

The development of Aberdeen Harbour Expansion Project, UK

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Abstract

One of Europe's largest greenfield port capital investments projects over the next few decades will be the Aberdeen Harbour Expansion Project. (Figure 1). It has a project investment of over £300 million, the project involves the construction of two new breakwaters each 600m long, quay lengths of over 1.5km, 2 million m³ of dredging including 0.25 million m³ of rock dredge and approximately 1 million m³ of reclamation. The harbour is situated on the east coast of Scotland and is subject to severe wave climate where design waves exceed Hs~8m requiring single layer concrete armour units of up to 16m³ to protect the Southern Breakwater.

This paper sets out the elements of the development of the port masterplan including the key engineering design and environmental constraints and operational requirements using many of the principles set out in the forthcoming PIANC WG185 guide to site selection and masterplanning of greenfield ports. The paper presents the context and background of the project, the masterplanning process, numerical and physical wave modelling studies, navigation simulation, aspects of the engineering design and the procurement process. The construction contract was awarded on 20 December 2016 with the project due to be complete in 2020. The construction is now fully underway.