



Ian Coghlan

Senior Coastal Engineer

Ian has completed a Master of Engineering Science degree with specialisation in the field of Coastal Engineering and Management, a Bachelor of Engineering (Mechanical) degree, with first class honours and a Diploma in Engineering Practice. He has over a decade of experience working at WRL, and primarily manages projects in the fields of coastal structures, processes, hazards and coastal management. These studies include field investigations, physical modelling, numerical modelling, desktop analysis and data analysis. Ian is a member of the Institution of Engineers Australia and regularly attends their Coastal, Ocean and Port

Engineering Panel (Sydney Division) seminars.

Ian is acknowledged as an Australian expert in wave runup and overtopping processes on coastal structures and natural beaches. As a coastal engineer at WRL, he has carried out hundreds of physical modelling tests on scale revetments and seawalls in WRL's wave facilities. These included measurement and description of wave overtopping on coastal structures within Australia, southeast Asia and the Pacific Islands. He remains abreast of current desktop techniques for estimating wave runup and overtopping and tolerable thresholds for pedestrians, vehicles and infrastructure. Ian has published two papers comparing desktop wave overtopping predictions with physical model results.

For WRL's coastal engineering short course, delivered at the 2017 Australasian Coasts and Ports Conference in Cairns, Ian taught the "Basis of Coastal Engineering Design" and "Runup and Overtopping" modules. He regularly consults with clients on wave overtopping impacts before and after major storm events and maintains a keen eye on his local seawall at Fairy Bower (Manly). Ian has assisted in the preparation of state and federal coastal engineering guidelines. He is also regularly engaged as a fair and balanced peer reviewer.

Qualifications

BE Hons 1 & Uni. Medal (Mechanical Eng), UTS, 2005
Diploma of Engineering Practice, UTS, 2005
MEngSc (Coastal Engineering), UNSW, 2009

Professional history

2014-Current: Senior Coastal Engineer - WRL, UNSW
2005-2014: Coastal Engineer - WRL, UNSW
2002-2003: Project Engineer - GHD Consulting

Expertise

- Structure condition assessments
- Rubble mound coastal structures
- Rigid marine and coastal structures
- Sand-filled geotextile containers
- Coastal and estuarine processes and hazards
- Numerical modelling (wave propagation, erosion, overtopping)
- Climate change adaptation
- Project management

Summary of relevant experience

Coastal inundation studies

2010: Coastal storms and extremes waves, NSW
2012-2013: Port Fairy, Moyne Shire Council, VIC
2016-2017: Eurobodalla Shire Council, NSW

Coastal structure design for overtopping optimisation

2011-2016: Kingscliff Beach seawall, NSW
2011-2012: Black Rocks Campground, Bundjalung NP, NSW
2012-2016: Caseys Beach seawall upgrade design, NSW
2013: Belongil Beach interim seawall, Byron Bay, NSW
2016: Fairy Bower seawall remediation, Manly, NSW
2016: River Road revetment, Shoalhaven Heads, NSW

Overtopping adaptation for existing coastal structures

2008: South Arm Highway, TAS
2012: Bilgola Beach and Clontarf seawalls, NSW

Coastal engineering guidelines developed for government

2010: Code of practice for coastal emergency works, NSW
2011-2012: Generic erosion volumes & setbacks for Australia
2013: Use of sandbags for coastal protection, NSW

Physical modelling of overtopping on coastal structures

2006: Dalrymple Bay coal terminal, QLD
2007: Wyndham Harbour breakwaters, VIC
2008-2009: Gorgon LNG terminal, Barrow Island, WA
2009-2010: Hay Point coal terminal reclamation, QLD
2011: Abbot Point multi-cargo facility, QLD
2011: Browse LNG terminal, James Price Point, WA
2012: Coffs Harbour eastern breakwater, NSW
2015: Waitangi Wharf development, Chatham Islands