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Dredging, Marine & Environmental Solutions

PERGENOVA BREAKWATER

PORTS of GENOA
VADO LIGURE ■ SAVONA ■ PRA' ■ GENOVA

New Genoa Breakwater

The New Genoa Breakwater is a unique work for its engineering innovation, dimension, and positive impact on the city and on the Italian system, besides being the greatest intervention ever to be built to strengthen Italy's port system. With the completion of this work, Genoa is poised to become an important centre for large ships and a major logistics hub for European trade.

Italy's largest port expansion and the deepest dam in Europe

WHAT IS A BREAKWATER?

It is an embankment work to limit the wave movements in front of the port. Today, almost all worldwide ports are protected by breakwaters that allow large ships to safely carry out their manoeuvres.

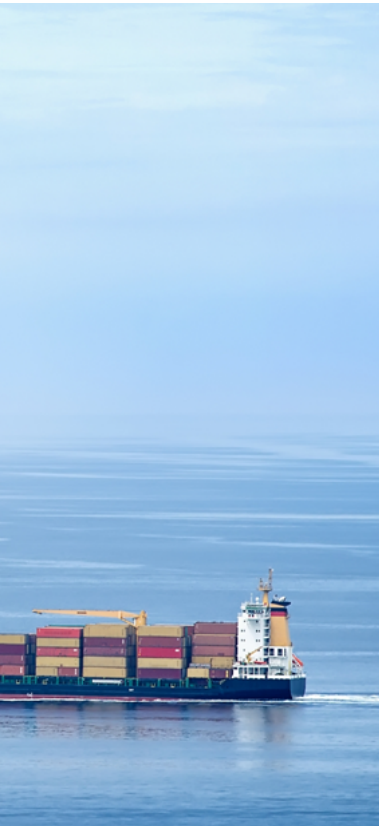
Europe's deepest breakwater can be found in front of the Port of Algeciras, in Spain, reaching a depth of 40 metres. A record that will be broken by the New Genoa Breakwater, which will reach instead a depth of 50 metres.

WHO WILL BUILD THE WORK?

The New Genoa Breakwater construction was commissioned by the Western Ligurian Sea Port Authority in October 2022 to the "PERGENOVA BREAKWATER" consortium, led by the Webuild Group with the participation of Fincantieri, Fincosit and Sidra. The first phase of the works will end in 2026; the breakwater will be completed in 2030 with further interventions that will allow an operational increase of all Sampierdarena terminals.

Some 1,000 people will participate in its construction.

The new breakwater will measure 6,200 metres in length and will employ 1,000 people for its construction



THE PROJECT

A LOOK INTO THE DEEP SEA: INNOVATION, TECHNIQUE AND TIMING

The New Genoa Breakwater is an impressive, unique work from an engineering perspective: its base rests on seabeds at a record-depth of 50 metres. When finished, it will reach an overall length of 6,200 metres. To build the breakwater base, 7 million tons of rock material will be used. Prefabricated reinforced concrete elements will be then placed on it, made of almost 100 cellular caissons.

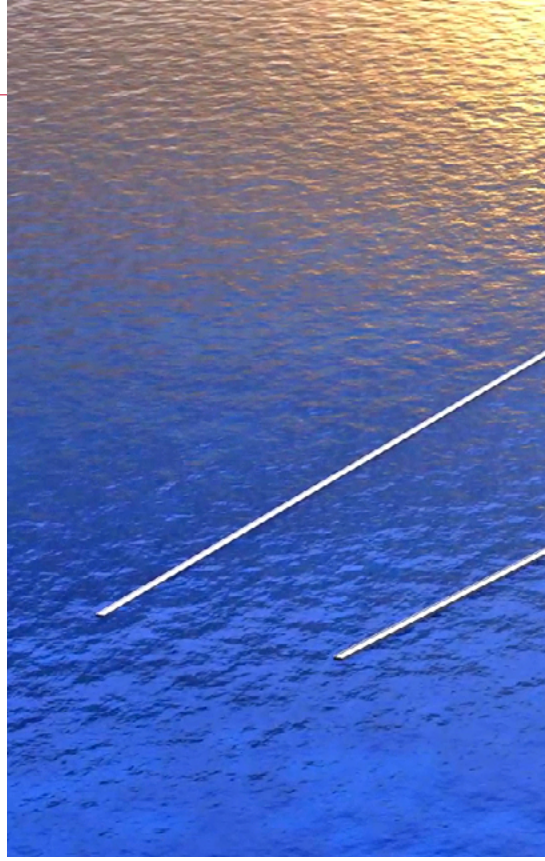
The caissons will measure up to 33 metres (like a 10-storey building), and will be 35 metres wide and 67 metres long.

