

chrisleaman

chartered professional maritime & coastal engineer

professional summary

Currently completing a PhD at the UNSW Water Research Laboratory investigating approaches to forecast inundation and erosion hazards for an Australian coastal hazards Early Warning System. Chartered Professional coastal and maritime engineer (CPEng & RPEQ) with a variety of extensive skills in structural engineering, coastal modelling, and hydraulic modelling. Seven years of diverse experience as an engineering consultant, demonstrating adaptability and flexibility to work effectively in autonomous and team environments.

contact

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education

- 2018–22 **Doctor of Philosophy** (ongoing) Sydney, New South Wales
The University of New South Wales - Water Research Laboratory
Research topic: 'Regional-Scale Forecasting for Coastal Storm Impact Early Warning Systems'
Key skills:
- **Coastal processes:** Wave runup, shoreline and dune erosion, storm impacts
 - **Remote sensing and analysis:** Satellite imagery, beach video monitoring, Python workflows
 - **Communication:** Technical & academic writing, stakeholder presentations
- 2007–10 **Bachelor of Engineering** (Extended Major in Civil Engineering) Brisbane, Queensland
The University of Queensland

positions held

- 2017–18 **Structural Engineer (Maritime & Coastal)**
2011–16 **Graduate Structural Engineer (Maritime & Coastal)** Brisbane, Queensland
Kellogg, Brown & Root
Key skills and responsibilities:
- Coastal, hydraulic and hydrologic modelling**
- Modelling coastal processes including waves and sediment transport using DELFT3D
 - Building and developing TUFLOW models to simulate flood events
 - Developing flood studies and risk assessments for regional towns and rail tracks
- Structural engineering of maritime structures**
- Completing structural design and detailing of wharves, dolphins, sea walls and ramps
 - Performing complex finite element analysis using Strand7
 - Inspecting site works for design verification and construction support purposes
- Programming and documentation**
- Developing Excel VBA and Python scripts to perform large scale, complex analysis
 - Writing technical reports, specifications and proposal documents

professional memberships

- since 2017 **Chartered Professional Engineer** (CPEng) (Structural)
National Engineering Register (NER) (Structural)
Engineers Australia

hydraulic/coastal modelling projects

- 2015–2016 **Callide Dam Operation Study** Biloela, Queensland
Department of Energy and Water Supply (Queensland Government) and SunWater
Investigated the feasibility of operating Callide Dam as a flood mitigation dam after the Feb 2015 flood event.
- 2015–2016 **Dawson River Flood Study** Banana, Queensland
Banana Shire Council
Developed TUFLOW models and simulated future flood scenarios to identify areas of risk.
- 2014–15 **Patterson River and Queenscliff Dredging Review** Melbourne, Victoria
Parks Victoria
Completed modelling of Port Philip bay to optimize Parks Victoria's dredging program at river entrances.
- 2014–15 **Wave Buoy Data Recovery, Processing and Management** Deagon, Queensland
Coastal Impacts Unit (Queensland Government)
Produced and documented MATLAB and Python scripts to consolidate historical wave buoy data.
- 2012–14 **Jazan Refinery Sea Water Cooling System** Jazan Economic City, Saudi Arabia
Saudi Aramco
Evaluated hydraulic performance of cooling system under varying operational conditions.
- 2011–12 **Browse LNG Port Operability Study** James Price Point, Western Australia
Woodside Energy
Identified critical sea states for using wave hindcast data for use in mooring analysis.

structural engineering projects

- 2016–2018 **Kingsford Smith Drive Upgrade** Brisbane, Queensland
Lendlease and Brisbane City Council
Performed detailed design of cantilever retaining wall structure for road widening over the Brisbane River.
- 2015 **Osborne No. 1 Berth Upgrade** Adelaide, Queensland
Flinders Port Holdings Pty Ltd
Developed wharf strengthening concept design to enable berth to accommodate larger vessels.
- 2014–2018 **Port of Brisbane Operations & Maintenance Studies** Brisbane, Queensland
Port of Brisbane Pty Ltd
Conducted assessment of various existing wharf structural components at the Port of Brisbane.
- 2014–15 **Burrum Heads Boat Ramp and Car Trailer Park** Burrum Heads, Queensland
Department of Transport and Main Roads (Queensland Government)
Completed detail design new boat ramp facilities, groyne, shore protection and drainage works.
- 2014 **Legacy Way Residential Property Condition Surveys** Indooroopilly, Queensland
Transcity Joint Venture
Conducted condition surveys of nearby residential buildings to assess impacts of construction works.
- 2012–13 **Townsville Port Inner Harbour Expansion (TPIX)** Townsville, Queensland
Port of Townsville
Completed detailed design and site supervision of berth upgrade and new cruise terminal building works.
- 2012 **East Swanson Dock Crane Unloading Verification** Melbourne, Victoria
Patrick Terminals
Assessed capacity of wharf under temporary loads imposed by new quay container crane unloading.
- 2011–14 **Gorgon LNG Construction Support** Barrow Island, Western Australia
Chevron Australia
Performed detailed design and provided site support for a large steel mechanical barge ramp.

volunteer

- 2019–20 **UNSW WRL Research Management Group (RMG)** Sydney, New South Wales
PhD student representative
The RMG identifies opportunities and addresses issues regarding WRL's research output.
- Managing creation of WRL webpage to showcase current PhD students and provide information to prospective students.
 - Organising social events between research and project staff to encourage collaboration.
- 2012–15 **Young Engineers Australia Queensland** Brisbane, Queensland
Treasurer
YEAQ is a special interest group of Engineers Australia aimed at supporting young engineers.
- Budgeted, managed and monitored the group's finances
 - Attracted over \$25,000 in industry sponsorship during the '13–'14 financial year.
 - Advised the committee on strategy to ensure events and initiatives were financially feasible.
 - Responsible for financial administration; keeping up-to-date records and ensuring the group complied with internal processes and procedures.
- 2012–15 **IMPACT (KBR Graduate Program)** Brisbane, Australia
Graduate Program Coordinator
IMPACT is a network of developing professionals with 0–7 years of experience within KBR.
- Involved on a state and national level to deliver training and social activities to graduates.
 - Proposed and monitored budget for social activities.
 - Coordinated Australia's participation in company-wide events, such as Green Week and Global Week.

select publications

Leaman, C.K., Harley, M.D., Splinter, K.D., Thran, M.C., Kinsela, M.A., Turner, I.L., 2020. A Storm Hazard Matrix combining coastal flooding and beach erosion. *EarthArXiv [PREPRINT]*

Leaman, C.K., Splinter, K.D., Harley, M.D., Turner, I.L., Kinsela, M.A., 2019. Could an early warning system have forecast the impacts of a recent coastal erosion event along the SE Australian coast? *Australasian Coasts and Ports 2019 Conference: Future directions from 40 [degrees] S and beyond, Hobart, 10-13 September 2019* 755.

Stewart, J.P., **Leaman, C.K.**, 2013. Validation of dredge plume modelling inputs. *Coasts and Ports 2013: 21st Australasian Coastal and Ocean Engineering Conference and the 14th Australasian Port and Harbour Conference* 715.

A full list of publications can be found on [Google Scholar](#).