

Dubai International Airport



Passenger traffic is forecast to grow to 19 million by 2005.

The Government of Dubai completed a \$540 million, 10-year implementation plan developed by Bechtel in 1990, to upgrade and expand the Dubai International Airport. The new Terminal 2 opened in June 1998. The new 28-contact-gate concourse opened in April 2000. The airport is among the fastest growing in the world and is a focal point for business and tourism growth of the entire UAE. In 1998, it handled more than 120,000 flights and some 450,000 tons of cargo. Passenger traffic, forecast at 11 million in 1999, is expected to grow to 19 million by 2005.

The program is the latest in a series of expansion programs at Dubai International, and includes a new 28-contact-gate satellite concourse of 1.3 million square feet (120,770 square meters), with 42 loading bridges and 221 check-in counters; new duty-free and specialty shops; a 100-room, 5-star luxury hotel; a conference center; a business service center; restaurants; and an entertainment center. Major aprons and taxiways were completed to support the new satellite concourse. A new charter terminal handles more than 500 passengers per hour. Existing terminals were expanded. A new 13,000-foot (4,000-meter) runway and taxi system was completed, including Nav aids and state-of-the-art computerized airfield lighting systems. Other facilities include a new automated baggage-handling system, a new air traffic control tower, a fuel farm, a central utility plant, fire stations, and associated airside facilities.

BECHTEL'S ROLE

Bechtel and the government of Dubai have had an ongoing relationship for airport renovation and expansion since 1977. As an extension to the government staff, Bechtel served as designer, project manager, and construction manager for the airport and runway system, terminals,



Location:

Dubai, United Arab Emirates

Client:

Department of Civil Aviation Government of Dubai, U.A.E.

Scope of Services:

Planning
Design
Engineering
Construction Management

Project Duration:

1977-2000

Total Installed Cost:

\$800 million



Significant Features/ Accomplishments:

- 23 years of continuous service to Dubai International Airport
- New terminals, concourses, runways, taxiways, aprons, utilities, and cargo and support facilities
- New 28-contact-gate concourse
- Provided globally networked design review that resulted in 24-hour capability, increased speed, and accuracy
- Set new standards in the use of computer technology and complex simulations
- Used virtual reality to enable the client to "experience" the result during the design stage
- Performed engineering to U.S. and U.K. codes and standards
- Received the "Best Cargo Airport" award in 1992

Dubai International Airport (Cont'd)

access roadways, parking facilities, and a cargo complex designed to handle 250,000 tons (227,000 metric tons) of cargo per year. The cargo/free trade zone complex was awarded the International Cargo Airport Forum "Best Cargo Airport" award in 1992, and has helped make Dubai International a cargo hub for the Middle East.

Bechtel responsibilities for overall program management included planning, design, and construction management. Design efforts set new standards in the use of computer technology and complex simulations to develop alternatives, permit more informed decision-making, explore operations issues, and improve public outreach. All construction activities were planned and scheduled to minimize the impact on existing airport operations.

Bechtel's responsibilities also included overall program technical and financial review/recommendations to the government, implementation of a wrap-up insurance program, contract administration and claims management, and transfer of program management skills and techniques to government counterparts. This included conducting a master plan study for a trade and technology park at the airport.

The program operated independently, under the control of the Bechtel onsite program manager, but drew on the full support of professional and technical resources worldwide. Globally networked advanced technology added significant value for the design and preliminary engineering phases.

All architectural design using state-of-the-art computer-aided design (CADD) and document tracking systems was completed with Bechtel's worldwide computer network. The network was used for design review and electronic exchange of CADD design drawings among regional offices and the project team, resulting in increased speed and accuracy of performance.

Simulation modules provided significant benefits. Virtual reality served as an aid to decision-making, allowing the client to "experience" the result during the design stage. Automated simulation studies were also used to establish planning and design criteria for aircraft movement and passenger flow.



The large number of glass walls and skylights in a hot desert environment required a state-of-the-art, optimized HVAC.



Architectural design was performed with state-of-the-art CAD, 3D modeling, and document tracking systems.