The new breakwater will allow large container ships, over 400 meters long and 60 meters wide, and “World Class” cruise ships to enter the port of Genoa. Works will be divided into 2 phases. During the first phase, the new eastern entrance will be built, works ending in 2026. Being 300 metres wide, it will allow ships the required space to carry out their manoeuvres. During the second phase, ending in 2030, the Sampierdarena channel will be completed, which will reach 400 metres in length. There will be an increase of all operations and of the competitiveness of all terminals of the historical commercial basin.

HOW WILL THE PORT OF GENOA CHANGE?

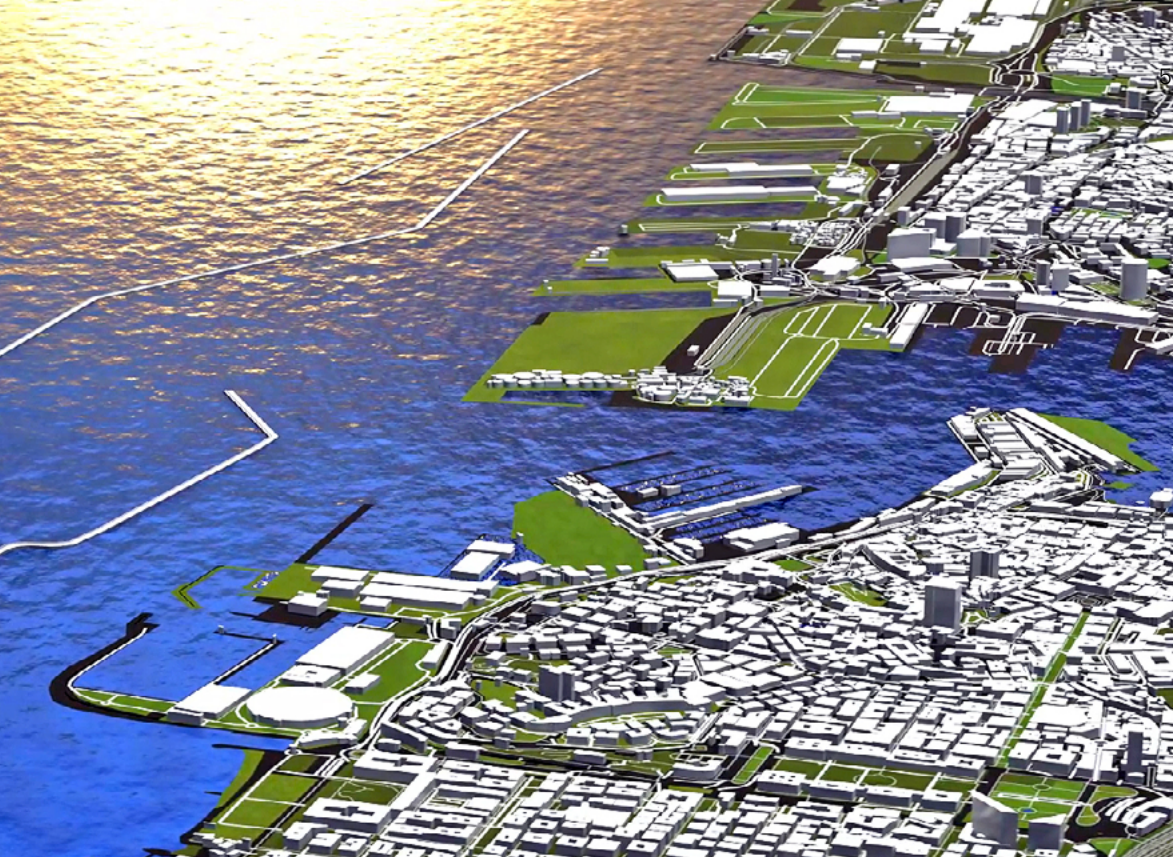
When the New Genoa Breakwater is completed, the Port of Genoa will have a turning basin of 800 metres, allowing large ships to carry out safe manoeuvres. An enormous water plane will be created in which it will also be possible to separate transit flows with a differentiated approach, dividing, for example, trade traffic from cruise traffic, while also improving the safety of maritime operations.

