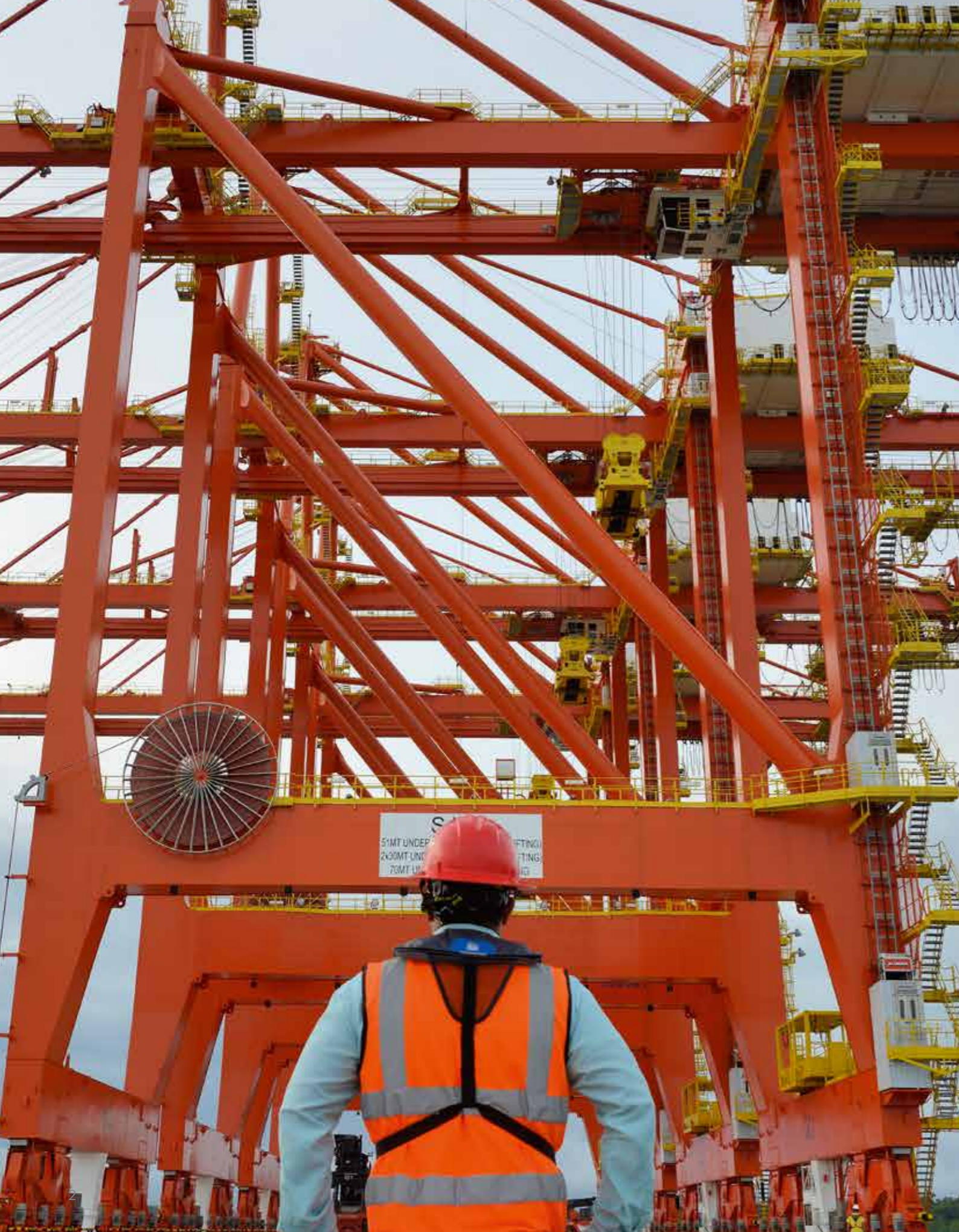


**FOR
SHORE**
BY SOLETANCHE BACHY



Ports





About us



Shipping accounts for 80% of global transportation of goods and is growing rapidly. There are numerous port infrastructure projects on every continent, including the creation of **new** terminals, the **extension** of existing quays and the **deepening** of operational ports, etc.

Ports are a key component for global trade and can be a key resource for local economies. Therefore, ForSHORE strives to link regions by sea with the construction of modern, efficient port hubs.

To achieve this, ForSHORE assists its clients with their port infrastructure construction and repair works when facing major geotechnical challenges.

