



Stadium seating. Courtesy of Spillis Candela DMJM.

Miami's Marine Stadium

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The Marine Stadium (240 acres of land and water) was the culmination of a series of proposals for the development of the publicly owned barrier island of Virginia Key, situated north of Key Biscayne on the northeastern edge of the Rickenbacker Causeway. The mangrove-covered site faced the bay and provided a spectacular view of the downtown Miami skyline, yet during and immediately following World War II, it was curiously designated as the location for one of Miami's most ambitious infrastructure schemes: a combined oceanfront seaport and airport complex. Opposed by both public and private interests, the idea failed. Instead, the site became a major segment of a planned postwar chain of parks, entertainment venues and public infrastructure that Dade County Parks Commissioner Charles Crandon envisioned and partially built between the Rickenbacker Causeway and on Key Biscayne. The island's system of public infrastructure and beaches was also an integral part the planned (but never realized) Ocean Highway that was to connect Virginia Key, Key Biscayne, Key Largo and possibly Miami Beach. Among the realized projects were the completion of a sewage treatment plant on the island's easternmost portion (DATE TK), Miami's first designated park for blacks (1945) and the development of both the laboratories for the University of Miami School of Marine Sciences (DATE TK) and the Miami Seaquarium (1955).

Intent on making Miami "the boat racing capital of the world" in 1962 the City Commission hired the Chicago firm Ralph Burke Engineers & Architects to study the feasibility and to develop a master plan for a marine stadium on Virginia

Key. The report determined that there was no other facility of the type in the world, and that the local cultural and climatic conditions would make the stadium an economic and public success. The tradition of aquatic games and performances in Miami (boat racing and water skiing in particular) went back to the early years of the century when Miami Beach developer Carl Fisher constructed grandstands along Biscayne Bay and solicited the participation of Gar Wood, a famous speedboat racer of the 1920s. The Virginia Key site was well protected from the winds and provided calm and safe waters for high-speed motorized boats as well as for a relocated Orange Bowl Regatta.

The project, by Burke Engineers, continued the Miami tradition of shaping geometric land out of the irregularly formed natural and artificial island (other examples of this tradition included construction of the Venetian Islands, Flagler Memorial Island and the Bay Harbor Islands). The amorphous edges of the western shores of Virginia Key were dramatically reconfigured in the shape of a 5,300-foot-long water stadium, oriented northwest-southeast. Along its northeastern shoreline, the engineers projected a pier-like structure, whereas the widened southern bank alongside the causeway included a grandstand, a floating stage for concerts, a series of boat slips, places for restaurants, beaches and a large 4200-car parking area separating the stadium proper from the Rickenbacker Causeway.¹ The stadium's iconic form had an illustrious prec-

[1] Ralph H. Burke, *Feasibility Study and Master Plan for a Marine Stadium on Virginia Key, Miami* (Chicago: Burke Engineers & Architects, 1962).



“Proposed Marine Stadium for the City of Miami, Florida.” Perspective rendering. Feasibility Study and Master Plan for a Marine Stadium on Virginia Key at Miami, Florida. Chicago and Park Ridge, Illinois : Ralph H. Burke, Inc. 1962.

edent : the antique Circus Maximus in Rome, whose fame in the twentieth century had been revived by the two American versions of *Ben Hur*. A small island, placed in relation with the end of the pier and on the central axis of the stadium, functioned as a marker for boat races : a short loop inside the stadium was 1.7 mile long, a longer one reaching further out in the bay was three miles.

The facility would offer boat racing, water-skiing and “aqua spectaculars,” as well as boat shows and demonstrations of the type usually held at Dinner Key in Coconut Grove. Concerts and other cultural events were considered, but were not deemed critical in economic and management terms in light of the large floating amphitheater planned (but never realized) for Interama in North Miami at the same time.

As the stadium was being built, the project for a seven-thousand-seat grandstand was commissioned to Pancoast, Ferendino, Grafton, Skeels and Burnham. Albert Ferendino and

Hilario Candela, a young Cuban architect educated at Georgia Tech, were put in charge of the project. Like Burke Engineers and Architects in their original report, Candela and Ferendino immediately imagined the stadium as a image-making waterfront landmark that would also offer one of the most spectacular views over the developing downtown. One of their challenges was the shortsighted vision of the city administration, which pushed for a functional steel-frame structure. Candela and Ferendino eventually succeeded – with the collaboration of Norman Dignum Associates Engineers of Miami – in demonstrating the incipient prowess of poured-in-place concrete construction. Miami architects Weed – Russell – Johnson Associates with New York structural engineers Amman and Whitney had pioneered the technique in their work on the National Airlines Nose Hangar (DATE TK) at Miami International Airport, but the bold and exquisitely detailed structure was far from the public eye.

