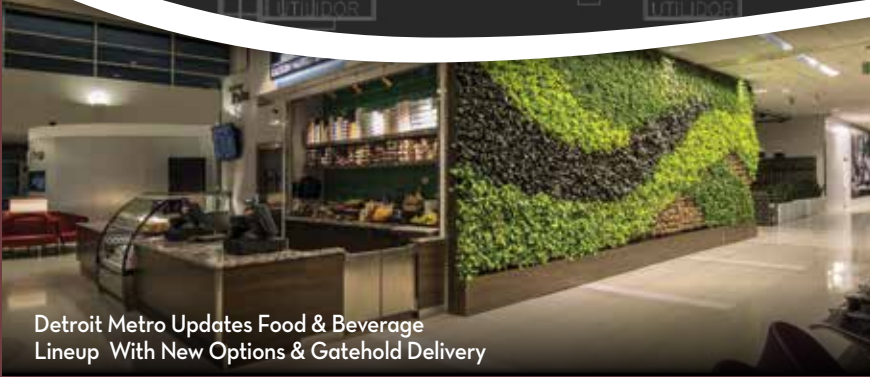


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Detroit Metro Updates Food & Beverage Lineup With New Options & Gatehold Delivery



Win-Win-Win: New Car Rental Facility at El Paso Int'l Benefits Airport, Agencies & Customers

Northeast Florida Regional Demolishes Old Terminal & Erects New in 100 Days



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Local Donations Help West Michigan Regional Build New Terminal

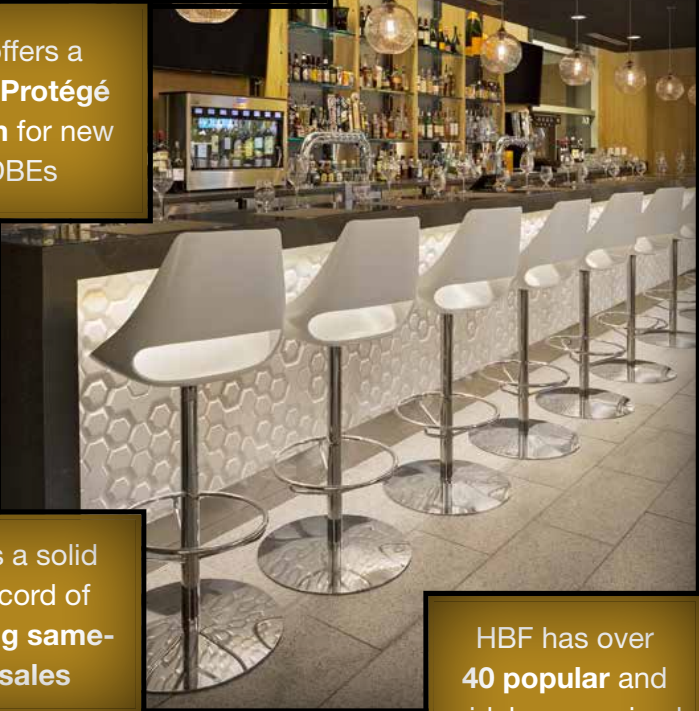
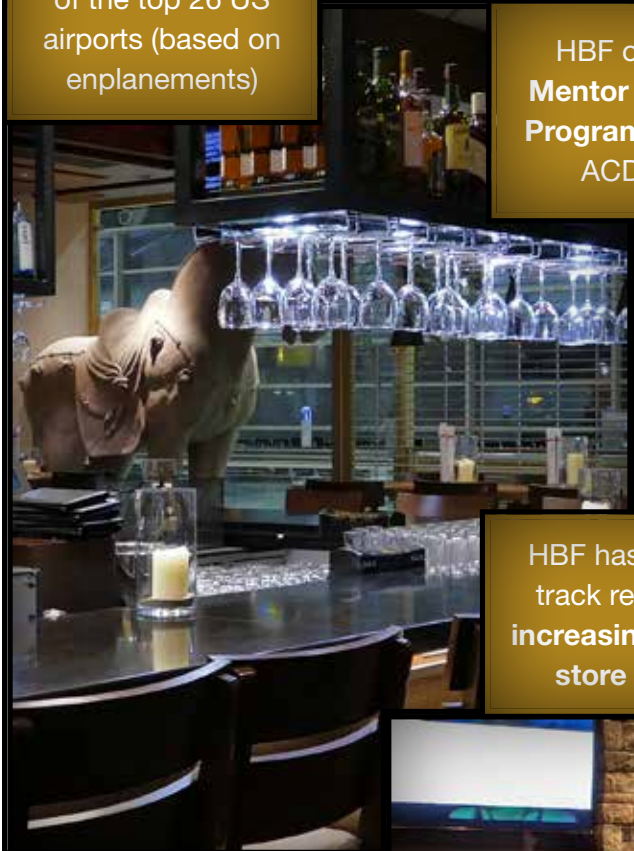


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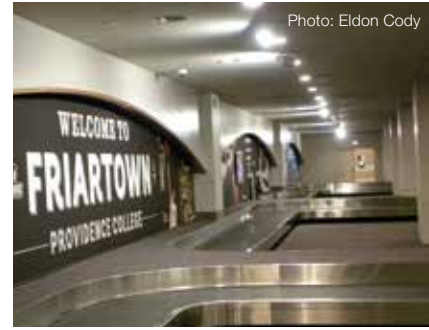


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Photo: Scott Weaver

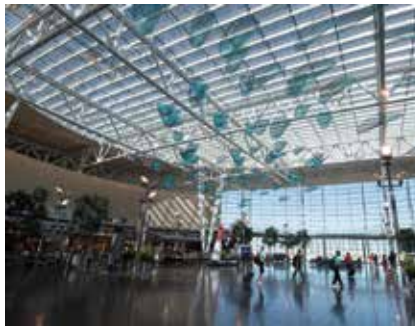
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Western Michigan Scores Big

No, I'm not talking football. But there's something brewing at airports in the western part of Michigan that's worth cheering for. Gerald R. Ford International (GRR) and West Michigan Regional (BIV) have found a new funding mechanism that doesn't involve AIPs, PFCs or local taxes of any persuasion. Rather, the airports are generating funds for airport projects from donations. That's right, voluntary financial support is coming from local businesses, charitable organizations and community members to help build new facilities at the airports.

