



Boffa Miskell

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Boffa Miskell NEWS
winter ²⁰⁰⁶



Master plan
for Pegasus

02

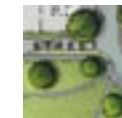
The design of the soon-to-be-built Pegasus new town has evolved from understanding the site's unique natural and cultural history. – SEE PAGE 2.



Wind farms

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Boffa Miskell has been developing best practice in a specialist field of environmental assessment and planning. – SEE PAGE 4.



Having a say in
urban renewal

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Collaborative design brings a community together to revitalise an Auckland neighbourhood. – SEE PAGE 6.



Editorial: The Future of Wind Energy

Although New Zealand is one of the best-suited places in the world for wind energy, wind farms are a comparatively recent advent here.

To date, wind farm development in New Zealand – constructed and proposed – has concentrated on large, high-producing sites using large turbines. Boffa Miskell has been involved in a number of these projects and has developed specialist areas of expertise, which are profiled on pages 4 and 5.

If trends here follow overseas patterns of wind farm development, it won't be long before the honeymoon phase is over. Inevitably, the best wind farm sites tend to be in prominent locations and close to major transmission lines for easy connection to the main grid. Already, as sites in the most productive and accessible areas are utilised, the question of cumulative effects is becoming an increasing issue.

In response, wind farm development will need to evolve and diversify. Perhaps wind farms will become smaller in scale and start

to be developed in more remote locations to supply local communities. A more strategic approach to managing wind resources may also be needed – where the capacity of given areas to absorb wind farm development is examined and parameters developed before reaching the point where communities realise 'this is too much.'

Given increasing demand for renewable, low-emission energy sources, it is likely that wind generation will continue to grow. As energy users, all New Zealanders are stakeholders and we all stand to benefit from finding a workable way forward.

Boyden Evans, Director

Master plan shapes the new town of Pegasus

Construction of the new town of Pegasus, north of Christchurch, is due to begin in late 2006, following an intensive period of master planning by Boffa Miskell.

Boffa Miskell landscape architects, ecologists and planners previously worked on the overall concept for the town of 5,000, which gained planning approval in 2002. Essential to the concept were guiding principles that included creating conditions necessary for a self-sustaining community, in a setting where natural and cultural values would be inherent.

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The Pegasus design team at work using ▲ the touch-sensitive SMART Board.

Interactive design across the ocean

When a huge 1:100-scale model of a town is being made, it is crucial that the plans are interpreted correctly. In the case of the Pegasus model (see page 3) the Boffa Miskell design team were able to do so by working interactively with the model-maker in China – without leaving the Christchurch office!

Using SMART Board technology during conferencing sessions, Boffa Miskell staff drew corrections straight onto digital images displayed on a touch-sensitive screen, which the model maker in China could see instantly via remote connection.



◀ A 1,000m² model of the town is on display at the Pegasus Display Centre.

“The master plan shows just how those principles will be translated onto the ground,” says project leader Don Miskell.

The plan accommodates an ambitious list of features including a series of neighbourhoods containing 1700 house sites and a retirement village, a town centre with 295 commercial sites including a supermarket, retail and hospitality outlets, and a hotel. Community facilities include a library, pre-school and primary school, emergency services and a community centre.

Pegasus is also to be a ‘recreational heaven’ with parks and sports grounds, a recreation centre, aquatic sports, an equestrian centre, a golf course, tennis courts and 25 kilometres of walking and cycle ways.

Sense of place

“Understanding the site’s unique natural and cultural history informed the design process,” Don says. “There’s a real sense of place here.”

A soon-to-be-created lake is to be the town’s centrepiece, connected with extensive waterways, wetlands and conservation areas that will occupy half the 342-hectare site and restore some of the area’s rich former ecology.

The site is highly significant to tangata whenua, Ngai Tahu, as it is immediately adjacent to the former Kaiapoi pa site, traditional home of Te Ngai Tuahuriri Runanga and the former wetlands were important sources of mahinga kai.

Cultural conservation

Bob Robertson, Chief Executive of developers, Infinity Investment Group, says cultural advisors and a project archaeologist were appointed in 2005 to be on site before and during construction to ensure proper identification and treatment of any cultural and archaeological discoveries.

