

PHILIP HUGHES ASSOCIATES

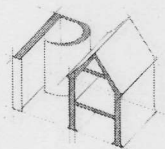
HISTORIC BUILDING CONSERVATION CONSULTANTS

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Report on Investigation Works undertaken at St. Stephen's Church Winsham



July 2008



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Report on Roof Investigation Works at St. Stephen's Church, Winsham undertaken in March 2008

1. Preliminary Information

1.1 General Information

1.1.1 The following inspection and report has been prepared as part of the Stage I grant application documentation to be submitted to English Heritage. The grant application is for re-roofing, roof structure, internal ceiling and high level stonework conservation works to St. Stephen's Church, Winsham. The following areas were inspected:

a) The slate roof coverings to the pitched roof slopes to both the north and south slopes of the nave.

b) The roof structure including access throughout the roof void above collar level and access at selected point at the eaves and collar levels to both the north and south slopes of the nave.

c) Internal access via a ladder to the nave ceiling (limited to low levels at the eastern end only).

1.1.2 Access was provided and opening up and making good works undertaken by Geo. Masters & Sons, Limington Road, Ilchester, Somerset BA22 8LX in accordance with a specification issued on 7th March 2008 prepared by Philip Hughes Associates. The works were undertaken on the 18th and 19th March 2008.

1.1.3 The inspection and report have been undertaken by Samuel Wheeler under the guidance of Philip Hughes of Philip Hughes Associates, Old Manor Stables, Tout Hill, Wincanton, Somerset BA9 9DL. Inspection of the building was made on the 18th and 19th March 2008.

1.1.4 This report should not be regarded as a specification or schedule of repairs to be undertaken and is not intended for use other than by the Parochial Church Council and English Heritage.

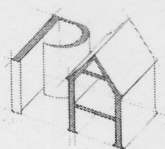
1.2 Description & Listing

1.2.1 The church consists of nave, central tower, chancel and south porch with an extension to the south of the south porch accommodating the vestry. The church is surrounded by a small churchyard and accessed from public highways to the east and west.

1.2.2 The church is believed to have Norman origins. Major works were undertaken in the thirteenth and fourteenth centuries and the tower, large perpendicular style window, font and nave roof structure are all of fifteenth century date. Further internal works were undertaken in the 1800's and the vestry was built in 1928/29. The church is listed Grade II* and is located in a conservation area.

1.3 Limitations of Investigation Survey

1.3.1 A visual inspection was made from ground level and internal floor levels. In addition, tower scaffolding and ladder access was provided to the eaves level of the north and south slopes of the nave externally and to internal ceilings. Roof crawling ladders were used to provide access to the full height of the nave roof slopes. Several areas of limited opening up works were undertaken to



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remove slate roof coverings to allow access at eaves level. Access to the roof void above collar level on the nave was possible from an access hatch in the tower.

- 1.3.2 Areas of access and opening up were limited to relatively small areas of roof coverings being removed due to risk of weather penetration and cost of further works. Areas to be opened up were selected to provide the maximum amount of information without removing large areas of roof coverings and, therefore, tended to concentrate around the eaves and collar levels of the roof structure to the nave.
- 1.3.3 Access was not gained to the following areas, as they were not in the scope of the current brief:
- a) to the roof coverings or structure of the chancel.
 - b) To the roof coverings or structure of the south porch.
 - c) To the roof coverings or structure of the vestry
 - d) To the roof coverings or structure of the tower.
 - e) Internally to the ceiling of the chancel
- 1.4 ***Existing Reports & Consultation carried out for the Report***
- 1.4.1 Existing reports and other consultants who have provided information which has been incorporated within this report are:

Philip Hughes Associates – who prepared a quinquennial report dated November 2006.

Clive Dawson – Structural Engineer – whose report dated July 2008 (following a visual inspection on the 19th March 2008) on the structural condition of the nave roof is included in the appendices of this report.

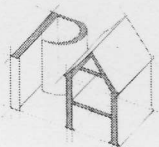
Lewis Brown – whose measured survey was used in the preparation of the specification and tender documents.

