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LIGHT FANTASTIC

LED GIVES VENUES A NEW WAY TO SHINE

SEEING THE LIGHT

LED'S LATEST

COURTESY SACO TECHNOLOGIES

BRIGHT IDEA: An LED system from Saco Technologies lights up the outside of TQL Stadium, Cincinnati's new MLS venue.

T EVOLUTION

UPGRADED TECHNOLOGY MOVES TO THE EXTERIOR OF VENUES AS A WAY TO MESMERIZE AND MARKET


TQL
STADIUM
TQL
STADIUM

> **"Anybody can make a light, but it's the brains talking to the light that's the most critical thing."**
>
> **— RICH ONGIRSKI**

BY DON MURET

The evolution of LED technology at sports venues has largely been defined by the growth in size and complexity of videoboards inside the bowl, but the lighting systems are now part of the stadium architecture itself, designed into exterior walls and roof structures.

TQL Stadium, the new home of Major League Soccer's FC Cincinnati, and SoFi Stadium in Inglewood, California, where the NFL's Los Angeles Rams and Chargers play, both incorporate LED schemes on the outer portions of their stadiums that have the ability to display motion sequences and messaging images.

In addition, Madison Square Garden Entertainment's two multibillion-dollar Sphere arena projects, in Las Vegas and London, will feature the same LED technology when they open over the next three years.

For all four venues, the LED lighting provider is Saco Technologies, a Montreal firm launched in 1987 that got its start in sports and entertainment in the late 1990s with its first LED video display, a 7,500-square-foot screen for U2's "PopMart" stadium tour.

For the two Sphere developments, designed as fully immersive LED environments inside and outside the arenas, Saco got involved after MSG acquired 30% of the company in 2018, confirmed Yanick Fournier, Saco's senior vice president of development.

Saco's competitors include traditional videoboard providers such as Daktronics and Samsung, plus smaller companies such as Environmental Lighting and Clear LED, which focus on the newest form of the technology.

The technology in its newest form provides the wow factor through advances in lighting that have gone from color-changing abilities to "pixel-point controlled LED, where you're getting nice graphic imagery," said Rich Ongirski, senior vice president of sports for Jones Sign Co., which played a key role in helping Saco find the best design solution for FC Cincinnati.

"It's just short of live motion video," Ongirski said. "You can fade the light as it goes across and make it dance and put people in it and make it something more dynamic than a typical lighted sign."

The technology is most effective at night, when those LED signs are most vibrant and stand out against dark skies.

During the 2020 NFL season, for example, the Saco system applied to the roof of SoFi Stadium displayed part of the broadcast during a "Monday Night Football" game. The stadium sits under a flight path to Los Angeles International Airport, and airliner passengers can look out their windows and view the display (see related story, Page 22).

A few weeks before its home opener May 16, FC Cincinnati posted a video of the stadium's exterior LED wall showing a player in action and heading a soccer ball, which got a lot of attention across social media channels.

"This is the wave of the future," Ongirski said. "You're going to see more of it on building facades."

THE 'BRAINS' ARE CRITICAL

Jones Sign Co., based in Green Bay, Wisconsin, typically designs and fabricates signs for arenas, stadiums and racetracks. For TQL Stadium, it designed and engineered 385 custom shaped "fins," which form the facade along the east side, and built the steel structure holding those fins.

Saco's LED components, essentially small light sticks, are attached to the outward-facing fins to provide moving lighting sequences programmed through a computer in the stadium's video control room.

Saco's secret sauce is its proprietary V-Brain system, a small box with control knobs that pushes data from the venue's software system to all of the pixel points that make up the LED structure outside the stadium.

"Anybody can make a light, but it's the brains talking to the light that's the most critical thing," Ongirski said. "Saco is the top-of-the-line product that is so much nicer than just red, green and blue color changing."

In Cincinnati, LED lighting as a design feature integrated into the stadium facade is a first in North America, said Jonathan Mallie, Populous senior principal and design lead for TQL Stadium, and director of the architect's New York office.

"It's highly advanced programmable technology that brings the facade to life," Mallie said. "It creates a heightened sense of experience as people are entering the venue. When you're viewing it over the length of the facility, you can deliver legible content. It's a powerful system."

Mallie knew Saco Technologies through Populous' work on the Spheres. He brought the company to the attention of FC Cincinnati soon after the team switched architects midway through the development and Populous took over designing the stadium.

"We were amazed by the energy of the fan base in Cincinnati; that passion struck us right away," Mallie said. "Our inclination was to create a state-of-the-art activation on the plaza to capture that energy and how we could do that. Everyone saw the benefits of the system."

The initial design under Meis Architects featured some glowing exterior and roof lighting. After Populous came on board, the concept evolved to what it is now with Saco's technology, said FC Cincinnati President Jeff Berding.

"At Mercedes-Benz Stadium, they have the halo board that surrounds the roof and I asked (Populous) if we could install an LED board from one end to another on the east exterior," Berding said. "Jonathan came back with the vertical fins and LED lighting effect from Saco."

The technology doesn't come cheap. For FC Cincinnati, the system ran in the millions of dollars, Berding said.

In addition, the MLS team had to get zoning approval from city officials for the LED structure. Berding said

COURTESY POPULOUS

FINS TO THE LEFT: Jones Sign Co. designed and engineered 385 custom "fins" to which LED components are attached on the exterior of TQL Stadium.

LED THE WAY: Saco's LED components are essentially small light sticks.

the team is required to turn those lights off at 11 p.m.