Cultural advisor, Te Marino Lenihan, has been developing protocols for discoveries and advising on the master plan. Plans for a Whare Karakia (or place of worship) on Pegasus land adjacent to the former pa are being discussed with Ngai Tuahuriri, and a memorial garden to commemorate the brave defenders of the pa has also been suggested. The church and the town centre’s main street have also been aligned with a sightline to Maunga Tere (Mount Grey), which is an important feature of the Ngai Tuahuriri ancestral landscape as well as of the contemporary landscape.

Don says the partnership with tangata whenua has enriched the master plan process and has created opportunities to improve the liveability and character of the new community.

CONTACT: DON MISKELL don.miskell@boffamiskell.co.nz



▲ Lakes and waterways are a feature of Pegasus (centre) and of the adjoining Mapleham golf course/residential development (bottom), while extensive conservation areas border the coast (top).



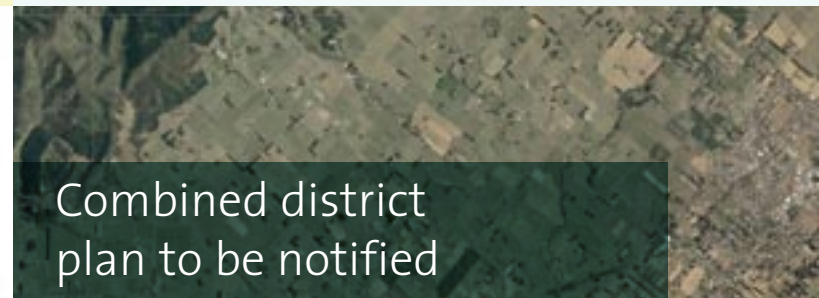
Garston

Nestled in at the base of the Hector Mountains on SH6 in Southland, Garston is one of those blink-of-the-eye settlements – a pub, church, garage and scattering of five houses.

Plans prepared by Boffa Miskell for client, Paramount Group, will see it grow seven-fold with the addition of 35 houses but it will nevertheless remain a compact village. It will offer more housing choice for retired and holidaying Southlanders as well as housing for Queenstown, just 45 minutes drive to the north.

Boffa Miskell planner, Nicola Rykers, who prepared the recently-lodged resource consent application, says the master plan and landscape design grew from the site itself – responding to the character and setting of Garston Village.

CONTACT: NICOLA RYKERS nicola.rykers@boffamiskell.co.nz



Combined district plan to be notified

The three Wairarapa district councils are about to publicly notify a new combined district plan, a first for New Zealand.

Boffa Miskell, led by planner Robert Schofield, has been providing the necessary planning services to the Masterton, Carterton and South Wairarapa District Councils since taking over a partly prepared draft plan in July 2004.

Robert says the combined plan was a good option for the councils, which collectively administer a large rural area with similar and overlapping issues. Public comment on the draft, released in December 2004, strongly supported having a single plan.

The effectiveness of the combined plan will lie in its consistent interpretation and implementation, so the Boffa Miskell planners have also been busy preparing guidance and administration protocols.

CONTACT: ROBERT SCHOFIELD robert.schofield@boffamiskell.co.nz

Wind farms: developing best practice

Of the fifty constructed and proposed wind farm projects currently underway in New Zealand, Boffa Miskell has provided environmental assessment or planning services to nineteen.

It's a specialist field in which the company has invested considerably in training, state-of-the-art software and overseas research.

In 1995, Boffa Miskell landscape architect Boyden Evans toured wind farms in the United Kingdom, anticipating their development in New Zealand. "It was invaluable not only for knowledge-gathering but for establishing relationships with overseas experts which continue to this day."

The company's specialist wind farm team of planners, landscape architects, ecologists, and GIS and 3D visualisation specialists meet regularly to pool collective knowledge and experience, including experiences as expert witnesses at council and Environment Court hearings. Boffa Miskell ecologist, Stephen Fuller, says the team has now developed well-tested principles of best practice.

Looking at the whole picture

"For best outcomes, we think it's really important that the assessment process begins before the wind farm is designed. That way, parameters for the whole environment – physical and social – can be established to assist the client find the optimal

balance between energy production and potential effects. Ideally, all the disciplines work together with the engineering and wind generation specialists from the start."

