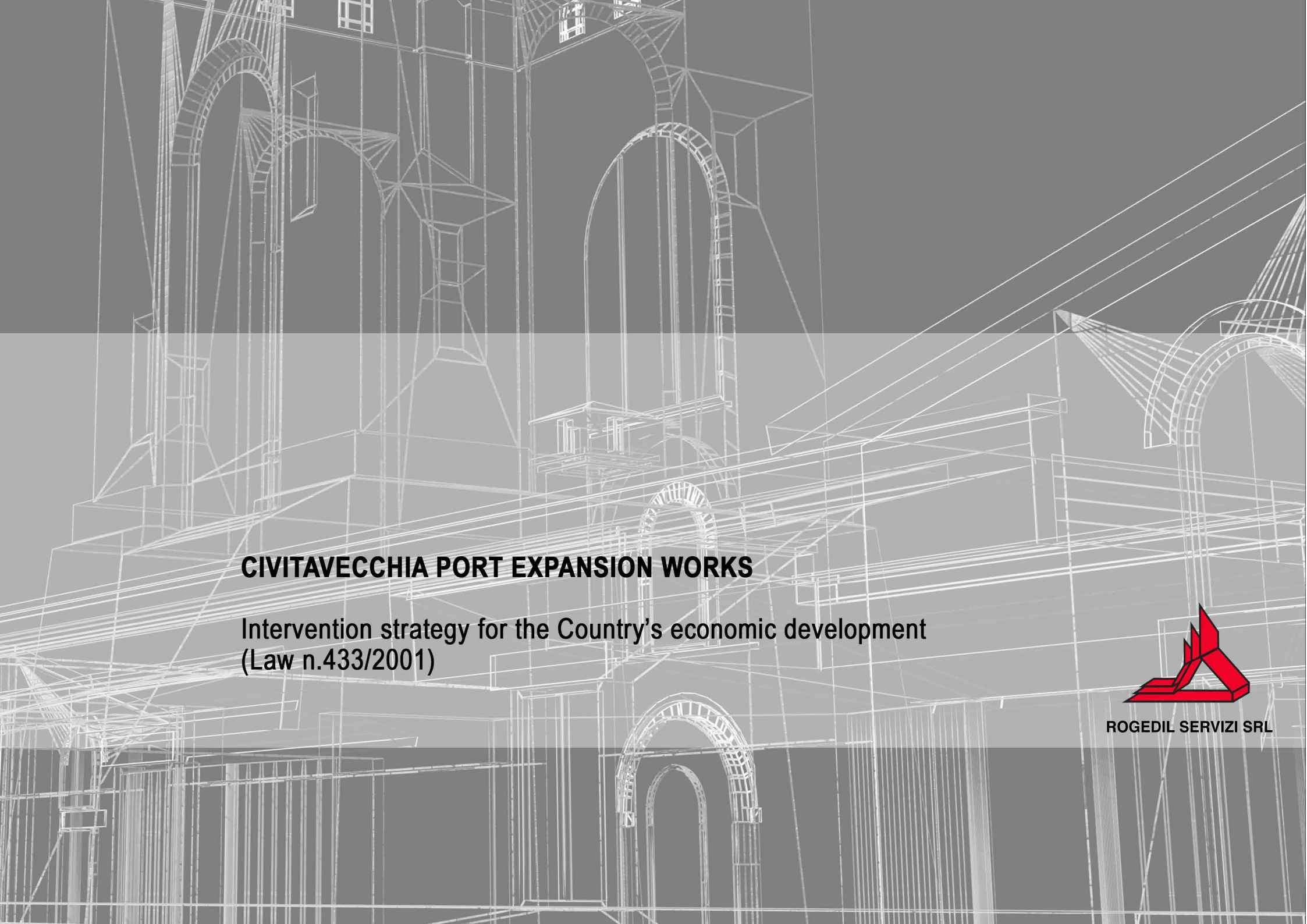


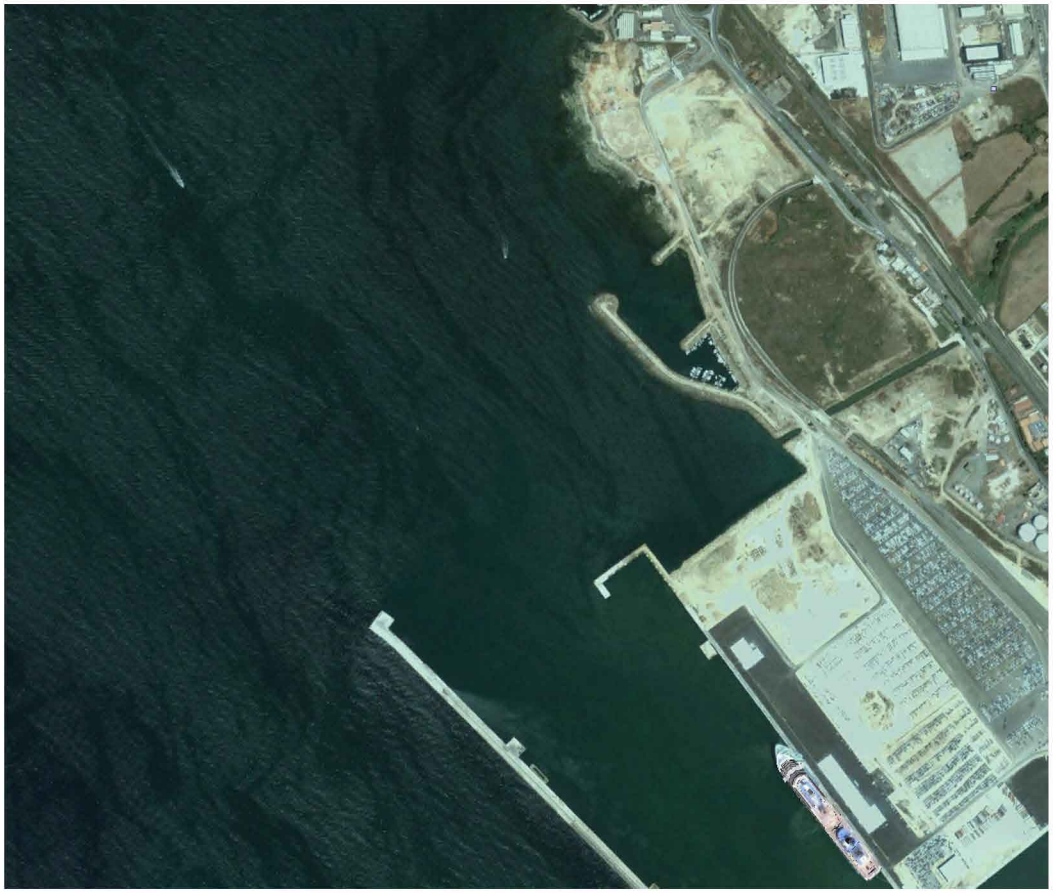
CIVITAVECCHIA PORT EXPANSION WORKS

Intervention strategy for the Country's economic development
(Law n.433/2001)

ROGEDIL SERVIZI SRL

CIVITAVECCHIA PORT EXPANSION WORKS

ROGEDIL SERVIZI S.R.L.



