



**BOFFA
MISKELL**
planning • design • ecology



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& PROJECT INFORMATION

summer²⁰⁰¹



Editorial: working with water

Rivers, lakes, wetlands and the coast are among our most precious environmental assets. However, the demands on marine and aquatic environments have never been greater. Finding a balance between the use and conservation of these sensitive and dynamic environments is an enormous challenge.

The examples illustrated in this newsletter give a taste of the diverse projects where Boffa Miskell staff have contributed their skills and knowledge to meet this challenge. Whether it is through the identification of values, the preparation of innovative plans, creative design, sustainable management or targeted monitoring, the challenge is always to ensure that change will occur in appropriate places and in appropriate ways.

A sub-theme in this newsletter is the importance of teamwork and partnership. We have a committed team of individuals at Boffa Miskell, who share a common vision – and we also know that having effective partnerships with our clients and fellow consultants is crucial to the success of our projects.



Allan Rackham, Managing Director

Boffa Miskell NEWS & PROJECT INFORMATION

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Coastal wetlands restored

Boffa Miskell, in association with Duffill Watts and Tse Limited, has been engaged by the Kapiti Coast District Council to prepare a plan for decommissioning Waikanae's wastewater treatment plant.

Land occupied by the plant was originally part of an extensive coastal wetland extending eight kilometres from the north of Waikanae to Te Horo.

Proposals currently being worked through with community interest groups and organisations focus on the rehabilitation and integration of the 23 hectare site back into the wetland. Public health, timing, cost and wetland management are also being considered.

Resource consents for the decommissioning will be lodged with the Wellington Regional Council by March 31, 2002.

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dispatches

Northland port development

Maintaining marine ecology and water quality has been a major objective in the development of a new deepwater port at Marsden Point in the Whangarei Harbour.

Boffa Miskell marine ecologist, Mark Poynter, advised on water quality management to meet ecological standards, which he says are very high in the port area because harbour waters are specially classified under the regional coastal plan.

“To ensure the seawater quality is maintained, the port was designed so that runoff will be treated instead of being discharged directly into the harbour, and strict parameters have been set for any discharges that do occur,” he says.

The nearby lower harbour area is rich in marine life with important invertebrate, wading bird and shellfish populations.

“Monitoring the health of these sensitive marine populations is a useful way to gauge whether or not water quality objectives are being met.”

Mark completed five years of predevelopment monitoring to gather the base data needed to measure future effects on marine life. This involved surveying the composition, abundance and age of inter-tidal invertebrate and shellfish communities annually from 1997 until 2001. Development work started on the port in December 2000.

“Northland Port Corporation had the foresight to recognise that an effective monitoring programme must start well before development begins so that adequate base line data can be gathered.” Mark will continue to monitor and gauge the effects of the port development.

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Marinas: more than just boat parks

▲ The proposed Parua Bay marina, currently at the investigation stage, will provide private berths and improved public boat launching, parking and recreational facilities.

New Zealand’s long coastline, with its many harbours, sheltered inlets and scenic beauty, is ideal for recreational boating. Consequently, boat ownership in New Zealand is very high by world standards and the number of craft moored around the coastline is on the increase. Boating activity can, however, adversely affect the very coastal environment that makes it so popular.

Well-designed marinas are an effective means of accommodating craft and often also result in wider environmental protection and enhancement of an area.

Boffa Miskell planner, Max Dunn, who has been involved with several marina projects in the Northland and Thames/Coromandel regions, says marinas can reduce boating pressures on sensitive coastal areas, but need to be carefully sited and designed.

“Like most real estate investments, location is the key. Many potential sites are either not suitable or marginal from an access, cultural, hydraulic, ecological or landscape perspective – and there are also regional or district plan constraints to consider.”

Max says developing a marina and its onshore facilities to best accommodate the interests of prospective berth holders, visiting boat owners and the wider public, is a multi-disciplinary exercise.

“Considerable groundwork is required to bring a marina concept to the resource consent stage and it invariably involves Boffa Miskell’s combined planning, design and ecology skills.” We have to ensure that valuable marine resources and landscape features are protected and enhanced, and that buildings, roadways, parking and pedestrian facilities are effectively laid out.”

Integrating marinas with existing businesses and community facilities is also important.

