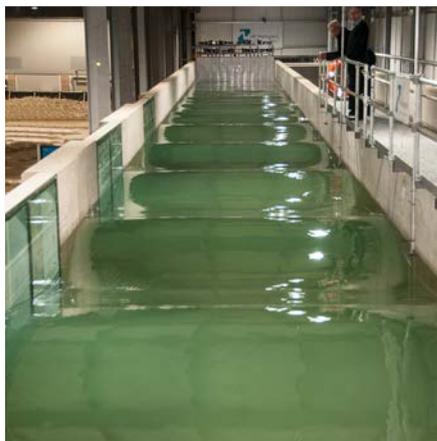
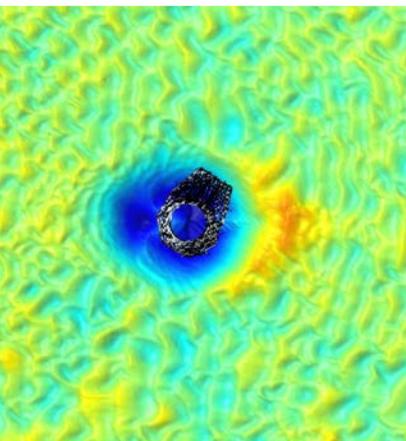


Physical modelling facilities

Fast Flow Facility



The Fast Flow Facility is one of the world's largest marine test facilities. This dual-channel, race track shaped flume is a unique large scale modelling facility offering wave, fast tidal current and sediment capabilities.

Understanding the complex way waves, currents and sediments interact is vital to the successful delivery of projects in the marine environment. The Fast Flow Facility allows our scientists and engineers to examine these interactions at a larger scale and in more detail than has previously been possible, helping us to more effectively optimise designs for our clients and minimise the water based risks for their projects.

We can study sediment transport, scour and morphology for a wide range of subsea, coastal, estuarine and fluvial engineering projects, as well as the combined impact of waves and currents on structures in a fast flow environment.

The 75 m long, 8 m wide Fast Flow Facility holds a million litres of water, can generate waves up to 1 m high and flows of over 2 m/s. The size of the facility allows us to model complex structures and arrays without compromising on scale. The main working channel has a 60 m long test section, giving us the space to look at array effects, long wakes behind structures and the relative placement of structures and devices.

Reducing scale effects will help to increase certainty for our clients, allowing them to minimise design risks during the early stages of their project.





In the marine renewable energy sector, developments in exposed marine environments are high risk: fast currents, deep water and energetic waves present significant technical challenges. The ability to model large structures and arrays, without compromising on scale, means that we can help our clients to plan, install and maintain their assets in the most efficient way possible.

Our physical laboratory test facilities provide a global service to support water related engineering projects. The Fast Flow Facility significantly enhances these capabilities, helping us to expand our role in the offshore, maritime and coastal sectors. In addition to extending the capabilities available for our commercial projects, the facility is also suitable for researchers investigating problems related to hydraulics and sediment transport.

For more information on the Fast Flow Facility contact



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Key features of the Fast Flow Facility

- > Main working channel size of 70 m by 4 m, secondary working channel of 50 m by 2.6 m
- > Water depth range 0.85 m to 2 m
- > 1 m deep (16 m³) test pit for sediment studies
- > Significant wave heights up to 0.5 m and maximum wave height 1.0 m
- > Reversible pumps to simulate tidal currents, generating flows of over 2 m/s
- > State of the art monitoring and data collection instrumentation
- > Versatile facility for general science and engineering hydraulic and sediment research

Scientific and engineering research applications

- > Foundation stability and scour
- > Seabed–structure interaction
- > Wave–current interaction
- > Sediment transport: flow, waves and currents
- > Morphology: rivers, coasts and estuaries
- > Loading on structures
- > Floating structures
- > Sea-keeping tests
- > Drag experiments
- > Hydrometry