

Marina

World www.marinaworld.com

May/June 2021

Issue 125



Essential reading for marina and waterfront developers, planners and operators



An oasis in a commercial port

The driving force of a waterfront development project, the public marina of Molo Pagliari in La Spezia, is a micro oasis nestled between large shipyards, a container terminal and a cruise ship port. *Donatella Zucca reports*

The concept of a port authority undertaking construction of a full-service marina so as to enhance the city waterfront may seem a little unusual. But in La Spezia, Italy, in a strip of Liguria bordering Tuscany, this has not only happened but happened in a singular way in terms of location, green credentials and the players involved.

Internationally renowned company Trevi, appointed as general contractor, suggested the best technical solutions as early as the executive design phase, and Ingemar was entrusted to provide floating piers and breakwaters. Studio Manfroni and Associati, developer of Riva shipyard near Pagliari and well known regionally for waterfront regeneration work, presented the design work in 2007.

All of the players reported to the Port System Authority of the Eastern Ligurian Sea which, in an investment of over £15 million, has taken over management of all land and water elements, the creation and maintenance of green areas, paths, and pedestrian and cycle lanes along the seafront.

The expansion, which required the development of a third nautical basin, meant the improvement of La Spezia Container Terminal and the relocation of various maritime associations from the Canaletto and Fossamastra areas to the new dock. Each has benefited from being granted dedicated space in the renovated Molo Pagliari, and the City has been rewarded with an eco-sustainable enhancement of the waterfront.

The new Pagliari is located in a stretch now known as the Blue Mile; a concentration of leisure and naval shipyards in line with the Port Regulatory Plan. The rationalisation of port space allows for greater efficiency and eliminates overlap between the different operational areas but also, equally importantly, creates a public marina between the privately operated Porto Mirabello and Porto Lotti. To date, around 13 concessions are in place to take advantage of the privileged location, which has numerous dedicated spaces for services, boardwalks and walkways.

On the sea

Floating elements have been used throughout to create the new marina space. A floating breakwater in excess of 600m (1,970ft) long protects a 5.6ha (13.8 acre) basin. Pontoons and floating gangways are installed to moor over 850 boats of 8-15m (26-49ft) in length.

Said to be unparalleled in Europe in terms of size, the gigantic breakwater barriers have been built using reinforced concrete blocks with expanded polystyrene cores joined together with semi-flexible connectors. Internal mooring piers, the pontoons under the quayside, the pontoon walkways and floating structures are also constructed from reinforced concrete and have hardwood decking. The pontoons, along with lightweight aluminium gangways, were manufactured at Ingemar's factory in Treviso, Italy, along with six 45m² (484ft²) floating platforms, each equipped with a launch and hauling slide.

The largest elements of the breakwater were built on site in an Ingemar mobile yard installed at the Antonini Navalmare shipyard so as



