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St. Louis Int'l Modernizes Iconic Terminal Without Losing Connection to the Past



Photo: Steinkamp Photography

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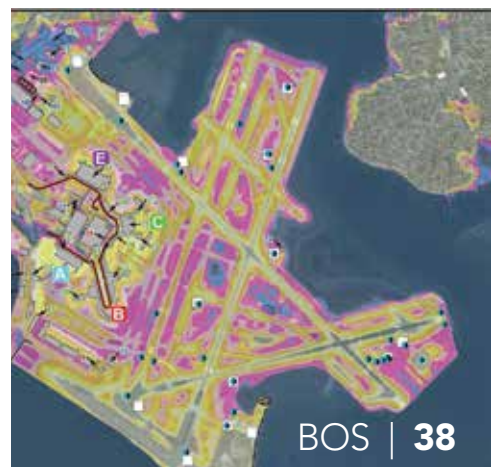
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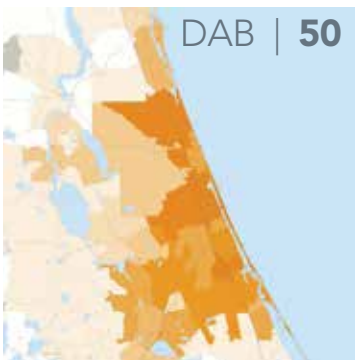
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Airport Improvement

Show Me the Money ... & the Innovation

Money and airport funding are definitely vital ingredients for creating and maintaining healthy airports. But I submit that there's another topic that should receive equal billing: innovation.

You can't build without money. I'll give you that. Money can create jobs, attract carriers, build safer runways and educate future generations of the airport leaders. But money alone won't fix all of our problems. In fact, we can become complacent and continue to spend funds the same way year after year because it's become a habit. We protect what money we have and risk becoming mired in the status quo, settling for the proverbial bird in the hand.

Now innovation is another story. It is money-agnostic. One can even argue that lack of money, and even desperation, can inspire innovation to great heights.

As a magazine about airport projects (operational as well as traditional brick-and-mortar) *Airport Improvement* has the privilege and honor of bringing you some of the industry's best and brightest innovations. Money is an important factor in the narratives, which is why we list how much various

projects cost in an opening Facts & Figures box. However, innovation is often where the real story lies.

Our story from Daytona International Airport (DAB) on Page 50 is a shining example of innovation ... and, I must add, collaboration between an airport and consultant. Together, their low-cost innovation was used to solve a need for demographic information. Information, with our old friend money, was the critical combination that brought new air service from New York's John F. Kennedy International to DAB. It's likely that neither money nor innovation would have worked on its own. It was the powerful synergy of the two that sealed the deal. Congratulations to DAB.

If you have an innovation story that deserves to be told, please send me an email. That's how many of our articles get started.

Cheers,

Paul



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St. Louis Int'l Modernizes Iconic Terminal Without Losing Connection to the Past

By Jodi Richards

factsfigures

Project: Terminal Renovation

Location: Lambert St. Louis Int'l Airport

Program Name: Airport Experience

Total Cost: \$150 million

Terminal Renovations: \$70 million

Tornado Damage Repair & New Baggage System: \$80 million

Construction Manager: Kwame Building Group

Designer, Architect, Structural Engineer: exp US Services

Baggage Handling System Design: VTC

Baggage Handling System Installation: Horsley

Retail Concessions: Hudson Group

Food & Beverage Concessions: HMSHost

Green Wall: GSKy Plant Systems

Water Wall: Bluworld of Water



“Out with the old, in with the new” is often the sentiment that drives large-scale terminal improvement programs. Lambert-St. Louis International Airport (STL) took a different approach during the recent \$70 million renovation of its mid-century Terminal 1, by working to preserve iconic architectural elements while infusing efficiency, flexibility and modern systems to carry the facility into the future.

Originally built in 1956, Terminal 1 at STL was designed by famed architect Minoru Yamasaki, who also designed the original World Trade Center. When the terminal



Rhonda Hamm-Niebruegge

opened, it was a prime example of an operationally effective, modern facility, says Airport Director Rhonda Hamm-Niebruegge. Its copper-roofed domes were recognized around the world for decades, but time was ultimately not kind to the facility.

Over the years, the terminal and concourses became cluttered as STL adapted to evolving needs, such as new security requirements. “The lobby had become sort of a hodgepodge of everything,” says Hamm-Niebruegge. The facility began looking and feeling “tired,” and local community members became frustrated with the lack of updates.

“We had this incredible asset, but we were not competitive with the industry,” she reflects.

Removing baggage screening equipment from lobby helped restore the clarity of the original terminal design.



Photo: Steinkamp Photography

In 2007, STL officials began planning to restore the regional asset, so the airport could once again create a positive impression on arriving and departing passengers. Given the terminal's historic architectural value, preserving the look and feel of the original structure was critical, notes Hamm-Niebruegge.

Bonds were sold in summer 2009 to help fund the initiative; construction began in 2010. Terminal 1 renovations cost \$70 million, and the balance of the airport's \$150 million Airport Experience project was spent repairing damage from a 2011 tornado and adding a new inline baggage system.

Last year, STL served more than 12 million passengers, with 10 airlines and 64 nonstop destinations.

Grand Restoration

Design of the comprehensive renovation was led by exp US Services. Tom Hoepf, principal design architect with the firm, notes that bringing back the clarity and beauty of the terminal's original design by simplifying and minimizing the current structure was a guiding principle throughout the project. "Yamasaki referred to the terminal as the 'Grand Central Station of the jet age,'" explains Hoepf, FAIA, LEED AP.



Tom Hoepf

Architects also focused on modernizing the 50-year-old facility to improve efficiency and fulfill STL's other goal of enhancing convenience and overall service for airport guests.

"I think there was a sense from the community that we'd lost some of the appeal as an airport," Hamm-Niebruegge reflects. "There was just not a very good feeling about our airport and how it looked or how it was operating at the time, in terms of the customer experience."

The first phase of projects began in 2008, with an overhaul of signage and wayfinding — crucial components to the customer experience, Hamm-Niebruegge notes. For years, the airport had received feedback that navigating in and around the facilities was confusing; so it worked with designers from exp and a local working

group to improve the system. "Having the community weigh in on important aspects is critical," Hamm-Niebruegge emphasizes.

Phase 1 also included the installation of new baggage claim carousels and restoration of the airport's iconic vaults. Over the years, the surface of the four vaulted structures had deteriorated, which complicated cleaning and maintaining them. During renovations, crews removed the existing surface and plastered the area with a



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crisp, white acoustical surface, explains Michelle Bear, AIA, project manager with exp.

Restoring the vaults required careful coordination with STL's carriers. Airline counters were temporarily relocated as crews on scaffolding moved around the ticketing lobby, completing one section at a time. "We knew that was going to be one of the most challenging [projects], because you had to be able to get customers to the ticket counter," comments Hamm-Niebruegge.

Skylights in the vaults were repaired, and crews replaced fluorescent lights with color-changing LEDs. The airport can program the new lights to display different scenes, such as seasonal holiday decorations or graphics to celebrate the success of a St. Louis sports team.

Consolidating ticket offices and counters allowed the airport to open up the view to one of its courtyards — an original design feature that was lost in the cluttering that took place over the years, Hoepf notes.

The layout of the revamped terminal is much more efficient and flexible, says Hamm-Niebruegge. In addition to working better for airlines and customers, it will also be easy to change as the industry evolves, she notes. New lighting and operating systems were selected to make the facility more operationally efficient.



Michelle Bear

Twister Delays Progress

In April 2011, a tornado swept through the airport, causing nearly \$35 million in damage, including damage to some of the renovation work that had already taken place. (For more details, see our July/August 2012 issue.) The tornado hit right in front of the terminal, blowing out all the historic windows in the domed area, and then traveled down the C Concourse and through the TSA checkpoint. Concourse C was closed a full year for repairs, and the overall Airport Experience program was delayed by about one year.

The last piece of the project was replacing the terminal's copper roof. Restoring its original brightness and beauty renewed the community's pride in the airport, notes Hamm-Niebruegge. "The copper roof was the icing on the cake," she says. "The fame and the luster the terminal brought to the city came back. For us, it was about having the community feel that we've got a gem again in our region."

Although exp didn't design the original building, Hoepf says that the firm's architects feel some type of authorship of it. "We've brought it back — and improved on some things, too," he explains.

He also considers STL's Airport Experience program a model for sustainability and environmental efforts, noting that officials chose to adapt and improve their existing facilities instead of throwing them away.

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Inline Streamlines

While not part of the original Airport Experience program, an inline baggage system eventually became a key component of STL's renovations. Previously, cumbersome screening machines cluttered the lobby. "It looked awful" and didn't support the airport's vision of becoming a modern, efficient facility, says Hamm-Niebruegge. The process was also inefficient for passengers. In 2010, the airport was awarded \$48 million in Homeland Security grants and funding for an inline baggage system.

VTC joined the project team in 2009 to evaluate a proposal TSA had prepared for the new system. Following a "high-level review" of the concept, VTC proposed a different solution, which eventually saved the airport about \$70 million compared to estimated cost projections for TSA's plan, notes VTC Project Manager J.R. Smith.



J.R. Smith



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Fitting the new inline baggage system into an existing bag room instead of building a new facility saved an estimated \$70 million.

VTC's plan housed the new inline system in the existing baggage space on the lower levels of terminals 1 and 2. "We were able to find room in the existing structures without having to go out and build a brand new building," Smith explains. "Even though we were working in a 50-year-old bag room, with low head clearances, we were able to [fit] all the baggage handling equipment inside and make it a lot more efficient than building new structures."

Bags from all the ticket counters in both terminals travel down a conveyor system to the lower-level bag rooms, where they are screened and sorted back to their respective airlines. Each of the terminals has three Explosives Detection Systems in its baggage matrix, and a sortation system delivers the bags to the appropriate airline carousels.

Moving STL's screening equipment downstairs not only simplifies the check-in process for passengers and improves the lobby's appearance, it also gives airport officials more flexibility to move or add airlines in the upstairs ticketing area.

Smith notes that although VTC's design was more efficient and less costly, installing a new system in STL's 50-year-old bag room presented a few unexpected challenges. Crews found abandoned equipment, and undocumented cables and conduit needed to be identified and organized before the project could move ahead safely.

In Terminal 2, a cable tray with more than 200 cables had to be relocated to fit the new baggage matrix into the available space. Because drawings weren't available, VTC hired a subcontractor to identify both ends of the cables and devised a plan to move the tray and execute a changeover.

The low ceiling clearance of the space required a "very innovative" conveyor system design with ductwork relocations and smoke evacuation systems in the lower level, comments Smith.

After 9/11, TSA had constructed buildings in the airport's courtyard for baggage screening and added about a dozen other screening machines throughout the terminals. The new inline system consolidated the scattered collection into a pair of three-machine matrixes. Terminal 1's inline system was completed in March 2014; Terminal 2's system went live about seven months later, in October.

Local Concessions

STL's concessions program also received a facelift during the Airport Experience. With its 20-year news and gift contract set to expire during renovations, the airport chose to solicit new bids rather than automatically extend the existing contract. The bid was won by HG-St. Louis JV, a joint venture of Hudson Group Retail, Final Phase Marketing, OHM Concession Group and Newburns Management Group. Within nine months, the joint venture remodeled and rebranded 14 retail locations at STL.

Giving shops a local feel was important to the airport, and the new Discover St. Louis boutique in Terminal 2 helps achieve that objective. The store sells souvenirs from the city's various cultural institutions such as the Peabody Opera and St. Louis Art Museum, as well as mementos from local attractions including the St. Louis Zoo, Gateway Arch and Washington University of St. Louis. Merchandise supporting the city's various professional sports teams is also featured.

HMS Host, STL's food and beverage concessionaire, partnered with the airport to bring in local-themed dining options. New offerings include Schlafly Beer Bar and Grill, a St. Louis-original; Eighteen 76, a Budweiser bar and restaurant; and Pasta House, which is part of a popular local chain.