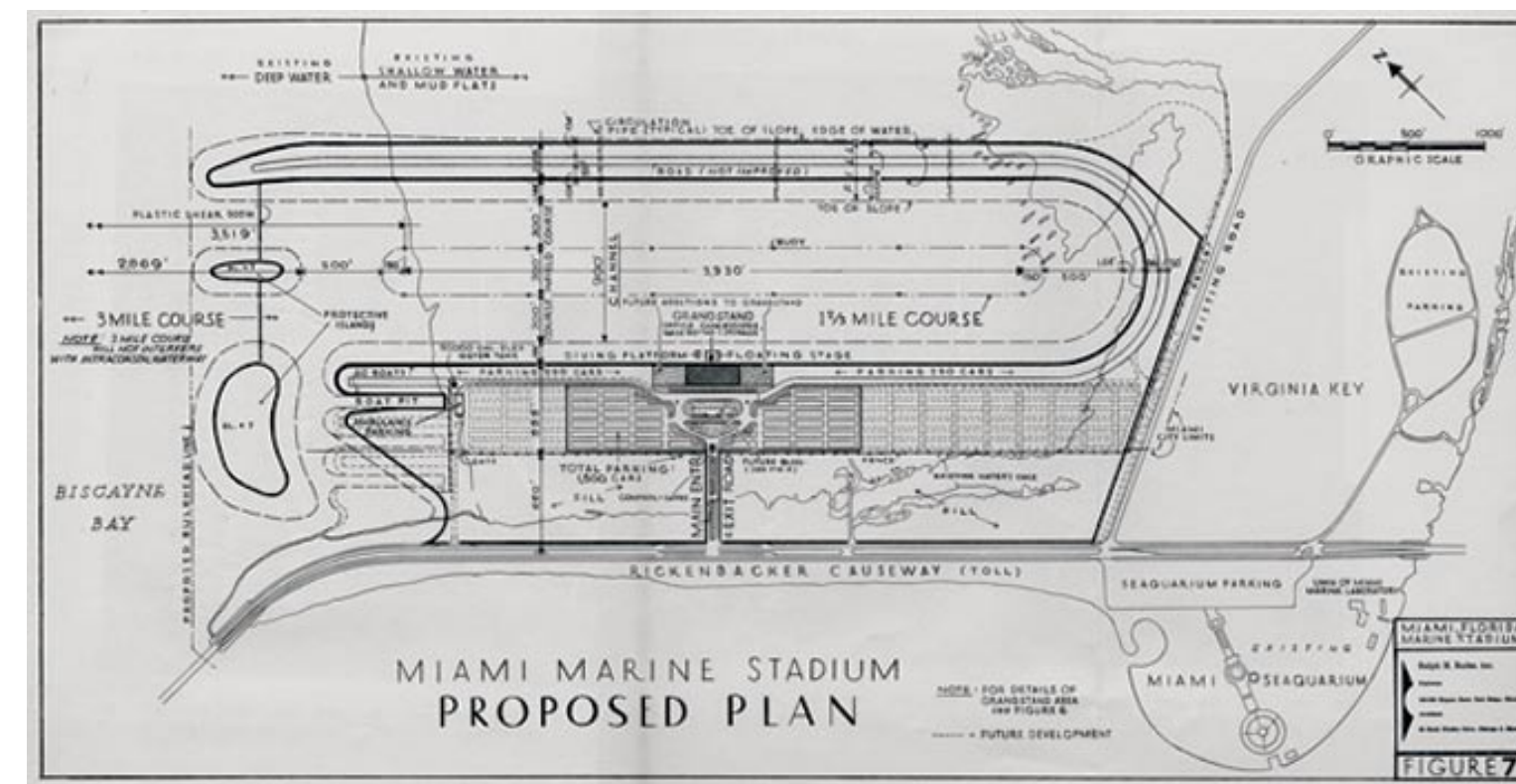
Beginning in the 1930s in Europe and Latin America, a series of sport facilities had been built in which the plastic aesthetic qualities of poured-in-place concrete were exploited for visual effect. Pier Luigi Nervi’s Florence Stadium (1929-32) and Palazzo dello Sport (1958-59) in Rome pioneered plastic concrete shell construction. In Nervi’s footsteps, Carlos Raúl Villanueva (University Stadium in Caracas, 1950-52), Oscar Niemeyer and especially Felix Candela, the Spanish-born architect who immigrated to Mexico, made concrete a genuine expression of modern Latin American architecture, whose sensuality and plasticity contrasted with the rationalist canons of the international style. Hilario Candela was not only distantly related to Felix Candela, but he had seen him at work while Hilario was employed by the Cuban firm SACMAG (Saenz-Cancio-Martin-Alvarez-Gutierrez, architects) in 1958-59. At that time, the firm was working with Felix Candela on the Bacardí warehouse in Mexico, designed as a series of articulated concrete shells with large glass inserts. Hilario had also met Nervi when he was still in school and he had worked with Max Borges, also a graduate of Georgia Tech and the architect of the Tropicana Nightclub (1951) in Havana, an elegant and organic structure