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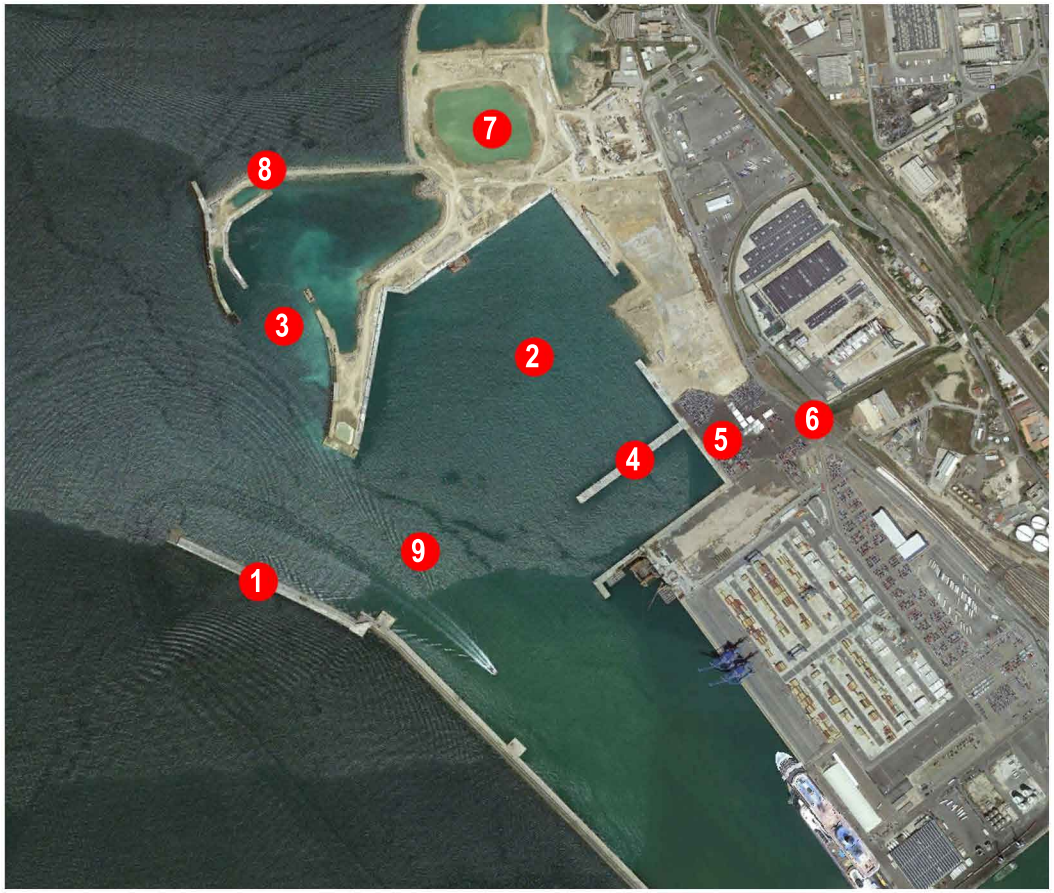
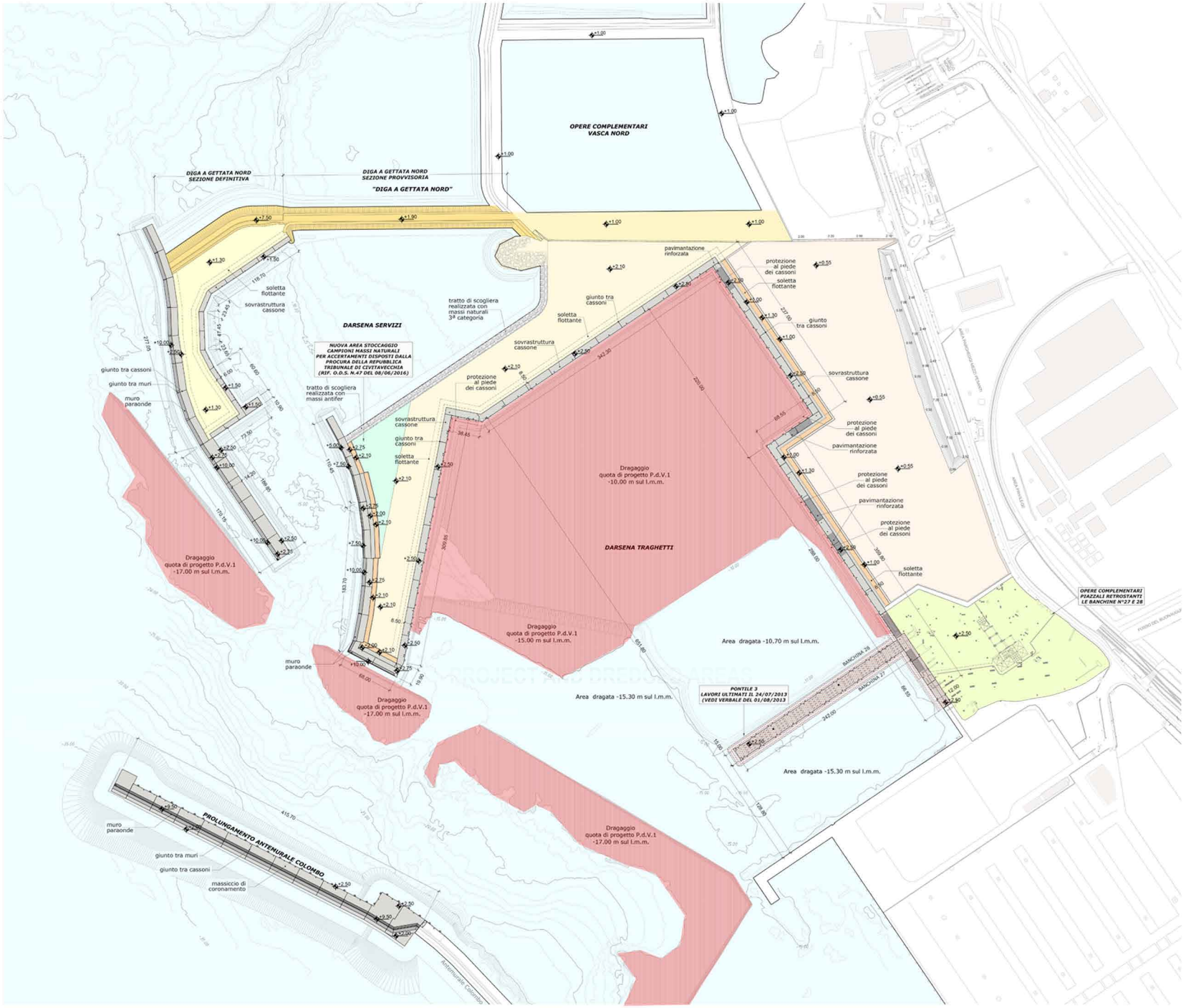


