

# BLESSED STANLEY ROTHER SHRINE

OKLAHOMA CITY, OK



## PROJECT DESCRIPTION

The Blessed Stanley Rother Shrine is a two-story, 40,000-square-foot facility with ornate details, towers, clerestory, interior and exterior domes, interior barrel vaults and pendentive framing. McClure assisted Radius Track Corporation in the design and detailing of the structure.

**Main Dome:** The 40ft diameter main dome is a cold-formed, steel stud-framed, self-supporting load bearing system comprised of load bearing crimped studs combined with structural steel laser-cut steel plate circular tension ring, and laser-cut custom curved structural steel built up compression box ring.

**Small Dome:** The small domes were relatively traditionally framed, with the added complexity of hoisting engineering due to their complex surface.

**Half Dome:** The half dome's complexity is that the compression ring at the top of the dome was not permitted to penetrate the brick finish. To laterally support the half dome, the interior finish dome was used. The two domes were then tied together vertically and laterally at the top of the dome, so that the resultant thrust could be transferred at the center point of the half dome. A tension ring at the bottom acted as a vertical load distribution member, as well as a wind girt to transfer forces back to the structure.

**Interior Pendentive:** Although they are uniform surfaces, there are many different directions and spans of framing that required complex coordination between all surfaces. All required 3D model coordination and detailed coordination of the surfaces, as well as unique load paths and connection evaluation.

This complicated curved structure showcases McClure's significant experience and expertise at curved cold-formed steel structures, pushing the limits and boundaries of cold-formed steel to solve complex and unique problems.

## PROJECT HIGHLIGHTS:

- A main 40ft diameter self-supporting dome supports an octagonal windowed cupola and secondary 11ft diameter dome, which in turn supports an 11ft tall finial
- Two smaller 10ft diameter self-supporting domes are supported by 1'6" tall knee walls
- A 25ft diameter half dome with a diverging diameter interior dome and horizontal support penetrating the brick cladding system
- Interior pendentive and arch framing to support decorative millwork

## COMPLETION DATE

Dec. 2022

## REFERENCE

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