

Bobbie Corbett

Principal Coastal Engineer, International Coastal Management
Adjunct Research Fellow, Griffith University



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Experience ➤

As a Principal Coastal Engineer, Bobbie has been involved in a broad range of coastal and estuarine projects over more than sixteen years. This has included the development of coastal management strategies for both very active coastlines and more environmentally sensitive coastal zones. While structural solutions can be more traditional, many have been innovative in design, can be multi-functional and utilise alternate construction materials and methodologies. Her involvement often spans the full life of a project, including:

Project Management

Option assessment and development of coastal management strategies

Stakeholder consultation

Data Collection

Concept design, detailed engineering design & independent design review

Physical and numerical modelling

Impact assessment, risk assessment and preparation of environmental management plans

Approvals

Technical specifications and contract documents

Contract management and administration

Construction supervision and inspection

Post-construction monitoring and condition assessment

Qualifications ➤

Registration

Registered Professional Engineer of Queensland [RPEQ 14154]

National Engineering Register [NER]

Chartered Professional Engineer [CPEng, MIEAust 2374778]

University of Queensland

Bachelor of Engineering (Civil), graduated with first class honours in 2001

Bachelor of Business Management, graduated 2002

Licences

Recreational Scuba Diving Licence

Recreational Marine Drivers Licence and Personal Watercraft Licence

Short Courses

Coastal Climate Change Guidelines Workshop [2013]

Contract Administration [2005]

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Projects



Coastal Management Strategies

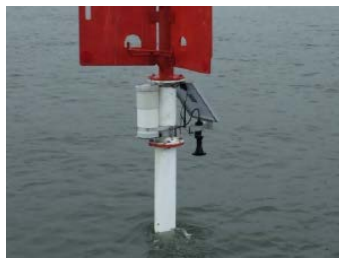
Noosa River Spit [Dog Beach] Erosion Protection Works, incorporating geotextile mega-container groyne & submerged channel closure, rock wall, dredging & foreshore nourishment - *option assessment, strategy development and staging, detailed design [based on outputs from Mike21 numerical model], impact assessment, approvals, contract documentation, contract superintendent & construction supervision.*

Munna Point [Noosa] Erosion Protection Works, incorporating semi-submerged sand-filled geotextile container groyne field & nourishment - *review of historical works, design and staging, detailed construction design, approvals, technical specification, contract superintendent & construction supervision.*

Woorim Beach [Bribie Island] Foreshore Dunal Reconstruction, incorporating review & implementation of aspects of the Shoreline Erosion Management Plan [SEMP] - *review nourishment design based on STWave and Genesis numerical models, design & approval of terminal protection, recommend monitoring program, amend SEMP & 5yr works program*

Noosa Main Beach Algae Mitigation Strategy, incorporating custom submerged geotextile curtain - *option review, collection of field data, design, approvals & project management of trial*

Elliott Heads Erosion Protection Strategy, incorporating sand-filled geotextile container groyne & oceanfront seawall - *design, impact assessment, approvals, contract management, construction inspection & condition assessment*



Data Collection & Review

Strategic Planning – including Scientific Research & Management Program for Gold Coast waters - *including compile and review existing datasets, gap analysis, options assessment, cost estimates, prioritisation of data collection activities and preparation of technical specifications.*

Hydrodynamic data collection – as required for numerous coastal projects, including Scientific Research & Management Program for Gold Coast waters and Gold Coast Dive Attraction - *determine requirements, options assessment, deployment planning and project management of instrumentation including tide gauges, wave buoys, ADCPs and turbidity sensors.*

Sediment testing – as required for numerous coastal projects, including dredging projects and Scientific Research & Management Program for Gold Coast waters - *determine requirements, prepare technical brief, project management and reporting.*

Survey – as required for numerous coastal projects (RTK; single beam or multi-beam hydrographic survey; LiDAR; photogrammetry) – *determine requirements, prepare project brief and project manage*

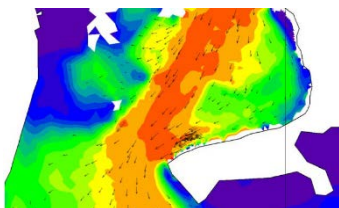
GIS – as required for project delivery, including Scientific Research & Management Program for Gold Coast waters - *compilation of existing and collected datasets in ArcGIS format and analysis of data spatially.*



