

# BecaNews

January 2009

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Beca people making a difference

On the cover: Onepoto footbridge, winner of the Urban Design category in the NZIA 2008 Architecture Awards. Photograph by Simon Devitt.

 **Beca**

The new Beca group logo, introduced in March 2008, has been well received by Beca employees and clients alike; with many commenting on our clean new look. In selected parts of our business, sub-brands are also being developed to promote particular areas of expertise or market knowledge.

According to Group CEO Richard Aitken, our new distinctive brand identity "appropriately represents Beca as the highly respected, professional services organisation we are".

"Our people strengthen and grow our reputation through the calibre of their work. The Beca brand represents the quality of what we do and tells the world that, despite our diversity of geography and disciplines, we are One Beca." Richard Aitken.

### New vision and values

In addition to the new look, Beca's values have also been refreshed to consolidate and build on our values of excellence, trust, integrity, teamwork and innovation. The expression of our new values provides clarity on what it means to be part of Beca and live our culture.

These new values are **Partnership, Tenacity, Enjoyment and Care.**

**Partnership:** We value our longstanding relationships and connection with our clients, business partners and colleagues.

**Tenacity:** We stick by our clients and the need to solve their complex problems and challenges, and our perseverance, attitude, systems and disciplines focus our efforts into the delivery of excellence.

**Enjoyment:** Taking pride in being innovative and delivering successful solutions, we thrive on challenges, enjoying each other's company and celebrating our achievements along the way.

**Care:** We respect each other, our clients, the environment and our community. Safety and care are embedded in our work practices and are key to the positive solutions we deliver for our clients.

All of these values and the spirit of the refreshed Beca are encapsulated in our vision: "Creative people striving together to transform our world."

We encourage our colleagues, clients and business partners to hold us to task on these values and we look forward to working together on many more great projects, striving together to make a real difference to the world around us. ■



Above: The new Beca values - Partnership, Tenacity, Enjoyment, Care.

# Creative people striving together to transform our world

Our vision.

"The expression of our new values provides clarity on what it means to live the Beca culture."  
Richard Aitken, Beca Group CEO.



# Iconic gateway a first for New Zealand

Connecting the community of Flat Bush with their proposed new town centre has given Beca a rare opportunity to be part of something unique.

Beca, alongside Moller Architects, designed the Ormiston Road Bridge for the Manukau City Council. The streamlined, cable stay bridge is the first of its kind in New Zealand and captures the township's modern feel. Designed to complement its environment, it allows a free flow of light and visual continuity for the park, walkways and waterways beneath while it soars above.

According to Manukau City Mayor Len Brown, the bridge provides an iconic entrance to New Zealand's most comprehensively planned new town. "The Ormiston Road Bridge is a great engineering achievement, but what it really represents is connections that are important to the community," he said. "The bridge sets a high standard for design as the rest of Flat Bush develops around it."

The dual carriageway design allows for cars, pedestrians and cyclists to move safely across, connecting one side of Flat Bush to the Town Centre, while a walkway under the bridge connects the two sides of Barry Curtis Park. With an overall width of 27m and a length of 70m, it carries two 3.2m lanes, along with a 1.4m cycle lane and pedestrian walkway, in each direction.

As the first of its kind, the bridge presented some interesting challenges the design and construction teams would not ordinarily face in the course of their work.

The bridge owes its spectacular appearance to the 15 degree longitudinal and 5 degree inwards angling of the two reinforced concrete pylons, surmounted by 12m stainless steel lattice and glass spires that are lit internally at night. Including the spires the pylons are 45.5m high; and it took two days and four cranes to lift and place the pylon column formers into position. The self compacting concrete for the pylons was then pumped into the forms from the bottom.



The completed bridge is very similar to the concept design submitted with the winning design competition, providing evidence of the hard work and attention to detail the design team put in. Custom fit to the needs of the budding Flat Bush community, it stands as an inspiring monument to a community vision. ■



Winner: International and Excellence Award - Illumination Engineering Societies of Australia and New Zealand, 2008.

## Statistics

27m wide // 70m long  
 // Two 3.2m lanes //  
 Pedestrian walkways each  
 direction // 1.4m cycle lane

## New offices for Beca in Australia

### Brisbane office

Beca has expanded operations in Brisbane, moving to a much larger, newly built office in Milton, five minutes from the CBD. Our Brisbane-based team's skills include Industrial Project Management, Power, Water and Waste water, Planning and Building Services.

The office was officially opened by Beca group CEO Richard Aitken on 14 October, at a cocktail party attended by over 120 invited guests and Beca staff.

### Wollongong opening

The acquisition of MBK South Coast earlier this year saw Beca's Wollongong team swell in numbers, which has led to a move to the recently opened iC Innovation Campus. The team continues to support key clients in the Illawarra in the steel sector, as well as working closely with new clients in local government and tertiary education.

The official opening of the new Wollongong office was held on 3 December 2008. ■

Below: New Brisbane office (Photograph by Naz Mulla); Wollongong office.