An overhaul of signage and wayfinding was one of the first projects completed.

Hamm-Niebruegge reports a “significant uptick” in revenue per enplaned passenger since the renovation. In fact, it is double what it was five years ago. “We have more shops and restaurants than before. And if you have products people are interested in, they will spend money,” she comments. “It’s made a huge difference in our revenue.”

Regional Connection


Adding a regional “sense of place” to the airport was also an integral part of the project. “We have such a vibrant region in terms of art, culture, botanical gardens, zoos, museums, sports teams,” says Hamm-Niebruegge. “[Previously], when you landed at the airport, if you didn’t know you were in St. Louis, you’d have no clue where you were. We wanted to make that feel different.”

Airport personnel collaborated with a newly formed arts advisory committee comprised of regional arts professionals to develop plans for where and how to display local and national works. An annual fundraiser helps offset the cost of the art program, and local organizations provide select pieces. For instance, a 6-foot-tall bronze sculpture titled *China, China* is currently on loan from the St. Louis Gateway Foundation.

A green wall and separate vertical, cascading water feature add natural art elements to the seating area in the newly created Terminal 1 ticketing lobby. The water and live plants soften the area and help visitors connect with the space, says Hoepf.

In the concourses, a series of freestanding panels feature translucent glass displays that “animate the circulation” in the gate areas, he adds. The art glass screens were the first commissioned pieces in the Lambert Art & Culture Program. “It looks like a museum in some ways,” says Hoepf.

The St. Louis Convention and Visitor’s Bureau advertises its members (including Rams, Cardinals and Blues) on interchangeable panels throughout the terminal. A wall of windows in Terminal 1 features a revolving rotation that showcases the work of local non-profit organizations. Together, the various elements provide the “sense of place” the airport was looking for, Hoepf comments.

“It’s remarkable to see what was and what is now,” he notes. “It’s not so much that we designed a great building, but we brought a great building back to life.” 



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Baltimore/Washington Int'l Enhances Parking Shuttle Operations

By Thomas J. Smith



factsfigures

Project: Parking Shuttle Improvements

Location: Baltimore/Washington Int'l Thurgood Marshall Airport

Shuttle Fleet: 49 buses

Private Shuttle Operator: First Transit

Contract Duration: 3 yrs (expires in 2016)

Shuttle Frequency: Every 5 min.

Service Offered: 24 hrs/day; 7 days/week

Parking Facilities Served: 5

Total Parking Capacity: 24,700 spaces

Avg. Parking Occupancy: 50% - 60%

Private Parking Operator: SP Plus

Contract Duration: 5 yrs (expires in 2020)

Annual Parking Revenue: \$60 million

Future Enhancements: \$8 million Automated Parking Control System from Hub Parking; \$500,000 Next Vehicle Arrival System from Clever Devices

Expected Deployment: Fall 2015



When searching for a competitive edge, many airports automatically focus on developing new air service.

Baltimore/Washington International Thurgood Marshall Airport (BWI) is also developing its parking shuttle service.

Executive Director/Chief Executive Officer Paul Wiedefeld and other airport officials realized that with more than 25% of their passengers riding buses to and from airport parking lots, the shuttle system could make or break BWI's reputation as an "easy come, easy go" airport. Recent changes to operational practices are already showing measurable improvements, and investments in new technology to enhance customer service are also under way.

One of the airport's first moves was hiring transit specialist Ralign T. Wells in July 2013. Previously, Wells oversaw bus, light rail and subway operations for the entire state as the chief executive officer of the Maryland Transit Administration. As director of Parking and Transportation at BWI, he manages all of the airport's ground transportation and parking operations.

Before Wells arrived at BWI, the buses that served the airport's five parking facilities kept

inconsistent schedules. Sometimes, shuttles showed up every 10 minutes; other times, waits were twice as long. The unpredictable nature of the service was frustrating for passengers trying to catch flights or return home.

After taking a hard look at the way the shuttle system was operating, Wells began implementing changes to make it work better. Improving the efficiency and effectiveness of the system was key to recouping market share in the airport's battle with off-site parking operators, he explains. It was also important to help BWI maintain market dominance in the three-way race to be the busiest airport in the Washington, D.C. area, he adds.

In the Trenches

With customer surveys indicating that price and shuttle frequency are the top two respective factors for passengers choosing where to park, Wells introduced a new schedule in May 2014. Now, BWI's buses are scheduled to stop every five minutes; and the airport has averaged 92% on-time performance since the changes were instituted, Wells reports.

All of BWI's shuttles now display uniform branding and graphics.

With a bus showing up every five minutes on each route, BWI now matches the level of service offered by off-airport parking competitors. The frequency is also twice as fast as other airport shuttles in the area, adds Wells.

In the year since the new schedule has been in place, the airport's market share increased to 77% — up from 74%. Although results are trending up, Wells is intent on capturing even more business. BWI once had more than 90% market share, he notes.

With 24,700 total parking spaces and an average occupancy rate of 50% to 60%, parking generates about \$60 million of non-aeronautical revenue per year for BWI. According to Wells, it's too early to determine how much parking lot revenue has grown with the improved market share.

Evolutionary Pains

BWI outsources its parking and shuttle operations to private vendors. The airport owns the assets — 49 shuttle buses and five parking facilities; its contractors provide staff and manage daily service.

First Transit operates BWI's shuttle buses and is currently in the midst of a three-year contract that expires in 2016. SP Plus has been operating the airport's parking facilities since January, under a five-year contract. First Transit held the prior shuttle contract with BWI, but this is the first contract with the airport for SP Plus.

After analyzing previous bus operations, Wells found a way to increase shuttle frequency without increasing BWI's contract costs. He observed that drivers often rested for up to 25 minutes after each loop. "The 25 minutes was dead time, and we were not getting any value out of it," he explains. "We gave them a recovery of five minutes, which was much more reasonable."

Wells acknowledges that BWI received pushback from First Transit after the schedule change, and some of the company's 135 drivers quit. But the airport stuck to its plan to improve shuttle service while holding costs steady. BWI's contract with First Transit did not include mandatory "recovery" periods; and First Transit's contract with its drivers did not specify a schedule or duration for breaks between runs, notes Wells. "At the end of the day, we were not getting all that we were paying for," he remarks.

First Transit's contract requires it to provide 805 hours of bus service each day. BWI preferred to leverage its fleet of equipment and provide passengers with around-the-clock service by increasing the frequency of shuttle stops. Part of the rationale for longer breaks was to increase the likelihood of maintaining on-time route schedules even if problems arose, explains Wells. Per the terms of its contract, First Transit is penalized if a route is not on time. Previously, the company ran on time nearly 100% of the time; now its on-time rate averages 92%, Wells reports.



Courtesy of Yeager Airport

CRJ 200, 2010 Charleston, WV



Courtesy of Key West Int'l Airport

Citation 550, 2011 Key West, FL

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Background photo: EMASMAX installation at Kjevik Airport, Kristiansand, Norway

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The late penalties BWI collects help offset the higher fuel bills it is incurring since the switch to more frequent routes, he adds. While airport officials projected a 20% jump in fuel costs, the actual increase was lower than expected.

Even with increased frequency, the buses have high ridership levels in both directions. "At peak times, we do have full buses," Wells comments.

Currently, the largest buses in BWI's fleet measure 40 feet long, seat 29 passengers each and serve the long-term lots, daily garage and Amtrak station. However, officials are assessing the feasibility of purchasing articulated buses when the next fleet contract is bid in 2017 or 2018. Articulated buses, which bend in the middle, can carry 50% more passengers, explains Wells. Since the typical lifespan of an airport bus is 12 to 15 years, BWI will base its equipment decisions on expected capacity through 2030.

Any buses that join BWI's fleet will sport its new "official" colors and graphics. Previously, up to three different branding schemes were in use at the same time, which lead to confusion. "Most people prefer to use an authentic BWI [bus]," says Wells. "Sometimes they did not even know which one was ours."

Now, all airport parking shuttles feature a uniform look for easy identification by passengers.

Investing in Technology

BWI is in the process of implementing two technology upgrades to improve service for passengers parking at the airport. Both are expected to be ready by fall.

The airport is currently testing a system that tracks and communicates the anticipated arrival time of parking shuttles. "This will take the guesswork out of when the next bus will arrive," explains Wells. BWI's off-site parking competitors do not offer riders such information, he adds.

Major transit systems have launched similar systems in recent years, but BWI wants to make sure all the bugs are worked out before introducing the technology to airport customers. "We have done some tests with less-than-perfect results," Wells reports. "We will not turn it on until it is perfect."

Because the network is hardwired, the "next bus system" will not support a smartphone app. However, bus arrival information will be fed to the airport's revamped website, and that information should be available on its mobile website.

A new parking and revenue control system by Hub Parking — an \$8 million investment — is the other technology enhancement currently in the works. The system is designed to eliminate the need for customers to take and redeem tickets for parking and will allow them to pay directly with credit cards and E-Z Pass transponders.

Other system options allow the airport to implement flexible pricing and offer passengers the opportunity to reserve parking spots in advance.

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Project: Runway Improvements

Location: Charles M. Schultz-Sonoma County (CA) Airport

Primary Elements: Runway extensions; runway safety areas; decoupling runway ends

Approx. Cost: \$55 million

Funding: Airport Improvement Program (90%); passenger facility charges (10%)

Engineering & Design: Mead & Hunt

General Contractor: O.C. Jones & Sons

Environmental Compliance: LSA Assoc.

Drainage Engineering & Stormwater Pollution Prevention Compliance: Brelje & Race

Geotechnical: Bauer Assoc.

Electrical: Royal Electric Co.

Airfield Lighting: ADB Airfield Solutions

Airfield Markings: AirMark, by Ennis-Flint

Airfield Markings Contractor: Maxwell Asphalt

Of Note: Airport decoupled & extended two runways while meeting the FAA deadline for runway safety areas; new length & configuration facilitate regional jet service

Sonoma Airport Facilitates Regional Jet Service While Meeting Runway Safety Area Deadline

By Robert Nordstrom

When Charles M. Schultz-Sonoma County Airport (STS) completed a \$55 million runway expansion and improvement project last November, it not only met the congressionally mandated December 31, 2014, deadline for runway safety areas (RSAs) at Part 139 airports, it also added enough runway length to help attract regional jet traffic — a benefit offering long-term growth opportunities for the California wine country airport.

“We’ve had that goal (adding regional jet service) since the 1990s,” explains STS Airport Manager Jon Stout. “Carriers were saying they wanted to use regional jet service in our market, but they couldn’t do it on a 5,100-foot runway.”



Jon Stout

Complicating matters, STS’s two runways shared a common end point and needed to be decoupled for safety reasons. To accomplish both goals, STS and engineer of record Mead & Hunt originally devised a plan to extend the airport’s primary runway, 14-32, by 750 feet and its secondary runway, 2-20, by 200 feet, which would place its end just past 14-32.

That design had problems, though. “Although 14-32 would be out of 2-20’s safety area, the runway end wouldn’t have any taxiway connection out of the safety area, and we wouldn’t be able to have dual runway operations,” explains Stout. “We were able to convince the FAA that by adding an additional 150 feet to 14-32, we could add two taxiway connectors outside the RSA and thus maximize utilization of both runways.”

Work was scheduled so one runway could remain open throughout the project.



The revised and approved plan also brought STS's primary runway to 6,000 feet — the length needed to attract regional jet service.

Easier Said Than Done

With the big-picture design complete, a long list of specifics had to be worked through:

- extending two runways;
- constructing a partial parallel taxiway for 2-20;
- constructing entrance and exit taxiways for 14-32;
- constructing two new taxiways for 2-20;
- reconstructing an existing taxiway;
- grading the safety areas for both runways;
- constructing new run-up aprons for both runways;
- realigning a creek and installing a culvert under the Runway 14-32 safety area; and
- constructing detention basins and a retention structure for airfield drainage

If that were not enough, one runway had to remain in operation throughout the project; and all work needed to meet complex environmental standards and be completed within a compressed timeframe.

