James Morgan/Sydney Airport: 1354877

Australia strides ahead

Competition among airlines drives demand as airports across the country plan upgrade work

With the Australian economy in comparatively good health when measured against Europe and the US, its aviation industry is gearing up for expansion.

In its most recent outlook for the Australian airport sector in 2010-11, credit ratings agency Moody's predicted that price competition among airlines and solid business activity should help preserve demand growth for airports.

"Stable earnings growth will also remain supported by the strong market positions of the major capital city airports rated by Moody's," said report author Paul Ovnerud-Potter. "Double-digit growth in international passenger numbers has been a feature of the last few months for Melbourne, Sydney, Perth and Adelaide."

Sydney Airport completed the expansion and upgrade of its International Terminal in mid-2010. The upgrade is part of an AUD1.7 billion (USD1.8 billion) investment at the airport since 2002, with about AUD700 million invested in the last two years. "Passengers will continue to benefit from ongoing investment, with a further AUD1 billion in planned in capital expenditure over the next five years," says Russell Balding, chief executive officer of Sydney Airport.

The omens appear good for Sydney – operator Macquarie Airports (MAp) on 19 January revealed 7.8 per cent year-on-year growth in passenger traffic. Domestic demand grew by 8.1 per cent, while international passenger volume rose by 6.9 per cent. The annual growth for 2010 is "consistent with MAp's long-term 4 per cent to 5 per cent target, despite the impact of the global financial crisis during the period", says Kerrie Mather, group chief executive officer. Qantas is introducing four weekly B-747 flights to Dallas/Fort Worth from May 2011 – other airlines boosting existing services or starting new routes from Sydney in the year ahead include Emirates, Turkish Airlines and Hawaiian Airlines.

The airport forecasts significant growth in passengers, aircraft movements and air freight volumes to the year 2029, and expects to accommodate this growth through upgrading and expanding airport facilities including terminal buildings, taxiways, hangars, freight facilities and parking.

After striking a new aviation pricing agreement with the Qantas Group in 2010, Darwin International Airport is planning to invest more than AUD100 million into its airport facilities over the next 10 years, including an AUD33.5 million terminal expansion. Construction is due to commence in 2011. Expansion of the general aviation precinct will deliver an extra 16,000 m^2 of landside aviation sites, next to 11,000 m^2 of apron and 38 parking positions to cater for aircraft. Darwin's master plan, which includes these expansion plans, was approved by the transport and infrastructure minister in December 2010.

Cairns Airport opened its new domestic terminal in September 2010, three months ahead of schedule, marking the completion of an AUD200 million redevelopment project that commenced in August 2007. The new terminal includes five passenger boarding bridges; new walkways and roadways; and an extended car park.

The overall terminal floor area has increased by 133 per cent to 42,900 m^2. It includes modern, common-use check-in and arrivals areas offering smoother passenger flows, and provides 19 retail outlets and an outdoor seating area. The new arrivals hall includes baggage claim, rental car booths and a landside café. The airport is now looking to upgrade the international terminal departures lounge.