The material from demolishing the old breakwater is going to be almost entirely used



SUSTAINABLE LIKE THE SEA. A CIRCULAR ECONOMY WORK

The innovative construction project foresees building a work that was created to protect basins and port structures from climate change, an actual embankment inside the sea.
Almost all material from the old breakwater's demolition is going to be reused. This is done with a circular economy perspective, therefore minimizing environmental impacts during construction. At the same time, it will greatly reduce transport and material disposal operations, and therefore fuel consumption.
The remaining materials from marble quarries will also be partially reused, in a circular economy perspective.
With regard to concrete used to build celluar caissons, a special mix has been created to significantly increase water resistance.



Environmental impacts of the breakwater's construction are minimized

To build the cellular caissons, some highly specialised production plants will be concomitantly used. Once the caissons are waterproofed they will be transported via sea in their design position, then sunk and filled with recycled inert material from the old breakwater's demolition. An advanced monitoring sensor system will allow to control the infrastructure both when it is being built and when it is completed.

GENOA, THE GLOBAL EXCHANGE HUB

THE PORT OF GENOA

The Port of Genoa, managed by the Port Authority System that also supervises the maritime activities of the Pra', Savona and Vado Ligure basins, is a strategic asset for maritime trade and for Italy's economy.
The four port basins develop along 50 km of shore, 30 private terminals, over 700 hectares of port area, 22 km of quays. Numbers that make it the leading maritime hub for 80% of Italian manufacturing companies.
Currently, 66 million tons of goods every year are managed by these port stops. They cover 33% of Italian gateway container traffic, confirming itself as the first Italian port and sixth European port with regard to container gateway traffic, and second Italian passenger port. These significant numbers are destined to be higher still with the construction of the New Genoa Breakwater.

The new breakwater will ensure an economic benefit of 4.2 billion euros

GENOA, THE HEART OF THE MEDITERRANEAN

The New Genoa Breakwater will contribute to strengthening Genoa's role and its port as Mediterranean's strategic hub. Just like Rotterdam is currently the most important commercial port in Northern Europe, Genoa will also become, when completed, the strategic hub of Southern Europe.
The construction of the new breakwater will in fact ensure an annual progressive growth of commercial traffic, calculated to be between 22% and 30% in the 2027-2030 period, when the breakwater will be completed. In fact, the Port Authority System estimates that when the new breakwater will be completed it will bring an economic benefit of 4.2 billion euros, in terms of greater revenue from container traffic, rights and port taxes.

THE NEW ROUTES FROM ASIA TO GENOA

The breakwater will increase the competitive capacity of the Port of Genoa, mainly intercepting traffic from Asia

Today, the main global trade routes are navigated by evermore larger ships, of 400 metres in length, which can dock only in ports that are adequately equipped to contain them. The phenomenon is defined “naval gigantism”. The new breakwater will allow the Genoa port to contain these sea giants and compete with the major European ports, capitalizing on the optimal geographic Mediterranean position advantage, between Asia and the Americas.

Genoa is in fact much closer to the large Asian ports compared to ports of Northern Europe. If we take one of the Northern European main ports, the average travel time from Shanghai to Genoa is 24 days, against the 29 days needed to reach Rotterdam; From Yokohama to Genoa, it takes 26 travel days against the 31 days required to go to Rotterdam; And again, from Singapore to Genoa, it requires 18 days, against 23 days to reach Rotterdam.

An inferior distance of approximately 1,000 nautical miles that - once the new infrastructure is ready - will become a significant competitive advantage for the city and its territory.