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Earthwork was originally required to stop by mid-October, but the project obtained a one-month extension due to lack of rain.



Scott Van Gompel

Scott Van Gompel, a Mead & Hunt engineer, describes the scheduling challenges: “The project was originally slated to be completed over a season and a half. For various reasons, including funding and environmental clearances, work was condensed into basically one season. Our plan was to start work in August 2013, but we weren’t able to start until late September.

Environmental restrictions mandated we terminate earthwork by October 15, although we were able to obtain a one-month extension because it wasn’t raining. We couldn’t resume work until April 2014, so we ended up jamming most all of the work into the 2014 season.”

To create room for construction of the RSAs and an adjacent service road, the airport acquired three land parcels totaling 30 acres. Various environmental mitigation measures were executed to protect California tiger salamanders and rare plants; fencing was erected to exclude Western pond turtles from construction areas; and siltation barriers were installed adjacent to grading or excavation areas.

During the first phase of the project, Runway 2-20 was shut down for approximately two months while crews upgraded a taxiway that runs to the main terminal area and constructed a partial parallel taxiway and connectors. Much of the runway and taxiway lighting was installed during winter 2013, although not connected to a power supply until contractors began earthwork in April 2014.

“Our primary concern was that we knew we were going to shut down our main runway (14-32) for about four or five months,” details Stout. “We had to get all of our instrument procedures for Runway 2-20 FAA-certified before we could take 14-32 out of service.”

Ultimately, the certification and shut down processes took 10 days longer than the original schedule planned.

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Crews installed an arch culvert during the night so tall cranes placing concrete blocks would not infringe on active airspace.

Landscaping Saves the Day

In order for crews to complete work on Runway 14-32, initial plans called for the airport to temporarily shorten Runway 2-20 to 4,600 feet. Then, two months before the scheduled shutdown of 14-32, STS' sole commercial carrier informed airport officials that its aircraft needed 4,800 feet.

"Alaska Airlines ran their numbers and determined that if they had an engine-out situation and the aircraft had to return to the airfield, trees at the end of the runway would present an obstruction and aircraft would need another 200 feet of runway to land," explains Van Gompel. "As a result, we had to reposition and remark the entire threshold end of the runway."

The company also worked with airline personnel to identify the particular trees that were causing concern. "They initially gave us a list of around 400 trees," he recalls. "We determined that many of the trees identified were drawn from old, outdated information and cut the list down to 11 trees, which we removed. When we did the switchover, the airline experienced no problems."

Mead & Hunt Vice President Jon Faucher takes pride in the project team's ability to overcome the late-fourth-quarter challenge. "We made sure (Alaska Airlines) flight personnel were comfortable with the distance we gave them while maintaining appropriate separation from construction activity," he comments. "They were able to operate off the shortened runway for the majority of the summer. And now, with the project complete, Runway 2-20 is 5,200 feet — 200 feet longer than its original length."



Jon Faucher



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Talking & Listening


The 2014 construction season was a particularly busy time at Charles M. Schultz-Sonoma County Airport (STS). During the course of its \$55 million runway project, the California airfield had *four* different configurations. Naturally, each change required robust communication to inform control tower personnel, airlines and pilots about the latest modifications.

“We reworked the entire airfield and brought it up to FAA advisory circulars for the naming of taxiways,” recalls Mead & Hunt Vice President Jon Faucher.

Three weeks prior to each new configuration, airport officials met with the construction team to understand upcoming changes on the airfield. The chief pilot and safety officers from Alaska Airlines also attended the sessions, where

project leaders identified which areas would be open or closed and verified names that would be used. Booklets with graphics depicting specific changes were also distributed

“We received great feedback from the pilot community on our outreach efforts to keep them informed,” reports Airport Manager Jon Stout. Since then, other airports have contacted STS for specific tips regarding effective communication during complex construction projects.

Stout cites air traffic control personnel as a particularly important factor, and describes the support STS received from its tower as incredible. “It seemed like we were changing the airfield configuration every week,” he recalls. “It got to the point where some pilots would ask, ‘OK, what is it today?’” 

To minimize impact on airport operations, much of the airfield work was performed at night, when no flights were scheduled. The installation of an 885-foot-long precast concrete arch culvert beneath one of the runway safety areas was one of the nighttime projects. Large cranes were needed to move the structure's 149 blocks (each weighing 18 to 22 tons); so work was performed at night during 44 scheduled airport closure periods to prevent the tall equipment from encroaching on active airspace. Crews also constructed another precast concrete box culvert that measured 825 feet in length.

All told, the project required 45,000 cubic yards of aggregate base, 36,000 tons of asphalt and 160,000 square feet of pavement markings. More than 130,000 cubic yards of soil were taken from a previous on-airport project for the runway extensions.

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Mead & Hunt congratulates Charles M. Schulz – Sonoma County Airport on the success of its Runway Safety Area Improvements project.

Each of the 149 precast concrete blocks for the arch culvert weighed 18 to 22 tons.

Two Birds, One Stone

Although the airport's complex airfield initiative was primarily a safety project, Stout reflects that decoupling and extending the runways facilitated flight operations. "The control tower personnel have more flexibility when directing aircraft, and aircraft can now land simultaneously on both runways," he explains. "We can't land commercial aircraft simultaneously, but 90% of our traffic is general aviation."

The airport has also received increased interest from air carriers since the runway improvements were completed last fall. Several airlines have indicated that STS is now on their short list for adding service, reports Stout.

"Our primary focus is providing service to eastern destinations such as Salt Lake City, Phoenix and Denver. We actively marketed the airport throughout the construction process and have ramped up our efforts since project completion," he explains. "Alaska Airlines continues to do well and will be up to seven Q400 flights a day this summer. We've also seen an increase in corporate traffic since the completion of the project as well as increased interest in using the airport as a base for corporate jets." ✈️

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New Security System Expands the View for Small Staff at Elmira Corning Regional

By Kristin Vanderhey **Shaw**

**ELMIRA CORNING
REGIONAL AIRPORT**



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Project: New Security System

Location: Elmira Corning (NY) Regional Airport

Total cost: \$2.4 million

Timeline: 2010 - 2014

Number of Cameras: 60

Noteworthy Element: Virtual Fence

Design Consultant/Project Management:
McFarland Johnson

Owner's Representative: Aviation Security Consulting

ID Management: Quantum Secure (part of HID Global)

Outdoor Video Surveillance System: SightLogix, Pelco;
Scallop Imaging

Thermal Cameras: SightLogix

Automated Exit Lane: IEE Sensing



Elmira Corning Regional Airport (ELM) was still in the process of installing a new \$2.4 million security system when an arriving passenger prematurely tested some of its new components. The passenger was later discovered to be suffering from dementia, and the 2013 incident decisively validated the decision to invest in new technology at the upstate New York facility.

One evening around 9:00, a man who had just deplaned started testing doors in the sterile area to get out to the airfield. He located a door that opened with a push of a crash bar, and approached the aircraft he had just exited. Grabbing a pair of marshalling wands, he ran down the apron, across the taxiway, and evaded authorities on the ramp. In the meantime, airport staff closed the airfield, called the emergency operations phone number and law enforcement was summoned; but the man was nowhere in sight.

Fortunately, a "virtual fence" was one component of ELM's new system that was already in place. The fence consists of eight thermal imaging perimeter cameras

that connect to a video surveillance system and large video wall in the airport's Security Operations Center. With the help of the brand-new thermal cameras, authorities apprehended the man and took him into custody. After airport grounds were inspected, ELM promptly reopened its airfield.

"In addition to being able to locate this man, another great outcome of this system was that [the incident] was very clearly documented," says Ann Crook, the airport's director of Aviation. "And all of the responders did what they were supposed to do."

The virtual fence was just one piece of a larger security project that ELM began in 2010, when it hired Aviation Security Consulting. In 2011, Lori Beckman, the firm's president, started taking inventory of what the airport had and what it needed. ELM's new system was installed and operational by spring 2014.



Ann Crook



Lori Beckman

Overhaul vs. Update

"Most security systems have a lifespan of about 12 to 15 years," advises Beckman. "The time was right for Elmira Corning to update, and the technology available to us now provides more options than when the system was originally installed."

Identification badges with Polaroid pictures used to be the norm for airport employees, she reflects. Then, the Aviation Security Improvement Act of 1990 required airports to install access control systems that included badges that could control access. "The TSA has added many new requirements over the last two decades, and the systems at Elmira Corning were disparate," recalls Beckman. "We needed a way to integrate and tie it all together."

Over the years, ELM had upgraded its previous system to stay current; but in 2010, officials were ready to make a bigger change and replace individual aging components with a new integrated system. The airport decided to overhaul everything, including access control and badging. ELM's previous system would have required costly custom programming to conform to new requirements such as threat assessments, Crook explains.

ELM personnel worked closely with the airport's consulting team to decide which solutions made the most sense. "Our goal was to design and procure state-of-the-art technology that complied with the TSA requirements," recalls Crook. "We needed to integrate all of the badging and access control systems and be able to easily obtain badge record reports. In addition, we wanted to add biometrics to the access control doors that access the secured area. Biometrics are not yet required by TSA, but we felt it was reasonable to expect that was coming. As long as we were investing in a new security system, we wanted to think forward."

Beckman stresses the importance of hiring a system designer with specific experience in airport security. "You don't want to purchase systems and components you really don't need and that aren't proven in an airport environment. You don't want to be bleeding edge," she advises. "At the end of the day, the airport staff have a day job, and they don't need to be bogged down trying to research and manage security system design by themselves."

Products vs. Personnel

ELM is a non-hub, county-owned airport that accommodates both commercial and general aviation traffic. Airfield tenants include

the corporate flight department for glass and ceramic manufacturer Corning Inc. Last July, ELM broke its all-time passenger record; and, unlike other airports in the area, officials expect that upward trend to continue.

With recent and future growth in mind, Crook wanted to meet the newest industry requirements but stay on budget and not overwhelm the airport's small staff with new security-related duties. Paul Benne, president of Sentinel Consulting, brainstormed with ELM officials and Beckman to find ways to achieve the airport's goals.



Paul Benne

"Part of our job as the security consultant and engineer is to analyze the best way to solve a problem with the best return on investment," says Benne. "We analyzed the problems, looked at various technologies, and figured out what the best fit would be for Elmira Corning."

The electronics deployed at ELM cost a fraction of what it would have cost the airport to hire additional staff members, he notes. "We



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look at what airports are faced with and create solutions that solve the security problem while addressing short- and long-term budget considerations.”

According to Benne, ELM’s integration of access control and virtual fencing may be a first. “It’s a new approach to combine these three technologies: thermal imaging, video surveillance and access control,” he notes. “We tied all three together to create an automated way of complying with the TSA guidelines.”

One of the team’s goals was to create a secure Aircraft Operations Area (AOA) that allows aircraft operators to access their equipment when it’s on the tarmac without triggering alarms. The airport, however, must maintain security when anyone leaves the fixed-base operator area and enters the AOA. “It’s a challenge, because it’s an enormously wide-open space,” Benne comments.

ELM’s consulting team recommended the airport-wide deployment of video cameras, the use of thermal imaging technology and specific intelligent surveillance products from SightLogix that are designed especially for outdoor use. The combination of equipment allows airplanes to cross the security line of demarcation without triggering an alarm; but people entering the AOA without presenting access control credentials at a local card reader will trip an alarm.

“The use of a virtual fence is very new technology for a commercial service airport,” says Beckman. “In many facilities,

tenants have access control systems in their own buildings, with a line of demarcation between the hangar and the AOA. There is a card reader inside the hangar, and they have to swipe it to go outside — [so] there is a limited range where the tenants can move around without triggering alarms. If an alarm is set off, the Operations team is alerted via their smartphones.”