## Commitment to conservation

### Working with Karori Sanctuary

Karori Sanctuary, with its 500-year vision to "restore a corner of mainland New Zealand, as closely as possible, to the way it was the day before humans arrived" is a cause dear to Beca's heart. Involved with the charitable trust since its inception in 1995, Beca has been providing ongoing pro bono assistance to the tune of over \$10,000 a year.

Work is now well underway on the Sanctuary's impressive new Visitor and Education Centre, with design services provided by Beca. The \$16m Centre is the biggest tourism initiative of its kind currently under development in New Zealand. Due to open in early 2010, it is set to be the country's flagship environmental education and eco-tourism facility.

Attracting international attention, the Centre will be a superb all-weather experience with interactive exhibitions telling the story of New Zealand's natural history and demonstrating the Sanctuary's groundbreaking conservation techniques.

Below: Karori Sanctuary, Wellington. Illustrations by Stantiall Studio Ltd.



Engaging visitors in the uniqueness and vulnerability of our country's native wildlife and ecosystems, the Centre aims to inspire them to make a positive change.

Beca's previous work for the Sanctuary has included the design of a unique predator-proof fence, plus help with other essential infrastructure.

"By harnessing our professional expertise for the Sanctuary, Beca gets the chance to demonstrate our genuine care for our environment, plus contribute to the local community in a meaningful way," says Mike Kerr, Regional Manager of Beca's Wellington office. "But Karori is more than just work - many of us hold personal memberships of the Sanctuary, and one of Beca's staff, Helen Ferner, has served as a trustee. It's testament to our passion for conserving our unique natural heritage." ■

# BECA HERITAGE WEEK

Celebrating Christchurch's heritage.

Retro fun was the mood at this year's Beca Heritage Week. Themed RETROspective: Christchurch life, architecture and design 1940s-1970s, the event celebrated innovation, achievement and milestones over the last four decades in architecture and design, popular culture, music, transport and fashion.

The event, held from 17-25 October, is the 16th annual week of celebrating and raising awareness of the area's unique social, cultural, built and environmental heritage, and is run by the Christchurch City Council. This year the event was officially opened by the Prime Minister, Helen Clark and Christchurch Mayor, Bob Parker.

Raising awareness of the importance and benefits of conserving heritage places, the annual Beca Heritage Week offers a rare opportunity to reflect on where we've come from and celebrate the achievements of the past.

'Beca has been involved in the event for the past four years, the last two as naming sponsor,' says Craig Price, Beca's Regional Manager, South Island. 'It's become one of our highest profile and most significant sponsorships in New Zealand. From helping return the Isaac Theatre Royal to its former glory to our work on the sustainably designed South Christchurch Library, Beca's people are proud to play an important role in restoring Christchurch's special heritage

places, and helping create the city's heritage of tomorrow.'

Something for everyone, the Week's activities included cultural precinct events, exhibitions, tours, seminars, music, dance and film, plus The Great Heritage Debate and popular 1970s disco night. ■

Below: South Christchurch Library.



## One down, many more to go

Beca is now firmly established as a major player in the design of geothermal power plants.

Design work on the NZ\$450m Rotokawa II geothermal power plant outside Taupo is progressing according to schedule. Beca also recently completed work on the NZ\$275m Kawerau geothermal power plant near Whakatane.

Beca provided architectural, structural, civil, geotechnical, and fire engineering design services for both sites for Mighty River Power, Sumitomo, Fuji Electric, and Hawkins Construction, as the latter's civil infrastructure design consultant.

The 90MW Kawerau plant was a fast track design and build project. Beca Project Director Hamish Brookie says the design team's biggest challenge was gaining an understanding of the plant processes and unique requirements in a very short time frame. In addition, on both projects the team encountered difficult ground conditions that called for innovative design solutions.

"It was critical getting to know the process designers' requirements and keeping track of these requirements to produce a fully integrated design that would address the complex needs of the generating equipment and balance of plant."

Kawerau went on line in September 2008, ahead of schedule and under budget. Work on the 132MW Rotokawa II started in March 2008.

According to Hamish the Rotokawa II project's scope and challenges are very similar to those of Kawerau. This gave the team a unique learning opportunity: "It enabled us to review and change some of the things we did before and come up with a better design yet again. We're now well placed to make the most of future geothermal opportunities that might arise in New Zealand and Asia."

The two Bay of Plenty power stations are part of owner Mighty River's strategy to generate 400MW renewable geothermal energy per year by 2012. ■

**"The close working relationship between Hawkins, Fuji, and Beca enabled Beca to deliver innovative and cost effective engineering solutions on time."**  
Hamish Brookie, Beca Project Director.

## Beca Business - improving business

Productivity growth, staffing issues and increasing demands on capital are some of the challenges faced by businesses today.

Whether it is the delivery of a strategic initiative, reducing operational costs or improving performance within the business, Beca Business' team of experienced management consulting specialists provides project and people management skills that enable our clients to improve their business performance with confidence. The Beca Business team has both consultancy and practical application experience; and their goal is not only to provide strategic advice, based on sound business analysis and industry knowledge, but also to assist with implementing recommendations.

