

# PROJECT SHEET

**MAKASSAR NEW PORT PROJECT PHASE 1B & 1C**  
 DREDGING AND RECLAMATION WORKS  
 FOR MAKASSAR NEW PORT PROJECT

## BOSKALIS

Royal Boskalis Westminster is a leading global services provider operating in the dredging, maritime infrastructure and maritime services sectors. The company provides creative and innovative all-round solutions to infrastructural challenges in the maritime, coastal and delta regions of the world. With core activities such as coastal defense, river-bank protection and land reclamation Boskalis is able to provide adaptive and mitigating solutions to combat the effects of climate change, such as extreme weather conditions and rising sea levels, as well as delivering solutions for the increasing need for space in coastal and delta regions across the world. The company facilitates the development of offshore energy infrastructure, including renewable wind energy. Boskalis is furthermore active in the construction and maintenance of ports, waterways, access channels and civil infrastructure, thus helping to facilitate trade flows and regional socio-economic development. In addition, Boskalis is a global marine salvage expert and has a number of strategic partnerships in harbor towage and terminal services (Keppel Smit Towage and Smit Lamnalco). With a versatile fleet of more than 700 vessels and floating equipment and 10,000 employees, including associates, Boskalis is creating new horizons around the world.

## PROJECT DESCRIPTION

Located in Makassar Strait, Indonesia, PT Pelindo IV is developing the Makassar New Port project. This is an iconic project for Makassar, which involves land reclamation for the expansion of the existing container terminal. Phase 1B and 1C of this project create an extension of approximately 45 hectares. The dredging and reclamation scope for phase 1B and 1C of the project was awarded to Boskalis in April 2019. The dredging of the unsuitable soft soil and discharging of it into a disposal area was subcontracted. The reclamation part of the scope, which included sand mining at an offshore borrow area, was executed by mega trailing suction hopper dredger (TSHD) Queen of the Netherlands, the spray pontoon Zeehond and dry earth moving equipment. In total, a volume of approximately 2 million cubic meters of soft soil has been removed and replaced by approximately 11 million cubic meters of sand. The project was, despite challenging conditions and restrictions as result of the Covid-19 pandemic, completed on time and to the satisfaction of the contractor.

## FEATURES

Client	PT. Pelabuhan Indonesia IV (Persero)
Location	Makassar, South Sulawesi, Indonesia
Period	April 2019 - October 2020
Contractor	PT. PP (Persero) Tbk
Subcontractor	PT. Boskalis International Indonesia



**A** Trailing Suction Hopper Dredger Queen of the Netherlands  
**B** Birds eye view of the completed reclamation area

## DREDGING AND RECLAMATION WORKS

The dredging campaign started in September 2019 and the reclamation works were completed in October 2020. The first phase of the project, encompassing dredging of unsuitable soft soil and discharging it into a disposal area was subcontracted to a local dredging company and saw the deployment of a grab dredger and two small cutter suction dredgers. This phase started in September 2019 and was completed ahead of the reclamation works in January 2020. From February 2020 till October 2020, Boskalis deployed one of its largest TSHD's, the Queen of the Netherlands with a hopper capacity of 35,500 m<sup>3</sup>, to undertake the dredging and transportation of some 11 million cubic meters of sand from the marine borrow areas to the project site. The sand discharged by the TSHD was pumped via floating and land-based pipelines to the reclamation area.



Despite having removed a considerable part of the unsuitable soil, the reclamation was constructed under challenging soft soil conditions, requiring a computer controlled spray pontoon equipped with 4-points mooring system to carefully build up the reclamation in stages, allowing the underlying soft soil to adjust to the weight of the sand on top of it. Where sufficient water depth was available the spray pontoon was used to spray the sand in horizontal layers of predefined thickness. When areas became too shallow for the spray pontoon to operate, the TSHD discharged the sand through floating and shore pipelines. Land-based equipment was used to distribute and level the sand.



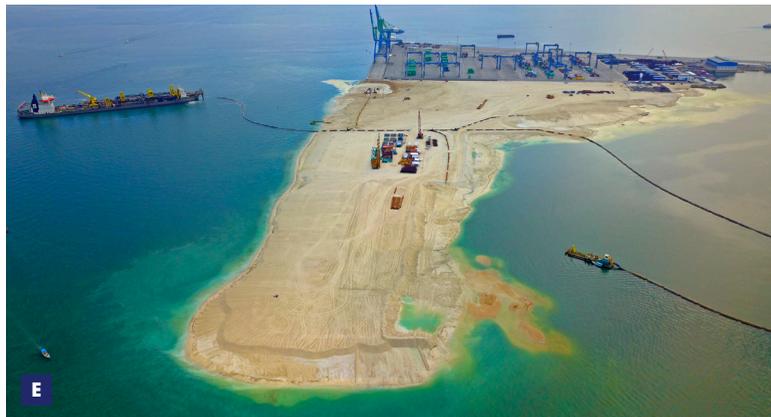
**SOCIAL AND ENVIRONMENTAL MONITORING**

On the Makassar New Port project special attention was given to monitoring of the social and environmental impact of the project.

A local consultant was hired to establish the baseline condition of the environmental ecosystem that existed within the marine borrow areas prior to the execution of the reclamation works. This was followed-up during the execution of the works by bi-weekly diving campaigns to monitor variables like sedimentation and biodiversity.

Twice a week a team of project engineers went to the marine borrow areas to perform turbidity monitoring and visual inspection using an underwater drone.

To benefit from the local experience and know-how a local independent third party was hired to carry out a social monitoring campaign. Prior to the execution of the reclamation works, a baseline condition was established and through monthly



interactions with possibly affected communities, the potential impact of the dredging activities on these communities was monitored. During the execution of the project several social and environmental related initiatives were developed. From funds saved through the project safety incentive scheme, donations were made to local orphanages and during the Covid-19 pandemic medical supplies were donated to local hospitals. A beach clean-up was organised to clean the beach of the popular weekend getaway island of Samalona. Finally, Boskalis organised a defensive driving training for the drivers working for the operator of Makassar New Port, Pelindo IV.

**NO INJURIES, NO ACCIDENTS**

This project, executed under challenging conditions and working with various nationalities and differing cultures and safety standards, provided Boskalis with significant challenges to safeguard the required safety culture on the project. With commitment to its NINA safety program, Boskalis successfully achieved 800.000 manhours without a single lost time injury.



- C** Land-based equipment is used to distribute and level the sand
- D** Diver during environmental baseline survey
- E** Spray pontoon Zeeshond used to spray thin layers of sand on soft soil
- F** Social monitoring in local coastal community
- G** Beach clean-up at Pulau Samalona

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