POST (IN PROGRESS)

1- EXTERNAL BREAKWATER EXTENSION;
2-NEW RO-RO VASSEL DOCK CONSTRUCTION;
3-NEW PORT GENERAL SERVICES DOCK CONSTRUCTION;
4-NEW JETTY ON CAISSONS FOR RO-RO VESSEL CONSTRUCTION;
5- RO-RO TERMINAL CONSTRUCTION;
6-BONAUGURIO RIVER TUNNELING REGIMENTATION;
7-NORTH DREDGING RECLAMATION AREA CONSTRUCTION;
8-NORTH RUBBLE MOUND BREAKWATER CONSTRUCTION;
9- DREDGING WORKS.

CIVITAVECCHIA PORT EXPANSION WORKS

ROGEDIL SERVIZI S.R.L.



NORTH RUBBLE MOUND BREAKWATER

CAISSONS

DREDGING AREAS

JETTY

RO-RO TERMINAL

CIVITAVECCHIA PORT EXPANSION WORKS

ROGEDIL SERVIZI S.R.L.

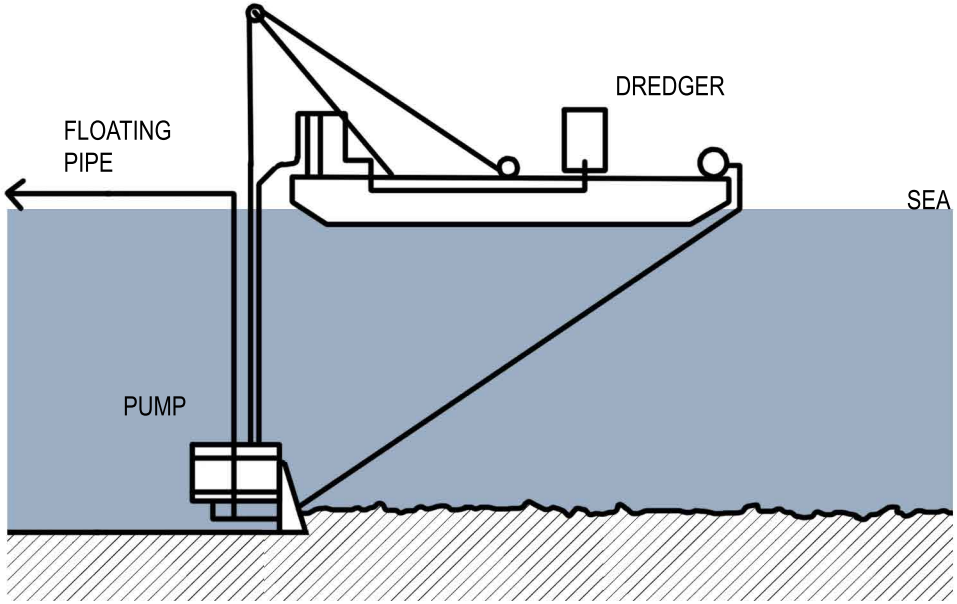
DIFFERENT TYPES OF CAISSONS

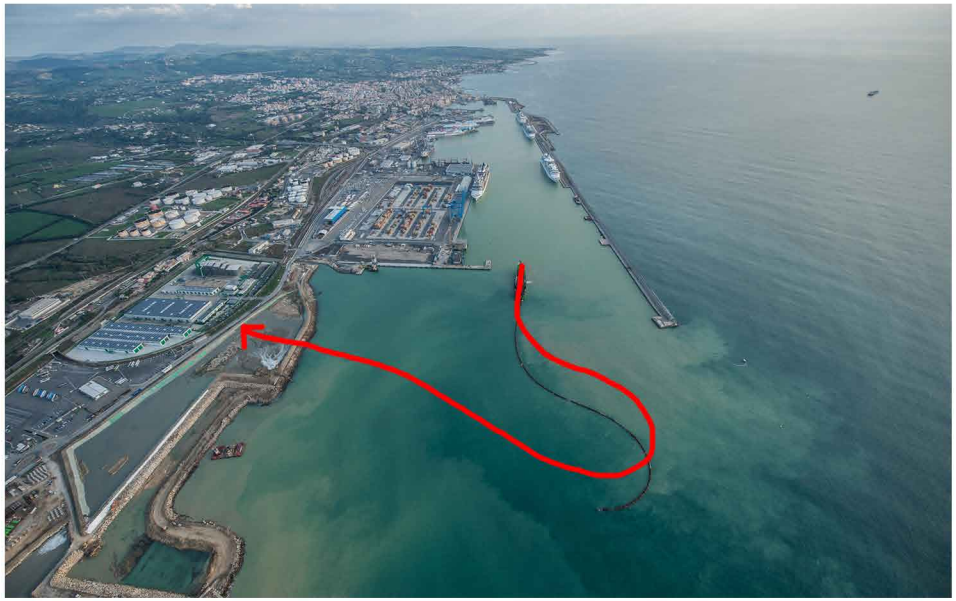
Cassone A
Cassone B
Cassone B1
Cassone B2a
Cassone B2b
Cassone B2c
Cassone S
Cassone S1
Cassone S2
Cassone S3
Cassone S4
Cassone L
Cassone L1
Cassone L3
Cassone T
Cassone T1 (1)
Cassone PAC-a
Cassone PAC-b
Cassone PAC-c
Cassone P3

DREDGING WORKS

ROGEDIL SERVIZI S.R.L.