Utilising Soletanche Bachy group's extensive port experience, we provide the best **risk management** related to the **ground-infrastructure interaction** to build resilient, lasting ports.

OUR VALUES

Reliability

ForSHORE continually strives for excellence, ensuring reliability and durability of its constructions.

Agility

ForSHORE demonstrates its agility through its adaptation to each situation and proposes different solutions depending on its clients' needs.

Entrepreneurship

ForSHORE works with its clients as a dedicated partner, taking a joint approach to achieve a shared objective.

Innovation

ForSHORE can draw on Soletanche Bachy's R&D capabilities, equipment, and innovative digital solutions.

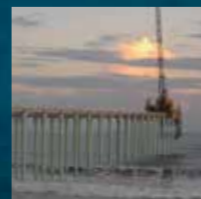
ForSHORE
offers a full range
of port infrastructure
capabilities



QUAYS



DRY DOCKS
AND LOCKS



JETTIES



QUAY UPGRADE
deepening,
widening



FOUNDATIONS
for platforms,
storage tanks,
buildings



SEA OUTFALL/
INTAKE



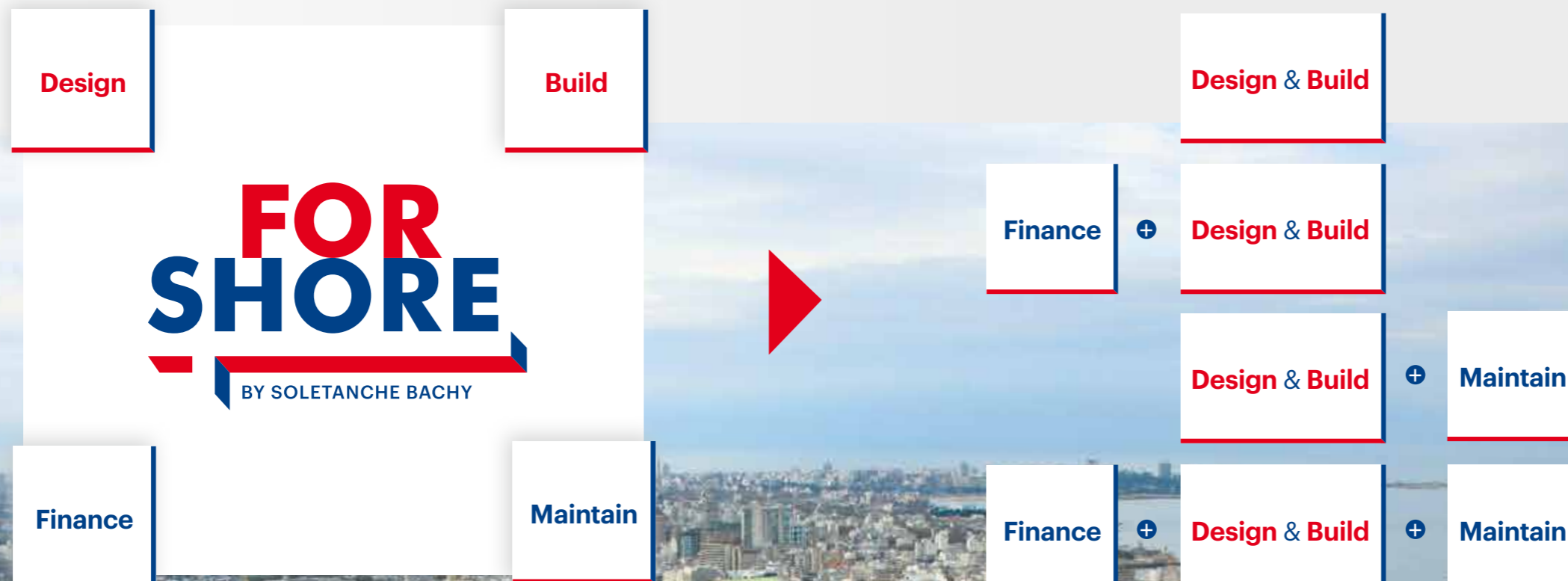
BREAKWATERS



DOLPHINS

our offer

ForSHORE operates as a General Contractor to deliver all four stages in the development of port infrastructure projects: financing, design, build, and maintenance.



THE ADVANTAGES OF ForSHORE

Geotechnical expertise and quality standards

ForSHORE draws on Soletanche Bachy's extensive technical expertise to develop solutions adapted to all types of soils, whilst maintaining the Group's high standards of quality.