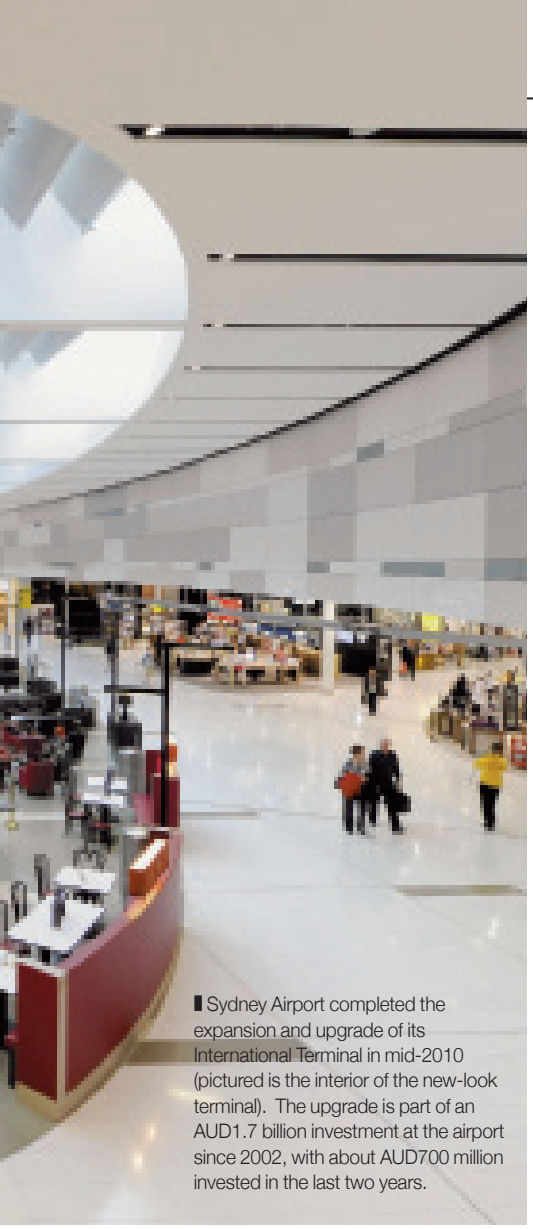
Westralia Airports Corporation (WAC), owner and operator of Perth Airport, is investing up to AUD500 million over the next three years (2011-13) on new and expanded passenger terminals, enlarged aircraft parking areas and improved public access infrastructure.

The redevelopment includes a new AUD120 million domestic terminal to increase capacity for airlines and cater for the needs of regional services, including the mineral resource sector. The terminal will be built adjacent to the current international terminal, with work to commence in mid-2011.

The new terminal is scheduled to be operational in 2013. It will feature a check-in hall with 16 check-in counters and space for new check-in technology, including self-service and bag drop; a large central passenger security screening zone accessing a spacious departure lounge; access to 14 aircraft gates via covered walkways, providing protection from the elements; and three large baggage reclaim belts.

Perth is also expanding its international terminal, which will feature an expanded check-in hall with an additional 16 counters; self-service and bag drop areas; and expanded border agency and security screening areas.

Work also includes a major expansion of the departure lounge, including access to new aircraft gates and expanded retail offerings; aircraft gates able to efficiently service new-generation aircraft including the A380; and enhancements to the arrivals area with an upstairs customs/immigration zone, a larger arrivals duty free store and an expanded



Sydney Airport completed the expansion and upgrade of its International Terminal in mid-2010 (pictured is the interior of the new-look terminal). The upgrade is part of an AUD1.7 billion investment at the airport since 2002, with about AUD700 million invested in the last two years.

baggage reclaim and quarantine processing hall. Work is to commence in late 2011 and be completed in 2013. In addition, a new shared pier will be added to the international terminal to meet the needs of larger domestic airlines.

At Adelaide Airport, construction is due to start in late 2010 on a multi-storey car park and pedestrian plaza adjacent to Terminal 1 (T1). "Once this exterior work plan is completed, Adelaide Airport Limited will begin work on extending T1, adding new gates and increasing international capacity," says Phil Baker, managing director of operator Adelaide Airport Ltd. "In the meantime, some airlines will have modernised their check-in arrangements and changes to security screening procedures will be evident inside the terminal."

The latest work at Melbourne Airport includes construction of a new technical services centre by Airservices Australia, which began in December 2010. Costing close to AUD20 million, the new centre will house the engineers, technicians and equipment required to maintain the safety and integrity of Australia's air traffic navigation system.

Early in 2010, the Australian government announced a series of measures to strengthen Australia's international and domestic aviation security against emerging threats.

The measures are consistent with the security strategy set out in the government's Aviation White Paper. Over four years, the government is investing AUD200 million on new and improved security technologies, increased policing at airports, enhanced security procedures and strengthened international co-operation.