Something of this magnitude is much more involved than simply opening a post office box to collect checks as they pour in. To start, airports have to demonstrate the need for funds and build high levels of communication and trust with their communities. There also needs to be visionaries in place, both at the airport and in the business community, to explain why private donations are needed and will provide a return on investment. For an airport director, this is out-of-the-box thinking. Finding leaders from the business community who will not only champion airport projects but also go the extra mile and spearhead fundraising efforts is unheard of and deserves our attention and applause. Could your airport pull this off? You can read about how BIV and GRR view the fundraising process on Pages 36 and 62 in this issue.

Need something else to chew on? How about SARA, that's service animal relief areas. In August 2015, the Transportation Department set forth a final rule requiring at least one post-security relief area for each terminal. The rule gave airports until August 2016 to comply. In the final rule, DOT decided not to adopt specific requirements for size, design, materials or maintenance requirements. And as we've all heard many times, "When you've seen one airport, you've seen one airport." While some SARAs follow the letter of the law, others have gone above and beyond, providing for the animals, as well as owners with disabilities. Touché. Please find our SARA story on Page 54.



PAUL BOWERS, PUBLISHER

So ends the final issue of an incredible year. Thanks to all of our readers at airports, consulting firms and the companies that supply them with vital products. Thank you to our advertisers. And thank you to everyone on the Airport Improvement team who has brought you each issue of the magazine.

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Northeast Florida Regional Demolishes Old Terminal & Erects New in 100 Days

BY ROBERT NORDSTROM



 While U.S. presidents like to *talk* about plans for their first 100 days in office, officials at Northeast Florida Regional Airport (SGJ) can proudly show what they *accomplished* in 100 days. SGJ closed its existing terminal, tore that structure down and constructed a new 14,000-square-foot facility—all while maintaining flights into and out of the airport.

SGJ officials knew they were going to have to do something about their terminal, an insulated and air-conditioned tension fabric structure constructed in 2007 when the airport began commercial air service. The 9,000-square-foot facility served its purpose but took a basic approach to handling travelers, informs Ed Wuellner, AAE, executive director of St. Augustine-St. Johns County Airport Authority.

Moreover, the Florida sunshine is hard on fabric structures. Replacing the exterior skin of SGJ's previous terminal would have cost nearly \$1 million, and other structural components also needed work, explains Wuellner. Another important consideration: The airport would have had to fully finance the rehabilitation work itself.

By committing airport funds to constructing a new facility, however, SGJ was able to split the cost equally with the Florida Department of Transportation. The result is a “real brick-and-mortar type building” as Wuellner describes it, and the airport only had to pay for half of the \$4.1 million project.



ED WUELLNER

When Opportunity Knocks

In June 2015, Frontier Airlines, one of SGJ's two commercial carriers, informed airport officials it would be suspending operations for a brief period in early 2016 while it rescheduled local service. Airport officials saw the airline-imposed hiatus as an opportunity to fast track their terminal plans.

Within approximately six months, the airport and its partners developed a design-build package to demolish the existing terminal and build a new one in 100 days. Closing the terminal on Jan. 4, 2016, they committed to opening SGJ's new terminal for business 110 days later on April 14, 2016.

Passero Associates served as the architectural and engineering firm for the project, with Elkins Construction as general contractor. “There was no way we were going to use a traditional design-bid-build approach and feel confident that the building would be done in time,” says Andrew Holesko, vice president and director of aviation service for Passero. “Using traditional methods, it would have taken at least a year, maybe 18 months.”



ANDREW HOLESKO

Design work began in June 2015. Given the general lifespan of fabric structures and cost estimates to rehabilitate SGJ's particular facility, airport officials determined that a new, more durable structure was in the best interest of the airport and community.

The new brick and mortar terminal replaces a tension fabric structure constructed in 2007.



Deciding what type of structure—metal, concrete block—and devising a plan to design and build it in such a short time frame were the real challenges. “It took a bunch of very creative professionals to figure out how to build it and get it done in time,” recalls Holesko. “Our design-build team met sometimes on a daily basis to work on everything from foundations to roofing structure. Meetings included civil, structural, mechanical and electrical engineers, along with the architect and general contractor—everyone cross talking to make sure everyone knew and understood what others were working on.”

Designs for the new terminal leveraged tilt-wall construction, which allowed contractors to begin work on the walls in late November and December, before the existing terminal was shut down. Crews poured a temporary 2-inch concrete base over a section of SGJ's asphalt apron to create a level surface where contractors could work without harming the airfield pavement. Workers used the area to fabricate wood forms; set rebar; create openings for windows, doors and reveals; and then pour the concrete walls. While the walls cured, preparations were underway to close the old terminal. Later, workers removed the concrete overlay and returned the asphalt apron to service.

