

Breakwaters



Grenaa Harbour

Services

- Surveying and mapping
- Geotechnical investigations
- Environmental impact assessments (EIA)
- Planning
- Modelling of coastal dynamics
- Modelling of wave agitation
- Establishment of design parameters (wave heights, overtopping, filter criteria etc.)
- Design
- Procurement
- Contract management and construction supervision

Description

Over the years, Grontmij | Carl Bro has provided consulting services for both public and private clients, in connection with the establishment of new breakwaters, extension of existing breakwaters and revetments for protection of landfills. Breakwaters are often an integrated part of the over-all harbour design.

Our activities cover broad from projects for breakwaters protecting harbour facilities over physical model tests and numerical modelling of structures to the large-scale infrastructure project of Øresund Fixed Link, where Grontmij | Carl Bro performed planning, design and supervision of 14 km stone revetments and breakwaters.

We master several modelling tools which are useful during the design phase in respect of wave agitation and design parameters for the breakwaters.

Selected References

2005-13, Køge, Denmark

Design of breakwater for major port extension

2005, Trelleborg, Sweden

Design of breakwater

2004-05, Grenaa, Denmark

Design of breakwater and revetments

2004-05, Malta

Design of breakwater protecting a marina area

1995-00, Øresund Link, Denmark/Sweden

Design of breakwaters and revetments

1992-95, Grenaa, Denmark

Breakwaters for major port extension

1990-92, Køge, Denmark

Breakwaters for port extension

1990-92 Rønne, Denmark

Breakwaters for ferry terminal

1989-92 Elsinore, Denmark

Conceptual design of breakwaters

1988-89 Kuwait

Concrete block breakwaters



Øresund fixed link