

# PROJECT SHEET

**THE PORT OF PIPAVAV PROJECT, INDIA**  
PHASE 2 OF A DREDGING AND RECLAMATION PROJECT FOR APPROACH, CHANNELS & BERTHS

## INTRODUCTION

The Port of Pipavav is a public/private enterprise that is emerging as an important gateway port on the West Coast of India for containers, bulk and liquid cargo. At less than ten hours steaming time from the Nhava Sheva Port in Mumbai, Port Pipavav provides excellent access to the main trade lines in the North-Western region of India.

The Port of Pipavav is operated by APM Terminals (APMT), part of the A.P. Moller-Maersk Group, one of the largest container terminal operators in the world, with operations spread over more than 50 terminals in 31 countries on 5 continents. With a 54% stake, APM Terminals is the largest shareholder in the Port of Pipavav.

One of the main reasons for the further development of the Port of Pipavav is the fact that it is an 'all-weather' port. The port area is protected by the islands Shial Bet and Savai Bet, which function as natural breakwaters, making the port safe in all weather conditions. The presence of these islands ensures tranquility in the harbor, with wave heights hardly ever exceeding 0.5 meters. As a result of the monsoon, India's most important - and more congested - container hub, Mumbai, is operational only 7-8 months per year. The Port of Pipavav is operational throughout the year. In 2006-2008 Boskalis was commissioned to deepen the harbor and extend the quay-wall.

## PHASE 2 OF THE PORTEXPANSION PROJECT

As a result of the booming container market in recent years, GPLL and APM Terminals introduced a long term investment plan to further develop the port's facilities. Phase 2 of the expansion program included the reclamation of a new storage (container stacking) area and the extension of the

## FEATURES

Client	Gujarat Pipavav Port Limited (GPLL)
Contractor	Zinkcon Marine Singapore (a subsidiary of Boskalis International bv)
Location	Pipavav, Gujarat, India
Period	November 2008 - June 2009



- A** Location map
- B** Overview of the port and Phase 2 of the project
- C** One of the Port of Pipavav employees
- D** Two of Boskalis' dredgers in action



port's capacity by deepening the approach, channels and berths, allowing larger (container) vessels to enter the port. Zinkcon Marine Singapore, a subsidiary of Boskalis International bv, won the contract for the dredging and reclamation works for Phase 2. In the beginning of 2009, however, the client re-evaluated the investment against the background of the dramatic effects of the economic crisis, which seriously affected the global container market.

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GPPL, APMT and ZMS agreed to optimize the project in such a way that all parties would benefit.

### DREDGING ACTIVITIES

Although Pipavav is a sheltered port, the working season for dredging and reclamation activities is limited to the period October - May. During the monsoon season, numerous gales, heavy rain periods, strong currents and occasional swell hamper the process of dredging. Demobilization by towing can be particularly hazardous.

This situation called for a tight time frame. After the contract was signed in October 2008, mobilization activities started in November / December 2008. Consequently, the actual dredging work commenced in early January 2009, when the Cutter Suction Dredger 'Cyrus II' was employed for the dredging of a volume of 1,900,000 m<sup>3</sup>. The dredged material, mainly consisting of sandstone and a mixture of sand and clay, was pumped ashore into the reclamation area. In May 2009, the Trailing Suction Hopper Dredger 'Prins der Nederlanden' dredged the outer channel. A total volume of 400,000 m<sup>3</sup> was dumped offshore. The project was completed by the end of May, well before the start of the

monsoon, followed by demobilization in June 2009.

### LOCAL SITUATION

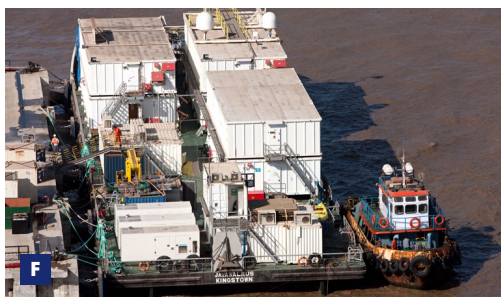
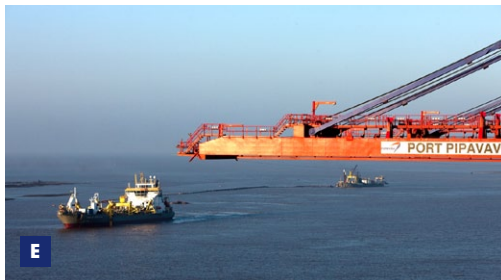
The Port of Pipavav is situated in a relatively remote region of India. Connections for cargo transport are well established, but for workers and visitors it was far from easy to reach the project site. The international flight to Mumbai was followed by a domestic flight to Bavnagar the next day, and from there it took another 2½ hours by car to reach the project site. This remote location caused a number of logistic challenges, such as the fact that there were no facilities for the housing of the workforce, which consisted of over 150 employees. In order to accommodate crew members and workers, a campsite of 40 cabins had to be built. Special attention was given to catering facilities. Furthermore, the accommodation barge 'Java Walrus' was deployed. This 'small village' also included medical and hospital facilities.

### SAFETY

The project was carried out within strict safety limits. In order to maintain the highest safety levels, special management training programs were developed and frequent safety toolbox meetings were organized. No major incidents or accidents occurred on site.

### CONCLUSION

After the completion of Phase 2, Pipavav offers a total quay length of 1,075 meters and is able to facilitate vessels with a draft up to 14.5 meters. There is an on-dock rail facility with dedicated sidings to handle containers, bulk and break-bulk cargo. The port also offers warehousing facilities, open stack yards, weigh bridges and dedicated rail slidings. The timely completion of the works guarantees that the port is ready for a next 'market boom'.



- E** CSD 'Cyrus II' and TSHD 'Prins der Nederlanden' working simultaneously in the port basin
- F** In order to accommodate crew members and workers, a campsite of 40 cabins had to be built. Furthermore, the accommodation barge 'Java Walrus' was deployed
- G** Work in progress
- H** CSD 'Cyrus II' pumping sandstone and a mixture of sand and clay into the reclamation area

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