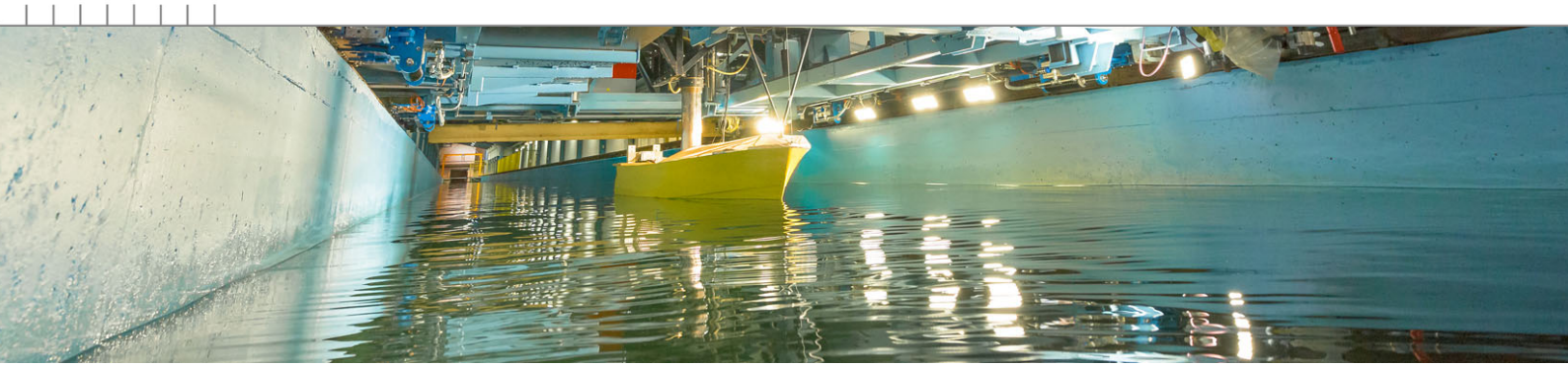


Concept Basin

Model size range

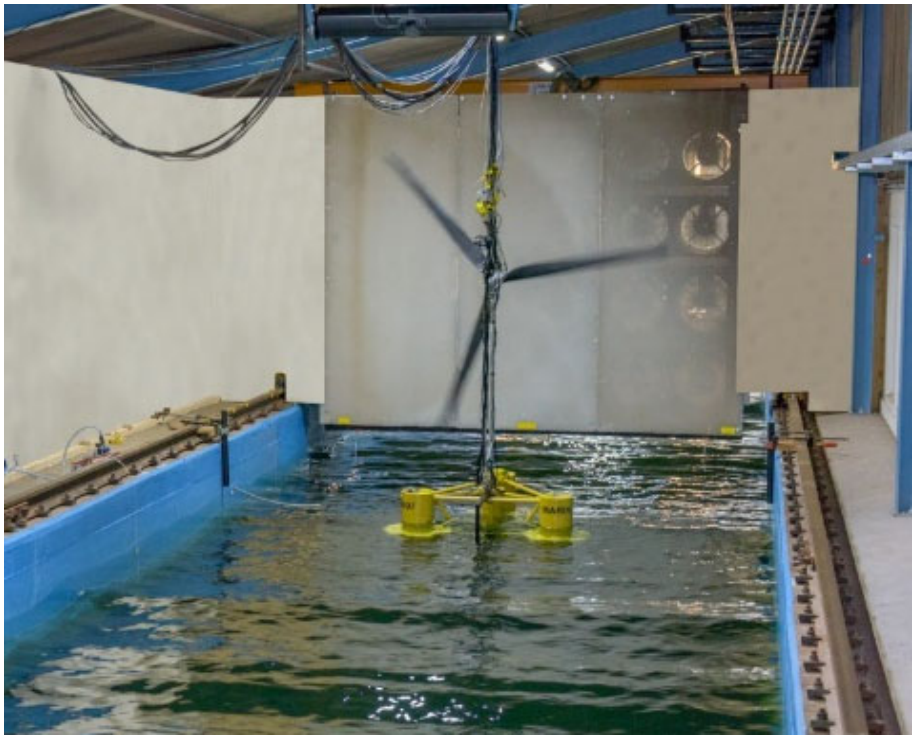
- Model length of 1 – 4 m;
- Floating structures of any kind, size depending on water depth, wave condition and with of basin;
- Length for VIV oscillator 3.4 m.

