

ST. MICHAEL THE ARCHANGEL CATHOLIC CHURCH

GRAND PRAIRIE, TEXAS



YEAR COMPLETED:

2020

PROJECT COST:

\$9M

PROJECT SIZE:

19,000SF

OWNER:

St. Michael the Archangel Catholic Church

ARCHITECT:

GFF Architects

CONTRACTOR:

Mycon General Contractors

RLG SERVICES:

Structural Engineering

PROJECT DESCRIPTION /SCOPE:

St. Michael the Archangel Catholic Church continues to grow by leaps and bounds. The community was in need of a larger sanctuary and more working space. A vision for a new addition began in 2017.

The RLG Consulting Engineers team of structural engineers provided design services for the new Loggia addition. This includes a 50 foot tall bell tower, a 3,200 square foot entry/gathering space, and a 15,600 square foot column free sanctuary with a cupola on top that rises to a height of 50 feet above the ground. The very large column-free space was accomplished by using a series of pitched roof trusses spanning across the sanctuary roof, which are supported by two 80 foot long Vierendeel trusses flanking the sanctuary. Vierendeel trusses were used to maximize the amount of light that can enter the worship space through clear story windows near the roof.

The design specified concrete underreamed pier foundations. The first floor slab is a two-way flat plate concrete slab isolated from the expansive soils below, and a steel superstructure frame. The challenge in this project was to avoid a large thrust force to the top of the Vierendeel trusses flanking the sanctuary. RLG structural engineers provided a design utilizing slide bearing connections on one end of the pitched roof trusses that cross the sanctuary.

Construction was completed in fall 2020.