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Preserving the Miami Marine Stadium

In 1963, Jack Meyer figured out how to make concrete fly. Meyer was head engineer on construction of Miami's Commodore Munroe Stadium (now known as Miami Marine Stadium), a grandstand for boat races, water shows, and floating-stage events. Its waveform roof was the world's longest span of cantilevered concrete. Shuttered in 1992, the stadium has moldered ever since. Since 2008, [Friends of Miami Marine Stadium](http://www.marinestadium.org/)(<http://www.marinestadium.org/>) —a preservation group affiliated with Dade Heritage Trust—has pushed for restoration. Dwell spoke with Meyer, now 87, about the hardest project of his career.

By: [Rob Jordan](#)**Published on:** 04/21/2011

An aerial view of Miami Marine Stadium reveals its current ravaged state.

Photo by Rick Bravo.



At that point in your career, had you done anything that prepared you for the engineering complexities of Miami Marine Stadium?

I did a good amount of work at the University of Miami, the residence halls there. I had done an awful lot of churches and schools and that type of thing. Our office had, strangely enough, gotten involved in doing some folded-plate roof spans of a good size. These things would characteristically be over bowling alleys and stuff like that.



The view from stadium parking lot shows the dramatic roofline. Photo by Harry Emilio Gottlieb.

How did you approach the stadium project?

Strangely enough, when I did this there were five or six good engineers in my firm and nobody wanted to touch the damn project. So we just approached it from the standpoint that it was a simple folded plate. A plate is like an umbrella. It's got spines, and the slabs between the spines are just enough to cover some reinforcing, which is very little.



The grandstands in better days. Photo courtesy Friends of Miami Marine Stadium.

What was your original design like compared to that of Hilario Candela, the stadium's architect?

My design was simpler. Hilario came up and he drove me crazy. He and I are good friends, but he still drove me crazy. I attribute the good looks of the stadium to Hilario as much as I cursed him when he was turning that darn simplified cantilever fold plate into rolling it on its back, so to speak, and complicating all the details.



A late 1960s photograph shows fans watching an event from the grandstands. Photo courtesy Friends of Miami Marine Stadium.

What was the key to making the structure work?

We had the best reinforcing bar crews in town, we had the best concrete guys in town. I knew them well, and they knew me well enough to curse me. You have to give it to the workmen really that it came out as well as it did. Mostly it was just mean, difficult-

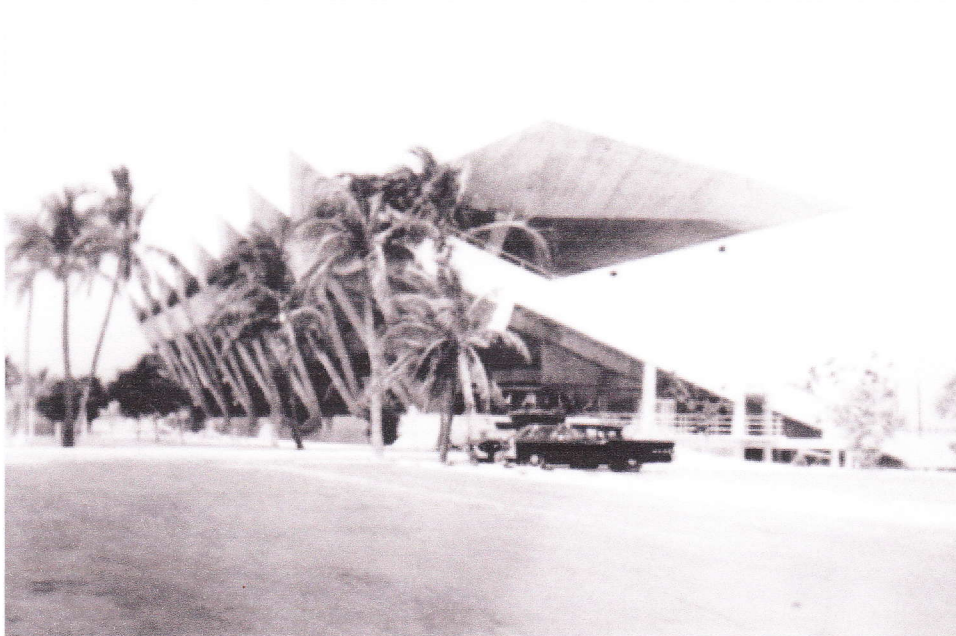
to-work-with reinforced concrete work.



Vandals have had their way with the stadium in recent years. Photo courtesy Friends of Miami Marine Stadium.

The stadium is constructed entirely of poured-in-place concrete, with portions of the roof only three inches thick. How could you be sure it would hold up?

This was back in the days before computers. On a tapered cantilever that long, you had to do a lot of guessing. It has three or four grades of concrete, all the way from lightweight concrete between the spines – the main part of the roof – and some extra high-strength, heavy-weight concrete further back toward the fulcrum. There were some extremely heavy reinforcing bars in those spines.



Here's what the stadium looked like shortly after construction. Photo courtesy Bramson Archive.

Did you have any concerns about the roof's structural integrity? Did your calculations prove out?

I had screwed around with everything I could. I came to the conclusion that thing would sag about 18 inches when they filled the concrete and dropped the form, and it only deflected six inches. You felt like going "Whew, I think we got it made." It seemed to have an inherent strength so I quit worrying about it.



Just past the stadium's deep eaves is downtown Miami. Photo by Rick Bravo.

Were you surprised that the stadium held up to Hurricane Andrew in 1992?

No I wasn't. Much earlier than that there was a small, but pretty violent hurricane. The darn thing came right over the top of the stadium, and it didn't move or do anything. On a windy day, when the wind was blowing hard out of the northwest, you could get up in the back (of the grandstand) and the air was compressed and felt like it was blowing at 40 miles per hour.



The stadium under construction in 1963. Photo courtesy Friends of Miami Marine Stadium.

What kind of engineering work needs to be done as part of the stadium's renovation and preservation?

Actually, very little. I've been talking with the folks the city hired to survey the thing, and their conclusion is it's sound. Kids have been up on the roof skateboarding on the darn thing. They haven't found anything, except that the place has to be cleaned up greatly. It probably would benefit greatly from a coating on the roof of some kind.

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