

Ringsend Water Treatment Works, Ireland

Client: Dublin Corporation
Contractor: BAM Ireland Ltd
Location: Dublin Bay, Ireland
Products: Maxima / Alshor / Rapidstage

Case Study

RMD Kwikform Ireland supplied a number of formwork and shoring solutions for the construction of the IRE200 million Ringsend Waste Water Treatment Works at Dublin Bay, Ireland. The civil engineering element of the works was undertaken by Ascon Limited, with whom RMD Kwikform worked in close partnership from the outset of the project, for Dublin Corporation.

The project is to serve a population of 1.5 million people. By the time it was completed, it utilised 90,000 cubic metres of concrete and 9,000 tonnes of steel reinforcement to construct the SBRs tanks [Sequence Batch Reactors] that cover an area of 6.2 acres, incorporate six tanks, each with four cells that together will hold 84 million gallons of water. Uniquely to Europe, the project is the first where two-tier water retaining tanks have been constructed.

To help achieve this, RMD Kwikform supplied a range of products, including Maxima large panel system formwork for the tank walls, Alshor aluminium shoring for deck support, and Rapidstage support.

The lightweight aluminium Alshor shoring was chosen because of its proven ability to support heavy loads at extended propping heights. Each of the 12 Ringsend elevated slabs is 945 square metres, resulting in a total area being supported of 11,340 square metres at a height of 10.4 metres. Each reinforced concrete slab weighs 2,150 tonnes with the support load split between 1,600 tonnes carried by the Alshor shoring and 550 tonnes by precast concrete deck sections. This called for a total of 10,000 formwork and shoring components for every one of the dozen 15,500 cubic metre capacity cells that measure 45 metres wide by 53 metres long by 7.5 metres deep.

With a programme duration for each cell of just five weeks, speed of erection, striking and reconfiguration of the shoring was of critical importance to the contractors. At any one time, one and a half tanks were supported by the RMD Kwikform shoring system, so it was clear from the outset that the system had to offer exceptional in-use versatility, be highly mobile and easy to use.

According to Ascon's specialist formwork sub-contractor's Managing Director, John Blowick, it was a challenge never before tackled in Ireland. He says: "This is the highest RMD Kwikform movable formwork system of its kind ever erected in Ireland and the overall construction programme depended on maintaining the shoring cycle. Clearly shoring systems that had to be completely dismantled and then re-assembled for each cell would have been neither cost effective efficient nor meet the construction programme. Hiring from RMD Kwikform enables us to hire exactly what we need, precisely when we want it."

The Maxima large panel formwork was used in the construction of the SBR central core walls along with other wall forming systems. It was chosen because it withstands concrete pressures up to 80 kN/m² and will cope with a wide variety of pour heights, pour lengths and layouts. Pre-assembled high strength, steel panels significantly reduce on-site labour costs and preparation times, while cast iron frame corners that incorporate levering points assist handling, reduce site damage and allow easy adjustment of the panels and assemblies. Fast tool-free erection is possible due to the use of special quick-fix Maxima Multi Clamps.