"We work with our clients," says Beca Business leader James Lowe, "we want to get our clients to the point where they have the skills to be able to do the work needed themselves."

Beca's management consulting clients come from a wide range of industries. In recent months we have helped these clients improve their business performance, implement strategic change, make informed decisions and deliver against strategic initiatives. These clients include Auckland Airport, New Zealand Steel and the Royal New Zealand Airforce. ■



James Lowe,  
Beca Business leader.

**"There's no doubt that without your calm measured approach we would not have made the tight deadlines and the end result would not have been as professional and well presented."**  
Client comment on a Beca supported tender submission.

## Beca growth in Vietnam

Although Beca has been undertaking projects in Vietnam for several years, our representative office was formally established within the last year.

Beca is assisting international clients with many projects in this region, mainly in the commercial buildings area, but also in industrial and management fields. In spite of the world's recent economic hiccups, many of our clients are taking a long term approach and significant investment continues. Beca's commitment also continues.

"In keeping with Beca's philosophy for building technical excellence in all our offices, we have undertaken training for several Vietnamese engineers in our Singapore office during the year," notes Lim Kok Shen, Beca Operations Director in Vietnam. "This will offer our Vietnam office Beca cultural and technical benefits once training is complete."

Beca's extensive experience on large building projects in Singapore is helping set a new benchmark for construction in Vietnam. In December 2007, Beca was awarded the contract to develop the basic design of the new Bank for Investment and Development of Vietnam (BIDV) building in the heart of Ho Chi Minh City, providing civil and structural consultancy services. Cost of construction on the 45-storey, four levels basement Grade A office tower is estimated at \$US60m.

Beca is also providing engineering on The Kenton, currently one of the largest mixed developments of its type in Vietnam.

Outside Ho Chi Minh City, Beca's longstanding work with Swire Vietnam Cold Storage continues with a commission to design a new Greenfields store in Long Hau.

"Stage 1 of this project, comprising an initial 26,000 pallets in a 5.45 million cubic foot store, aims to add 50% to Swire's Vietnam capacity. Stage 2, when it proceeds, will ultimately double the size of Long Hau and fully develop the new site", says Lim Kok Shen. "In recent years, growth in Vietnam has been very strong, and recently the Vietnamese government has committed to supporting growth with strong measures against inflation and overseas investment initiatives. Beca is pleased to play a part in the long term development of Vietnam." ■

## Kupe Project showcases Beca Oil & Gas capabilities

Beca's engineering expertise and collaborative approach is helping Origin Energy produce the 'good oil' on the Kupe Project – a gas and light oilfield development in the offshore Taranaki basin aiming to help New Zealand meet its increasing gas needs.

Kupe's initial development comprises three wellheads, an unmanned offshore platform, a 30km pipeline to shore, an onshore production station near Hawera and oil storage facilities at New Plymouth; with a total project value of around NZ\$12 billion.

Beca was contracted to Technip, Origin Energy's Alliance partner, to provide civil, structural and geotechnical engineering services for the onshore plant, which will process the raw gas and separate out the light oil/condensate and liquid petroleum gas (LPG).

"This is by far the largest oil and gas project the Beca team has undertaken," says Peter Dyer, the Beca Technical Director leading this project.

Beca's design work has included the civil and structural items associated with this large process plant. In addition a significant portion of the main process area structures were designed and built as preassembled modules. This provided greater flexibility for the construction team and enabled competitive pricing to be obtained on the world markets.

Kupe's rapid construction programme meant the Beca team had to proceed with detailed design well in advance of the process and

mechanical design. This necessitated a design approach that provided maximum flexibility to accommodate the evolving process plant requirements. A key factor in the success of this project is Beca's ability to work in conjunction with the clients globally diverse design teams to produce a very comprehensive 3D model of the plant.

"The fast track nature of the project, the large volumes of materials pre-fabricated overseas, plus the diverse nature and locations of the design teams have provided some real challenges, but also a valuable learning experience and a fantastic opportunity to showcase Beca's capabilities," says Peter.

Beca's gain is also paying off for the client. Construction is proceeding extremely smoothly, largely due to the accurate design work and professionalism of the design team, of which Beca is a key part. ■

**As of October 2008, construction was on track for the Kupe Project to commence fulltime production in mid-2009.**



# Awards Round Up 2008

Beca won two **New Zealand Engineering Excellence Awards (NZEEA)** in November. The University of Auckland Business School won the Building and Construction category; with Beca responsible for site selection, surveying, civil and structural, fire and geotechnical engineering as well as project management. The Burwood Landfill Gas project was the winner in the Sustainability and Clean Technology category. The Beca team designed a complex scheme to conserve and transport the landfill's methane gas to heat and partially power Christchurch's largest pool and sports centre.

Beca Architects have won two awards for the design of the Onepoto Bridge on Auckland's North Shore. The bridge has won the Urban Design category in the **New Zealand Institute of Architects (NZIA) 2008 Architecture Awards** and was also the Outdoor Infrastructure winner in the **New Zealand Wood Timber Design Awards**.

