Honeywell

Minneapolis-St. Paul International Airport

Thinking open architecture is how energy

The Goals

- Eliminate proprietary systems and integrate disparate systems under one automated platform
- Save on maintenance by creating competition to bid service contracts
- Reduce construction costs through competitive bidding
- Generate energy cost savings to meet the five-year payback on investment
- Implement metering to allow for tenant billing
- Utilize occupancy sensors for lighting and ventilation control
- Reduce operating costs by having command center access within each department

Honeywell Products Installed

- Tridium Niagara^{AX} Framework®
- Java Application Control Engine (JACE)

The Results

- Real-time access to systems reduces operating costs and energy consumption
- Open protocols for monitoring and control allow competition for maintenance and construction
- During conversion OABA reused existing components that were not proprietary
- Reduced construction costs by more than 25 percent through competitive bidding
- Reduced maintenance costs by 50 percent through competitive bidding
- Energy savings have exceeded expectations
- Precision metering set up for a more streamlined future tenet billing process
- OABA HVAC has been so successful that lighting and plumbing components are being added
- OABA system is a showcase and success story for open protocol automation in the industry

Honeywell Contractors

Consulting Engineer
Michaud Cooley Erickson
333 S. 7th St. #1200
Minneapolis, MN 55402-2422
612-339-4941
www.michaudcooley.com

Contractor
Harris Companies
909 Montreal Circle
St. Paul, MN 55102
651-602-6500
www.hmcc.com

The Minneapolis-St. Paul International Airport (MSP), owned and operated by the Metropolitan Airports Commission (MAC), is a major hub airport with more than 3 million square feet of terminal space, serving more than 33 million passengers a year. As the fifteenth busiest airport in the U.S., it had many challenges facing the 90+ buildings which encompass the airport's massive campus. MSP is essentially a small city which requires full automation and real-time access to systems for better cost and energy savings. It became imperative that a fully integrated HVAC, plumbing and lighting solution be developed and implemented with an open protocol where operation, efficiency and cost goals could be met while removing the burden of proprietary systems and their associated costs. With the need for a new approach, the Open Architecture Building Automation (OABA) initiative was created, and the MAC has achieved and exceeded its goals with equal enthusiasm about the future of this technology and the opportunities it provides.

> " With the flexibility of our open protocol, we can use any manufacturer of controllers, installed by any contractor and have it function seamlessly on the dashboard. "
>
> *Steve Shuppert*
> *Chief Engineer, Metropolitan Airports Commission*

savings can take off.

The power of an open protocol.

The first step to achieving the MAC's redesign and upgrade goals was to determine what they needed and who could do it. OABA outlined a body of shared project requirements that enabled everyone involved to be on the same page. The goal was simple — remove the proprietary systems and replace them with an open protocol solution to improve building automation service and construction, while introducing a new specification that would allow the MAC to receive competitive bids using an open architecture building automation system.

Automation takes flight.

After Harris Companies introduced the Niagara^{AX} Framework to Michaud Cooley Erickson, it was only a matter of time before the OABA concept was complete. Once the concept was in place, Michaud Cooley Erickson and Harris Companies worked together to champion the program and set the system's technology standards. The core of that technology is Niagara^{AX}, including the Java Application Control Engine (JACE), which is essentially a compact PC that can serve as an automation controller, a network manager and a protocol gateway. It is the key to the Niagara user interface since it delivers automation data in HTML, the common language to all web browsers including Microsoft Internet Explorer®. The JACE provides custom sequences like central plants and air-handlers. LonMark® controllers were chosen for application specific sequences such as VAV boxes and heat pumps. The Modbus interfaces with many factory control panels on equipment such as generators, chillers and boilers. With the open protocol in place, the MAC didn't need to replace existing sensors, valves, dampers and wiring, and they were able to competitively bid out all of their automation work (construction and maintenance) and not remain subject to costly proprietary vendor relationships.

First class all the way.

The entire OABA program was initially planned to be completed in four phases over five years, including design, construction and commissioning. After two years, it became clear that OABA would exceed the MAC's financial goals and that investments in the system would payback in less than four years. OABA, supported by Honeywell products, had proven to be so successful in terms of speed, reliability and ease of use, that other departments within the MAC recognized its immediate value and asked to be added to the scope — plumbing first, followed by electrical. As the scope of the OABA program has increased, the time frame has been extended to accommodate new phases of work. As phase four enters construction, the system is already outperforming all of MAC's expectations.

> " We welcome clients, building owners and visiting airport authorities to see the streamlined power and versatility of OABA. The program has been a resounding success. "
>
> *Frank Hartranft*
> *Principal, Michaud Cooley Erickson*

The future is ready for departure.

Thanks to the perseverance and first-hand knowledge from professionals that use and understand the value of integration and an open protocol system, the MAC is well on its way to achieving its long-standing goal of an intelligent building monitoring and control system, where operating data are put to work providing energy savings, system performance and occupant health and safety. As a fully integrated, web browser-based system, OABA frees the MAC from the bondage of proprietary systems where the customer suffers from the absence of competition. Now that the system is up and running, it is a beacon for the future — where anyone and everyone that is interested in achieving the same success can come to MSP and see how it's done right.

Find out more

For more information, please contact your Honeywell sales representative, call **1-800-466-3993** or visit us at **www.customer.honeywell.com.**

Automation and Control Solutions

Honeywell

1985 Douglas Drive North

Golden Valley, MN 55422-3992

1-800-466-3993

www.honeywell.com

Follow us on Twitter:
@honeywellcpro

YouTube:
@honeywellcpro

Honeywell