



John Cairns

Editorial

Beca Airports is once again proud to be the lead sponsor of the sixth annual New Zealand Airports Association Conference to be held in Wellington from 31 October to 01 November 2011 with the theme of 'Smarter Airports, Better Business'.

We will also have a strong presence at the Australian Airports Association (AAA) Conference being held in Brisbane in mid-November 2011.

In this edition we feature our ongoing airfield pavement work at Christchurch International Airport, our recent appointment as the consultant for the major airfield upgrade program in Papua New Guinea and our passenger measurement and modelling work at Auckland Airport. We also provide a roundup of various airport projects in Australia, New Zealand and the Pacific Islands and introduce some new Airports team members.

Our work and the growth of the Beca Airports team demonstrate our continued focus on and commitment to delivering successful projects for both the airport and defence segments in Australasia. This is reinforced by our recent Australian Institute of Project Management Awards for the Adelaide Airport Runway and Taxiway Overlay Project.

We trust that you continue to enjoy receiving and reading our newsletter and welcome your feedback. We look forward to meeting you on either side of the Tasman in October or November 2011.

John Cairns
Technical Director - Beca Airports

Adelaide Airport (Photo Courtesy of Adelaide Airport) ▼

Editorial

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Australian Airports Highlights 2011

Airfield Defence

In late 2010, Beca secured the three year contract for the airfield pavement maintenance works for the Australian Department of Defence. This has involved inspection, design and construction supervision at over 20 airfields across Australia over the last nine months, including remote locations such as RAAF Woomera Aerodrome in South Australia and Mount Bunday Airfield in Northern Territory.



Adelaide Airport

The Runway and Taxiway Overlay Project was successfully completed in early 2011. The project received a South Australian Project Management Achievement Award in early September 2011 and was received in person by James Low of Adelaide Airport Ltd and Mark Wilson and Nathan Wallace of Beca. In October 2011, the project went on to win the corresponding AIPM National Project Management Achievement Award. This was presented to James Low and Mark Wilson during the IPMA 25th World Congress in Brisbane.



▲ Nathan Wallace of Beca (left), James Low of Adelaide Airport Ltd (centre) and Mark Wilson of Beca (right) receiving the South Australian Project Management Achievement Award. Photo courtesy of "Heidi Who?"

Ballarat Airport

Continuing Beca's commitment to support development of regional aviation infrastructure, Beca has been working with the local Council to develop a range of pavement and infrastructure upgrade options at Ballarat Airport. These upgrades include assessment of runway strengthening and extension options, as well as upgrades to taxiway and terminal facilities. This work feeds into high level planning currently being undertaken to chart the direction of future growth potential of the aerodrome.

Bendigo Airport

Beca has been involved in the design of a new parking apron for small jet aircraft at Bendigo Airport. The project will involve the design and construction of a 1,600m² apron as part of the development of the aerodrome for new aviation business in the region.

Brisbane Airport

Construction work is now well underway on the International Apron and Taxiway Extension (IATE) project and Beca is providing the technical supervision services. The new H2S Taxiway was completed in July 2011.

Hobart International Airport

Beca has been working closely with HIAPL since April 2011 and is the designer for the Runway Overlay and AGL Upgrade Works, with the runway overlay component of the project, commencing on site in mid October 2011. The project involves over 20,000 tonnes of asphalt and installation of a new AGL system.

Melbourne

Working closely with APAM, Fulton Hogan and Avionics, the Runway Overlay Project was successfully completed in August 2011. Beca has now commenced the feasibility design for a major program of concrete slab replacement works on Taxiways P, U and G.

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Melbourne Airport ▲



Above and middle: Brisbane Airport IATE project ▲

Team Growth in Australia

The Beca Airports Team in Australia has grown in both size and reputation over the past 12 months.



Clarence Chin

Clarence has recently joined the Beca Airports Team as a Senior Airport Electrical Engineer and Airfield Ground Lighting specialist in our Melbourne Office. Clarence has over 23 years' experience in maintenance, electrical design, construction supervision and project management with ten years' experience in the Malaysian Airports sector.

Clarence has been involved in the planning and management of engineering projects for 16 airports in Sarawak including the replacement of the Aeronautical Ground Lighting (AGL) System at Kuching International Airport.

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We now have more than 20 staff members based in Adelaide, Brisbane, Melbourne and Sydney, comprising skilled people with design and operational experience gained on a number of civil airports and defence airfields.



Peter Tonkes

Peter has recently joined the Beca Airports team based in Brisbane.

As a Senior Airport Project Manager, Peter brings a wealth of experience from his previous roles, including spending the last 10 years with the RAAF (with postings to Timor, Iraq and Afghanistan). He also worked for seven years in the construction industry managing pavement projects, including runway construction works in the Torres Strait.

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Damian Johnson

Damian joined the Beca Airports Team in July and is based in Brisbane. He brings airfield pavement inspection, design and construction supervision skills to the team.