GENOA IN THE HEART OF EUROPE

A LOGISTIC NODE ALWAYS AT THE VANGUARD

The strength of the trade strength of the Port of Genoa is also ensured by the large infrastructure supporting the Port.
The Webuild Group, after having built in record time the Genoa San Giorgio Bridge, is today engaged in building the Terzo Valico dei Giovi - Genoa Junction, the high speed/high-capacity railway line that from the port will allow goods and people to travel in all Europe. The work is part in fact of the Rhine-Alps corridor of the European TEN-T networks, which from Genoa reaches Rotterdam, touching Europe's production lines.

Large infrastructure for Genoa's future: Genoa Bridge, Terzo Valico and New Genoa Breakwater

AN INTEGRATED INFRASTRUCTURAL SYSTEM

On one side, the New Genoa San Giorgio Bridge built by Webuild in record time; on the other, the Terzo Valico dei Giovi - Genoa Junction One project, the high speed railway line that will connect Genoa to the European network that reaches Rotterdam; and now, the New Genoa Breakwater.
The presence of the new bridge and the high-speed railway line will provide a multiplying effect on the economic impact generated by the creation of a new breakwater in the territory: these three works will jointly contribute to giving life to a maxi logistics hub, and more generally to an infrastructural one, capable of nearing Genoa to Europe. The Port of Genoa has in fact a favourable positioning, even on dry land. The distance on land between Genoa and the great continental cities like Zurich, Stuttgart and Paris is less than the one dividing these cities from other Mediterranean ports like Valencia, Barcelona, and Marseilles.

PORTS OF GENOA

The ports of Genoa, Pra', Savona and Vado Ligure - all under the "Ports of Genoa" brand - are currently the most significant Italian port hubs in terms of volumes moved, production diversity and economic value: the Mediterranean terminals of the Rhine-Alps corridor, the entrance to Southern Europe. Since 2017, the four ports are administered by a single Port Authority committed to ensuring services with higher standards to operators and clients, strengthening port and dry port infrastructure, making goods flow more efficiently, perfecting the system's organization with technological innovation. Furthermore, the Western Ligurian Sea Port Authority pursues the objective of improving the port's efficiency and increasing employment and economic development, while favouring the cooperation between nearby ports and procedural simplification.

portsofgenoa.com

WEBUILD

Webuild is a major global player in the construction of large complex infrastructure. The Group ranks first globally for the construction of infrastructure in the water sector. Since 2018, it is also among the top 10 companies by revenue generated from environmental services. The Group works globally, with a presence in over 50 nations, and 2022 revenues equalling 8.2 billion euros, 70% of these earned on the international market, with 83 thousand employees (direct and indirect) of over 100 nationalities and a supply chain of over 17,500 companies.
From bridges to motorways, from civil buildings to dams, from metros to railways: Webuild has signed some of the world's most iconic infrastructural projects, like the New Panama Canal, the Long Beach International Gateway, the Second and Third Bridge on the Bosphorous, Rome's and Milan's metros and Copenhagen's Cityringen, besides numerous high-speed sections in Italy.

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FINCANTIERI

Fincantieri is one of the world's largest shipbuilding groups, the only one active in all high-tech marine industry sectors. It leads the construction and transformation sector of cruise, naval and oil & gas and wind offshore vessels. It is present in the wind-energy, oil&gas, fishery units and special ships compartments, and also in the infrastructure sector. It participates in building this work with the specialised company Fincantieri Infrastructure Opere Marittime that, due to the multi-year experience gathered in the specific maritime infrastructure sector, is engaged in building the main and most complex works for developing and strengthening Italy's port infrastructures.

fincantieri.com

FINCOSIT

Fincosit, founded in 1905, is a Company that has been actively and successfully working for over half a century in the maritime sector. A pioneer in building large cellular caissons in reinforced concrete, it has consolidated, over the years, its leadership in this niche sector with over 2,700 caissons built to this day. In time, it has developed an impressive quantity of civil engineering case studies and project solutions, and more specifically maritime works.
Our clients benefit from a premium construction tradition of over a century.

fincosit.it

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Project editorial coordination
Corporate Identity and Communication Webuild

September 2023