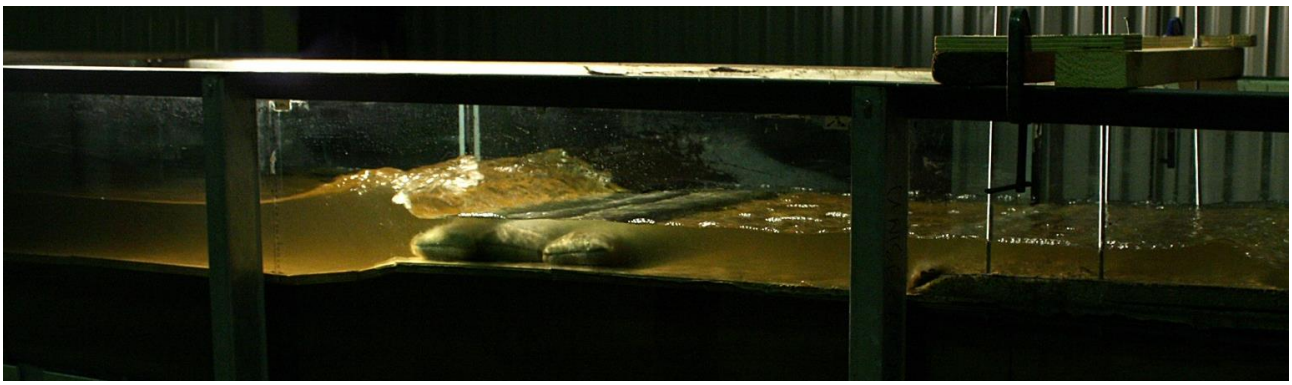
Water Research Laboratory

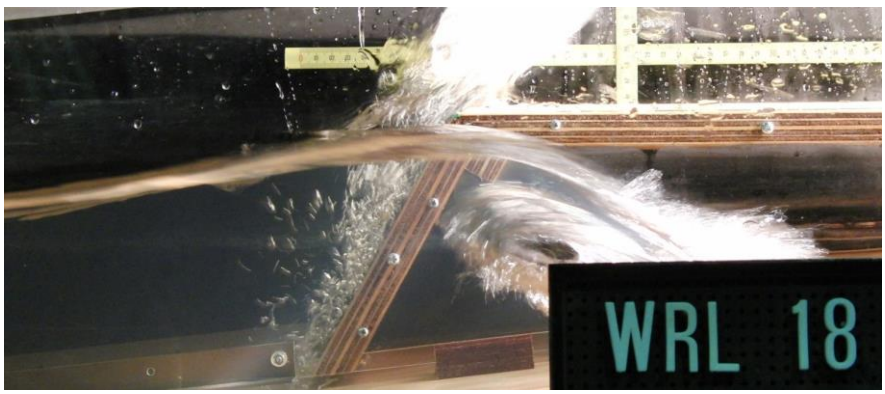
0.6 m Wave Flume

Never Stand Still | Faculty of Engineering | School of Civil and Environmental Engineering

The Water Research Laboratory's 0.6 m wave/sediment transport flume measures approximately 40 m in length, 0.6 m in width, and 0.9 m in depth. The flume walls are constructed of glass panels for the entire flume length, allowing observations of wave/model interactions to be made throughout testing. The flume is constructed with a segmented tilting floor, to allow different bed profiles to be tested. For site specific modelling investigations, detailed bathymetric profiles are reproduced in the flume using a false timber floor.



Two types of wave generator are available for this flume, being either piston-paddle type or flap-paddle type, and are powered by an electrical servo motor. The system is capable of generating both monochromatic and irregular wave spectrums, as well as producing user defined pre-recorded wave sequences. Control signals for the wave paddle are produced and controlled using either the Canadian Hydraulics Centre (CHC) GEDAP/NDAC software package, or a National Instruments control software package. As well as paddle driven waves, this flume is also able to be operated as a wind tunnel, allowing analysis of wind/wave interactions.



A range of data is able to be collected during experiments in the flume, including wave heights, wave runup, overtopping rates and depths, forces, and pressures. All electronic sensor units are typically logged using the GEDAP/NDAC software package. Wave height and water level measurements are made using capacitance wave probes, which are available in a range of lengths from 200 mm to 1500 mm. Overtopping analysis is typically undertaken by volumetric collection, or with the use of capacitance wave probes and/or ultrasonic sensors. Force measurements are taken using load cell units, available in a range of capacities. Pressures are measured using pressure transducer units, available in a range of capacities up to 125 kPa.

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