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New Zealand Coastal Society Conference Edition

Coastlines

Editorial

Niksa Sardelic – Editor

This edition of Coastlines focuses on the 2008 NZ Coastal Society conference. The NZ Coastal Society mission is to promote sustainable management of the coastal environment, something which Beca applauds. Beca has chosen to show our support by sponsoring this year's conference and sharing knowledge by presenting papers on engineering and planning topics.

Increasing development around NZ coasts and the way that industry, culture and the environment co-exist are central conference issues. These are reflected in our article "Redeveloping Tauranga's waterfront". The Tauranga region is well known and much loved for its surf and shopping culture and the proposed redevelopment will focus on providing a waterfront to be proud of, complementing neighbour 'The Mount'. Beca is working closely with Tauranga City Council on a vision of an open parkland to be enjoyed by the public for recreation and events, replacing the current industrial area.

In this edition we also proudly present our leading development in water quality at Lake Rotoiti. Though not a coastal project, it reflects the theme explored in the Coastal Society conference of industry (in this case agriculture) and environment co-existing. You may have heard about the significant increase of algae blooms "suffocating" the Rotorua lakes due to intensive use of nitrogen based fertilizers. Beca has provided a practical engineering solution to this problem, a flow separating wall, which will help to address water quality issues.

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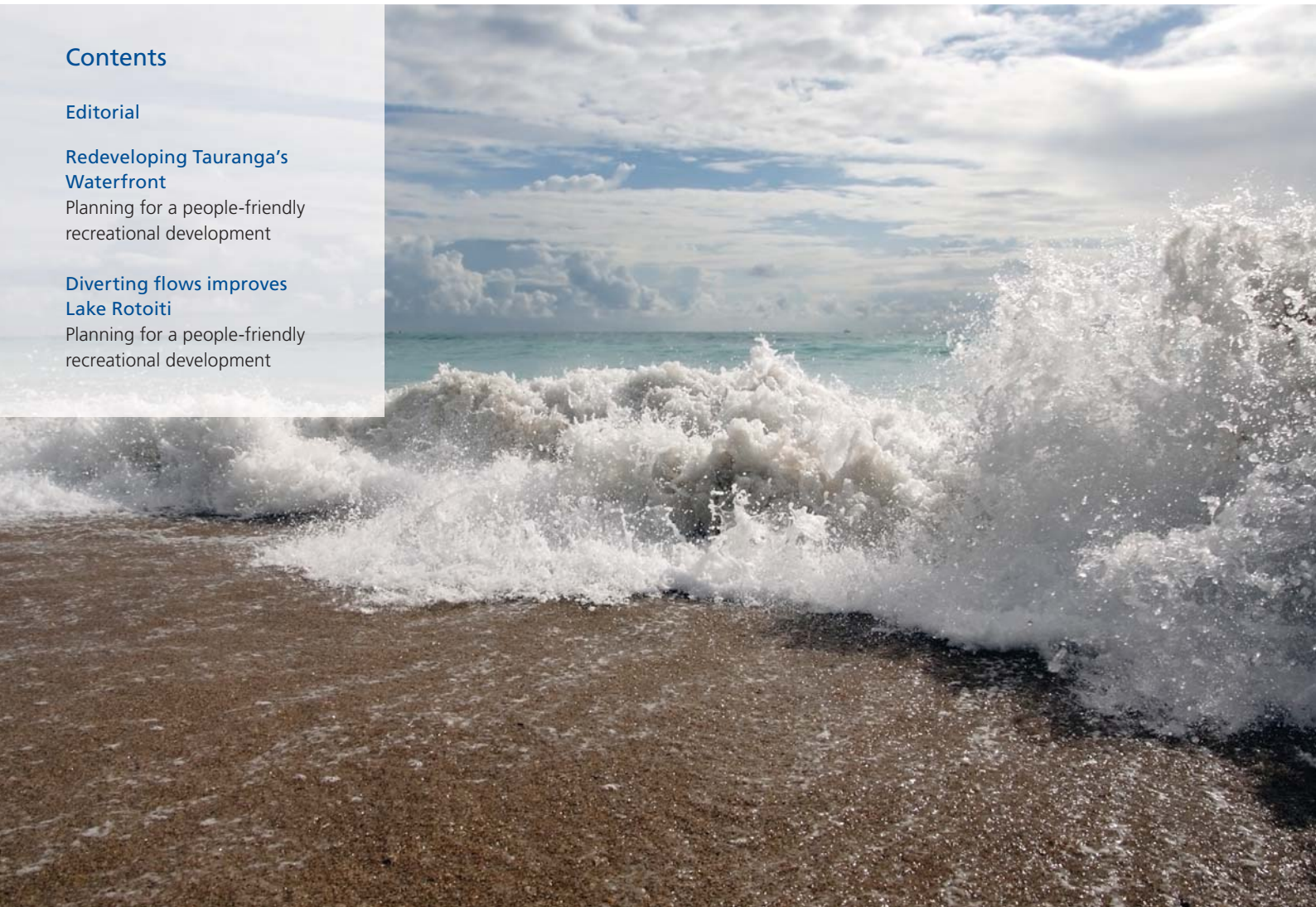

