

Institute Honor Awards

St. Patrick's Cathedral Restoration Project

Murphy Burnham & Buttrick Architects

This project was a labor of love and commitment by the design and client team to carefully renew this New York City and world landmark over a nine year duration: 2006- 2015. It was a multi-faceted undertaking that included conservation, expansion, life safety improvements, and systems upgrades for the midtown Manhattan campus. (fig.1)

The Cathedral was designed by James Renwick, Jr., beginning in 1852, and the first mass was celebrated in a mostly completed building in 1879. By 2005, the Cathedral had reached a serious state of need. In response to the needs of the project, Murphy Burnham & Buttrick Architects (MBB) assembled a multi-disciplinary team and brought a large group to the interview to address the myriad issues. Selected for their understanding of the technical challenges and their attention to detail, MBB began the building assessment, programming, Code analysis, energy studies, and systems evaluations that defined the restoration program. In addition to the physical problems with the facility, the needs assessment revealed a lack of space for ministry which led to proposals for expansion of the Parish House and renovations to the Rectory.

The resulting \$175 million dollar project encompassed conservation of all building elements and surfaces from the tops of the spires (fig.2) down to the terraces. The work included the conservation of marble, roofing, metals, plaster, wood, Beton Coignet (cast stone), and stained glass. In addition, outdated mechanical, electrical, plumbing, and life safety systems were updated or replaced. Construction was conducted while the Cathedral remained open for daily mass, welcoming the millions of visitors who pass through its doors every year. (fig.3)

Working closely with Building Conservation Associates, the team conducted forensic and archival research to determine the composition and colors of the original interior paint and the stone mortar specified by Renwick. Scanning technology was used to create accurate digital drawings of the Cathedral to supplement the original, archival drawings. BIM 360 Field, a Construction Management software run on I-Pads, was used to track and communicate status changes, from the scaffolding or the office, of over 30,000 individual repairs on the project. (fig.4)

The Cathedral's setting in its urban environment led the team to implement innovative life safety and system upgrades. A mist fire suppression system enables a fire in the nave attic to

be suppressed with 1/10th the water of a sprinkler system. A new, ten well, closed loop geothermal HVAC system will generate the required 240 tons of air conditioning and heating for the campus.

MBB Partner in Charge, Jeffrey Murphy, FAIA, indicated that during the development of the project, the recession actually gave time to consider options that might not have otherwise become a part of the project. The recession allowed time for budget development and fund raising to converge. Cardinal Dolan was a consistent and inspirational supporter of the design team and the workers. He saw an opportunity to improve the worship experience with more welcoming design initiatives. Some of these included: 1) taking out two rows of pews to encourage better circulation patterns during Holy Communion, 2) reconfiguring the Our Lady of Guadeloupe Chapel to be more accessible, 3) making the confessionals accessible to disabled priests and worshippers, and 4) creating an accessible bathroom in the building.

Restored to its original magnificence inside and outside, St. Patrick's Cathedral is again a glowing landmark, which serves as the spiritual center of City of New York. (Fig. 5)

Project Team:

Owner

St. Patrick's Cathedral
Monsignor Robert T. Ritchie
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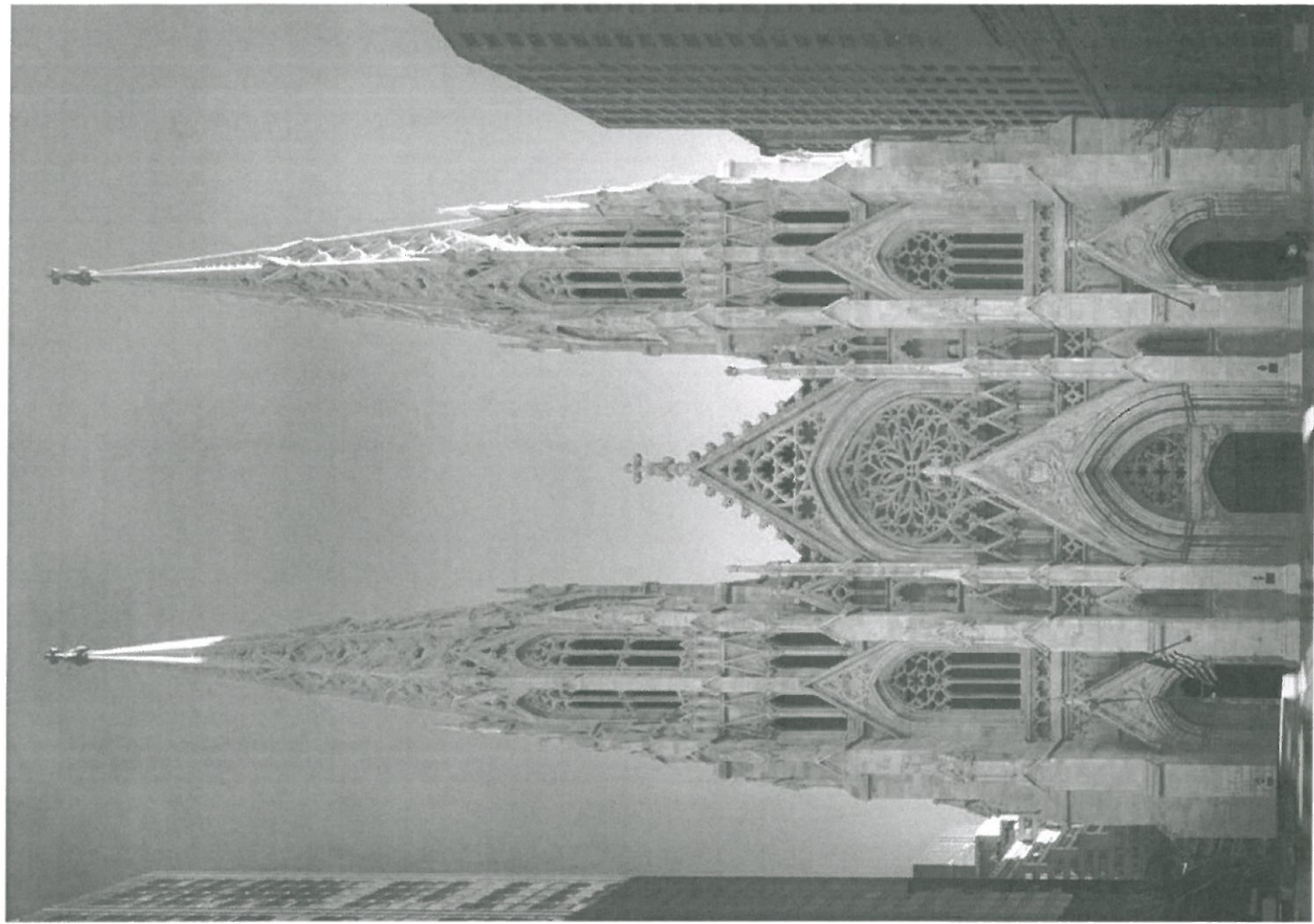
Trustees of Saint Patrick's Cathedral
George Borrero, Managing Director
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Owners Representative: Zubatkin Owner Representation

Architect: Murphy Burnham & Buttrick Architects

Consultants

MEP Consultant: Landmark Facilities Group, Inc.
Structural Engineer: Silman Associates
Restoration Architect: Jean Phifer FAIA
Material Conservation: Building Conservation Associates
Window Restoration: Femenella & Associates, Inc.
Door Restoration: Mary Kay Judy
Code Consultant: William Dailey
Construction Manager: StructureTone Inc.
Landscape Architecture: Robin Key Landscape Architecture
Lighting Consultant: Fisher Marantz Stone
Elevator Consultant: Van Deusen & Associates
Cost Consultant: Christopher Slocum
Security Consultant: Ducibella Venter & Santore
MEP Acoustics: Cerami & Associates
AV Consultant: JaffeHolden
Geotechnical Engineer & Surveyors: Langan Engineering & GB Geotechnics USA Inc.
Stained Glass Consultant: Drew Anderson



