



Coastlines

EDITORIAL

Our 2017 edition of Coastlines showcases projects from around New Zealand and the Pacific.

- ▶ Technical Director – Planning Cushla Loomb addresses the planning legacy of one of our most challenging maritime incidents, the wreck of the container ship *Rena* (*pictured*).
- ▶ Waterfront development continues to be a key focus, supporting both the tourism sector and our communities' public spaces. In this edition we cover the Vanuatu Tourism Infrastructure project, presently under construction, which is a major project funded by New Zealand's Ministry of Foreign Affairs and Trade.
- ▶ Development of new port facilities, providing improved efficiencies and more resilient structures, is highlighted in our article on Ports of Auckland's new tug berth.

We also welcome representatives from Pacific ports to Auckland this year, with the Ports of Auckland hosting the 42nd Pacific Maritime Transport Alliance Conference.



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RENA – A BACK TO FRONT CONSENT APPLICATION

Ever since the MV Renna container ship grounded on Astrolabe Reef off the Bay of Plenty coast in 2011, Beca has been working closely with the ship's owner to evaluate various options for the fate of the wreck. The task was complicated as after the initial grounding and oil spill, the ship split in two, spreading containers and debris into the surrounding area.

Beca coordinated a large team of technical experts to investigate the potential effects of various long term options for the wreck. These included complete removal, partial removal (i.e. cutting the wreck down below sea level and removal of the accommodation block) or leaving the wreck in place on the reef. Investigations looked at effects on water and sediment quality, ecology, fisheries, marine mammals, birds, cultural values, social and recreational values (including dive safety), noise, economics, operational health and safety, coastal processes and ecotoxicology.

In parallel, Beca team members ran a comprehensive engagement process with key stakeholders, the wider community and iwi. This consisted of open days, newsletters, a dedicated website, focus groups and one on one meetings. Beca also liaised with the consent authority given the unique nature of the application.

Following the investigations and discussions with stakeholders the owner and insurer made the decision to apply for resource consent to leave the remains on Astrolabe Reef. Beca prepared the application for consent which was lodged in May 2014.

The resource consent application was a first of its kind, seeking consent to abandon a large container ship under Section 15A of the Resource Management Act (RMA) and associated discharges from the wreck under s15B. The consent was unusual in that it was essentially an application 'in reverse'. Typically under the RMA applications are made for a future activity or development that is yet to occur. This allows considerations such as whether the activity is 'appropriate' in the area proposed and whether the effects against the existing environment are significant. In this case,



a significant incident had already modified the environment (in some cases irreversibly) and consent was being sought to allow the remains of the wreck to stay on the reef. This created challenges in regards to what constitutes the 'existing environment' against which effects were to be assessed (particularly as quantitative data on the environment was limited).

The application was made trickier by the fact that the national and regional planning framework does not anticipate or specifically address these types of activities (i.e. a maritime incident and associated abandonment).

Astrolabe Reef, where the ship grounded and the wreckage remains, is identified in planning documents as an Outstanding Natural Feature and Landscape and Indigenous Biodiversity Area. The reef is also a taonga and culturally significant. The policy framework promotes avoidance of adverse effects on these sensitive areas. However, in the case of a maritime incident there is no choice of 'appropriate' location as anticipated in the policy framework (which is forward looking).

In assessing the application under the RMA, Beca's planners therefore adopted a pragmatic approach and assessed it against the purpose and principles of the RMA and against the general framework provided in the planning documents. Effects were assessed against an environment that was chosen depending on what was being assessed. For example, contaminants already in the environment from the grounding or subsequent break-up of the ship that cannot be removed were considered as part of the environment that any further discharges were considered against (i.e. cumulative effects).

The consent application included suggested/ offered conditions, including conditions that provide for projects with environmental or cultural benefit for affected iwi to offset the effects of leaving the wreck that could not be directly avoided, remediated or mitigated. Conditions were also suggested and a monitoring plan developed to provide a check that the environment was continuing to recover as had already been observed to occur over the years since the ship initially grounded.

