

# INGEMAR

*Ingegneria Marittima*



BUILDING ON  
THE WATER  
2014/2022

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According to the latest market data and signals, the Italian yachting industry seems to have finally overcome its difficult years, during which Ingemar consolidated its leadership in Italy, strengthened its presence in the Mediterranean area and broadened its commercial horizons, often in emerging and rapidly changing geographical areas.

In the Mediterranean, we have participated in the growth of astonishing new residential complexes such as in Porto Montenegro, Sea City in Kuwait and Portopiccolo in Italy, and equipped important new marinas such as the marinas of Valletta in Malta, Sant'Amanza in France, Novi Vinodolski in Croatia, Marina Zea in Athens and Capo d'Orlando in Italy. Our floating breakwaters, up to 10m wide and built on site, enabled the construction of the new floating marinas of La Spezia, as well as Cala dei Sardi, La Maddalena and Cagliari in Sardinia.

The installations of all-concrete pontoons in the Emirates for Dubai Harbour, in Oman for Duqm Harbour and in Kuwait for 4 marinas in Sea City are the main projects carried out in cooperation with our local partners.

The supply of steel and aluminium pontoons for the exclusive clubs of Antigua and of Lagos in Nigeria, the platforms for the island of Qetaifan in Qatar, the breakwaters for the Al Faw industrial port in Iraq, and the floating landings for military use in Saudi Arabia and Jordan are testimony to Ingemar's diversification of projects and presence.

In recent years, the Group has strengthened its operational capabilities by expanding its production areas and investing in research and development.

The adoption of 'mobile sites' in Italy and the relocation of production to more distant markets proved to be winning choices.

The need to optimise internal resources suggested bringing together, under the same roof, all the company's operations, which are now concentrated in Casale sul Sile near Venice, while in Milan, where Ingemar was founded over 40 years ago, top management functions and the company's registered office have been maintained. The moment is particularly complex at a global level, but it is nevertheless clear that boating will increasingly represent a moment of leisure, by its very nature respectful of social distancing, in a vast and virtually unspoilt environment.

In this a difficult but very stimulating scenario, as we round the buoy of our 40 years of activity with the wind in our sails, we look back with satisfaction at what we have been able to achieve and are ready to face new challenges with even more serenity and enthusiasm.





## CAGLIARI

### Floating breakwater for a new mooring at Molo Bonaria

The city of Cagliari is an attractive destination for cruise passengers and offers yachtsmen numerous organised berths on the city seafront and in the nearby port of Su Siccù. The Port Authority Autorità di Sistema Portuale del Mare di Sardegna has always been sensitive to the needs of pleasure boaters and over the years promoted various interventions in favour of boating facilities. As part of the new programme for the redevelopment of Cagliari's port basin, Ingemar was awarded the contract for the construction of a floating wave attenuating barrier to protect the port area in front of the Bonaria pier. The project aims to create a water space sheltered from the waves created in the port area by strong westerly winds. The works involved the restoration and relocation of the 3 existing breakwaters, installed by Ingemar in 2006, and the supply of 8 new 12x3m elements weighing 30t each to obtain an overall total length of the barrier of about 120m.



## DARSAIT and DUQM - OMAN

### All-concrete pontoons for fishing boats and military vessels

The cooperation with Khimji Ramdas, our licensee in Oman, continues with excellent results, and a new project to furnish the fishing port of Darsait has been completed to everyone's satisfaction. Under difficult conditions due to the ongoing pandemic, the installation of 2 large monolithic concrete jetties built on site near the port, 20 km from the capital, was carried out. In Duqm, after supply of pontoons for a fishing port, the second project has just been successfully completed, that of replacing the existing pontoons destroyed during a storm. Here the design work was particularly demanding to adapt the new modules to the old layout and the existing anchoring piles. The elements, with a total length of 220m, are 4 m wide and in different lengths between 11m and 20m. The pontoons are intended for the mooring of Omani Navy and Police vessels of up to 20m in length. For both installations Ingemar ensured, as stipulated in the licence agreement, the executive design, supply of special components and technical assistance for production.

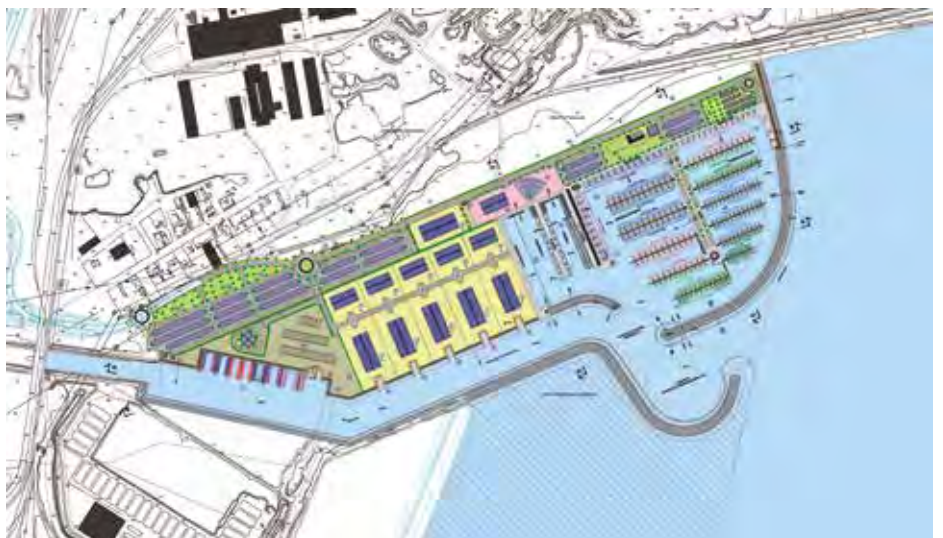




**Marina Arcipelago Toscano, a modern marina on the ashes of the steel industry**

An astonishing project, with completion scheduled for 2024, that will offer the city a modern and efficient structure, reclaiming a degraded and abandoned part of the territory of the city's most important resource, the sea.

An initiative with a twofold value: to provide an answer to the city's boating needs with a bow towards the public, since a fishing port and a shipbuilding area will be constructed as part of the works, with important investments that will create employment. A facility that will be not only a starting point for yachtsmen towards the archipelago, but also a driving force for all those companies and activities that revolve around the nautical world. Coop La Chiusa is the promoter, concessionaire of the area and executor of the works of this ambitious project, entrusted with the subsequent management of the marina, aimed also at creating new and important opportunities for companies in the nautical sector. In this context, Marina Arcipelago Toscano joined the Consorzio Marinas of Tuscany, which has been entrusted with the promotion of the new port. The new settlement, which covers a total area of almost 10 hectares destined for shipyards, dry port and sports logistics, is characterised by the presence of the large marina with imposing protective works made of natural boulders, a large central pier and a series of transversal mooring piers. The design and supervision of works were awarded to a temporary consortium of which MODIMAR spa is the group leader; the dredging and sea works were carried out by Sales spa while Ingemar was entrusted with the executive design, construction and installation of all the floating structures. In the marina, which is at an advanced stage of construction, the protection works have been completed and the pontoons and fingers are being installed for the first lot, which includes all the berths on the EAST side of the port and is scheduled for completion by spring 2023. The whole marina is scheduled for completion within the next 12 months. The floating structures are made of aluminium alloy, with concrete flotation units and expanded polystyrene core, and decking in tropical timber staves. In total, the marina will be able to accommodate 654 boats, ranging from 8 to 20 m in length, moored at approximately 1,500 m of pontoons anchored with piles driven into the seabed and with sliders. All berths will be served by fingers and the most modern utility bollards.





## MONACO

### Two-storey pontoon for naval vessels

Inaugurated and fully operational in the city port of Port Hercule is the new floating jetty for mooring the Princess Gabrielle and Libecciu vessels of the Monegasque police force. It is a very special pier as it has sections of varying width (some 3m and some 2m) and an unprecedented raised walking surface with a gently sloping access ramp to facilitate access to the larger vessels.



## LAKE MAGGIORE

### Landings for the hotel Albergo Castello del Sole in Ascona and the Hotel La Palma in Stresa

In Switzerland, a new landing is operational in Ascona, close to the green area of the resort and intended for customers arriving from Locarno via the lake with exclusive water taxis. The project is by the ETH SIA OTIA office of Fiorenzo Tresoldi and Franco Cavalli, in collaboration with Studio Sciarini for the structural anchorage and land works. The custom-built floating structure is 18m long by 2.5m wide and is equipped with a 14m walkway that makes the landing accessible in all conditions of the water level of Lake Maggiore, known for major changes in water level around the year.

