Coastal structures

Dept. of Civil Engineering, Ghent University

Background

Coastal structures are important assets for the economic health of many coastal communities to protect harbours, provide beach and shoreline stability, and provide flood protection. The increase of the storminess and sea level rise associated to climate change will accelerate the coastal erosion processes. Coastal structures protect human lifes and infrastructures from the dangers of wave attack.

Coastal erosion
(Hornsea, UK)

Wave attack affecting a railway line
(Dawlish, UK)

Dikes and dunes

Seadike: groynes, berm, maintenance path, revetment and grass cover
(Westkapelle, The Netherlands)

Dike with concrete revetment and storm wall elements
(Norderney, Germany)

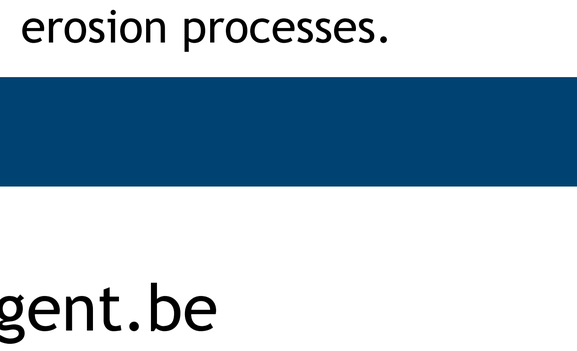
Sand dune system
(Koksijde, Belgium)

Combined dike and dune system
(Westende, Belgium)
Source: afdeling KUST

Sea walls, harbours and breakwaters

Seawall to block the waves
(Seaham, UK)

Harbour with quay wall and rubble mound breakwater (Hirtshals, Denmark)



Waves attacking a rubble mound breakwater
(Zeebrugge harbour, Belgium)

Construction of a rubble mound breakwater
(Oostende, Belgium)

Innovative structures

Delta Works: Maeslantkering storm-surge barrier (Rotterdam, The Netherlands)

Palm Jumeirah: land reclamation
(Dubai, UAE)

Coastal structures at UGent

At the Coastal Engineering Research Group we have a long-established research experience in coastal structures. Our expertise ranges from designing breakwaters based on both numerical and physical modelling (Zeebrugge harbour protection, Oostende breakwater extension) to assessing the coastal erosion processes.

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