

Abu Dhabi has set out on an ambitious project to expand its existing airport and construct a second to meet the goals of the UAE capital's fast-track tourism development plan. The scheme is expected to pull in more than three million extra business and leisure travellers annually by 2010. The emirate's national carrier, Etihad Airways, has benefited from the surge in passenger numbers and plans to bring 56 wide-bodied aircraft into operation by the end of 2008.

Work is underway on a state-of-the-art, five-million passenger capacity concourse expansion in the original airport terminal for the exclusive use of Etihad Airways, with the carrier moving into the new facility this year. In designing the development it fell to Scadia (Supervision Committee for the Expansion of Abu Dhabi International Airport) to consider the fluctuating needs of Etihad and the airport's commercial aspirations at every point – not always an easy task.

Rapid expansion

Abu Dhabi's international airport managed 5.2 million passengers in 2004, up from three million the previous year. The \$6.8 billion Abu Dhabi

airport expansion will be completed in phases, with the objective of equipping the city to handle 50 million passengers by 2015. The first phase is scheduled to be completed by 2010, boosting capacity to 20 million passengers. Etihad predicts that it will handle a total of six million passengers

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in 2008, which represents an increase of about 30% on figures for the previous year. The rise could be bolstered by this year's launch of the airline's Beijing service, its first Chinese route.

The national carrier's new concourse, effectively a third terminal with eight gates and capable of supporting wide-bodied aircraft, is expected to accommodate the airline's growth until 2012, when Etihad's masterplan – a huge midfield terminal – finally comes into action. The concourse is already complete despite Etihad not yet having made a final order for its new planes.

As Matthew Mead, vice-president of programme management and design director for Scadia, explains, Abu Dhabi has an existing stand capable of handling simultaneous A380s. 'We built up the

KEY FACTS

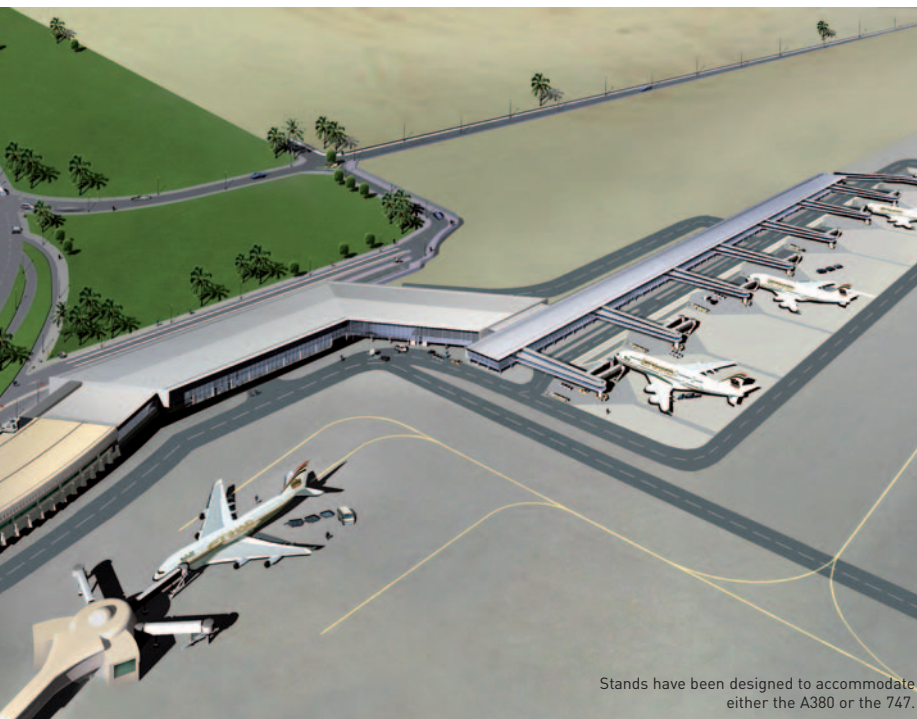
- Etihad Airways plans to bring 56 wide-bodied aircraft into operation by the end of 2008.
- Abu Dhabi's international airport managed 5.2 million passengers in 2004, up from three million the previous year.
- In five years' time a new 30-million passenger terminal will be launched at Abu Dhabi Airport.

