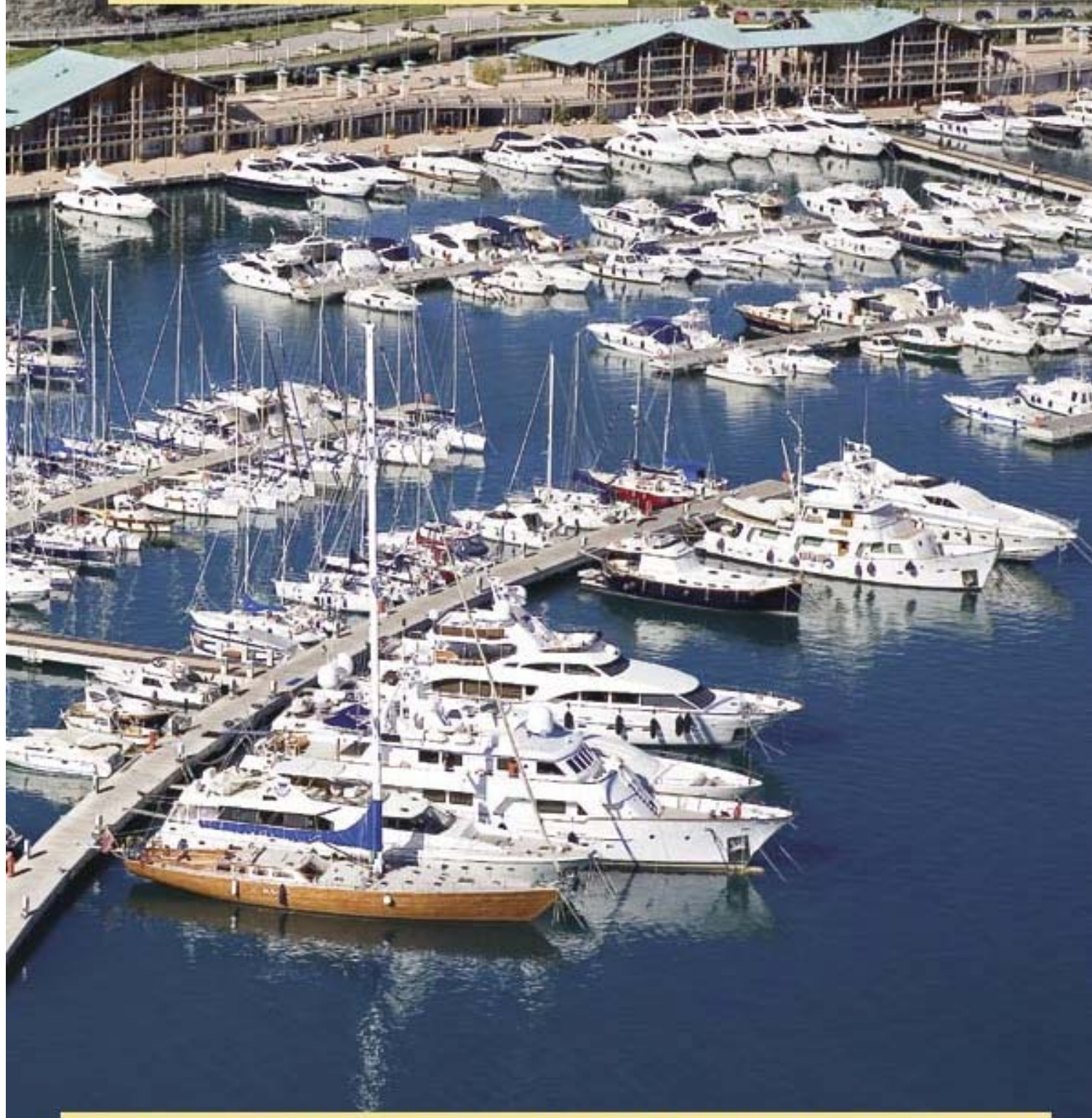


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used vessels at the back of the racking system.”