2. **Investigation Works**

2.1 ***Nave Roof Coverings***

The nave roof is formed of standard sized natural slates approximately 305x605mm (12x24”) with 2 no. alloy nails to the centre of each slate fixed directly into large roof battens (75x45mm). At the eaves of both slopes is one course of stone (formed in a similar fashion to coping stones rather than the stone tiles) with halved laps with mortar pointing and fixed with a mixture of large headed alloy and copper nails directly into the rafters. The eaves stones on the north slope had suffered surface lamination in numerous areas. On the south slope the stone was in better condition. There is no underlay to the nave roof slope. Corrosion to a number of the nail fixings was noted and although this was not severe a large number of slates had slipped due to failure of fixing. The type and condition of the slate fixings varied greatly throughout the roof slopes. The failure of fixings appears to be largely due to the holes in the slates being too large, where the slates have been reused and reholed or the edge of the slate fracturing. Several slates were chipped, damaged or split. A large number of slates, especially on the north slope had been refixed with lead tingles. The ridge tiles to the full length of the nave are of Ham Hill stone bedded in cement mortar.

At the western end both the north and south roof slopes abut the west parapet wall. The northern slope has slate bedded against the abutment and over the slates in place of a flashing. At the



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eastern end both the north and south roof slopes abut the tower wall and have lead flashings extended horizontally over the slates.

2.2 *Nave Roof Structure*

The roof structure is formed of common rafters forming A-framed trusses resting on oak wall plates bedded to the wall heads. The trusses are spaced at approximately 450mm centres (although this varies) and support curved braces which in turn carry the lath and plaster internal ceiling. Several trusses have a second collar inserted above the main collar.

Access in a number of locations was gained to the rafter feet and wall plate on both the north and south slopes. Beetle attack and decay to both the inner and outer wall plates was found on both the north and south elevations and appeared severe in numerous areas.

Access to the full length of the roof void above the collar level provided limited views down to the wall plate (over the plaster ceiling) and access throughout the roof, allowed close inspection of the top section of the rafters, the upper braces, collars and ridge connections. Extensive beetle attack and decay were identified throughout all the roof structure elements including the inner and outer wall plates, rafters, collars and braces. Extensive repairs (generally in the form of timber splints) had been undertaken in what appeared to be several phases of repair. A number of the repairs seemed crude and had failed or suffered from beetle attack. While the structure currently appeared to be performing adequately this is significantly aided by the extensive repairs (several of which are now beginning to fail due to the beetle attack) but numerous pegged joints have failed or fractured and the numerous areas of decay have caused isolated areas of weakness. The original roof structure is of oak and the majority of repairs are formed in softwood. A significant number of the trusses are racking to the west.

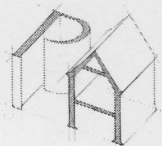
Internally a number of ribbed rafters are visible along with ribbed purlins and a moulded wall plate. There are carved timber bosses at the junctions between the rafters and purlins. The bosses are screw fixed.

2.3 *Internal Ceiling Plasterwork*

Internally the nave has a barrel vaulted lath and plaster ceiling to its full length. The lath and plaster is fixed to timber braces fixed directly to the underside of the roof trusses (see roof structure above). The fixings of the laths were not visible during this inspection. The laths are much newer than the original roof structure and generally appear to be well fixed and in good condition. A small number of laths have minor decay (generally in areas of leaks) or damage. In a few areas the plaster key has failed, although this is generally sound where visible. The ceiling is decorated with what appears to be a casein bound distemper. Internally, the plaster had a number of stained patches which appear to correspond with previous leaks through the roof coverings. There is some damage to the plaster in these areas.

2.4 *High Level Stonework*

Access through the roof void allowed inspection of parts of the stonework to the nave gable walls. At the west end a timber is bedded into the stonework of the gable. The timber appears to have been the collar of the end truss that is now redundant as the rafters have been replaced with sawn timbers. The timber is severely decayed and this has resulted in stonework in the wall above becoming loose and small areas appear to be unstable.



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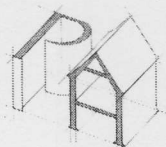
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The western wall of the nave has a stone coping to both slopes and an apex cross. There is some lamination to the stonework of the apex stone supporting the cross. At the eastern end the roof slopes abut the stonework of the tower. The eaves of the roof coverings rest on a dressed and moulded stone cornice. The majority of this stonework is in satisfactory condition but a few stones have laminated and some repointing is required.