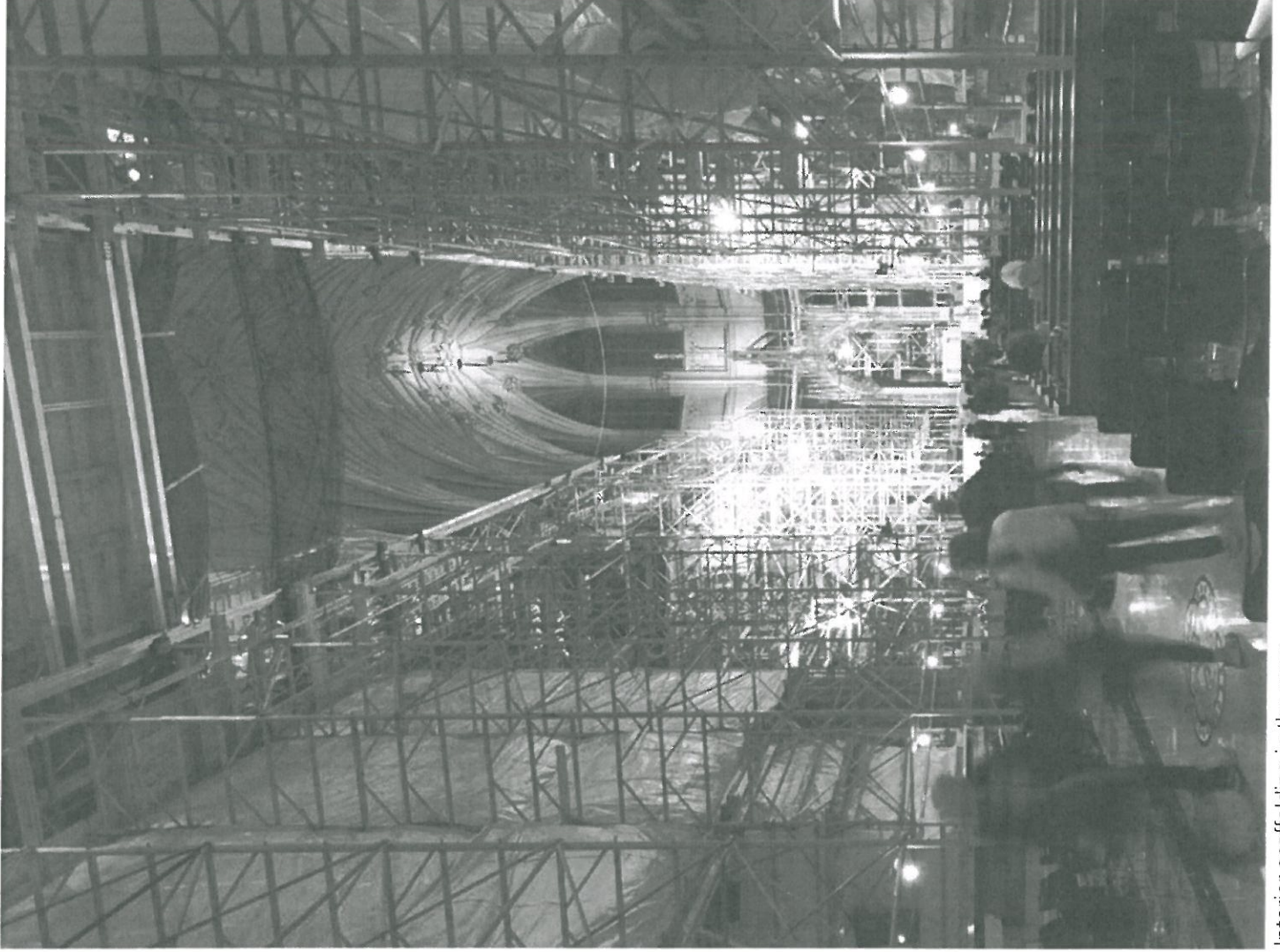
Exterior façade after restoration

Fig 1



