QUAD-LOCK® St. Margaret Mary's Church

The original building plans for the St. Margaret Mary Church in Bullhead City, AZ were for the structure to be built using masonry construction. After meeting Quad-Lock's Worship Facility Team, the architect and Diocese were convinced that utilizing Quad-Lock's ICF system was the smarter way to build - saving time, and the congregation's money. The overall height of construction set new standards for unsupported ICF walls (over 68 feet tall) through the use of columns and curtain wall design standards typical in the high rise industry. The completed structure is an outstanding example of a complex building constructed with Quad-Lock ICFs, providing the desired architectural elements, energy savings, and sound attenuation.

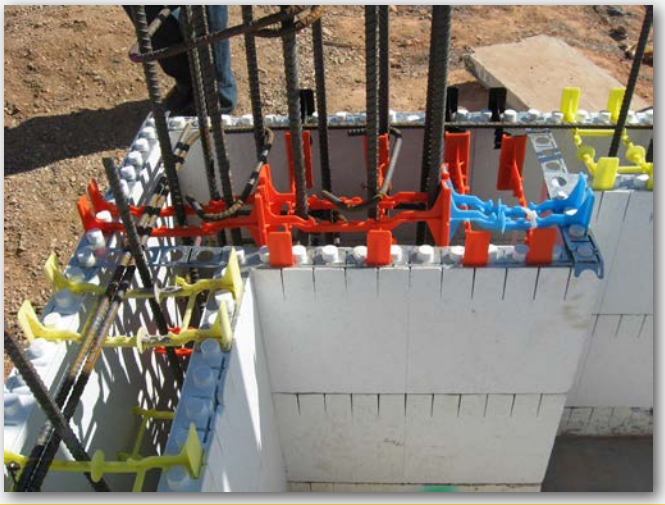
The church stands tall and magnificent above Bullhead City, and was selected as a Finalist in the 2014 ICF Builder Awards

Why Quad-Lock was Chosen

- The final design incorporated Quad-Lock ICF walls that stretched from the footer (six feet below grade) to the roof drip edge, a distance of 68 feet using only six inch thick concrete walls.
- Utilizing Quad-Lock ICFs in the design significantly reduced the amount of concrete, steel and transportation resources required.
- Quad-Lock's panel design allowed the construction team to use high reach forklift equipment
- Using Quad-Lock's Extender Ties allowed for the large and complicated columns & pilasters to be easily constructed by the crew
- The air handling units were able to be reduced by 50%

Interesting Facts

Location:	Bullhead City, AZ
Completion Date:	August 2011
Building Size (Total):	Over 18,000sqft
Quad-Lock Walls:	52,000sqft (Exterior) 7,000sqft (Interior)
% of Exterior Walls:	100%
Unique Architectural Features:	42 columns of varied sizes
Exterior:	Plastermax Stucco
Wall Bracing:	Panel Jack



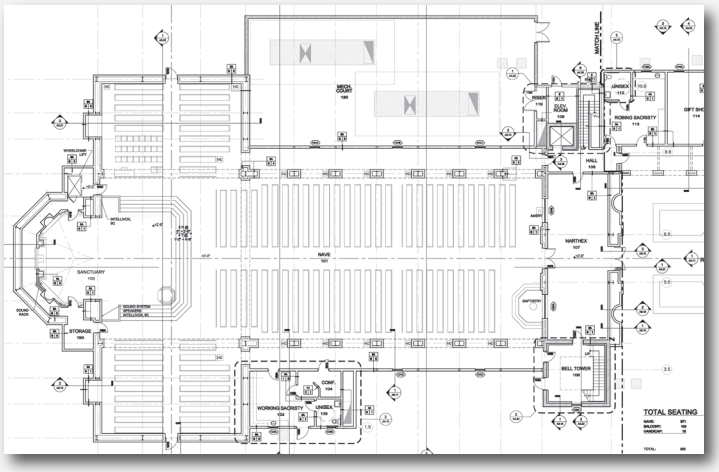
Quad-Lock Project Profile - St. Margaret Mary's Church, AZ

The Design Vision

Originally designed by Duncan Stroik in 1999, the building contains many elements inspired by the mission churches of the American Southwest, with a building shape that is a cruciform shape including numerous arches, niches and a raised altar to allow viewing from all sides of the cross shape.

The structure incorporates freestanding walls that project above the footer to a drip edge height of 68 feet and a ridge height of 76 feet above the finished grade without interior supporting floors. The bell tower extends to a height of 75 feet. **These are believed to be the highest free-standing 6 inch ICF walls without internal support elements/floors.**

This design was completed using 42 columns within the interior to achieve the cathedral appearance while supporting the walls.



The structure provides the feel of large thick walls and strong structural elements (of which 40% are actually insulation) coupled with arches along the sides to achieve the old historical Catholic Church Design..

The parish and the Bishop of Phoenix have raved about the overall satisfaction with the project and the resulting old world design.

This project pushed the technical boundaries for the commercial use of ICF, whilst also demonstrating significant cost savings in both construction, transport, materials and energy use.

Project Partners

General Contractor:	TR Orr Construction
Architect:	Duncan G. Stroik & CCBG Architects
Engineer:	Paul Koehler
Quad-Lock Dist.:	Arizona Radiant Heat Barrier
Additional Members:	Energywise Sustainable Products

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