Boffa Miskell works with private interests, marina trusts and local authorities to help develop marinas that are not only environmentally sound but also financially viable. Boat servicing, chartering and other business opportunities invariably arise from marina development.

Key elements

Max has found a number of key elements to be crucial in successful marina development.

Thorough investigation of the environment and marina requirements is essential at the outset, coupled with on-going consultation with affected parties throughout the project.

Scoping, evaluation of alternatives and identifying potential public benefits are also important to ensure that the marina will best cater for private and public requirements.

“We’re finding, for instance, that some marinas attract more casual trailer boat usage with associated vehicle parking and washdown facilities, while others attract large craft requiring private berths,” says Max.

Finally, clear, concise presentation is essential for the resource consent process.

“There is so much information that we put a lot of effort into presentation – distilling out the key points and using plans and photomontages to graphically illustrate environmental effects,” he says.

Boffa Miskell has been involved with successful marina projects at Opuā, Tutukaka and Whangaroa, while projects in the Kerikeri, One Tree Point, Parua Bay and Whitianga areas are either in the resource consent or investigation phase. Extensions to the Havelock Marina in the Marlborough Sounds are also underway (See BM News 04).

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◀ The Tutukaka marina in Northland has been designed to cater for a range of commercial operators and private recreational boat owners.

Riparian assessment

Riparian zones are complex environments – and finding consistent methods to assess them for management purposes has been a challenge.



- ▲ Assessment methods can assist with understanding and managing the effects of riparian land use, such as grazing, on waterways and wetlands.
- Riparian zones are complex environments, incorporating a range of biological, recreational, land use and amenity values.

A report prepared by Boffa Miskell ecologist, Dr Judith Roper-Lindsay in 1999, said riparian assessment in New Zealand was “fragmented and inconsistent”.

“Many riparian managers developed their own assessment methods as there was little information about recognised methodologies, and it was not always relevant to their own requirements,” she said.

To fill this gap, the Ministry for the Environment (MfE) Sustainable Management Fund commissioned Boffa Miskell ecologists to prepare *A Guide to Riparian Assessment Methods* – a comprehensive guide which describes 34 different assessment methods used in New Zealand and overseas.

One of the guide’s authors, Vaughan Keesing, says the number of assessment methods reflects the complexity of riparian zones and the differing objectives of managers.

“The riparian zone is where land and water environments meet and interact. The ecosystem health and processes of one affect the other, and managers have differing goals and expertise for their management,” he says.

“For example, a farmer might want information about the effects of grazing on a small stream on his or her

“The riparian zone is where land and water environments meet and interact. The ecosystem health and processes of one affect the other, and managers have differing goals and expertise for their management.”

land, but a local authority officer might be thinking about inter-related ecology, recreation and land use issues for the whole catchment.”

Presenting the guideline information in a form that would be useful to this wide audience was a challenge. The Boffa Miskell team and steering committee of riparian experts from the Department of Conservation, local authorities, MFE, and NIWA who oversaw the work, decided to anticipate the key management questions that riparian managers would ask.

They devised 18 questions to address a range of management issues in five broad categories: terrestrial ecology, in-stream ecology, recreation and amenity, land use and combined factors of riparian protection.

Assessment methods best suited to each situation were recommended, based on the completeness and rigour of data that each method would provide. Ease of use was another important factor, as assessments are carried out by relatively untrained individuals and

community groups, as well as highly skilled specialists.

One of these methods, the river margin study system, has already been put to the test with very useful results in the Wairoa River catchment, east of Papakura.

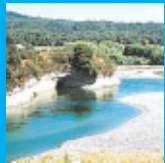
Boffa Miskell used this system to assess the first order streams within the catchment, and evaluate the condition and biological values of their riparian and in-stream habitats. The Auckland Regional Council was then able to use the findings to make long-term land-use decisions, and develop a protocol for assessing physical habitats in future (See BM News 04).

The Guide to Riparian Assessment is available from the NZ Landcare Trust, PO Box 16-269, Christchurch, who sponsored the project.

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dispatches continued...



Rivers - more than meets the eye

When it comes to managing rivers, appearances are important. Not only from a scenic point of view, but also because appearance can be used as an indicator of what else is happening in the river environment – such as changes in flow levels, flow dynamics and ecosystem functioning.

