

Coastal & Ocean Basin (COB) - Oostende

Flanders Maritime Laboratory

The Coastal & Ocean Basin (COB) is a wave tank with unique features, located in Ostend Science Park (Oostende, Belgium), managed by a consortium composed of Ghent University, KU Leuven and Flanders Hydraulics Research.

The COB welcomes users from academia, industry and governmental institutions, with the opportunity to develop and test innovative designs for coastal protection, offshore structures and marine renewable energy devices.

Basin characteristics

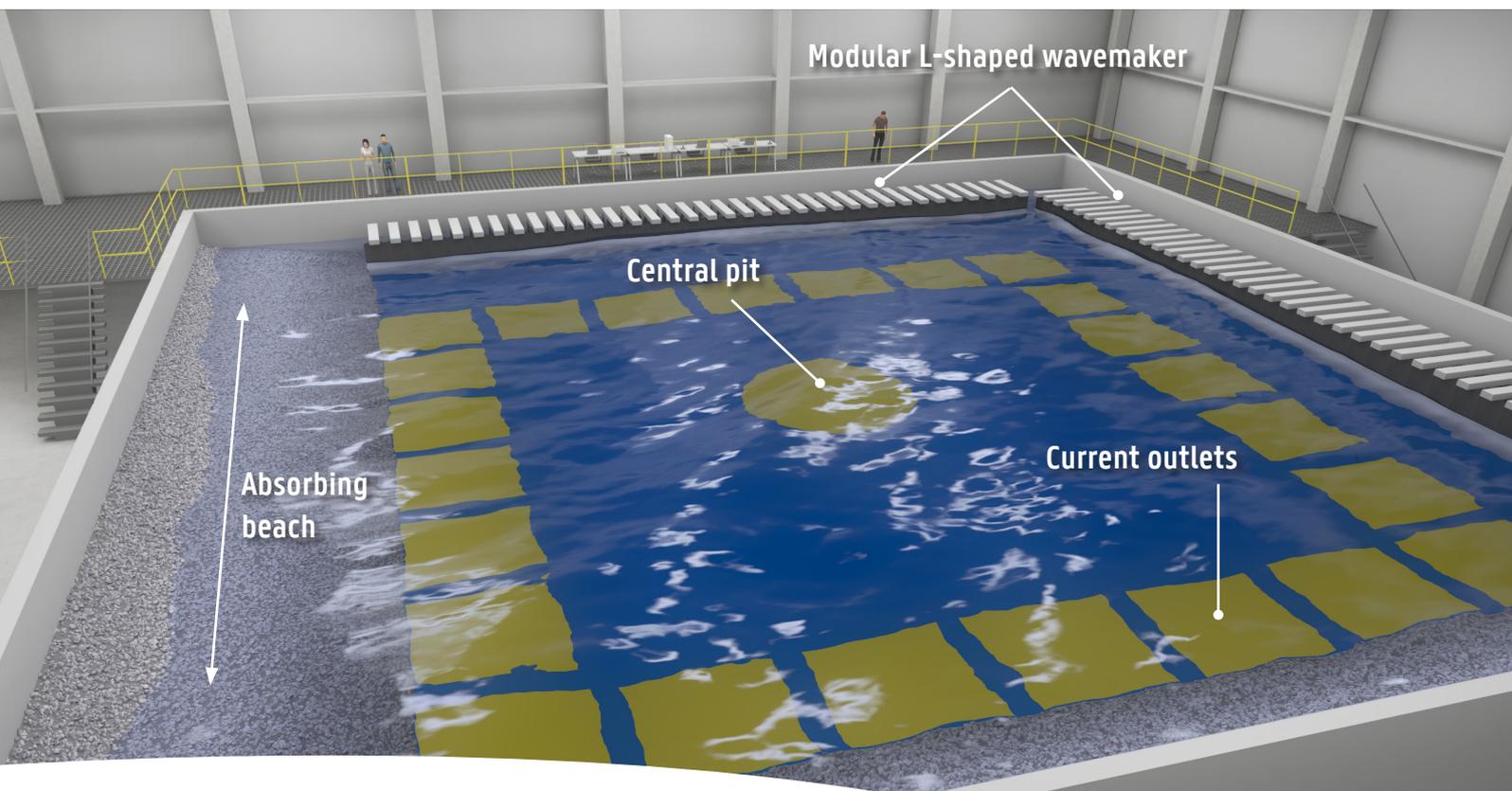
- Basin dimensions (L x W x H) : 30 x 30 x 2.3 m
- Variable water depth (0.3 – 1.4 m) with a central pit of up to 4 m deep
- Wave heights up to 0.55 m
- Currents up to 0.4 m/s
- Wave-current interaction in any relative direction
- Technology readiness level (TRL) : 1-4

Wave generation

- Piston type wave paddles
- L-shaped wavemaker (20 x 20 m)
- Regular and irregular, first and second order, directional, shortcrested waves, 2 sea states
- Active wave absorption

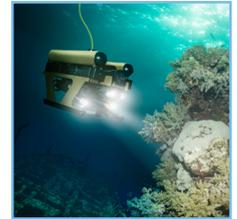
Current generation

- Propeller type current generation
- Flexible current direction
- Excellent quality velocity profile
- Suppression of spurious flows



Wide Fields of Application

- Coastal structures
- Offshore structures
- Ocean energy
- Floating structures & mooring applications
- Nature based coastal defense solutions
- Testing of observation equipment



First projects with COB involvement

- 3D Breakwater tests
- Floating photovoltaic tests
- SOILTWIN: Improved design of monopile foundations focussing on structural dynamics
- WECFarm: Testing of wave energy converters in an array formation
- ENCORE (Interreg 2 Seas): Training for wave basin tests of floating photovoltaic systems and moorings

Strategic partnerships

- COB is IECRE partner (www.iecre.org)
- COB is key partner in EFRI Mariner-g-i (www.mariner-g-i.eu)
- COB is Qualisys partner with state-of-the-art motion tracking system (www.qualisys.com)
- COB is OWI-lab partner (www.owi-lab.be/cob-wave-tank-testing)
- Local network of leading companies supporting the COB from the early start

Location

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