In the north-west corner of the roof is a brick chimney with a steel flue. There is significant failure of the mortar joints throughout the brickwork and the lead back gutter is poor.

3. Summary

The nave roof structure and internal ceilings are all formed in such a way that any movement in the roof structure will affect both the coverings and ceiling. Numerous repairs have been undertaken to the roof coverings and structure throughout their life, the ceiling appears of a much later date than the original roof structure suggesting it has been renewed. Although numerous patch repairs have been undertaken continued failure of the roof coverings is allowing water penetration resulting in damage, decay and gradual failure continuing to occur to both the structure and plaster ceiling. Whilst all the elements of the roof are currently functioning, repair works to both the structure and plaster ceiling will reduce or prevent the continuing deterioration of each element and reduce the risk of major failure or loss of fabric in the future. Replacement of roof coverings and the inclusion of a breathable underlay (to catch any windblown water penetration or leaks) would provide improved long-term protections to the roof structure. Repairs to decayed sections and failed joints of the roof trusses including decayed elements of previous repairs would strengthen the roof to enable it to continue its current function for the foreseeable future. Whilst works to the roof coverings and structure are being undertaken access to repair damaged laths and sections of plaster (in a sensitive manner which cannot be undertaken whilst the roof coverings are in place) can also be provided. Works to the roof and ceiling will also provide access for minor stonework repairs and repointing to be undertaken. The opportunity to repair damaged sections of ceiling, plasterwork and high level stonework should be taken.



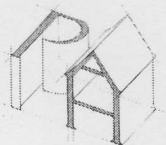
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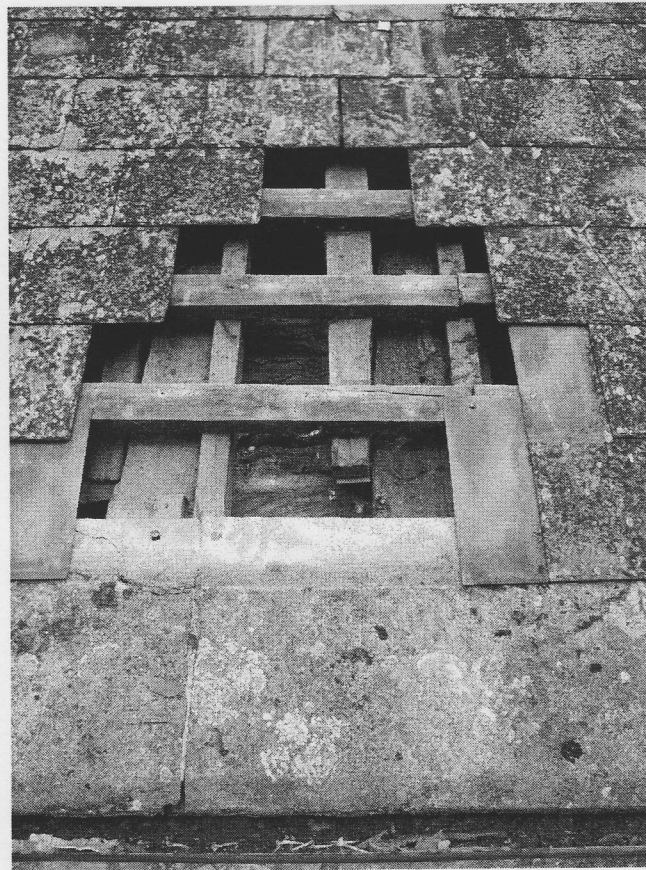
APPENDIX A