Regional councils responsible for deciding minimum flow levels and predicting the effects of water extraction or damming can benefit from good visual records, linked to flow data. The absence of such information compromises informed consultation and decision-making.

For this reason, Boffa Miskell has been developing methodology for establishing visual monitoring of rivers. Tailored to the specific characteristics of each river type, this methodology can be used to meet the particular needs of councils throughout the country.

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The energy challenge

Since April this year, Boffa Miskell has worked closely with Tauranga-based TrustPower Limited to ensure the company's hydro-electricity generation meets its environmental and commercial performance objectives.

"TrustPower takes environmental management seriously, and this philosophy influences everything it does. Through careful consideration of both the biophysical and commercial environments, Boffa Miskell has been able to help TrustPower improve its environmental performance with the minimum of disruption to its commercial operations," says Boffa Miskell's Tauranga planner, Gavin Kemble.

Hydro-electricity generation can have an impact (both positively and negatively) on the environment, and is subject to strict regulations under the Resource Management Act. Boffa Miskell has assisted TrustPower to meet the requirements established by the Act and still be competitive in a highly volatile market.

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▼ Riverside amenity areas have been enhanced by the reintroduction of locally appropriate riverside plants.



▼ Restoration planting on previously unstable, mown riverbanks has benefited drainage, ecology and landscape values.



▼ The tidal barrage at the Woolston Cut, on the Heathcote River, has contained tidal movement, making river bank restoration possible.



Joint effort leads to winning solutions

The Christchurch City Council's modern, holistic approach to waterways management has won international acclaim – it was one of four finalists in the International RiverPrize competition held in Brisbane earlier this year.

The success comes after some "major re-thinking" and more than 10 years work with Boffa Miskell to develop the sustainable management of the city's waterways and wetlands.

Robert Watts, Christchurch City Council (CCC) planning engineer, says developing strong partnerships has been the key.

"This means partnership with waterside residents, tangata whenua, other agencies and designers and consultants, like Boffa Miskell," he says.

The Woolston Cut

Christchurch City Council first engaged Boffa Miskell in the early 1990s, to help address the concerns of riverside communities dissatisfied with the effect of drainage works, such as the Woolston Cut.

"The cut bypassed a meander in the Heathcote River, shortening it by two kilometres in its tidal reaches, to reduce flooding problems. Unfortunately, salinity and tidal movement increased in the river upstream of the cut, resulting in bank slumping and the death of many riverside trees," says Robert.

Boffa Miskell assisted with the exhaustive studies and consultation that followed and then prepared a set of options. A scheme involving a tidal barrage, extensive bank restoration and planting was adopted.

"Now, 10 years later, the river looks great," says Robert.

Natural assets

In 1996, the task of preparing an asset management plan for the Council's waterways, wetlands and drainage infrastructure was another challenge.

Ken Couling, CCC waterways team leader at the time, said the difficulty was trying to satisfy both the resource management and financial management responsibilities of the Council.

"Conventional asset management planning just didn't work, so, together with Boffa Miskell, we pioneered an asset management system for natural assets based on six core values – ecology, recreation, landscape, heritage, culture and drainage."

An holistic view of the city's natural drainage system was adopted, recognising the network of urban and rural tributaries, springs, wetlands, flood retention areas and kilometres of open drains as well as the better-known Avon and Heathcote Rivers.

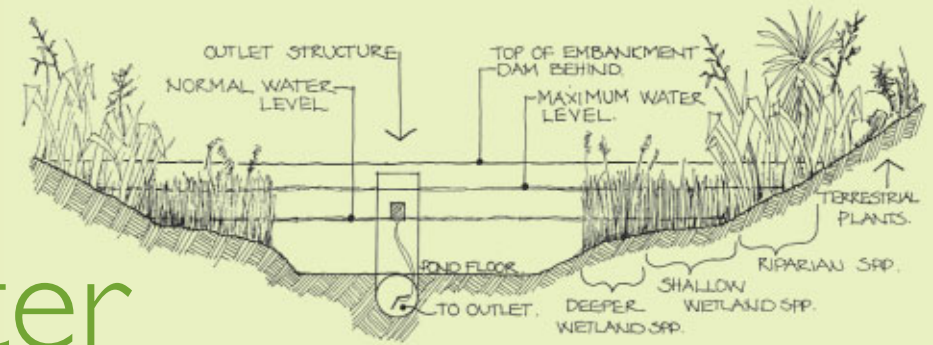
"Piping has been supplanted by conservation, restoration and creation of waterways and wetlands," says Ken. "Boffa Miskell also assisted us to obtain a global consent from the regional council for implementing this approach around the city."

