

# Coastal Engineering Services

Coastal engineering is a discipline that involves insight into coastal processes such as the transformation of waves and currents, and the movement of sediments in the near-shore zone.

Ben C. Gerwick, Inc. and our affiliate COWI A/S possess valuable knowledge within this field, making it possible to provide technically outstanding engineering designs, which are durable, economically feasible, and take due consideration to the marine and coastal environments.



Storm damage reduction project, Chicago shoreline, Lake Michigan, IL.



Large-scale beach nourishment by pipeline.

Our specialist knowledge within coastal-, marine-, and geotechnical-engineering, in combination with our multi-disciplinary pool of services, ensures that all aspects of a given project are considered, ranging from environmental concerns, landscaping and aesthetics to sustainability, long-term effects, and public interest.

In addition to our tradition and background in marine engineering, advanced numerical modeling and physical model testing is utilized in the planning and design of breakwaters and coastal structures.

Our services include:

- Field Investigations & Surveys
- Data Collection and Research
- Desk Studies and Analyses
- Feasibility Studies
- Planning
- Coastal Zone Management
- Conceptual Design
- Detailed Design
- Construction Supervision
- Technical Reviews and Expert Advice
- Value Engineering

## Areas of Engineering:

- Design of Shore Protection Structures
- Scour Protection
- Erosion Control
- Hydrodynamics and Hydraulics
- Wind Dynamics
- Morphological Studies
- Dredging
- Numerical Modeling
- Reef Restoration
- Spill Monitoring
- Constructibility Studies

## Assessment and Evaluation of:

- Wave Hydrodynamics and Wave Impact Forces
- Littoral Transport
- Shoreline Recession, Inundation, and Bathymetric Changes
- Scour and Erosion/Accretion Phenomena
- Wind-Generated and Ship-induced Waves and Currents
- Tidal and Storm Surge Water Levels
- Sea Level Rise
- Quarry Materials