

AIRPORT/PORT

A SMALL NATION'S MIGHTY GATEWAY

HaDarom Port

Submitted by China Harbour Engineering Co. Ltd.

ASHDOD, ISRAEL

BEST PROJECT



OWNER: Israel Ports Development & Assets Co. Ltd.

LEAD DESIGN FIRM: HPA Engineers PC

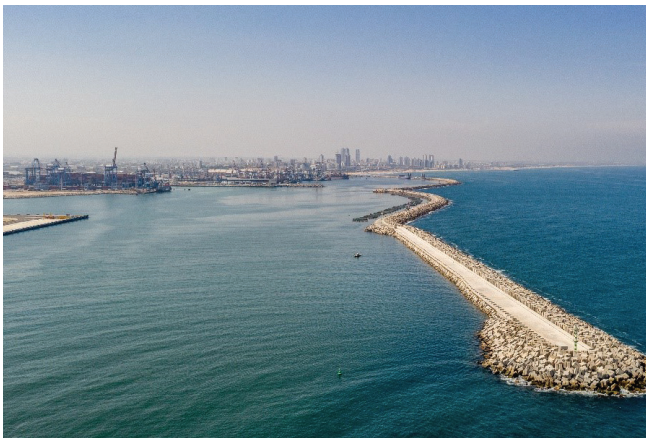
GENERAL CONTRACTOR: China Harbour Engineering Co. Ltd.

CIVIL ENGINEER: Gronner D.e.I. Engineers Ltd.

STRUCTURAL ENGINEER: Yaron-Shimoni-Shacham Consulting Engineers Ltd.

MEP ENGINEER: Yanai Engineering Electrical Ltd.

SUPERVISORY ENGINEER: ADYR Constructions Ltd.



NEW AGE Container terminal used multinational expertise and new technology to expand and upgrade a 1960s-era port for a growing nation.

This project expands and modernizes Israel's second deepwater port, which dates to the early 1960s. Added berth space accommodates the world's largest container vessels, allowing Ashdod's HaDarom private terminal to more efficiently handle more marine cargo.

The project team from Israel, China, the U.S. and Europe made use of value engineering and technology, including a jack-walking construction platform, to boost work efficiency. Specialized marine equipment was sourced from Italy, Germany, the Netherlands and Spain.

"Since the HaDarom port was constructed in the open sea, the key engineering challenge is the adverse wave condition," says the team, noting normal

wave heights "not stable and safe for floating construction." To protect the construction area, minimize port vessel impacts and expedite work, project design featured a "temporary caisson breakwater which could be fabricated relatively quickly ... and a revetment within steel pipe piles that had been driven to support a new open quay," says Bill Paparis, project director for lead design firm HPA Engineers PC. He adds that elimination of wick drains, use of stone columns in lieu of excavation and removal of liquefiable soils beneath breakwaters reduced cost and expedited construction.

The team says the jack-walking platform could have wider use in offshore construction under adverse wave

conditions, noting it was adapted for a power plant port project in Pakistan.

The HaDarom project makes maximum use of natural materials, supplemented by concrete armor units similar in appearance to natural rock. Use of real-time 3D sonar and related technology ensured accurate underwater armor unit installation and rock sloping, and optimized ground improvement design cut project cost and completion time. The project notes 8 million working hours with zero injuries and lost-time accidents, with a focus on monitoring riskier specialized work and a total of 14 special emergency response plans developed.

By Debra K. Rubin