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▼ The wetland pond at St Michael's Avenue reserve is enjoyed by local residents and wildlife.

► Dams and outlet structures have been designed to control peak flows at Puremuka Stream.

Managing stormwater



Stormwater has traditionally been piped away as quickly as possible from built-up areas. But Boffa Miskell landscape architect, Sarah Collins, says it can be used as a positive feature in new subdivisions.

This alternative approach adds value to the subdivision. It also benefits the environment and water quality.

“Wetlands, waterways and ‘floodable’ areas that absorb stormwater in natural systems often no longer exist in urban areas, or cannot cope with the increased runoff from built-up areas,” she says.

“Our approach is to recreate natural drainage systems by using waterways, flood overflow areas and vegetation to handle stormwater within the subdivision design.”

This requires an integrated approach involving landscape architecture, ecology and planning; with community consultation also an essential component.

Boffa Miskell worked with Beca Carter Hollings and Ferner engineers in 1987 to create the first of these systems, at Michael's Avenue Reserve in Ellerslie. It transformed a weed-infested wasteland prone to flooding, into a wetland with a permanent pond designed to absorb high flows from the upstream catchment.

The project was highly recommended at the 1989 New Zealand Institute of Landscape Architects (NZILA) awards, and described as a “good example of designing with nature to create a low-key natural environment which both the local wildlife and residents enjoy”. It was seen as a sensible design solution which visually and functionally integrated well with its surrounds.

Restoring waterways

More recently, Boffa Miskell has worked with Waitakere City Council on the Manawa wetland and Paremuka stream. Formerly a clay quarry, the Manawa wetland site is being transformed into a reserve which will include a retention area for stormwater, solving flooding problems and providing restored habitats for fish and bird life.

Stormwater ponds and weirs have also been used in the Paremuka stream restoration project to hold and slow flood flows, while improved riparian vegetation helps to absorb water and reduce soil loss.

Restoration of the stream has helped in the conservation of various freshwater fish and insect species, such as eels, koura (freshwater crayfish), and banded kokopu – one of the largest native freshwater fish in the country. The Paramuka stream is also home to a locally threatened plant species, *Astelia grandis*, found in only two other locations in Waitakere.

Part of the Waitakere City Council “Green Network Project”, the Paremuka stream project won a gold award in the NZILA awards 2000.

Turning problems into assets

Sarah says no two projects are the same, as every situation presents different opportunities and challenges. At Regents Park, an up-market greenfield subdivision near Christchurch, natural springs meant conventional stormwater treatment was inappropriate.

“Instead, we designed a watercourse, which added value to the sections by improving amenity. A problem became an asset,” she says.

Springs and wetlands on the site were linked with water from a nearby timber-lined watercourse and integrated to form an attractive roadside stream, which is the centerpiece for the subdivision and contributes to its semi-rural character. The result is a highly desirable and distinctive subdivision.

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dispatches continued...



Water in Bush City

Boffa Miskell used water as an integral part of the design when creating Bush City, the outdoor natural history area of Te Papa, the Museum of New Zealand.

By using water, suitable conditions were created for the New Zealand native vegetation used in the project, and allowed visitors to see a diverse range of habitats within the confined waterfront site.

Runoff is intercepted and recirculated through a series of water features including the bush stream, a pond, wetlands and a waterfall.

Visitors can follow a stream from its source to its collection point – a specially designed wetland – and see the changes in the vegetation along the way.

Situated along the lower edge of the site, the wetland habitats were designed with specialist advice from Chris Tanner of NIWA. Substrates for the wetlands were created to provide suitable plant habitats and to allow the water to move through the wetland.