CUTTER SUCTION DREDGER AMBIORIX WITH A SPECIFIC ROCK CUTTER





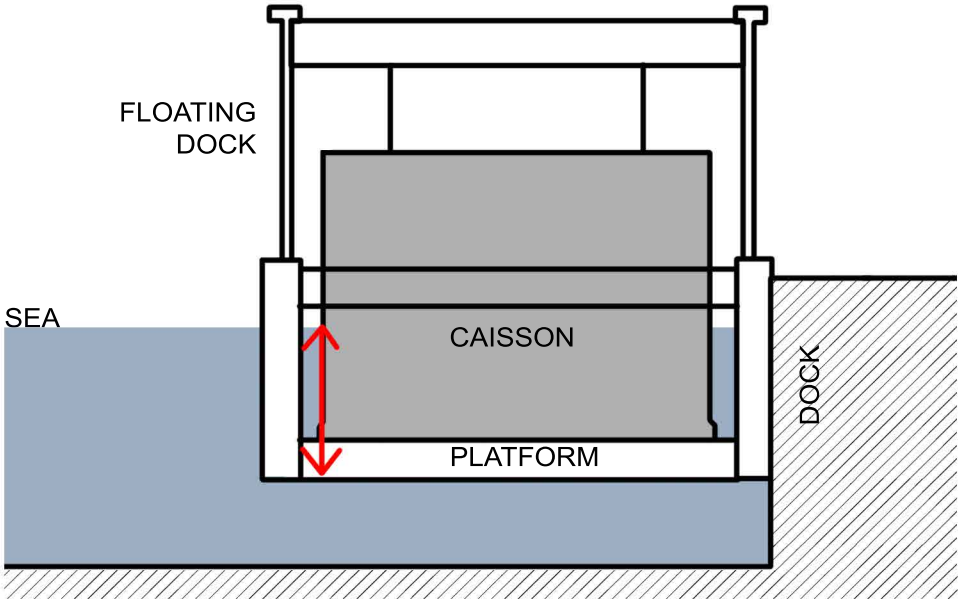
1 DREDGING OF THE BOTTOM FOR DEPTH INCREASING (-18 M) AND FOR THE FLOATING CAISSONS RIGHT POSITIONING

2 DREDGED SOIL-WATER MIXTURE FLOWING OVER TWO RECLAMATION AREAS NAMED NORTH AND SOUTH

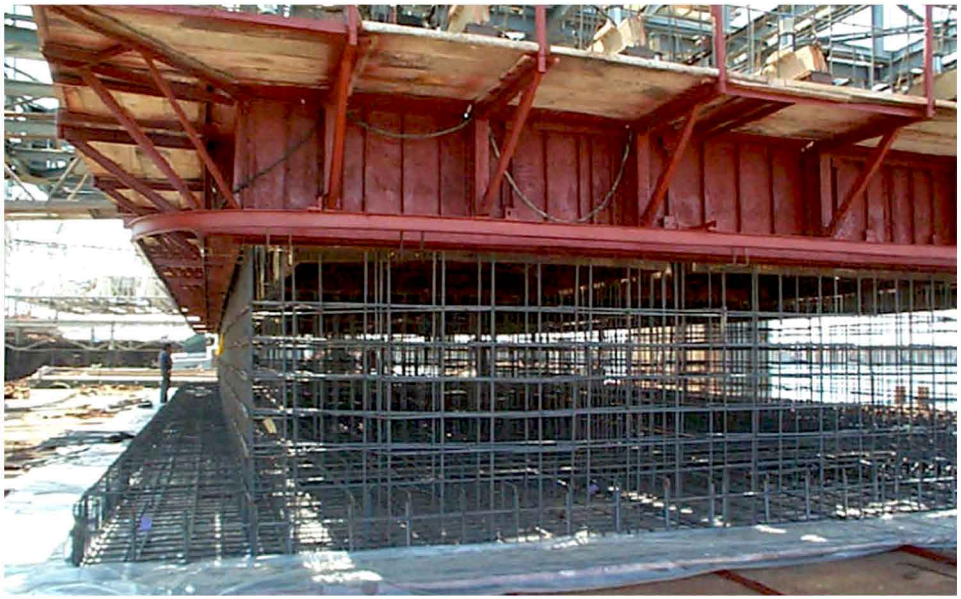
CONCRETE CELLULAR CAISSONS CONSTRUCTION

ROGEDIL SERVIZI S.R.L.

THE FLOATING CAISSONS ARE CONCRETE BOX WITH CELLES, THEY WERE PREFABRICATED USING THREE SPECIAL FLOATING DOCKS



1 FORMWORK ASSEMBLY FOR INTERNAL AND EXTERNAL CELLS



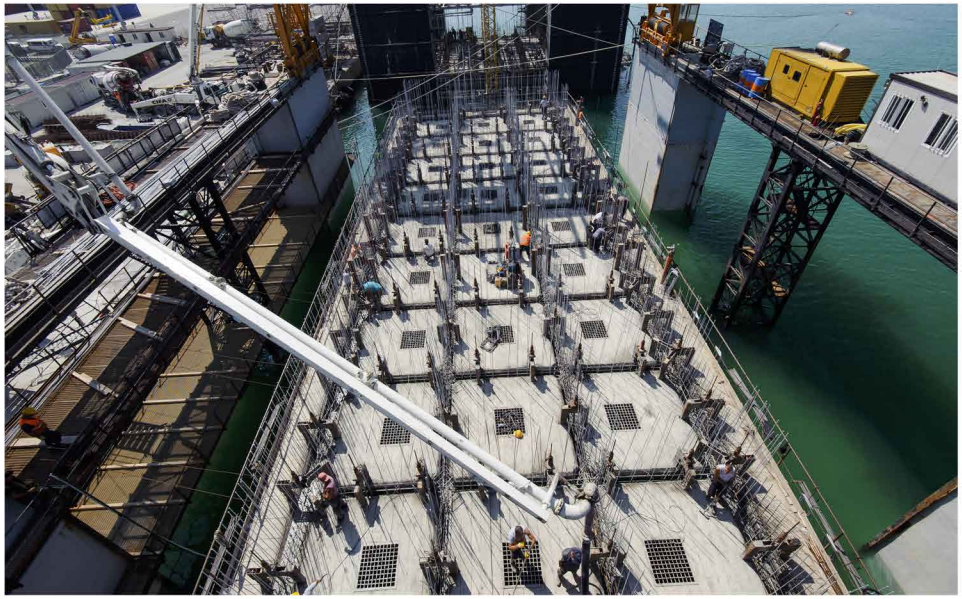
2 REINFORCEMENT CAGE: BOTTOM SLAB, INTERNAL AND EXTERNAL VERTICAL WALLS. POURING THE SLAB AS A MONOLITHIC ELEMENT

CONCRETE CELLULAR CAISSONS CONSTRUCTION

ROGEDIL SERVIZI S.R.L.