Increasing passenger and baggage screening was an immediate priority and in response to this, Melbourne and Sydney airports commenced trials in November 2010 of explosive detection technology designed to detect explosives in liquids, aerosols and gels. Conducted by staff from the Ministry of Infrastructure and Transport's office, the trials will help inform efforts to lift the current liquid restrictions on international flights, which remove the need for passengers to declare liquids, aerosols and gels for inspection before boarding.

Body scanners, one of the most controversial security measures airports are planning to implement, will be introduced progressively as an additional security measure at screening points servicing international departing passengers by early 2011.

Planning reforms

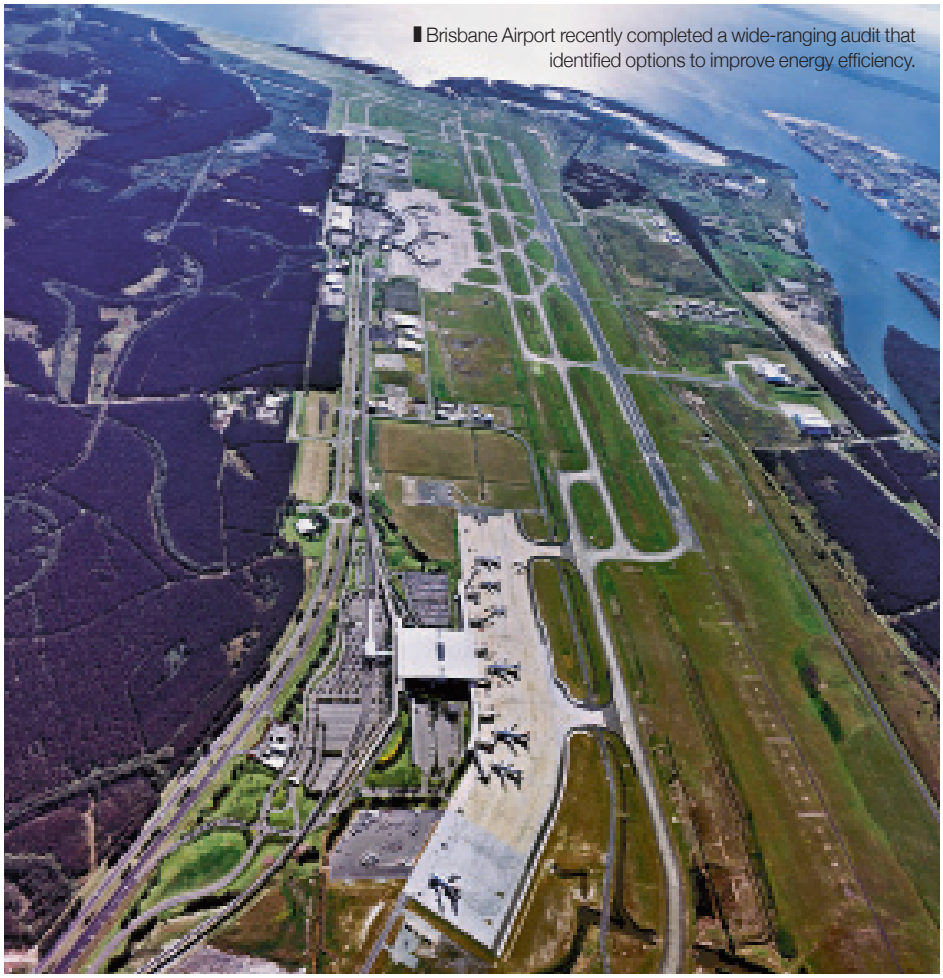
In November 2010, the Australian government announced major reforms to airport planning, which will empower local communities and improve transparency around the long-term development plans at the nation's major airports. These reforms continue the implementation of the 2009 Aviation White Paper. Key changes include strengthening the requirements for airport Master Plans and Major Development Plans to undertake community consultation; the requirement of public consultation on runway alterations that significantly change flight paths or aircraft noise arrangements through a Major Development Plan; and integration of an airports' environmental plan into their Master Plan to give comprehensive information to the public through a unified consultation period.

