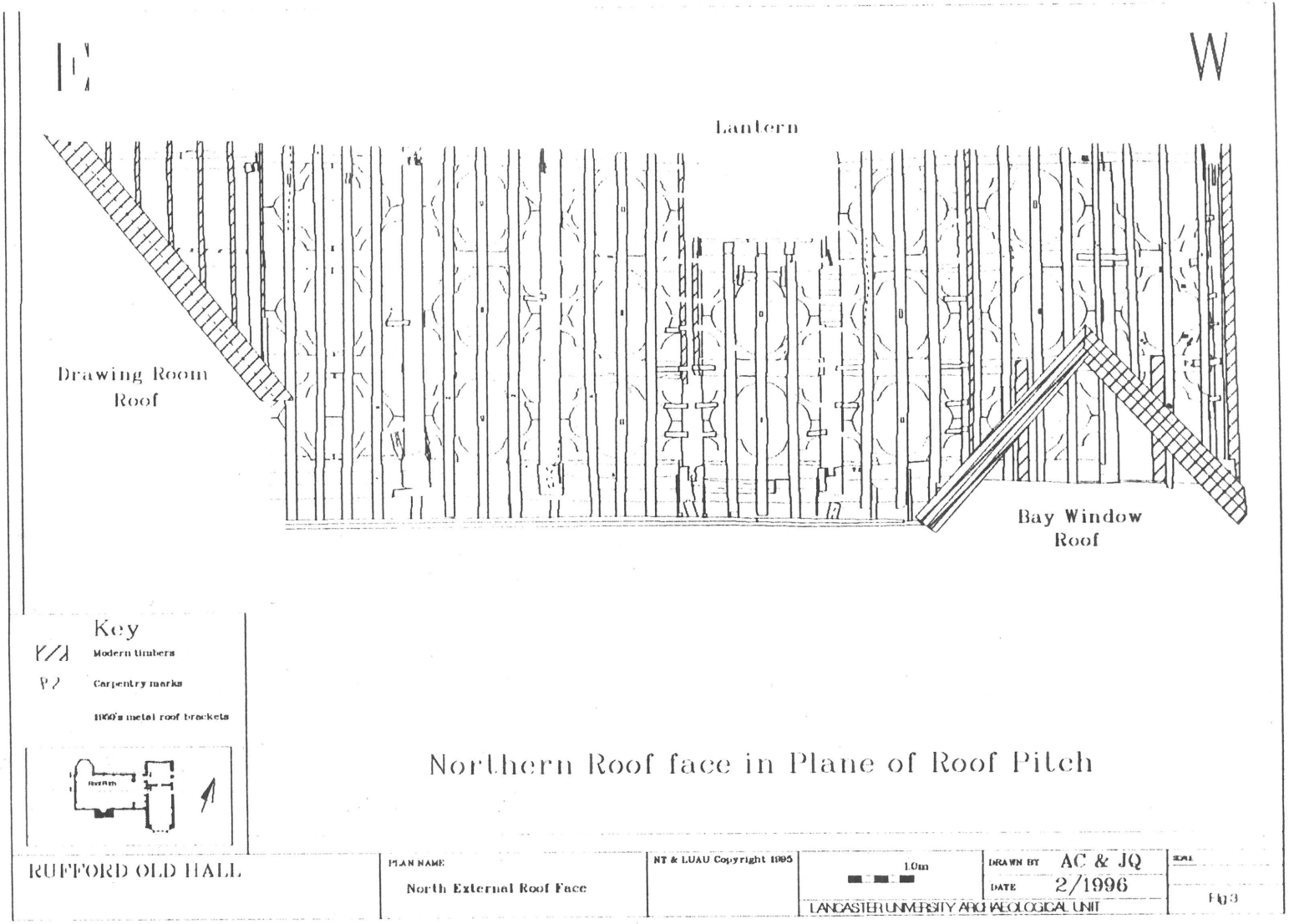


Fig 3 North