Prior to joining Beca he was a Flight Lieutenant in the RAAF and held a number of roles within the Airfield Engineering Specialisation over a ten year career. Highlights of his time with the RAAF include deployments to Iraq and Afghanistan as a Project Engineer, leading the RAAF team for the construction of Nackaroo Airfield in the Northern Territory, and leading the RAAF Specialist Engineering team during the Queensland Flood relief at Ipswich.

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New Zealand and Pacific Airports Highlights 2011

Beca is currently working on a number of airfield and terminal building projects in New Zealand and the Pacific Islands.

In addition to the projects featured in this edition, recent projects include:

New Zealand

In August this year, the **Hawke's Bay Runway 16-34 extension** was completed resulting in an increased runway length to 1,750m and an apron extension for Code C aircraft was completed in September. August also saw the completion of an apron extension at **Tauranga Airport** consisting of 5,000m² of concrete pavement to cater for Code C jet engine aircraft. In late September, Beca commenced the design of the 2012 concrete slab replacement works at

Auckland Airport – this project involves the replacement of over 200 concrete slabs dating from the 1960s.

Queenstown Airport – design of the sealing of GA Runway 14-32.

Recent works at **Wellington International Airport** include the reconfiguration of Stands 10, 11 & 12, which has provided the airport with four contact and one remote stand around the south west pier, capable of parking the Airbus A320. The baggage handling system was also recently upgraded, and Smartgate units were installed in the International Arrivals and Departures halls.

The airfield upgrade works at **RNZAF Base Auckland (Whenuapai)** is now over 50% complete, with a target completion date of February 2012. Finally, the RESA works on Runway 11-29 at **Christchurch International Airport** were completed in September 2011.



Hawke's Bay Airport ▲

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Papua New Guinea – Airfield Upgrade Works

In July this year, the National Airports Corporation of Papua New Guinea awarded Beca the design contract to upgrade 11 regional airports, with funding from the Asian Development Bank.

The project comprises major pavement strengthening and runway extensions as well as associated works. Beca's project management and design team (Sundar Suntharesan and Jay Nair) set off for Papua New Guinea in July 2011, with visiting technical support provided by Tony Wallis and Raymond Kwan from the Auckland-based team. A project office has been established at Jackson's International Airport.

Beca is supported by sub consultant Cardno, based in Port Moresby. Initial site visits to Hoskins, Gurney, Mt Hagen and Wewak Airports have already been done to confirm the outline scope of the works. The project will run for three years with funding confirmed for the physical works at Hoskins Airport.



Jay Nair (left) and Sundar Suntharesan at Port Jackson
Mt Hagen Runway 12-30 ▲▼



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Pacific Islands

We continue to provide project management and design services to a number of projects in the Pacific Islands including the runway, taxiway and terminal works in **'Eua (Tonga)**, the relocation of the Non Directional Beacon (NDB) in the **Marshall Islands** and the overlay of Taxiway A at Pago Pago Airport in **American Samoa**.

ACI (Airports Council International) Pacific Small Airports Seminar

Beca has a long history of working on airfield projects in the Pacific Islands with recent work in American Samoa, Fiji, the Cook Islands, Tonga, Niue and the Marshall Islands.

In early June 2011, Beca Airports Technical Director Tony Wallis presented at the ACI Asia-Pacific Region Small Airports Seminar held at Incheon Airport, Seoul, Korea. Tony's presentation highlighted

the large number of airport projects in the Pacific Islands, drivers such as tourism growth, changes to aircraft fleets and the implementation of safety enhancements along with the challenges faced by these typically remote projects sites, particularly with funding and logistical issues.

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Tony Wallis at the ACI Seminar ▲

Christchurch International Airport - Airfield Works

Integrated Terminal Project (ITP) Airside Civils Works

The ITP Airside Civils Works construction began in May 2010 after years of detailed apron planning, design and staging assessments. This included value engineering and risk workshops held with CIAL, the Project Manager (Coffey) and other members of the ITP Design Team (including electrical engineers, Pedersen Read, and architects Hassell and Warren and Mahoney).

The majority of the ITP airside works are being constructed by Christchurch-based Isaac Construction Company and are due for completion in September 2012. As part of the ITP works, a new Remote Code E Stand was constructed in 2010 by Fulton Hogan and this is now in operation.

The ITP Airside Civils Works consists of the refiguration and expansion of the Domestic Apron to suit the layout of the new ITP Terminal Building and recently opened Regional Lounge. The reconstructed Domestic Apron is approximately 80,000m² and has involved the construction of approximately 25,000m² of new asphalt and Interlocking Concrete Block Paving (ICBP) surface flexible pavements; and around 55,000m² of asphalt overlay to the existing pavements for 15 aircraft.

