

Ras Laffan port expansion (armour blocks), Qatar

Ras Laffan Industrial City, situated along the northeast coast of Qatar, is one of the fastest growing industrial cities in the world. Within just a few years it is expected to expand from 106 square kilometres to nearly 250 square kilometres. The city's deep-water port is able to accommodate the largest categories of tanker and cargo ships, including LNG carriers and VLCCs (very-large crude carriers). Covering an area of 8.5 square kilometres, Ras Laffan port is in fact the world's largest LNG export facility.

BAM International produced and supplied the 200,000 pre-cast concrete armour blocks for the construction of new and longer breakwaters. The breakwaters form the first phase in the development of a section of the port specialised in the handling of LNG tankers.



Location Production yard: Port of Ajman, United Arab Emirates

Delivery site: Port of Ras Laffan, Qatar

Client Qatar Petroleum

Contractor BAM International and Sixconstruct as subcontractors of the Ras Laffan joint venture

Contract period October 2006 – October 2008

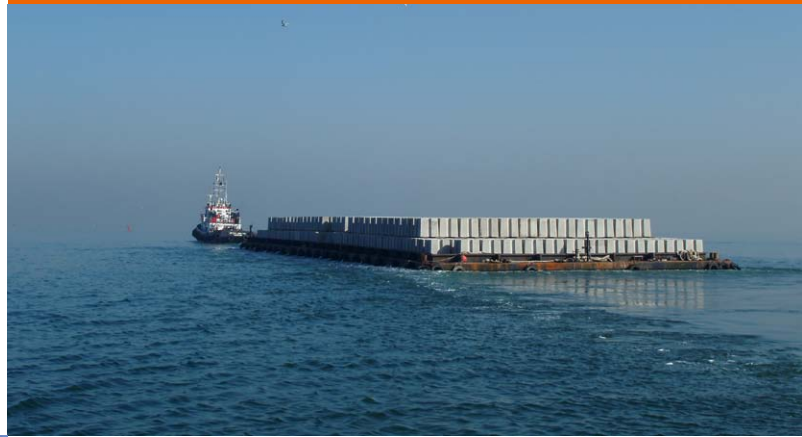
Contract sum € 110 million

'The logistics involved were fascinating.'

Scope of work

The scope of work included the production of approximately 200,000 precast concrete elements in the port of Ajman, one of the seven United Arab Emirates. Here, five to six hundred units (a total of 1,800 cubic metres) were produced each day. At times up to 15,000 armour blocks were kept in specially created storage facilities, from where they were shipped over 400 kilometres in 226 transport tows.

At their final destination in Qatar, the concrete armour blocks were used in the construction of the breakwaters that will protect the Ras Laffan port expansion from the elements.



Big concrete factory

This project was distinctively different from BAM International's usual sites, as basically a big concrete factory was run. In peak periods over 2,000 m³ concrete per day was produced, which in practice meant pouring 600 pre-cast elements per day, transporting an equal amount to the barges and to Qatar and to receiving all materials on site to achieve this.

Smooth transport flow

Great effort was put into setting up the site to facilitate the production and to accommodate a smooth flow of transport. To pour the pre-cast elements six bays of 200 metres in length were set up, with a tower crane each. The bays had sufficient storage capacity for about a week's production. A 180-metre quay wall was made, which had three cranes for the loading of pre-cast elements onto the barges. Three tug boats were used, two for towing the barges and one standby for manoeuvring in the port.



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