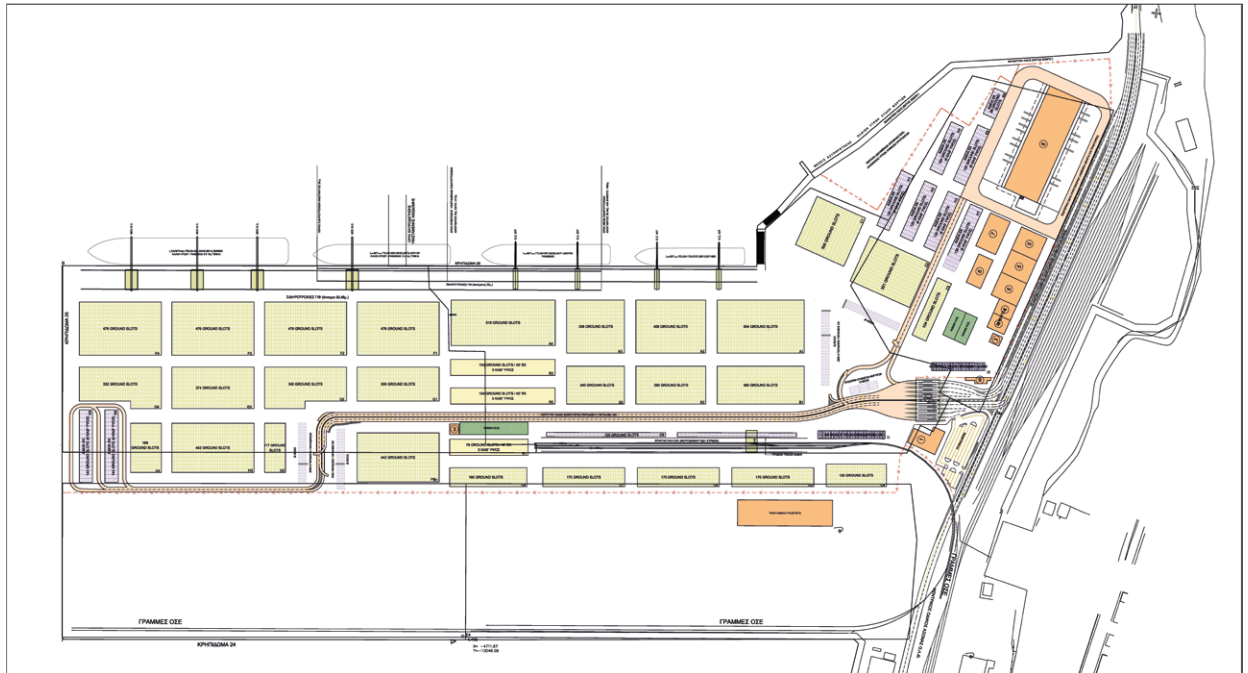


PROJECT TITLE	Thessaloniki Port – Extension of Pier No 6
LOCATION	Thessaloniki, Greece
CLIENT	Thessaloniki Port Authority S.A. (ThPA)

DESCRIPTION

ADK Consulting Engineers S.A., since 1998, through a series of consultancy contracts (Masterplan Design and Supervision Works) was assigned by Thessaloniki Port Authority (ThPA) the design for the extension of the Port's Container (Quay No. 26) and Bulk (Quay No.24) Terminal.



6th Pier General Layout – Thessaloniki Container Terminal

Within the framework of the extension, rehabilitation and modernization of the container terminal, **ADK Consulting Engineers S.A.** has provided the following consultancy and engineering services to **Thessaloniki Port Authority (ThPA)**:

- a. Detailed design and preparation of tender documents (1998) for the construction of all harbour works for the extension of the container terminal, namely:
 - Caisson type quay wall for the extension of Quay No. 26 by 555 m, with a construction depth of -15.00 m (CD)
 - Caisson type quay wall for the extension of Quay No. 24 by 638 m, with a construction depth of -15.00 m (CD)
 - Caisson type quay wall for future extension of Quay No. 25, 598 m long, with a construction depth of -15.00 m (CD)
 - Foundation system for the extension of the existing (20 m rail gauge) landward container crane rail (reinforced concrete bored piles, pile cap and tie beams) along Quay No. 26.