Through those guidelines and restrictions, FC Cincinnati has the rights to effectively split the structure's content equally among team programming, TQL Stadium and community events, and sponsor messages, Berding said.

The structure is not classified as an electronic billboard, which is a taxable asset. FC Cincinnati doesn't sell space on the LED fins, but the team has the ability to display its sponsors' brands on the structure, he said.

IT STARTED WITH U2

The growth of LED lighting at sports and entertainment venues has come a long way over the past 25 years.

Saco made its way into sports venues during that U2 tour in 1997 when officials met with NFL team owners in stadiums playing host to the concerts, Fournier said. Those discussions led to Saco producing one of the first LED videoboards at a stadium for the Baltimore Ravens' home, M&T Bank Stadium.

"In 2000, we did the NASDAQ screen that was up and running for 17 years before it got swapped out for a tighter pixel pitch," Fournier said. "It was still working really well, but everybody else in Times Square upgraded to 6-millimeter from 20-millimeter."

Over the past few years, Saco has designed LED lighting systems for giant guitar-shaped signs at two new Hard Rock hotels and casinos in Florida and New Jersey. In Atlantic City, Jones Sign built the 62-foot-tall sign, whose strings feature the same pixel-point control technology.

Two years from now, the Vegas Sphere project will take the LED technology one step further, driven by a dynamic exterior wall to wall that will glow as much during the day as at night, all the better to show off for those flying into McCarran International Airport.

"How you get brighter is more pixels packed together or a bigger screen, and these two projects will be the sum of that," Fournier said. "There are current projects already benefiting from what we are developing with the Sphere."

The same can be said for TQL Stadium. That job has led to Jones Sign Co. getting more work on the design and construction of LED exterior structures at one big league venue and one college facility. Ongirski could not identify those projects after signing nondisclosure agreements.

"People are interested in the visualization, the potential to grab somebody's eye and make their building go from plain looking to standing out as something completely different," he said.

LED HITS THE ROOF

At SoFi Stadium, display puts on a show for air passengers

BY DON MURET

SoFi Stadium's 20-acre roof is essentially a giant LED display and serves as a key piece of inventory for a building that sits beneath a flight path to Los Angeles International Airport.

Saco Technologies supplied the pixel-point control system.

It's the next step in LED technology, and it allows the NFL home of the Los Angeles Rams and Chargers to display images and messaging that moves across 26,000 pixel (lights) attached to the roof surface.

Rams owner Stan Kroenke, the developer of the $5.2 billion facility in Inglewood, California, had a vision to create something extraordinary, said Skarpi Hedinsson, SoFi Stadium's chief technology officer.

As they were searching for that special something, officials with HKS and Walter P Moore, SoFi Stadium's architect and structural engineer, introduced the facility development team to Saco Technologies.

On his own, Hedinsson was aware of the Burj Khalifa, a Saco project. The building in Dubai, the world's tallest, stands 2,717 feet high, its exterior bathed in LED lighting with more than 1 million pixels attached.

COURTESY SACO TECHNOLOGIES

"We always had this idea that it would for all intents and purposes be a large LED sign," Hedinsson said. "What we didn't realize was just how flexible it was. We can put animation, moving pictures and full color on it. In that respect, it's just another display."

The roof display is integrated into the stadium's content management system used to run all LED displays at SoFi Stadium, extending from Samsung's center-hung board to ribbon boards in the seating bowl and other LED signs across the 300-acre retail and entertainment district.

"It's very impactful," Hedinsson said. "What Saco does really well is the technology, from an interface perspective, is very simple to integrate. It is essentially an HDMI cord coming out on the other end, which is familiar to anyone doing content and audio-visual components."

The technology allows SoFi Stadium to experiment with running parts of live broadcasts on the roof of events going on inside the facility. It was done for "Monday Night Football" in 2020 and "Vax Live," a May 2 concert to raise awareness for COVID-19 vaccinations.

"It acts as a video screen even though the pixels are 5 feet apart," said Yanick Fournier, Saco's senior vice president of business development. "It's not high-definition or 4K. But it's a huge canvas and when you're seeing it from a plane, it becomes a high-resolution (display) and you can picture the image as you've seen on TV watching an NFL game."

The roof display also provides opportunities to flash images of naming rights partner SoFi's brand, which it has done over the past several months, and some of the stadium's other major sponsors

In that respect, Fournier said, teams have the ability to recoup their investment in the LED technology by selling advertising space on those exterior displays.

"The owners know they can do that," he said. "We have a media collective team that can take logos and make them look good based on the quantity of pixels on the venue. It could be as easy as (placing a) Budweiser Super Bowl ad. It could work at SoFi because of the pixel dimensions."

Hedinsson sees lots of potential for the roof display as the broadcast and production team at SoFi Stadium's massive control room grow acclimated to the technology and what it can do that makes the most sense for the facility.

Stadium developers worked closely with the Federal Aviation Administration to ensure the venue would not interfere with aircraft landing at LAX, which led to the foundations being put 100 feet into the ground. Hedinsson said it ultimately changed the shape of the stadium. The sloping roofline tied to cutting-edge LED was a creative way to showcase the architecture, especially at night.

"I'm really bullish on LED technology, period," he said. "As you think about how to get effective messages across to your fans, it's a clever way to innovate in that space. It doesn't have to be the 16-by-9 television screen that you put on the side of the building to be impactful."

CONTROLLING THEIR OVERHEAD: **SoFi's brand is often seen on the stadium roof, but the system can display video of what's going on inside.**

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