Facing External Roof Structure

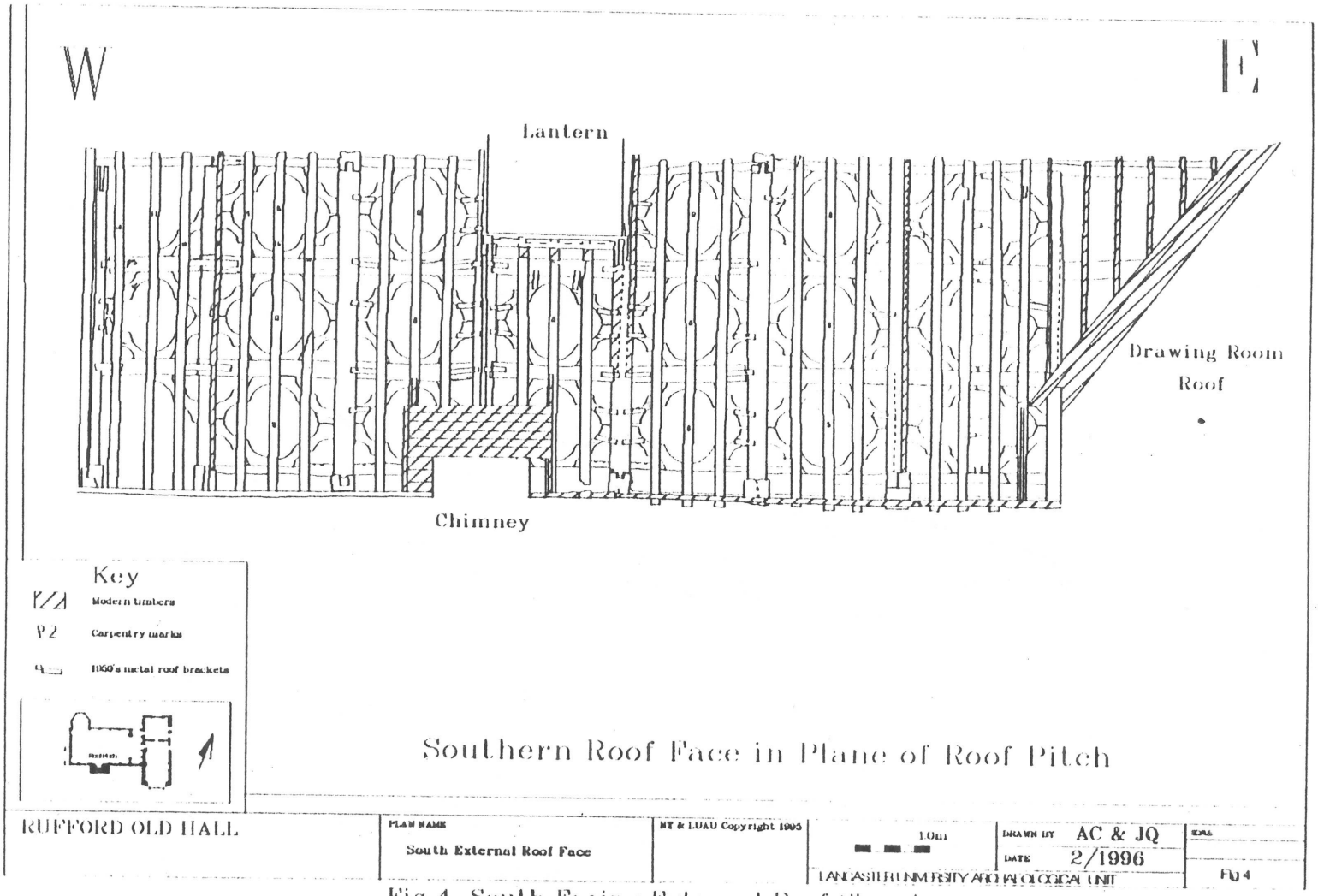
