

Long term current & silt measurements Braakmanhaven

The Braakmanhaven near Terneuzen is subject to severe siltation, viz. on average 80 cm per year. Zeeland Seaports has initiated a project with the aim to reduce the maintenance dredging effort. To gain insight into the driving forces behind this siltation, Svašek Hydraulics has performed four 13-hours current and turbidity measurements

These measurements have identified a complex 3D flow pattern in the entrance of the Braakmanhaven in the first hours after high water. A strong near bed current flows into the harbour, while an outflowing current over the whole water column is expected. Such a strong near bed current potentially is an efficient mechanism for the influx of sediment into the harbour. To investigate the persistency of this flow pattern an additional survey has been performed.

This survey consisted of the deployment during a period of six weeks of an AWAC mounted in a barnacle frame, measuring vertical current velocity profiles, and an OBS, measuring near bed turbidity levels. The barnacle frame was equipped with a battery pack so

that the frame could be deployed stand-alone. The OBS received its power from and logged on the AWAC. The frame was placed in 16 m deep water and connected to the nearby jetty of DOW Benelux by means of an 80 m chain.

The survey was with 100% data return very successful! The measurements have shown that the strong near bed inflow occurred every day. Besides, the near bed sediment concentrations in these currents are high. This means that this 3D flow pattern is the cause of the large siltation of this harbour. The next steps to be taken are to identify the cause of this current and to design measures preventing this current or the associated influx of sediment.

CLIENT

Zeeland Seaports

LOCATION

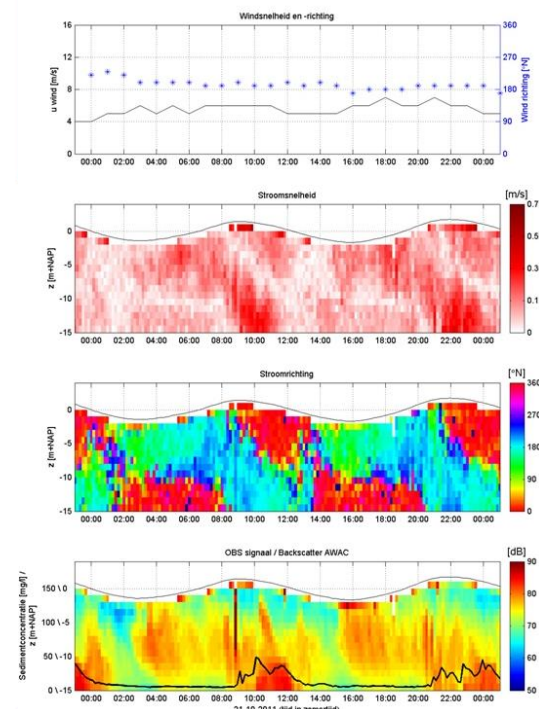
Braakmanhaven, The Netherlands

DATE

2011

SERVICES

Current measurements,
Turbidity measurements,
Data processing and analysis.



SVASEK

HYDRAULICS

COASTAL, HARBOUR AND RIVER CONSULTANTS

Svašek Hydraulics
Kratonkade 23
3024 ES Rotterdam
The Netherlands

Phone: + 31 10 467 13 61
Internet: www.svasek.com
E-mail: info@svasek.com