The Northern Busway in Auckland was awarded the **Athur Mead Environmental Award**, the **Roading New Zealand Supreme Award** and a **Shell Bitumen Excellence Award** for a Major Roothing Project. Beca was one the main designers alongside Fletcher Construction, Transit NZ (now NZTA), Opus and Connell Wagner. The Project was completed one month early in November 2007 and the Busway was officially opened on 3 February 2008.

Beca Planning was joint recipient of the **2008 Resource Management Law Association Projects Award** for the Investigating and Reporting (I&R) Stage of Victoria Park Tunnel. Beca received this prestigious award together with client advisors Chapman Tripp and Zomac.

Beca had great success at the 2008 **Association of Consulting Engineers New Zealand (ACENZ) Awards**, winning one Gold, two Silver and three Merit awards. Gold went to Beca Infrastructure for the Melbourne Airport A380 Runway Widening project, where the team assisted with major civil engineering works alongside a major runway while keeping the busy airport fully operational. Beca International Consultants Ltd won a Silver award for the Istanbul Earthquake Retrofit Study, a detailed study of 369 buildings with a high earthquake risk. Beca's Singapore Republic Polytechnic air conditioning design also won a Silver Award. Merit awards were won for our New National Mapping System for the Kingdom of Tonga and the M&E Engineering for the Ritz Carlton as well as Structural Engineering for Pacific Place, both in Jakarta, Indonesia.

Beca won four awards in the **National and International Awards of the Illumination and Engineering Societies of Australia and New Zealand (IESANZ)** in October. These were an International award and an Excellence award for the lighting of Ormiston Road Bridge, an Excellence award for the Kumutoto Public Space in Wellington and a National Award of Commendation for the Auckland Domestic Terminal.

The **2008 Auckland Export Award** saw Beca winning the QBE Insurance Consultants and Services Exporter category. Presented each year by the Export New Zealand Auckland branch, the award recognised Beca as the region's best provider of consulting services to export markets.

Beca's investment in its employees was recognised recently at the **Wellington Regional Gold Awards**. Beca's Wellington office was announced as the winner in the 'WRLMS Investment in People' category.

The Meridian Energy Building won the Sustainable Design and Innovation Award at the **2008 NZI National Sustainable Business Network Awards**.

Singapore's Republic Polytechnic campus was the winner of the **ASEAN Energy Award 2008** (New and Existing category). As the M&E Consultant for this project the Singaporean Beca team designed IT infrastructure for wireless connectivity, a smoke control system design and an integrated security management access control system. Beca also provided total building performance modelling and introduced the Thermal Energy Storage System, a new benchmark for this type of campus facility in Singapore.

The Rowville 500kV Power Project received a Highly Commended award at the **Australian Institute of Project Management (APIM) Victorian Chapter Awards** in August. Beca provided design services for this project, working as part of a consortium with SP AusNet, Powercor and Civil Power.

The **Property Council Awards** in June recognised two Beca projects with awards: The Meridian Building in Wellington won the Kensington Swan Green Building Award and an Excellence in the GIB Commercial Office category, while the University of Auckland Owen G Glenn Building won a Merit in the Coffey Projects Education and Arts category.

Beca International Consultants Ltd and the Planning and Urban Management Agency (PUMA) of the Ministry of Natural Resources and Environment, Government of Samoa, were awarded the **NZ Planning Institute (NZPI) "Nancy Norcroft Award"** in April. This is the premier award for excellence in planning practice.

Left to right: Beca Planning; Paul White receiving the Export Award; Northern Busway.



"Beca's innovative approach to the needs of a small island nation, founded on good relationships and building trust with the entire community, is a clear winner." External judging panel commentary on declaring this project the winner in the "Trust and Integrity" category - Beca Innovate 2008 Awards.

An extensive project involving fourteen Beca disciplines has enabled the Marshall Islands to approach building in an improved and sustainable way.

The government of the Marshall Islands is committed to designing and constructing new schools and health centres and carrying out maintenance on existing structures. The government recognized the need for developing sustainable infrastructure but was unsure of how to achieve this.

The largely Tauranga-based Beca team includes planners, architects, structural engineers and building services engineers. Our work has included the design of six new schools as well as extensive rebuilding work for the College of the Marshall Islands and Majuro Hospital.

Beca developed a holistic approach, promoting a culture of knowledge sharing,

formal training and the up-skilling of local people, promoting longevity and sustainability and delivering solutions appropriate for the community; setting up documentation and procedures that have enabled the Marshall Islands to continue producing work to a high standard.

Some of the innovative solutions Beca has provided for the College of the Marshall Islands include air conditioning using salt water as a coolant for the chiller (to avoid the pitfalls of refrigeration and re-gassing in this remote location) and alternative energy plans such as 250kW of solar electric energy on the roofs and 300kW of wind turbines. The first solar power project (65kW) will be commissioned in April 2009.