PHOTOGRAPHS OF NAVE ROOF & CEILING





View of nave roof viewed from south-east vestry building in foreground



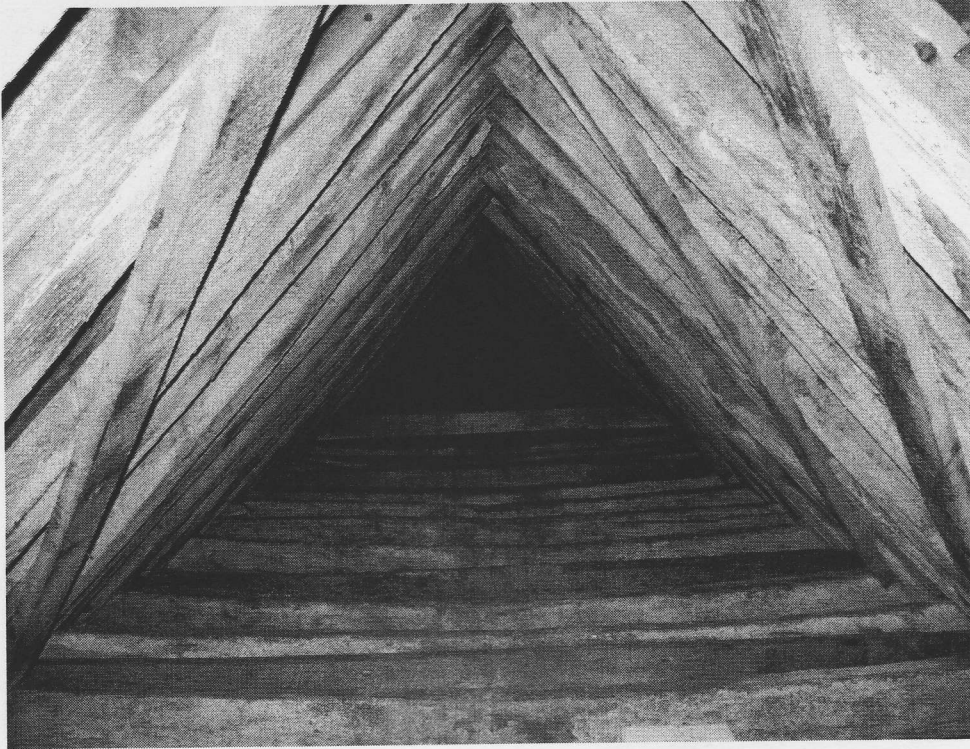
Opening up of roof coverings on south slope of nave. Eaves stones and splint repairs to rafters visible.



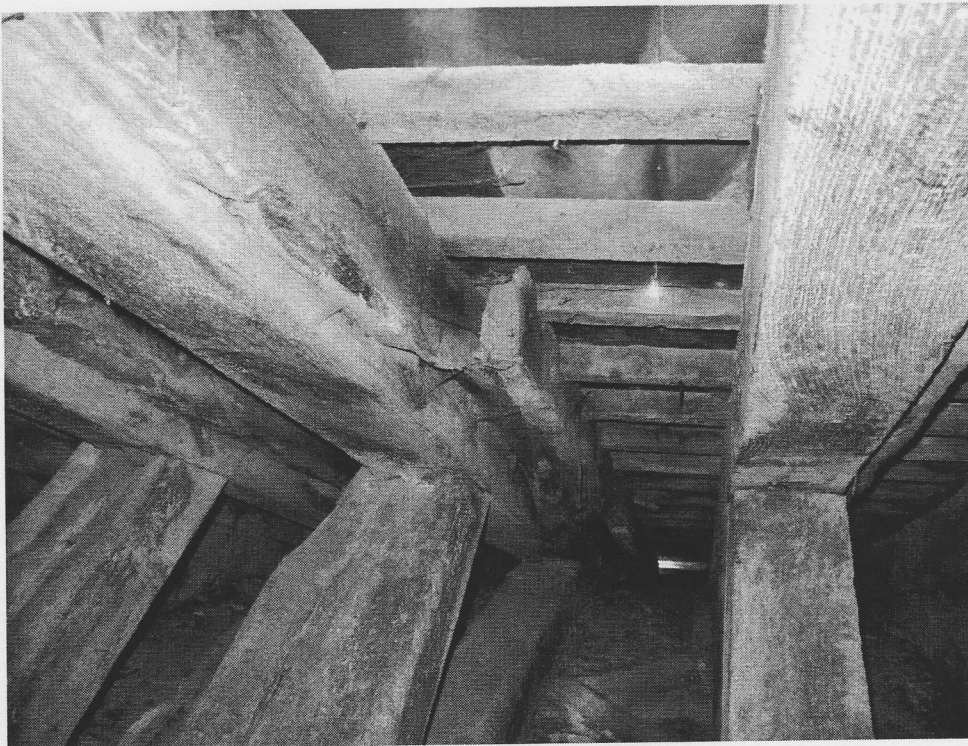
Slates on nave roof fixed to large battens. Poor nail fixing and reholing of slates (for reuse) visible.