GIS (Geographical Information Systems) has proved an invaluable tool in this approach. On one recent project, for instance, Boffa Miskell integrated all the base information from the various consultants including wind speed data, terrain contours, road and traffic patterns, a noise buffer zone around every dwelling, geotechnical parameters, archaeological sites, wildlife habitats and landform visibility.

By mapping the constraints together with the wind generation potential, areas best suited for turbines were identified as well as areas where issues were likely to arise. This was the starting point for the wind farm design.

Catherine Clarke, Boffa Miskell planner, predicts that this 'whole picture' approach will be increasingly important for resource consent applications. "As more wind farms are built, cumulative effects will become an issue, with corresponding demand for thorough investigation."

Solid science behind ecological assessment

For the ecologists 'thorough investigation' has meant developing methodology geared specifically for wind farm development.

"We've been working in something of a knowledge vacuum," Stephen explains. "Only two large wind farms (Tararua and Te Apiti) have been built so far and they were consented before ongoing monitoring was a requirement.

"But there's a wealth of solid overseas research into the ecological effects of wind farms. We've tapped into that and set about adapting it to New Zealand conditions."

Gathering good data is critical, so pre-construction monitoring is now underway at seven sites around the country – with several more about to begin – and will continue during and after construction.

Christchurch-based ecologist, Di Robertson, who has been managing bird monitoring for several wind farm projects, says pre-design monitoring enables turbines to be located to minimise disruption because existing wildlife patterns are known.

Habitat displacement, turbine strike and air turbulence around turbines are the main risks to birds and bats, although some species are known to be more at risk than others.

One example is the New Zealand falcon, which Di has been monitoring at the Meridian Energy White Hill wind farm in Southland. "Falcons tend to suddenly change direction or altitude to chase prey, and that can be hazardous near a turbine.



▲ The consultant team at the proposed Titiokura Wind Farm, considering the potential effects of a proposed turbine in an area containing sub-alpine plants.

Being a threatened species it's particularly important to monitor the effects of their unpredictable behaviour."

Assessing ecological effects also extends, of course, to terrestrial and freshwater environments. Earthworks associated with building access roads and turbine platforms can result in vegetation removal, habitat fragmentation and stormwater silt loads.

Stephen says mitigation plays an important part here. "We're all experienced in restoration work so we're able to give practical advice on minimising adverse effects during construction and then rehabilitating the site afterwards."

The art of accuracy – visual simulations

When it comes to assessing the potential effects of wind farms, landscape and visual effects are often the most controversial. It's not surprising given the divergence of views between those who regard turbines as objects of beauty and those who see them as components of industrial landscapes.

Landscape assessment seeks to inform the inevitable debate by providing objective analysis of factors such as landscape change, visibility and relative scale of turbines. However, it's a feat of imagination beyond most people to realistically visualise a wind farm where none exists now.

That's where visual simulations come in as a valuable communication tool, designed to reduce the guesswork and help people comprehend what's proposed.

Accuracy is critical, especially when simulations are used as evidence at consent hearings. It involves a complex and systematic process.

Views from representative locations are photographed and the geographical location fixed by GPS. A three-dimensional digital terrain 'wireframe' model of the site and its environs is then generated from contour information and digital models of the turbines positioned on it in their proposed locations. Lastly, the photo viewpoints are located on the wireframe model. A rendered image of the turbine layout corresponding to each photograph can then be created.

Boffa Miskell's CAD specialist Pen Moore says the purchase of specialist software called 'Windfarm' has transformed what used to be a time-consuming process. "Being purpose-built, it's quick and highly accurate and that means it's more



Visual simulation



After construction

▲ Comparison of the pre-construction simulation (left) with the post-construction photograph from the same viewpoint (right) demonstrates the accuracy of the Boffa Miskell simulations done for Meridian Energy's Te Apiti Wind Farm, Tararua.

economic to produce a series of simulations during the design phase to compare different turbine layouts, types and sizes."

The new software also includes an animation package that shows the blades rotating on the simulated turbines. "Motion is a significant visual factor," Pen says, "so animation is a major step forward in realistically portraying wind farm proposals."

CONTACTS:

AUCKLAND Catherine Clarke catherine.clarke@boffamiskell.co.nz
TAURANGA Craig Batchelar craig.batchelar@boffamiskell.co.nz
WELLINGTON Boyden Evans boyden.evans@boffamiskell.co.nz
CHRISTCHURCH Di Robertson diana.robertson@boffamiskell.co.nz

▼ Creating visual simulations: models of proposed turbines are positioned on a three-dimensional wireframe terrain model which is then rendered using photographic information.