Providing a global vision for projects

ForSHORE enables the development of turnkey projects, offering tailored solutions for its clients, whatever the contractual framework.

Adaptability

ForSHORE evaluates the context of each project (market, cultural aspects, environment, complexity, etc.) and can offer smarter alternative solutions.

Financing

For those leading large-scale port projects, raising financing for works on existing or new infrastructure can be a difficult process.

ForSHORE brings you the support you need to facilitate this key step in your project. We draw on our contacts within VINCI Construction and our parent companies, to help you source the financing.

ForSHORE is neither a bank nor an investor, but does offer two services:

Identification of investors who might take a share in port infrastructure

We put our clients in contact with:

- ⊕ Investment funds
- ⊕ Venture capitalists
- ⊕ Sovereign wealth funds

Sourcing of credit solutions

We can solicit:

- ⊕ Financing on the markets, through bonds to finance infrastructure projects or corporate bonds
- ⊕ Financial institutions (banks)



The choices made during the design phase have a direct impact on the future maritime structure, its usage, its lifespan, and its ability to be adapted or enlarged.

The commissioning authorities for the construction or repair of port infrastructure projects must therefore work with specialists who can assist them with making the right decisions.

Our approach

With ForSHORE, you have the benefit of Soletanche Bachy's design offices, present within the Group's subsidiaries worldwide, to build port facilities adapted to your needs and constraints.

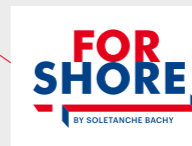
To offer you the best geotechnical processes and solutions that correspond to your project, ForSHORE takes on board a range of parameters from the design stage:

Environmental factors

- Soil conditions • Climate
- Tides • Sedimentation
- Wind

The specifics of the port structure

- Project vessel size • Life expectancy
- Handling equipment
- Services • Storage facilities
- Corrosion disposition • Mooring



Purpose of the port

- Oil & gas • Minerals • Containers • Cruise liners • Roro • Bulk and Goods



Design

our offer

ForSHORE acts as a General Contractor for the construction of your new port infrastructure, or to remediate, adapt or upgrade existing facilities. This means you can rely on one company to handle your port project from A to Z.

ForSHORE can assist you with the construction of all types of maritime structure:

Quays

- ⊕ Decks on piles
- ⊕ Bulkhead walls: diaphragm walls, prefabricated walls, sheet piling, or combi-walls
- ⊕ Gravity walls: closed or open cells, concrete caissons or concrete blocks

Jetties

Related facilities

- ⊕ Dry docks
- ⊕ Locks
- ⊕ Breakwaters
- ⊕ Sea water intakes/outfalls
- ⊕ Bridges
- ⊕ Foundations for storage platforms, buildings and tanks

ForSHORE utilises Soletanche Bachy's presence in more than 60 countries, the support of the international Major Projects Division and the Group's expertise in soils and full range of geotechnical solutions.

Build and upgrade



Maintain

Port infrastructure represents a major financial investment and is often a source of economic activity for an entire region. Ensuring its correct day-to-day operation and optimising its lifespan are key challenges.

This is why ForSHORE proposes maintenance services for all types of port infrastructure, through the following three stages:

Stage 1 • Inspection

Our teams can carry out all types of inspection:
 • visual • aerial • underwater • radar • endoscopy • bathymetry • physical test • coating measurement • etc...

Stage 2 • Analysis

ForSHORE's experts carry out evaluation of data collected during the inspection, in order to make predictions of deterioration.

Stage 3 • Planned replacements and repairs

- Depending on the lifespan of the elements making up the port infrastructure, ForSHORE replaces them at the predicted date:
 - cathodic protection • paint on moorings
 - protective coating on piles • road surfaces, etc...
- ForSHORE carries out the necessary repair work depending on the Stage 1 Inspection and Stage 2 Analysis.

Port of Sept-Îles Canada

The port of Sept-Îles on the northern bank of the Saint Lawrence River 650 km downstream from Quebec City is ideally located along one of the major shipping routes between North America, Europe and Asia. It is one of the largest bulk ore ports in North America. In 2014 the port acquired a multi-user dock that can accommodate Chinamax VLOCs. Between October 2012 and June 2014, Bermingham and Balineau – respectively a local and a specialist subsidiary of Soletanche Bachy – combined their marine works capabilities to install the piles to support the main wharf and the approach jetty. The teams paid careful attention to the many species of marine mammals living in the area and introduced a series of systems to reduce noise during the works.

