



Canewdon blocks revetment replacement at Hullbridge, Essex

Background

Canewdon blocks are used to support and protect riverside and coastal embankment slopes, and are designed specifically to absorb wave energy to protect the land.

At Hullbridge, on the tidal estuary of the River Crouch in Essex, an area of revetments were in need of replacement in an area classified by the Environment Agency as being at significant risk of flooding.

Main contractor



The project to replace the existing revetments was carried out over a 10 month period and required the installation of steel pilings and a cofferdam to provide a safe working environment while the work was carried out.





Solution

The Canewdon blocks were delivered by barge due to access to the site. in A 100 tonne crane on a 200 tonnes jack up barge was used while piling was carried out and then this was then replaced with a 65 tonnes crane on a 100 tonne jack up barge to move the Canewdon blocks from the floating barge to the area where they needed to be installed.

The Canewdon blocks were laid on a 75mm concrete bed on a geotextile terram. Once in position the joints between each block was sealed using a bitumen grout.



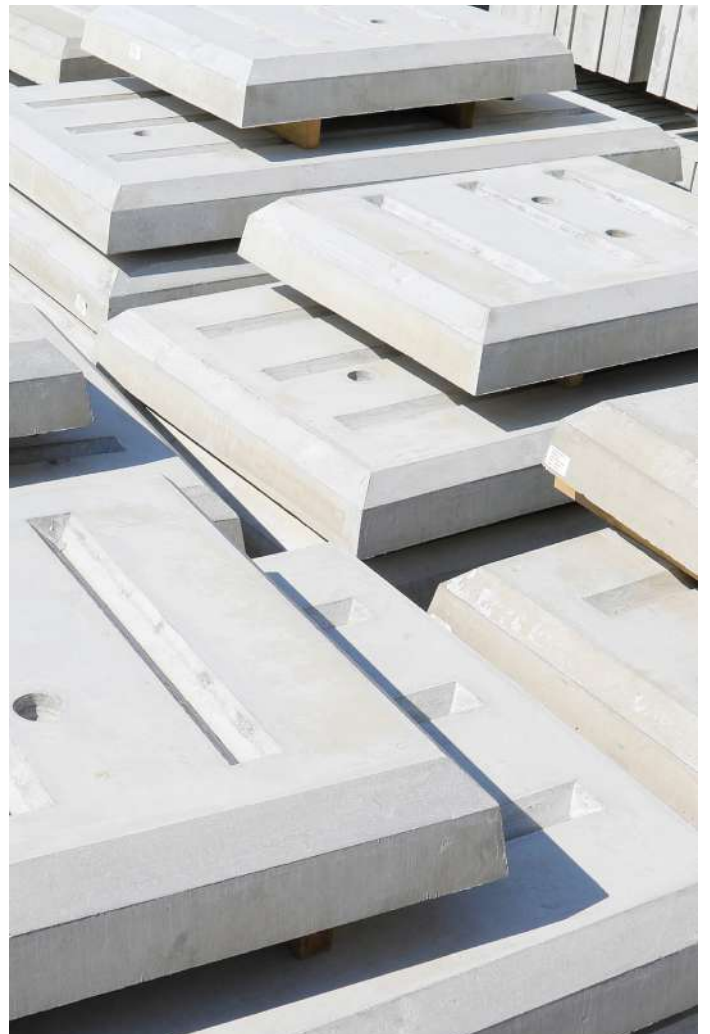


How we helped

We supplied a total of 162 Canewdon blocks in two different sizes. As part of a trial, a number of the blocks were produced as an ultra-low carbon concrete option using Cemfree from DB Holdings, a cement-free alternative to traditional cement. This resulted in savings of up to 78% in embodied CO₂ being achieved compared to the conventional mix of OPC (Ordinary Portland Cement).

Other options to reduce the carbon footprint were also manufactured, which included using basalt reinforcement as an alternative to steel, and the use of carbon negative aggregate which permanently captures CO₂.

Jackson Civil Engineering were named a Carbon Champion by the Institution of Civil Engineers (ICE) to celebrate their efforts to quantifiably reduce the carbon emissions associated with this project.





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