



Solving an Outdoor Design Challenge

Marmon Mok Architecture, the architect of a 6,500 sq. ft. outdoor gymnasium for the Harvey E. Najim Family YMCA in San Antonio, TX, had an ambitious vision for the exposed structure enclosing the space. The Engineer of Record, Thomas Hamer of Alpha Consulting Engineers, took on the design challenge and searched for a steel provider that could make it a reality.



The exposed joist framing system for the Harvey E. Najim Family YMCA "Air-nasium" — a 6,500 sq. ft. outdoor gym — features joist girders with curved bottom chords to meet both structural and aesthetic requirements of the project.

"The original concept called for joist girders with a curved bottom chord to be part of the moment frame, but we could not make that work given the aesthetic constraints. So we needed to come up with an alternative," says Joe Voigt, Sales Engineer, New Millennium Building Systems. "Thomas Hamer and I spent several weeks together trying different design approaches until we found something that worked."

Retaining the Aesthetic

What they came up with was a unique design element in which the joists run in the same direction as the curved bottom chord special girders. Typically, joists bear on girders perpendicularly and the deck sits on the joists. For this structure, beams went

straight down the middle of the bay and connected to the webs of the girders, with the joists bearing on the beams so that the top of the girder and the top of the joist were at the same elevation. The deck then connected to the top of the girders and the joists.

"New Millennium was able to provide feedback during the design phase of the project which included preliminary layouts, sizes, and fabrication limitations," says Thomas Hamer. "This allowed the architects and us to choose a framing layout that was both economical and aesthetically pleasing. Beams connecting to the center span of the girder web members and special joists bearing on those beams met the design intent of the architect and did so economically."

continued...

A Design Partner

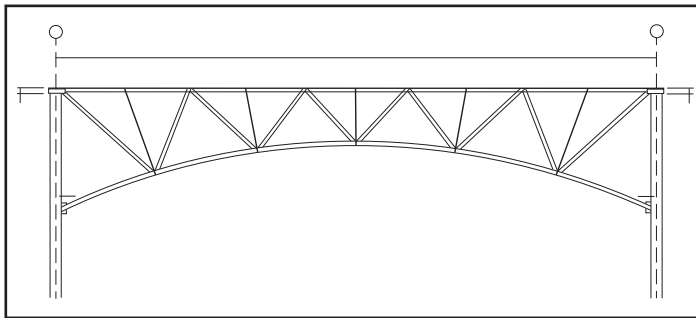
When the EOR, Alpha Consulting Engineers, approached New Millennium with the project, it was after a search for a steel supplier who could help with design. “We provided some preliminary sketches of the design intent and constraints as well as joist girder loading,” says Thomas. “New Millennium provided preliminary sizes and comments on panel layout.”

“On this project, the joist girders support the metal deck, large concentrated loads at mid-span, and wind loads while still providing an economical and aesthetically pleasing framing system,” adds Thomas. “It’s always a pleasure working with New Millennium. They are responsive and helpful when answering questions and concerns of a design team.”

Taking Out the Cost

“New Millennium also took cost out of the project and accelerated our timeframe by designing and fabricating the five custom joist girders. When the steel package was delivered, the contractor, Malitz Construction Inc., had additional flexibility in the schedule,” he adds.

“Joists aren’t typically fabricated to be aesthetically pleasing,” says Joe. “But with collaboration on the front end of a project between the design team and the manufacturer, the end result can be both practical and stunning with a much lower price tag versus conventional alternatives.”



Profile of the special joist girder with a curved bottom chord used for the Harvey E. Najim Family YMCA outdoor “Air-nasium.”



The special joist girders with curved bottom chords designed for the Harvey E. Najim Family YMCA are seen here prior to the installation of the deck above it.



New Millennium designed an aesthetically pleasing curved bottom chord joist girder system with square HSS bracing that the architect preferred to retain the aesthetic goal of the project while keeping costs down.



NEW MILLENNIUM
BUILDING SYSTEMS

Build a better steel experience... visit our website for complete information:

www.newmill.com