In Stresa, on the enchanting shores of the lake, an original fixed pontoon with a gangway with variable inclination that can be mechanically adjusted from the ground. A necessary addition for the prestigious hotel to allow docking of tourist boats.



## PALERMO

### Guardia di Finanza Naval Base

This floating installation, intended for the Guardia di Finanza (Tax Police) small and fast units, is quite different from the usual robust and heavy Ingemar structures. More specifically, the tender specifications called for modular cubes made of rotational polyethylene and an anchoring system with elastic elements and concrete anchoring blocks laid on the seabed. Nevertheless, the installation was successfully completed with the precious collaboration of the importers for Italy of Cube Dock for the supply of the floating modules and Hazelett Marine for the elastic anchoring system to the seabed.

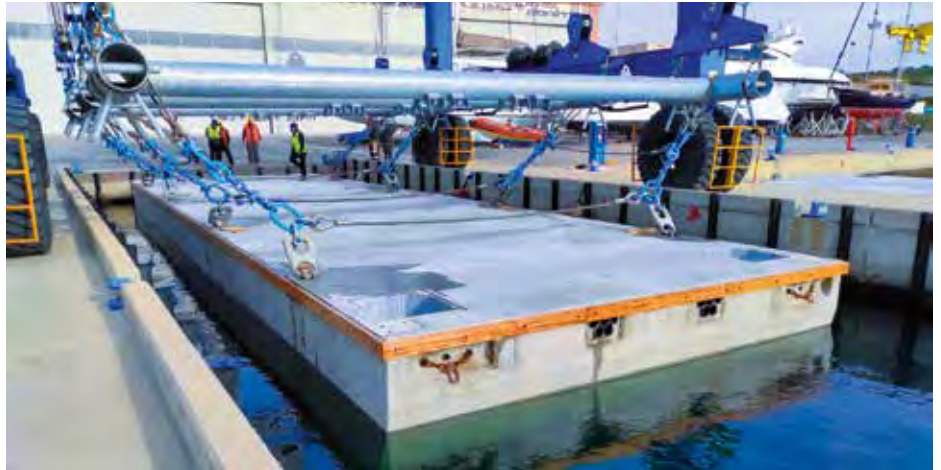




## BAY OF CUGNANA (OT)

### Floating breakwater for marina Cala dei Sardi

Cala dei Sardi is the largest eco-friendly floating marina in the heart of Costa Smeralda, Sardinia. It is located in the Gulf of Cugnana, between Portisco and Porto Rotondo, and set in a wonderful landscape context. It is served ashore by a lovely club house with a bar and a restaurant and is surrounded by well-kept greenery. The marina can accommodate 140 boats of up to 40m in length. The pontoons that make up the marina have always suffered from the severe wave conditions, which made the berth difficult to navigate in the prevailing north-easterly winds. The successful installation of Ingemar breakwaters to protect the new harbour of Cala Balbiano in La Maddalena gave the owner of Cala dei Sardi, Sardegna Navigando, even more reason to undertake a major improvement of the harbour lay-out with the installation of two massive floating barriers. The wave attenuators, with a total length of 280m, are the result of the semi-flexible joining of 14 reinforced concrete elements measuring 20x6x2.40m, with a polystyrene foam core and weighing 130t each. The modules were manufactured in a mobile construction site set up in Olbia and then towed by sea to the installation site. This was a very demanding project for Ingemar due to the strict conditions of use and environmental protection, which involved a careful study of the anchoring systems with the development of an elastic damping device that, applied on the chains, has a progressive damping capacity with no load peaks on the anchors. The device also ensures the stability of the planimetric arrangement of the barriers under different wave motion stress conditions and, by allowing increased chain tension even in the absence of wave motion, minimises the interference of the chains on the seabed. The new breakwaters brought the hoped-for results during the winter 2021 sea storms, ensuring the necessary safety at the moorings and allowing, in the words of Marina administrator Simone Morelli, to "lengthen the season and intercept new flows of nautical tourism and make the base come alive even during the cold season with sailing events and sailing school activities". For Ingemar it was a very important reference with a respected and prestigious client, but also the opportunity to develop new structural and anchoring solutions: a great working experience in a climate of enthusiasm and collaboration.







Acquamarine Boat Club, Lagos - Nigeria



Marina Zea, Atene - Grecia



Kopraina Marine, Grecia



Kalkara Marine Ship yard, La Valletta - Malta



Evento Campari, Arsenale di Venezia





Diporto Nautico Etneo, Palermo



Luštica Bay, Montenegro



Agios Kosmas Marina, Grecia



Terminal passeggeri stazione Marittima, Venezia



Approdo mezzi di stato, Pirano - Slovenia



## JESOLO (VE)

### **An expanding marina, with great plans for the future**

After the major expansion works carried out in 2009 which involved the installation of the floating piers along the new quays, the marina of Jesolo had 650 berths, which in recent years proved insufficient. There has been increasing demand from local and international yachtsmen attracted by the city's tourist development and residential investment in the marina.

After a number of ancillary interventions, such as the installation of mini-fingers on a number of pontoons not yet equipped with fingers, the latest and most important intervention was aimed at optimising the use of the marina's water space in the southern area, with the creation of new berths for boats up to 15m. All berths are equipped with a finger and the necessary service terminals.



## CASTEL GANDOLFO (RM)

### **New pontoons for the FICK (Italian Canoe and Kayak Federation)**

Ingemar's collaboration with FICK is long-standing as there have been many installations for the Italian Canoe and Kayak Federation where Ingemar is proud to have made its contribution. The latest was at the Rowing Centre in Castel Gandolfo, on Lake Albano, where Ingemar installed 2 new floating platforms for hauling and launching boats, accessible by floating walkways. We added a path on the lake slope to facilitate access for people with disabilities.



## ROSOLINA (RO)

### **Marina di Alberella renovates old fixed pontoons**

Until recently, the Albarella marina consisted of a series of fixed concrete jetties built in the late 1970s that have honourably reached the end of their service life. Ingemar was given the important task of the complete refurbishment of 3 piers, replacing the existing fixed structures with floating pontoons with the same layout. In relation to the particular environmental context, the type of pontoon adopted is the King Size, 3 m wide, with a steel structure and floating units in concrete and a polystyrene foam core. These pontoons easily blend with the delicate nature context thanks to the wooden finish and the discontinuous flotation that allows a water exchange at surface level.





## LIGNANO (UD)

### Special pontoons for the Marina Azzurra Resort houseboats

The innovative Marina Azzurra Resort in Lignano (Ud) is located on the banks of the Tagliamento river: it covers a green area of 120,000 sqm and is an exclusive tourist complex consisting of houseboats and was inspired by Dutch and Canadian floating villages.

The marina resort consists of 29 houseboats moored in the dock and 59 houseboats along the bank of the Tagliamento.

The marina is immersed in a unique and relaxing setting, adorned with fascinating native aquatic plants descending along the perimeter of the port and enveloping it in a lagoon green.

For the first phase of the new settlement, Ingemar designed and installed a floating T-shaped pontoon approximately 240m long, with a 20m connecting footbridge and two wide access/exit ramps at each end.

The stability of the floating modules is ensured by galvanised steel structures with concrete and expanded polystyrene floats. The pontoons have tropical timber decking and sliding devices which slide along steel piles driven into the river bed. The anchoring system is capable of withstanding the stresses of extraordinary floods, since the level of the Tagliamento can rise up to +3.80m!



## DUQM - OMAN

### Maxi concrete jetties for Duqm fishing harbour

A new exclusive licence agreement has recently been signed in the Sultanate of Oman with Khimji Ramdas LLC for construction and marketing of Ingemar products in the country. Khimji Ramdas LLC is an important holding with multiple activities, including the maritime infrastructure. Ingemar will provide executive design, supply of special components and technical assistance for production. Despite the current difficult epidemic phase, the executive design of the elements measuring 18x6m and weighing 80t and the necessary operational instructions was successfully completed, confirming Ingemar's ability to transfer its know-how.

In Oman the set-up of the production site is almost complete, after the training phase for the local teams, duration of which was necessarily reduced due to Covid 19 restrictions. The first elements are being built to be subsequently installed in the port of Duqm, 450 km south of Muscat, to accommodate the Sultanate's fishing fleet.





## Marina Molo Pagliari: last works before the inauguration

The construction and fitting out of the new floating marina in La Spezia is almost complete.