The four Aero-Dock systems offer increasing levels of sophistication. Aero 1 is a cantilever rack system with internal crane system that accommodates boats up to 50 feet while Aero 2 offers a full length rack with roll-in feature, inside crane and ability to stack boats up to 65ft long. Aero 3, with capacity for vessels of 90ft and above, is based around a push up lift and internal transport elevator with roll-in feature. According to Lydle, aisle width for these systems need only be 2ft wider than the length of the longest boat. “This reduces the building’s footprint, increases the storage capacity and also

## Patent pending technology for high density storage

An innovative lift and launch system that owes much of its success to well proven technology used to move 500 ton aircraft and stage huge theatrical effects, will extend options available to drystack designers and operators.

Florida based Aero-Docks, whose speciality according to CEO Richard Lydle is “an ability to lift heavy things quickly and store them more densely and economically” offers four patent pending storage systems. The most sophisticated of these features an elevator transport mechanism and – in the case of Aero-Max – a unique revolving carousel docking facility.

Experienced in building automated storage systems for over 26 years for the aircraft and locomotive industries, Aero-Docks claims to offer the highest density of storage per square foot, the fastest cycle time and largest vessel storage with ability to rack vessels over 90ft long. Applicable for new build or retrofit,

building systems can withstand hurricane force winds of up to 200 miles per hour and, although 15-20% more expensive to build than traditional forklift based drystacks, offer reduced long term labour and maintenance costs.

All systems can be operated via computer controls (manual operation is also available) using software that not only reduces staffing levels and operator error but also streamlines the entire drystack operation. “The system self-analyses data stored on every boat in the drystack,” says Lydle. “It uses this to determine the specific needs of each boat and also frequency of use. In systems, such as our Aero 3, it uses this data to store rarely

reduces the cost of concrete that would be needed in a forklift system,” he explains.

All Aero-Docks storage systems house more boats per square foot than forklift systems. For example, if a building using a forklift system presently houses 200 boats, Aero-Docks 1, 2 and 3 could store up to 300 boats. The carousel based Aero-Max system, which eliminates the need for any centre aisle, can store 400 vessels in that same space. And these vessels can be up to an unprecedented 100 feet in length and weigh up to 200,000lbs.

Aero-Max differs from the other three systems by featuring an exterior – as opposed to interior – transport elevator. Vessels motor up to the staging dock where a submerged cradle is waiting. The boat is raised out of the water on the underwater lift and is locked by means of two ‘walrus tusks’ to the elevator transport system. The boat is met by a special transporter called a ‘tug’ which has hydraulic lifts that take the boat and its cradle from the underwater lift through a boat wash down. The wash down removes salt water and surface dirt preparing the boat for storage. The water is then recycled.

Now on the elevator transport, the boat

*Below l to r: the boat is lifted out on to the ‘tug’ and proceeds through the wash down system. Above: it glides smoothly on to the Aero-Max carousel.*



## STACKS & YARDS: DRYSTACK SYSTEMS



is moved horizontally and vertically out of the building to its assigned floor. Once inside, it is smoothly glided into its space on the carousel. The boat remains connected to electricity throughout, a unique and patented feature that ensures power to onboard refrigerators remains uninterrupted. The computer cycle time from water to indoor storage is less than six minutes. "No other indoor storage can match that speed and other systems can take as long as 15 minutes," Lydle confirms.

Manufactured in the USA and backed up by an international support and service network, Aero-Docks drystack systems benefit from the

input and expertise of two additional partner companies – Serapid of Sterling Heights, Michigan and Barth Industries of Cleveland, Ohio. Serapid has built over 90% of all movable stages in the world for theatres, rock concerts and Las Vegas shows, and designed, manufactured and supplied all the staging lift systems for the 2008 Beijing Olympic opening and closing ceremonies. It supplies the vertical and horizontal lift systems for all Aero-Docks' projects.

Barth Industries is a 'build to print' manufacturing company that designs, manufactures and installs conveyor systems and components for coal mining, paper, waste

*An exterior transport elevator is utilised to lift the boat to the designated level before entering the carousel.*

removal and agricultural markets. It fabricates machines, assembles, electrifies and automates all of Aero-Docks' robotic storage and retrieval systems and, most importantly, installs all the computer-controlled electronics.

Aero-Docks is currently breaking ground on two Aero 3 projects in the USA and the Bahamas.

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