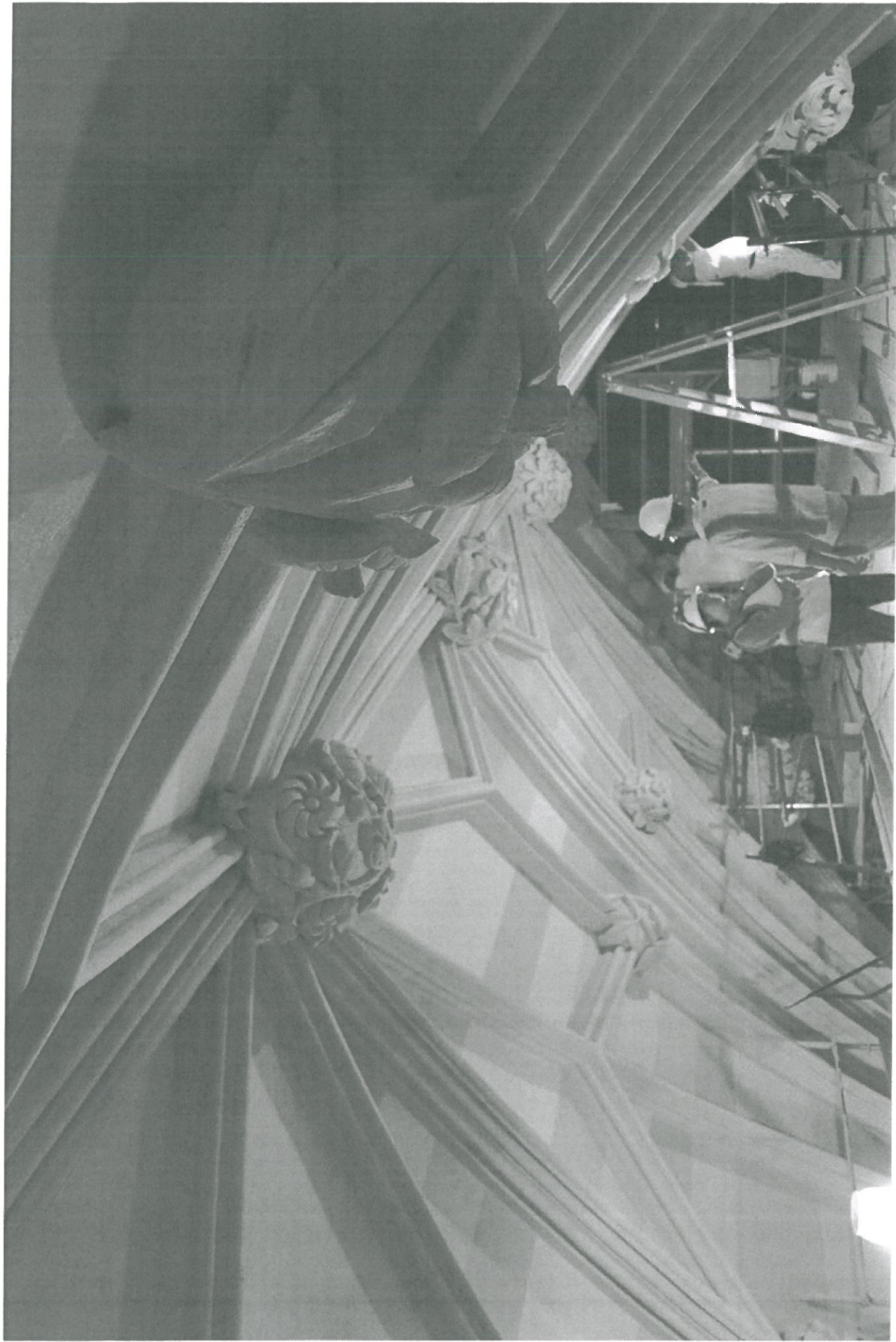
Review of stone pinnacle

Fig. 2.