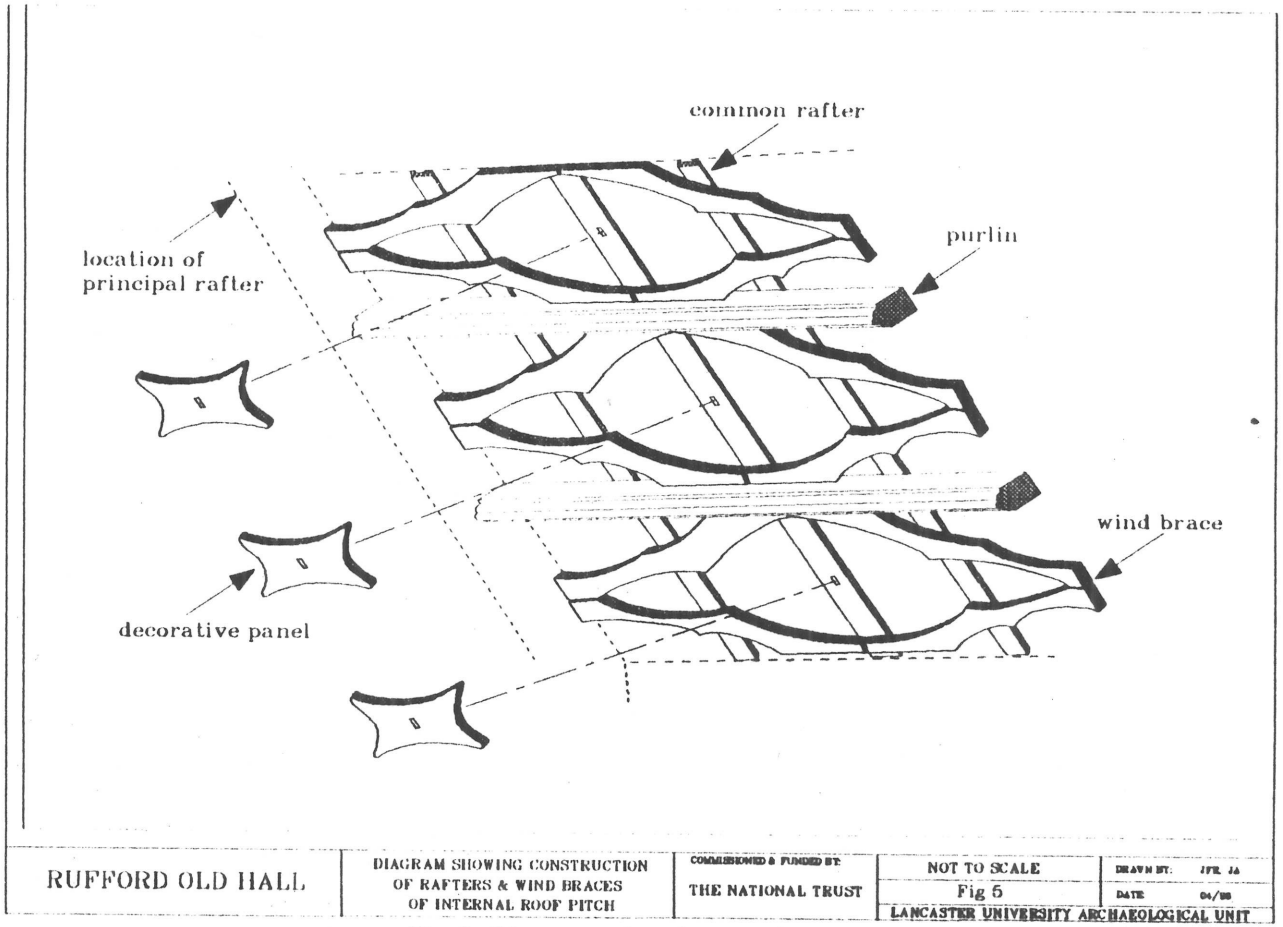