Modelling

Physical Modelling – Flume or Basin – including Narrowneck [Gold Coast] artificial reef, Noosa reef, Sir Bani Yas Island [UAE] semi-emergent breakwater – *project management, technical brief, design modification, qualitative data collection, analysis and reporting.*

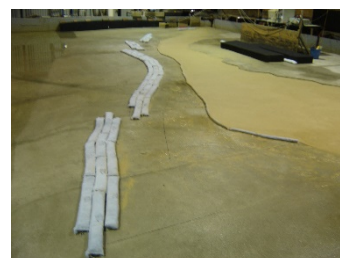
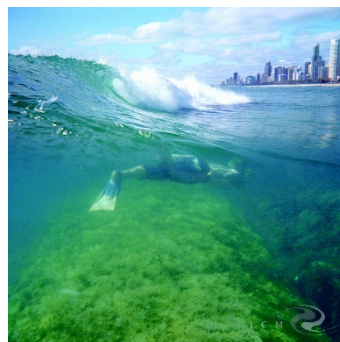
Numerical Modelling – including ACES, SBEACH, SMS, Delft3D & Mike21 – *technical specification, project planning, interpretation of results, reporting and project management of modelling activities.*



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Projects



Nourishment & Dredging

Three Point Plan for Coastal Protection, incorporating mass nourishment of Gold Coast ocean beaches - *project management, review of available sand sources, methodology options assessment, approvals & technical specifications*

Gladstone Port dredging for LNG tanker access using backhoe dredgers - *contract management & interface planning*

Illawong Beach Resort [Mackay] nourishment & beach scraping – *design & approvals*

Sand stockpile on the Spit, Gold Coast – *design*

Rose Bay & Front Beach [Bowen] nourishment - *design*

Johnstone River all-tide access - *feasibility study*

Woorim Beach, Bribie Island nearshore nourishment - *nourishment review & approvals*

Coomera River maintenance dredging and associated landfill at Paradise Point - *design, dredge management plan, impact assessment, approvals, tender specification & tender evaluation*

Palm Beach [Gold Coast] dredging & nourishment - *design, approvals, project management & monitoring*

Allisee development [Broadwater, Gold Coast] dredging & nourishment - *design, dredge management plan, impact assessment, approval, tenders & contract superintendent*

Gold Coast Seaway, evaluation of littoral recycling [backpassing] - *feasibility study*

Noosa River dredging and nourishment of adjacent foreshores - *design & approval*

Numerous marina and private dredging projects, including Royal Queensland Yacht Squadron [Brisbane], Runaway Bay Marina [Gold Coast], Pier 2 Marina [Tweed], SeaWorld [Gold Coast] - *design, dredge management plan, impact assessment & approvals*

Numerous dredging projects ranging in size from <math><10,000\text{m}^3</math> to contract management on behalf of McQuade Marine using mid-sized trailing suction hopper dredgers, small suction dredgers, barge-mounted excavators & bed levelling

Breakwaters & Artificial Reefs

Multi-functional artificial reef, Narrowneck, Gold Coast, Australia – *theoretical concept design, physical basin modelling, detailed construction design, technical specifications, project management, construction supervision, condition assessment and extensive monitoring of all aspects of reef performance including coastal protection, surfing and ecology.*

Rock breakwater [Whisper Bay, Whitsunday] – *condition assessment & rectification design*

Oyster reef [Noosa] – *detailed design & impact assessment*

Recreational dive attraction [Gold Coast, Australia] - *site suitability assessment & comparison*

Semi-emergent breakwater [Nurai Island, Abu Dhabi, UAE] - *design review based on numerical modelling [Delft3D]*

Semi-emergent breakwater [Sir Bani Yas Island, Abu Dhabi, UAE] - *concept design, detailed design based on physical modelling [flume & basin] & numerical modelling [Delft3D]*

Artificial surf reef [Dubai, UAE] - *construction design*

Artificial surf reef [Durban, South Africa] - *feasibility study*

Artificial surf reef [Albany, Western Australia] - *feasibility study*

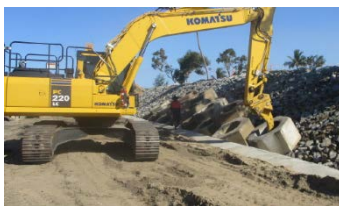
Coastal protection reefs [Palm Beach, Gold Coast] - *design & approval*

Noosa artificial reef [Sunshine Coast, Australia] - *safety review, utilising physical modelling [flume]*

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Oceanfront Seawalls

New seawalls - options assessment, concept design, coastal processes impact assessment, detailed design, design review, approvals, policy assessment & construction supervision.