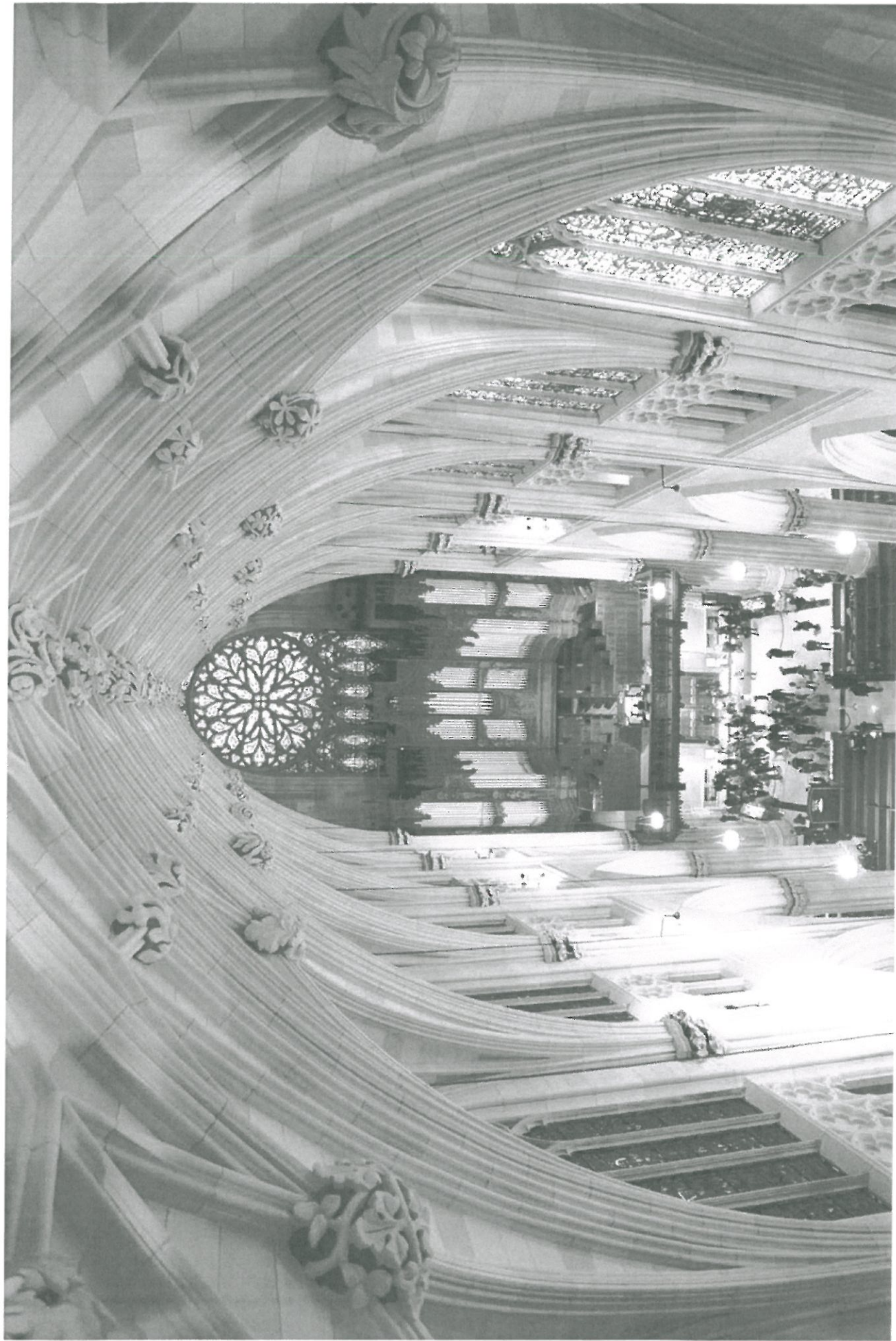
Interior scaffolding in the nave

Fig 3.



Team review of ceiling

Fig. A.



Interior after restoration, showing rose window, organ, and choir loft

Fig 5.