With the second phase of the project Ingemar completed the protection of the marina adding 7 floating breakwater modules measuring 20x10x2.4 and weighing 185t each. The modules are positioned in an L-shaped configuration to protect the marina from wave motion and a further 2 modules of the same size to protect the adjacent Canaletti basin. The elements were still produced in the mobile construction site set up near the installation site. The harbour was furnished with 12 floating pontoons in reinforced concrete with tropical timber decking, 6 service platforms and a slipway for hauling and launching dinghies, all produced in the Casale sul Sile factory. 620 m of floating breakwater barriers and 1650 m of pontoons and service platforms will serve about 850 boats over a total area of 56,000 square metres. The structures underwent an endurance test at the end of 2018 when, with works still in progress, a terrible sea storm battered the Ligurian coasts. The only damage to the floating structures, which was anyway modest, was caused by the collision of a large cargo ship that had broken its moorings. Only the presence of the floating breakwater barrier stopped it in its drift towards the mainland.

The new floating harbour, financed by the Port Authority of the Eastern Ligurian Sea, designed by Studio Manfroni & Associati of La Spezia and contracted out to Trevi Spa, fulfilled the expectations for this important coastal area, as a redeveloping element of the system of the open spaces that connect the urban centre with the eastern part of the city. Ingemar is very proud of its important contribution to this amazing floating project, probably the largest and most innovative in Europe in this sector.





## VENICE

### Bridges, exhibitions and moorings, all floating

Venice and its lagoon are a splendid open-air show room of Ingemar's ability to build on water, both within and outside the pleasure boat sector and the deep gratitude that binds the Group to the lagoon is easily seen in the durability and quality of its installations and the utmost respect always demonstrated for the settlements and the host ecosystem.

Recently new installations were added in different areas: for leisure with pontoons for tourist yachts, for local transport with docking platforms for vaporettos (shuttle boats) and working boats, for services with a new floating bridge and for exhibition activities with floating structures for the Venice Boat Show.

During the days of the commemoration of the dead in the northern lagoon, around the All Saints' Day, between the Fondamenta Nove and the cemetery on the Island of San Michele, a new 410m-long Ingemar floating bridge revived another important Venetian tradition, previously abandoned since 1950. In the past the city's population used to make a pilgrimage to the cemetery using the bridge formed by boats, all connected together for the occasion.

The re-launch of the Venice Boat Show once again saw the Ingemar floating structures host the most beautiful boats of the exhibition in the waters of the historic Arsenal of the Serenissima, while a new floating bridge provided access to Forte Marghera, which is being redeveloped by Insula.

A new floating landing station for State Police vehicles, a platform for loading and unloading goods at Tronchetto, platforms for docking transport vehicles near Piazzale Roma, a small floating marina on the island of Pellestrina and a private landing place on the island of Mazzorbetto are other examples of Ingemar's diversified interventions and continuous activity on the islands of the Venice lagoon.





## AL KHIRAN - KUWAIT

### The third marina at La'ala Al Kuwait Sabah Al-Ahmad Sea City completed

The grand new settlement of Sea City in Kuwait continues its development in line with the ambitious plan to create from scratch a new city for 200,000 inhabitants, on the shores of the Persian Gulf.

The infrastructure is almost complete: the third marina, with almost 10 km of floating concrete fingers and fingers for 860 berths, is operational and the pontoons for the fourth and final marina are stored ashore waiting to be launched and installed.

Ingemar has therefore almost completed its assignment - some complementary works for special purposes remain - with a wealth of exceptional experience and a great satisfaction for having contributed with its know-how, technical assistance and supplies of some specialised accessories to the achievement of what is undoubtedly the most amazing yachting establishment in the Middle East. The 4 docks will offer a total of 2,700 berths on 33km of pontoons and fingers with a total floating area of approximately 87,000sqm.

The on-site construction entailed a great deal of effort for the design of the production resources (when fully operational, 17 casting moulds were in place), the sourcing of raw materials and semi-finished products, and the organisation of the workforce and production cycles in an isolated environment, subject to extreme climatic conditions.

It was a wonderful experience of sharing the work with the investor and collaborating effectively with the local workers, overcoming problems and deadlines that seemed insurmountable, all with enthusiasm and a great spirit of cooperation.





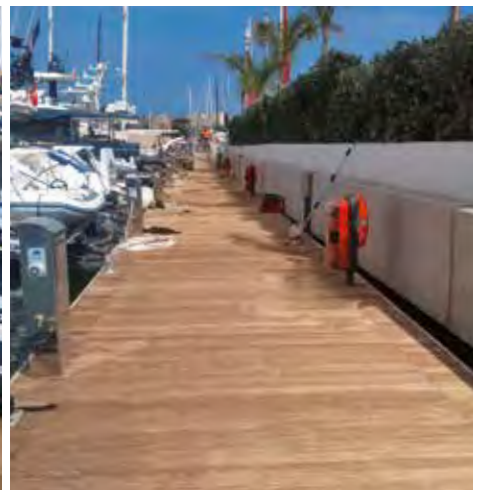
## MALTA

### Ingemar confirms its presence with new installations

It was a great success for the new Valletta Marina, a sold-out only two years after its inauguration and requiring an expansion to increase the berths offer.

As a result, new pontoons parallel to the quays were added, bringing the marina's total capacity to 250 berths of between 10 and 28 metres long as well as a number of berths for superyachts up to 50m.

Always on the island of Malta, pontoons are being installed for the renovation and expansion of the ports of Marsaxlokk, south-east of Valletta, and Mgarr on the island of Gozo, where the first Ingemar pontoons were installed almost 30 years old. Confirming the validity of the previous choices for both sites, floating pontoons of the same type were chosen again, with the technical improvements and restyling suggested by the changing needs of the vessels and the company's production evolution. The new pontoons, with a total length of 570m, feature galvanised steel structures, concrete and expanded polystyrene floaters and tropical timber decking, and will provide accommodation for the local yachting and fishing flotilla.



## PORTOFINO (GE)

### Floating path for an exhibition

This is not the first time that Ingemar's pontoons and platforms, usually used in marinas or for industrial purposes, are being used to host and showcase the special features of individual artists or, as in this case, of cultural events and exhibitions.

In Portofino, in early 2020, Ingemar contributed to the success of the Mondo Terracqueo installation providing a pedestrian crossing over the water and a floating platform of over 80 square metres to reach the luminous sphere created by the Venetian artist Marco Nereo Rotelli. The 2.50m high sphere positioned at the centre of the bay is made of steel and bears fire engraved words by the world's greatest poets, dedicated to the sea and to our planet. Mondo Terracqueo is the cultural, artistic and experiential event developed by Geometry Global Italy and the Municipality of Portofino that inaugurates a new communication campaign aimed at enhancing Portofino as a microcosm of land and sea, an accomplished model of beauty, a symbol of a possible balance between man and the environment and between culture and nature.





## MARINA DI CARRARA (MS)

### Heavy-duty floating structures for fishermen

In Marina di Carrara, a series of new high-displacement floating all-concrete pontoons were installed in 2019 with the scope to reorganise the moorings and the activities of fishing boats within the industrial port.

The intervention, which fully satisfied the particular requirements of various users, is part of a complex programme of rearrangement of the areas and development of productive activities by the Port Authority of the Eastern Ligurian Sea.



## SAUDI ARABIA

### Floating pontoons, breakwaters and jetties

The latest installations for the Ministry of the Interior have been tested and approved. They include special landings with steel fingers and floating concrete units for boats up to 18m and, on two sites that were not adequately protected, a series of floating concrete breakwaters (20x4x2m with a displacement of 65t).

To these floating landings, already extensively tested along the country's shores, four innovative 60x5m floating jetties were added for the mooring of vessels up to 50m in Saudi Arabia's two main naval bases, in Dammam and Jeddah. One of the two floating piers in Jeddah is destined for the mooring of the Saudi Navy's magnificent 60m-long training ship.

All elements were produced in the Casale sul Sile factory; the disassembled piers and fingers were shipped in containers, while the large breakers reached the installation sites on the shores of the Red Sea and the Gulf with ships that normally transport bulk cargo.





## VIAREGGIO (LU)

### Renovation of the pontoons and the quay in the municipal port

The municipal administration of Viareggio, in collaboration with iCare, an 'in house providing' company of the municipality, and with the technical support of NAVIGO, a company for the innovation and development of the nautical sector, started the renovation of the 'La Madonnina' tourist port. It was a pleasure for Ingemar to return, after 25 years, to the lively Viareggio harbour and almost completely renovate the floating pontoons installed so many years ago. The task consisted in replacing of the structural elements that had been damaged by exposure to the salty spray of the waves and a installing all new joints between the modules and as well as some parts of the wooden decking. The most impressive and representative intervention consisted in raising the level of the quay by covering it with a prefabricated galvanised and painted steel structure with timber decking. The solution restored the structural and functional qualities of the quay and raised the entry level to the access gangways, which were previously often in contact with the water during high tides or prominent wave motion periods. Particular attention has been paid to the access systems to ensure that the landing is accessible for disabled and visually impaired users. The complex of works is now as harmonious, functional and elegant as the historic port deserves of a city that aims to be the Mediterranean Port of the Mediterranean of Fashion and Italian style and an international model of innovation and sustainability.