made of light concrete shells that opened up on the tropical skies.²

The 6,566-seat grandstand of the Commodore Munroe Stadium, named for Coconut Grove pioneer and boating enthusiast Ralph Munroe, was completed in 1964. Poured entirely in concrete, it consisted of a dramatically cantilevered folded plate roof supported by eight big slanted columns anchored in the ground through the grandstand. A huge horizontal beam tied them all together. A cut in the seating arrangement allowed spectators to appreciate the full height of the posts, which were pushed as far back as possible to permit unobstructed views over the watercourse. From the top of the columns, each section of the six-inch-thin roof – thicker than Felix Candela’s works in Mexico but a feat of craftsmanship in Miami – developed as four folds. Seen from the causeway, the folds suggested “the romance of the water” and the structure ex-

[2] Much of the information in this article is from an interview the author conducted with Hilario Candela, on January 17, 2005. On the Tropicana, see Eduardo Luis Rodriguez, *Havana Guide : Modern Architecture 1925-1965* (New York: Princeton Architectural Press, 2000).

Proposed plan of Miami Marine Stadium from “Proposed Marine Stadium for the City of Miami, Florida.” Feasibility Study and Master Plan for a Marine Stadium on Virginia Key at Miami, Florida. Chicago and Park Ridge, Illinois : Ralph H. Burke, Inc. 1962.

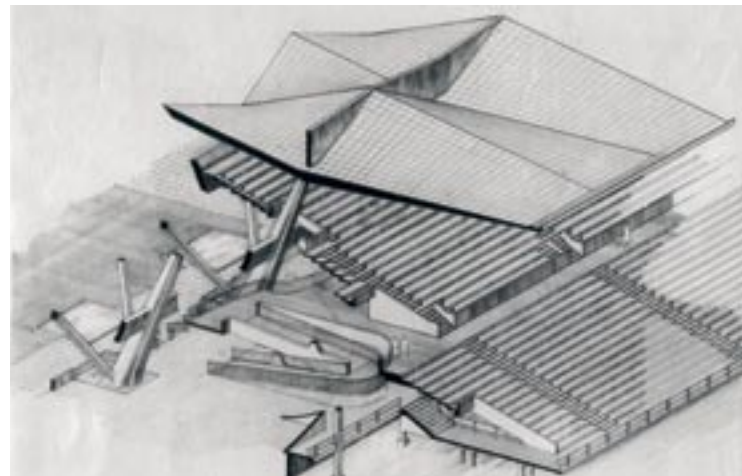


pressed the movement of waves gently bathing the stadium's shoreline.³ The low points of the waves were anchored to a series of diagonal concrete members attached to the bottom of the posts in a sculptural demonstration of concrete malleability. Together, the straight and inverted triangles of the structure created an elegant and mineral façade that alluded to the complex geometry of marine life. On the water side, the waving roof thinned out gradually and morphed into a single structural line at the edge of the water. In combination with the straight line of the theater seating, the roofline completed a bold figure, which strongly suggested the open claw of a crustacean (common to the bay). From the spectators' side, the structure formed a large-scale horizontal visor shading the view of the changing city skyline above the line of mangroves surrounding the water circus.

Pedestrian access for the almost seven thousand spectators was deceptively transparent and efficient. Two ramps led to the second floor balcony, which housed major concessions and connected to the distribution landing and its eight staircases on the waterside. The technical booth, suspended from the roof, was accessible via a catwalk. To facilitate traffic movement around the grandstand and to improve visibility to and from the water during a concert staged from the floating stage, the architects moved the structure over and used piers to support the bottom third of the seating into the water. As a result, the whole grandstand appeared to glide over the water; it floated and was ready to leave shore like a traveling barge.

[\(3\) Hilario Candela, interview with author, January 17, 2005.](#)

Proposed marine stadium. Perspective rendering. Courtesy of Spillis Candela



In spite of some technical problems – early cracks appeared in the concrete roof, which Lester Grafton attributed to “skimping” of the budget by the city and unrealistic construction timelines – the construction was a success.⁴ Contractors were willing to experiment and with the help of the architect, who built large-scale plaster models of the complex concrete articulations, they succeeded in matching the best Latin American examples. Yet, the quality of the building was not recognized at

[\(4\) Stadium's Budget Forced Skimping," Miami Herald, 11 April 1964.](#)



the time of its inauguration in 1964. The press concentrated on budgetary and management issues that plagued the building since its inception. Major pop concerts, which started on July 4, 1965 – 6,500 attendees in the stands and about five hundred in boats – eventually won the skeptics over. The stadium was for more than two decades a spectacular setting for speedboat championship races and unforgettable evening concerts.⁵

[\(5\) Hurricane Andrew damaged the stadium in 1992. Engineering reports have since proven that the structure was sound but needed repairs, yet it has remai-](#)



Modern beach hotel. Rendering by Arthur Radebaugh. From TK.

Boat racing. Courtesy of Spillis Candela DMJM