

ONE COMMUNITY CHURCH YOUTH MINISTRY EXPANSION AND RENOVATION

Plano, Texas



COMPLETION DATE

December 2021

CONSTRUCTION COST

\$9.1 Million

SERVICES

Structural Engineering

REFERENCE

GFF

Sandra Beer

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KEY PERSONNEL

Andy Ayers, PE

Principal-in-Charge

Dustin Swart, PE

Project Manager

Clovis Desrochers, PE

Structural Engineer

PROJECT DESCRIPTION

The One Community Church enlisted the help of RLG Consulting Engineers to provide structural engineering services for their 26,000 square foot youth ministry renovation and expansion. The project involved renovating an existing building that housed the youth ministry and then increasing the footprint by expanding the space to accommodate office space and worship areas.

RLG's structural engineers first had to assess the structure of the existing building, analyze the modeling for the new roof and add reinforcements to ensure it could withstand additional weight.

The new building is a steel-framed structure with composite metal deck for the second floor, ensuring shorter construction times and more architectural freedom due to more open spaces allowing the architect to apply a modern design to the building.

The structural team designed the monumental staircase consisting of two massive steel tube stringers avoiding the need for intermittent posts to emphasize the open space. Additionally, the curved beams brought another unique challenge to the structural design team. To capture the eccentric effects and torsional forces resulting from the curve, the team used 3D modeling to analyze how these curved beams would perform under various load scenarios, ensuring that the installation would be structurally sound.