## PORTOVECCHIO - FRANCE

### A fixed but removable, prefabricated pontoon

It was a new challenge for Ingemar: to design and build in its prefabrication plant all the elements required to construct a fixed pontoon for 'seasonal' use. An innovative project, strongly desired by the client Porto Vecchio Marine who gave us an important contribution of experience and ideas. Shallow sandy seabed, mooring of luxury yachts up to 20m, impossibility of adopting traditional solutions, and above all, the need for a structure that could be easily removed during the winter months. These were the project conditions, which were fully met by the new jetty supplied to Porto Vecchio Marine, to the enthusiasm of the investor and the users.





### Dubai Harbour: a floating marina for superyachts

The floating docks for the prestigious nautical hub of Dubai Harbour Marina, near Palm Jumeirah, have been completed.

This is the first gratifying result of the licensing agreement with Overseas AST LLC for the exclusive production and distribution in the Arab Emirates of Ingemar's most important high-profile products: pontoons, fingers and floating concrete breakwaters with high displacement.

In recent years Ingemar refined its production technologies for on-site prefabrication and gained great experience in the management of delocalised sites and in the transfer of know-how.

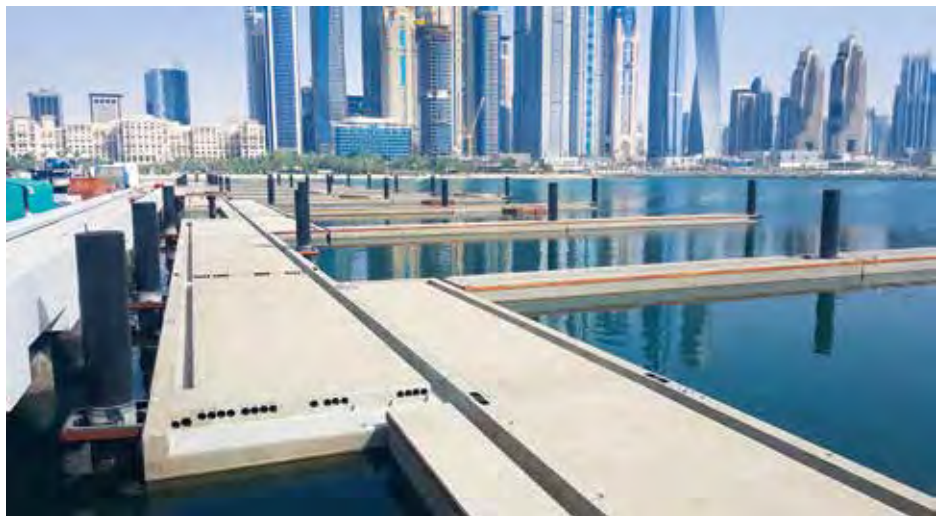
The AST Overseas LLC Group has been involved in major maritime and civil infrastructure projects in the United Arab Emirates for the last 60 years and can boast a consolidated experience in the construction of important marinas. AST/Ingemar's intervention is part of the fantastic new project to enhance the city's Waterfront of 'Dubai Harbour' which include the construction of a new mega marina with 1,400 berths and an innovative cruise boats terminal capable of accommodating large ships up to 6,000 passengers.

The final touch will be added by a 135-metre high structure, the Dubai Lighthouse, an architectural icon that will rise at the entrance to the harbour. After an initial phase of defining construction types and local resources, the production of the floating pontoons started in December 2019 in a construction site about 20km from the installation area.

The typology of the floating pontoons, up to 6m wide and up to 20m long, is All-Concrete, in reinforced concrete and characterised by very high displacement. The layout and specific utility requirements of large yachts to be moored resulted in a great deal of effort dedicated to design of numerous special elements.

In record time, 220 modules were installed, almost all of them specially designed, for a total of 3800m. Mega-yachts up to 60m in length will be moored directly to the new floating jetties, while giga-yachts of up to 120m in length have special fingers and anchorages at buoys and mooring blocks.

Dubai Harbour covers an area of over 1.8 million square metres and will also include a large shopping centre, an event arena, residential buildings, offices, shops, restaurants and bars.





## AQABA - JORDAN

### After Ayla Marina new installations for pleasure boats and work vehicles

After 8 years since the amazing construction of Ayla Marina with boats moored at the pontoons overlooking lagoons surrounded by luxury residences and hotels, Ingemar returned to this beautiful far end of the Red Sea with some installations for industrial and military use, such as a 60m fixed pontoon, supported by piles, with a galvanised and painted steel structure and a fibreglass grating decking. In the sphere in which we are best known, that of nautical accommodation, we built a highly articulated, custom-designed floating complex for the exclusive Japanese Garden Marina, a private marina serving a resort located near the Saudi Arabian border. The 3m wide, galvanised steel frame pontoons and concrete floaters are anchored to the quay with vertical beams. Additionally, the piers are equipped with 10m long fingers for boat mooring and special rotational polyethylene floating platforms for jet-skis.



## VENTIMIGLIA (IM)

### Tailor-made pontoon for the Cala del Forte marina

The collaboration between Ingemar and SEPM – the company which manages the ports in Monaco - continues after the installation in 2012 of the very high displacement concrete floating piers at Port Hercule in the historic centre of Monte Carlo.

In 2016, in response to the ever-increasing demand for berths and saturation in the Principality's ports, Monaco Ports decided to create SMIP (Société Monégasque Internationale Portuaire) and purchased the nearby port of Cala del Forte in Ventimiglia (IM). Cala del Forte will come into operation in the first quarter of 2021 and will have 78 berths from 6.5m up to 70m, 39 shops, 577 car parking spaces and a 180t travel lift.

Ingemar has been entrusted with the supply of a 390m long pier along the quay, designed to follow the curvilinear course of the cove and built with custom-made aluminium alloy pontoons with concrete floaters, anchored with vertical beams to the quay and finished with tropical timber decking. Ingemar's contribution extended to the design and supply of the wooden surface finishing elements of the fixed pontoons that ensure the aesthetic homogeneity of all the port's mooring structures.





## LA MADDALENA (SS)

### The new harbour of Cala Balbiano is all floating

The archipelago of La Maddalena, just north of Sardinia and close to Corsica, is a paradise for lovers of the sea and unspoilt nature.

The new tourist port of Cala Balbiano is considered one of the key projects for the relaunch of the tourist industry of La Maddalena island. Talks about it started in the days of the former G8 and many had almost stopped believing in it. Nevertheless, after a long and difficult bureaucratic procedure with the objective of minimizing the environmental impact of the project, the contract has been awarded and work is nearing completion: the new port, close to the town centre, will finally be operational by the end of the year.

The project design was prepared by the engineers Andrea Ritossa of MarTech srl and Giovanni Pileri of Studio Pileri. It includes the construction of two reinforced concrete barriers for a total of 140m, consisting of 6x20m floating breakwaters weighing 130t each. In addition, one steel access dock with concrete and expanded polystyrene floats of the same size was installed. Ingemar, the contractor of the works, managed the implementation of all the floating structures with their anchoring systems, moorings for the boats and the services. Three floating jetties will be positioned in the basin to accommodate smaller vessels.

A total of about 140 berths will be available, out of which 52 for boats up to 40m on the breakwaters and along the quay close to the harbour were added with this contract.

This is a very diverse and challenging project due to the significant size of the elements and boats to be moored and the specific conditions of use and environmental protection.

The gigantic breakwater modules were built in a "mobile construction site" temporarily set up in Olbia and then towed by sea to the installation site.

A rewarding choice, given the size and weight of the elements, but also an excellent opportunity to establish close collaboration with the local production realities which contributed in solving all the complex issues of the operations of the yard, from the positioning of the mooring blocks weighing 35t each, to the installation of the service bollards with very voltage and the complementary works on the quay. Once again Ingemar's experience of deploying its production resources and managing the multiple requirements of distant construction sites has been proven successful not only abroad but also in Italy.