Having a say in urban renewal

Urban renewal is as much about building communities as houses, which is why residents of Talbot Park near Glen Innes in Auckland had a big say in planning the revitalisation of their neighbourhood.

First developed in the 1960s with a high proportion of public housing, the four-hectare Talbot Park block had failed to keep pace with demographic change. Outdated bungalow housing no longer catered adequately for a more diverse population, while secluded parks and cul de sac streets were contributing to anti-social behaviour.

The Housing New Zealand Corporation and Auckland City Council joined together in 2002 to run the revitalisation project under their Community Renewal programmes.

“We realised that, despite its problems, Talbot Park had many qualities consistent with the Ministry for the Environment’s Liveable Cities Strategy,” says NHZC project leader, Stuart Bracey. “It was close to public transport, shops, work places, schools and even a university branch.”

Brisbane-based consultant, Geoffrey Walker, was called in for preliminary scoping and concept work, and Boffa Miskell was

◀ The Talbot Park Neighbourhood Plan: varied housing types are linked with new streets and open spaces designed for improved safety and amenity.

then appointed to undertake community consultation, urban design, landscape design and statutory planning.

“We advocated a highly collaborative design approach to hear people’s needs and concerns,” says Boffa Miskell team leader Doug Leighton. “It also helps strengthen the community by bringing people together to think about the environment they want.”

Over a 12-month period residents participated in workshops, family open days and focus groups. Project newsletters were also distributed to the community.

A “Neighbourhood Plan” was proposed with five sectors of mixed housing types to cater for large extended families, single-parent families, couples, individuals and a range of cultural and age groups. New internal streets were also proposed to better link the area and a land swap negotiated to enable reserves to be relocated.

Under a district plan change, Talbot Park was the first area to be rezoned Residential 8, which allows for urban intensification and renewal.

Boffa Miskell planner, Peter Hall, who managed the statutory planning process says, “Talbot Park was ideally suited to the re-zoning because the existing layout was inefficient and we were proposing concepts that fitted with the city’s urban design objectives such as pedestrian-friendly streets and rain gardens for treating stormwater.”

When the completed first stage of the renewal project was officially opened in March 2006, it was – fittingly – a community celebration.

CONTACT: DOUG LEIGHTON doug.leighton@boffamiskell.co.nz



HNZC Construction Project Manager, Terry Mansfield, discusses design issues with community members.



Kindergartens benefit from working to a plan

Master planning has proved invaluable in getting the most from tight budgets at more than 20 kindergarten sites around Auckland.

Working with the Auckland Kindergarten Association, Boffa Miskell has prepared a master plan for upgrading the outdoor facilities at each site. Each plan comprises a number of self-contained projects that can be incrementally built as funding becomes available.

Boffa Miskell landscape architect, Sarah Collins, says funding is tight as the AKA is a charitable trust and most of the funding for the playground upgrades comes from the very generous support of the ASB Trust and other local community organizations.

“The funding constraints have certainly tested our project management skills. We work with the Association’s funding support personnel to determine a staged implementation programme over a period of two or more years, and then supervise selected contractors during the construction phases.”

The detailed design has its challenges, too, given the diversity of sites and the need to accommodate varied areas for play in spaces that must be free-flowing and easily supervised, yet challenge children’s senses, invite them to explore and – above all – provide enjoyment daily! The outdoor environment is also important for children to learn about the natural world, so gardens are designed for the children to experience the seasonal cycle of tending plants, recycling organic waste and then replenishing the soil.

CONTACT: SARAH COLLINS sarah.collins@boffamiskell.co.nz

Environmental leadership



Dr Judith Roper-Lindsay of our Christchurch office has been elected President of the New Zealand Chapter of the Environment Institute of Australia and New Zealand (EIANZ).

The Institute, established in Australia in 1987, facilitates interaction among environmental professionals, promotes environmental knowledge and awareness, and seeks to advance ethical and competent environmental practice.

The New Zealand Chapter was formed in 2003. Judith, a former president of the New Zealand Ecological Society, says building membership and improving networking for environmental professionals will be the main focus for the coming year.