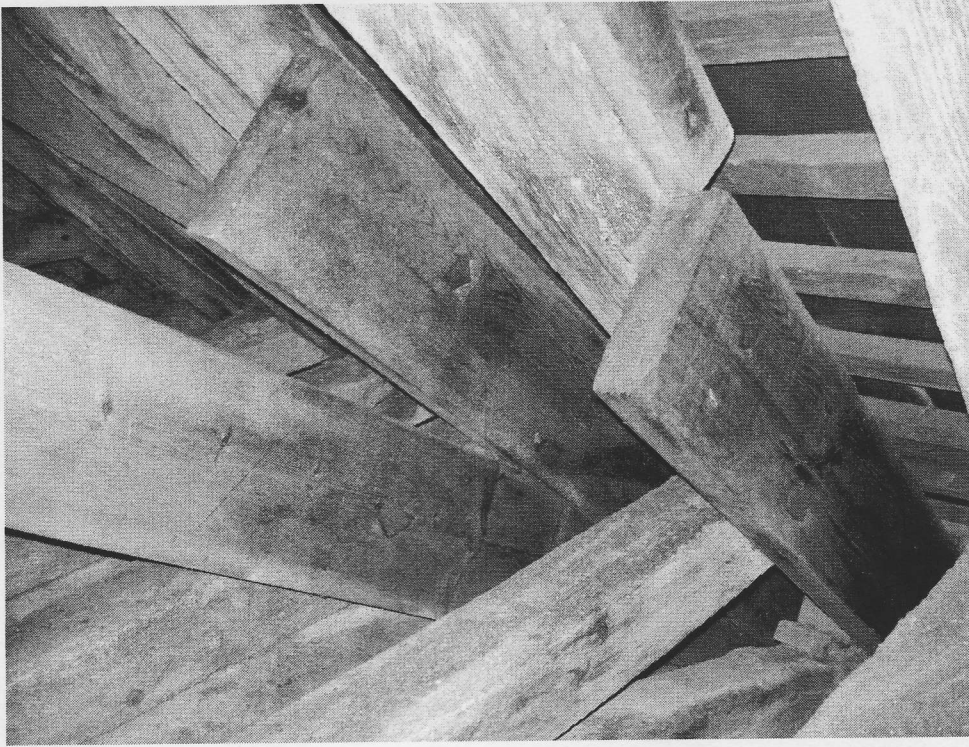
Slipped slates (to right of chimney) at west end of north roof slope. Lead tingles visible above chimney, forming new fixings for previously slipped slates. Water staining visible on wall where roof coverings have failed.



