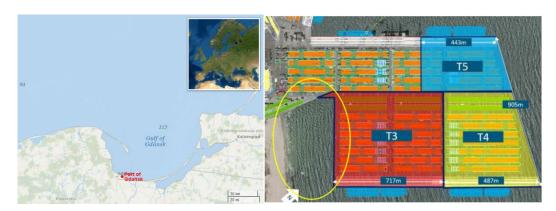
PORT OF GDAŃSK: NUMERICAL MODELLING OF SEDIMENT TRANSPORT AND WATER QUALITY



GDAŃSK, POLAND



INFO:

Location: Gdańsk, Poland

Client: Arup

Project Date: June 2022

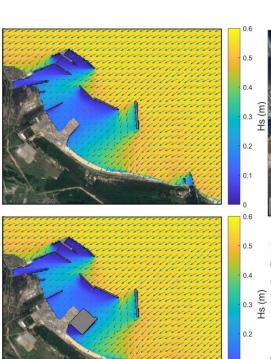
SCOPE OF WORK:

- Literature reviews
- Hydrodynamic modelling
- Report preparation and delivery

PROJECT DESCRIPTION:

The Port of Gdańsk is a seaport located in the city of Gdańsk on the southern coast of the Gulf of Gdańsk and is one of the largest seaports on the Baltic Sea. The Gdańsk Deepwater Container Terminal (DCT) is the only truly deep-water container terminal in the Baltic Sea and is the primary gateway for Polish traffic and Baltic transhipment operations. DCT has plans for a 37 Ha expansion of a Terminal 3 (T3) which will include capital dredging and land reclamation.

As part of the environmental impact assessment for this project we conducted a detailed numerical modelling study that was focussed on sediment transport and water quality effects of the proposed development on Stogi Beach which lies adjacent to the port. The project included a beach morphology evolution study and hydrodynamic numerical modelling aimed at quantifying potential water quality issues affecting the coastal zone due to the development of T3.



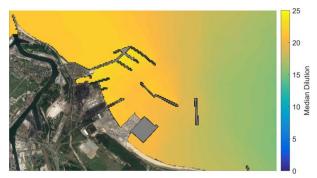


TOP: Location of Gdansk (left) and the proposed expansion of the Port (right). The location of Stogi Beach is circled in Yellow

LEFT: Predicted shoreline change for the 'Future' scenario including the effects

LEFT: Significant wave height for a moderate 0.5 m NE wave condition for the $\widehat{\mathbb{E}}$ present (top), future $\widehat{\mathbb{E}}$ (bottom) scenarios.

RIGHT: Median dilution of water contamination in the vicinity of the port.



ORCAS: Oceanic Resilience and Coastal hazards Adaptation Solutions