- ⊕ Owner
Port of Sept-Îles
- ⊕ Main contractor
Pomerleau



Port of Aguadulce Colombia



Buenaventura, home to the port of Aguadulce, Colombia's main port on the Pacific coast, is a strategic city. Most of the Andean country's exports and imports pass through the port, which was recently upgraded in a project that sets a standard for the entire region. Soletanche Bachy helped achieve the modernisation by working within the SBCC joint venture and designed and built a 600-metre container terminal (SPIA). This was followed by a 250-metre bulk terminal (Boscoal), where the first cargo ship docked in December 2016 carrying maize loaded at the Louis Dreyfus terminal in the Argentinian port of Bahía Blanca. In Buenaventura, several innovations were introduced to boost the efficiency and quality of the onshore and offshore works, optimise costs and accelerate the construction process.

- ⊕ Owners
Sociedad Puerto Industrial Aguadulce for SPIA, Compas for Boscoal
- ⊕ Main contractor
SBCC joint venture (Soletanche Bachy Cimas – Soletanche Bachy International – Concreto)





Port of Brighton Trinidad and Tobago

With its sheet piling in disrepair and its structure weakened by corrosion, Berth 2 at Port of Brighton near the city of La Brea in the southeastern part of the island was in need of repair. Rising to the challenge, Soletanche Bachy International and local subsidiary Soletanche Bachy Cimas worked for 25 months to build a 352-metre retaining wall about five metres in front of the existing berth and a heavy loading area resting on piles. The work – part of the Group’s range of infrastructure solutions and services for the oil and gas industry – was successfully completed in time for British Petroleum to launch its new Juniper offshore platform from Berth 2 in January 2017.

- + Client
National Energy Corporation of Trinidad and Tobago
- + Main contractor
Soletanche Bachy International – Soletanche Bachy Cimas joint venture



Puerto Brisa Colombia

The joint venture formed by Soletanche Bachy International, Soletanche Bachy Cimas, Conconcreto and Dredging International built the 1,180-metre piled jetty between November 2011 and December 2013, which was commissioned in 2014. It is connected to a 360-metre long, 16-metre wide quay and enables coal carriers to be loaded far offshore. Puerto Brisa, on the Atlantic seaboard, is a major factor in the industrial and commercial development of a region with a wealth of mineral deposits.

- + Owner
Sociedad Portuaria Puerto Brisa
- + Main contractor
Soletanche Bachy International – Soletanche Bachy Cimas – Conconcreto – Dredging International joint venture





Guillermo Brown jetty Argentina

Built to keep pace with the country's growing energy requirements, the Guillermo Brown thermoelectric power plant needed facilities to receive liquid fuel supplies. These are located at the Puerto Galván site and include a 17-km pipeline and an unloading quay. In November 2013, Siemens awarded the design-build contract for the jetty and associated berthing and mooring facilities to the SBA – JML UTE joint venture. The work consisted in building an offshore trestle with a length of about 800 metres and a quay comprising four berths, an operating platform and four moorings.

- ⊕ Client
Siemens
- ⊕ Main contractor
SBA – JML UTE (Soletanche Bachy Argentina – Soletanche Bachy International – Juan M. Lavigne y Cía) joint venture



Drydocks World Dubai, United Arab Emirates

Dubai, one of the world's leading ports, is also a shipbuilding hub. Dubai Drydocks, which long specialised in ship repair, branched out into construction with the Safina project in 2005. A new dry dock for ship being built and repaired was commissioned in the summer of 2006. The lift, built on a general contracting basis by the Soletanche Bachy – NSCC joint venture, enables the vessel to be moved vertically and horizontally and operates like a slipway but incorporates a reverse hydraulic process. The structure is made up of a transfer platform set above sea level, an adjacent basin that opens to the sea, two abutments and a sill, a quay platform, two gates and two mooring dolphins.