System Specs

McFarland Johnson designed ELM’s new security system and managed its construction. In total, the airport has 60 cameras, eight of which create its virtual fence. The system includes a closed-circuit television system with a video wall that gives airport personnel a streamlined view of the entire facility.

“The cameras sense when someone walks onto the apron, the people in the Security Operations Center get a warning that the perimeter sensor has been set, and then the camera zooms in on it,” explains Chad Nixon, senior vice president at McFarland Johnson. “The system can easily distinguish people and animals from airplanes, based on size and thermal profile, which saves time.”



Chad Nixon

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Another challenge ELM faced was staffing the exit lane for passengers leaving the terminal. The team suggested an automated door with a sensor that determines the direction each passenger is traveling. If anyone stops and backs up or tries to re-enter, the sensor sets off an alarm, closes the door and alerts the Security Operations Center to a possible security violation.

“Though the TSA has responsibility for monitoring the exit lane, this system provides a cost-effective redundancy,” Benne notes.

“Smaller airports like Elmira Corning are lean, and employees wear several hats every day,” adds Nixon. “The team’s job was to find a solution that would maximize technology to run the security system for both airfield and terminal threats in order to most efficiently utilize the staff.”



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Nixon acknowledges that it's challenging for small and non-hub airports to provide meaningful security without breaking the bank for technology and personnel. "We looked at improving security through an identity management system to replace the traditional badging system," he explains. "Usually, airports the size of Elmira Corning have a keypad for entering a PIN or a proximity card. The airport now has both a smart card and biometric readers for two-step authentication and the ability to add a PIN for a third authentication if necessary."

To mitigate inside threats, the airport hired Quantum Secure, part of HID Global, which created the first Physical Identity and Access Management platform. Quantum's SAFE for Aviation Software Suite is designed for managing identities and provisioning access in physical security infrastructure. The company helps automate physical security system functions such as physical identity management, role-based access, self-service administration, identity/event correlation and reporting into a single Web-based interface.

"Airports often focus on passengers, which are outside threats," says Andy Kuchel, vice president of Business Development for Quantum. "We focus on the employees at the airport — those who are badged — to help the airport keep watch for malicious or mistakenly risky actions."

The company's approach is to manage access control infrastructure through employee credentialing. "We put intelligence on top of the access control system to ensure that anyone who gains access through a door meets the requirements to reach AOA and SIDA (Security Identification Display Area) areas," explains Kuchel.

Quantum's software is a compliance-based, enterprise-wide system that determines and demonstrates whether airport personnel have properly completed the credentialing process. The system also checks to ensure that employees are 100% in compliance at all times, adds Kuchel. The software monitors driver's license and badge expiration dates and notifies the company when it's time to renew. Because the system is fully automated, it minimizes personnel time, he explains.

"Elmira is a small airport with a limited budget," Kuchel relates. "When you have a small badging office, like Elmira's, things can get delayed and people get upset. Identity management is a way to help the airport comply with regulatory requirements and provide better security and customer service. There are always new hoops to jump through as we continue to close gaps that present threats to airports, and it puts pressure on small teams and limits the ability to comply quickly."



An updated TSA security directive (1542-04-08H) that increases the frequency of background checks for badged airport staff was announced in April. Previously, airports were only required to check criminal history records when hiring employees. With the new rule, they must perform background checks every two years.

"Now that there are more requirements inside the badging office, airports who have prepared with an identity management system — something like what Quantum Secure offers — will be in better shape," says Kristi Crase, director of vertical market development for the company. "We will minimize the impact of those kinds of changes for Elmira Corning."

She explains that the company's goal was to allow ELM staff to focus more on actual security and less on mundane elements of mandated security issues. Quantum ensures that airport badges are trustworthy, and identity management systems help reduce insider threats and augment airport security programs, adds Kuchel.

"The airport has to manage records from the time people are on-boarded to the time they are deactivated. That encompasses a number of procedures that are federally and locally driven," advises Crase. "Our company provides an overlay to what is in place at the airport. At Elmira Corning, we helped streamline their process and made it easier for them in a paperless environment."

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Manchester Regional Stresses Local Products at Main Restaurant

By Mike Schwanz



factsfigures

Project: New Restaurant/Bar
Location: Manchester-Boston Regional Airport
Focus: New England food & beer
Management Partner: HMSHost
Approx. 2014 Sales: \$5 million
Restaurant Traffic: 300 customers/day
Seating: 40 tables; 10 bar stools
Traffic at Carryout Kiosk: 100 customers/day
Key Benefits: Promote regional flavors & brands to travelers; increased concessions revenue

Some travelers rate airport food only a small step above in-flight airline food. Manchester-Boston Regional Airport (MHT) in New Hampshire is doing its best to change that perception by upgrading its main sit-down restaurant.

The Local@MHT, which opened in March 2014, serves regional specialties created with fresh ingredients from local farms and suppliers. It also features beers from several area breweries. The new restaurant/bar concept posted sales of nearly \$5 million in 2014, and revenue projections are even higher for this year.

"[The Local] gives passengers a chance to get a true taste of what this region has to offer," says Airport Director Mark Brewer. "Every element of



Mark Brewer

the restaurant, from the menu to the décor, is focused on celebrating New Hampshire and the surrounding areas."

House specialties include Maine Lobster Roll, Fish & Chips, and Dirty Mac-n-Cheese (braised beef brisket is what makes it dirty). The bar features regional beers such as New Hampshire's own Red Hook and Smuttynose; Magic Hat from Vermont; Maine's Shipyard; and Samuel Adams, which is brewed in Massachusetts. Although MHT is located in New Hampshire, the airport is only 50 miles north of Boston.

The combination restaurant/bar is beyond all TSA security checkpoints, centrally located within a five-minute walk from all of MHT's gates. The terminal concourse serves four major airlines: Southwest, USAirways/American, Delta and United. Last year, 2.1 million passengers traveled through MHT.

The new HMSHost concept grossed nearly \$5 million in 2014.

According to airport figures, about 300 people frequent The Local per day, and another 100 guests visit the affiliated Local Rustic Market — a kiosk that offers carryout versions of some items served at the restaurant.

The Local@MHT occupies the footprint of the airport's former main eatery, Milltowne Grille. Designers used an earthy New England color palette for the new restaurant's paint and finish materials; its décor features photos and posters that highlight local scenery and sites. Seating includes 40 tables and 10 bar stools.

Regional Emphasis, National Resources

The Local is managed by HMSHost, which runs restaurants in 114 airports around the world, including the 20 busiest in North America. The company developed the concept for The Local, staffs its bar and restaurant, manages daily operations and buys all ingredients, products and supplies.

As the establishment's name suggests, using local suppliers has been key. Three people from the HMSHost's nationwide procurement staff purchase supplies and ingredients, and Executive Chef Patrick Malone works closely with the firm's supply chain to ensure the quality and sustainability of local suppliers, explains Tyler Pitman, the company's director of restaurant development.

"Whenever possible, we use local suppliers to supply the ingredients we need for our regional menu," says Pitman. "In winter, it is a challenge to obtain locally grown produce, so we source ingredients from the Southeast, if necessary." Some items are purchased from wholesalers to lower costs and ensure fair value pricing, he adds.



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So far, restaurant and bar sales are roughly equal at the new concession.

In 2014, The Local generated nearly \$5 million in revenue, with receipts split roughly evenly between the food and drinks. “We consider this fine for an airport the size of MHT,” Pitman says. “I am optimistic our revenue will continue to grow in 2015, once frequent travelers become more familiar with The Local@MHT and what it offers.”

According to Brewer, the airport’s business arrangement with HMSHost has worked well for both parties. “Under our agreement, HMSHost pays us a percentage of gross sales, on a graduated scale. Therefore, their success is our success,” he explains.

The airport serves slightly more leisure travelers than business fliers (53% pleasure; 47% business); but both segments seem to be embracing The Local as a destination restaurant. Many rank it equal to or better than other restaurants near the airport, reports Brewer. “Most guests are delighted and amazed by the quality and variety of the menu, combined with the hometown Granite State hospitality of the staff,” he remarks.

“More customers seem to be arriving at the airport earlier than they normally would, so they can visit the restaurant before departing.”

According to Pitman, fully 85% of the restaurant’s business comes from departing passengers. “People returning to Manchester from a trip usually just want to get home,” he theorizes.

Riding the current industry trend of concession concepts that highlight local ingredients and food/beverage brands, HMSHost also manages a regionally focused restaurant in Terminal 1 of New York’s John F. Kennedy International Airport. Later this summer, it plans to open a similar concept at Albany International, also in New York.

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NEW ENGLAND CLAM CHOWDER cup 4.99 bowl 8.99

ICEBERG WEDGY 8.99
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mixed greens, smoked turkey, ham, cheddar cheese, red onions, tomatoes, avocado butter, charred corn & green onion vinaigrette

CAESAR SALAD 8.99
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GREEK SALAD 9.99
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STEAKBURGER 10.29
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PORTABELLO MUSHROOM SANDWICH 12.29
basil, portabello mushrooms, garlic aioli, creamed onions, provolone cheese, iceberg lettuce, tomato

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cheddar & provolone cheese, sliced tomato, smoked bacon, grilled sourdough

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SLIDERS

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roasted tomato sauce, shredded mozzarella, basil, shaved parmesan

TASTE OF THE BRONX 10.99
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roasted tomato sauce, Italian sausage, shredded mozzarella, shaved parmesan

BRO BRISKET 11.99
pulled beef brisket, gastrosauce, green onions, shredded mozzarella

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Left: HMSHost Corporate Chef and VP of Culinary Jeff Steelman sourcing local mushrooms from Burlington, Wisconsin's River Valley Ranch for the Pollo Marsala served at Tuscany at Chicago O'Hare International Airport (below).

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AWARDS



Terminal Renovation Helps Myrtle Beach Int'l Flex with Seasonal Traffic

By Jennifer Bradley

factsfigures

Project: Terminal Renovation

Location: Myrtle Beach (SC) Int'l Airport

Owner: Horry County

Total Cost: \$10.1 million

Concourse B Renovations: \$5.4 million

Exterior Renovations & Parking Lot: \$7.4 million

Design/Build Contractor: Southside Constructors

Architect: Pike-McFarland-Hall Assoc.

Shared-Use Technology: AirT

Products Used: Airport Operational Database, Resource Management System, PROPworks, Common-Use Self-Service Kiosks, Extended Airline System Environment

Seating: Vitra

Key Subcontractors:

A Step Above Tile

Billy's Plumbing

First Defense Fire Protection

JP Ross Skylights

Melton Electric

North Strand Mechanical

Premier Wall Systems

Peralta Millwork

 Year after year, Myrtle Beach International Airport (MYR) services half of its annual passenger volume in a short three-month span when tourists flock to area beaches and other Gulf attractions for spring and summer vacations. Thanks to new facilities and recent renovations, the South Carolina airport can expand during its busy season and contract when traffic subsides.

With a new 274,000-square-foot terminal opening two years ago and the airport's 9,500-foot runway receiving a total facelift in 2014-15, MYR's original terminal was just waiting for its turn to shine. Its time came in early May, when Concourse B, as the second floor of the old terminal is officially called, reopened for business after \$5.4 million of interior renovations.

The new design for Concourse B enhances the airport's ability to accommodate peak passenger volume, while saving ongoing

costs during the rest of the

year. Because the overall space can be subdivided into individual zones with roll-up doors, MYR can open and close the six gates in Concourse B as traffic dictates. "We are able to use a phased approach to bringing gates online," explains Jason Terrerri, assistant director of airports at MYR. "We can actually match our available gates to a flight schedule so the demand is there to support the cost."



Jason Terrerri

The new flexibility added with the recent changes helps MYR make the most of its seasonal market.

Time to Change

After more than seven years of deliberation by city and county officials, the city of Myrtle Beach gave the airport's owner, Horry

County, one year to decide on a strategy for MYR's old terminal. Officials stressed that a well-laid plan for the existing space had to be in place when the airport's new terminal opened.