Existing seawalls - condition assessment, rectification recommendations & preparation of adaptation strategies in response to climate change.

Boulder seawalls – including numerous Gold Coast A-line seawalls, Wilson's Beach & Conway Beach [Whitsunday], Illawong Beach Resort [Mackay] and Master's Avenue [Victoria Point].

Sand-filled geotextile container and mega-container seawalls – including Musklers Beach [Yeppoon], Rose Bay & Queens Beach [Bowen], Putney Beach [Great Keppel Island], Margate [Redcliffe], Woorim Beach [Bribie Island], Surfers Paradise [Gold Coast] and Lord Howe Island.

Seabees concrete module seawall - Queens Beach [Bowen]

Concrete seawall – Front Beach [Bowen]

River and Canal Walls

New walls - concept & detailed design, approvals & construction supervision.

Existing seawalls - condition assessment.

Rock revetments, including numerous Gold Coast canal and riverine walls, Noosa River Spit [Sunshine Coast] and Ross River [Townsville]

Sand-filled geotextile container walls - including Noosa River Spit [Sunshine Coast] & Swan Bay [Newcastle]

Sheet pile wall - Runaway Bay marina [Gold Coast]

Concrete block wall - Burrum Heads [Hervey Bay]

Groynes

Dog Beach [Noosa] – emergent and submerged control structures using sand filled geotextile mega-containers - *detailed design, impact assessment, approvals, contract documentation, contract superintendent & construction supervision*

Munna Point [Noosa] - semi-submerged groyne field using in-situ filled sand filled geotextile containers and custom scour mattress – *design, approval, construction inspections & performance monitoring*

Kirra [Gold Coast] – extension of existing rock groyne - *construction advice & construction supervision*

Maroochydore [Sunshine Coast] - sand-filled geotextile sand container groyne field - *condition assessment*

Spinnaker Sound, Pumicestone Passage - *design, approval & construction inspection*

Dungeness Spit, Hinchinbrook - *construction layout, construction methodology & costing*

Elliott Heads - *design, approvals, tendering, construction supervision & contract administration*

Dunes & Beach Accesses

Woorim Beach, Bribie Island beach accesses, dune fencing, dune reprofiling & revegetation - *design & approval*

Noosa North Shore vehicular beach access - *option evaluation, design, approvals & construction inspection*

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Marinas & boating facilities

Salacia Waters marina [Paradise Point, Gold Coast] - *preliminary marina & swing mooring layout, tender specification, tender evaluation & contract superintendent*

Southport Yacht Club Marina extension - *preliminary marina and swing mooring layout, tender evaluation, approval, project management & contract supervision*

Dunk & Bedarra Islands swing moorings - *layout, design & inspection*

Pumpkin Island swing moorings - *design*

Rivage Royale marina & Port Meiron marina - *condition assessment*

Black Island & Tongue Bay [Whitsunday Islands] all tide access - *option assessment, stakeholder consultation*

Mer Island vessel access - *design*

Outrigger Park [Mooloolah River] & Horseshoe Bay [Magnetic Is] boat ramp – *design review*

Victoria Point [Redland City] foreshore access ramp - *impact assessment*

Kayak access ramp [Currumbin Creek, Gold Coast] - *concept design*

Moreton Bay Navigation Beacon refurbishment & Coochiemudlo Island Jetty piles rectification - *project management*

Residential pontoons for several lots at Coomera Waters - *design & approval*

Residential pontoons at Calypso Bay & Coomera Waters - *design assessment against body corporate requirements & final inspection*

Constructed Wetland

Emu Lake – *design of bund, weir & erosion protection*

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Publications

Australasian Coastal & Ocean Engineering Conference 2017 – Cairns

Strategic and Cost-Effective Networks of Miniaturised Tide Gauges

Rock seawall design and construction with deeper toes for climate change

Condition Survey of Coastal Structures using UAV and Photogrammetry

International Conference on Coastal Engineering 2016 – Turkey

Case Study: Stabilisation of a Rapidly Eroding Point using an In-Situ Filled Geotextile Container Groyne Field

