

# PORT OF BRESKENS

## RESEARCH INTO WAVE CONDITIONS, CURRENTS AND SILTATION

The port of Breskens is situated on the southern shore at the mouth of the Western Scheldt. The port consists of a marina, a fishing port, and a commercial port. It is protected by two breakwaters (the east and west dam). At the end of the west dam, the structure transitions from a steel sheet pile wall to a wooden pier. These two structures provide shelter when entering the port in rough weather, but both are in poor condition and at the end of their lifespan.

The municipality of Sluis has commissioned Svašek Hydraulics to investigate the impact of removing the sheet pile wall and pier on wave conditions, currents, and siltation within the port.

To determine the wave conditions at the port entrance and in the port basin of Breskens, the numerical wave model HARES was used. Using this model, the wave penetration into the port was calculated for both the situation with and without the sheet pile wall and pier, based on wave conditions that occur once a year.

To determine the effect of the sheet pile wall and wooden pier on siltation, an online coupled morphological FINEL-SWAN model was set up.

This approach allows both wave-driven and tide-driven sediment transport to be taken into account. By comparing the results of the two layout scenarios, the influence of these structures on sedimentation has been investigated.

In assessing port accessibility during storm conditions, it is important to account not only for wave conditions but also for the prevailing current patterns, particularly the wave-induced currents. To this end, the same online-coupled FINEL-SWAN model was employed. Three characteristic storm scenarios were simulated to evaluate the hydrodynamic conditions influencing port accessibility.

### CLIENT

Municipality of Sluis

### LOCATION

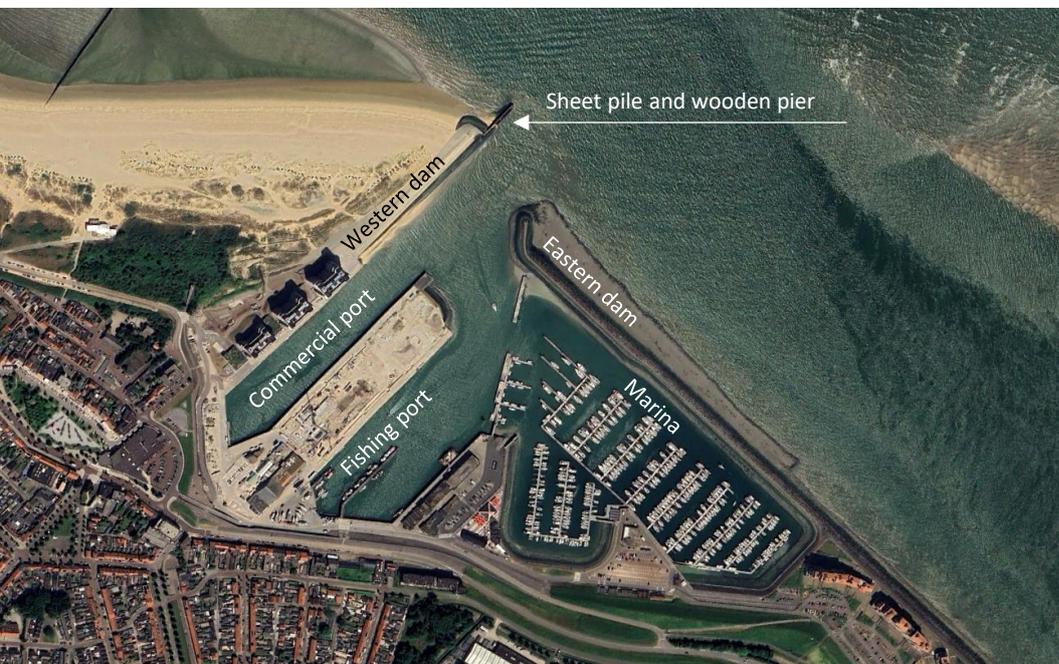
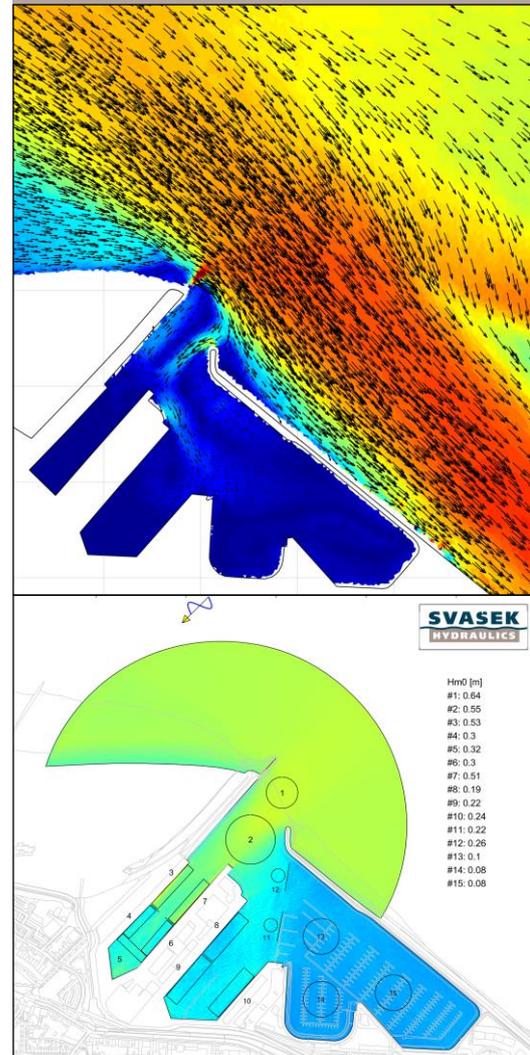
Port of Breskens, Western Scheldt, the Netherlands

### DATE

2024

### SERVICES

- Model computations and analysis into wave conditions, currents and siltation.



**SVASEK**  
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