

BIG RIG ROOF SYSTEM

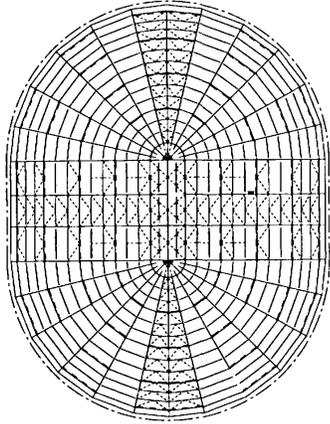
The BIG RIG ROOF SYSTEM meets the architectural, strength, stiffness, fabrication, erection, and functional requirements of covered sports facilities through a unique, integrated design. The system has been used successfully for many of our sports arena roof designs over the past decade. It is based on the principles of a tied-arch truss, but with roof geometry and details fine-tuned so the structure not only supports the roof envelope, but also automatically provides a platform for rigging and staging events. The system is sized to permit fast roof erection, either with limited shores at center court, or with splices made while arches are still 'on the hook.' Either way, many months are saved in the construction schedule. In addition, truss spacing, purlin sizing, and connection detailing have been fine-tuned to provide clean, simple bracing connections in the roof plane and permit curved roof decks using economical, straight structural members. It is a winning combination for any sports venue, even before the first game is played.

The system centers on the tied-arch truss. Truss stiffness relates to chord steel area and chord separation. Previous long-span roof framing emulated truss bridges; long diagonal web members connected separate top and bottom chords. As separation increased, longer diagonals offset increased chord efficiency. Also, long diagonals required piece-by-piece erection on extensive shoring and complicated access and use of the truss for rigging. But roofs are not railroad bridges: roof loads are lighter, and unbalanced loads are less severe, so full-depth webs are not needed. With the tied-arch truss, the distance between chords is increased for efficiency, and the top chord is a shallow truss itself. This permits field delivery of long shop-assembled truss segments strong enough to allow lifting half a span at a time. Bottom chords links the ends of arched top chords, keeping them from spreading without the expense or geometric limitations of a heavy perimeter tension ring. Just as important, bottom chords and verticals support catwalks for rigging, lighting, and scoreboard access without supplementary framing. The accompanying page of illustrations shows the trusses and roof plans for three recent projects that employed this innovative roof system.

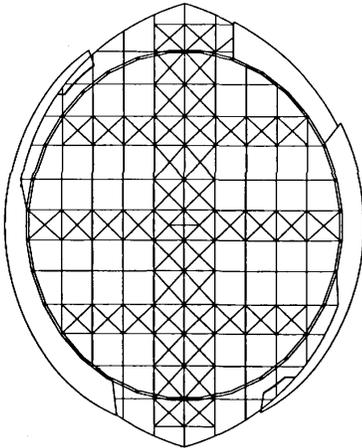
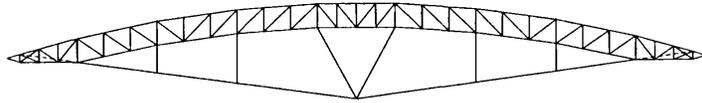
Arena roofs are more than simple enclosures. The Big Rig Roof System integrates all the desirable attributes of roof framing, from flexible geometry, economical fabrication, and fast erection to efficient ongoing operations, into one fully coordinated structural arrangement.

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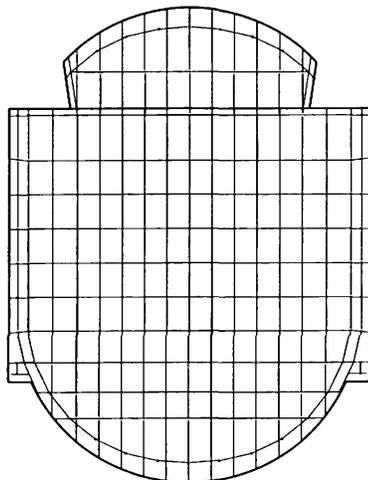
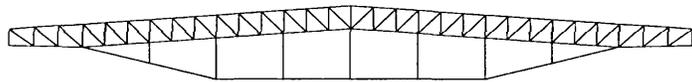
The Big Rig Roof System



Pepsi Center, Denver, CO



American Airlines Arena, Miami, FL



Nationwide Arena, Columbus, OH

