



The Evangelical Covenant Church building in Chicago, Illinois is 6 stories tall, and square in plan. The facade typically consists of curtainwall with exposed concrete columns. There are mechanical equipment and a penthouse on the roof. The roof is low slope with a brick parapet around the perimeter. Light fixtures extend from the roof over edges of the building on all 4 sides. The light fixtures are supported by steel framing supports.

The building does not have roof anchorages, and window washers had requested to attach their rope descent systems (RDS) from the rooftop light fixture steel framing supports. Occupational Safety and Health Administration (OSHA) 1910.27 requires anchorages for RDS to be tested such that they are capable of supporting at least 5,000 pounds in any direction. If the rooftop light fixture steel framing supports were to be used as anchorages for RDS, they would need to be tested to resist the stipulated loading requirements. BTC was retained to perform a preliminary evaluation of the rooftop light fixture steel framing supports to opine if it was feasible for them to be used as RDS anchorages prior to performing load testing.

No original drawings were available for the existing light fixture steel framing supports on the roof. As such, BTC field measured the existing framing, and documented framing configurations. Utilizing the field information obtained, BTC performed structural calculations to determine if the framing was capable of supporting the required RDS loading, in addition to loads induced from the light fixtures. Based on BTC's calculations, there were several loading conditions which prohibit the existing rooftop light fixture steel framing from safely supporting 5,000 pounds in any direction. As such, it was not feasible for the existing framing to safely support the required RDS loads. Therefore, comprehensive load testing was determined not to be merited, and such testing could possibly damage the framing.

Project Name:
Evangelical Covenant Church
Preliminary Roof Support Evaluation

Project Location:
8303 West Higgins Road
Chicago, Illinois

Client:
Evangelical Covenant Church
8303 West Higgins Road
Chicago, Illinois 60631

Approximate Construction Cost:
Not Applicable

Year Completed:
2022

Nature of Services:
Structural Evaluation