3 PLACING THE REINFORCEMENT, UNDER THE CONTROL OF THE CONSTRUCTION SUPERVISOR

5 SEQUENCES 3-4 WERE REPEATED UNTIL THE TOTAL HEIGHT OF THE CAISSON WAS REACHED

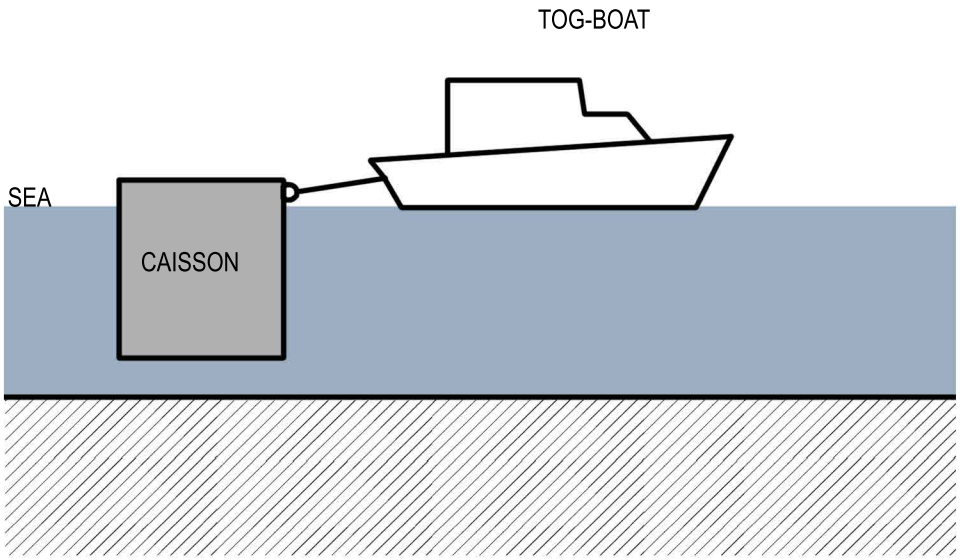


4 SLIDING THE FORMS, POURING AND VIBRATING THE CONCRETE

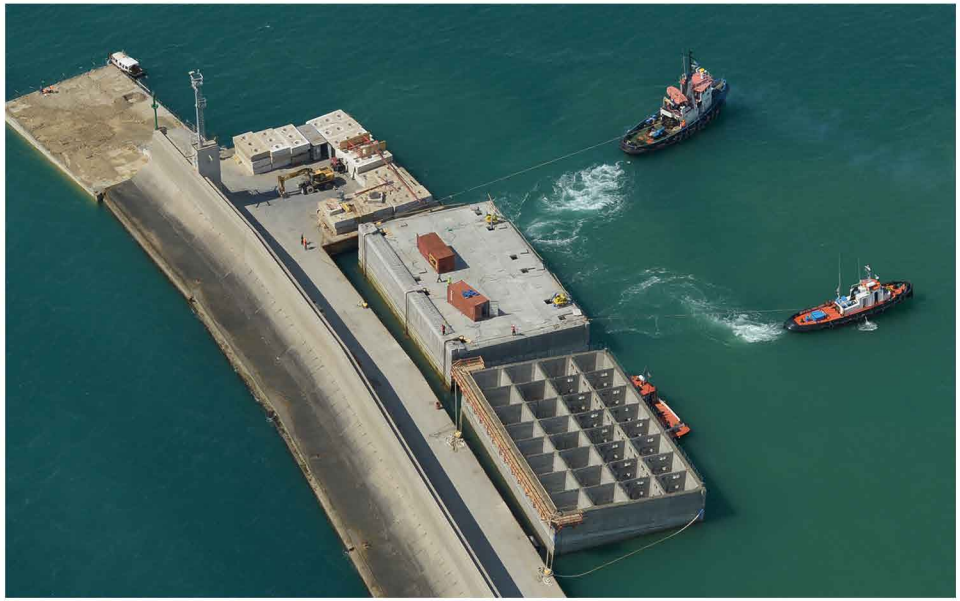
6 AT THE END OF THE CONSTRUCTION PHASE, THE PLATFORM WERE SLID DOWN TO ALLOW THE LAUNCHING FROM THE DOCK

LAUNCHING THE FLOATING CAISSONS

7 THE CAISSON FLOATS BY ITSELF. AFTER THE LAUNCHING PHASE IT WAS MOORD NEAR THE DOCK WAITING FOR THE POSITIONING



8 EVERY CAISSON WAS PULLED BY TUGBOATS

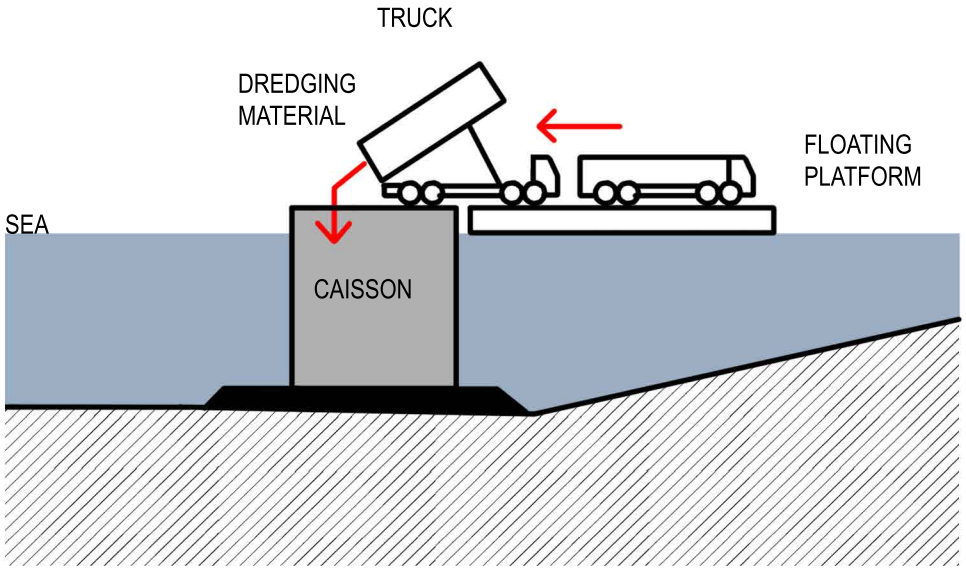


9 THE CAISSON WAS DRIVED TO THE FINAL POSITION

FLOATING CAISSONS POSITIONING

ROGEDIL SERVIZI S.R.L.