CONTACT: JUDITH ROPER-LINDSAY judith.ropelindsay@boffamiskell.co.nz

Shapeshifter Exhibition Sponsorship

Every year, Boffa Miskell sponsors events or projects that promote understanding or enhancement of the environment.

In March, Boffa Miskell's Wellington office was proud to be one of the sponsors for the 2006 Shapeshifter outdoor sculpture exhibition in Lower Hutt, held in association with the New Zealand International Arts Festival. The exhibition, which raised more than \$50,000 for local charities, featured works by leading New Zealand artists.

New principals

We are pleased to announce the following appointments to Boffa Miskell's principals' group of senior staff responsible for strategic leadership within the company.

Andrew Scrivens, Auckland

Jane Masters, Auckland

Michael Bain, Auckland

Peter Hall, Auckland

Peter Kensington, Auckland

Stephen Fuller, Wellington

Steve Dunn, Wellington

Blair Walker, Christchurch



'Innovation Garden' design competition

Landscape architects in Boffa Miskell's Wellington office recently collaborated to submit their 'Living Cloak' concept to the Wellington Botanic Garden "Founders' Entrance Innovation Garden" design competition.

The design brief called for thought-provoking, eye-catching entries that would stimulate discussion, photograph well and look good for the 2006 Spring Festival and World of Wearable Arts event.

The Boffa Miskell entry evokes a garment that drapes over the stone walls bounding the garden. Inspired initially by the designs of traditional Maori cloaks, the bold yellow and black distorted grid design also draws on the iconic checked Swandri shirt, the city grid that drapes the hills of Wellington and – of course – Wellington's rugby colours!

CONTACT: HEIDI MEADOWS heidi.meadows@boffamiskell.co.nz

Overseas connections

Visiting professors of landscape architecture

Boffa Miskell landscape architects were fortunate to attend internal workshops with two highly respected leaders in landscape planning and research who were visiting New Zealand earlier this year.

Professor Joan Nassauer, Professor of Landscape Architecture in the School of Natural Resources and Environment at the University of Michigan, gave a nation-wide lecture tour at the invitation of the New Zealand Institute of Landscape Architecture's Education Foundation and the Royal New Zealand Institute of Horticulture. Joan specialises in landscape ecology, perception studies, and the monitoring and managing of landscape change. Boffa Miskell was one of the lecture tour sponsors.

Professor Carys Swanwick, Professor of Landscape at the University of Sheffield, was on sabbatical at Lincoln University. She has played a leading role in the development of landscape assessment in the United Kingdom, including the methodology for regional and national landscape classification and description adopted by the Countryside Commission in England.



New office for Tauranga team

Boffa Miskell's Tauranga office has relocated to one of the few new buildings built in Tauranga in the last few years.

New premises were a necessity, given the office's expansion and broadening of consulting services in urban design, ecology, cultural assessment and geospatial information to better service the growth and development happening in the Bay of Plenty and Central North Island.

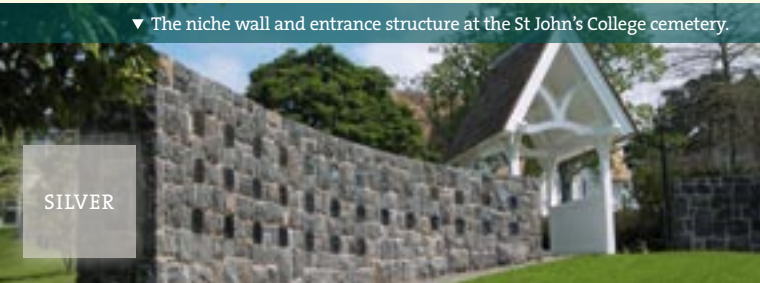
The new premises are located centrally at 116 Cameron Road on the corner of Cameron Road and Wharf Street.

Award winners

Boffa Miskell projects were among the winners in the New Zealand Institute of Landscape Architects' 2006 Pride of Place Awards.

The biannual awards honour the best examples of landscape architecture in New Zealand, and Institute President, Renee Lambert, applauded the distinctive New Zealand landscape character that was evident in many of the entries.

▼ The niche wall and entrance structure at the St John's College cemetery.