Crews began demolishing the existing structure on Jan. 4, 2016, after the last plane for the day departed; 72 hours later, the old terminal was gone. Working off the old terminal's existing concrete pad, crews expanded the footprint by 5 feet on both the north and south ends, and 20 feet to the east and west. Workers also



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FACTS&FIGURES

Project: Demolish Existing Terminal & Construct New One on Same Footprint

Location: Northeast Florida Regional Airport (St. Augustine)

Cost: \$4.1 million

Funding: Airport (50%), FL Dept. of Transportation (50%)

Timeline: Design work began June 2015; demolition ensued Jan. 2016; first flight at new terminal April 2016

Program Management, Architectural Design & Engineering: Passero Associates

General Contractor: Elkins Construction

Construction Project Management: CBRE

Electrical Systems: Ohmega Group

Video & Flight Info Display Integration: Synect

Structural Systems: Structures Int'l

Passenger Ramps: Aviramp

Exterior Canopies: Peachtree Awnings

Security & Access Control: Johnson Controls

Of Note: Demolition & new construction completed in 100 days; tilt-wall construction allowed construction of new facility to begin before old terminal was demolished

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The new brick and mortar terminal replaces a tension fabric structure constructed in 2007.



completed the new footers, which they had started before demolition, and used a large crane to lift the pre-constructed concrete walls into place.

Passero Senior Aviation Architect Christopher Nardone explains that tilt-wall construction was an ideal approach for the SGJ project because it not only allowed contractors to get a



CHRISTOPHER NARDONE

head start on the time-sensitive project, it also met building code requirements for high impacts. The building is designed and built to withstand 142 mile per hour winds.

Curved Roof Design

The tilt-wall construction exposes steel and curved beams in the building's interior, and the curved exterior roof is reminiscent of the World War II era. "Architecturally, it is reminiscent of the Quonset hut design," Wuellner notes.

In the main lobby, 30-foot ceilings lend an open, spacious feel as travelers enter through automatic doors. Ticket counters are located to the right, restrooms to the left, and TSA operations occupy the center of the building. The post-security area of the building, which accounts for more than half of the total square footage, includes seating for about 375 travelers. Most of the 25 common-use LED monitors scattered throughout the terminal display airline flight information. Some, however, display marketing and promotional messages from local businesses.

Four doors open onto the airfield for ground loading. Covered switchback units protect travelers from inclement weather while they board and deplane.

From a design and amenities standpoint, SGJ heeded the advice of its carriers and focused on function and simplicity—Home Depot vs. Macy's is how Wuellner describes it. "Our niche is leisure-type carriers," he explains. "Our travelers are not interested in frills."

To that end, the new terminal includes a somewhat unusual baggage claim area. When travelers disembark on the ramp, they walk directly to a 120-by-37-foot canopy structure set a few feet away from



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TOP: Denver International Airport - Hotel and Transit Center, Colorado
LEFT: Los Angeles International Airport - Tom Bradley Terminal, California | RIGHT: San Francisco International Airport - Air Traffic Control Tower, California

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Tilt-wall construction allowed contractors to begin work on the concrete walls before the existing terminal was shut down.



the terminal. Baggage is offloaded and carted directly into the outdoor structure, where passengers can claim their luggage and leave without entering the terminal.

“The baggage claim canopy has a Caribbean island feel,” Holesko observes. “When travelers get off the airplane, they don’t need to go into the building. They can be off the plane and in their car within 10 minutes.”

The canopy roof of the baggage claim area follows the same curvature as the larger terminal building and is supported with corrosion-resistant clear anodized aluminum to guard against the brackish coastal air.

Nardone notes that the terminal design plays to the departure experience more than arrivals. “While there are a few windows at eye level on the landside of the building, the interior of the building is all about seeing the airfield,” he explains. “The building’s larger airside windows open to the airfield. It’s about experiencing the aircraft on the airfield. When travelers land, the experience is about getting off the plane and grabbing one’s bags. Few people enter the building unless they need to use a restroom or rent a car.”

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Heeding the advice of its carriers , SGJ focused on basic customer comfort and efficiency vs. extra amenities and frills.



Team Effort

The design-construction team, which included 25 various building trades, worked day and night shifts for 24,000 work hours to complete the project on time and allow Frontier Airlines to resume operations April 14. Work occurred adjacent to active taxiways with zero foreign object debris or safety incidents, report airport officials.

Via Air, SGJ's other commercial carrier, maintained its operations throughout the project in temporary trailers adjacent to the construction site. TSA shared space in the trailers for passenger screening. "On some days, we had 50 to 100 construction workers on what one would think would be a closed down site," Holesko reports. "But we accommodated Via Air's operations as well as TSA."

Wuellner praises the cooperative effort: "It took a group of very talented people paying very close attention to the window of time available to get this done. Tearing down an existing structure and constructing a new building in such a short time frame would not have been an option for most contractors and engineers. We are extremely grateful to the project team."

"Nothing would have been more embarrassing than reading 'Plane Delayed' instead of 'Terminal Opens on Time,'" adds Nardone. "We were going to be either heroes or losers. But we had a great team of risk-takers who were focused and able to pull this off with no major hiccups or budget busters." ✈️

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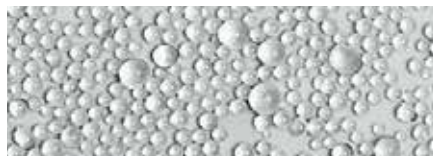


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Pittsburgh Int'l Rolls Out Renewed Train



PITTSBURGH INTERNATIONAL AIRPORT

FACTS & FIGURES

Project: Update Internal Train System

Location: Pittsburgh Int'l Airport

System Size: 2 tunnels, ½ mile each; 2 trains, each with 3 cars

Approx. Refurbishing Cost: \$11 million

Funding: Airport Bonds

Project Elements: New underframes & interiors (wiring, lights & air conditioning) for trains; refurbished station doors; new digital dynamic signs on boarding platforms; new mechanical & electrical components system-wide

Timeline: 29 months completed spring 2016

Architect & Design: GAI Consultants; Bombardier

Installation Mgmt: Management Engineering Consultants

General Contractor: Bombardier


Subcontractors: Mosites; Miller Electric

Train Refurbishment: Bombardier

Station Door Refurbishment:
Stanley Access Technology

Civil Design & Installation of Digital Signs:
Int'l Display Systems

Software & Controls for Digital Signs:
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 After 24 years and more than 2 million miles in service, the people mover trains connecting the landside and airside terminals at Pittsburgh International Airport (PIT) are virtually all new and rolling into the future. A four-phase, \$11 million project modernized the trains with new underframes and updated interior elements (flooring, air conditioning, lighting, etc.) Other upgrades include refurbished station doors, new digital signs on the loading/unloading platforms, and new mechanical and electrical components throughout the system.