Several Australian airports have already taken steps to reduce their carbon footprint and implemented a number of initiatives that minimise the impact of their operations on the environment.

During 2010, Brisbane Airport maintained its water management programme, which includes managing the airport's freshwater lakes, innovative efficiency devices in buildings and terminals, building a recycled water supply to cooling towers and the design and implementation of a comprehensive, airport-wide drought tolerant landscaping programme.

Water-saving initiatives have been implemented at Sydney Airport, including the New South Wales Government-approved Water Savings Action Plan (WSAP). This includes completion of an airport-wide leak detection programme; installation of water-conservation devices across the airport; and installation of a sophisticated real-time water demand monitoring system. Some 80 million litres of potable water have been saved through initiatives under the WSAP since the first year of implementation. The airport uses recycled water for toilet flushing, in cooling towers and for energy efficient air-conditioning in the Forum.

At Adelaide Airport, recycled water is used for toilet flushing in the airport terminal, all irrigation is



Brisbane Airport recently completed a wide-ranging audit that identified options to improve energy efficiency.

Brisbane Airport Corporation Pty Ltd: 1354880

undertaken using recycled water, and future development sites will have access to recycled water connections. The South Australian Government's water authority, SA Water, is finalising design of an aquifer storage and recovery project on airport land. In mid-2010, Cairns Airport launched a recycling programme in association with local authorities. The airport provides public place recycling bins to enable airport visitors to deposit plastic, glass, paper, cardboard and aluminium cans, which can be recycled into valuable resources. With 55 per cent of waste generated at Cairns Airport being recyclable, the programme is set to make a significant difference to the airport's environmental footprint.

Brisbane Airport has a strong focus on waste reduction and has recycled over 200 tonnes of paper and cardboard from the international terminal during 2010. The terminal itself has become Australia's first plastic bag-free airport terminal. Adelaide Airport formed a working group to work towards implementing public space recycling in T1, while recycling facilities are currently provided in the terminal for tenants.

Brisbane Airport completed an energy audit in 2010 for buildings across the airport, and has identified options to improve energy efficiency for light and air-conditioning.

At Perth Airport, an energy strategy is being developed to provide a review of alternative energy supply including co-generation opportunities for the airport estate. Co-generation will assist in reducing operator WAC's reliance on electricity generated by coal-fired power stations.

To improve energy efficiency, Sydney Airport is implementing the state government-approved Energy Savings Action Plan (ESAP). Energy efficiency improvements and many of the milestones identified in the ESAP have already been achieved. For example, during its first year of operation, the airport cut total energy use by 1 per cent, despite a 6.4 per cent increase in passenger numbers. Initiatives such as the new lighting system in the domestic terminals car park (which will reduce energy usage in the car park by 30 per cent), and measures to prevent the loss of air-conditioned air from the terminals, will help to save energy and reduce carbon dioxide emissions.

Unlike some major Australian airports, Adelaide Airport has not implemented co-generation measures but instead installed a 114 kW solar panel system on the roof of the main terminal to provide green power to the building. The airport is now investigating the installation of a mini wind turbine. Carbon footprint monitoring of airport activities is undertaken each year, while energy and water audits have been completed for the T1 building, with recommendations currently being implemented.

New Zealand places sustainability at the heart of upgrades. At Brisbane Airport, the operator is working closely with relevant agencies to maintain and improve public transport options to the airport.

In a move to offer sustainable multi-passenger transport options to and from Perth Airport, a new shuttle service commenced operations in late 2009, providing multi-passenger transport to the city and surrounding suburbs.