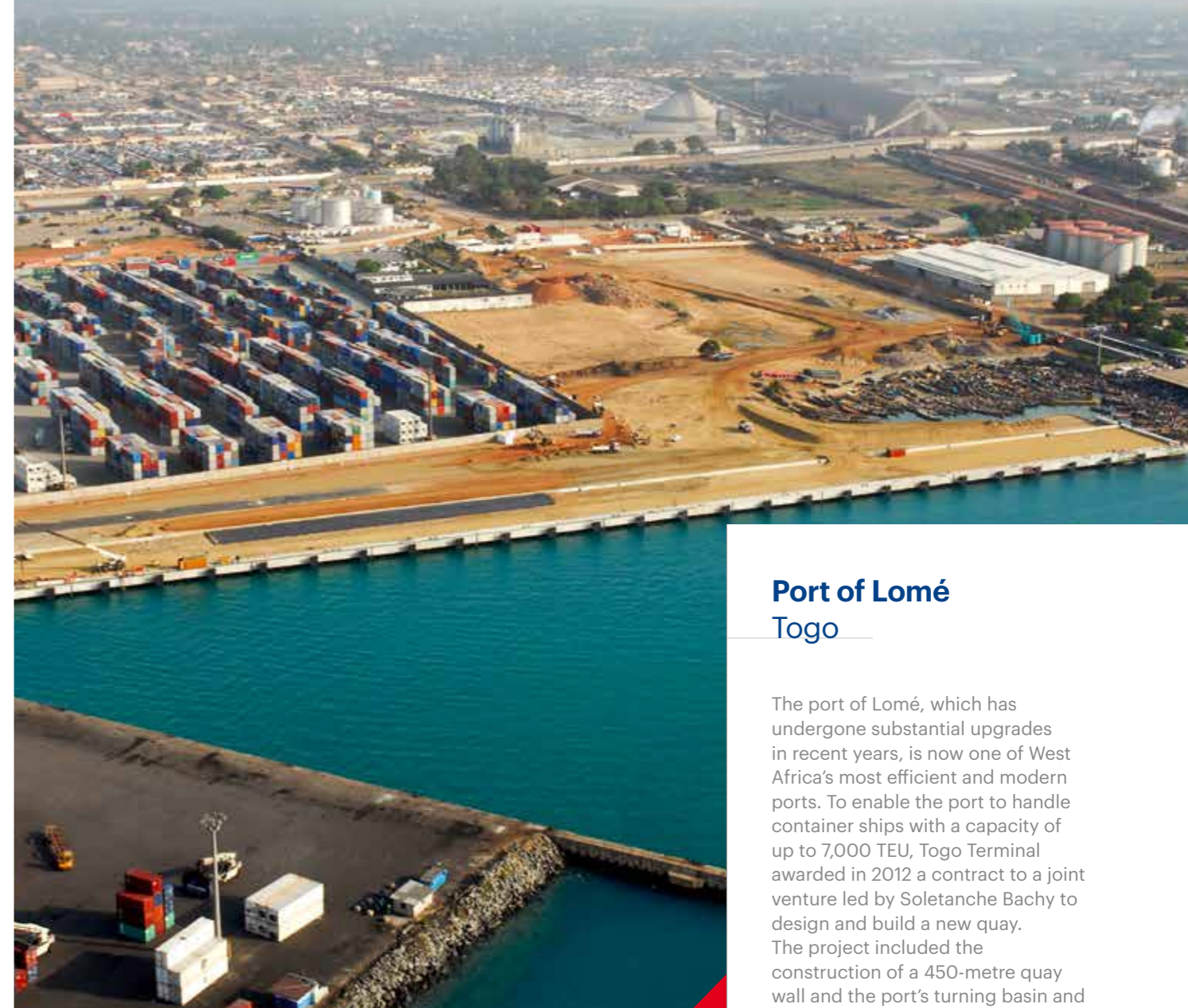
- ⊕ Owner
Dubai Drydocks
- ⊕ Main contractor
Soletanche Bachy – NSCC joint venture



Jebel Ali Port Dubai, United Arab Emirates

The Jebel Ali Port, the region's main container port, increased its capacity to 19 million TEU in 2014 by adding a third terminal. The 1,860-metre long, 17-metre deep quay with a 70-hectare storage yard can accommodate the next generation of Post-Panamax container ships. DP World awarded the contract to the TOA – Soletanche Bachy joint venture to design, build, commission and equip the terminal infrastructure. In addition to building the diaphragm wall and barrettes, Soletanche Bachy undertook ground improvement works to support temporary and permanent backfill for the quay wall and supplied and installed ground anchors.

- + Owner
DP World
- + Main contractor
TOA Corporation – Soletanche Bachy International joint venture



Port of Lomé Togo

The port of Lomé, which has undergone substantial upgrades in recent years, is now one of West Africa's most efficient and modern ports. To enable the port to handle container ships with a capacity of up to 7,000 TEU, Togo Terminal awarded in 2012 a contract to a joint venture led by Soletanche Bachy to design and build a new quay. The project included the construction of a 450-metre quay wall and the port's turning basin and access channel.

