



Coastal and Ports

Variables in the coastal and port engineering equation are complex. The environment is delicate, but also hostile and destructive. Work in this area requires balance and a particular level of expertise. At Tonkin & Taylor we provide that balance and skill set.

Our multi-disciplinary, specialist team of scientists, engineers and planners have an international track record. Our expertise provides appropriate solutions to coastal projects, statutory consents and engineering issues. Each project is handled methodically and comprehensively, from feasibility assessment through consents, design and construction to rehabilitation and environmental monitoring.

Expertise

Typical services include:

- Planning
 - Coastal hazard mapping
 - Preparation of statutory plans
 - Integrated coastal zone management
 - Port master plans
 - Peer reviews
 - Expert evidence and submissions.
- Investigations
 - Field investigations
 - Coastal process assessments
 - Study of coastal impact effects
 - Hazard assessments
 - Numerical modelling
 - Laboratory testing and analysis.
- Monitoring
 - Shoreline movement
 - Coastal process
 - Sea state and water quality measurements.
- Consents
 - Consultation
 - Achieving compliance with environmental legislation
 - Assessment and auditing of environmental effects and expert evidence.
- Design and construction
 - Feasibility studies
 - Value engineering
 - Detailed design and supervision of maritime structures and protection works.

Experience

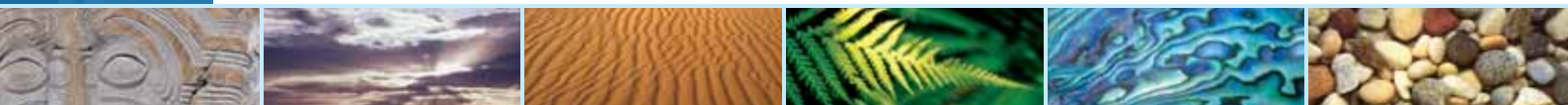
- Coastal Hazard Identification and Management
 - We have carried out coastal erosion and inundation assessments for individual areas as well as entire regions, covering hundreds of kilometres. These studies involve a range of investigative techniques and GIS mapping tailored to our clients' needs and budget, and require consideration of existing hazards as well as climate change effects. Many studies include development of appropriate mitigation, either using planning tools or physical works.
- Oriental Bay Foreshore Restoration
 - Preliminary and detailed design of a multi award winning \$7.5 m foreshore restoration. The upgrade involved bringing in more than 22,000 tonnes of sand, building sand control reefs, and adding a wave platform, a pier, new toilet and changing facilities, a new playground, access steps down to the beach, and at-sea stormwater outlets to prevent the sand from washing into the sea. The beach's total sand area is now four times larger than before.
- The project has won the following awards
 - New Zealand Institute of Architects Urban Design Award, 2004
 - New Zealand Institute of Landscape Architects George Malcolm Supreme Award, 2004





Tonkin & Taylor

- New Zealand Recreation Association Outstanding Project Award, 2004
 - New Zealand Contractors Federation Caltex Construction Award, 2004
 - International Federation of Landscape Architects Excellence Award, 2004
 - Association of Consulting Engineers New Zealand Gold Award of Excellence, 2005
 - Wellington Civil Trust Award, 2005
 - New Zealand Year of the Built Environment Award winner, 2005
 - New Zealand Institute of Architects Supreme Award, 2006.
- Westport - Port Klang, Malaysia
 - Westport is Malaysia's leading private seaport and is located at Port Klang on its west coast. It handled 2.91 m TEU's in 2005 and anticipates more than 3.4 m TEU's in 2006. Due to significant growth, as well as an increasingly important transshipment market, shipping volume is increasing significantly requiring major growth of this facility. T&T was engaged to provide detailed design of maritime and geotechnical aspects of a 4 km port and wharf extension, including eight new container terminals, dredging and reclamation.
 - Coastal Management
 - Managing coastal erosion in a cost effective and sustainable manner that improves natural character and public amenity is the holy grail of many local authorities. T&T has been involved in many such coastal erosion assessments and satisfactory design and planning solutions, ranging from dune management and replanting, beach nourishment, bio-engineering as well as the more traditional protection methods, often combining beach nourishment and/or vegetation buffers with structural controls to improve the stability of the protection system.



ENVIRONMENTAL AND ENGINEERING CONSULTANTS