



Ryan Abrey

Principal Coastal and Civil Engineer



Ryan is a professionally registered engineer with over a decade of experience. He has a Masters in Coastal Engineering and has experience in design, contract documentation, project management and implementation of projects.

After spending two years in civil construction in Zambia, he joined PRDW Port and Consulting Engineers on a wide range of projects and recently he has been specialising in the design and specification of hydraulic structures for the abstraction and delivery of water.

Ryan joined the Stantec, Wellington, NZ water team in 2019 and has been involved in a variety of projects such as the Nuggets Road Coastal Protection, Eastern Bays Shared Path, ongoing maintenance of the Hastings District Outfall and upgrades to the nearby Groyne.

QUALIFICATIONS

MEng (Research), Stellenbosch University, Port and Coastal Engineering Masters, Stellenbosch University/Cape Town, Western Cape, South Africa, 2019

BSC Eng (Civ) hons, University of Cape Town, Cape Town, Western Cape, South Africa, 2010

Understanding NZS 3910:2013 Conditions of Contract, NZ Institute of Highway Technology, Wellington, Wellington, 2019

In May 2020, Stantec provided a drone inspection of a unstable rock face beneath Nuggets Road which was being eroded by the sea. Ryan was responsible for reviewing the coastal processes at the location for input into design. He then sized the rock protection required and provided the geometric constraints to be included on the construction drawings. Ryan then provided further input into the consent application.

REGISTRATIONS/MEMBERSHIPS

Professional Engineer (PrEng) #20190616,

Engineering Council of South Africa

Chartered Member (CMEngNZ) #1164035, Engineering New Zealand

IWA Member: #1629730

Water NZ: #A00378

Eastern Bays Shared Path | Wellington, New Zealand | 2021 | Coastal Design Engineer
Client: Hutt City Council

The Eastern Bays Shared Path creates a safe and integrated 4.4km walking and cycling facility along Marine Drive (between Point Howard to Eastbourne). As it runs along the coastline the path needs to be protected with seawalls and revetments. Ryan was responsible for the coastal aspects of the project and carried out the detail design of the revetment at sunshine bay.

PROJECT EXPERIENCE

East Clive WWTP Outfall Assessment | Hastings District Outfall | Hastings, Hawke's Bay, New Zealand | NZD 600K | 2019-present | Design Engineer

Ryan has prepared a condition assessment report for the 2.75km outfall which discharges treated wastewater into Hawke Bay. The assessment fed into scoping and review of a side-scan sonar survey and concrete coring of the intake. This has continued with support for the annual diver maintenance contract as well as developing a solution to stem a small leak at the connection to the new diffuser. Ryan has also assessed the rock scour protection of the groyne nearby the pipeline shore crossing which has been upgraded early 2021.

Port Tarakohe Upgrade | Takaka, Tasman, New Zealand | 2020-Present | Coastal Design Engineer
Client: Tasman District Council

The project included the extension of two breakwaters to reduce the channel width and improve the wave climate within the Port for recreational mooring as well as to facilitate the growth in the mussel farming industry. Ryan was responsible for reviewing the Concept Design and existing site information such as metocean modelling to develop the design basis and progress this further to Detail Design. This included finalising the layout to align with entrance channel requirements, geometric design of the extensions to fit in with the existing breakwaters as well as sizing of the armour rock units and subsequent breakwater layers.

The Nuggets Road Revetment | Balclutha, New Zealand | 2021-2022 | Coastal Design Engineer
Client: Clutha District Council

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Bulk Watermain Cathodic Protection | Wellington, New Zealand | 2019-Present | Project Management & Eng Rep

Ryan took on project management of the Cathodic Protection upgrades to the wellington bulk watermain network with a specialist design subconsultant Phoenix Solutions. Stantec, collated and issued the tender for the first package of work which was awarded in 2020 where Ryan then served as the Engineers Representative for construction continuing. This has lead onto procurement further CP installations for the remainder of Wellingtons Bulk Main.

Disaggregated Water Supply Options - Desalination Plant | Darwin NT, Australia | 2021 | Coastal Engineer

As part of the Adelaide River Off-stream Water Storage Detailed Business Case, it was required to asses the alternate option for Desalination to supply Darwin with water. Ryan was responsible for the concept design of the seawater 121 ML/day intake system through a 3.7km, pipeline as well as the brine disposal pipeline.

Robben Island Ferry Jetty* | Robben Island, Western Cape, South Africa | 2015-2018 | Project Leader

Client: Coega Development Corporation

Ryan was the Project Leader for an assessment of the existing jetty ferry on the island which determined that a new jetty was required along with immediate temporary mitigation to ensure public safety. He was then responsible for the preparation of performance specifications and

procurement tender. He then assisted with the contractor selection and carried out designer validation inspections during fabrication.

City of Cape Town Emergency Desalination* | Proxa Water | Cape Town, Western Cape, South Africa | USD 7M | 2017-2018 | Hydraulic & Coastal Designer

As "Day Zero" approached where the City of Cape Town was predicted to run out of water, the city put out a several tenders for temporary "Emergency" desalination plants around the cape peninsula. Ryan was responsible for the hydraulic and process tender design of the intake screen, pipeline, seawater abstraction pumps and priming systems. He was a part of the team which partnered with a marine contractor to provide an EPC package for various tender submissions to the city. Two of the sites, Monwabisi & Strandfontein, were awarded and Ryan was responsible for completing the intake system design of these sites for the 7MLD desalination plants. He also was responsible from the design office to supervise construction and implementation. This included commissioning and running assistance with operation and pigging of the seawater intake pipeline.

Durban Sand Bypass Construction Stage* | Ethekwini Municipality | Durban, KwaZulu-Natal, South Africa | USD 11.5M | 2013-2018 | Quality Representative, Design Engineer

Ryan was involved in a number of design and implementation tasks during implementation phase. He coordinated and carried out the design of services for the facility including, fire, sewer, water and electrical, including the analysis of the overflow water discharge.

COMMUNITY INVOLVEMENT

Treasurer , New Zealand Coastal Society (NZCS), Wellington, New Zealand 2021-Present
Regional Representative, New Zealand Coastal Society (NZCS), Wellington, New Zealand 2019-Present

Treasurer, SAICE Marine, Cape Town, Western Cape, South Africa 2014-2018