10 WHEN THE FLOATING CAISSON REACHES THE FINAL POSITION, IT'S SUNK BY FILLING EVERY CELL WITH WATER

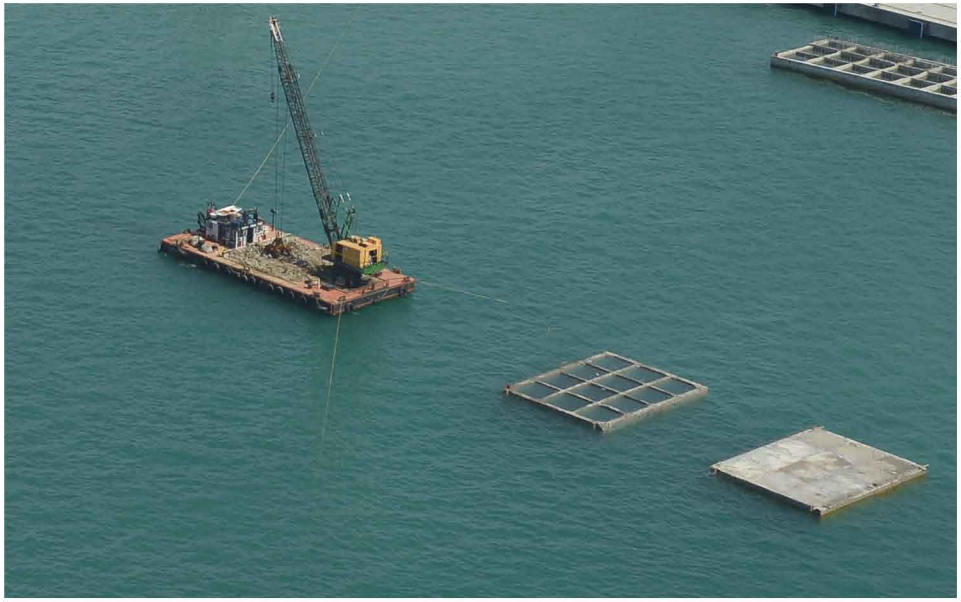


11 EVERY CELL IS FILLED WITH GRANULAR DRY MATERIAL (DREDGED SOIL)

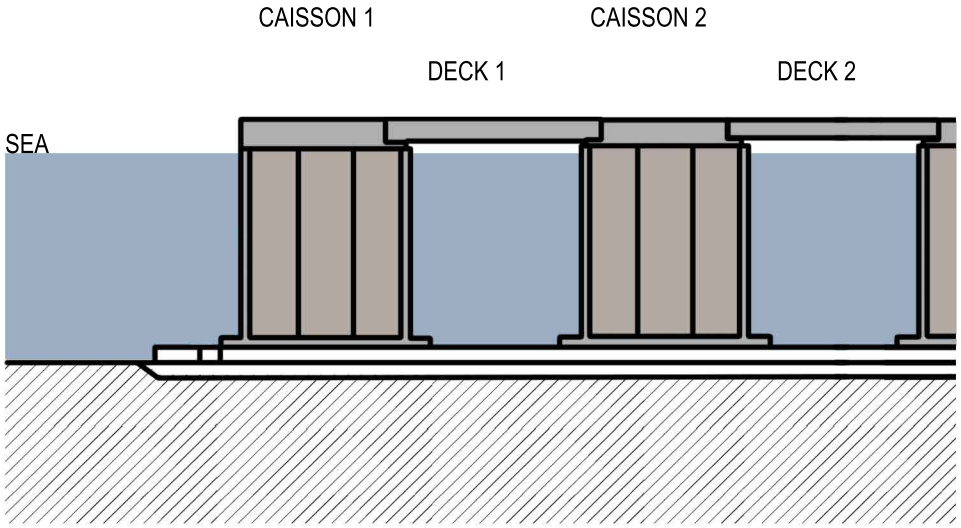
12 THE UPPER PART OF THE CELLS IS FILLED WITH CONCRETE BY USING CONCRETE TRUCKS ON PONTOON

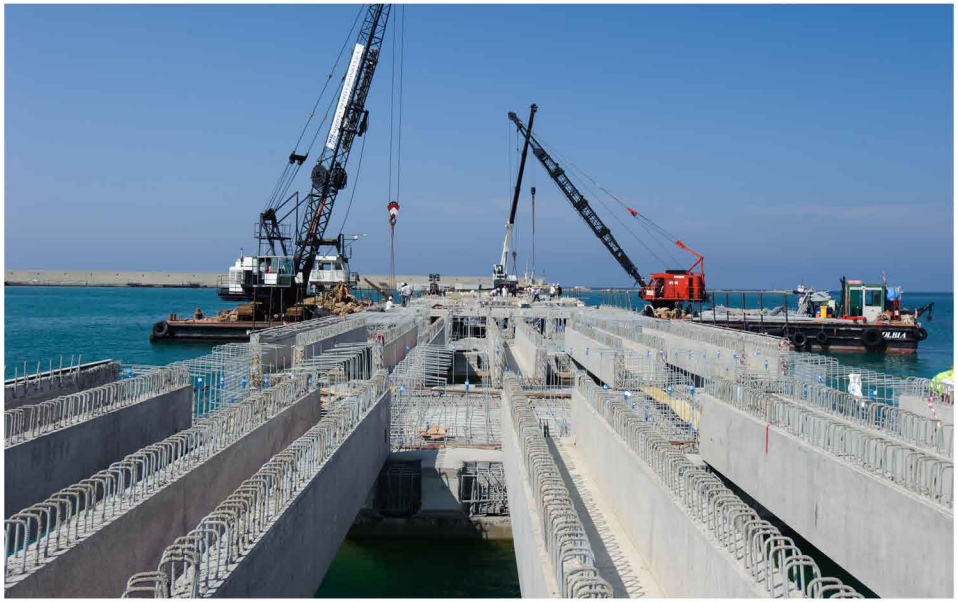
NEW JETTY ON CAISSONS FOR RO-RO VESSEL

ROGEDIL SERVIZI S.R.L.



