PROJECT PROFILE

Miller Park

SarnaProof

Project
Miller Park
201 South 46th Street
Milwaukee, WI 53208

Building Owner
Southeast Wisconsin Professional Baseball Park District and the Milwaukee Brewers Baseball Club

Architectural Firm
HKS, Inc.
Dallas, Texas

Roofing Contractor
Midland Engineering Company
South Bend, Indiana

Roofing System
Sarnafast – mechanically attached custom colored S327 membrane with white G410 membrane used for the logo

Project Size
420,000 sq. ft.

Completed
Spring 2001

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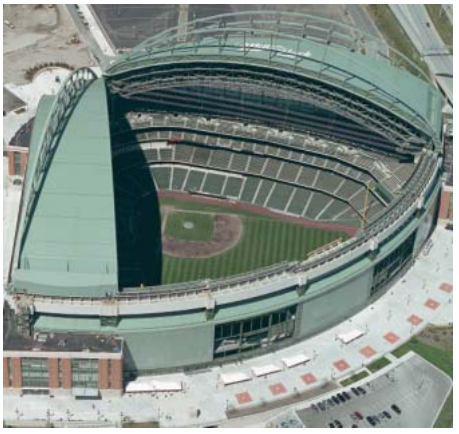
The new home of the Milwaukee Brewers baseball team, Miller Park, was a far cry from your usual roofing project. The stadium's 10.5-acre roof is a curved, retractable marvel that consists of seven elongated, pie-shaped wedges that arch high over the field. These pieces slide into nested stacks above and behind the first and third base lines when open, and fan out to meet in the center when closed. This huge piece of machinery, which contains 12,800 tons of structural steel, takes only 10 minutes to open or close.

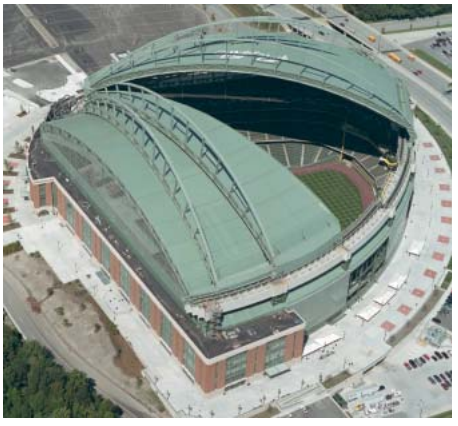
The creators of this unusual roof were in the market for something other than a run-of-the-mill roofing system. That's one of the reasons that when Midland Engineering Company in South Bend, Indiana, became involved in the roofing project, they chose Sarnafil's mechanically attached S327 membrane.

"We've been installing Sarnafil since the early 70s, so we were familiar with its capabilities," says Fred Helmen, vice president of sales at Midland Engineering Company. "We roofed the United Center, home of the Chicago Bulls with Sarnafil, as well as Comiskey Park, home of the Chicago White Sox and Victory Field, a AAA baseball field in Indianapolis."

The building's owners chose a Benjamin Moore color, which Sarnafil was able to match, and a white logo. "When you get into custom colors, Sarnafil's product really lends itself to that situation," says Helmen.

A 60 mil membrane was used on most of the roof and an 80 mil membrane was used in the large, built-in gutters at each end of the roof panels. Sarnafil has an advantage over other products when working with these greater thicknesses. If a project requires an 80 mil sheet, Sarnafil can run an





80 mil sheet right on the money; other companies may have to run a 90 or 95 mil sheet to ensure that their nominal tolerances don't fall below 80 mil.

"The way Sarnafil manufacturers its PVC membrane, they can control the thickness very tightly," says Helmen. "Other membrane manufacturers don't have the ability to run to the tight tolerances that Sarnafil does."

In a stadium that would contain blaring speakers and thousands of cheering fans, soundproofing was key. The architect did a sound test of the roof, checking what it would be like both with and without an acoustical deck, and decided that a very high value Epic acoustical deck was essential. To accomplish this, Midland Engineering anchored 5/8 Dens-Deck®, gypsum sheathing board with fiberglass mat facing, to the steel deck with screws and plates. The Sarnafil roofing membrane was mechanically attached on top of that.

All this was done while the seven pie slice-shaped pieces of the roof were stacked on top of one another, held up by hydraulic jacks on shoring towers. So instead of installing the membrane from one end of the roof to the other, as in a conventional roofing project, the roofers had to jump back and forth, depending on which side of the panel was being constructed, installing temporary seals around the jack stands until they were removed.

"We were working on these stacked panels somewhere – like a sandwich," says Helmen. "We could never finish a panel 100 percent. We just roofed wherever we could get into." This required a lot of coordination between all the trades on the site.

The project was running smoothly until July of 1999, when tragedy struck the site. A crane collapsed while lifting a 400-ton roof piece, killing three iron workers. "At that point, we were about 20 percent done with the job," says Helmen. "We had until spring of the following year – eight months – to do this job. After the delay, and by the time everything got back on track, we had to compress that eight months worth of work into three or four."

To make things even harder, it was the dead of winter when the project started up again. Fortunately, cold temperatures have little impact on the installation of a Sarnafil roof system and hot air welded seams.

Midland Engineering made up for lost time by employing 60 people seven-days-a-week. This presented another problem – safety. "Just making sure no one got hurt with that many people on the roof in the ice and snow was difficult," says Helmen. "We had 100 percent fall protection. Everyone had to be on their own harnesses with lanyards. It was a very slow, deliberate process but in light of the potential consequences, it was the prudent thing to do."

The job took over 20,000 hours to complete, but the results were phenomenal! As a testament to all involved, the stadium owners had a monument erected to acknowledge all the workers who were crucial to the success of the project.

"It was a heck of an undertaking," says Helmen. "This project was unique, and not just because of the design, but because of the circumstances under which it was built. Everyone involved should be proud."

Sarnafil has over 35 years experience roofing stadiums and arenas around the world, including the American Airlines Center in Dallas, Texas, the Staples Center in Los Angeles, California, the Skydome in Toronto, Canada and the new Olympic Speed Skating Oval in Salt Lake City, Utah.

For more information on how you can have a cost-effective Sarnafil roofing or waterproofing system on your institutional, industrial or commercial building, contact Sarnafil today.
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