A lack of power generation capacity is not the only problem plaguing the Marshall Islands. The biggest problem on the island is a lack of fresh water. In April 2008

a reverse osmosis unit was installed to provide world health quality water from salt water. The unit provides potable water for the college and potentially for the community of 26,000 gallons a day.

Designing long lasting structures in this highly corrosive environment has been another challenge for the Beca team. The high humidity and salt laden atmosphere means that concrete literally blows off the reinforcing after a few years; so the team had to come up with special designs for the schools using fibreglass, epoxy coated and stainless steel reinforcing.

The Marshall Islands is continuing to engage Beca and a number of other Pacific Island countries (such as the Federated States of Micronesia) are also developing new relationships with Beca as a result of this work. ■

## Respecting a fragile environment

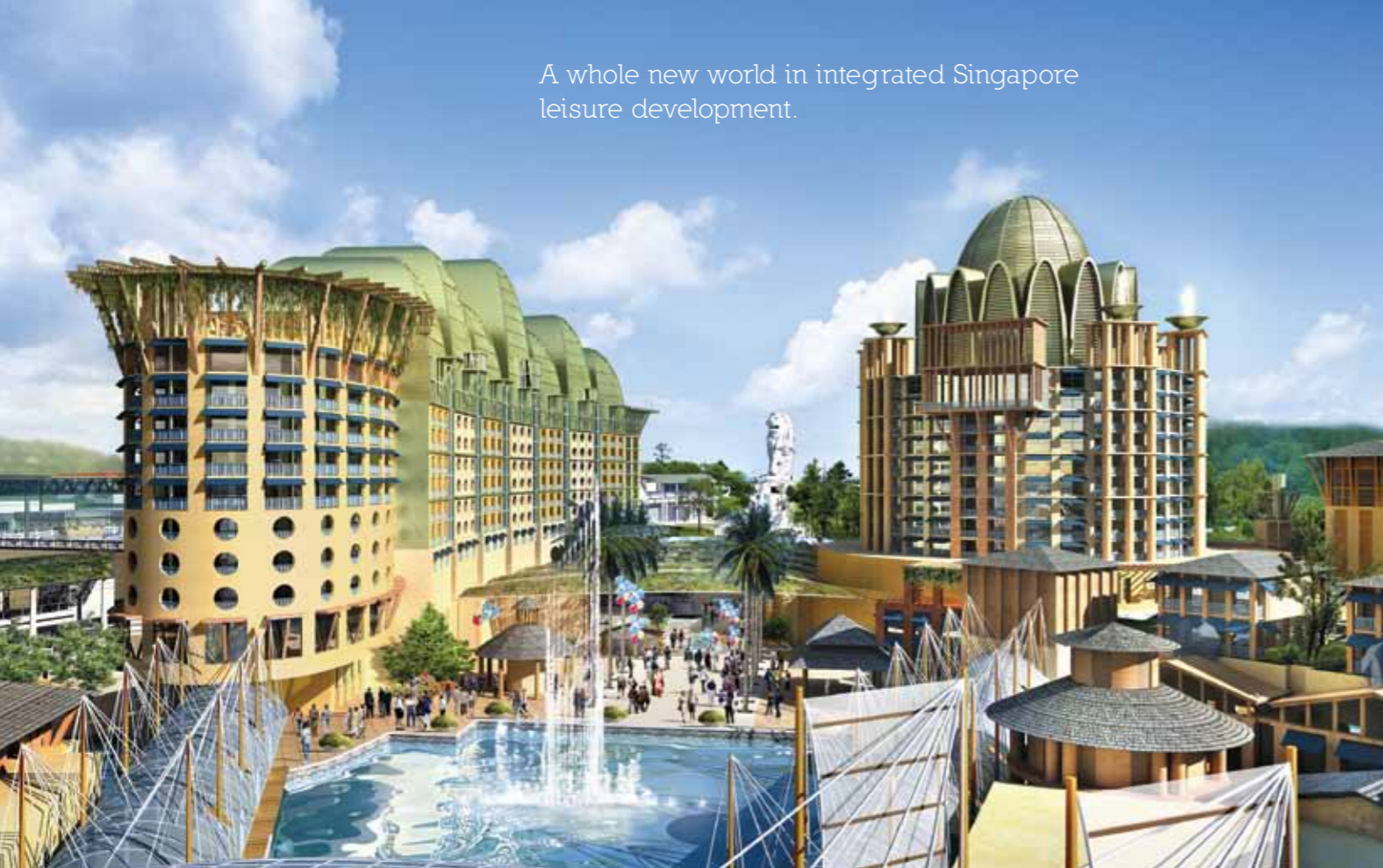
Beca - transforming facilities in the Marshall Islands.



A whole new world in integrated Singapore leisure development

The Beca team in Singapore is involved in one of Asia's most exciting resort destination developments.

A whole new world in integrated Singapore leisure development.



In an exciting expansion of our work on tall buildings and hotels in Asia, the Beca team in Singapore is involved in one of Asia's most exciting resort destination developments that will include theme parks, a casino, hotels and conference facilities; shopping facilities and the world's largest oceanarium.