1A POSITIONING THE FLOATING CAISSON FOR THE JETTY





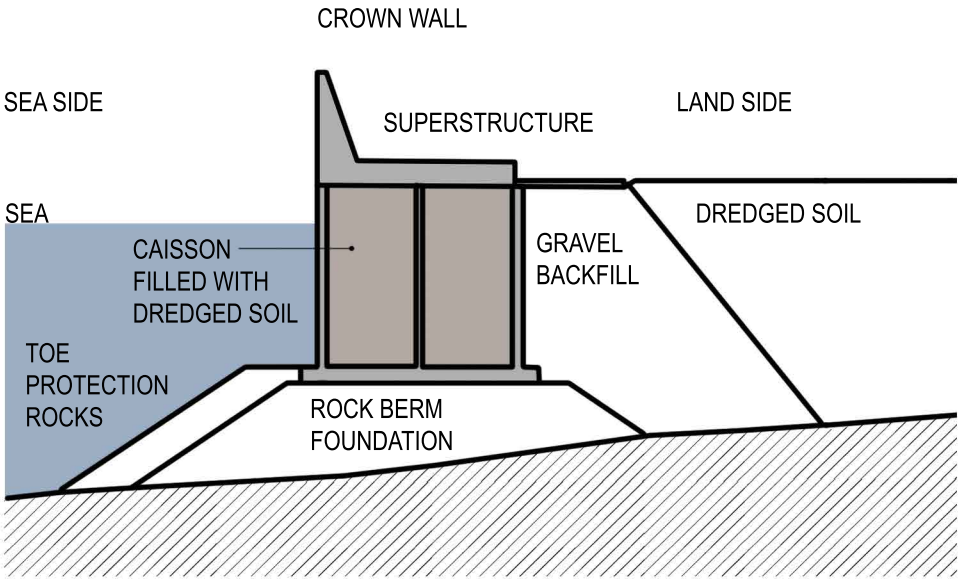
2A ASSEMBLING PRECAST BEAMS BETWEEN THE CAISSONS FOR THE UPPER CONCRETE DECK CONSTRUCTION

3A FINAL STEP: ELECTRICAL, LIGHTS, WATER AND FIRE FIGHTING SYSTEM INSTALLATION, FENDERS , LADDERS, BOLLARDS, RINGS

NEW PORT GENERAL SERVICES DOCK

ROGEDIL SERVIZI S.R.L.

1B ROCK BERM FOUNDATION, IPOSITIONING THE CAISSON JOINED, FILLING CONCRETE, GRAVEL BACKFILL SETTINGS, EMBANKMENT

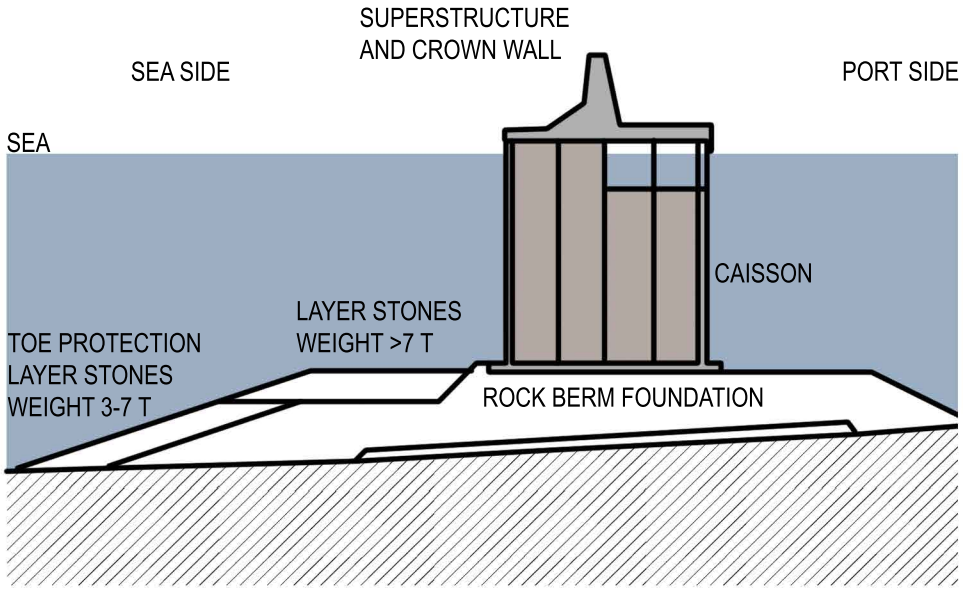


2B SUPERSTRUCTURE AND CROWN WALL CONSTRUCTION WITH REINFORCED CONCRETE

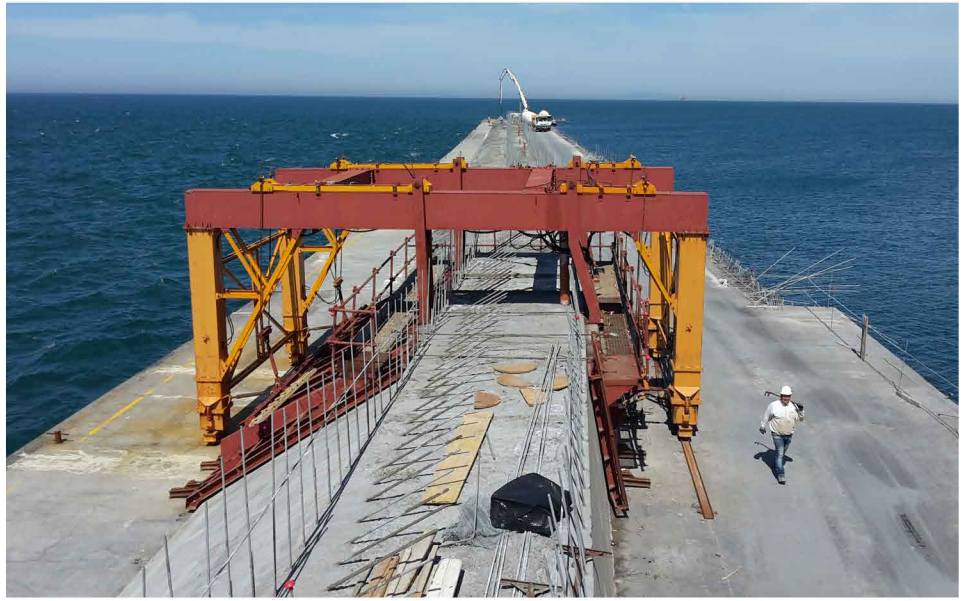
3B FINAL STEP: ELECTRICAL, LIGHTS, WATER AND FIRE FIGHTING SYSTEM INSTALLATION, FENDERS , LADDERS, BOLLARDS, RINGS

