



Alice S. Millar Chapel is a steel frame structure built in 1962. The exterior facade at this religious facility is clad in lannon stone, buff limestone, and bluestone. Large stained glass windows are located at each elevation. Full-height 60-foot tall buttresses are located at each corner of the building and along the east and west elevations.

Due to significant cracking of mortar joints and displacement of lannon stone at the corner buttresses, BTC was requested to perform an evaluation of the exterior facade. This evaluation indicated that the observed deterioration was due to severe freeze-thaw damage of the back-up brick masonry within the buttresses.

BTC prepared repair details and specifications for rebuilding the deteriorated buttresses with freeze-thaw resistant back-up masonry, stainless steel ties and anchors, and properly configured through-wall flashing. Additional repairs included comprehensive repointing, localized lannon stone replacement, replacement and reconfiguration of bluestone buttress caps, sealant replacement, new roofing at top of buttresses, and application of a penetrating water repellent to all lannon stone and limestone.

During construction, locations of inadequate support for back-up brick at sloped roof surfaces were identified. Supplemental buttress support was designed and installed at these locations.

BTC also provided bidding assistance and construction contract administration services during the construction phase of the project. The project was substantially completed in December 2010.

**Project Name:**

*Buttress and Exterior Facade Repairs at Alice S. Millar Chapel, Northwestern University*

**Project Location:**

*Evanston, Illinois*

**Client:**

*Northwestern University  
2020 Ridge Avenue  
Evanston, Illinois 60208*

**Approximate Construction Cost:**

*\$800,000*

**Year Completed:**

*2010*

**Nature of Services:**

*Evaluation, Repair Design, Bidding Assistance, and Construction Phase Services*



2011 ICRI Award of Merit