Resorts World at Sentosa is a S\$6 billion resort on a 49ha site on Sentosa Island, 200m from the mainland. Beca is providing 40% of the M&E consulting services to the project, which will house Southeast Asia's first and only Universal Studios theme park,

the world's largest oceanarium and the region's first fully integrated wellness spa. Universal Studios Singapore will boast 24 sophisticated rides, many of which are world firsts.

The development also includes six hotels and a casino, with all components built above a two level, 3,800 space car park. Shopping in the sprawling half a kilometre strip of outdoor shops is made comfortable through the extensive use of inflatable shade canopies and an outdoor spot cooling system that produces the feeling of a cool sea breeze on even still days.

Equipment specialists from Asia, Europe and US have been employed on the project to design the specialty equipment including water ride designers, marine life husbandry advisers, museum exhibit specialists and theme park ride engineers. Beca is providing the services to support these specialist systems as well as providing these overseas design teams with code and local authority guidance.

Resorts World at Sentosa is due to open in early 2010. ■

Above: Hotel Michael and Maxims Residences at Resorts World. Previous page: Resorts World.

**"Many of the specialists work on a small portion of the project, where we have been involved throughout and have a broad overview. We have been able to add value for our client by providing input on the specialists' concept and schematic level designs and suggest design options that have been successfully used on the project in other areas."**  
Beca's Steve Perkins.

## Statistics

S\$6 billion resort //  
49ha site // 200m from  
mainland // Asia's only  
Universal theme park //  
Six hotels // Casino //  
3,800 car parks

Lynne Hancock, Urban  
Design team leader.



## New urban design team aims to transform public spaces

New Zealand is seeing an increasing focus on the quality of public places, and a growing demand for better design outcomes. Urban design is about guiding, designing and delivering a high quality built environment. It is a tool for transformation of our towns, cities and regions, grounded in an understanding of places and a commitment to their future.

Urban design has long been factored into Beca's work, but the company recently formed an official Urban Design team, adding internationally recruited urban designers to our existing team, to form a focussed unit.

Beca's process is a collaborative one, and as part of one of New Zealand's largest multidisciplinary consultancies, we are well positioned to draw on the full range of Beca's diverse disciplines to take a project from design concept through to implementation.

According to Urban Design team leader Lynne Hancock, many of Beca's clients "are as passionate about good urban design as we are". These clients can be found within local and central government, infrastructure and transport and the development sectors.

The broad range of projects our Urban Design team can assist with include future character strategies, design guidelines and controls for integration with District Plans, concept plans that support growth strategies and peer review and policy inputs for residential and mixed use developments.

They can also produce masterplans, structure plans and urban design frameworks for towns, cities and regions and assist on infrastructure projects, streetscape upgrades, revitalisation projects, public space design, and pedestrian and cycle bridges.

According to Lynne, the urban design team is looking forward to working closely with our clients to assist in revitalising existing public areas; and "to being involved from concept level on new projects for more community friendly design outcomes". ■

## Beca people making a difference



### IPENZ Honours

Several senior Beca people were honoured in the 2008 IPENZ (Institution of Professional Engineers New Zealand) Fellows and Achievers Awards. Beca CEO Richard Aitken has been promoted to the class of Distinguished Fellow, while Garry Hadfield, Peter Hay, Craig Price, Peter Steel and Jon Williams were elected IPENZ Fellows.



### Beca Leader Appointed Co-Chairman of Sustainability Panel

Beca Asia Chairman Lee Chuan Seng has been appointed Co-Chairman of the recently formed BCA International Panel of Experts. The BCA (Building and Construction Authority) is an agency under the Ministry of National Development, championing the development of an excellent built environment for Singapore.



### Distinguished Service Award

Tony Johnson, Beca AMEC's General Manager, Forest Industries, has been awarded the 2007 Appita Oertel Nadebaum Distinguished Service Award. This is Appita's top service award recognising Appita members who have given outstanding service to the association over a number of years. Appita is the not-for-profit technical association serving the Australian and New Zealand pulp and paper industry.



### New ACENZ President

Congratulations to Beca's General Manager, Civil Infrastructure, Brent Meekan on his election as the new ACENZ (Association of Consulting Engineers New Zealand) President in August. His term as President will run for two years.

“We are delighted with the wonderful end product which Beca has helped to create with a large team of dedicated individuals.”  
 Manager - Planning and Terminals, Paul Duffy.



The new international arrivals area at Auckland Airport opened for passengers on the morning of 1 April 2008, marking the next stage of the airport's expansion which aims to handle 25 million passengers a year by 2025.

Acting as principal consultant to Auckland Airport to lead the large multi-firm consulting team delivering this sizeable development, Beca also provided all project management, cost management and engineering services.

The new area increases the space available for arrivals border processing with 44 immigration passport control counters and provides space for the associated

support offices. It also incorporates a new 1600m<sup>2</sup> arrivals duty free retail area, the largest in the Asia-Pacific region.