CRISTOFORO COLOMBO EXTERNAL BREAKWATER EXTENSION

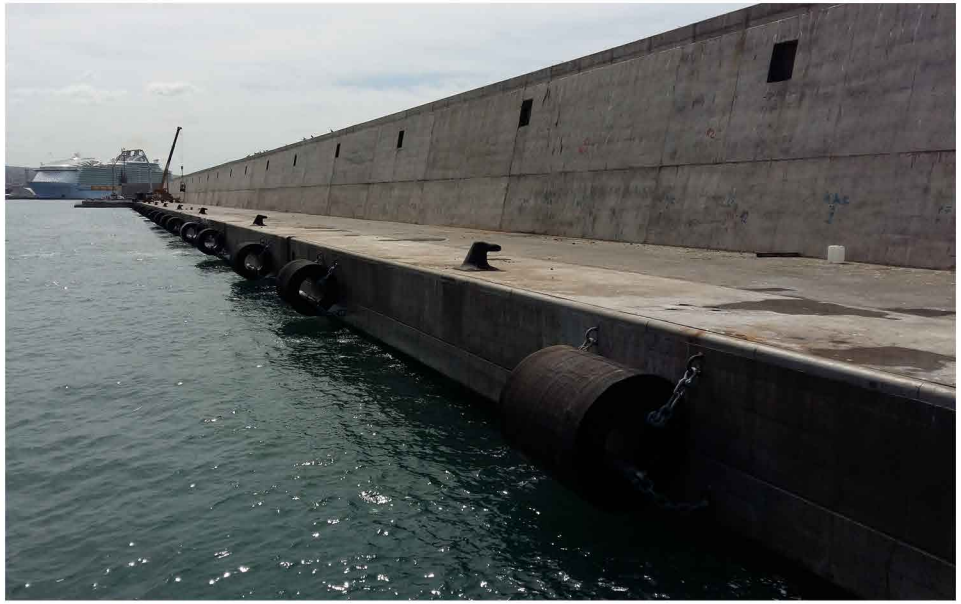
ROGEDIL SERVIZI S.R.L.



1C ROCK BERM FOUNDATION REALIZATION, POSITIONING THE CAISSON JOINED AND FILLING WITH CONCRETE



2C SUPERSRTUCTURE AND THE CROWN WALL CONSTRUCTION WITH REINFORCED CONCRETE

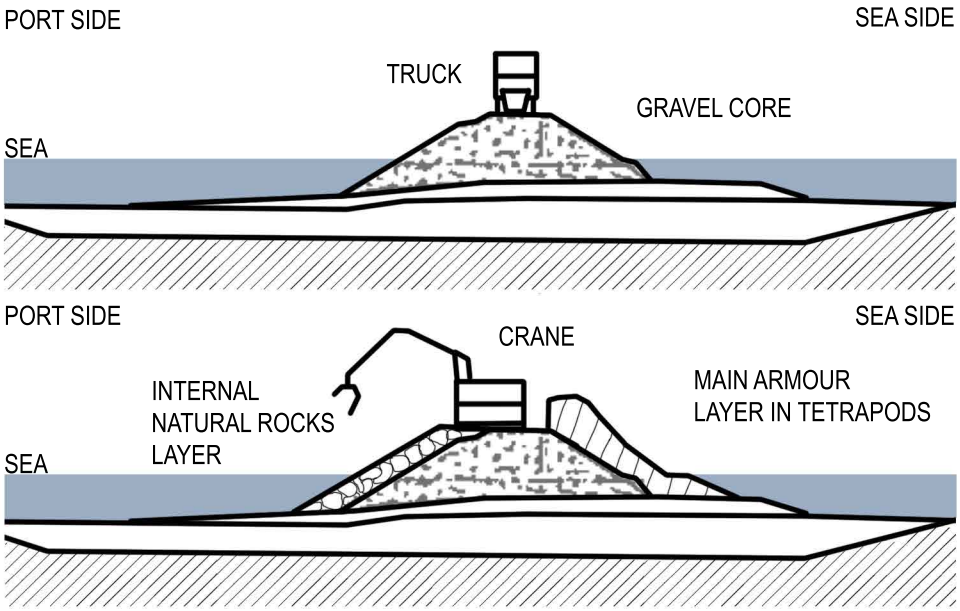


3C FINAL STEP: ELECTRICAL, LIGHTS, WATER AND FIRE FIGHTING SYSTEM INSTALLATION, FENDERS , LADDERS, BOLLARDS SETTINGS

NORTH RUBBLE MOUNT BREAKWATER

ROGEDIL SERVIZI S.R.L.

1 TETRAPOD BLOCKS: TETRAHEDRAL PRECASTED CONCRETE STRUCTURE DESIGNED TO DISSIPATE THE FORCE OF THE WAVES



2 CONSTRUCTION OF THE BREAKWATER CORE WITH DREDGING MATERIALS AND THE PROTECTION LAYERS WITH TETRAPODS

3 CONSTRUCTION OF THE INTERNAL ARMOUR WITH NATURAL ROCKS

RO-RO TERMINAL CONSTRUCTION

ROGEDIL SERVIZI S.R.L.

1 LAND RECLAMATION: EMBANKMENT FILL WITH DREDGED SOIL

3 TERMINAL PAVEMENTS REALIZATION WITH A BEARING CAPACITY OF 10 t/MQ

2 ELECTRICAL, LIGHT, FRESH WATER AND FIRE FIGHTING SYSIEMS INSTALLATION

4 TERMINAL OFFICES AND ROAD ACCES CONSTRUCTION

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2016

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