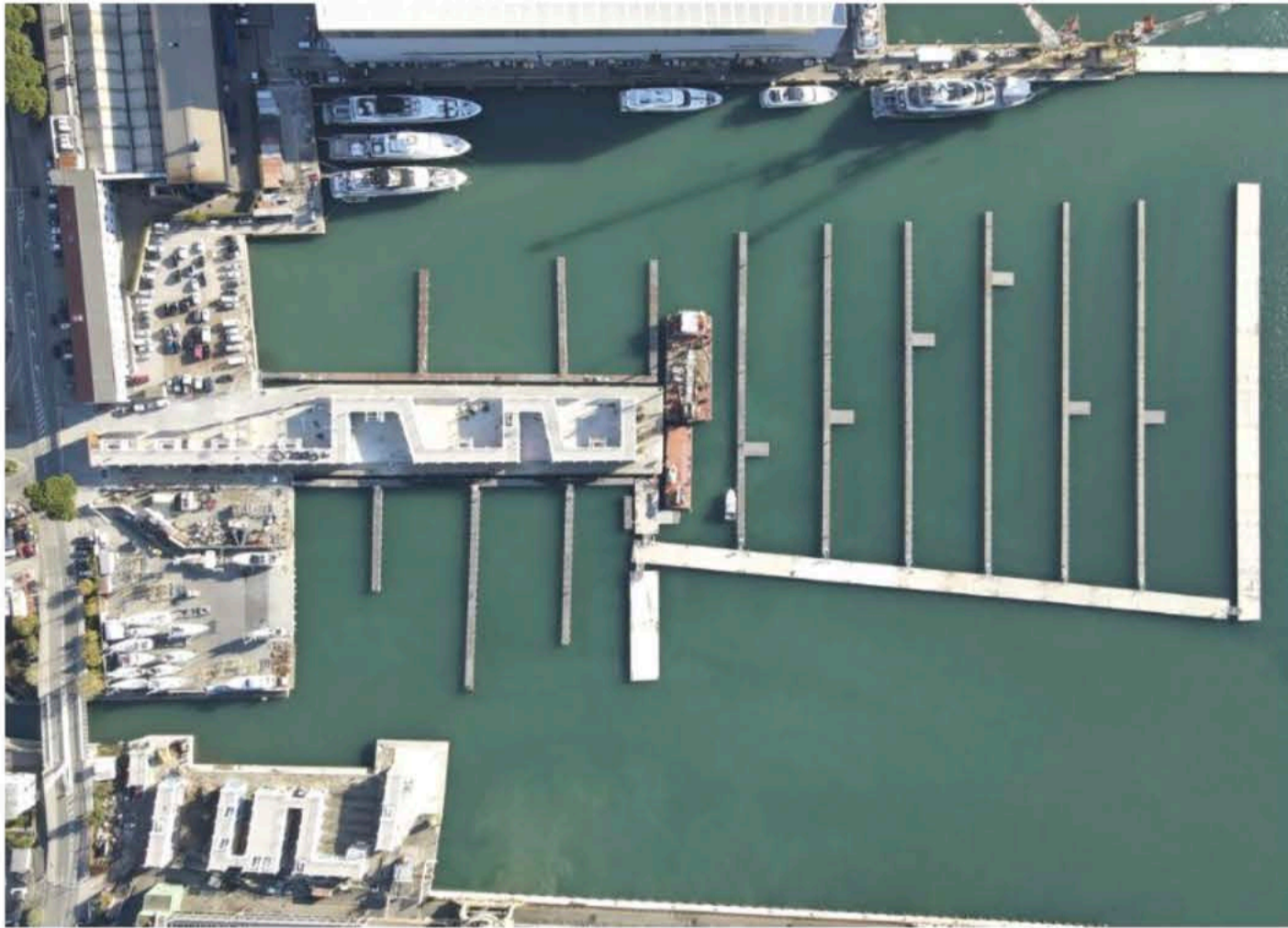
Luca Perfetti



Patrizia Burlando and Mario Manfroni (above) and Nicola Perrotta (below).



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Left: Molo Pagliari will comprise the largest concentration of floating structures in Europe.

Below: The Wings of Freedom sculpture commemorates the embarkation of Jewish refugees in 1014 for Palestine.

to save time and energy, and reduce polluting emissions. Trevi opted for an anchoring system of steel poles driven into the seabed instead of deadweight anchors with ballast.

Decisions regarding the breakwater – especially its size and resistance – were subject to significant study due to the awkwardly positioned entrance to the marina basin. “The biggest test was the storm of 2018, which destroyed the Carlo Riva marina in Rapallo and the road to Portofino,” explained Ingemar founder and president Lorenzo Isalberti. “Work was not completely finished at Molo Pagliari but the breakwater resisted the hurricane, and managed to support a large unmoored ship leaning alongside.”

Ingemar participated in the early stages of the design, collaborating with Studio Manfroni and making technical suggestions for specific elements and the general layout. The result is impressive. “This is the biggest concentration of floating structures in Europe, with the largest and highest quality elements developed for extreme conditions,” Isalberti noted. “The position of the marina and the very deep water required an extraordinary solution, which will obviously require good maintenance.”

State property manager, Luca Perfetti, explained how maintenance costs and responsibilities are apportioned. “We [the port authority] have the common areas, at sea and on land, that are open to the public. It will be the responsibility of the marina concessionaires to fund

their ordinary and extraordinary property maintenance. Individual concessionaires of the various associations share the costs of the energy, water, cleaning and maintenance of areas they use as in a consortium or condominium. All state concessions are valid for four years and then subject to competitive tender as required by Italian law.”

Expanding a commercial port was a challenge. “Moving the concessionaires of a series of historic maritime entities was no mean feat. But there were many upsides. Solutions had positive outcomes for the waterfront, including the creation of cycleways and pedestrian paths and sound-absorbing barriers that are easy on the eye and look good at night. In places the barriers are transparent, and you can see through to the marina, and the rest is made up of vertical green panels with various types of plants. This mitigates the visual impact of the commercial port for people approaching from the highway.”

“We wanted something that is strikingly beautiful,” he added. “After all, the new Molo Pagliari was conceived to be beautiful with its colourful structures such as the rainbow and Wings of Freedom sculpture, in memory of the embarkation of Jewish refugees in 1014 for Palestine.”

Path to design

Designing the project has been the work of architect Mario Manfroni and architect and landscaper

Patrizia Burlando – joint developers of many key projects in La Spezia. But, although Molo Pagliari is a waterfront project, the common thread has been the development of cycle and pedestrian paths. “The Morin Walk is the only coastal path in La Spezia,” said Burlando. “But the cycle-pedestrian path we are building will run along the entire city waterfront. For now, it is being built in small sections but, in time, it will all be connected.”

The overall vision is one of peaceful greenery. “I wanted to create a joyful place, made with easy-to-maintain, long-lasting materials, designed so that users could identify with their own colour,” Manfroni said. “There will be few parking spaces [car parking is available at neighbouring boatyards] and perhaps charging stations for electric cars although this was not part of the original plan.” Burlando expands the picture: “The greenery will develop between the piers and in sheltered areas and, given the lack of soil, will consist of non-invasive vegetation.”

Trevi has, meanwhile, focused on the site lighting and electric systems as well as the multi-service water and electricity pedestals distributed around the berths. Piping is of high-pressure polyethylene type, running between the concrete and the timber decking of the floating pontoons.

Surveyor Nicola Perrotta, who is in charge of the construction site, also confirms that a series of cabins is being built, offering a space of about 4m x 1.5m (13ft x 5ft) for each berth, and fenced outdoor space has been allocated to each concessionaire to allow for small boat docking activities.