The project began in October 2014 and ended in spring of 2016. Before it, the last significant renovation of the trains occurred in 1999. Operations personnel estimate that the trains have traveled more than 1 million miles carrying passengers and employees since then.

PIT officials characterize the massive renewal effort as a cost-effective way to bring the people mover system into the modern era and to complement other recent changes at the airport. Within the last few years, PIT has renovated baggage claim areas, upgraded concessions, improved new landside seating and installed new terrazzo flooring (see our May/June 2016, issue for more details). Amid the changes, the airport has experienced a 30% increase in nonstop destinations and an associated uptick in passenger traffic.

Millennial System

Placed into service in 1992, PIT's \$14 million people mover system logged more than 600,000 miles before it was updated and expanded in 1999. Driverless, rubber-tired trains run on two parallel tunnels below airfield taxiways, spanning the one-half mile between PIT's landside and airside terminals. Largely a computer-operated system, the trains run with minimal human control except during unusual circumstances and emergencies.

Departing travelers board the underground people mover after passing through the TSA checkpoint and then proceed to their gates in the airside terminal.

Typically, each one-way trip takes less than two minutes: 70 seconds of travel along the automated guideway and a 30-second stop to load and unload. Efficiently designed stations allow each people mover to handle about 6,000 riders per hour. When the vehicle stops at the station, doors first open on the outer sides to allow passengers to exit. After those doors close, doors on the inner side (between the two tunnels) open to allow passengers to enter. Round windows at each end of the tunnels give riders a view of the entire journey.

Like the airport itself, PIT's people mover system was designed and built to allow for expansion. In 1999, the airport closed the people movers one tunnel at a time so crews could



System

BY DAN VNUK

demolish temporary walls and extend the passenger loading areas. One car was added to each train at a cost of \$5.3 million, and the system's original four cars were updated to the tune of \$1.6 million. FROM that point forward each train had three cars.

Potentially, the people mover can be extended to service a second airside terminal if the airport expands in that manner. When PIT was originally designed, provisions were made so a second airside terminal could be placed beyond the current "X" shaped airside terminal to create more of a "Y" shape.

Currently, PIT serves more than 8 million passengers per year and ranks as the second busiest passenger airport in Pennsylvania, behind Philadelphia International.

Maintaining Service Standards

During the latest people mover renovations, the airport temporarily took train cars out of service. Crews lifted cars from the parallel tunnels with cranes through a ground-level hatch, and then Bombardier refurbished them at its nearby facility in West Mifflin, PA.

"The removal and return to service of two train cars at a time required considerable airport staff coordination to minimize impacts to the traveling public and airport employees," notes Mike Adams, project manager for the airport authority. To offset slightly longer wait times for trains during renovations, PIT provided shuttle bus service to and from the airside terminal. It also added signs in key spots to facilitate passenger flow.

Throughout construction and renovations, it was important for the airport to maintain high levels of customer service, notes Christina Cassotis, chief executive officer of the

Allegheny County Airport Authority. "Customer service is one of our strategic priorities," she emphasizes. "This is just one of many upgrades underway at Pittsburgh International Airport to improve the customer experience." ✈️



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T.F. Green Completes Comprehensive Landside Lighting Conversion

BY PAUL NOLAN

 In his new book, “Simply Brilliant: How Great Organizations Do Ordinary Things In Extraordinary Ways,” *Fast Company* co-founder William C. Taylor emphasizes, “You don’t have to be working at world-famous innovators such as Uber or Airbnb to be accomplishing something remarkable. Often, the best opportunities are in the humdrum sorts of businesses that clean buildings, run parking lots or deliver rural health care.”

You can add airport management to that list, and hold up the Rhode Island Airport Corporation (RIAC) as a prime example. RIAC operates and maintains the state’s six airports, including T.F. Green Airport (PVD), near Providence, which serves about 3.6 million passengers annually.

Over the years, RIAC has demonstrated an ability to develop innovative ideas that simultaneously increase operating efficiency and make PVD a good neighbor.

In 2009, it performed an extensive energy audit at all six of its airports as well as its own buildings. One year later, it entered into an Energy Savings Performance Contract with Con Edison Solutions that included 11 energy conservation measures with a budget of \$5 million and a 12-year guaranteed payback—a return on investment of about \$500,000 per year.

“Because we receive no state funding to operate the airports, we need to be self-sustaining. We found that energy efficiency programs have been ideal for that,” says Peter Frazier, RIAC senior vice president of administration, engineering, planning and environment, and the corporation’s general counsel. (Frazier also served as RIAC interim president in 2016 after Kelly



PETER FRAZIER

J. Fredericks left for a similar position at the Ontario International Airport Authority in California.)

Not willing to stand pat with past successes, RIAC completed another major energy efficiency project at PVD this fall: replacing existing metal halide and fluorescent bulbs in all landside and a few airside fixtures with energy-efficient light emitting diode (LED) bulbs. All interior and exterior lighting for the airport’s roadways, buildings, maintenance garages and four parking lots was converted for about \$4 million. Associated energy savings are projected at \$855,000 per year.

