

Project Details

Project 3: *High Level Repairs to St. Philip's & St. James's Church,
Ratby, Leicestershire
Diocese of Leicester*

Listing Status: *Grade II**

Client: *PCC St. Philip's & St. James's, Ratby
C/o Reverend Mr. Richard Worsfold, ,
The Vicarage, 15, Groby Road, Ratby, Leicester*

Description of the Building



The building is the parish church of the village of Ratby. The church dates from the 14th Century and has a massive tower the top



of which is in the perpendicular style. There are five bays with circular piers, the south doorway has a band of big four petalled fleuron's all up the arch and the south aisle east window has a flowing tracery culminating in a circle with a wheel of three mouchettes. Nicholas Joyce of Stafford was responsible for the major restoration works of 1881 and it is from this period that the roof structure originates. A large war memorial screen divided the south aisle into two parts and long length pews were set on raised timber staging in all areas.

Conservation Issues



The Quinquennial inspection had revealed a serious outbreak of dry rot in the roof timbers above the arcade to the extent that the church had to be closed.

The necessary repairs to the timberwork would entail cutting away all infected and replacing all timbers below the first purlins. A structural scaffold would be required to support the retained structure during the remedial works. This scaffold would need to be founded upon solid ground and the pew staging was not considered adequate and therefore had to be removed. The war memorial screen also had to be removed away from the arcade and the removed pew staging.

A temporary roof had to be erected between the ridges of the nave and south aisle to allow the internal valley roofs to be stripped and opened up to facilitate the timber replacements. Electrical installation would have to be removed where they ran in the vicinity of the arcade.

On completion the roof reconstruction would have the appearance of the original structure. The sourcing of timber sizes and species was a major priority. The church also took the opportunity to re-order the nave and south aisle to form a lady chapel using the south aisle east window and the relocated war memorial screen and to gain a more prominent access through the south doorway, which had level access to the church.

Architects Appointment

Following the retirement of the previous Architect I was appointed church Architect for St. Philip's and St. James's and requested to carry out the Quinquennial inspection in June 1999. I was advised at the time of my appointment that the previous Architect had notified the church that extensive dry rot had been identified in the timbers above the arcade. Investigations of the fungal growths were immediately undertaken and were so severe that I recommended closure of the church as I considered the roof to be in danger of collapsing. The PCC commissioned me to instigate the necessary repairs.

Process of Repairs for Ratby Church

1. Investigations of the extent of the dry rot out break were undertaken at various sections along the arcade. The rubble and plaster in fill between the rafters was removed in these limited areas and they revealed



that where the timbers were contained within the fill they had almost entirely rotted away. The rafter ends were therefore taking their support off the fill. Further investigation and opening up was then suspended. A decision to close the church was agreed with the PCC, Messrs Rowland's Structural Consultants (Structural Engineers) were appointed to advise on the scaffold design necessary to support the roof structure whilst repairs were undertaken. An emergency faculty was obtained and the specification for the remedial works prepared.

2. To provide an adequate support for the scaffolding the raised pew platforms were removed, this revealed that the 1881 renovations had prepared the substructure to a high standard and it was well ventilated. All structural timbers were set aside for re-use, the boarding could not however be salvaged.
3. The large memorial screen was carefully sandwiched between protective boarding and lifted from its fixings and set aside for repositioning on completion of the repairs.
4. The structural scaffold was erected to support the roof from the first purlin on both sides of the arcade and a temporary external roof was formed between the two ridges.

5. The remainder of the in fill between the rafters was removed; this exposed the full extent of the damage. The two inner roof slopes of the nave and the south aisles were stripped and the slates stacked on



- specially extended and strengthened scaffold platforms either end of the valley. The roof boarding was removed and discarded, this revealed that serious damage to the lower sections of the trusses had also occurred.
6. All infected timber was cut away up to the first purlin and trusses were cut back by one meter beyond any timber infection. The timbers were then treated. All ironwork from the original truss feet was recovered and cleaned and painted. New thrust blocks and truss rafters were fabricated to original dimensions and details.

- A scarf joint was agreed and drawn onto the retained sections of the truss rafters and carefully cut and dressed; new timbers were then scarfed into the originals, glued and bolted together



- New rafters were run between new wall plates and the first purlin
- The top of the arcade wall was covered in a code seven lead prior to the replacement of any timberwork, this was to prevent any fungal infection within the walling from re-infecting the new timber work

- On completion of the timber repairs care was taken to stain all the new timbers to match the existing



- A new lead covered valley was formed with the increased number of drops and weirs enabling lead

lengths to be minimized. The outfalls at either end of the valley were improved to facilitate easier and safer cleaning of the valley gutter. Safety eyelets were also installed to provide permanent fixing points for ladders or other access equipment.



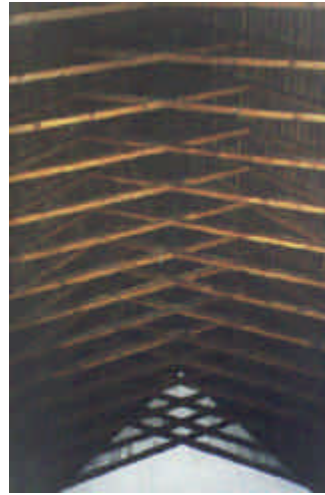
- Scaffolding was dropped and the timber flooring replaced but to a level of the aisles. Threaded inserts were let into the new boarding and pews were shortened to enable them to be easily handled, special brackets were also fitted to the pews which allowed them to be bolted to the new flooring in differing arrangements to suit various functions. Some new chairs were also

purchased again allowing for flexibility. The war memorial was relocated to form a lady chapel at the east end of the south aisle.

- The south door was designated as the new preferred access and an internal lobby constructed, providing level access to the church.
- Rubble fill around the rafter feet at the outer walls was also removed as a precaution, no rot was found.

The whole church was redecorated using Keim breathable paint and the church is again now re-open, besides the slight re-ordering of the interior the repair work is not easily identifiable

THE PROCESS OF REPAIR FOR RATBY CHURCH



1. The roof as it appeared at the time of the Quinquennial inspection, there was evidence of fruiting bodies but the full extent of the damage was



2. The image on the right shows the arcade above which was the intersection of the nave and the south aisle as shown in the image on the left, where the purlins crossed was rubble in filled and plastered, this limited drying through ventilation and caused the rot problem



3. Scaffolding along the nave and aisle propping the roof and providing easy access to the affected areas



4. The extent of the damage to the roof structure was revealed once the in fill was removed



5. The image on the left shows the fruiting bodies on the outside of the main truss timbers, right shows the cubing of the rafters



6. Right is a rafter which has crumbled when removing the in fill, it is clear from the picture on the left how the front faces of the rafter were intact and not revealing the extent of the damage



7. These images show the main trusses being cut back and how the rot has travelled in the left hand picture up the centre of the timbers and again is not evident externally, this truss had to be cut back further than first thought



8. Trusses are shown here with the new timber scarf pieces jointed into place and then as shown right the new rafters were installed



9. This drawing shows how during this procedure the scaffolding supported the roofing and a canopy protected the valley from the weather

10. This shows the drawing of the new valley arrangement overlaid with the on site photograph of the scarf joints



11. The valley was then replaced and the roof re-boarded and finished