Grand designs

➤ **MATTHEW MEAD, VICE-PRESIDENT OF PROGRAMME MANAGEMENT AND DESIGN DIRECTOR FOR SCADIA, TALKS TO FUTURE AIRPORT ABOUT THE PLANNING BEHIND ETIHAD'S NEW FIVE-MILLION CAPACITY CONCOURSE.**

Etihad Airways moves into its new state-of-the-art facility this year.





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concourse on the land side to reach out to those gates,' says Mead. 'But the airline is still in the process of deciding which jets to buy, so the stands have been built to accommodate either the A380 or the 747. We're prepared for all eventualities.'

Keeping pace with changes

The importance of flexibility is a theme running through all aspects of Scadia's involvement in the Abu Dhabi concourse design. 'People often say that big infrastructure projects in the GCC enjoy freedom from bureaucracy but that's not strictly true,' says Mead. 'It's a different kind of bureaucracy. Those who hold the purse strings know what they want and adaptations are often made as commercial realities change. From a designer's point of view, what's most crucial is that you keep pace with changes to the plan.'

Branding was important to Etihad and the airline wanted a facility with a high level of service and appearance. 'The new concourse is a stopgap to take us up to the opening of the new 30-million passenger terminal that will be launched in five years,' says Mead. 'Etihad has a high ratio of connection passengers and the carrier was determined that processing times and performance standards would ensure that a connection time of about 45 minutes was possible.'

To manage the arrivals process smoothly, Scadia has installed moving walkways between the arrival gates. The passport arrivals areas are oversized to minimise waiting times. The number of level changes is also reduced by using ramps instead of escalators, staircases and elevators. 'People don't get lost in the new building,' adds Mead.

Lessons learned

Mead says he has applied lessons from earlier projects completed at San Francisco, Baltimore and in Portugal, and outlines the core competencies an airline needs to manage passenger flow. 'What are the transfer rate, outbound bag-screening capacity and first bag-last bag timing?' he says. 'Those are the questions to ask as a designer. What about the peak hours?'

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'Everybody likes to talk about annual passenger figures but buildings really operate in their peak hours. Etihad's primary peak is between 10pm and 2am. How many bags do passengers have and what type of quality does the airline want to offer its first class passengers? Inspired design requires an appreciation of the cultural considerations that the airline is trying to apply to a commercial operation.'

Money matters

Abu Dhabi's new concourse features an airside commercial section for high-end shopping, including electronic consumer goods and duty free. 'The commercial opportunities fuel a lot of revenue streams for an airport, particularly at Abu Dhabi,' says Mead. 'Duty free is a big deal here. The commercial department at the airport is growing increasingly sophisticated. We've had significant redesigns because of changes in thinking that happened late in the day. Fortunately the floor plan of the space is flexible enough to accommodate such changes. The redesigns have affected the schedule we're working towards but we can recover from that.'

The design process has altered as new priorities emerged. These have included the fluctuating success of certain brand names and the airline's varying requirements, such as changed specifications for the lounge areas, including the view, and the desirability of separating premium customers from frequent flyers. 'As designers we also need to be mindful of where the airline and airport maintenance teams, and the cargo facilities, are based. Where is the prime location for the commercial operations?'

'All parties involved have a personal interest that concessions are successful, as it keeps the rent lower. Etihad is trying to be proactive and dedicate resources,' Mead concludes. 'That doesn't stop it from making last-minute changes. But that's normal in this business.' ○



MATTHEW MEAD

➔ Matthew Mead has been planning and building airports since 1986, from Baltimore to Bali to Berlin. He joined the Abu Dhabi expansion project in August 2004 and was design director at Scadia for six months. Mead rejoined the design effort this year. He takes his design inspiration from Tampa, Orlando, Hong Kong and Schiphol airports.