Green considerations have been a major feature of the building's design, which includes a rainwater harvesting system, photovoltaic cells on the roof to provide power for lighting and preheating water in the hot water system, plus high efficiency chillers and boilers.

The new facility reflects Auckland Airport's aim of being outstanding, welcoming and uniquely Kiwi with iconic and cultural New Zealand imagery featured throughout the building design and interior finishes. ■

“The arrivals expansion project has been a major accomplishment in terms of complex systems, tight deadlines and environmentally sustainable design challenges. We are proud to see this project delivered for the airport through a combined team effort.” Beca Project Director, Helen Ferner.

## Warm welcome for international travellers

Beca leads multi-team delivery of arrivals expansion project at Auckland Airport.

## Sustainable travel for Tauranga City Council

The Tauranga City Council (TCC) is leading the way for businesses in the city by encouraging its staff to make sustainable travel choices.

With Beca's assistance, the TCC successfully launched their organisation-wide Travel Plan in October last year. A programme to assist other Tauranga businesses and organisations with developing travel plans followed.

Beca's involvement included assisting the TCC to finalise and implement their sustainable travel plan and developing and coordinating the overall Workplace Travel Plan Programme. Through this programme, Beca is working with public and private sectors to encourage the use of travel plans as a travel demand management initiative and as a sustainability tool.

The Workplace Travel Plan Programme encourages developing a sustainable travel plan through training workshops for workplace Travel Plan co-ordinators, organising travel plan network sessions and providing guidance and template material.

Workplace travel plans can bring a variety of benefits to companies, the local community and the environment. Introducing sustainable travel plans in Tauranga is intended to reduce traffic congestion and carbon emissions, improve air quality and make the road network more efficient and attractive for cyclists and pedestrians.

Beca's work for the TCC is working towards increasing the number of people who choose to travel by means other than driving alone, whether on the regular work commute or business travel. Travel plans often also include an organisation's fleet vehicles; and the TCC's plan includes a review of the vehicle fleet; with options such as exploring the inclusion of an electric scooter for local business travel. ■



## Assisting our clients with Sustainability Services

It is now generally accepted that the way forward to a sustainable future for our businesses and community is through the integration of environmental, social, cultural and economic performance.

In recognition of this Beca now provides a range of sustainability services, grouped into two broad categories:

### Business Sustainability Services

This is about helping our clients achieve sustainable outcomes throughout their business. We offer in-depth consultancy in Environmental Management Systems (EMS) (ISO 14001) implementation and auditing, corporate sustainability strategies and corporate social responsibility, carbon footprinting and sustainable transport advice.

### Project Sustainability Services

Sustainability principles are now generally accepted as standard by project teams in guiding the planning, design, construction and operation of projects. Beca's technical experts offer consultancy on green buildings (including GreenStar, LEED, Green Mark and BREEAM), wastewater re-use, waste auditing and minimisation, energy management and process optimisation, carbon footprinting and greenhouse gas inventories, sustainable travel plans,

sustainability appraisals and project sustainability toolkits.

In addition we have staff who are experienced in statutory and policy planning advice, environmental impact assessments, environmental compliance management, and environmental and social due diligence/risk management.

In the last two years Beca has provided sustainability consultancy for projects across a wide variety of industry sectors. These include Air New Zealand's EMS, the Melbourne Water Alliance, Auckland Airport's Pier B, Singapore's Republic Polytechnic, Christchurch City's Renewal Energy Model, Tauranga City's Travel Planning and the South Christchurch Library.

In the buildings sector the award-winning Meridian Energy building on Wellington's waterfront became the first building in New Zealand to be awarded a 5-star rating under the New Zealand Green Building Council GreenStar rating system for commercial buildings. Beca provided a range of services to the project team to assist with creating a more sustainable outcome. ■

Right: Camilla Needham (Beca Infrastructure Ltd) and Lester Sherman (Beca AMEC) are achieving growing recognition in the fields of carbon footprinting and carbon emissions trading.



## Harnessing Wellington wind power

By the end of 2009 Wellingtonians will be enjoying tangible benefits of their city's windy weather. Balanced atop the rugged Makara hills, 'West Wind', Meridian Energy's newest wind farm venture, is set to become New Zealand's most productive wind farm and the flagship for the state-owned generator's renewable energy.

