

# WEST ARCHITECTURAL

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Cover Story...

New Raiders Stadium  
in Las Vegas, Nevada  
(page 12)

Inside this issue...

Carbon Neutrality  
Zoning Compliance  
Waterproofing  
Remodeling





# Cover Story

Photo courtesy of Ethan Miller, Getty Images.

## New Raiders Stadium

### *Allegiant Stadium Scores a Touchdown in Las Vegas, Nevada*

by Ali Turner, editorial & multimedia manager



A new landmark sits just west of the global tourist attraction, the Las Vegas Strip in Nevada. A 1.8 million sq.ft., 65,000-seat domed stadium, costing nearly \$2 billion is the new home of the Las Vegas Raiders. Southern Nevada residents, as well as global sports spectators, have eagerly awaited the completion of the amazing new stadium. Eberhard Southwest Roofing, Las Vegas, was contracted to waterproof the stadium's footprint and install the cutting-edge roofing system, which encompasses a transparent roof and surrounding membrane.

Eberhard was founded in Van Nuys, California, in 1945 by Emery L. Eberhard, and over the decades has used its reputation as a

provider of high-quality construction-related services to expand across California and into Nevada. The company is respected in Las Vegas as a reliable service provider for commercial, industrial, and gaming complexes. So, when Allegiant leadership was looking for a solid contractor that could handle the stadium's complex roof installation and waterproofing, Eberhard was a perfect fit.

The waterproofing project came first, and is arguably the most exciting part of the whole stadium build. The stadium's footprint encompasses 650,000 sq.ft., is 30' deep, and was the first big phase of the project. The road leading in and out of the stadium had 20 semi-trucks in an assembly line that were there to relocate massive amounts of

dirt. Eberhard then waterproofed the slab and walls with GCP peel-and-stick Bituthene® membrane before installing 2"-thick insulation board.

The field is retractable and can either spend time outside, in growing position, or inside, in a playing-field position. This movable field tray had to be waterproofed with hot rubberized asphalt on the bottom for a total of 86,000 sq.ft. Eberhard used the MM6125® monolithic membrane from American Hydrotech®, which was topped with 3' of sand and soil, with impeccably grown grass on top.

"The whole process, from the planning to the execution, was incredibly scientific," said Paul McKellar, vice president of Eberhard Southwest Roofing. "The grass has to

**THE FIELD IS RETRACTABLE & CAN EITHER SPEND TIME OUTSIDE, IN GROWING POSITION, OR INSIDE, IN A PLAYING-FIELD POSITION.**



be perfectly flat and kept green at all times.”

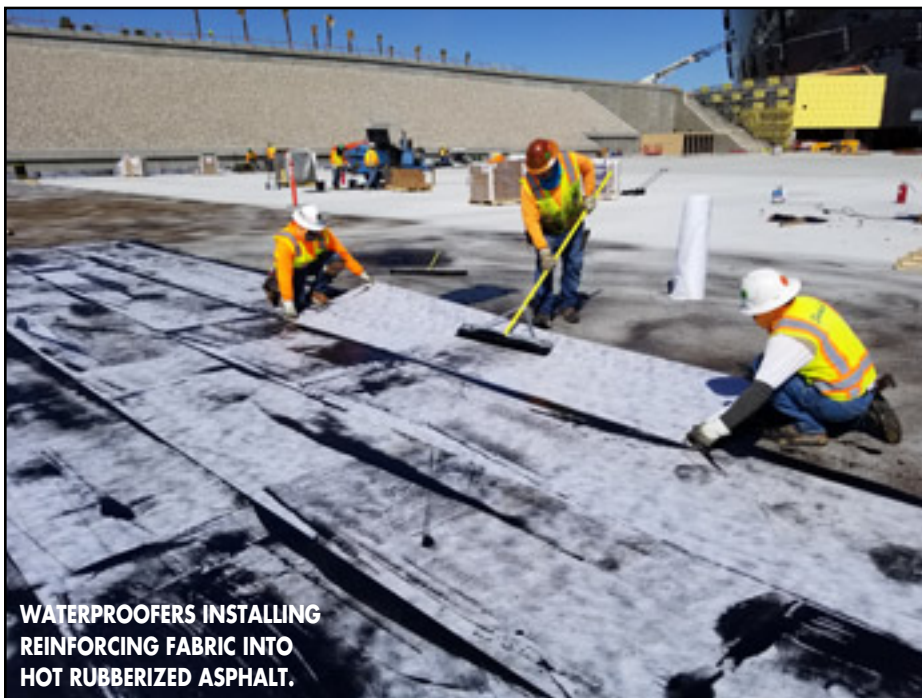
In addition to the field tray, five different areas of exterior terraces throughout the stadium utilized American Hydrotech’s

