

King Fahd International Airport



King Fahd International Airport incorporates the graceful Islamic motifs of the country.

On October 27, 1999, in ceremonies led by HRH Prince Sultan, the dedication of King Fahd International Airport (KFIA) took place, followed by the transition to commercial operation a month later. The occasion marked a quarter of a century of involvement by Bechtel in airports in Saudi Arabia.

The grassroots KFIA project involved building a new airport to occupy a 293-square-mile (759-square-kilometer) site. It was designed to meet minimum operating requirements for 12 million passengers and 125,000 tons (113,375 metric tons) of air cargo annually. The airport includes a 3.5-million-square-foot (325,000-square-meter) passenger terminal; a 269,000-square-foot (25,000-square-meter) royal terminal; an expandable passenger concourse (to a maximum of 31 gates); a three-level, 4,500-car garage; a 280-foot (84-meter) control tower; and two 13,000-foot (3,900-meter) parallel runways with associated taxiways and aprons.

There is also a mosque for 2,000 worshippers, more than 20 airport and airline support buildings, and a residential community that accommodates 3,000 people, and supporting infrastructure, such as roads, bridges, and utilities.

BECHTEL'S ROLE

Bechtel was the prime consultant for planning and architectural/engineering design for this project. Responsibilities included complete services from planning and economic analysis through final design and management of construction. At the peak of the design effort, more than 500 professionals were assigned to design work.

Early in the process, Bechtel developed the initial airport master plan



Location:

Dammam, Saudi Arabia

Client:

International Airports Projects
Ministry of Defence and Aviation

Scope of Services:

Project Management
Master Planning
Engineering Design
Construction Management

Project Duration:

1970–1999

Total Installed Cost:

\$1.4 billion



Significant Features/ Accomplishments:

- Provided a complete range of services
- Conducted round-the-clock engineering operations, which allowed teams in San Francisco and Saudi Arabia to use automation for latest CAD designs
- Carried out an extensive technology transfer program
- Established a safety record, including 34 separate million-jobhour milestones with record runs of 10.4 million jobhours
- Completed the engineering design to U.S. codes and standards, and FAA regulations

King Fahd International Airport (Cont'd)

and provided integrated project management services. Bechtel prepared cost estimates; conducted coordination studies between the design phase and operations and maintenance; developed procedures and plans for operation activities, including site investigation and environmental impact studies.

Design was completed around the clock as teams in San Francisco and Saudi Arabia used automation for the latest CAD designs. Engineering design was completed for structural, civil, electrical, mechanical, and plumbing facilities, all of which were completed in accordance with applicable U.S. codes and standards. Runway and apron design was completed to meet FAA requirements, including rigid and flexible pavements, airfield lighting and markings, apron services, and power distribution. Design of the fuel hydrant system and other fixed apron services used the latest technology in the industry. Technical support was also provided for construction civil works.

Bechtel also designed the associated residential community complex and provided planning, design, and construction management services for all access and internal roads for the airport and community development.

An extensive fire and safety program was established, with organization buildup, then transition from construction to operations and maintenance. The project's safety record includes 34 separate million-jobhour milestones, with record runs of 10.4 million jobhours for the overall project and a 6.8 million-jobhour high for Saudi Arabian Bechtel Co.

Technology transfer was a vital element on this project. Bechtel managers trained Saudi personnel and transferred management of departments to qualified Saudis. Bechtel also assisted the client in the placement of Saudi architect/engineers with U.S. design and construction firms so that they could obtain direct work experience.

During the late stages of design and the early stages of construction, the project was instructed by the client to reduce the approved budget by 30 percent. Working closely with the client, Bechtel developed and implemented an alternate implementation plan, and was able to achieve the client's 30 percent budget reduction objectives.

While the project has now been dedicated and the transition made to commercial operation, Bechtel still provides some ongoing services in operations and maintenance of the airport and community facilities.