**Mazzorbetto Island (VE):** mooring of Sporting Club Re-inhabited Islands



**Tivat - Montenegro:** new pontoons along the quay for Lustica Bay



**Bacoli Bay (NA):** Fiart Mare tourist landing



**Pianottoli - France:** floating breakwater for the Municipal port in the Bay of Figari



**Antigua and Barbuda:** a beautiful testimony of optimism in times of crisis from Antigua Yacht Club

Forwarded  
On behalf of the Government and people of Antigua and Barbuda, I want to express my sincere appreciation for coming to our assistance at this time of crisis in our country. Blessings! 🙏🙏



**Marghera (VE):** floating bridge to Forte Marghera



**Trieste (TS):** Officina Navale Quaiat naval base

**Genova:** floating structures for the 2019 International Boat Show



## VALLETTA - MALTA

### **An elite marina under the palaces of the Hospitallers**

The new marina in Valletta is the Marina di Varazze initiative, part of the Azimut - Benetti group, in cooperation with some Maltese entrepreneurs in the boating and construction sectors. All members have enthusiastically contributed their specific skills to the success of the project that integrates well with the dense network of Maltese landings. The Azimut - Benetti shipyard has a well-established experience in the management of marina, Esprit Yachting in the field of boat sales and assistance, Arrigo Group in the hotel and tourism sector, Tal - Maghtab of the constructions and Joinwell in the furnishings sector. Positioned in Sa Maison, close to Msida Marina, the new marina contributes its discreet and elegant structure to the ambitious "Valletta City Gate" project of restructuring the monumental city walls and historic buildings classified as "World Heritage". Inaugurated in July 2017, the marina offers 270 berths from 10 to 28 meters and has some additional moorings for superyachts up to 50 meters. Ingemar supplied 4 long piers of 3 meters wide floating pontoons type King Size, with galvanized steel structure, concrete floaters filled with polystyrene foam and decking in exotic wood. The type of pontoons used, characterized by discontinuous floatation to limit the interference with the currents, ensures their high resistance to the residual wave motion of the site and a discreet and elegant look in analogy with other installations on the Maltese islands. A wonderful experience of collaboration and a very pleasant return to Valletta where, in 1989, we made our first important experience on foreign markets.





## Mega 185 t wave attenuators for an all-floating marina

As part of the redevelopment of the city waterfront, the Autorità di Sistema Portuale del Mar Ligure Orientale undertook the redevelopment and conversion of the Molo Pagliari in La Spezia to the east of the port areas, with the aim to enhance its historical and cultural value. The works have been entrusted to Trevi spa, a company specializing in foundations and special works, and include the construction of modular structures in metallic carpentry to host the service and support activities for the storage and maintenance of small pleasure craft, as well as mussel farming activities. The works at sea consist of the construction of a new floating tourist landing to assure about 850 berths for local residents and small boat holders in the Marina di Fossamastra and Canaletto. After a very long contest in which all the most important manufacturers at international level took part, Trevi has entrusted Ingemar with the demanding task of supplying all the floating works envisaged by the project. Considering particularly strong wave movement in the installation site, the floating structures require dimensions and performance capabilities well above the international off the shelf production standards.

A distinctive and qualifying feature of the new marina, in fact, is precisely the breakwater protection, consisting of the semi-flexible connection of monolithic elements in reinforced concrete with polystyrene foam core. The dimensions and weight of the breakwater modules are truly exceptional (the breakwater modules have dimensions 20x10x2.4m and 20x8x2.40 weighing respectively 180 and 150 ton!). The solution to produce the modules directly in the vicinity of the place of use, as in case of a maxi construction site in Kuwait, allowed significant production savings, acceleration of time and reduction of the overall energy consumption and pollution emissions by limiting or eliminating the need for many handling and transport activities.

In the Ingemar factory in Casale sul Sile, the elements of the internal mooring piers were produced, of all-concrete type, in reinforced concrete and wood decking. The same type of element are employed for service pontoons parallel to the Molo Pagliari quay and for service floating platforms. At the end of the works, approximately 1400 linear meters of pontoons will be installed, able to accommodate about 850 boats.





## SANTA MANZA - FRANCE

### All-floating new marina at the entrance to the Straights of Bonifacio

Straights of Bonifacio, Maddalena Archipelago and the Costa Smeralda are the most popular destinations for yachtsmen cruising between Corsica and Sardinia. In this context we find the new all-floating marina of Santa Manza, built by Porto Vecchio Marine, a par excellence company in the nautical sector considering its dimensions, equipment and services, taking care of the sales and offering assistance for important international shipyards. In the spirit of continuous growth in the nautical sector, Porto Vecchio Marine completed this wonderful initiative a few miles from Bonifacio. The renovation of an old building as a modern club house and the creation of a floating marina for large yachts transformed a corner of the beautiful bay into a discreet and luxurious mooring point and a meeting place for sea lovers. Ingemar was entrusted with design and construction of floating structures: 240 m of All Concrete, heavy duty pontoons in monolithic 20x4 m reinforced concrete elements weighing 40 tons each. The floating elements will be dismantled and put to safety at the end of the season when the strong winds from the North-West start to blow, creating inside the bay the waves unsustainable for floating structures. The installation, with its characteristics of seasonal use, will contribute to the appreciation of natural resources by restoring a pristine environment at the end of the summer season.

A few steps from the new marina a new landing was added, on the initiative of the municipal administration. Local boaters would have found new moorings on two floating piers composed of Ingemar discontinuous pontoons with a steel structure and wooden finishings.





## CAPO D'ORLANDO (ME)

### A strategic tourist port for pleasure yachting in the southern Tyrrhenian Sea

Capo d'Orlando is located in an enchanting setting between Messina and Cefalù, facing the Aeolian Islands. The new marina is the result of the commitment of some local entrepreneurs - Ilario Franco, Giuseppe Mangano and Francesco Federico - who believed in the potential of this town with an important tourist tradition and an enviable environmental context. The new marina is developed on a layout formed by 2 large central piers that extend from the quay to the North and from which a series of perpendicular mooring piers branch off.

The 5 m wide main piers with a concrete walking surface consist of a new type of continuous floating concrete elements with a very high live load capacity (500kg / sqm), which allow for safe transit of electric vehicles and provide a wide access corridor to the mooring piers. The mooring pontoons are characterized by a wooden decking and a discontinuous floatation to allow water to be recycled at the surface level. The single piers, up to 150m long, have a total linear development of 850m and consist of 2.5m wide modules with frames in galvanized steel, supported by unsinkable concrete floaters with a polystyrene foam core. All the floating elements are anchored with tubular steel piles fixed in the seabed and special cushioned pile guide devices.

The marina covers a total area of 183,000 square meters and is able to accommodate 562 boats with a length between 7.5 m and 40 m. The boats will use the "med-mooring" systems, with mooring lines, ground chains and concrete anchor blocks. All the moorings are served by fire-fighting terminals and service pillars in stainless steel, with E-Power system for energy and water metering, controlled remotely from the marina office.

The elegant constructions foreseen by the project to support the tourist infrastructure include the workshop for repairs and storage, a promenade of shops that extends to the level of the quay on about 3,000 square meters, with bars, restaurants, Yacht Club and a minimarket. A truly futuristic port complex in an exceptional landscape: a prestigious reference for Ingemar and a wonderful memory of collaboration and enthusiasm among all the participants of the initiative.





## ATHENS - GREECE

### Expansion and renovation in Marina Zea

In Marina Zea, the lively marina managed by KG MEDMARINAS in the center of Piraeus, after long delays linked to local authorizations, the elements of the All Concrete Ingemar floating pontoons and steel frame piers with wood finishings, stored for many years on the quay in Piraeus awaiting the green light for installation, are finally operative. In the summer of 2018, two long piers perpendicular to the mainland and a pontoon parallel to the quay secured mooring to a maxi-yacht. Another T-shaped pier was ready to accommodate smaller boats. Different construction types of piers with different lay outs for specific functional and design requirements. For us at Ingemar it was a great pleasure to return to a friendly environment and see our previous installations in perfect working order. It was especially important to us work again with our customers with whom we have established a special relationship of trust and collaboration since the years when we installed the piers and floating breakwaters of Marina di Gouvià in Corfù and Marina di Lefkada.



## CASTELFRANCO VENETO (TV)

### Floating solarium for Baita al Lago on the private pond

On the private lake of Baita al Lago, which in summer is an alternative beach walk for those who want to avoid queues, the surface for sunbathers has been expanded with a floating solarium made by Ingemar: 240sqm, able to support the load of 700 people. In the evenings, the solarium becomes an eating area for the restaurant on the ground. A platform obtained by exploiting the modularity of King Size standard pontoons, connected to the ground with a walkway and served by a floating swimming pool.