Illuminating Upgrades

The three-phase project began in September 2014 with the replacement of outdoor lighting on the tarmac and airport parking lots. That phase was completed in January 2015. During Phase two, which ran from September 2015 through



February 2016, crews replaced interior lighting in the terminal, baggage area, concession spaces and garages. The third phase, completed this fall, converted lighting for all of PVD's signage.

You don't have to be a pocket protector-wearing numbers cruncher to realize that switching to LEDs made sense. The magnitude of the potential savings generated by a switch to LED lighting made the decision to proceed self-evident, says Frazier.



JOE DASILVA

Incentives and financing offered by National Grid, the local and regional utility, sweetened the deal. It paid RIAC \$2.3 million in rebates and let the airport corporation

pay the \$1.8 million balance via on-bill financing. That allowed the airport to complete the project without having to raise capital. "The on-bill financing made this project work," says Joe DaSilva, assistant vice president of landside maintenance for RIAC. "It left us with less than a three-year payback and meant that we were paying off the project as we were saving the cost of wattage."

The arrangement is not unique. National Grid aggressively pursues



FACTS&FIGURES

Project: LED Lighting Conversion

Location: T.F. Green Airport—Warwick, RI

Airport Operator: Rhode Island Airport Corp.

Project Scope: All landside fixture (interior & exterior); limited tarmac lighting

Approx. Cost: \$4 million

Funding: Utility company incentives (\$2.3 million); on-bill financing (\$1.8 million)

Timeline: Sept. 2014 – Oct. 2016

Installation Contractor: Energy Source

LED Mfr: enLux

Product Distributor: D&M Manson Brothers Electric

Key Benefits: Estimated \$855,000+/yr savings in energy costs; brighter, more consistent illumination than previous incandescent lights

Projected Recoup of Project Costs: Less than 3 yrs

Accolade: 2016 Northeast Business Leader for Energy Efficiency

Of Note: Similar upgrades in the works at 5 smaller RI airports



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Switching to LED lighting is expected to save the airport more than \$855,000 per year.



partnerships with businesses and private residents for energy efficiency projects. "Efficiency programs lower the demand during seasonal peaks, which cause a major strain on our system," explains Gerald Mirabile, lead sales representative in Sales and Program Operations with the utility. "[Incentives] replace the expense of building new power plants and deferring the need for construction of substations."

Officials from the utility and RIAC estimate that switching to LED lighting at the airport will result in annual energy savings of more than 5.5 million kilowatt hours, with estimated cost savings of \$855,000. As DaSilva points out, PVD not only lowers its energy bills, it also reduces labor costs and frees staff for other projects because long-lasting LEDs require significantly less maintenance.

Beyond cost savings, the lighting project also improved the aesthetics of the airport environment, adds DaSilva. Because LED light is directional (vs. a spherical shape from incandescent bulbs), PVD's new lighting produces brighter and more consistent levels of illumination. Changes are especially noticeable in the main terminal lobby, along the concourses, in the terminal gate area and at baggage pickup, he explains.



RON SLINEY

Ron Sliney, vice president of the company that installed PVD's new lights, marvels at how quickly the market has evolved: "Only four years ago, we were still installing fluorescent technology. Today, we don't install anything but LED fixtures."

Converting to the more current technology garnered RIAC recognition as a 2016 Northeast Business Leader for Energy Efficiency. "RIAC provides an excellent example of how energy-efficient measures can improve a company's bottom line, contribute to economic growth and reduce environmental impact," says Sue Coakley, executive director for the nonprofit Northeast Energy Efficiency Partnerships.

More Improvements Ahead

With PVD operating at peak lighting efficiency, RIAC is initiating similar projects at the five smaller airports it oversees. Total cost is projected at approximately \$425,000.

But that doesn't mean the sustainability work is done at PVD.

"We'd like to think that 'green' is more than our name," notes Frazier. "We are constantly looking for innovative ways to make our impact on the community and the world as environmentally friendly as possible. Let's face it, there are impacts associated with airports to residential neighbors, so we do everything we can to mitigate those, and then we want to take the extra step and also be environmentally friendly."

To that end, RIAC is planning to install a solar array that will allow PVD to generate its own renewable, clean energy. Once completed, the photovoltaic system is expected to make the airport a near zero net energy facility. "We manage to the bottom line, but with these technologies, you don't have to be a genius in the C-suite to understand that they make environmental and economic sense," Frazier says.

In his book, "Simply Brilliant," William Taylor asks, "Why should the story of success be the exclusive domain of a few technology-driven startups or a handful of billionaires? The thrill of breakthrough creativity and breakaway performance doesn't belong just to the youngest companies with the most cutting-edge technology or the most radical business strategies. It can be summoned in all sorts of industries and all walks of life, if leaders can reimagine what's possible in their fields."

The team at PVD and RIAC is living proof of Taylor's premise. "This is the type of project that everyone on the staff is proud to participate in," reflects Frazier. "We love to deliver curb-to-gate customer service, and here is one that is giving superior lighting at a reduced cost and having a positive environmental impact. It's one you get up in the morning and feel proud to be part of." ✈️

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Detroit Metro Updates Food & Beverage Lineup With New Options & Gatehold Delivery

BY VICTORIA SOUKUP



FACTS&FIGURES

Project: New Food & Beverage Program

Location: Detroit Metropolitan Airport – McNamara Terminal

Packages Offered: 8

Sales Projections: \$63 million in first full year; airport revenue expected to increase by 57%, to \$10 million

Food & Beverage Concessionaires: Midfield Concession Enterprises; HBF APU Joint Venture; Areas USA

Architects/Designers: Studio H2G; JGA; NORR

General Contractors: Seerco; Micco Construction; MiG Construction; The Petersen Companies

Vertical Plant Wall: GSKy Plant Systems

Seating: Arcadia Seating; Interra Designs; W.E. Gingell Associates; Office Furniture Solutions

Of Note: 2 new gatehold dining areas with tablet-based ordering



Visitors at Detroit Metropolitan Airport (DTW) might not leave the McNamara Terminal if it's up to their taste buds. Earlier this year, the airport launched an entirely new lineup of food and beverage offerings that includes farm-to-table freshness and an updated combination of local and national options. In addition, the terminal also features delivery service in two gatehold areas, Motown-flavored live music and a lush green wall.