The combi-wall quay was built with 30-metre long large-diameter (1,412 mm) metal piles and sheet piling. The access channel was dredged to a depth of 15 metres and the turning basin was built. More than a million hours of work were required to complete the project and it featured very strong involvement of Togolese and other African workers and supervisory staff.

- + Owner
Bolloré Africa Logistics subsidiary Togo Terminal
- + Main contractor
Soletanche Bachy – Sogea-Satom – EMCC joint venture



Port of Cotonou Benin

The capacity of the port of Cotonou, often described as the “economic lungs of Benin”, was increased under programme designed to boost access to the country’s market. As part of the extension project, Soletanche Bachy was awarded a contract in August 2009 to design and build a 660-metre long quay with a draft of 15 metres. Carried out by a joint venture that also included Sogea-Satom and Dredging International, work on the south quay, like that on the north quay, consisted in building two parallel diaphragm walls connected by a layer of tie rods, followed by general earthworks, civil engineering, quay equipment (apart from rolling stock) and dredging.

- + Owner
Port Autonome de Cotonou
- + Main contractor
Soletanche Bachy International – Sogea-Satom – Dredging International joint venture

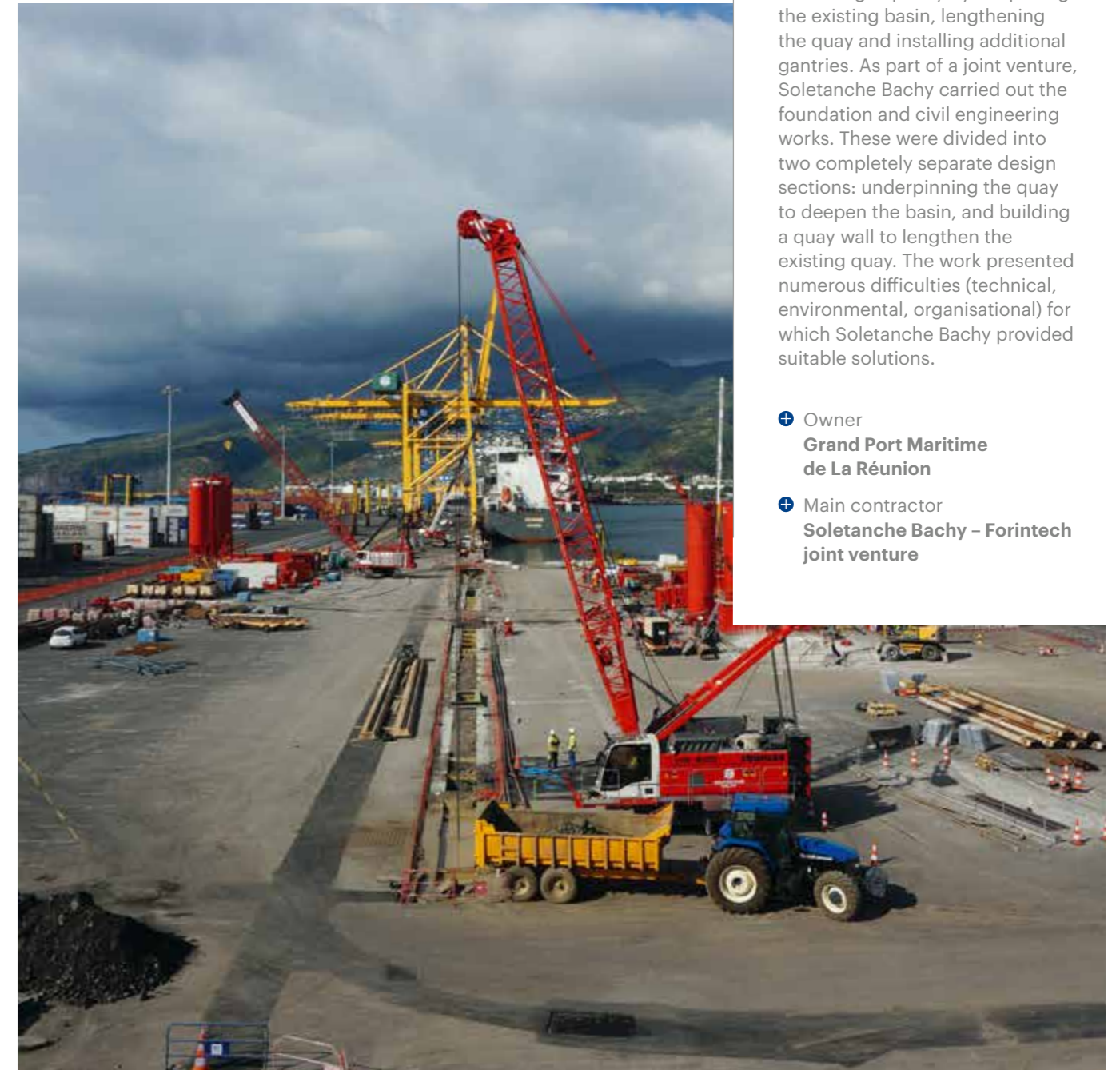


Port Réunion France



The Grand Port Maritime de La Réunion handles 99% of the island’s external trade. The port authorities decided in 2014 to increase its berthing and offloading capacity by deepening the existing basin, lengthening the quay and installing additional gantries. As part of a joint venture, Soletanche Bachy carried out the foundation and civil engineering works. These were divided into two completely separate design sections: underpinning the quay to deepen the basin, and building a quay wall to lengthen the existing quay. The work presented numerous difficulties (technical, environmental, organisational) for which Soletanche Bachy provided suitable solutions.

- + Owner
Grand Port Maritime de La Réunion
- + Main contractor
Soletanche Bachy – Forintech joint venture



Port of Sète France

The port of Sète on the Mediterranean sea has undergone a transformation to meet rising container traffic demand. Soletanche Bachy France and Balineau, a specialist subsidiary of Soletanche Bachy, built Quay H, with a length of 470 metres and a depth of 14.5 metres. Work got under way in September 2014 with the construction of a dyke. It continued in 2015 with vibrocompaction work carried out by Soletanche Bachy's sister company Menard to improve the ground and the construction of a 530-metre long, 29.5-metre deep diaphragm wall.