## TIVAT - MONTENEGRO

### Luštica Bay, a new tourist port

The new tourist settlement is the work of Luštica Development AD, a company of the Orascom Development Ltd. group responsible for the development and management of the Luštica bay and was built around its marina on the image of the old fishing villages along the Adriatic coast, traditionally build around the port. The project includes 2 elegant marinas: the main one with about 180 berths for boats up to 35m and another for smaller vessels. After a rigorous selection at an international level, Ingemar was awarded the contract to supply the floating structures and began an active technical collaboration with the managers of the investor. The first piers are operational since July 2018.





## SISTIANA (TS)

### Residences and a tourist harbour on the site of an old quarry

Portopiccolo (the north east's "little Monte Carlo" of North East) was inaugurated on 8 August 2014. It is strategically located on the cliffs of Sistiana between the two magnificent castles of Duino and Miramare. This was an investment of € 250 million with the sole purpose of redeveloping the site of an old chalk quarry in the Bay of Sistiana close to Trieste.

In three years a surface area of 350,000m<sup>2</sup> (the previous stone "factory") has become a modern tourist harbour for the elite surrounded by a typically maritime-style village.

There are 380 lodgings, of which 80 are residences. There are also restaurants by the sea, a spa of 15,000m<sup>2</sup> with the best thalassotherapy treatments in Europe and fashionable shops along the seafront.

The whole village complex is a zero emissions zone, it is entirely pedestrianised and has also abolished the use of all types of gas (including for cooking).

Ingemar was appointed by Rizzani de Eccher, the complex's main contractor, to execute the final plan drawings, the construction and installation of all the floating structures servicing the marina.

This was quite literally a "tailor made" assignment from the minutely detailed plan drawings, to the choice of supplies and the technical decisions.

The pontoons, with an overall length of 500 m and a surface area of approximately 1800 sqm, are 2.5/3m wide and are all equipped with fingers for mooring yachts up to 32m.

A large floating platform acts as a main focal point of the marina giving access to the largest berths. All the elements, with decks in staves made of exotic hardwood, have lengths, form, size and variable features according to the complex layout and the different requirements of the vessels.

Floating units are in concrete for the pontoons and in rotomoulded polyethylene for the fingers and were chosen on the basis of the expected performances and of the local wind and wave climate.

The floating structures are anchored by 65 no. pile drilled into the rock bed and secured by high strength mortar so as to guarantee maximum safety and functionality of the floating systems.

Pontoons are fastened to the piles by sliding devices recessed into the structure of the pontoon so to avoid interference with the moored boats.

This was a prestigious turnkey assignment for an important international group.

This was a challenging project characterised by a very tight timeframe and a demanding client, a challenge that Ingemar was able to take on itself and win in 4 months only in a very collaborative environment made of enthusiastic people proud of being involved in such an futuristic development.





## SEA CITY - KUWAIT

### Growth continues in the basins of the new city on the Arabic Gulf

La'ala Al-Kuwait Sabah Al-Ahmad Sea City, 85km south of Kuwait City, is an astonishing project in several stages begun in 2003 and occupying an area of over 64 square kilometers along the Arabic Gulf; with a 25 year development plan a new city for in excess of 100,000 inhabitants will arise from nothing along more than 200km of new coastline overlooking a series of canals and lagoons excavated out of the desert.

The project, by the La'ala Al-Kuwait Real Estate Company, has seen completion of the first 3 phases of infrastructures and residential plots and includes the development of three new marinas, the first two of which are already completed, and the third is currently under construction, for more than 2,000 berths. In early 2012, following a stringent international selection process, Ingemar was appointed to manage the final design and to supervise the on-site construction of pontoons, fingers and floating breakwaters, and of the additional accessories and the anchorage systems for the marinas. Due to their importance for the success of the fabrication, Ingemar was also appointed to supply all the specialist structures, the gangways and the most critical components for the standard All Concrete elements.

After a precise analysis of the manufacturing types, of the logistic issues and of the local resources, the construction of floating elements began in 2013. The "numbers" for the projects are truly impressive: in the first two marinas only, 17km of floating breakwaters, pontoons and fingers, for a total of 40,000 square meters, anchored by in excess of 830 no. piles will provide moorings for over 1,200 yachts up to 40m in length. At present the construction of the structures for the third marina, with more 8,500 m of floating structure and 860 berths is under way and to be completed in 2018.





The types of elements of the third marina are the same as those of the previous two marinas, with the necessary modifications to adapt the structures to the specific layout and to the size of the boats: concrete floating pontoons and breakwaters, 3 and 4m wide and up to 20m long with a displacement of up to 65 tons and concrete fingers up to 30x3m. The elements are of the all-concrete continuous floating type with galvanised rebar, expanded polystyrene cores that assuring flotation and with a concrete anti-slip deck finishing. A great number of elements has requested a specific design to follow the indications of lay-out of marina and the request for large floating platforms with dimension up to 16x16m both for connecting different piers and for accommodating buildings for marina related services. This is an extremely prestigious international assignment rewarding Ingemar's attention to the Middle East market and its capacity to adapt to the specific requirements of each client-investor in the role of reliable technical partner and supplier.





## NOVI VINODOLSKI - CROATIA

### Novi Marina

In the Gulf of Quarnaro at Novi Vinodolski a new tourist port is nearing completion; it is being constructed by an important local company, GPP Mikic d.o.o., which is highly motivated to invest in the yachting sector. This is a very appealing area: on the border with Istria, in the splendid gulf of Quarnaro and in front of Krk island. The new marina has 180 berths and will certainly become a popular destination within the efficient Croatian network of harbours.

The authorities in Croatia are extremely efficient and Ingemar received approval to install their types of pontoons and moorings in a short time. Installation of the modules, four piers placed at right angles to the quay for approximately 500m was completed in August 2016.

The pontoons are in reinforced steel, suitable to the size of the yachts up to 18m in length and considering the strong winds which are common in this area.



### Mitan Marina

The discontinuous floating pontoons in steel, concrete and tropical wood seem to be the winning solution in this very stormy area of the upper Gulf of Quarnaro. As part of a program to adapt to the new functional requirements of the marina, Navicon decided to entrust Ingemar with the supply of the new floating structures: floating pontoons and fingers along the quay were part of the first step, to be followed by restyling and upgrading of the other existing structures.



## PORTOROŽE - SLOVENIA

### A new municipal landing in the Gulf of Trieste

The small stretch of Slovenian coast between Italy and Croatia is a destination for many yachtsmen, especially foreigners, because of its easy road connections with the countries of Central Europe and development of quality tourism along the coast. The municipality of Piran, where the large tourist port of Portorož is situated, decided to increase the number of berths in the port. New landings on floating structures were added, located at the entrance of the bay, close to the historical center. On behalf of Adriaing, the contractor for the works, Ingemar supplied a 12x3x1.80m floating barrier of reinforced concrete breakwaters and a series of 12x2.50x1m continuous floatation all-concrete pontoons.





## AL FAW - IRAQ

### A new maritime hub in the Arabic Gulf is under construction

On the estuaries of the Tigris and Euphrates a gigantic port complex is being constructed which will serve as a junction for maritime traffic in the entire Arabic Gulf.

Ingemar was appointed to supply a series of floating pontoons in reinforced concrete of very high displacement to moor service and working vessels.

The modules were designed by and produced in Kuwait under the supervision of Ingemar to be subsequently towed to Iraq. The sections, with dimensions of 20x4x2m, weigh 65t, have an a very high freeboard of 80cm to meet the specific requirements of the vessels which will be accommodated at the moorings.



## SALERNO

### Marina d'Arechi selects Ingemar to complete the port

Work at sea is completed at the tourist Marina D'Arechi - Salerno Sport Village. Begun in July 2010 and inaugurated in June 2012 with the first 480 berths, the marina today has nearly 1,000 berths of between 10 to 100m over a surface area of approximately 340,000m<sup>2</sup>. This is a futuristic project by the architect, Santiago Calatrava, and the engineer, Guglielmo Migliorino: a harbour off the coast connected to land by an elegant suspension bridge and a marina club in the shape of a yacht. Today the Marina is one of the most important assets in the Mediterranean sea and was awarded the FEE's Blue Flag as well as 5 Helms by the Registro Italiano Navale. Ingemar is especially proud of having contributed to the success of the Marina by installing five floating piers which complete the port's layout. The pontoons forming the piers, 35 elements altogether with dimensions of 12x3m, are of the all-concrete type in reinforced concrete with a displacement of 16t and a freeboard of 60cm, and are anchored by piles. The deck is composed by staves made in WPC (Wood Plastic Composite) in line with the previous installations. Yachts up to 36m now moor along the new piers. By the end of 2016 Ingemar supplied and installed another pier which completed the marina layout. This 100 m pier includes pontoons of the same All Concrete type and is dedicated to superyachts. Marina D'Arechi's president, cav. Agostino Gallozzi, honoured Ingemar with an appreciative testimony of its contribution to the success of the new marina: *"We are truly pleased to vouch for the added value which Ingemar's pontoons have conferred on the Marina's moorings with their quality, stability and comfort."* A great working experience in a very cooperative environment enriched by the dedication and the enthusiasm of the people involved.