The Concourse B renovation actually includes three projects — an organizational structure that caused confusion, notes Terreri. Interior renovations completed in May cost \$5.4 million, but total cost for the trio is expected to be \$10.1 million. The two projects that account for the remaining \$4.7 million of the total projected budget are still in the works. A new on-site parking lot is scheduled for completion this September; and the renovation of the terminal's exterior façade is currently deferred while planners decide about future use of the previous ticketing and baggage claim areas.

Although interior renovations for Concourse B cost three times more than originally expected, the project was completed with reserve funds and a portion of the \$4.9 million budget surplus from construction of the new terminal (Concourse A). Despite the budget overrun for Concourse B renovations, airline rates and charges were not affected by the renovation, stresses Terreri. Holding tenant costs steady is particularly important at the seasonally driven airport, he notes.

"When we built the new terminal, it was always part of the plan to renovate the old terminal at some point," Terreri notes. "We were waiting for that trigger of: When do we need the extra gates, and when do we spend that money?"

The trigger was tripped in November 2014, when one of MYR's carriers announced service to five new markets, and another airline added one more destination to its lineup. The airport also realized its busy season would be more demanding in 2015, with flights beginning earlier and increased passenger volume, due to carriers flying larger aircraft. "We knew we needed to open the extra gates," Terreri recalls.

Zone Defense

Tim Laframboise, principal at Southside Constructors and project manager for the design/build Concourse B program, notes that the seasonal approach at MYR makes the renovation project unique.

Each of the three zones in the renovated terminal has its own power and heating, venting and air conditioning controls. "The best way to control their operating cost was to segregate this part from the rest of the airport," says Laframboise.

Essentially, the airport can shut down individual zones/areas when they are no longer needed. "Off season, we don't have to heat it, cool it, staff it, and security doesn't have to patrol it," adds Terreri.

Zones can also be pressed into service as traffic increases. For example: On May 9, the airport opened two of its additional gates in Zone 2 of Concourse B, which triggered additional concessions and restroom support as well.

Terreri reports that concessionaires appreciate MYR's zoned approach, because they don't have to staff some locations year-round and can provide extra employees only as demand dictates. As of early June, three of the six gates in Concourse B hadn't been used yet this season; but the airport can open an additional zone in just five minutes if airside volume increases due to irregular operations or other gates are taken out of operation.

"We have the flexibility to move people around," says Terreri. "Also, as a full common-use airport, we can put any airline on any gate."

In early June, MYR's arriving traffic was equally split between concourses A and B, which has decreased crowding and enhanced customer experience in both areas, Terreri reports. It's also helping spread out the revenue base for concessionaires, creating yet another selling point for that group of airport tenants.

After the summertime visitors return home, MYR's new terminal will once again take center stage by servicing the airport's non-seasonal guests. While segregating the terminals was key, designers also had to unify the appearance of the two structures and physically connect them with a hallway, notes Laframboise. "Capital cost is one thing, but the operational cost is ongoing; and with this, it can be managed effectively," he remarks.

Timing & Teamwork

After the airport established its preliminary scope of work for the project, Southside was hired in December 2014 and began demolition/construction the second week of January 2015. While waiting for other approvals, prep work orders were released to keep schedules on track, Laframboise explains. Crews also removed existing finish materials, stairs and escalators, and filled in a portion of floor between the original first and second floors.

The overriding goal was to finish renovations before the spring travel season began — a task that required crews to work 14 to 16 hours



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per day, seven days per week, for more than three months to complete the project on time.

“The project flowed once we got it started,” recalls Laframboise. “The guys were really dedicated, came in and worked hard to make sure we met that date. Everyone just knew they were up against some long hours and a lot of overtime.”

He credits the relationship between the airport and other project team members for the success of the project. Good camaraderie led to quick decisions and a true collaborative effort, he explains.

Open communication is a theme that's consistently emphasized on Southside projects, he adds. “When you're moving on a fast-track project like the one at MYR, the last thing there is opportunity for is to re-do work,” he explains. “Communication helps everyone understand what the expectations are up front so we can carry that out in the field.”

Design Details

The renovations in Concourse B echo the design details of Concourse A through seating, carpet, ceramic tile and other finish materials. New work stations with high counters and chairs offer a modern look, and 85 new charging stations meet growing demand for more places to work and plug in devices while customers wait for flights, says Laframboise.

Re-designing the existing terminal also presented MYR with a valuable opportunity to address sustainability issues, adds Terreri. All lights fixtures were switched to full LED, and the airport's new zoned approach drastically decreases operational costs, he details.

The existing 3,200-square-foot skylight was also a substantial element, notes Terreri. MYR officials wanted to save the skylight because of its prevailing presence at the airport over the years, but also because it brings natural

light into the terminal's main gathering area. Ultimately, the skylight was retrofitted with new gaskets and seals to make it more energy efficient, and it remains a focal point.

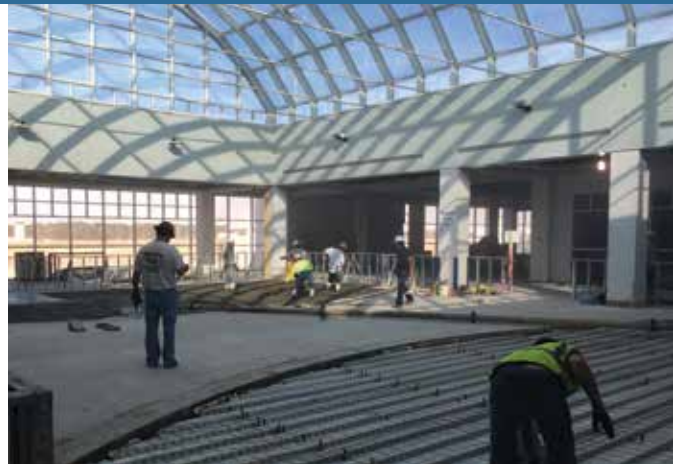
The extension of electronic data services from the new terminal to Concourse B was one of the project's significant, but unseen, elements. The airport selected shared-use technology products from AirIT for operational, passenger processing and business/revenue management systems. MYR also uses the company's common-use self-service kiosks.

The company's suite of products provides flexibility for both airlines and passengers, notes AirIT President and Chief Operating Officer Chris Keller. No matter what gate an airline is stationed at, the kiosks allow airline employees to use the same hardware and software, Keller explains. This capability also extends to the ticketing counters.



Chris Keller

"The renovation of the old terminal allowed MYR to leverage that technology to accommodate efficiencies during construction and after," says Keller. MYR was able to extend the technology to the new area with little assistance from AirIT, thanks to previous training airport personnel received during initial implementation of the systems in Concourse A, he adds.



With renovations complete and summer in full swing, arriving and departing passengers are enjoying both of the MYR's terminals — the new and newly renovated. Soon, the seasons will shift again, and so will the airport's traffic. But this year, the airport has new systems and structures in place that will mimic its market's seasonal fluctuations. ✈️

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Logan Int'l Heeds Warnings & Prepares for Potential Flooding

By Victoria Soukup



The last few times Boston got clobbered by a hurricane, damage was mitigated because the associated storm surge struck the coast at low tide. But when Hurricane Sandy's powerful surge pounded New York and New Jersey in 2012, officials at Boston's Logan International Airport (BOS) realized they might not always be so lucky. As then-mayor Thomas Menino pointed out, Sandy missed high tide in Boston by just five hours.

Massport, the authority that governs the state's public airports and seaports, was inspired to take action. Subsequent analysis identified flooding from another major weather event like Sandy as *the* most serious risk facing Boston's primary airport; and Massport consequently set aside \$9 million to help BOS prepare for potential future flooding. The funds are to be spent over the next five years and focused on systems to help BOS prevent and recover from serious flooding.

Massport CEO Thomas Glynn puts the \$9 million "resiliency budget" in perspective by noting that it will cost less than 1% of the airport's annual budget over each of the next five years. He further notes that the airport's board of directors is on board with the investments. "When Hurricane Sandy struck,



Thomas Glynn

we saw what New York and New Jersey went through," Glynn explains. "We wanted to be certain we were prepared because, in general, Boston has worse weather than New York or New Jersey."

BOS also sits on Boston Harbor, surrounded by water on three sides, which further magnifies its risk for serious damage from flooding.

"Massport is trying to be proactive and ahead of the curve," explains Robbin Peach, manager of the authority's formal resiliency program. "We had a wakeup call after Sandy. We can't continue to plan on good luck that future storms will hit at low tide. It's much more economically viable to prevent a problem than try to repair it."



Robbin Peach

Threat Assessment & Response

Two major reports, completed by two separate consultants in the past year, are helping guide Massport's efforts: a Disaster and Infrastructure Resiliency Plan (DIRP) by Kleinfelder and a Sustainability Management Plan by Vanasse Hangen Brustlin.

The DIRP study, which cost about \$500,000 and was completed in October, focuses on the airport's resiliency — its ability to endure



factsfigures

- Project:** Resiliency Upgrades
- Location:** Logan Int'l Airport (Boston)
- Primary Goals:** Protect airport from high water due to weather-related flooding & rising sea level
- Strategy:** Identify & prioritize key assets to protect during & after serious flooding
- Disaster & Infrastructure Resiliency Plan:** \$500,000
- Consultant:** Kleinfelder
- Flood Elevation Model Program:** SLOSH (Sea, Lake & Overland Surges from Hurricanes)
- Source:** National Oceanic & Atmospheric Admin.
- Airport Funds Earmarked for Resiliency Upgrades:** \$9 million over next 5 yrs
- Sustainability Management Plan:** \$1 million
- Funding:** 75% FAA; 25% Massport
- Consultant:** Vanasse Hangen Brustlin

flooding due to storm surges and climate change. The Sustainability Management Plan addresses six primary ecological and operational issues: climate change, air quality, noise, water quality, passenger experience and community/social issues. It cost roughly \$1 million and qualified for 75% funding from the FAA.

Massport also used THIRA, an emergency preparedness model from the U.S. Department of Homeland Security, during its strategic planning. The THIRA review focused on three types of disasters: natural (earthquakes, tsunamis, floods and hurricanes); technological (data loss) and manmade (sabotage and terrorism). For BOS, hurricanes and floods were deemed the most likely and damaging risk, notes Peach.

Massport had already hired Kleinfelder for disaster and resiliency planning after Boston's close call with Superstorm Sandy. The THIRA process then added in-depth analysis on an asset-specific basis. Officials focused on critical functionality, employee safety, equipment cost and communications when prioritizing a list of key assets that need to be protected during a disaster, Peach details.

Kleinfelder's resiliency plan emphasized understanding climate risks based on potential storm surges and climate change, explains Lisa C. Dickson, the company's vice president of sustainability.



Computer modeling from NOAA maps predicted flooding from a Category 3 hurricane.



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“We identified the critical assets that Massport needed for both barebones and partial functionality,” Dickson explains. “We took climate change impacts and overlaid them with critical assets and determined the key vulnerabilities throughout the airport with emphasis on sea level rise and storm surge.”



Lisa C. Dickson

Using advanced modeling from the National Oceanic and Atmospheric Administration (NOAA), consultants designed flood elevation specifications to protect existing infrastructure from a Category 2 hurricane hitting at Mean High Water. They also designed similar specifications to protect new construction from the direct hit of a Category 3 hurricane at Mean High Water. Ironically, the modeling program is referred to as SLOSH, short for Sea, Lake and Overland Surges from Hurricanes.

“The SLOSH model was based on a perfect storm,” says Dickson. “If everything lined up, what would be the maximum flooding extent?”

Massport also uses a probability model called ADCIRC to inform its decision-making, adds Peach.

BOS’ response strategy is divided into three categories:

- ensuring there is a place to land military and emergency aircraft;

- resuming and recovering basic operations; and
- returning assets to business as usual.

The structure will help airport officials triage their responses and ensure that their primary focus is on restoring critical operational needs, explains Peach. “In a major weather event or sea level rise, we won’t be worried about getting the terminals back up and running within the first two hours,” she elaborates. “But we would be interested in making sure the navigational aids and substations that provide critical electricity are up and running.”