DTW officials project that the changes will generate \$63 million in sales during the first full year of operation. Annual revenue to the airport authority is projected to increase 57% to \$10 million. Early figures show sales are on-track, if not exceeding, estimates.

"We brought a lot of innovative thinking and a willingness to step outside the box with

this new program," explains Interim Chief Executive Officer Joseph Nardone. "We wanted our travelers to remember that their airport experience was uniquely Detroit, and we worked to infuse our own local culture and people into the experience."

The terminal, which originally opened in 2002 and is home to a Delta Air Lines hub, was due for a concessions overhaul. "Things change in 10 years, and there was a lot of new activity in the market," explains Nardone. "It was just the right time for us to have a new program."

Recent changes to the terminal's food and beverage program complement a 2014 overhaul of retail offerings. New shops added two years ago include PANDORA, Porsche Design, Hugo Boss, Estee Lauder, Dylan's Candy Bar, CNBC Smartshop, *Time* newsstand, Be Relax Spa and *The Wall Street Journal* newsstand and travel store.

When it came time to update food and beverages offerings, airport officials knew the task would be trickier. Because DTW is an



JOSEPH NARDONE



international gateway serving 33 million passengers per year, airport officials focused on balance between sit down and “to go” food, local and national brands, and snacks and full meals. “The airport serves travelers with a wide variety of preferences, tastes, experiences and needs,” says Nardone. “It was important that we tried to offer something that appeals to everyone moving through our facility.”

Local Flavors & Natural Decor

Two entities reigned supreme when DTW issued eight separate request for proposal packages: Midfield Concession Enterprises, a local firm that got its start at DTW, and HBF APU, a joint venture between Atlanta-based Hojeij Branded Foods and Detroit-based AP United.



SAMIR MASHNI

Midfield, which operates 13 restaurants in the terminal, brought in strong national brands such as Chili’s and Max & Erma’s, but also concentrated on local flavor and upscale dining. “We find that’s the trend in the airports,” reflects Samir W. Mashni, vice president of business development. “That’s what airport landlords want, and that’s what the travelers want.”

The company developed one area of the terminal into the Eastern Market, with offerings patterned after a 125-year-old local farmers’ market that has become a popular year-round destination. Except for one national coffee shop, all the food and beverage vendors in DTW’s Eastern Market are local brands. “We took Detroit’s Eastern Market—the oldest farmers’ market in the country—and themed an entire market setting behind it, utilizing our award-winning corporate chef to create the menus for some of the vendors,” says Mashni.

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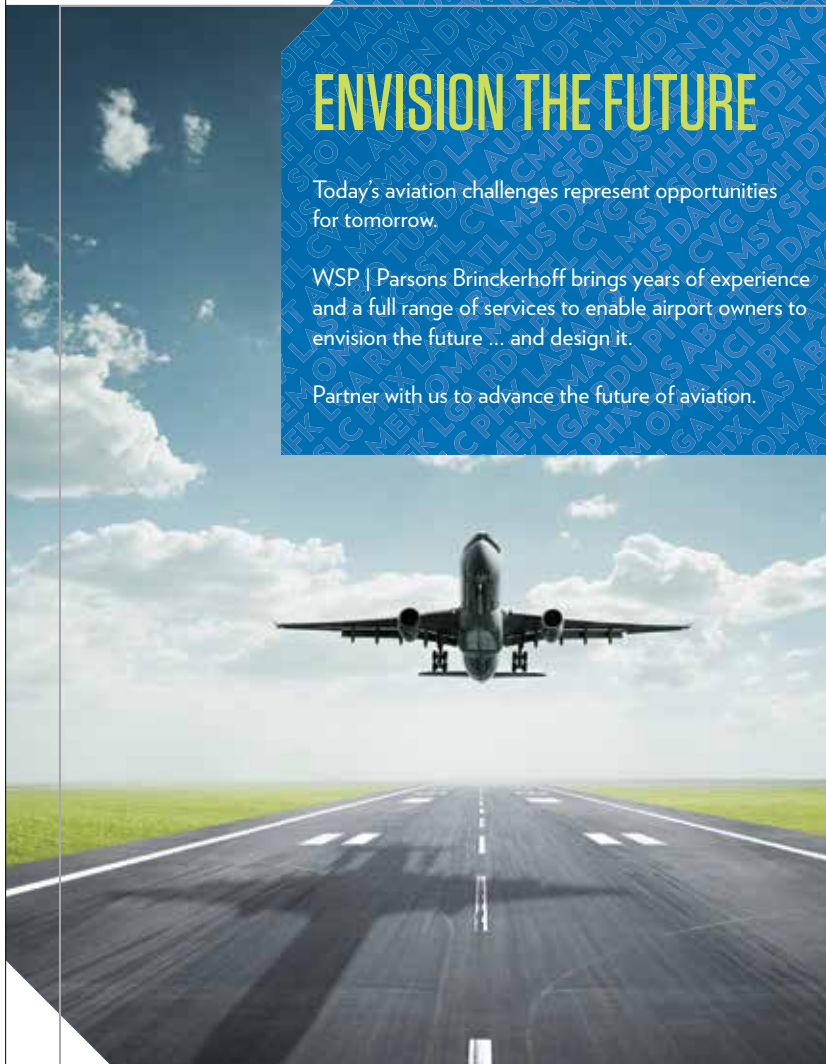
An accent wall made of live plants adds a verdant touch to the Eastern Market.

