

From the editor: Glass scores in NFL stadiums

Dolphins renovate; Cowboys, Colts build new facilities

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September. It marks the end of summer: school is back in session; the weather begins to cool. And loud, face-painted, jersey-wearing, cooler-carrying football fans flock to stadiums across the country.

As new gridiron venues have been built or existing structures have been renovated, more glass has made its way into the conception and design. And I don't just mean the glass that keeps the upper-class ticket holders warm or cool in their luxury suites while acting as a barrier from the

rowdy fans.



In Dallas, America's Team will be in a new stadium before the 2009 season at a cost approaching \$1 billion. The defending Super Bowl champion Indianapolis Colts will huddle up in a new facility in 2008. Even before completion, the new Dallas stadium has already beaten Indy on one contest, winning the bid for Super Bowl XLV in 2011.

Meanwhile in Miami, Dolphin Stadium got a face-lift completed in time for kickoff this year. The venue, which has been known as Joe Robbie Stadium and Pro Player Park, opened in 1987 and will be the host of Super Bowl XLIV in 2010.

The changes in Miami did more than get rid of a few wrinkles. The complex features a museum, restaurants, upgraded luxury suites and a new VIP area. A 75,000-square-foot glass, aluminum and steel system encompasses the renovations at the stadium's curved north and south facades. Viracon, Owatonna, Minn. supplied the glass.

In what seemed an impossible mission request, Dolphins owner H. Wayne Huizenga wanted a transparent inward curving façade in a hurricane zone in 12 months.

Jim Phelps and the I.M. Force are not engineers, architects nor do they deal in specialty glass, so club management assembled a team of officials from Novum Structures, Menomonee Falls, Wis.; Stiles Construction, Fort Lauderdale, Fla.; IBA Curtain Wall Consultants, Boca Raton, Fla.; Harmon Inc., Eden Prairie, Minn.; and HOK Architects, Miami.

"There were several keys to success of this job," says Terry Peterson, vice president of sales, Novum. "It started with the willingness to listen and be non-judgmental with the client. They have a vision and a need. Then you have to be creative and [think] outside-the-box, [and be willing] to come up with the technical solution to solve the problem."

Since the facility needed a glass façade that would withstand hurricane winds, a curved tubular steel support system combined with a metal-framed, glazed wall was the solution. However, initial wind tests were disconcerting.

“The loading values were so high, the extrusions would have been humongous,” Peterson says. “We had to reduce the glass module to make it work, and the architect was disappointed. We felt we could reduce the load by 30 percent if we ran a wind-tunnel test.”

Novum contacted a North American company with a stellar reputation: Rowan Williams Davies & Irwin Inc., Guelph, Ontario. But RWDI’s schedule was full for 12 months. “We needed results in two months,” Peterson says. “RWDI is so popular and does such a good job, they couldn’t fit us in.”

Novum’s office in Germany did an international search and found Wacker Chemie AG, which completed the test in just two months. The results showed a load reduction of 40 percent, allowing bigger glass lites and smaller extrusions. That meant better aesthetics, lower costs and a timeline that could be met, Peterson says.

Novum China created 26 custom extrusions for the project as well as an in-depth installation manual for the Harmon crew.

The steel began arriving in February, the extrusions in May and glass in mid-May. The installation was complete in early July. The final glass rails were finished in August.

“The teamwork was great; different companies coming together like they were one,” Peterson says. “It was almost seamless. It was a great environment.”

Miami played host to the Jacksonville Jaguars in a preseason game Aug. 11 at the “new” Dolphin Stadium.

Cowboys

“There will be a canted exterior wall, with an 86-foot high glass, curtain wall surface,” according to the Cowboys’ stadium Web site. “A signature element for the new venue is the 365-day-a-year entry, framing in glass the future Pro Shop, Dallas Cowboy Hall of Fame and ticket office.”

Bizofffootball.com says the curtain wall surface slopes outwardly at a 14 degree angle to create a luminescent glow day or night. “A fritted glass system transitions up the elevation “to create an ever-changing aesthetic depending on the time of day. At night, a series of internal lights wash the glass wall to create a glow across the facade.”

The HKS Sports & Entertainment Group of Dallas designed the stadium, which also will feature the tallest retractable glass doors in the world in each end zone—180 feet wide and 120 feet tall. Viracon manufactured the glass; Haley Greer of Dallas installed it.

Colts

Lucas Oil Stadium features a movable window wall system consisting of six mechanized wall panels at the north end of the stadium, according to Landmarks, the quarterly publication of the Hunt Construction Group of Scottsdale, Ariz. Each panel is about 88 feet high by 41 feet wide and has a glass cladding system. Three panels are designed to stack to make the wall opening 244 feet wide. HKS is the lead architect. Viracon supplied the glass; the glazing contractor was ASI Ltd. of Indianapolis.