Utah Olympic Oval

Kearns, UT

The Utah Olympic Oval in Kearns, UT, is all about steel-from the speed skater's blades to the top of the cable suspension towers. By using a cable suspension system to support the arena roof, the 310'-span roof trusses are only 3' deep (compared to the 18' depth required by a typical framing scheme). The shallower roof structure reduced the enclosed building volume by 2.6 million cubic feet and reduced the required steel tonnage by 953 tons.

According to The Salt Lake Tribune on May 27, 2001, "Olympic speed skaters in 2002 will fly around a building that is designed to be as energy efficient as it is visually stunning. The [Olympic Oval]'s roof is held up by a cable suspension system similar to that of the Golden Gate Bridge. The dramatically lowered roof ...makes it cheaper to heat and cool the arena." The smaller enclosed volume also allows for optimum indoor air temperatures for skating and for ice control.

The creative use of steel and other functional and sustainable design features (including the tower-adjoining white heat-reflecting roof) earned the first of thirteen worldwide Leadership in Energy and Environmental Design (LEED) ratings from the U.S. Green Building Council.

JURORS' COMMENTS

Lacy, well-crafted and honest in its expression. Minimal structure (in weight) for the span. This is engineering at its best! The use of steel as a recyclable element in sustainable architecture is a noteworthy plus.

STRUCTURAL ENGINEER
Ove Arup & Partners, New York, NY

ARCHITECT
Gillies Stranksy Brems Smith, Salt Lake City, UT

STEEL FABRICATOR
Hirschfeld Steel Company (AISC member), San Angelo, TX
Vulcraft (Joists & Deck) (AISC member), Brigham City, UT

STEEL ERECTOR
Danny's Construction (AISC & NEA members), Shakopee, MN

STEEL DETAILER
BDS Detailers (NISD member), Australia

GENERAL CONTRACTOR
Layton Construction Company, Sandy, UT

DESIGN SOFTWARE
Oasys GSA (GSA = General Structural Analysis)

DETAILING SOFTWARE
Xsteel