Nave roof void, collars and common rafters visible



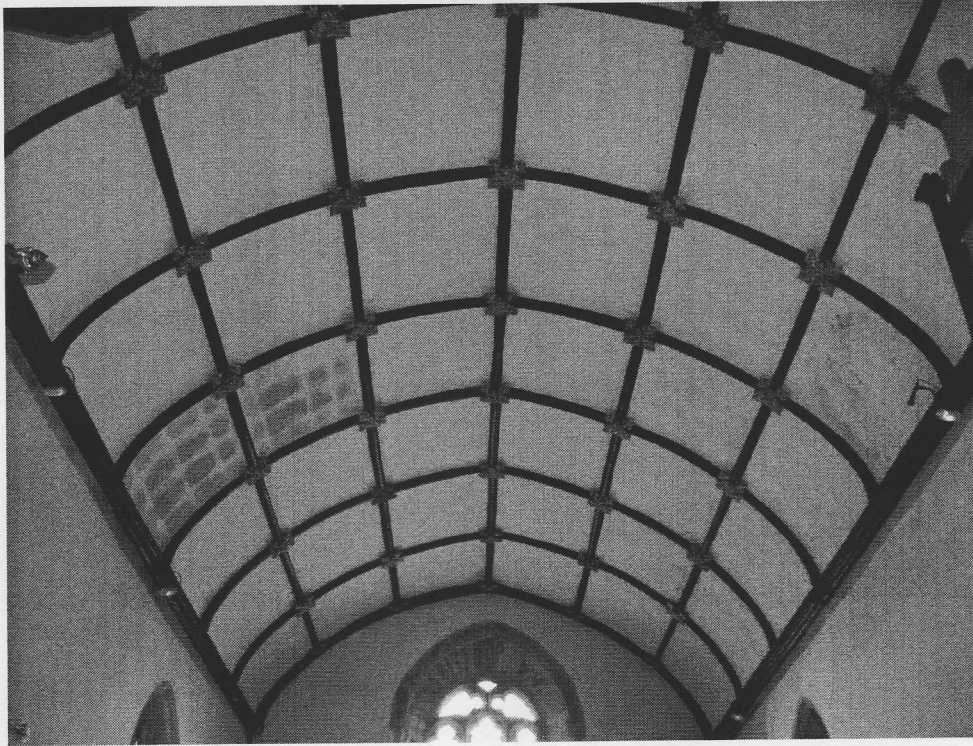
View of common rafters, collars braces, roof battens and underside of slates and top of lath and plaster ceiling looking down from collar level. Splint repairs to rafters visible.



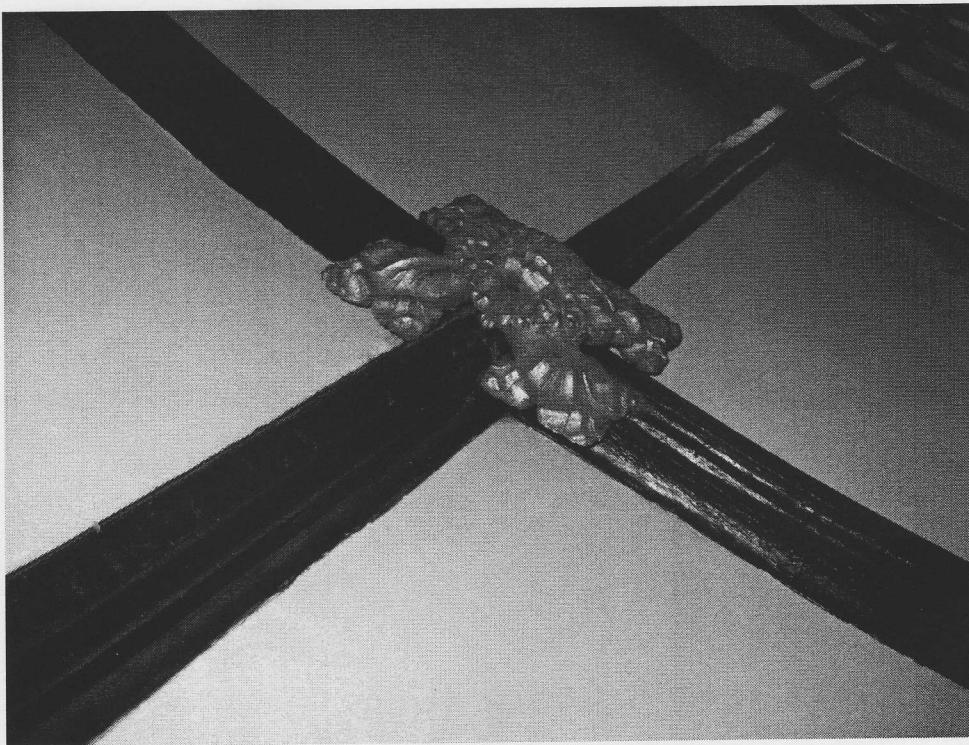
Extensive splint repairs to nave roof structure. A number of the splint timbers are now suffering from beetle attack and decay.



Severe decay to elements of the roof structure previously repaired.



Nave ceiling showing moulded rafters and horizontal ribs (fake purlins), carved bosses and staining/damage to plasterwork due to water penetration through roof coverings.



Carved boss screw fixed to moulded rafters and horizontal ribs (fake purlins).