

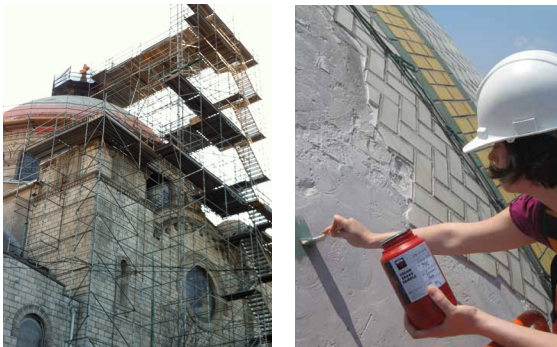
SAINT FRANCIS DE SALES PHILADELPHIA, PA

INVESTIGATION PHASE
EMERGENCY STABILIZATION
PHASE I RENOVATION

Henry D. Dagit, a leading Philadelphia architect, designed Saint Francis de Sales Roman Catholic Church in the Byzantine Revival Style in 1907; Rafael Guastavino, the legendary Spanish architect and builder, designed a complex series of domes and vaults for the church. The building is a stone load-bearing structure and all the domes are constructed with Guastavino tile.



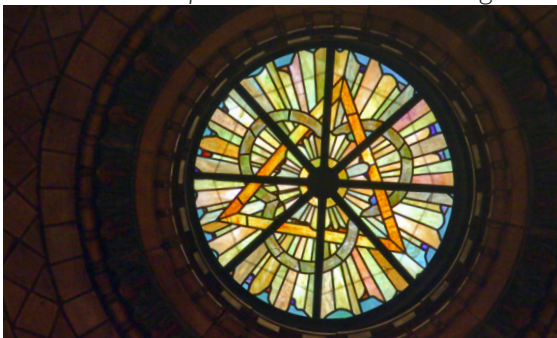
Historic Exterior Photograph



Scaffolding was needed to reach the dome



The new dome painted to match the original.



The restored stained glass laylight

Over the following century, the condition of the Church building slowly deteriorated as the roofs aged and failed, and thus HBA was commissioned to help restore this magnificent landmark in West Philadelphia. During the investigation phase, HBA focused on assessing the distress and deteriorated conditions of the exterior and interior masonry. The restoration team members developed innovative non-destructive techniques to assess the condition of the Guastavino tiles, brick, stone, and terra cotta on both the interior and exterior. They used professional climbers to sound each roof tile and map the condition in a CAD-based program, which linked condition photographs to the locations. They also used video to map the effectiveness of the below-grade drainage system. During the investigative period, HBA identified several unsafe conditions on both the exterior and interior. Thus, the team designed an emergency stabilization plan that was implemented to protect the people inside or near the church. In addition, the team used probes to verify subsurface conditions that non-destructive evaluation (NDE) techniques had earlier identified.

The Phase I Renovation focused on the repair and renovation of the roofing and rainwater conduction systems. Structural stabilization at the Lantern and Main Dome involved complex “needling” together of the mason walls. The Dome was painted using Guastavino’s original watercolors. The interconnecting roofs from the Lantern down to the square base at the Main Dome were replaced and new standing seam transept vaults were installed.