Environmental issues

At Sydney Airport, other initiatives implemented to tackle environmental issues include conducting a comprehensive air quality study to identify opportunities to reduce pollution and review options for the use of alternative fuels for vehicles; increase the use of fixed electrical ground-power units to minimise the use of noisier on-aircraft auxiliary power

Auckland International Airport: gateway to New Zealand

More than 13 million passengers per year use Auckland International Airport. Indeed, according to Richard Llewellyn, senior communications manager for the airport: "More than 70 per cent of all visitors to New Zealand arrive or depart through it." For most travellers the hub provides their first and last impression of the country and therefore plays an important role in shaping perceptions.

The airport takes that role seriously. Over the last three years its management has undertaken a number of measures to align themselves with the pure, clean image for which New Zealand is known overseas. In May 2010 Queensland, Australia-based EarthCheck's Bronze Benchmark certification rewarded those efforts.

EarthCheck is a global programme working with businesses in the tourism industry, monitoring their carbon emission claims and helping them with sustainability initiatives. In short, it keeps companies in check with their performance claims on the green front. Auckland Airport chose EarthCheck because of its comprehensive coverage: "Auckland Airport looked at many certification schemes but few covered the three main pillars of sustainability: our economic, social and environmental performance," says Martin Fryer, Auckland International Airport's sustainability advisor. "So, EarthCheck met our needs at a practical as well as philosophical level. We found EarthCheck to be the only truly global sustainable tourism certification scheme and certainly the only one that worked over sustained timescale. We need to be in the scheme, and reporting on performance, for a decade to achieve platinum status."

The hub's sustainability efforts cover a number of key areas monitored and managed by a sustainability forum of 11 staff members from different areas of the business meet regularly to ensure the airport stays on track. The focus categories include: climate change; culture/heritage; education; energy/fuel efficiency; environmental sustainability; landscape/wildlife; the airport's 'marae' (Maori for meeting place); noise; resource efficiency; sponsorship; sustainability policy; sustainable transport; sustainable buildings; and waste management.

"One area that links with so many other sustainability initiatives

John Doogan: 1354875

Video wall at Christchurch International Airport.

is climate change. Our approach to energy and fuel efficiency, sustainable transport and procurement all have a part to play, either directly or indirectly, in reducing our total carbon footprint," says Fryer. The airport's total 2010 emissions were at 9,377 tonnes (CO_2e – carbon dioxide equivalent) down from 11,727 tonnes in 2009.

Culturally, the Auckland airport marae, which is called Te Manukanuka o Hoturoa, plays an important role in providing a visual display of Maori culture but also is a sacred spot used for events, educational programmes and for receiving the bodies of New Zealanders who died abroad.

Visitors will also soon see more of New Zealand's indigenous culture and richness throughout the airport. "The completion of the major [NZD50 million (USD38 million)] redevelopment of the international departures and retail area is due for completion in five to six weeks," says Llewellyn. The redesign incorporates Maori

units (this also improves air quality and reduces greenhouse gas emissions); and continue to encourage the use of sustainable transport options as outlined in the Airport Ground Travel Plan.

Perth Airport, meanwhile, is seeking to implement a number of measures to improve its environmental sustainability.

These include ensuring all new water abstraction bores are appropriately metered, rolling out a water meter reading programme across the WAC estate, and implementing public recycling initiatives into the International and Domestic Terminal 3 with the support of the Packaging Stewardship Forum.

The Aviation White Paper found that Australian airports have very little direct involvement in managing aircraft noise or decisions relating to the land use and development of noise-sensitive buildings around the airport and under flight paths. Airports do have a broad scope of influence and it is in their best interests to work with governments, local communities, aircraft operators, regulators and air navigation service providers to help develop practical solutions to minimise noise impacts on communities.

In response, Sydney Airport is working with Airservices Australia and other key stakeholders to manage and minimise the impact of aircraft noise, especially in communities in the vicinity of Sydney Airport or those under flight paths leading to or from the airport.

Cairns Airport implements an Aircraft Noise Management Strategy, which brings together existing and proposed initiatives to minimise the impact of noise generated by aircraft activity.