Glynn acknowledges the responsibilities that BOS bears as an emergency facility. “Getting the airport open — or keeping it open — is a very high priority in emergency preparedness,” he remarks. “If there is an event like Hurricane Sandy, you want to bring in the Red Cross and the National Guard. They’re going to want to fly in.”

Bricks & Mortar

Massport’s \$9 million flooding prevention and recovery budget is earmarked for capital improvements over the next five years. Initial resiliency projects include installing temporary flood barriers, watertight doors and waterproof fencing to protect the highest priority critical assets. After permanent barriers have been

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designed and installed, crews will transfer the temporary barriers to protect assets categorized at the next level of priority.

Although a technology disaster was deemed less likely than a natural disaster, officials realize a major data loss would hit the airport hard. Some of BOS' information storage systems have consequently been co-located offsite – meaning that data remains onsite but is also backed up elsewhere.



Carol A. Lurie

The Sustainability Management Plan from Vanasse Hangen Brustlin is designed to continue to assist the airport as it makes facility, airfield and roadway improvements in coming years. “As new projects move forward, airport officials can think about how buildings and facilities need to be designed so they are more resilient — such as putting critical infrastructures on a roof,” explains Carol A. Lurie, senior planner/principal with the firm.

Not everything can be “flood-proofed,” she advises. “Some facilities, such as the airfield, are going to flood. But when the floodwaters recede, what condition will everything be in? The key is to understand what can be protected and what can't be protected, and making decisions where the best investments need to go.”

Kleinfelder's DIRP study assisted the process by rendering the uncertainty of weather into literal design applications — something that is still quite nuanced in the engineering industry, notes Dickson. “We actually translated what the ‘new normal’ may look like with respect to design and planning consideration,” she explains. “The tricky part is reinventing how we approach design with the recognition that we don't have a database of hundreds of years to pull from.”

A “10-year storm” in 2030 is likely to be very different from previous superstorms due to climate change, she notes. “We were able to work as an interdisciplinary team and translate that science into engineering design criteria that incorporated climate change,” Dickson says.

Ensuring business continuity played a major role in all aspects of DIRP. “There is as much emphasis on what we can do to avoid impacts as there is on rapid recovery,” she comments. “And that was the philosophy that guided the study.”

Resiliency & Sustainability


Components of Massport's Sustainability Management Plan include specific goals for greenhouse gas reduction, decreasing energy consumption, water conservation and noise abatement. BOS' current comprehensive energy-efficiency program, rooftop solar panel installations and several facilities designed and constructed to U.S. Green Building Council standards demonstrate previous performance in such areas.

Lurie applauds BOS officials for taking action on its resiliency initiatives: “This is among the first studies where an airport has actually set aside a budget to plan proactively for resiliency, where there is a capital improvement program around resiliency that is integrated into all future considerations.” She also appreciates Massport's strategy to collaborate with research entities and other transportation and public entities.

Peach notes that many airports tend to assign responsibility for resiliency issues to different departments; but BOS takes a more focused, centralized approach. “We don't know of any other airport in the nation that has been this progressive in actually appointing a full-time person to deal with resiliency,” she says. “While resiliency is different from sustainability, you can't really be sustainable without being resilient. And there's a real agreement among the airport leadership that we're on the right track.”

Those who question the need for weather-related resiliency planning or doubt the potential effects of climate instability don't need to rewind very far to recall Boston's punishing 2014-2015 winter. The record-breaking 110 inches of snow that fell — more than twice the city's usual average — reinforces the need for Massport to have a solid resiliency strategy, says Glynn.

“It wouldn't surprise us if in the next 15 years we experience a significant hurricane,” he remarks.

If/when another “big one” occurs, recent changes have surely made BOS better prepared to deal with Sandy's successor. 

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Small Businesses Take on Big Projects at San Diego Int'l

By Nicole Nelson



factsfigures

Project: Facilitate Local & Small Business Participation

Location: San Diego Int'l Airport

Program Administration: Small Business Development Dept.

Strategy: Create programs to increase inclusiveness vs. focusing on filling quotas

Personnel: 3 staff members dedicated to inclusion initiatives; support throughout the organization

Key Result: Approx. \$738 million of Green Build contracts were awarded to local businesses (90% of total value of contracts)



When Thella BOWENS transitioned operation of San Diego International Airport (SAN) from the Port of San Diego to the San Diego County Regional Airport Authority a dozen years ago, one of her goals was to create a “world-class organization.” Including all types and sizes of businesses in the organization’s massive infrastructure projects and everyday business is one of the ways SAN continues to work toward Bowen’s sky-high goal.



Thella BOWENS

As president and chief executive officer of the airport authority, BOWENS initiated a far-reaching search for best practices among public agencies and private businesses – transportation and otherwise. “One of the things that struck me as a leader was that really high-performing organizations had a very inclusive environment,” she reflects. “Inclusiveness doesn’t just [apply to] the

people who work for you, or a few contractors. It [applies to] everything you do.”

Creating an environment where everyone feels like they have a fair opportunity to succeed is now a guiding principle, with programs in place to provide structure to SAN’s efforts.

Like other governing entities within the industry, the airport authority established for SAN in 2003 is required to meet Department of Transportation standards for inclusiveness, as listed in Code of Federal Regulation Title 49, Part 23: *Participation of Disadvantaged Business Enterprise in Airport Concessions*. But BOWENS’ vision is to exceed compliance boundaries rather than meet them. She wants to build capacity within the region by improving the airport’s support of the local, small business-based economy.

“You do things because they are the right thing to do,” BOWENS explains. “My personal commitment was to have an inclusive

Classes for the Turner School of Construction Management are now held at the airport.



environment that I think is evident in every aspect of our business. It was just a natural evolution for us.”

SAN's top-down philosophy includes a board policy that commits the airport authority to providing opportunities for all levels of companies and people. It also includes supportive programs to encourage greater participation among small local businesses. Bowens credits the airport's current small business program to Bob Silvas, who formerly served as the authority's director of Small Business Development and is now an independent consultant. Individual elements of the program run the gamut — from a bond financing initiative that helps small businesses meet bonding criteria to training and education programs that teach small businesses how to win and conduct business at a large airport.



Bob Silvas

Simplification

A number of tools and techniques helped SAN shift the focus from meeting regulatory requirements to removing barriers for companies and individuals interested in working at or for the airport. Scaling down SAN's ready service contract documentation to a five-page application was an important tipping point in the cultural change, notes Silvas. Before the application was condensed, only three small businesses submitted proposals for specialty trade contracts; after the changes, the airport received more than 20 submissions from small business contractors.

The net result was equally dramatic: Of the \$7 million in task authorizations awarded to contractors, 95% went to local businesses and 75% to small businesses. More importantly to SAN officials and program leaders, the airport

authority's Small Business Development Department evolved from enforcing compliance to offering value-added resources.

Education

Beyond bid-related programs, Silvas developed an array of educational products for the airport authority. Online bidding tutorials accessed through the authority's website have been instrumental in directing small and large companies through the airport's proposal process, he comments.

Traditional classroom learning was also added, via a series of monthly workshops in conjunction with Turner Construction's School of Construction Management. In 2007, Silvas approached Turner Community Affairs Director Vera Howell about the prospect of moving the night school to the airport from the company's San Diego offices, where classes had been held for the past decade.

Howell recalls the airport authority, represented by Silvas, being “kind of blown away” by the free classes Turner has offered to small businesses in the construction industry since 1969. “The airport authority was more than happy to provide the facilities in partnership,” she relates, noting that Bowens has personally attended several of the classes that are designed to teach small subcontractor businesses how to work on larger prime projects.

“I really understood the community appreciation of the school when Steve Howell, who runs the Turner School with me, focused heavily on the personalized training and coaching aspect for attendees.”

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Classes at the airport are taught by Turner management personnel, community leaders and SAN staff. Turner Senior Vice President Rick Bach, for instance, teaches a contract class.

After Turner began holding classes at the airport, a long waiting list formed and the company increased its annual class schedule to twice yearly, with fall and spring sessions. Of 700 Turner School graduates fully 600 were educated at the SAN facility.

Howell notes that the educational program's success has translated into jobs for Turner School alumni. At least 10 companies that graduated from the program are working as subcontractors on SAN's \$820 million Green Build Terminal 2 Expansion.

Relations

Business training and employment achievements aside, Silvas is more widely known for building inroads for small businesses by developing internal and external relationships.

Within the authority, Silvas worked with the Facilities Department to break large projects down into the smallest components possible. This practice helps ensure that small businesses have the capacity to bid on work at the airport, and was used extensively during SAN's Green Build and its \$316 million dollar Rental Car Center project.

"Small businesses may be able to bid on \$1 million to \$3 million packages, whereas they do not have the capacity to bid on a larger project," Silvas explains. "As a team, we unbundled packages when possible into smaller components so that small businesses really did get an opportunity to compete equitably. It has paid off, as those businesses have had an impact in a large part of those projects here at the airport."

All in, 90% of the total dollar value of Green Build contracts went to local San Diego businesses. So far, the ongoing Rental Car Center program has posted \$166 million of its contracts to local businesses, with \$62 million awarded to small businesses.

"Everything that we have done in terms of project delivery really speaks loudly to how those programs work," Bowens says, noting that small or local businesses log nearly three of every four hours worked on the current Rental Car Center project. Nearly half of all hours worked is performed by under-

represented ethnic groups including African Americans, Hispanics, Asians and Native Americans. "It is the contracting, it is the employment, it is everything that really creates a high quality of life for everyone in San Diego," she adds.

Since Silvas retired from the airport authority two years ago, a small team of employees has run the various inclusion initiatives he began. Meanwhile, SAN continues to search for a long-term successor to direct its bustling small business development program.

"Our commitment goes beyond the actual staffing of the people who design the program, monitor the program and follow up on all the data," Bowens advises.

The Facilities Development Group supports the airport's three-person Small Business Development Department by identifying opportunities that are well suited for small businesses. It also helps break large projects into smaller components and locates specific trades in the greater San Diego area that could benefit from various airport projects.

The small business group also collaborates with marketing and public relations personnel to organize and advertise events that encourage small businesses to learn about and get involved in airport projects. To "close the loop" at the end of projects, the group works with the Finance Department to ensure that small and local businesses that have completed their contracts get paid in a timely manner.

"People want jobs and opportunities that we have provided though our small business program, and we continue to work to find ways to make it better," Bowens reflects. "Our whole organization gets involved in a truly inclusive process." ✈️



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Runway Upgrades Raise Airfield Standards & Facilitate Nighttime Operations at South Bimini Airport

By Dan Vnuk

factsfigures

Project: Runway Improvements

Location: South Bimini Airport (Bahama Islands)

Project Management:
Airport Maintenance Services Ltd.

Local Contractor: Bahamas Striping

Primary Elements: Runway extension; solar LED airfield lighting; precision approach path indicator; windcones; automated weather observing system

Airfield Lighting Designer:
Aviation Renewables Corp.

LED Precision Approach Path Indicator System:
Eaton Crouse-Hinds Airport Lighting Products

LED Solar Windcone: P. Wedge Windsocks

LED Hold Position & Warning Lights:
JSF Technologies

Solar Runway, Threshold, Approach & Taxiway Lighting: Avlite Systems

Retroreflective Signs: AGM Signs

Automated Weather Observing System:
All Weather Products

Carriers: Bahamasair, Silver Airways, Western Air and Flamingo Air

A series of airfield improvements at South Bimini Airport (YBS) is making it easier for travelers to get to Bimini, the tiny pair of Bahaman islands located just 50 miles off the east coast of Florida. That's good news for beachgoers, sport fishermen and any other North or South American travelers who want to escape to a tropical paradise without spending a lot of time getting there.