Recognising the difficulty of separating out future discharges of contaminants from leaving the wreck with those already in the environment, the monitoring and contingency actions applied to all contaminants in the environment, regardless of whether the contaminants are pre- or post- consent. Through the course of the project a number of iwi groups previously in opposition have changed to a position of support or where they are comfortable to withdraw their objection. The remaining appellants (2) have recently had their case heard by the Environment Court. An interim decision has been issued which grants the consent to abandon the wreck and the parties are now working through some modifications to the consent conditions.



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VANUATU TOURISM INFRASTRUCTURE PROJECT

A key strategy of the New Zealand Ministry of Foreign Affairs and Trade (MFAT) Development Programme in Vanuatu is a focus on lifting economic performance through investments in tourism, inter-island shipping infrastructure and services, potable water supply and solar power for rural communities. Tourism growth is of special importance because the tourism industry is about 40% of Vanuatu's GDP, and it employs about a quarter of Vanuatu's labour force. There has been significant growth in cruise ship tourism as arrivals have increased by about 150% between 2006 and 2012, and cruise ship visitors continue to underpin the Vanuatu tourism industry, accounting for over half of total international visitors.

The Vanuatu Tourism Infrastructure Project (VTIP) aims to improve infrastructure at the Port and Seafront Precincts in Port Vila, thereby enhancing the visitor experience and encouraging return visits. The public infrastructure improvements will also enhance the livelihoods and Seafront Park experience for ni-Vanuatu people. MFAT is the majority funder, supported by the Enhanced Integrated Framework, a World Trade Organisation aid for trade mechanism. Beca is engaged by MFAT on the VTIP for conceptual options assessment, stakeholder consultation, preliminary and detailed design, tendering and construction monitoring.

To reinforce the importance of the seafront area to Port Vila residents, ni-Vanuatu in other islands and international visitors, the design draws on the concept of the unfurled mat, rolled out on the length of the Seafront Park.



Ceremonial mats also often have a frayed edge of finer material around the perimeter of the mat. To reflect cultural values and connect ni-Vanuatu people to the project, references to the mat concept, weaving patterns, frayed mat edges and traditional architecture and building materials have been incorporated into design areas such as the coastal promenade, park pathways, the seawall, furniture and buildings.

Features of the project include a continuous 1km seafront promenade, a central pier observation platform, sea steps, water taxi jetty, coastal protection and beach nourishment, traditional type open air market buildings, extensive landscaping and seating and hardwood timber pole artwork created by local artists representing the six Provinces in Vanuatu. The design incorporates significant precast concrete units which are for seating, buildings, the sheetpile wall rehabilitation, central pier, sea steps, and water taxi jetty. This precast concrete work achieves durability requirements and a good quality finish.

The construction contract value is about 1.4 billion Vatu (NZ\$19 million). The works commenced in September 2015 and are expected to be completed by the end of August 2017.



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PORTS OF AUCKLAND TUG BERTH

New Zealand's largest import cargo port, Ports of Auckland Ltd (POAL) receives nearly 1600 vessel visits a year, carrying around 560,000 containers, 300,000 cars and a wide variety of other freight. In order to service these vessels, POAL needed to improve existing tug berthing facilities.

Beca's ports team was engaged to assist with a new tug berth structure. A concept was developed by the port's engineers and tug operators working alongside Niksa Sardelic and Mike Basham from Beca's Auckland office. The new berths, positioned between the Bledisloe B1 and Jellicoe Wharves, allow for the berthing and mooring of five tug boats at a location closer to the harbour entrance. This reduces the travel time from the berth to vessels requiring tug assistance, creating a more economic tug service and reducing fuel usage.

To improve seismic resilience, the new structure is independent of the existing 1950s reclamation. Vehicular and pedestrian access is provided by a reinforced concrete "bridge" between the reclamation and berth structure. A ground beam at the landside bridge abutment is designed to break away in a seismic event, allowing the berth structure to separate completely from the reclamation and sheetpile seawall. This reduces the loading on the new structure, resulting in capital savings.

The structure also utilises bored steel piles filled with reinforced concrete. These piles not only provide constructability benefits (the steel pile casing acts as permanent formwork) but are also quieter to install than driven piles, reducing noise and vibration impacts during construction, at the central city site.

The new tug berth will be brought into service in August 2017. It is part of a wider strategic plan to further improve the port's productivity while reducing its environmental footprint.



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