To retain the diaphragm wall, 70 passive anchors consisting of 160 mm diameter steel rods – some of France's largest – were installed. The project continued in 2016 with civil engineering, earthworks, controlled modulus columns, marine works and installation of quay equipment. Handed over in the autumn of 2016, the structure capped two years of works involving the full range of the Group's techniques.

- + Owner
Occitanie region
- + Main contractor
Soletanche Bachy France



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Port 2000 France

4.2 km of quays and 10 berths were just part of the Port 2000 project that raised the container capacity of the port of Le Havre to six million TEU and made it one of Europe's leading ports.

The project was carried out between 2001 and 2010 in two phases. In the first, Soletanche Bachy France won the general contract to commission the outer quay, a complex of four berths with a linear length of 1,602 metres protected by a new breakwater. In the second phase, a joint venture led by Soletanche Bachy France built six additional berths with a combined length of 2,130 linear metres in three works packages. The project involved the wide range of works required to build such structures: foundations, dewatering, earthworks, dredging, civil engineering, anchor walls and tie rods and installation of gantry equipment and tracks.

- + Clients
**Port Autonome du Havre
Grand Port Maritime du Havre**
- + Main contractors
**Soletanche Bachy France (first phase contract)
Soletanche Bachy France – Atlantique Dragage joint venture (second phase contracts)**



**FOR
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BY SOLETANCHE BACHY





Over 30 km
of quays built

North America

- 1 Port of Sept-Îles Canada

Latin America

- 2 Port of Altamira, McDermott terminal Mexico
- 3 Puerto Brisa Colombia
- 4 Port of Aguadulce, SPIA, Boscoal Colombia
- 5 Port of Brighton, Berth 2 Trinidad and Tobago
- 6 Muelle C and D Uruguay

- 7 Terminal Cuenca del Plata Uruguay
- 8 M'bopicua terminal Uruguay
- 9 Port of Bahía Blanca, Guillermo Brown jetty Argentina
- 10 Port of Belgrano, dry dock Argentina

Middle East

- 27 Turkmenbashi Seaport Turkmenistan
- 28 Jebel Ali Port, Terminal 3 Dubai, United Arab Emirates
- 29 Drydocks World, Safina project Dubai, United Arab Emirates