Other works consist of the provision of heavy duty slot drains, storm water drainage including a new oil interceptor, fire main, electrical ducting, new apron floodlighting, taxi lane lighting, and a new fuel hydrant system serving the jet aircraft stands.

The design and construction team have risen to the challenges of complex airside staging to minimise disruption to existing airside operations and maintain a safe working environment, site boundary level constraints and the proximity of numerous underground services as well as the need to coordinate with other interfacing ITP contractor works and airfield maintenance works. The wet winter of 2010 and the Canterbury earthquakes also added to the complexity of this project.

Airfield Pavement Maintenance Works (APMW)

CIAL, Fulton Hogan, Airways and Beca have adopted a collaborative team approach to deliver the APMW over the last six years.

CIAL was the first airport company in the southern hemisphere to achieve carbon neutral status; and to assist CIAL in maintaining this status, the focussed team approach has enabled several environmentally sustainable airfield paving innovations to be implemented. This includes the use of Warm Mix/Low Emission (Coolpave) Asphalt and Recycled Asphalt Pavement (RAP).

The APMW have included the night time resurfacing of parts of the main runway, Runway 02-20, the overlay of Runway 11-29, the overlay of Taxiways A and F and the reconstruction of Stands 27 and 34/35 with Interlocking Concrete Block Pavers. This has involved over 60,000 tonnes of high quality asphalt with over 5,000 tonnes of Recycled Asphalt Pavement (RAP) being used in the asphalt.

To date, the APMW team has successfully met the project targets for airfield and construction safety, quality, the environment, on time delivery, budget adherence and to the satisfaction of CIAL and various Stakeholders.

Beca has also undertaken the annual airfield pavement maintenance inspections for the last five years and has assisted CIAL in the development and implementation of its 10 Year Airfield Pavement Maintenance Plan. Beca and Fulton Hogan have also assisted CIAL with the assessment condition of the runways and principal taxiways following the 2010 and 2011 Canterbury earthquakes.

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CIAL – ITP ▲



CIAL – APMW ▲



CIAL – APMW ▲



"Our thanks to Beca for the management you have brought to the ongoing program. I believe we will have continued success in our Airport Paving Maintenance Program leveraged on the foundation that the full team has built to date."

Stuart Berryman, Manager, PROPEL Infrastructure Services, CIAL

Auckland Airport - Passenger Measurement System

Improving passenger experience

In support of Auckland Airport’s commitment to improving passenger experience within the International Terminal, Beca recently project managed the installation of a system to automatically measure passenger journey times through the arrivals and departures processes.

The project is a key component of a Lean Six Sigma improvement programme across the airport, providing real-time data that can be used for gauging the effectiveness of improvement initiatives and projects, as well as optimising the efficient deployment of operational support.

The measurement system, supplied by BLIP Systems A/S, uses a series of devices (known as Blipnodes) located at key points along a passenger’s journey through the International Terminal. The system is able to detect Bluetooth signals from enabled devices carried by passengers (such as cell phones and portable computers), and calculate journey times as passengers move past installed Blipnodes. Powerful software runs on Auckland Airport servers to enable the data to be recorded and analysed.

Beca managed all aspects of the project, ranging from the definition of business requirements through to testing and acceptance.

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Auckland Airport - Pedestrian Modelling

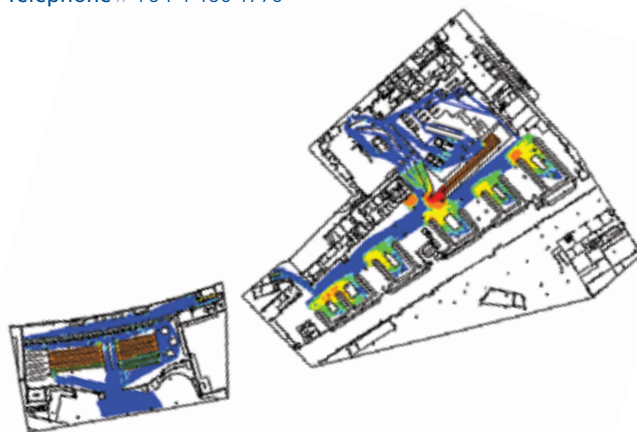
In support of Auckland Airport’s planning for the Rugby World Cup, Beca was commissioned to undertake pedestrian simulation modelling of both the Domestic and International Terminals at Auckland Airport.

The modelling was used to assess the impact of additional passenger demand during the World Cup and to develop and inform management techniques to assist the airport to operate smoothly and efficiently through this period of additional patronage. The models were used to compare options providing a raft of improvements proposed for the Aviation Security zone.

Beca used the Legion simulation software for this assessment, a specialist pedestrian simulator that assesses the movements of individuals in a range of different environments. Models can be built to assess emergency evacuation scenarios, infrastructure modification options, retail space allocation, schedule changes, signage strategies and security arrangements.

Beca is currently applying these techniques on a number of different projects including major international sporting venues, large commercial buildings and railway stations.

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