Dimensions

The Concept Basin has a length of 220 m, a width of 4 m and a depth of 3.6 m. The basin is filled with fresh water. The basin is mainly designed to perform calm water and seakeeping model tests of ships and structures in the concept phase. Furthermore, the basin can be used for research purposes.

Carriage

The basin has a stiff overhead carriage which runs over the full length of the basin. The maximum speed is 10 m/s.



Test capabilities

- Resistance and propulsion tests in calm water and waves.
- Seakeeping tests:
- head and following waves;
- other wave directions at zero speed;
- Captive test in calm water or waves (e.g. current loads, manoeuvring coefficients);
- Installation and sea transport test of offshore structures;
- Test on moored or fixed objects to determine the motions and loads due to waves and wind;
- Wave energy testing (renewable energy devices);
- VIV;
- Drop tests for freefall life boats.

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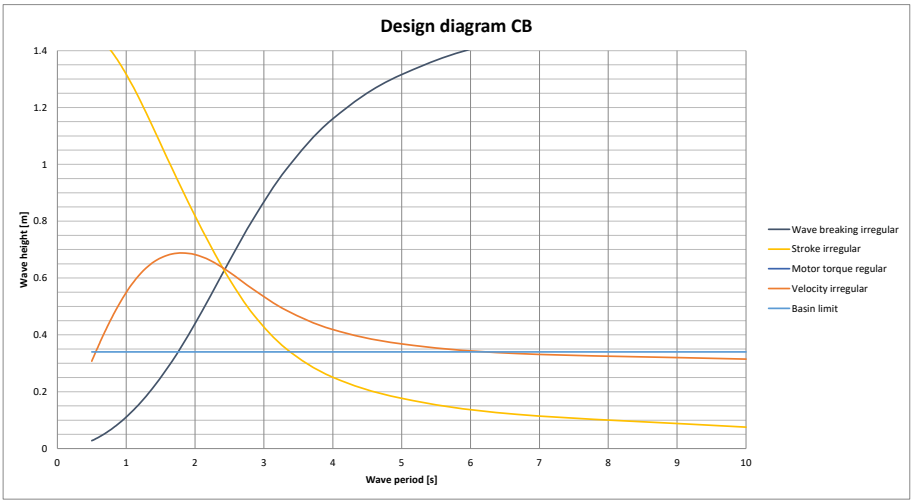
Environment

Waves

A wave generator is fitted at the end of the basin. The wave generator consists of 8 hinged flaps. Each flap (with a width of 50 cm) has its own driving motor, which is controlled separately. The wave-making capacity is up to an irregular significant wave height of 0.38 m at peak periods between 1.8 and 3.3 seconds and a regular wave height of 0.80 m at peak periods between 1.9 and 3.1 seconds. Opposite the wave generator, a passive sinkable wave absorber is installed. The wave generator is equipped with compensation of wave reflections form (ARC) the model and the wave absorbing beach. Wave generation is based on higher order wave synthesis techniques.



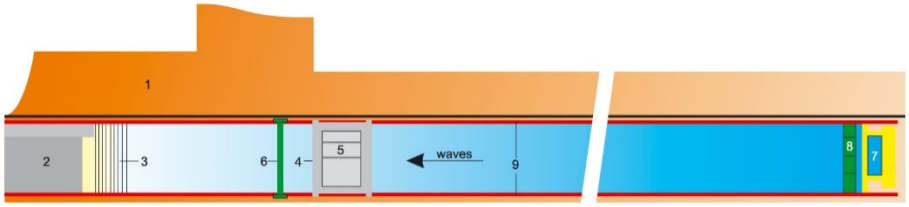
Wind

Wind can be simulated by an adjustable platform spanning the full width of the basin fitted with electrical fans.

Other capabilities

VIV oscillator

The carriage can be fitted with a large stroke vertical oscillator to test vortex induced vibrations on pipes, risers and other slender constructions. Maximum Reynolds number up to 5E5.



1 Workshop
2 Working pond
3 Beach
4 Main carriage
5 Test section
6 Auxiliary carriage
7 Multi segment wave generator
8 Wind platform
9 Rails