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A large, vertical wall filled with live green plants was added to reinforce the farmers' market theme and provide soothing aesthetics for travelers. GSKy Plant Systems created and installed the green wall.

Another local brand that gained a spot inside McNamara is Andiamo Restaurant, a renowned Detroit tradition that offers northern Italian cuisine. Operators tweaked the menu, however, to suit the fast-paced airport environment. "If you go to a non-airport Andiamo Restaurant, you have time to dine," Mashni relates. "In an airport setting, you have a half-hour or 45 minutes maximum. We selected menu items that represented the brand but can be delivered to the customer in five to seven minutes. We limited the menu in order to do that, but at the same time gave the customer the real taste of Andiamo."

The restaurant, which proved to be very popular at the airport, has also attracted national attention. It recently won *Airport Revenue News'* 2016 Best New Food and Beverage Concept.

High-Tech Convenience

A combination of self-service ordering and gatehold delivery provides passengers with a new level of convenience. Two gateside seating areas, located on opposite ends of the nearly mile-long Concourse A, allow customers to order selections from the Eastern Market via wireless tablets and have food and beverages delivered—without ever leaving their gate area. Guests can order alcohol from the tablets but must provide proof that they are at least 21 years old to be served. A collection of 100 iPads attached to the community tables facilitates ordering and credit card payments.

Designing the new dining areas proved to be one of the most challenging aspects of the project. "It was trickier doing the gatehold configuration because we had to move airline seating and adjust traffic flow," Nardone explains.

Sales, however, are 25% higher than when the area was arranged as a traditional food court, notes Mashni. "People are getting more and more accustomed to it," he reports. "It is slowly coming around." Airport visitors are finding they prefer having snacks and meals delivered to them instead of waiting in lines, he explains.

Working closely with Delta, the terminal's primary tenant, was critical to ensure that

the airline retained enough seating to accommodate passengers waiting for flights. "I cannot underestimate the value of Delta's participation," Nardone emphasizes. "They were a critical partner, and we communicated with them through every step of the process."

While mixing wireless technology with food service has presented some challenges for some customers, most travelers have welcomed the new option. "People always feel more comfortable psychologically to be at their gate and be brought a beverage and sandwich," Nardone explains.

Executives at Studio H2G, one of the design firms involved in the HBF APU project, say gatehold dining is doing exactly what airports had hoped: improving the passenger experience and increasing revenue. "That's why we are seeing a lot of seating areas being changed into venues [where] people can order food while waiting," reasons Creative Principal Nick Giammarco.

Snap-Worthy Spaces

The HBF APU joint venture is a new food and beverage operator at DTW. Among its 11 offerings in the McNamara Terminal is Bigalora Wood Fired Cucina, which features a \$40,000 domed oven that cooks pizza in 90 seconds. "We actually have people that come into the restaurant to take pictures of the oven," notes Tanya R. Allen, partner and vice president of HBF APU.



TANYA ALLEN

Nearby, the new Espressamente Illy Café and Fountain Bar is positioned beside the airport's famous "leap frog" water fountains. In addition to providing an authentic Italian coffee bar experience, DTW wanted the new option to be "iconic and memorable, with international style and appeal." Designed by Studio H2G and prefabricated offsite, the Illy structure is apparently living up to expectations. Giammarco describes the structure as modern in style, sleek and reminiscent of speed and airflow.

Designing the freestanding facility included two pragmatic challenges: the venue could not be anchored to a wall, and nothing could be anchored to the ceiling. "So we don't think of this as a building, but more as a permanent exhibit," explains Giammarco. "We designed



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Midfield Concession Enterprises, Inc. (MCE) is a Michigan-based premier food and beverage service organization capable of delivering world-class quality food, management and customer service to any destination. MCE is a woman-owned and ACDBE certified business that specializes in showcasing local brands, chef inspired menus and concepts of broader national and international presence. MCE is proud to announce that it was recently awarded multiple concession opportunities at Denver, Minneapolis-St. Paul and San Francisco airports.



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it in a way where the sculptural elements could be prefabricated and then installed on site. There is really no visible structure; there's just freestanding or floating ribbons [that] had to be engineered and fabricated."

DTW's objectives with the Illy design reflect an emerging national trend, he adds. "It is indicative of how airports and operators these days are committed to providing unique experiences and thus better experiences for passengers."

The terminal's top-grossing food and beverage venue thus far has been a surprise: Plum Market, a gourmet concept that features fresh, organic, unprocessed and other healthy foods from providers throughout Michigan as well as selections from Zingerman's food stores in Ann Arbor.

"We all are pleasantly surprised Plum Market is the top revenue generator in the airport and of all our restaurants," Allen excitedly notes. The market operates like a deli, but has seating as well as counter service. Popular selections include salmon, vegetables and soups. "People love it," Allen reports. "And I think that's the trend because passengers really want to buy healthy foods."

Motown Music Fills the Air

Allen's team also added something she feels is important for airports: live music. DTW purchased a pair of baby grand pianos from a local vendor for \$50,000 and placed one near the water feature, at the large intersection of the terminal, and the other near the gatehold dining area at the opposite end of the concourse. Live acoustic guitar music is also featured at the water fountains.

Local musician Keith Ferguson, musical director for the Spinners, is a fixture at one of the pianos, playing Motown favorites. "People sit in the area to enjoy the music," Allen says. "In fact, during a snowstorm last year, I was sitting there when a pianist was playing and a couple started ballroom dancing right in the middle the airport."

Allen credits the success of HFB APU's new concessions program to the organization's philosophy. "We view ourselves as restaurateurs and not concessionaries, and have a strong working relationship with the airport," she explains. "We truly think of them as a partner. We share ideas that can help enhance the overall experience of passengers."