It's also good news for Bimini's overall economy and the local workers who were employed during the multimillion-dollar construction effort. During the days of Prohibition, Bimini was a popular spot for speakeasies and liquor stores, with rumrunners stashing their cash in its numerous cays. These days, it's attracting a different kind of business. Genting Group, a Malaysian conglomerate, began investing in the islands with the development of a 750-acre beachfront resort and casino on North Bimini, and then opened a similar property adjacent to South Bimini International Airport (YBS) — both under the Resorts World brand.

Genting's South Bimini property boasts the closest offshore casino to the United States, and was mainly serviced by high-speed boat service from Miami when it opened in June 2013. With a daytime sea route in place, the resort owners soon turned their attention to facilitating 24-hour access to and from the island. YBS had daytime flight in place with Bahamasair, Silver Airways, Western Air and Flamingo Air; but its main 5,400-foot asphalt runway could not support nighttime traffic.

The solution involved a two-phase initiative that included a 900-foot runway extension, solar LED airfield lighting and other support elements such as a precision path indicator system, windcones and an automated weather observing system.

Local Development

Airport Maintenance Services Limited managed the multi-project effort, with Bahaman resident Atario Mitchell at the helm as president. "I am pleased and thankful that Resorts World and the Genting Group gave me the opportunity," says Mitchell.

He also appreciates the larger impact the YBS projects have had on the local economy and population. "My company and I were able to provide employment for local Biminities," he explains. "I remember feeling proud when a member of the crew expressed his gratitude to us for providing him this opportunity, because it allowed him to provide for his family. And this, ultimately, is what my company is passionate about."

During the first phase of the project, workers installed a new centerline, aiming points, threshold bars and holding/taxiway markings to improve overall safety at the airfield. Ten local Biminities were part of the crews and consequently received special training in tarmac cleaning and patching.

With Airport Maintenance Services finishing the first phase on time and on budget, Mitchell's company and subcontractors such as Bahamas Striping continued to earn subsequent projects. "Sometimes the crew worked almost 16 hours to complete a phase of the job in order to meet the deadline," he recalls. "But when the second stage of the airport runway construction commenced, the same crew was rehired with some additional staff. More Bahamian men need to be given opportunities to learn a trade and to become contributing citizens."

Jermaine Henfield is one local resident who received that chance. "I did not have a job for a long period of time, and the project helped me to provide for my kids and give them a good Christmas," says Henfield. "It's also about the bigger picture for me. Bimini needs to have tourists coming to the island all throughout the year, and we now have the runway to accommodate the airlines."

Lighting the Way, Off the Grid

The second phase of YBS' airfield upgrade included a 900-foot runway extension, but its main component was updating the airfield's lighting. Canadian-based ARC Aviation Renewables Corp. designed and supervised the installation of YBS' new solar LED system. Company officials note that the airfield lighting was operational in less than three weeks, and it cost a fraction of a conventional system. A team from Aviation Renewables traveled to South Bimini to provide guidance during installation, product training and commissioning. Because the system uses multiple products and components from several different manufacturers, proper installation, training and testing were particularly important to ensure long-term effectiveness.

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A new automated weather observing system helps keep pilots informed about operating conditions.



“The versatile airfield light, monitored by an advanced radio frequency control system, forms the cornerstone of the airfield lighting system,” explains Allister Wilmott, the company’s president. “A redundant network propagates the control signal to every light on the airfield and has the added ability to be incorporated into our Solar Series line of solar LED lighting products. As a result, the entire airfield lighting system can be controlled from a single handheld controller and customized to the customer’s individual needs.”

A solar precision approach path indicator (PAPI) was installed at both ends of the runway to provide pilots with visual approach slope guidance. “The Solar Series is the most installed LED PAPI on the market that meets both International Civil Aviation Organization and Federal Aviation Authority photometrics,” advises Wilmott. “The PAPI is powered by a frangible MAPPS: (Modular Autonomous Photovoltaic Power Supply).”

The MAPPS is completely off-grid, and designed to provide the airfield with more than seven days of autonomy. With proper use, the system shouldn’t require any maintenance for up to five years, when a simple and cost-effective battery replacement will keep the system healthy for another five years, notes Wilmott. The company’s MAPPS was an especially good fit for YBS because the airport’s remote location makes electricity extremely expensive to purchase and skilled labor to perform maintenance extremely difficult to find, Wilmott adds.

Windcones from P. Wedge Windssocks were installed at both ends of the runway to provide wind direction indications to pilots. Like the other new airfield elements, they are internally illuminated by solar power. “The radio control system is incorporated into the windcone, ensuring that it will operate in unison with the other lights on the airfield,” notes Wilmott. The self-contained units are the most rugged brand of windcones in the industry and have operated reliably on every continent for more than 50 years, he adds.

Solar Series LED Apron Lights were installed to facilitate aircraft handling and passenger movement at the airport, which is just 10 feet above sea level. Aviation Renewables notes that the lights are a first in the industry, because they provide complete off-grid solar operation for civilian aircraft facilities. YBS’ new apron lights can be turned on or off during daytime or nighttime operations via radio control and are designed to withstand hurricane conditions and provide a minimum autonomy of five days continuous operation.



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Aviation Renewables also added an automated weather observing system (AWOS) to support non-precision instrument flight approaches and flight planning. The AWOS system is designed and installed to be completely autonomous, and includes sensors and reporting systems that are compliant with International Civil Aviation Organization standards. Wireless signal transmission from the sensor site to the host computer in the terminal building simplified the installation and allows pilots and flight planners to access real-time local weather conditions via the Web.

Heavier Traffic?

Since completing the recent series of airfield improvements, YBS is able to accommodate more sophisticated flight operations, including nighttime service. Local officials now rank it as the second most pivotal airport in all of the Bahama Islands. Nassau's Lynden Pindling International Airport, which is the main international gateway to the islands and the fourth busiest airport in the Caribbean, is considered the "top" airport.

Resorts World Bimini, in turn, is building a 307-room luxury hotel on North Bimini next to its existing resort. The final phase of construction is scheduled to begin this summer and will add a restaurant, beach club, craft market and various facilities for water sports.

With even more reasons for travelers to visit Bimini, YBS will likely have more passenger volume to accommodate in 2015 and coming years. Perhaps terminal and landside improvements will be the next project fueling the local economy. ✈️



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Daytona Beach Int'l Hits Mother Lode When Mining Zip Code Data

By Robert Nordstrom



factsfigures

Project: Catchment Area Research

Location: Daytona Beach (FL) Int'l Airport

Timeline: 2009 – present

Strategy: Touchscreen kiosk near TSA checkpoint collects zip code data from passengers; airport receives summaries & analysis of data via monthly reports

Software: GetZip

Software Developer: Adastra Technologies

Passenger Response Rate: 10% - 20%

Key Benefit: Airport uses data to tailor advertising campaigns & as background for air service development strategies

Commercial airports certainly know where their travelers are going; but many don't know where they are coming from. Daytona Beach International Airport (DAB) in Florida has been tracking such information for about six years, and officials enjoy the rewards that come with being in the know: more targeted advertising campaigns and stronger appeals for additional airline service.

Steve Cooke, director of business development at DAB, was inspired to define the airport's catchment area more precisely after the Volusia County manager offhandedly asked him where most of the airport's passengers live. "That question got me thinking," Cooke reflects.



Steve Cooke

It also prompted him to consider the various shortcomings of the Department of Transportation (DOT) data the airport used to rely on. "It's at least six months old and drawn from the 10% sample airlines are required to report," he explains. The DOT data simply duplicates information the airport already knows from ticket sale information, Cooke elaborates. "You can extrapolate from these data [to determine daily passenger volume]

from a particular city and then try to determine how that changes over time. But it doesn't really tell you where these passengers are from."

Cooke recognized that knowing travelers' zip codes would help tremendously; but he didn't know how to capture them. Enter Dave Byers, Ph.D., president of Quadrex Aviation. Quadrex specializes in facility development, financial analysis and strategic planning for airports, but Byers also dabbles in software development and is a partner in Adastra Technologies, a software development company. When Cooke told Byers about DAB's desire to know where its passengers come from, Byers suggested using a touchscreen kiosk that would ask travelers a single question: What is your zip code?

Byers subsequently developed a software program that obtains and analyzes zip code information. DAB, in turn, built a touchscreen kiosk and placed it near the entry of its TSA security checkpoints for maximum exposure with passengers. By running the prototype software, DAB essentially became Adastra's beta site.

"The system is totally passive and anonymous," Cooke explains. "We have signage, but the traveler decides whether he

or she wishes to enter the information.” Ultimately, 10% to 20% of DAB’s departing travelers *do* choose to share their zip code with the airport, he reports.

“It’s a very reliable data source that reinforces itself continuously and is not a one-shot photo in time, which is the case with most survey methods,” relates Cooke. “I can compare and contrast markets on almost a real-time basis, then compare that information with other times of the year. We can see where our growth opportunities are as well as see where they are receding.”

Data Volume Drives Value

The system, which was eventually named GetZip, is now in its third generation; and DAB has been running it for six years. Byers performs the data analysis and provides the airport with tabular reports and heat maps that indicate concentrations of travelers by zip code locations.

Given the volume of passengers that provide their zip codes — approximately 40,000 per year — Byers is confident about the value of the airport’s data. “The information is ironclad from a statistical perspective,” he explains. “It eliminates randomness.”

The strength of the data also increases exponentially over time, he adds.

Byers characterizes GetZip software as largely “bulletproof” and notes that it has required little attention from DAB personnel. The airport set up the kiosk, let the program run and learned valuable demographic information about its passenger base, he summarizes.

DAB officials have found the report summaries to be interesting and useful. “We couldn’t get that information from other data,” says Cooke. “Now I can say with certainty that Ormond Beach, which is north of Daytona, is our strongest generator of traffic. I can tell you Port Orange, which is to our south, is second; Daytona Beach third and Palm Coast fourth.”

The airport uses this information to improve its local advertising efforts by tailoring messages to specific geographic locales and directing advertising dollars to areas that are likely to generate the most traffic. “You can’t do that as well with DOT data,” Cooke explains.

Byers positions the automated system as a cost-effective way for an airport to identify and define its catchment area — especially when compared to hiring a consultant to gather and analyze similar data. The software also constantly validates its findings, he adds.

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The zip code collection kiosk is positioned just outside the TSA checkpoint to maximize response.

Show & Tell

DAB's data collection efforts have really paid off regarding air service development. In February 2016, JetBlue Airlines will begin offering direct service between DAB and New York's John F. Kennedy International Airport. Although the new service agreement was solidified after business and political leaders offered JetBlue a \$2.3 million incentive package, Cooke used zip code data about the volume of New Yorkers traveling to Daytona during earlier discussions with JetBlue officials.

"We worked for years trying to attract JetBlue here," he recalls. "(The zip code data) was an important part of our marketing efforts." By subdividing its traffic data, DAB was able to demonstrate that traffic at the Florida airport doesn't drop in summer as dramatically as many carriers assume. "While seasonality is a factor, it's not a huge factor," says Cooke. "We can use our zip code data to show that."

Even though carriers have their own sources of market data, Cooke considers it important to present the airport's zip code information as well. "We have to be proactive in identifying opportunities for air service," he explains, noting that DAB is a non-hub facility with 630,000 annual passengers a year, while Orlando International, which serves 37 million passengers a year, is only about one hour away by car.

"If our data indicate a viable market an airline should consider serving, we share that information with them. But the opportunities must be viable," Cooke emphasizes. "You never want to present an airline with an air service opportunity that isn't viable, because you'd lose all credibility. The zip code data gives us information we can stand behind when presenting our case."

Improving the System

For the first five years, DAB only gathered zip code information. With just six touches on the screen — five for the individual zip code digits and one to enter the data — the airport captured where travelers were from, complete with individual time and date stamps.

Then, Byers reflected that the sixth "enter touch" was a wasted effort. Now, the kiosk asks one additional question, and a passenger's answer acts as the data entry touch. The airport provides a list of about 10 questions, and the program cycles through them systematically, doling out different questions to subsequent passengers.

