

Greystones Harbour Breakwater, Ireland

- shear key joints to precast blocks

Contractor: Sisk
 Consultant: Arup
 2009



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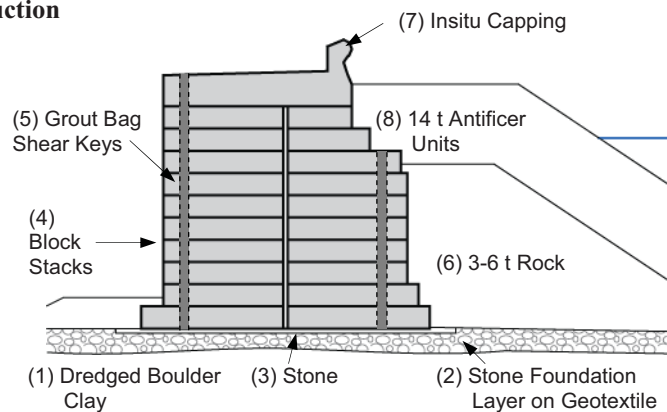
Fabriform



Greystones Harbour during construction



Placing of the stacked blocks



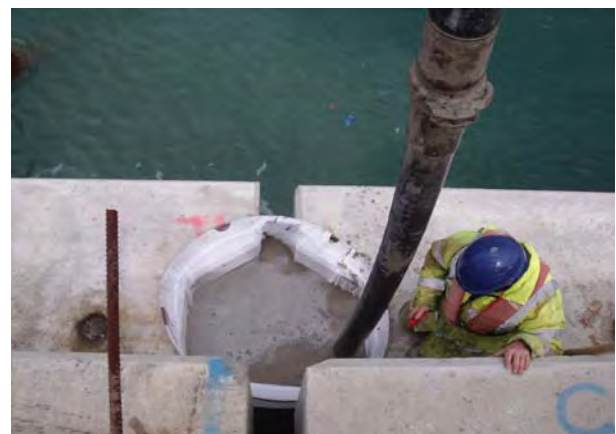
Construction sequence

A major expansion and improvement of the harbour was undertaken including the construction of extensive breakwaters. The breakwaters are stacked precast block walls with a seaward embankment of stone and Antifer wave protection units. The breakwaters were built by a build out method with a crane working from the end of the stacked precast blocks for work sequence stages 2 – 7. The great reduction in the use of marine plant has potential for significant savings.

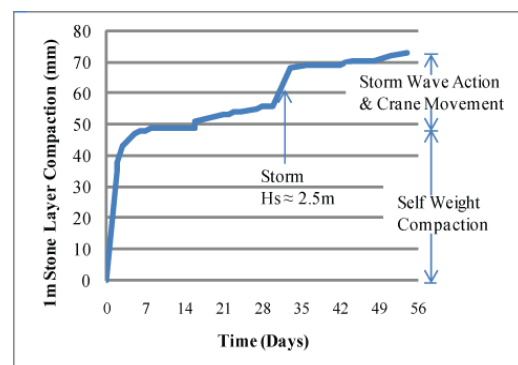
The solid concrete blocks are unreinforced, weighing up to 60 t and have side recesses to allow the formation of vertical shear keys. Blocks were placed onto a screeded stone bedding layer, laid by a travelling screed hopper, on top of an uncompacted stone foundation layer. The stone bed was laid 100mm high to allow for bedding in, stone layer compaction and slight strata settlement.

Easterly storms during construction did cause some initial scour to the stone bedding layer and unprotected stacked blocks. Construction proceeded with some improvements to foundation stone grading, temporary scour protection and shear key concreting sequence.

Stone layer compaction of typically 70mm occurred in some 2 to 3 months before the final lines of shear keys were concreted. This allowed management of settlement and differential settlement before the insitu capping slab was formed.



Shear



Typical Settlement, Greystones.