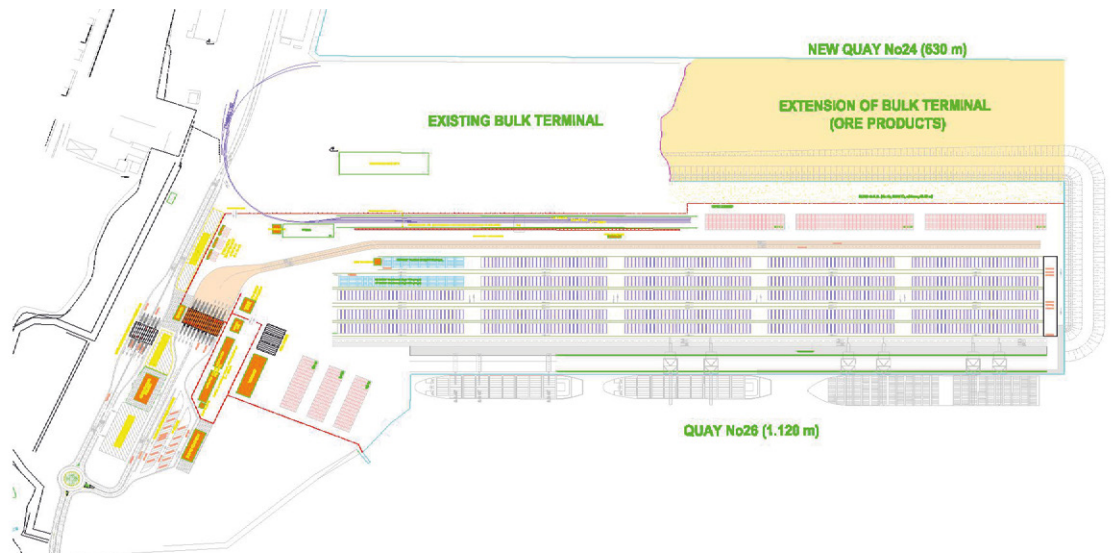
- b. Technical assistance to ThPA (2005-2007) during construction of the extension of Quay No. 26 (checking the Contractor's detailed designs and providing engineering support to ThPA for the supervision of works)
- c. Preparation of the Master Plan (2007) for the entire container terminal, based on the current utilization of straddle carriers
- d. Final design and cost estimate of all land infrastructure works (2007), necessary for the future operation of the container terminal expansion, namely:
 - Land reclamation including soil improvement works (prefabricated band drains and soil preloading)
 - Heavy duty steel-fibre reinforced concrete pavements at the marshalling and container storage yards (total area about 20.4 ha)
 - Storm drainage network
 - E/M utilities (power supply, etc)
 - Foundation system for the future installation of bigger container gantry cranes with 30 m rail gauge along the extension of Quay No. 26 (reinforced concrete bored piles, pile cap and tie beams)
- e. Final design and preparation of Tender Documents

On a later contract (2009) **ADK Consulting Engineers S.A.** was assigned the operational study and detailed engineering design for the extension of the Thessaloniki Port Container Terminal (Quay No. 26) which included:

- a) the Operational layout of the container terminal
- b) the detailed design of the extension of quay wall No 26 (reinforced concrete caissons and soil improvement works)
- c) the design of concrete pavements, the stormwater drainage network at quay No 26 and the E/M utilities network for servicing post panamax STS container cranes and
- d) tender documents

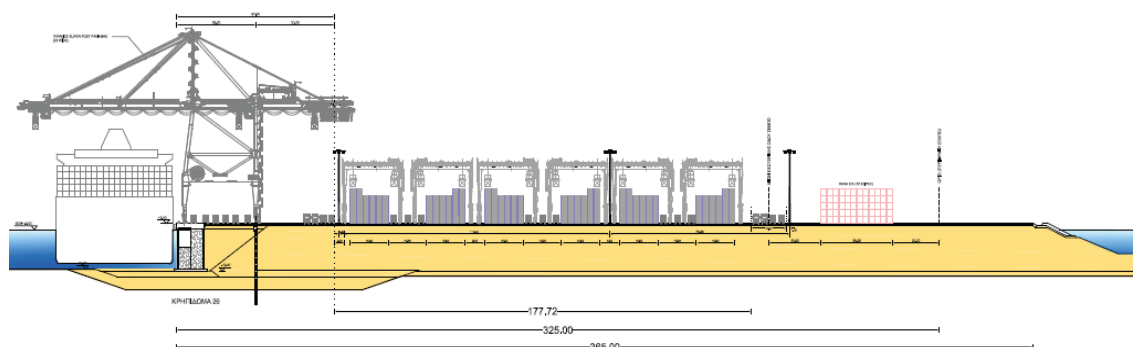
The study of the Operational Layout defined the optimum operational arrangement for the extension of Quay No 26 considering RTGs for containers stacking/handling. The marine works of the extension of quay wall No 26 consisted of the caisson's foundation study, caissons and superstructure detailed design as well as the structural design of the landward crane rail foundation. The design of heavy duty pavements, E/M utilities network and the stormwater drainage network were also elaborated.

For the completion of the entire design, ADK's team of experts took into consideration both the existing operational characteristics and capacity of the Container Terminal, as well as the scheduled future realisation of new marine facilities.



Thessaloniki Port Container Terminal Extension of Pier no 6

The study of the Operational Layout defined the optimum operational arrangement for the extension of Quay No 26 by using RTGs for container stacking/handling. The marine works of the extension of quay wall No 26 consisted of the caissons' foundation study, caissons and superstructure detailed design as well as the structural design of the landward crane rail foundation. The designs of heavy duty pavements, E/M utilities network and the stormwater drainage network have also been executed.



Container terminal Operational Layout – Cross section

On April 2012, **ADK Consulting Engineers S.A.** was assigned the Detailed engineering design for the new bulk terminal for the berthing and unloading of bulk carriers up to 100000 DWT. Construction works comprise soil improvement works, one 330 m long and -17.00 m (MSL) deep quay wall and land reclamation of the storage areas behind the quay. Soil improvement works comprise dredging for the removal of top soil layers and replacement with sand drainage blankets, installation of wick drains and stone columns (piles) and preloading. The quay wall has been designed as a gravity type structure with reinforced concrete caissons and cast in situ capping beam. Quay wall design loads include mooring loads, bulk solid storage behind the quay wall (nickel ore with storage height up to 13 m), ship-to-shore cargo handling equipment (rail mounted portal crane with 50 t lifting capacity) and railway loading on the quay.