## A showcase for unique creations

Venice and the Lagoon are the ideal setting for installing special floating structures which can cope with these extreme tidal fluctuations and, because of their modest dimensions and a constant low level surface aspect, they also have a low environmental impact.

The anchorage system of poles, minimising interference with the delicate hydromechanical equilibrium of the Lagoon, has contributed to the continued success of floating structures in many situations. There are many installations by Ingemar in the Venetian lagoon, both in the tourist harbour sector as well as that of the floating structures for the Venetian water taxis and both tourist as well as working craft. The efficiency of floating breakwaters in a lagoon characterised by short length and contained wave motion, means that economic barriers can be employed which are both functional and have a low impact. The practicality of floating crossings and mooring pontoons for motor vessels has convinced the city's administration, as well as both the operators and the consumer, of their validity and encouraged technicians to adopt floating solutions for further innovative structures.

It took time to convince the Venetians and overcome their diffidence when confronted by changes so different from their traditions. Structures fixed to poles have centuries of history: it took 5 years of activity by Ingemar before the first structure was installed in a shipyard in Mestre in 1984!

In the years that followed these new features have gradually become more common in the services sector, for moorings and special structures. The following is a list of the more important installations: pontoons and floating breakwaters for recreational yachts at Sacca della Misericordia, at Consorzio Cantieristica Minore and at Diporto Velico Veneziano; landings for the Venetian vaporettos at Sant'Elena, Certosa, Tronchetto and Punta Sabbioni; floating pedestrian walkways on the Giudecca canal and the Canal Grande; piers at the Venice passenger terminal for tourists, floating pavilions for the Venice Architecture Biennale and pontoons for the Americas Cup and the Italian Coast Guard at Arsenale; bespoke pontoons for the Hospital entrance, for depot of the vessels which collect the city's rubbish, for access to hotels and residences and for the refuge port of MOSE (the Venice flood barrier project); at the floating port of Tronchetto with approximately 900m of pontoons, piers and a floating bridge for an ad hoc project for 250 working vessels. New tourist harbours in the Venetian lagoon have also installed Ingemar's elements: Marina di Portegrandi, the harbour at the Parco Archeologico e Naturalistico in the north lagoon, with 300 berths from 8-18m,





the marina of Vento di Venezia, created to salvage an abandoned area on the island of La Certosa with 320 berths up to 35m, Marina St. Elena, which can be reached on foot from Piazza S. Marco, with 150 berths up to 40m and an entire floating harbour at Marina Fiorita at Treporti with 130 berths up to 22m.

So as can be seen the Venetian Lagoon is splendid testimony to Ingemar's ability to construct over water and not only for the yachting sector.

Over the last three years the difficult economic situation, especially within the yachting sector, has prompted greater prudence in the private investment sector. However, the energetic marina of Vento di Venezia has countered this trend.

Created in 2003, this marina was responsible for the reevaluation of the island of La Certosa which is one of the Lagoons' most evocative sites and close to the vaporetto stop at Piazza San Marco.

The number of berths has increased over time with new mooring structures which have grown in parallel with its receptive capacity, services, dockyard and hangars. In 2014 new important projects were implemented: a barrier using high displacement breakwater elements, 4m widths and 20m lengths weighing 70t, ensure protection for the new pontoons and fingers from wave motion making this a true floating harbour facing Venice.

The new harbour, fully supplied with all services and destined predominantly for Mega Yachts, has 11 new berths up to 35m adding to the existing 300 berths from 10 to 35m.

In the public works' sector there have been numerous important ventures.

At the new headquarters of the ACTV Venezia (Venetian public waterbuses) a floating harbour on Isola del Tronchetto, protected by 600m of floating breakwaters, is nearing completion.

The new modules, 20x3m and 2.05m in height, have a displacement of 55t per element and a freeboard of 75cm: the surface finish is in exposed concrete.

Within the area protected by the breakwaters a series of pontoons and floating piers ensure moorings for the water taxis and the public transport vessels. All floating elements are anchored to the seabed by steel piles. Two projects to modernise the Venetian public transport moorings at the airport harbour have been completed. Firstly a series of floating fingers were installed to be used by passengers of the water taxis, and secondly a number of ad hoc platforms and pontoons for the use of the vaporetti. The platforms follow a complicated layout according to their functions and the canopy systems.

All the structures have extremely high performance characteristics and finishings according to their specific use and surrounding environment.

Ingemar has also constructed many new special landings for tourist vessels and tourists visiting the Lagoon.





## MONFALCONE (GO)

### **Canale Liesert: ad hoc layout for the Cantiere Alto Adriatico 1977**

Cantiere Alto Adriatico is the last installation carried out by Ingemar in the Canale Liesert at Monfalcone near Gorizia. This is the basin for a shipyard which specialises in boat restoration and construction and boasts a patented technology for building hulls in wood. A change in management at the Cantiere meant further effort on our part and necessitated a complete review of the original project (modifying the layout) notwithstanding having already produced a large part of the contract.

The results however are exemplary: 72m of floating pontoons parallel to the quai and anchored with vertical beams (partly constructed with slim size pontoons), with two 40m perpendicular floating pontoons of our reinforced tall series and anchored by piles up to 20m long.

### **Panzano basin: variety of structures for Lega Navale Monfalcone and Circolo Canottieri Timavo**

In the first half of 2018, Ingemar completed two major projects with important enlargements of boat landings for Circolo Canottieri Timavo and Lega Navale di Monfalcone: two historical customers of Ingemar, concession neighbors with the management determined to benefit from the Municipal Plan of Territory which provided for the possibility of extension of the concessions. Ingemar's assistance on these new projects began more than 4 years before and the initial lay-outs have been refined over time in search of the right balance between maximising the use of available water space, specific needs of the association members and identification of Ingemar products most suitable for the purpose. In the end, the flexibility of the Group's intervention once again made the difference and, given the variety of elements supplied, the new landings resemble an open-air showroom of the most current Ingemar production.



## LUKA VOLME - CROATIA

### **A floating marina in the bay of Banjole**

Istria, with its natural beauty combined with a rich history and splendid architecture, has become a popular destination for yachtowners in the upper Adriatic. Amongst the many destinations for yachting tourists the small marina of Mr. Branimir Mezulich, Luka Volme d.o.o., is especially favoured for its beautiful surroundings, peace and tranquility of the moorings and the welcoming assistance of the marina's personnel. Ingemar is particularly pleased to have contributed to the success of this initiative.





## TIVAT - MONTENEGRO

### The “Monte Carlo of the Adriatic” expands - a popular destination for the elite

Porto Montenegro, overlooking the spectacular Bay of Kotor, Unesco World Heritage site, was inaugurated in 2009 and has since grown at a steady pace with a series of new interventions intended for the completion of residences and the opening of the large hotel Regent Porto Montenegro. The marina was almost doubled with the extension of the main pier, the construction of a new fixed pier arm and the installation of new pontoons and floating breakwaters. Ingemar continues to be the trusted partner of investors and completed the previous installations, on behalf of the Montenegrin company Yu Briv, main contractor of all the interventions in Phase 2, with about 600 meters of new steel piers with concrete floats with width 2.50, 3 and 4 meters to accommodate large yachts up to 25m. New floating breakwaters, on the other hand, were provided directly to Adriatic Marinas doo. With these latest supplies, Ingemar range of products and technical solutions is complete in the splendid showcase of this amazing project of residential development and the port. The marina is largely protected by floating breakwaters, the boats are moored at floating pontoons and piers of different sizes and functions, the quays are surrounded by floating and fixed structures made to measure, the berths are served by service bollards, fire terminals and pump out systems for waste waters. Ingemar is proud that this marina, equipped with its floating structures and “made in Italy” service networks, has been awarded with the 5 Golden Anchors by the Yacht Harbor Association (TYHA) and received the title of “Super Yacht Marina of the Year 2015”.



