

# Airport Design Evolves to Accommodate Security, Technology and Better Traffic Flow

BY BRENT MATHER

Airports are feeling the pinch of both the recession and airline financials more than ever, with negative impact on airport development. Many developing trends in airport design over the past 10 years respond to this economic reality. Programming for a new or improved airport facility is weighted toward maximizing value in those areas where passenger impact will be greatest.

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## **Security**

Apart from economics, the most visible changes in design have been security related as a result of Sept. 11, 2001. Security standards have impacted airport design substantially, with no small effect on the traveling public.

Most airports were not originally designed to accommodate extensive screening, and there is an overall lack of available space. Security requirements affect airport design primarily in two areas: passenger screening and baggage screening. Design concepts for passenger screening are developed based on the number of passengers and the available space to accommodate the screening area. Designers may consider adding onto an airport or relocating adjacent functions elsewhere to gain the necessary space. Baggage screening areas require significant capital investment in equipment and in the building itself. Integrating equipment requiring significant space into existing airports consistently challenges airport designers.

Tulsa International Airport was one of the first airports to implement the new guidelines. Originally, Tulsa had two security checkpoints, which was costly for both equipment and the number of staff required. The two checkpoints were consolidated into one central checkpoint, creating a more efficient and economic process.

## **Security and Concessions Design**

Security screening has also greatly affected airport concessions design. Trends suggest departing passengers prefer to spend their time and money beyond security, in the gate areas rather than in the terminal building. Historically, passengers would frequent retailers throughout an airport. With long security

lines after September 11, travelers became more anxious about getting through security. As a result, pre-security retail sales dropped substantially. This, coupled with the fact that only ticketed passengers can go to the gates, has greatly affected the design of concession areas.

At Jackson Hole Airport in Jackson, Wyo., the existing restaurant was located pre-security. During the recent expansion, the airport was reconfigured so that the restaurant is now located post-security, adjacent to the gate areas. This has resulted in a distinct increase in revenue. Concessions concentrated in high-traffic areas, such as concourse entrances and in remote gate areas, make sense because they capture passenger dollars before boarding time.

### **Ticketing Halls**

Historically, ticketing halls have been the primary architectural statement at airports with their soaring roofs and dramatic structures. Traditional ticketing halls are evolving rapidly, primarily due to technology. Many passengers check in online and bypass the ticketing counter. In order to decrease labor costs, airlines have been steadily increasing the number of self-service kiosks. With more airlines charging for checked baggage, many passengers are bringing carry-on luggage, further reducing usage of the ticketing halls. We can expect further reduction in the size and importance of ticketing halls as technology evolves. Arrival halls, on the other hand, are increasingly being enlarged and equipped with added services to support the “meeter-greeter” contingent concentrated on the fringes of the secured area.

### **Terminal Inspansions**

Terminal “inspansion” is a new term for replanning and upgrading terminals from the inside. In an economy where new buildings may not be viable, improving the passenger experience from the inside is a more affordable and faster option. Tulsa International Airport is comprehensively remodeling the two levels of Concourse B to maximize concession revenue, adding gates by reconfiguring aircraft layout, and improving the passenger experience. This is being achieved within the existing structure, which is significantly less expensive than expanding or building a new concourse.

### **Other Current Trends**

Low-cost carriers such as Southwest and JetBlue have dramatically affected terminal design. Their popularity has led to entire terminals being built for one carrier such as the

JetBlue Terminal at John F. Kennedy International Airport (JFK) in New York. Airline mergers and acquisitions are driving terminal design trends towards highly flexible terminal layouts.

Another growing trend is known as Airport City development. This is characterized as development focused on maximizing an airport’s land value and the economic return generated by the airport and airport-related businesses. Examples include office parks, hotel and mixed-use zones and even residential areas adjacent to an airport. Denver International Airport’s expansion program, which will include a hotel, a retail destination, public plaza and a train station, is a prime example in our region.

Connecting airports with rail transit and other mass transportation has greatly increased in recent years. A notable example in our region is the Regional Transportation District’s FastTracks, which will connect downtown Denver and the existing light rail system with DIA.

Across the nation, other airports and their municipalities are planning similar transit connections at Phoenix Sky Harbor International, Seattle-Tacoma International, Los Angeles International, JFK and Hartsfield-Jackson Atlanta International airports.

Finally, sustainability is becoming more prominent in airport design primarily due to building code changes, air quality and climate change regulations and increasing energy costs. Stringent funding for capital improvement projects is the primary obstacle to implementation of aggressive sustainability features. Key features now integrated into terminal design are daylighting, energy-saving light bulbs, recycling programs, green materials and more efficient mechanical, electrical and plumbing systems.

Security standards continue to evolve in the United States. We expect their impact on the typical traveler to gradually lessen over time as security improves. As airlines continue to face financial and technological challenges, they are increasingly looking to airports and their consultants to help maximize efficiency of terminal facilities through streamlining the check-in process and improving gate efficiency, while elevating the overall experience for the traveling public. Airport design will continue to embrace technology and sustainability while maintaining the role of airports as important civic institutions within our communities.

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