

HORNSEA OFFSHORE WIND FARM NORTH SEA, NORTH SEA, UNITED KINGDOM

Reinforced Soil Walls and Slope Reinforcement

Problem

Hornsea offshore wind farm is situated in the North Sea, off the Yorkshire coast. It is currently in construction and part 3 of the phases are in development. There are 3 projects in total in this area and this will be the largest offshore wind farm in the world. Its completion is set to be 2020 and it will generate enough energy to power over one million homes. It spans an area of 407 square kilometres, which has been estimated as 'five times the size of the city of Hull'. Each 7 megawatt wind turbine will be 190 metres tall—which is taller than the Gherkin building in London.

In April 2017 contractor Murphy undertook works for Dong Energy to install cabling to connect Hornsea Offshore Wind Farm to a new sub-station 38km inland at Killingholme. Part of the works required drilling under the sea defence wall. To enable the drilling plant to access the beach a temporary access ramp was needed over the sea defence. Murphy wanted to use a temporary wall structure to retain the access ramp on both the landward and seaward side of the sea defence.

Solution

Murphy contacted Maccaferri to find a solution to the problem and Maccaferri proposed to use Flexmac DT which would create the temporary retaining walls. There were to be multiple courses of FlexmacDT until they were at the required height for not only providing retention of the access ramp but also acting as a barrier either side of the ramp. Once erected the Flexmac DT units were placed in position and filled in situ with site won material. After the works were completed the Flexmac DT were emptied by lifting up and allowing the fill to escape out of the bottom of the unit.

Client: Dong Energy

Designer / Consultant: Maccaferri Ltd

Contractor: J Murphy & Sons Ltd

Products used (Qty.)

Date of construction: 04/2017 - 03/2020

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Initial phases of the works



Flexmac DT units are machined filled



FlexMac units crossing drainage tubes