## LOCARNO - SWITZERLAND

### Floating breakwaters and new pontoons for Cantiere Nautico Di Domenico

Locarno, on the Swiss side of the upper Lake Maggiore, is a lively town loved by tourists and boat enthusiasts. In 2017 the historic Di Domenico yard decided to completely restructure its old harbor, exposed to the short and steep waves that are formed by the wind from the North.

The experience and the precious collaboration of the technicians of the shipyard allowed Ingemar to supply a series of floating breakwaters and piers anchored with large piles fixed to the lake bed, that have fully satisfied the customer's expectations.





## SAUDI ARABIA

### Newly tailored landings for the Saudi sea borders

We are still working on the coast of Arabia on behalf of the Saudi Government: a task of great prestige and responsibility. We have built numerous new sea landings, having explored the 2,640 kilometers of coasts of the Red Sea and the Gulf to check the conditions of use of each project site in order to settle on the most suitable technical solution for each of them.

After the success of the first series of installations for boats up to 12 m long, Ingemar was charged with the task of designing and supplying new moorings for larger vessels, with fingers able to accommodate boats up to 16 m length. Diverse site conditions encountered (cliffs, beaches, reinforced concrete quays, islands not accessible with standard lifting machinery) required the use of different solutions with regard to the installation method, adapted each time to the specific site conditions. Piles fixed in seabed and sliding pile guide devices, vertical beams fixed to the quays or connecting horizontal rods anchored to the reinforced concrete plinths placed on the shore, represent the range of different anchoring solutions, designed ad hoc for each installation, which allow to adapt a single landing to the features of the installation site.

The structures are made of aluminum alloy for marine use or in galvanized and painted steel, depending on the size of the boats and the local marine weather conditions. Similarly, the type of floating units, in concrete or in





rotational polyethylene with expanded polystyrene core, varies according to the specific conditions of use.

The most important common characteristics of all the installation are the high endurance of the structures intended for "heavy duty" applications in areas that are not perfectly protected, and by the modularity of the lay-outs that allow for potential expansions, modifications or changes of the installation sites, possible even at an advanced stage of the project, in order to respond promptly to the customer requirements. The landing facilities, designed to be easily transported in containers, were built in Italy, in the Casale sul Sile factory, on the express wish of the client: a further signal of appreciation of the quality of the "Made in Italy" Ingemar products and tribute to the design skills and general contractor capability of Ingemar on the difficult but promising Saudi market. Starting from 2016, for the first time in Saudi Arabia, some installations subject to significant wave motion are protected by floating breakwaters, consisting of large monolithic elements in reinforced concrete with dimensions of 20x4x2m and 68t displacement. The breakwaters were made in Italy, transported by ship to the port of Jeddah for installations on the shores of the Red Sea and that of Dammam for the installations in the waters of the Gulf and eventually by truck to the installation sites.

This exciting experience, which sees us supporting our client as true technical partners, continues, is rewarding us for the Group technical and operational abilities but also for the great passion with which we have faced new challenges and responsibilities.





## PROTECTED AREAS

### Building on the water with respect for the environment

On the mainland the lakes, rivers and lagoons are natural environments, rich in resources for tourism, sport and recreation. However, they are often very precious contexts from a naturalistic point of view that require non-invasive interventions in harmony with the surrounding territory. The floating structures, light and almost transparent on the water, made of natural, inert and recyclable materials, ensure minimum impact on the territory and are the best solution for environmentally friendly installations. The floating paths on the lakes of Resia and Revine, the mooring points on the Cavanella canal in Caorle and the shore dock in the Venice Arsenal are examples of our latest projects in these delicate natural areas.



## PARATICO - LAGO D'ISEO

### A small floating marina for Cantiere Bertelli

This was a made to measure project using breakwaters, pontoons, and service platforms for the historic Cantiere Bertelli at Paratico which over the years has integrated their original activities as boatbuilders with storage hangars, with a small but excellent harbour on Lago d'Iseo. A large covered showroom and a modern restaurant complete the services of this yachting marina which has become a popular destination for both the local and international sailing community.

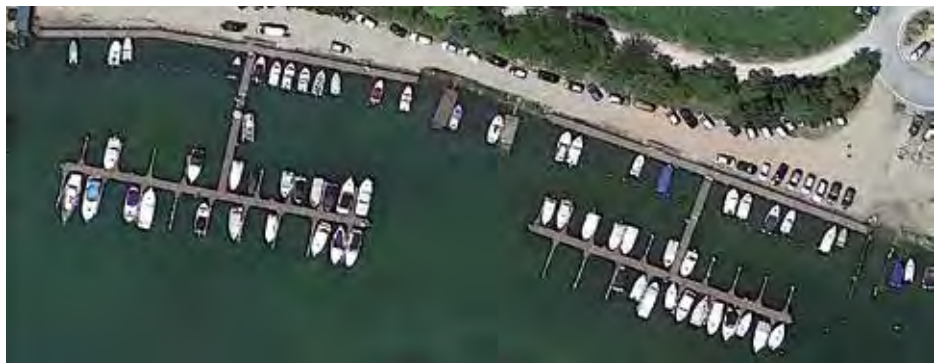


## S. GIORGIO DI NOGARO (UD)

### Reorganisation of the mooring at the Circolo Nautico Laguna San Giorgio

It is infrequent for amateur sailing clubs, which for years have existed using dysfunctional homemade moorings, to decide to rearrange their moorings and turn to the experience of Ingemar. Nor is it often that suppliers with whom we frequently work, such as Opemar, will take the helm of a commission and Ingemar instead becomes their supplier!

At the end of 2014, to create moorings for 120 yachts from 6-10m in the lagoon between Marano and Grado, two landings were installed which from above seem like 2 large letter Hs, both characterised by a narrow pontoon (160cm) so as to minimise any obstruction. Both landings are composed of a fixed pontoon parallel to the quay supported by steel piles, a central floating arm perpendicular to the pier and a floating pontoon forming a T-shape. The landings are completed with mooring fingers of 6-8m.





## INGEMAR PRODUCTION PLANT

### Ingemar's plant at Casale sul Sile expands production facilities for large reinforced concrete elements

Since 2003 the Ingemar group's production has been concentrated at its factory at Casale sul Sile, halfway between Treviso and Venice, whereas the offices in Milan continue as the administrative and financial centre. The production site, owned by Ingemar T&S, comprises a surface area of 2,000 sqm of offices and plant and a further 5,000 sqm for the loading, moving and storage of materials as well as the construction of prefabricated elements within dedicated retractable warehouses.

Growing demand for pontoons and floating breakwaters in reinforced concrete, combined with tight schedules for completing projects, has led to increasing the range of production facilities and equipment dedicated to these huge elements. Parallel to production equipment for the fabrication of the pontoons up to 12x3x1,20m, a new prefabricated depot has been installed housing a large modular mould for the production of breakwaters 20x4x2,40m and wider. Furthermore, two additional formworks for pontoons up to 12x3x1.6 m have been installed inside the factory.

A new construction crane covers almost the entire casting yard area so as to move materials on stock and to facilitate the preparation of castings. This was an important investment for the company, driven not only by the consideration that there is a growth in demand for these huge modules, but also by the conviction that only within a specially equipped area using a specialist workforce supervised by technical personnel it is possible to assure quality and the highest standards that are essential for the production of these large and complex structures.





## EVENTS ON THE WATER

### Ingemar's pontoons boost nautical shows, sport events and yacht races

After the years of decline in the yachting industry there is a great desire for recovery and many signs of improvement and Ingemar, as a technical sponsor, provided valuable support for organizers of the most diverse initiatives. The adaptability and strength of Ingemar floating modules made it possible to optimize the layout of the water exhibition areas of Genoa and Venice boat shows and the mooring structures of important sailing regattas, such as the TAN Trophy of the Livorno Naval Academy, some stages of the Louis Vuitton Cup and the The Gargano Regatta. In recent years numerous additional events were added, such as the provisional installations for Blu Roma at the port of Ostia, for the vintage boats rallies organised by Riva shipyard in Sarnico and in Venice, for the world championship of Canoa and Paracanoa on Idroscalo in Milano, for the Primavera cup and the National Youth Championships in 2016 in Trieste. In 2017, new sponsorships were added: for the challenges of the Venice Laser Cup and the International Optimist Class Team Race, those of the European Miniatura Championship and the Offshore World Championship of Motonautica di Chioggia. Ingemar floating structures were even chosen to provide mooring to the megayachts on display during the celebrations for the 50 years anniversary of the Ferretti Yachts Group in Venice.