MM6125 monolithic membrane, encompassing a total of 80,000 sq.ft. Hydroflex® 30, a heavy-duty, synthetic fiber-reinforced sheet, was applied on the high-traffic terraced

areas to provide additional protection. While the field tray was always specified for hot rubber, the terraces originally called for cold-applied products. However, Eberhard advocated for a thicker, more durable option with MM6125. “Hot rubber is far and away the best for this type of horizontal, flat surface,” explained McKellar. “Here in Southern Nevada, we use American Hydrotech pretty extensively. We like it because it is thick, self-healing, and can be used on a variety of projects that have no slope.”

A specialty contractor from Europe installed panels of ethylene tetrafluoroethylene (ETFE), a semi-clear, fluorine-based polymer material, on the central, oval-shaped portion of the roof. Not only is ETFE lightweight and resistant to corrosion, it also lets light in through the center part of the roof. This middle section makes up 1/2 of the area of the roof surface and is the por-

(Continued on Page 14)



**WATERPROOFERS INSTALLING REINFORCING FABRIC INTO HOT RUBBERIZED ASPHALT.**



**HYDROFLEX 30  
PROTECTION SHEET  
INSTALLED OVER THE  
HOT RUBBER MEMBRANE.**

## New Raiders Stadium

(Continued from Page 13)

tion that lies directly over the field. Surrounding the ETFE panels is 320,000 sq.ft. of a flat, donut-shaped roofing system, covered with an 80 mil Sarnafil G 410 PVC membrane.

There are other striking elements of the new stadium that make it truly a one-of-a-kind piece of architecture. Four massive lanai doors retract on game days, giving the 65,000-seat stadium a view of the Las Vegas Strip while simultaneously creating an open, outdoor feeling. American Hydrotech's MM6125 was used at the major entries of the stadium underneath concrete slab, on the terraced stadium entrance over the team store, as well as the base of the massive lanai door track.

An 85' structure honoring the Raiders' late owner, Al Davis, serves as a memorial torch inside Allegiant stadium. The 3D-

printed torch was constructed of carbon fiber and aluminum in Kansas, then put together piece by piece in Nevada. While the memorial torch does not house a real flame, it does symbolize the beloved Raiders tradition of lighting a flame before games.

Safety was key on such a large, complex installation. There was a slight slope to the roofing system, and no parapet wall around the outside edge. Additionally, OSHA stipulated that the crew was safe with perimeter fencing and the 8'-deep and wide gutter, but the general contractors required 100% full body harness tie-offs. This internal requirement made the job much slower, but Eberhard was able to continue working at the pace needed to complete the project on schedule. The winters were mild, but springtime in Las Vegas brought intense winds, especially when

working at heights of up to 170'.

"We lost a lot of days due to high wind," expressed Steve Hunter, operations manager, Eberhard Southwest. Even after making some changes to the plan, Eberhard was able to work around the issues and stick to the expected timeline.

Building Allegiant Stadium was a labor of love two years in the making. It was one of the most challenging and rewarding jobs in Eberhard's long and spectacular company history, and the whole team was honored to have worked on Las Vegas' new landmark. Las Vegas, historically known for its world-class casinos, now has a destination site for more diverse programming, such as concert tours and high-profile private events. As for the Raiders, Las Vegas welcomes its new team with open arms and an incredible stadium.

