

The tank

The University of Southampton is building a new towing tank at the recently opened Southampton Boldrewood Innovation Campus, which the University shares with Lloyd's Register's Global Technology Centre. The aim is to provide a world class facility supporting research, teaching and commercial clients, not just for conventional ship model testing but across the aerospace, energy, and transportation sectors.

The new tank is 138m long, 6m wide and 3.5m deep with a high speed carriage and capability of producing a full range of unidirectional seastate simulations.



University of Southampton Towing Tank building

This is a landmark event, not just for the University but for the whole of the UK and its maritime industries.



Rail alignment system

The carriage construction will consist of a state of the art aluminium monocoque structure making it unique in the world in this regard. Weight has been kept to a minimum and a cable tow drive will allow high speeds to be reached within the tank length. The facility will have state of the art internet streaming facilities to allow clients and users to view the ongoing testing from anywhere in the world.



Aluminium monocoque carriage (photo Diane Auckland)

Research

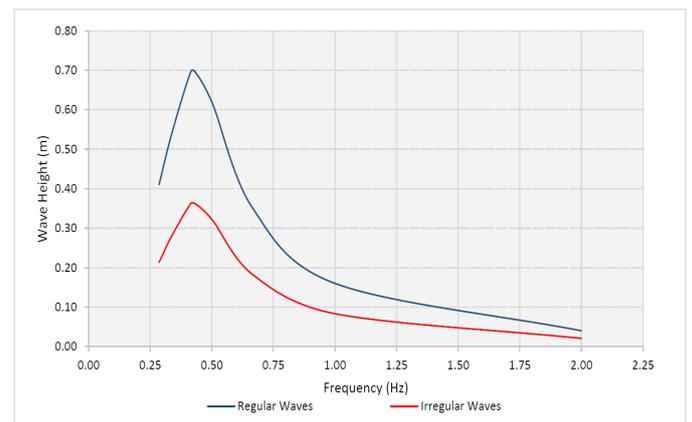
The tank will be equipped to complement the wide range of ship and offshore research underway within the Faculty of Engineering and the Environment. It will provide the ability to carry out detailed studies of non-linear phenomena necessary for understanding fluid - structure interaction, a current example of which is a study of the response of hydro-elastic models to rogue wave events.



Regular waves running down the tank

Commercial Testing

For over 45 years the Wolfson Unit, which is an integral part of the University, has conducted towing tank tests by hiring the facilities most appropriate or convenient for each specific project. Principally the facilities at Southampton Solent University, Haslar and Cowes have been used, but occasionally other tanks around the world have been hired and equipped by the Wolfson Unit for their clients' tests. The Wolfson Unit will be the main commercial user of the new facility, their engineers have assisted in the design, and it is the aim that most of their hydrodynamic testing will be conducted there.



Wavemaker capability

The building construction is complete and outfitting with the rails, carriage and wave makers is progressing. There remains a substantial amount of development and commissioning work to do, but the tank will become operational in 2016, when the Wolfson Unit looks forward to being able to offer an even more flexible and efficient model testing service. For more information please contact the Wolfson Unit by email at wumtia@soton.ac.uk.