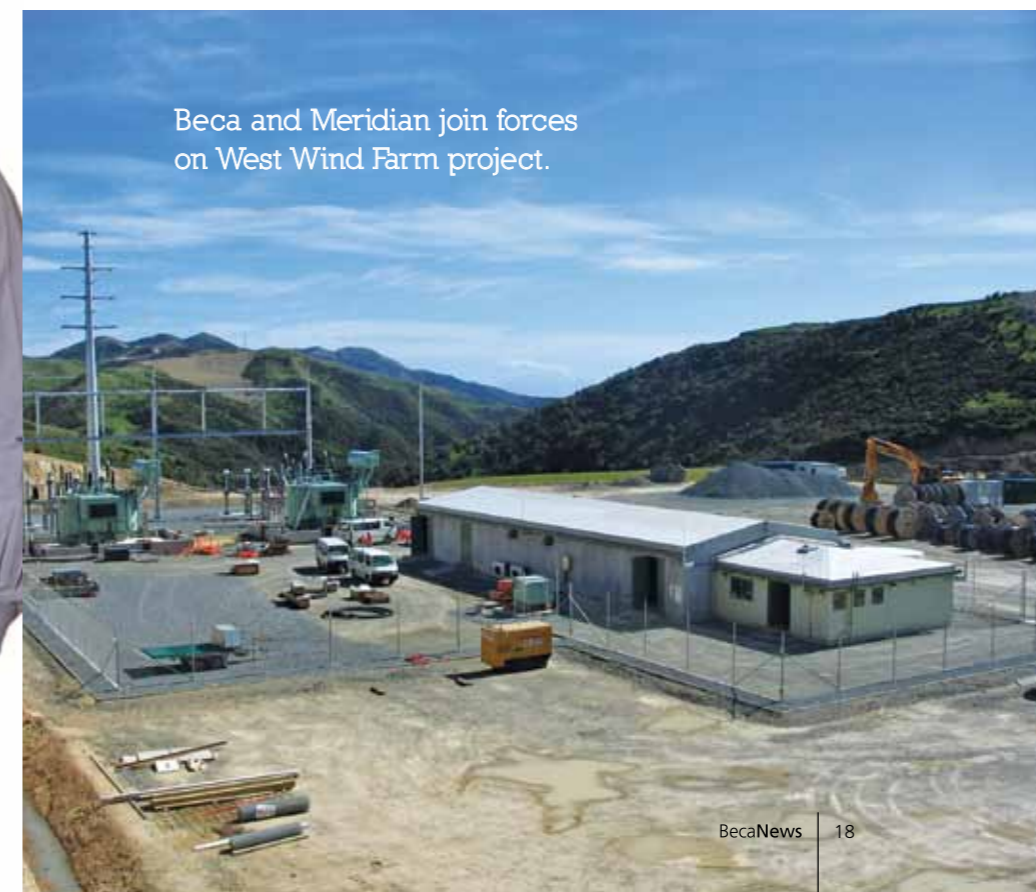
Harnessing Beca's extensive experience gained on the Te Apiti and White Hill wind farms, Meridian Energy has again engaged Beca for a broad spectrum of consulting services on West Wind. Beca is delighted to be involved in this iconic project.

'West Wind is an important Greenfield project for Beca,' says Dennis Hunt, Beca Project Director, Wellington Industrial, 'and its sheer generation capacity is significant from the point of view of New Zealand power generation.'

West Wind's 62 turbines will be capable of generating 142MW of energy, producing equivalent power for around 70,000 homes in the greater Wellington area. Expected to be generating over 90% of the time, with an estimated load factor of 47% (more than double the international average), West Wind will make the Wellington region a net producer of power.

The scope of Beca's work includes civil, structural and electrical design of the 33/110kV substation and switchroom and design of the 33kV cable reticulation scheme. Beca is also working with Transpower on the transmission line connecting into the Central Park-Wilton line. As well as design capabilities, Beca has also been involved in surveying and mapping the 52km<sup>2</sup> site, system studies and modelling, logistics and project management. ■

**"Beca's depth of services, integrated approach and willingness to address needs has proven valuable on a project of this magnitude and nature."** Meridian Energy's Project Manager, Royden Mayfield.



Beca and Meridian join forces on West Wind Farm project.

## Making life easier with GIS

Eager Wellington Girls College geography students may soon join the ranks of GIS consultants following a recent visit from Beca staff promoting World GIS Day.

Geographic Information Systems (GIS) principles and their real-world applications, plus opportunities for further learning and employment were all up for discussion. Reinforced by some lively hands-on learning, Beca helped demonstrate the difference GIS is making in society today.

"GIS Day is an international day, celebrated by thousands of organisations and schools to promote the use and study of GIS," says Sharon Burns, Beca GIS project manager. "At Beca, we celebrate it every year to try and promote the use of GIS on projects, increasing awareness of who we are and what we do."

"GIS is about a lot more than just maps," Sharon explains. "It can add significant value for clients and their projects. Data visualisation can improve communication and enable better decision making. By analysing spatial data we can also quickly and accurately interpret current situations and model trends using location-based data. Three-dimensional visualisation, web mapping, area calculations and owner and leasee investigations are all part of our GIS service that can assist engineers and architects during planning phases."

Beca has 13 GIS consultants across three New Zealand offices, working with a myriad of disciplines from planning to transport, civil to geotechnical, on projects as diverse as the Ngati Whakaue Land Master Plan to site selection for Lion Breweries' new beverage facility. Core Beca GIS services include spatial analysis, spatial modelling, 3D modelling, cartography, web mapping and mobile GIS services.

"GIS is becoming integral to every type of business. It's evolved into a technology that can help us get more out of the information we have and offer our clients smarter solutions." ■



University of Auckland Owen G Glenn Building



Melbourne Airport A380 Runway Widening



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