Europe

- 11 Port 2000 Le Havre France
- 12 Quai Rollet Rouen France
- 13 Hautot-sur-Seine turning basin France
- 14 Port of Honfleur France
- 15 Port of Cherbourg, quai des Flamands France
- 16 Flamanville EPR France
- 17 Port of Concarneau, dry dock France
- 18 Port of Sète, quai H France
- 19 Port-La Nouvelle France
- 20 Fort-de-France cruise ship terminal France
- 21 Port Réunion France
- 22 Port of Zeebrugge Belgique

Africa

- 23 Port of Lomé Togo
- 24 Port of Cotonou Benin
- 25 Moma Sands jetty Mozambique
- 26 Port of Ngqura South Africa



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Africa

Cameroon

Soletanche Bachy International
Cameroon

Egypt

Soletanche Bachy International Egypt

Ivory Coast

Solution Fondation Afrique de l'Ouest
(SFAO)

Morocco

Solsif Maroc SA

Mozambique

Dura Soletanche Bachy Moçambique
LDA

South Africa

Dura Soletanche Bachy (Pty) Ltd

Zambia

Dura Soletanche Bachy (Pty) Ltd -
Zambia Branch

North America

Canada

Soletanche Bachy Canada

United States

Nicholson Construction Company, Inc
Bessac USA

Latin America

Argentina

Soletanche Bachy Argentina SA

Brazil

Soletanche do Brasil

Chile

Soletanche Bachy Chile SpA

Colombia

Bessac Andina
Soletanche Bachy cimas S.A.
Geofundaciones S.A.S.
Soletanche Bachy Prefa

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Rodio - Swissboring Costa Rica, S.A.

El Salvador

Rodio - Swissboring El Salvador, S.A.

Guatemala

Rodio - Swissboring Centroamérica, S.A.

Honduras

Rodio - Swissboring Honduras, S.A.

Mexico

Cimentaciones Mexicanas S.A. de C.V.
(cimesa)

Rodio Cimentaciones Mexico

Nicaragua

Rodio - Swissboring Nicaragua, S.A.

Panama

Rodio - Swissboring Panamá, S.A.

Paraguay

Soletanche Bachy Paraguay

Peru

Soletanche Bachy Perú

Trinidad and Tobago

Soletanche Bachy International
Trinidad and Tobago

Uruguay

Soletanche Bachy Uruguay

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Soletanche Bachy C.A

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Soletanche Bachy International -
India Branch
Soletanche Bachy Engineering (India)

Kazakhstan

Zemin Foundation Technology

Malaysia

BSG Construction Malaysia SDN. BHD.

Singapore

Bachy Soletanche Singapore PTE LTD
Foundation Alliance

Vietnam

Bachy Soletanche Vietnam CO. LTD.

Europe

Belgium

Bachy Belgique
Fontec SA

Czech Republic

Soletanche Česká republika s.r.o.

France

Agence France Nord
Agence France Sud
Agence La Réunion
Antenne Guadeloupe
Antenne Bachy Fondaco Caraïbes
Antenne Bordeaux
Antenne Bretagne Pays de la Loire
Antenne Côte d'Azur
Antenne Île-de-France
Confortements
Antenne Hauts-de-France
Antenne Rhône-Alpes
Antenne Toulouse
Balineau
Balineau Antilles-Guyane
Bessac
CES-CEBTP Antilles SARL
Soletanche Bachy Fondations
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Sotem

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Hídépítő Soletanche Bachy
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Ireland

McDonnell

Monaco

Soletanche SAM

Poland

Soletanche Polska Sp. z.o.o.

Romania

SBR Soletanche Bachy Fundatii s.r.l.

Russia

Zemin Foundation Technology LLC

Slovakia

Solhydro spol. s.r.o.

Spain

Grupo Rodio Kronsa S.R.I.

Switzerland

Sif Groutbor S.A.

Turkey

Zetaş Zemin Teknolojisi A.Ş.

Ukraine

Osnova-Solsif L.L.C

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Middle East

Lebanon

Zetas Apex Foundation
Technologies SAL

Oman

Soletanche Bachy LLC

Qatar

Soletanche Bachy Qatar WLL
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Oceania

Australia

GFWA Pty Ltd
Bachy Soletanche Australia
Rob Carr Pty. Limited

New Zealand

March Construction Ltd



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Soletanche Bachy is a world leader in foundations and soil technologies, operating in 60 countries via a network of 80 subsidiaries and branches.

The Group delivers the full range of geotechnical processes and provides innovative, effective solutions as either a lead or specialist contractor for turnkey projects with a geotechnical focus or specialist works.

www.soletanche-bachy.com

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