Fig 4 South Facing External Roof Structure



RUFFORD OLD HALL	DIAGRAM SHOWING CONSTRUCTION OF RAFTERS & WIND BRACES OF INTERNAL ROOF PITCH	COMMISSIONED & FUNDED BY: THE NATIONAL TRUST	NOT TO SCALE	DRAWN BY: JFR JA
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Fig 5 Diagram showing roof construction

PLATES

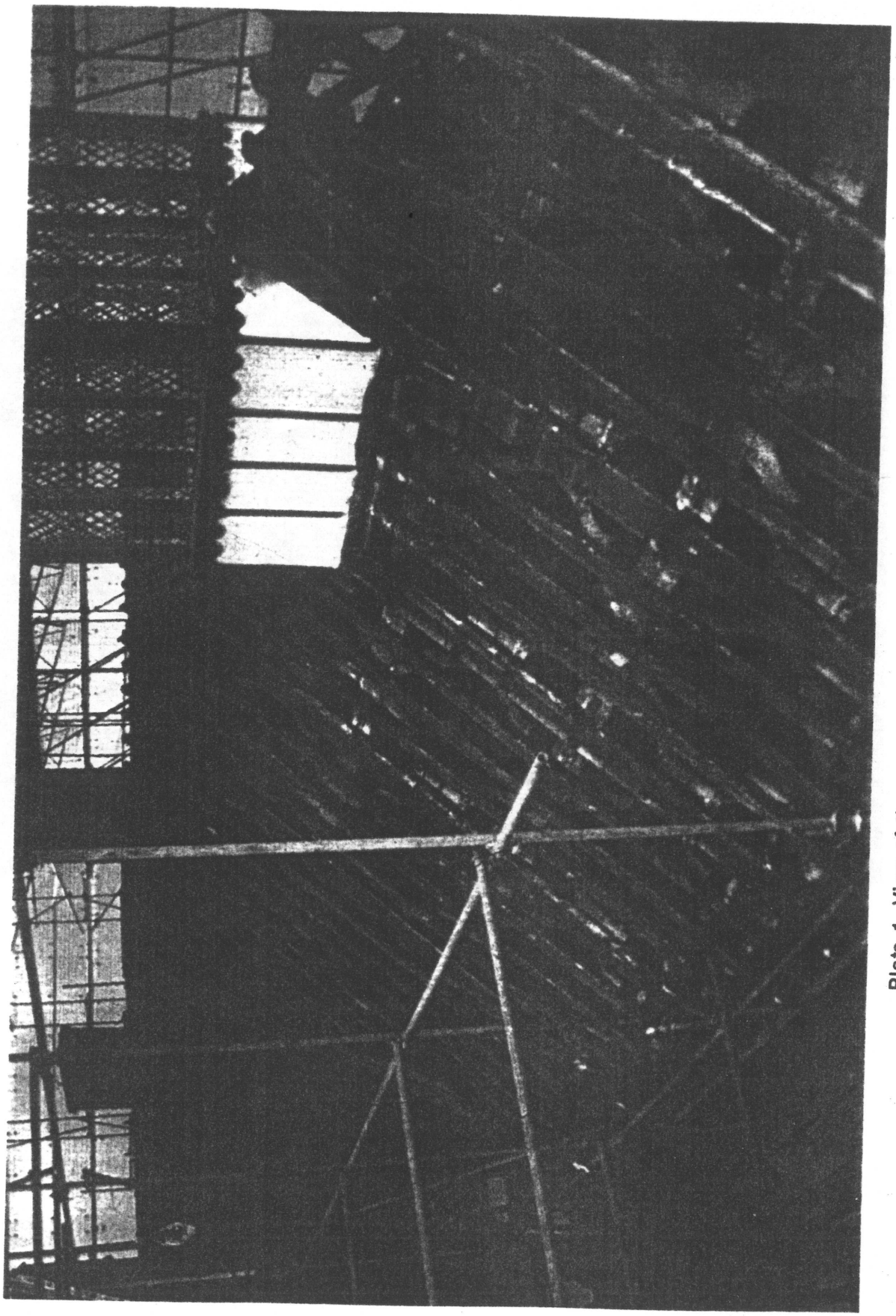

Plate 1. View of the exposed Roof Structure from the North-West

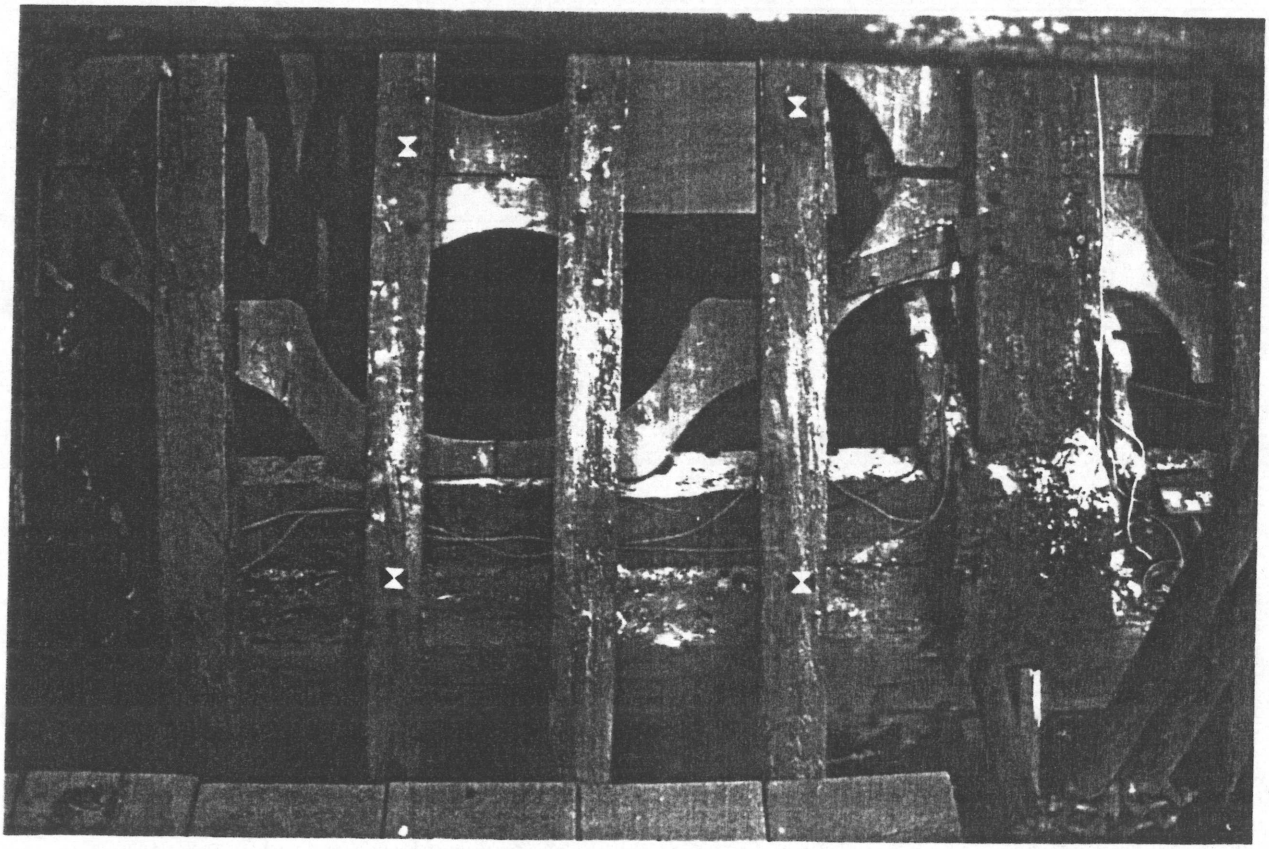

Plate 2. Roof detail on north side of roof pitch showing wall plate and hammer beam