St John's College Cemetery Area

SILVER – LANDSCAPE DESIGN, COMMERCIAL/INDUSTRIAL/INSTITUTIONAL

Since 1845 St John's College in Auckland has been the training centre for Anglican and Methodist ministers in New Zealand and the Pacific Islands.

Boffa Miskell was commissioned to design new structures for the historic college cemetery, including a niche wall, entry point and boundary definition. The new features were required to complement the cemetery's informal character and reveal the Maori, Pakeha and Pacific Island influences in the history of St John's.

The judges commented that the new structures "had been designed and constructed with such absolute consistency with the proportion and detail of the historic chapel that they look as though they have always been there.

"A great deal of respectful thinking and attention has been accorded to the development of this site."

CONTACT: SARAH COLLINS sarah.collins@boffamiskell.co.nz



▲ Bush City, a long narrow site between Wellington Harbour and the main Te Papa museum building (off photo at right).

Bush City, Te Papa

SILVER – LANDSCAPE DESIGN, COMMERCIAL/INDUSTRIAL/INSTITUTIONAL

Bush City is the outdoor natural history exhibition area at Te Papa Museum of New Zealand, designed to meet a demanding brief – to demonstrate a wide range of habitats and assemblages of New Zealand native plants within a confined site on the edge of Wellington Harbour.

The judges noted the skill with which spatial levels had been manipulated, and the soil substrates, artificial rock and shelter created.

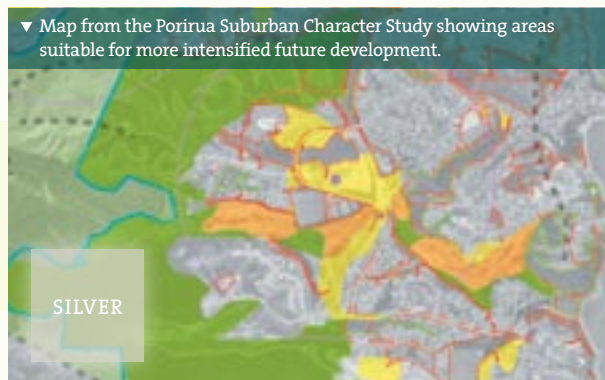
"The successful establishment of a 'bush' ecosystem that provides visitors with a remarkably authentic experience of New Zealand native forest on a 32-metre-wide site of just 4500 square metres is a triumph of meticulous planning and design," said the judges.

CONTACT: BOYDEN EVANS boyden.evans@boffamiskell.co.nz

Porirua Suburban Character Study

SILVER – LANDSCAPE PLANNING AND ENVIRONMENTAL STUDIES

Porirua City Council commissioned this character study to provide input to a review of the city's Suburban Zone district plan provisions. Boffa Miskell worked with Architect and Urban Designer, Graeme McIndoe, to carry out the review and provide recommendations for future actions.



▼ Map from the Porirua Suburban Character Study showing areas suitable for more intensified future development.



AUCKLAND

Level 3, IBM Centre,
82 Wyndham Street,
PO Box 91 250, AUCKLAND
PH: 09-358-2526
FAX: 09-359-5300

TAURANGA

Level 2, 116 on Cameron,
cnr Cameron Road and
Wharf Street,
PO Box 13 373, TAURANGA
PH: 07-571-5511
FAX: 07-571-3333

WELLINGTON

Level 9,
190 Willis Street,
PO Box 11 340, WELLINGTON
PH: 04-385-9315
FAX: 04-384-3089

CHRISTCHURCH

7th Floor, 86 Gloucester Street,
PO Box 110, CHRISTCHURCH
PH: 03-366-8891
FAX: 03-365-7539

WEBSITE: www.boffamiskell.co.nz

EMAIL: info@boffamiskell.co.nz

Consultation with local communities was integral as the study had been initiated partly in response to community concerns about the impact of development on the character of suburban areas. Components of natural and built character were assessed, together with recommendations for their improvement, maintenance or protection.

The judges described the study as "well structured, rigorous and professional."

CONTACT: BRON BENNETTS bron.bennetts@boffamiskell.co.nz

New talent

Newly graduated landscape architects who recently joined Boffa Miskell received student awards. Chris Punt, based in the Wellington office, received a gold award for his design of an ecological park at Tahunanui in Nelson. Mark Teesdale, based in the Christchurch office, received a silver award for his Maungatautari Ecological Reserve design.