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Innovative Dock is Miami Boat Show's New Home on the Water

by Robert Wilkes



Bellingham Marine designed and built the docks, including a number of innovative features – recessed cleats, flip-lid utility blocks, hidden lifting eyes, universal connection brackets and more.

With characteristic South Florida flair, the Miami Boat Show celebrates America's love of boating every year in February. The show has been produced by the National Marine Manufacturer's Association (NMMA) since the 1940s and has been held at the Miami Beach Convention Center since 1969.

When the last exhibit of the 2015 show was broken down, NMMA faced a difficult challenge: the Convention Center was closing for renovation. Larry Berryman, national sales manager and assistant show manager for NMMA, said, "It was a hard decision to make. The Convention Center was planning to reopen in 2018 in a new footprint we considered challenging. About 30 to 40 percent of the building would not be available, and our event is growing every year. It became clear that we needed to look for a new long-term home for the show."

The historic Miami Stadium at Virginia Key on Key Biscayne was identified as a potential site. The

stadium is owned by a national historic trust that is in the process of raising funds and working with the city to plan a rebirth of the park. The stadium was damaged in 1992 by Hurricane Andrew and condemned as unsafe. It once seated 6,500 for hydroplane races and premiere entertainment events. City planners have renamed the site Miami Marine Stadium Park and Basin and envision a "flex park" with soccer fields and events such as concerts and the Miami Boat Show.

Notwithstanding the dilapidated stadium, the site's abundant in-water and upland area was ideal for the boat show. NMMA partnered with the City of Miami for long-term use of the site and began the build out for the 2016 show. "It was the single most difficult and most rewarding project my team has worked on," Berryman said. "It was a massive effort."

The new site presented an opportunity to improve the boat show experience by integrating the upland and water sites into one venue. To do that, NMMA

needed a 450-boat temporary marina, and they needed it in a hurry.

"We had RFPs out to many of the U.S. dock companies and a couple of international companies," Berryman said. "We received a half-dozen viable proposals with different build types and different schematics. The RFP included not only the dock elements but also the supervision and oversight of building of the marina. It was a hard decision because there were a lot of good proposals, but at the end of the day we went with Bellingham Marine. We also hired a local contractor, Dock and Marine of Miami, to do the pile work and the dock installation."

The Design

The NMMA management team worked closely with Bellingham Marine engineers and craftsmen to create a purpose-built, custom facility to meet the unique requirements of the Miami Boat Show. The design won the 2016 Innovation Award presented by NMMA and Boating Writer's International. The design has a number of innovations.

The low-profile timber docks provide ample live load capacity and an 18-inch freeboard. The low profile makes them easy to stack for trucking and storage. The sub-structure is timber and the decking is southern yellow pine. The structure provides the utmost in environmental protection. Only the floatation tubs touch the water; all treated timber is above the waterline.

Other special features include:

- Hidden lifting eyes: heavy-duty eye bolts are in covered recesses hidden from the public. The floats are always ready for loading and unloading on trucks.

- Recessed cleats: above-dock cleats would make stacking a problem and might cause damage. The cleats are recessed under the walers.

- Easy access utility chases: Hinged aluminum covers expose utility chases on both sides of the floats.

- HDPE flip-lid utility blocks: these are located every 20 feet and provide an access point for power pedestals and water service. There is no need to drill holes in the deck or run utilities external to the docks.

- Total configuration flexibility: mainwalk and platform dock modules are 10x10, 10x20 and 10x40 feet. Eighty finger piers were added to the configuration as needed by the exhibitors. The 10x10 modules are called “connector” sections and provide the flexibility to build the geometry in almost any manner imaginable.

- Universal connection brackets: These are clamped as needed to a waler for a number of purposes. They connect modules and allow finger piers to be added anywhere they are needed. They provide hard points on floating platforms to accept tent poles and provide attachments for flagpoles. Finally, they provide connecting fixtures, wherever needed, to attach pile hoops.

- Easily formed platforms: The modules can be grouped into platforms with all necessary utilities passing through the modules. This feature was used to support large tent structures at the boat show.

- Two-pin non-articulating float connection: The connection brackets have two pins instead of one to prevent movement. The non-articulating module connection unitizes the structure and provides stability during heavy show traffic.

Environmental Features

Protection of the environment was a major design objective. The polyethylene floatation is completely enclosed, and there is no exposed foam. Each flotation unit is completely sealed. The hard polyethylene shell is UV inhibited to prevent fading and degradation. The floatation is also molded with a continuous mounting flange for strength and durability.

No part of the timber deck or structure is in contact with the water. The southern yellow pine decking is a sustainable and renewable resource, and 10 percent of the structure is recycled material. Timber treatment is C-A-C with wax sealant and is approved by the EPA as well as approved in California for use in freshwater municipal reservoirs. The wax sealer reduces water absorption by 30 percent.

All steel parts are either HDG weldments and hardware or stainless



The National Marine Manufacturers Association (NMMA) needed a new location for the Miami Boat Show. It renovated the historic Miami Stadium at Virginia Key on Key Biscayne, into the Miami Marine Stadium Park and Basin.

steel fasteners and hardware. No steel dock materials are in contact with the water. Utility trench covers are aluminum chase covers. All steel and aluminum materials meet ASTM standards for intended use and zone.

About 400 “green heart” untreated piling were set for the show and removed afterward. These will be stored and used each year. The estimated life of the piling is 20 years. The piling configuration can be new each year, depending on the needs of the show.

For the convenience of the show attendees, six aluminum gangways six-foot wide were provided. The gangways connected right up to the spacious show exhibit halls.

No special modules were needed to accommodate special loads. There were a number of transformers distributing power throughout the docks, and the Bellingham Marine timber docks were able to support the loads without modification.

Building Quickly

The timeline was insanely short and non-extendable. As is often the case in a new site, local resistance to any development had to be overcome in the normal course of permitting. While expected, this made the project timeline even shorter. The sheer scope and scale of the build-out for the show is daunting enough, the short timeline left no room for error.

Mark Johnson, Bellingham Marine’s General Manager, Timber Dock Division, said, “The Miami Boat Show docks were a wonderful opportunity to demonstrate the versatility of our timber dock system. We couldn’t ask for a better partner to work with than NMMA for the design of this unique dock product. The coordination of logistics, scheduling, site access and all the moving parts was nothing short of miraculous.”

Bellingham Marine manufactured 120,000 square feet of docks at its Castle Hayne, North Carolina facility. Transport to Miami required 90 truckloads. The marina was installed in about six weeks.

“It was a massive effort,” NMMA’s Berryman said. “Bellingham not only got the floats down to Miami on time, they floated them into the basin and managed the marina build. This happened all within a crowded construction zone on a tight timeline so we could do the upland portion. We were cleaning up some areas five minutes before the show opened, but it all came off.”

“At the 2016 show we planted a flag on the moon,” Berryman said. “We had to build a completely new facility from scratch. Of course, we learned a lot. Next year, we expect the show to expand 15 to 25 percent and to improve all aspects of the boat show experience.” ⚓

Robert Wilkes writes about the marina industry from Bellevue, Washington.