Coastal Planning

Redeveloping Tauranga's Waterfront

Planning for a people-friendly recreational development

Tauranga City Council is progressing plans to redevelop the Tauranga Waterfront.

The Tauranga city centre is the civic, cultural and commercial hub of the city and the region and the Waterfront offers an opportunity to develop a high-profile, urban, public open space that contributes to the overall character and identity of the city. Driving this project is a vision of open parkland, providing opportunities for public access, events and recreation.

Beca is assisting the Council with project management, planning and consultation advice to help progress the redevelopment.

Adele Hadfield, Tauranga City Council comments: "Working with the Beca project management and planning teams has allowed us to deliver a quality piece of work through to decision making on a high public interest, challenging bit of waterfront with many stakeholders and within really tight timeframes".

The next stages will include progressing the design and concepts as well as undertaking further consultation and working closely with the community to develop a waterfront space designed to be enjoyed by everyone. The aim for the waterfront is to be an active, pedestrian-focussed area, with cycling and walking routes, viewing areas, and space for a variety of functions including markets, events and festivals.

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Currently on Tauranga's waterfront, cars get the best view! This artist's impression shows how Tauranga City Council aims to make the waterfront a park land for people to enjoy.

Civil Structures

Diverting flows improves Lake Rotoiti

Diversion wall channels sediment to enable year round recreation

The wall under construction, showing the steel sheet piles and an H pile in the centre of the picture.

The Ohau Channel drains Lake Rotorua into Lake Rotoiti and the flow in the channel is rich with nutrients from the surrounding farmlands. These nutrients accumulate in the deeper parts of Lake Rotoiti. Under the right conditions, blue/green algal blooms occur in the lake which can be toxic as well as unpleasantly smelly. In the past this has led to closures of the lake for recreational use.

Responding to the local community, the Rotorua District Council and Environment Bay of Plenty started investigating ways to address the problem. Beca began helping in May 2005, developing options for a wall to divert the flow past the main body of Lake Rotoiti and into the Kaituna River and assisting in obtaining the necessary resource consents.

Beca then developed the preferred wall solution: a combination of steel H piles and steel sheet piles in a wall that is 1.25 km long. The design team had to take the very soft lake bed and volcanic ash soils beneath into account for the design; which, according to Beca's Richard Frankland, was "quite a challenge". The final design called for a sheet pile wall near the lake surface, supported on H piles. More than 380 H piles were driven over the length of the wall. The steel sheet piles were then driven between the H piles to make up the watertight diversion wall.

Lake conditions are being closely monitored and water quality improvements are expected to be significant within the next five years or so, to the point where algal blooms should be unlikely to occur as nutrient concentration decreases.

Beca disciplines involved included planning, geotechnical, structural and civil, who looked after the overall management of the project through the design and construction stages.

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Beca

Send your feedback and suggestions for future issues to portsandcoastal@beca.com

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