Arabian Coastal Conference 2016 – Dubai

Projects Review – Eco-Engineered Artificial Reefs in the Arabian Gulf

Coastal Stabilisation – Advancements in Geotextile Design & Construction Methods as an Alternative to Rock

Queensland Reef, Range & Red Dust Short Course 2015

Nourishment – Design, Approvals & Logistics

GCCM Coastal Twilight Series 2015

The Story of Narrowneck Reef: History-Construction-Performance

Australasian Coastal & Ocean Engineering Conference 2015 – Auckland, New Zealand

Design and Construction of a Submerged Breakwater and Terminal Seawall for Beach Stabilisation

Terminal Seawalls as a Strategy for Uncertainty and Sea Level Rise

Practical Responses to Climate Change Conference – Melbourne

Design Review of the Gold Coast Seawall for Climate Change

Australasian Coastal & Ocean Engineering Conference 2013 – Sydney, Australia

Noosa River Spit Erosion Protection Works

Site Investigations for Design of an Open Water Dive Attraction off the Gold Coast

International Conference on Coastal Engineering 2012 – Madrid, Spain

Long Term Performance of a Submerged Coastal Control Structure: A Case Study of the Narrowneck Multi-Functional Artificial Reef

International Coastal & Ocean Engineering Conference 2010 – Shanghai, China

Comparison of Geosynthetic Materials as Substrates on Coastal Structures – Gold Coast (Australia) and Arabian Gulf

Surf Reef Symposium 2010 – Bondi, Australia

Narrowneck Reef Monitoring and Lessons – 10 Years On

Arabian Coastal Conference 2010 – Dubai, UAE

Low Crested Reef Breakwaters – Theory Illustrated By Arabian Gulf Projects

Australasian Coastal & Ocean Engineering Conference 2009 – Wellington, NZ

Noosa Main Beach Algae Mitigation Trial

Wave Transmission over Low Crested Geotextile Breakwater Structures

International Conference on Coastal Engineering 2008 – Hamburg, Germany

Narrowneck Multi-Function Artificial Reef: Performance Evaluation of Design, Construction & Maintenance

Conference on Coasts and Ports Engineering in Developing Countries (COPEDEC) 2008 – Dubai

Eco-Friendly Coastal Protection using Multi-Functional Artificial Reefs

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COMPASS 2008 – Maldives

Alternative Coastal Protection and Amenity Provision using Multi Function Sand Filled Geo-Containers

Australasian Coastal & Ocean Engineering Conference 2007 – Melbourne, Australia

Marina Design to Incorporate Superyachts: A Case Study

Review of Existing Multi-Functional Artificial Reefs

Shore & Beach Journal (Special Edition on Surfing) 2007

Narrowneck Reef: Review of 7 Years of Monitoring Results

International Conference on Coastal Engineering 2006 - San Diego, USA

Failure Modes and Stability Modelling for Design of Sand Filled Geosynthetic Units in Coastal Structures

Arabian Coastal Conference 2005 - Dubai, UAE

Monitoring of Geosynthetics in Coastal Structures in the Arabian Gulf Marina Ecosystem

Australasian Coastal & Ocean Engineering Conference 2005 - Adelaide, Australia

Reef Breakwaters for Coastal Protection: Safety Aspects and Tolerances

International Surfing Reef Symposium 2005 - California, USA

Narrowneck Artificial Reef: Results of 4 Years of Monitoring and Modifications

International Conference on Coastal Engineering 2004 - Lisbon, Portugal

Marine Ecosystem Enhancement on a Geotextile Coastal Protection Reef - Narrowneck Reef Case Study

NSW Coastal Conference 2003 – Port Macquarie, Australia

Monitoring of Narrowneck Artificial Reef

Australasian Coastal & Ocean Engineering Conference 2003 - Auckland, New Zealand

Processes to Develop an Integrated and Multi-Functional Coastal Management Strategy for Palm Beach, Gold Coast

Large Sand Filled Geotextile Containers as a Construction Aid over Poor Quality Marine Clay

Australasian Coastal & Ocean Engineering Conference 2001 - Gold Coast, Australia

Tweed River Entrance Sand Bypassing Pre-commissioning Dredging Works

Undergraduate University of Queensland Thesis [2000]

Wave-Induced Pressures and Internal Stability of Geotextile Sand Containers in Artificial Reefs

Copies of publications can be obtained from ResearchGate

https://www.researchgate.net/profile/Bobbie_Corbett/contributions