

# Case study

# Bradley International Airport

## Windsor Locks, Connecticut



## New airport terminal takes security and integrated facility management to new heights

For Bradley International Airport, the completion of its 260,000-square-foot terminal improvement project was a tremendous accomplishment. The reason is two-fold. As one of the fastest-growing airports in the nation, Bradley is now sized to accommodate current and future scheduled passenger service with a modern, streamlined terminal. Secondly, as one of the only airports to proceed with construction plans when the events of September 11th occurred, Bradley is now a state-of-the-art airport with high-tech security and integrated facility management systems that are scalable to meet future federal requirements.

The new terminal and its 12-gate concourse are a major component of an ambitious \$200 million renovation and expansion project that began in April 2000. Connected to the existing terminal, the newly consolidated complex encompasses more than 450,000 square feet. When the airport decided to proceed with the project in the wake of 9/11, its design team looked to Johnson Controls, Inc. for a security solution that would meet current and future needs.

Bradley is New England's second-largest commercial airport, serving as a link for southern New England to the national air transportation system. Because of its central location and ease of use, Bradley needed to expand its facilities just to accommodate its ever-increasing number of flights. In addition, after more than 60 years of technology upgrades, the original terminal contained systems that were redundant and independent of each other.



**Security Command Center**

"This was a very large project requiring someone with a lot of presence and expertise. Johnson Controls was a good choice here, they performed well and we are very pleased with their flexibility and cooperation."

**GARY RESNICK**  
PARTNER, GLOVER RESNICK ASSOCIATES  
SECURITY CONSULTING ENGINEER



**Passenger Flight Information Display System**

Johnson Controls worked directly with the construction manager, architect, mechanical and electrical engineers and a security consultant to provide critical low-voltage systems. The project team saw the value that Johnson Controls offered by taking sole responsibility for installation of these systems. "Our goal was to have a high-tech security system that would serve the current functional needs of our employees and future federal requirements," says Barry Pallanck, airport administrator at Bradley. "Johnson Controls offered solutions that benefited travelers, airport personnel and our bottom line. As our security needs grow and industry requirements evolve, the new system can grow with us."

## Enhancing security through integration

After 9/11, the scope of the security project at Bradley changed from making necessary upgrades to exceeding even anticipated requirements. "Because of the tragedy, we had to pull back the bid and try to anticipate what the Federal Government was going to require. This resulted in a totally revised security package bid," states Lisa Fazzino, airport security coordinator. "If you were to put the pre- and post-9/11 project bids next to each other, it wouldn't even look like the same airport," adds Gary Resnick, Glover Resnick Associates, security consulting engineer. "Even so, Bradley chose not to put construction on hold when many other airports did. Johnson Controls worked with us as a team to be proactive, and design a system that would be flexible and adaptive to new requirements issued

by the Transportation Safety Administration (TSA)."

The revised security package features the Johnson Controls Cardkey® P2000R security management system. A new card access control system for approximately 5,000 airport employees, a CCTV surveillance system and digital video recording are integrated with the Cardkey system. The integration allows airport personnel to easily monitor and control all electronic security devices from stations throughout the airport. "The flexibility of the system puts useful, real-time information at the fingertips of the proper people. This is not only efficient and convenient, it also helps us keep the airport more secure," says Fazzino. "This system makes it much easier to first recognize a breach, and then react immediately to avoid travel delays and potential emergencies," adds Pallanck.

Key challenges for Glover Resnick were creating a system that was robust enough to handle the whole airport, which, in some cases, required very special software. In addition, the system needed to be fully redundant, since the airport could never be down. There were also running changes, such as the decision to add a fully equipped Command Center, which was not part of the original scope. It would require relocating the new systems without taking them offline. "Johnson Controls stepped up to the plate with a project plan and budget. They worked closely with us to get it done on time and on budget. It was a huge effort based on trust and a great example of what you can do when you all work together to a common goal," says Resnick.

The new system also meets the unique security specifications of the Federal Inspection Station (FIS), which resides at the airport. When making upgrades to its security system, the FIS had a proprietary fiber optic network installed, connecting it with the airport's security systems. This allows federal agents to maintain interior security for their building while enabling Bradley to maintain perimeter security of the airport's property. To ensure the station's privacy, Johnson Controls used partitioning and password protection which allows federal agents to override privacy measures, if necessary.

## Integrated systems reduce cost and increase performance

Security systems were not the first integration to take place at Bradley's new terminal. The airport's mechanical consultants were familiar with Johnson Controls and understood the benefit of integrating multiple building systems and equipment into one management system. Johnson Controls participated early on in the design of the building management system.



**The Federal Inspection Station**

"Johnson Controls offered solutions that benefited travelers, airport personnel and our bottom line. As our security needs grow and industry requirements evolve, the new system can grow with us."

**BARRY PALLANCK**  
**AIRPORT ADMINISTRATOR**  
**BRADLEY INTERNATIONAL AIRPORT**

### PROJECT DESIGN TEAM

Architect	HNTB Architect, Engineers and Planners
General Contractor	O&G Industries, Inc.
Mechanical Engineer	LMG Consulting Engineers
Security Engineer	Glover Resnick & Assoc.
Technology Contractor*	Johnson Controls, Inc.*

#### \* Systems installed and maintained include:

- Metasys/Integrated Facility Management System
- Simplex Fire Alarm System
- Lighting Control System
- Variable Frequency Drives
- Audio Paging System
- Cardkey® P2000R Security Management System
- Integrated CCTV System
- Digital Video Recording System
- Door Hardware
- Jet Bridge Electrical Metering
- Tenant Electrical Metering and Monitoring for Billing



**Lisa Fazzino, airport security coordinator, working closely with Allen Kamen, a Johnson Controls security system team member.**



**Security Checkpoint**

The design included the installation of a Metasys® building management system and the installation and integration of the fire alarm system, lighting controls and variable frequency drives. As a result, airport personnel are able to monitor and control the systems from a central location. Johnson Controls also installed the airport's audio paging system. "The integration allows us to be more efficient in the overall operations of the airport. Passengers and tenants of the airport also benefit because we can better react to seasonal temperature issues and provide a more comfortable environment," states Pallanck. "Structuring this purchase in a way that all systems were bundled together lowered our first costs and allowed us to obtain the systems we wanted," adds Fazzino.

Electrical usage is also integrated into Metasys, allowing Bradley Airport to track and monitor electrical usage for jet bridges and tenant areas. The airport uses tenant electrical reports to assure accurate tenant billing and jet bridge

metering to confirm that systems are working properly. All of the information available through systems integration can be utilized by the airport to make smart decisions, increase performance and lower total cost of ownership.

## Open systems connectivity allow building integration

Because of its open systems connectivity, Johnson Controls was able to integrate the Federal Inspection Station (FIS) facility on the airport grounds with the airport's building management system. The airport is now able to communicate via open protocol with FIS. One-point access is available from any master workstation, allowing the user to see all information.