Questions include:

Why are you traveling today?

- (1) Personal
- (2) Business
- (3) N/A

and

Did you use airport parking today?

- (1) Yes (Long-term)
- (2) Yes (Short-term)
- (3) No

Airport personnel can tweak the list of questions depending on what they want to know. During the Daytona 500 race, for instance, the airport asked passengers if they had flown in for the race. Although results confirmed that most fans still drive to the annual NASCAR event, the airport learned that more people fly into DAB to attend the race than previously assumed.

“We’ve also learned that we have more business travelers using the airport than we thought,” reports Cooks. “We’re constantly trying to think of new questions to ask. It helps us define our market. We can share information with airlines to help them with their decision-making process.”


The airport may also change the signage it uses to ask passengers to enter their zip codes and have documents ready for TSA agents. “We might use a race car driver or lifeguard to present the information,” says Cooke, noting that a more lighthearted approach could help reduce the stress some travelers feel while waiting to move through security checkpoints.

In addition, the airport is considering installing a printer that would reward each traveler using the kiosk with a coupon. Passengers would be able to redeem coupons post-Security for, say, a free bottle of water as a small token of thanks.

What’s Next?

After essentially six years of testing at DAB, Byers is currently in the process of offering zip code collection systems to the wider U.S. airport market. Adastra plans to lease touchscreen monitors loaded with GetZip software via three-, six- and 12-month plans. Rates, which are not yet available, will include monthly passenger traffic reports.

“Steve (Cooke) has been our best salesperson thus far,” says Byers. “Most everyone who sees the program in action has been impressed and seen its utility. We can provide graphics, pie charts, heat maps. If someone calls and says, ‘Give us everything you have on Chicago,’ we can provide that.”

Ancillary advertising or public service announcements on other areas of the screens are also a possibility. “The program can be customized to fit the informational needs of any airport,” says Byers. 

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Zipcar Expands Further Into Airport Market

By Stephanie Gehman



factsfigures

Project: Alternative Car Rental Concession

Provider: Zipcar

Rental Model: Customers pay a one-time setup charge & recurring annual membership fee to rent vehicles by the hour or day; rates include insurance, fuel & variable mileage allotments.

U.S. Airport Network: 50+ locations

Newest Airport Locations: Augusta (GA) Regional Airport; Griffiss Int'l Airport (Rome, NY); Monterey (CA) Regional Airport; Newport News/Williamsburg (VA) Int'l Airport; Orlando International and Tampa International Airports (FL); Tri-State Airport in WV

As the debate rages on about ride-sharing services such as Uber and Lyft operating at U.S. airports, another alternative ground transportation method is quietly spreading throughout the industry: car-sharing services.

Zipcar is an increasingly popular brand of car-sharing service with about 10,000 vehicles around the country, including small inventories at more than 50 U.S. airports. In April, the company announced it was adding seven new airport locations: Augusta Regional Airport in Georgia; Griffiss International Airport in Rome, NY; California's Monterey Regional Airport; Newport News/Williamsburg International Airport in Virginia; Florida's Orlando International and Tampa International; and Tri-State Airport in West Virginia.

To rent from Zipcar, customers pay a one-time \$25 setup charge and recurring annual membership fees of at least \$70 per year. Non-airport rental rates begin at \$9 per hour or \$49 per day and include insurance, fuel and variable mileage allotments.

The company prides itself in providing vehicles that are economical and efficient to operate and rent. At Dallas/Fort Worth International (DFW), for instance, the company offers five vehicles: a Jeep Patriot, Jeep Compass, Volkswagen Golf, Ford Focus and Toyota Corolla. Rates at DFW begin at \$9 per hour or \$80 per day.

Zipcar also rents to 21-year-olds, while many traditional agencies require drivers to be 25 to rent their cars.

The company was launched about a decade ago by two Massachusetts residents who wanted to bring the European car-sharing model across the pond to North America. (It also operates in France, Spain, Austria and the United Kingdom.) Avis Budget Group then purchased Zipcar in March 2013 for about \$500 million in cash. Operating as a subsidiary of the established car rental giant has likely eased the company's entry into the airport market.

"Zipcar makes it easier than ever to live without owning a car, and that includes providing a simple and convenient way to get around when you travel by air," Zipcar President Kaye Ceille said in a written statement. "Whether you are in town for a short business trip, or you're stuck at an airport for a long layover, Zipcar offers the flexibility and freedom to explore the surrounding area on your time and in your way."

New Choice on the Block



Jennifer Hickerson

Zipcar officials aren't the only ones who are optimistic about how its services can benefit airport customers. Jennifer Hickerson, marketing and public relations coordinator at Monterey Regional Airport (MRY), fully expects the car-sharing option to appeal to passengers at the coastal Californian facility — especially those arriving on nighttime flights.

"Zipcars will make it easy for those passengers who don't want to stop at a counter when they arrive," explains Hickerson. "They simply use the app to reserve, pay and unlock the car. This is very beneficial to those who arrive late in the evening (because) some of our rental cars close before the last flight arrives."

The brand should be a particularly good match for the airport's smartphone-centric travelers. "Zipcars allows MRY to cater to a more technology-advanced passenger," she elaborates. "Many of our visitors from large cities are used to this type of vendor. I think they will be pleasantly surprised to find it in Monterey."

That said, Hickerson still sees a place for the airport's more traditional providers. "Some passengers like the experience they receive from a rental car agent, and other passengers are more of a 'do-it-yourself' customer," she says. "This will allow the passengers who don't need the extra service traditional rental car agencies provide to just help themselves."



Jerry Brienza

Jerry Brienza, the director at Tri-State Airport (HTS) in Huntington, WV, also welcomes the chance to offer passengers a new ground transportation alternative. "We allowed Avis to begin the Zipcar program at our airport because it was simply another option for our customers to experience," says Brienza. "As far as I know, HTS is the only location in the state of West Virginia to have a Zipcar; so we were delighted to have this amenity available."

While Brienza expects some travelers to choose HTS' new ground transportation concessionaire, only time will tell how Zipcar performs in a smaller market like Huntington. In early June, the airport hadn't received much feedback about the recently added rental option; but Brienza was optimistic about seeing positive results later this summer, as Zipcar was just beginning to ramp up its local marketing efforts.

Marketing to Millennials

Zipcar largely targets its marketing appeals at Millennials, the children of Generation Xers who were born between the early 1980s and the early 2000s. Officials at Newport News/Williamsburg

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Zipcar customers can now rent vehicles at more than 50 U.S. airports.



Jessica Wharton

International Airport (PHF) are confident that the Millennial segment of their customer base will patronize the Virginia airport's new concessionaire.

"With Millennials on the rise, and travel a top priority among them, I can see Zipcar becoming a very popular choice," says Jessica A. Wharton, the airport's director of marketing and public affairs.


Zipcar's booking and checkout model dovetails with the rise in passengers booking travel online and using smartphones to check in for their flights. The company

also emphasizes the importance of saving money, self-service convenience and the beauty of on-demand transportation — all attributes many travelers seek in their flying experiences.

"We are all for service that lets our passengers choose their own level of convenience, while also offering a great product," Wharton remarks. "I hope to see Zipcar, as well as other new travel trends, emerge and be successful at PHF."

More Options Ahead?

Drafting off Zipcar's progress in changing the way that people think about alternative transportation, several competitors have emerged: Hertz on Demand, Enterprise CarShare, Uhaul Car Share and Daimler's Car2Go. However, Zipcar still lays claim to being the largest car-sharing service in the world and appears to have a significant lead in the airport segment.

A tagline on the company's website succinctly summarizes its appeal to airport customers: "You can go from the aisle seat to the driver's seat without slowing down." 

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Reno-Tahoe Int'l Delights Passengers with Random Acts of Kindness



Giant DHL Warehouse Opens at O'Hare Int'l



Wichita Airport Celebrates History, Prepares for Future With New Terminal

factbook
 Project: \$1.2 billion
 Location: Wichita, Kansas
 Architect: HOK
 General Contractor: Fluor
 Construction Manager: Fluor
 Opening: 2015

The new terminal is a landmark project for the city of Wichita, Kansas. It is a \$1.2 billion project that will replace the existing terminal, which is over 40 years old. The new terminal is a state-of-the-art facility that will provide a better travel experience for passengers. It features a modern design with large windows, a spacious layout, and a variety of amenities. The terminal is expected to be completed in 2015 and will be the centerpiece of the airport's future growth.

Building a new terminal is a complex task that requires a team of experts. The team for this project included architects, engineers, and construction professionals. The team worked closely together to ensure that the terminal was built to the highest standards of quality and safety. The terminal is now open and is serving passengers well. It is a testament to the power of teamwork and collaboration in the construction industry.



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Ascending to New Heights with Drinks on the Go



Rob Wigington

Rob Wigington, IAP, is president and chief executive officer of the Metropolitan Nashville Airport Authority. His 30+ years of experience in the industry include positions with the Houston Airport System, San Diego County Regional Airport Authority and San Diego International Airport, Airports Council International-North America and the Port Authority of New York and New Jersey.

Whether it's for business or leisure, people are visiting Nashville like never before. As Nashville experiences a time of unprecedented growth and opportunity, so does Nashville International Airport (BNA). BNA served more than 11 million passengers in 2014, setting a new record for the airport. This means more opportunities to provide the *Nashville Airports Experience* — our customer service mantra — to each and every traveler. Whether leaving for a trip or returning home, we are dedicated to making sure guests know they're in Music City the moment they arrive at BNA by greeting them with the live music, food and hospitality our city is known for.

In 2013, we set out to enhance the passenger experience through a new, innovative concept as well as introduce Nashville's booming craft beer movement to the airport community. Nashville is home to 10 local breweries that provide unique artisan beers that are helping form the city's identity today.

In the fall of 2013, we received our airport-wide beer license, and the following spring, our airport-wide liquor license, making the Metropolitan Nashville Airport Authority the only known airport in the United States to obtain airport-wide liquor and beer licenses. These licenses allow adult passengers the opportunity to enjoy an alcoholic beverage while listening to live music, getting a manicure or massage, shopping or waiting at their gates. Not only does it allow guests to enjoy their beverage of choice throughout the entire secure side of the airport, but it also addresses capacity constraints created by our previous licensing structure, which required each individual concept to be licensed and prohibited alcoholic beverages beyond lease lines. The airport-wide beer and liquor licenses allow our concessionaires the ability to maximize alcohol sales. It also allows us to pursue additional concepts without the previous seat-requirement restrictions demanded

in traditionally licensed venues. Ultimately, we are now making the most out of our terminal space like never before.

Prior to obtaining the licenses, we conducted a comprehensive analysis of our current liquor and beer sales to determine how the new initiative would affect existing alcohol and concession sales. Through the analysis, we projected an additional \$1 million in liquor and beer sales each year — a clear win/win situation for everyone at the airport.

Our *Drinks on the Go* initiative has been an overwhelming success. We partnered with Nashville-based Yazoo Brewing Company, a craft beer pioneer for the region, to bring the brewer's unique and popular beers to BNA. The Yazoo Beer kiosk — placed at the heart of our terminal to reach more than 70% of our total airport passenger traffic — opened in October 2013. We sold our first "breakfast beer" only minutes after opening, and it has yet to slow down. The concept grossed more than \$475,000 in total beer sales in the 2014 calendar year. Moreover, all restaurants and concepts have averaged more than \$83,000 in additional monthly alcohol sales, totaling \$730,000 in additional sales from May to December 2014.

On track to exceed our projections, the financial benefits of implementing our *Drinks on the Go* initiative speak for themselves. These funds allow us to reinvest in the airport and ensure travelers have the best experience possible.

More than simply providing easier access to adult beverages or increasing revenues, this initiative amplifies the *Nashville Airports Experience* by allowing us to bring the essence of our city to our airport. With the sound, the feel and now the taste of Nashville at the airport, travelers from around the world know they're in Music City as soon as they step foot in BNA. ✈️

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