Some of the current initiatives implemented by the airport include establishing an Airport Environmental Consultative Committee (AECC), which comprises representatives of operator Cairns Airport Pty Ltd, airlines, local community groups, local government and other stakeholders to address environmental issues. *Ruth Barnard* ■

Cairns Airport Pty Ltd: 1354878

■ Exterior of new domestic terminal at Cairns Airport, Queensland. The building opened in September 2010.

designs and New Zealand's natural landscape into the ceilings, floors and walls. At the heart of the project is a nine metre-high tree featuring 25 images representing the country.

In a similar move, Christchurch International Airport in New Zealand has redesigned its international arrivals zone to include multimedia video walls.

The "immersive multimedia design experience" opened in late December 2010, operator Christchurch International Airport Ltd states.

Passengers disembarking from international flights onto long airbridge corridors now move past a bank of video screens showcasing the local landscape. The immigration queueing area also features 54 seamlessly linked screens. Illustrative wall graphics guide passengers through the airport, creating a sense of flow between the various areas of the airport.

Recently Auckland International made changes to improve its energy and fuel efficiency. "We are now implementing a two-year programme, introducing new technology into our heating ventilation and air-conditioning system, as well as upgrading our building management system software so we can be much smarter in managing energy loads across the terminal," explains Fryer. He stated this will reduce energy costs by 20 per cent and potentially reduce their total carbon footprint by 13 per cent.

The airport has also sought to lower emissions by installing power units at international gates. "This enables aircrafts to use electricity instead of burning jet fuel when on the gate," says EarthCheck communications manager Chantal Dunbar.

Overall EarthCheck has been pleased with the airport's eco-endeavours. "In addition to having a sustainability policy in place, Auckland airport benchmarked with eight EarthCheck indicators at or above the baseline level," Dunbar states. "Further, there were a total of six indicators at or above Best Practice levels: potable water consumption, waste sent to landfill, paper products, cleaning products, pesticide products, stormwater management and noise nuisance."

To keep water usage low the airport has introduced sensor taps and toilets. Dunbar points out: "The airport measures both total water consumption and water per passenger to monitor the savings over time. Low-flow fittings and sensors have been part of a much wider water savings initiative that has helped them achieve an 11 per cent reduction in water usage per passenger over a three year period." The airport's rainwater harvesting programme "has a design capacity of 4,000m^3 per annum. This water is used in their cooling towers".

"Auckland Airport has installed solar water heating and has one of the largest photovoltaic [solar power] arrays in the southern hemisphere on the international terminal roof," says Dunbar. "The solar water heaters provide hot water for public restrooms and the photovoltaics contribute energy for corridor lighting."

Meanwhile, the airport is also expanding its routes. "Trans-Tasman traffic has continued to be the bedrock of our traffic, with a slight flattening of longer-haul markets and pleasing growth from Asia. We expect Asian traffic to continue to grow at a faster rate than other markets and that is where much of our route development activities are focused," says Llewellyn. "We have had significant success in the last 12 months, with new routes announced including Jetstar to Singapore, Jetstar to Cairns [Australia], Continental to Houston, China Airlines to Taipei, as well as a host of upgauged services from our other carriers. We estimate total new capacity to be well in excess of one million additional seats per annum. And its not just about seats, we have invested millions in promotional activity alongside industry partners to help put bums on those new seats."

Some initiatives at Auckland International received recognition beyond of EarthCheck. In 2010 the airport won an annual award from New Zealand's Energy Efficiency and Conservation Authority for its Lift Travel Plan. "Our travel plan includes priority parking for airport staff carpooling to work, as well as discounted public transport, which influences the airport community of 14,000-plus workers. It is reducing congestion on airport roads congestion and making the journey to the airport more efficient for staff and customers alike," says Llewellyn. The initial 2006 plan focused on airport staff but now includes 23 companies within the airport community. ***Karryn Miller*** ■