The water is channelled into the upper section of the wetland and is filtered as it moves through the system before being discharged and recirculated at the lower end. As it moves through these areas, the water is 'polished' to remove pollutants, as would occur in a natural situation.

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▼ Water is a linking theme throughout Te Papa's natural history site, Bush City.

Profile



Phil Stickney

Planner, AUCKLAND

Phil recently joined Boffa Miskell's Auckland team, bringing with him a sound understanding of land development issues and skills in preparing assessments of effects.

He is experienced in managing multi-consent proposals that involve several disciplines, and is presently involved with several large residential developments around the country.

Before joining Boffa Miskell, Phil managed the resource management team of a Wellington-based land development consultancy. He has also worked for the Gisborne District Council, and has spent some time in private practice.

Phil has a particular interest in urban design issues and plans to expand his experience in this field at Boffa Miskell.

Client survey

Thank you to all those who participated in Boffa Miskell's customer service survey. Conducted by Maltby's Research, the survey involved 300 randomly-selected clients who provided very useful feedback. The results will be used to review and improve our level of client service.

Amanda Lewer of Lane Neave, Christchurch, won the complimentary case of Ata Rangī Celebré offered to participants. Congratulations!

Putting it on paper

An update of papers and seminars recently presented and published by Boffa Miskell staff:

Robert Schofield, from Boffa Miskell's Wellington office, presented a paper on 'Regional Development: A New Zealand Perspective' at the *Royal Australian Planning Institute Annual Congress*, held in Canberra in October. Robert discussed the government's regional development initiatives that are based on locally derived strategies. He used Wellington as a case study, highlighting the business clusters approach, which in Wellington focuses on such business initiatives as the film and IT industries.

Doug Leighton and **Allan Rackham** delivered the two final lectures of the 2001 Unitec landscape architecture lecture series in Auckland. Doug's presentation, 'Creating Places', focused on urban design. Allan outlined a range of projects Boffa Miskell is currently involved with, including the Christchurch office's 'Project Aqua' – a major hydroelectric scheme for Meridian Energy.

Marc Baily presented a paper to the *Town Centres Association New Zealand Conference 2001* in September, entitled 'Heritage – not just a pretty face'. It focused on four aspects of heritage management that he says are often overlooked but can contribute positively to town centre development and viability.

COPIES OF PAPERS ARE AVAILABLE FROM THE AUTHORS.

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Recent staff appointments

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Kelly Sunkell
ADMINISTRATION MANAGER

WELLINGTON

Pen Moore
CAD SPECIALIST

Steph Casey
GRAPHIC DESIGNER

CHRISTCHURCH

Melissa Parker
RECEPTIONIST/ADMIN ASSISTANT



Urban coastline refurbished



A previously inaccessible stretch of urban coastline in the Waitemata Harbour has been developed into a promenade and opened to the public.

Part of the Devonport Naval Base, the Philomel Promenade was officially opened by Sir Michael Hardie Boys in October last year, and is now open to the public on weekends and special occasions.

Boffa Miskell worked with Navy facilities supervisor, Peter Baker, to create a “simple yet robust” promenade linking the Devonport foreshore and ferry building. Naval history and the local coastal character inspired the nautical design theme.

The removal of several buildings at the Naval Base opened up the shoreline, making possible a walkway link to nearby Devonport. New sea walls and pohutukawa planting were designed to complement the existing seaside character.

Boffa Miskell’s design team was subsequently invited to refurbish the Devonport Naval Base’s War Memorial, in consultation with Peter Baker. A seating area and formal planting completed the design, which was endorsed by the War Graves Commission in London.

Boffa Miskell is now implementing a concept design for the main entranceway of the Naval Base, which provides for a formal entrance with elements of naval architecture in the form of a ship’s bridge.

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▼ The existing concrete War Memorial was clad with granite, with the names of those who served and died in World War II engraved in silver. The Memorial is to be unveiled by his Royal Highness the Duke of Edinburgh, Prince Phillip early next year.



▲ Other key design elements along the promenade are the series of ships’ crests inlaid in a pebble aggregate concrete footpath, cast iron wharf bollards, brass lanterns and stainless steel bins.

◀ The nautical theme along Philomel Promenade is invoked in the bronze statue of a sailor about to depart for sea, located on a wharf-like cantilevered deck.

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