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On a similar note, Nardone credits much of the overall program's success to the airport team and concessionaires, but he also acknowledges Delta's importance. "Delta is an outstanding partner and served as an advisory member when the bids came in," he explains. "We are very lucky to have Delta at this airport and we are continually working with them to deliver the best product. We want to make sure our storefronts are snappy and attractive so when people walk by them, they are enticed to come in, spend money, and enjoy the experience." ✈️



Recent changes to the food and beverage program are expected generate \$63 million in sales during the first full year of operation.

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San Jose Int'l Upgrades Security Perimeter Beyond Federal Requirements

BY JODI RICHARDS

FACTS&FIGURES

Project: Perimeter Security Upgrades

Location: Mineta San Jose Int'l Airport

Total Cost: Nearly \$15.4 million

Cost of Phase 1: \$75,000

Funding: Airport funds

Cost of Phase 2: \$3.4 million

Funding: FAA grant; \$1.8 million airport funds

Cost of Phase 3: \$10.1 million

Funding: \$8.1 million FAA grant; \$2 million airport funds

Consultant: National Safe Skies Alliance

Fence Contractor: Granite Rock

Fencing: Golden Bay Fence

Design/Construction Management: AECOM

Design Support for Future Perimeter

Fence Project: Gensler

Rebar Contractor: Harris Rebar

Electrical Contractor: Rosendin Electric

Primary Strategies: Increase fence height & base; upgrade technology; increase awareness

Of Note: National Safe Skies Alliance, a non-profit funded by FAA, provided info about potential technological solutions free of charge



Following a series of high-profile security breaches at Mineta San Jose International (SJC), the airport teamed up with local and federal agencies and is working toward a safer, more secure facility through perimeter fence upgrades and technology enhancements.



BOB LOCKHART

Responding to the embarrassing breaches, SJC officials partnered with the San Jose Police Department, TSA and FAA to conduct a full evaluation of the airport and its perimeter, as well as security procedures and policies. At one point, the FBI came on site to inspect the airfield and assess its vulnerabilities, notes Bob Lockhart, airport deputy director of operations.

"It was valuable input," he says of the team-based approach. "Our security partners are the experts in the field, so it's better to have them involved to evaluate where they see vulnerabilities."

Congressional officials were invited to participate as well, which helped inform them about SJC's needs. "Their participation ultimately served us well as we sought and received federal funding to enhance our perimeter fence line," Lockhart emphasizes.

Evaluations indicated that the airport perimeter, with its 6-foot-tall fence, was, indeed, in compliance with current federal security requirements. "We also saw that there were some opportunities to improve the effectiveness of our perimeter, both from a perception perspective as well as an actual strengthening of some of our perimeter," adds Lockhart.

"Safety and security is our No. 1 priority," says Rosemary Barnes, public information manager for SJC. "It's easy to state this, but we had to also *show* our customers and community what we're doing to achieve this."



ROSEMARY BARNES



Physical & Technological Improvements

SJC is taking a two-prong approach to bolstering its perimeter security: physical fencing and technological enhancements.

Previously, the airport had a 6-foot chain-link perimeter fence with a 2-inch mesh. On top of that was a single angle iron with three strands of barbed wire, which added about a foot to the overall height, details Lockhart.

In addition to deterring intruders on foot with a higher fence, the airport added K-rail at the base to prevent vehicle intrusions. The 3-foot high K-rail was poured in place and provides a steady piece of solid concrete at the base of the fence line, Lockhart explains. On top of the K-rail is a 7-foot chain-link fence with one-inch mesh, which makes the fence much more difficult to climb with fingers or feet. On top of that is a 1-foot “v” of barbed wire. Now, most of SJC’s perimeter fence is 10 feet high; some key areas, however, are up to 11 feet tall.

The three-phase project began in early 2015 with the installation of 1,500 feet of the new taller fence at the southwest corner of the airfield, opposite the new San Jose Earthquakes soccer stadium. This phase was completed in April 2015 and paid for with airport operating funds.

Phase Two, completed in September 2016, covered north and south areas of the airfield and was funded through a \$3.4 million FAA grant and \$1.8 million in airport funds.

Airport officials expect Phase Three to be completed in 2017. It includes improving additional areas of the perimeter fence line as needed and incorporating high-tech hardware and software (more and improved cameras and/or adding sensor-type technologies). In September 2016, SJC was awarded an \$8.1 million FAA grant to move forward with the design, purchase and installation of surveillance technologies for targeted areas inside the perimeter fence line. The airport will fund \$2 million for the project. “[This technology] will give us another layer of security,” Lockhart notes.

Tech Testing


To evaluate potential technological solutions, the airport partnered with National Safe Skies Alliance, a non-profit formed in 1997 and funded by the FAA. Its goal is to help airport operators make informed decisions about perimeter and access control security, and its services are free to airports.

“An airport might have a general idea of where they want to go to improve their security, but they may not be as aware of the breadth of options that are out there,” says Brian Hollis, Safe Skies test engineer. “We can give you a firsthand look at how [a technology] performs at your site.”







BRIAN HOLLIS





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



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One-inch mesh and barbed wire make SJC's new chain-link fences more difficult to climb. Concrete K-rails at the bottom help prevent vehicle intrusions.



LORI ANDERSON

Test installations evaluated by independent, unbiased personnel provide an opportunity to foresee how a system could perform at a particular facility before investing in it, says Test Team Manager Lori Anderson.

Safe Skies began working with SJC in summer 2014. Following a site visit to assess the airport's challenges and goals,

the organization briefed officials about potentially applicable technology classes/types. "As an independent group, we don't recommend specific vendors, but we can say we feel based on these reasons that your location is a good fit for these particular technology classes," explains Hollis.

Site visits are critical to Safe Skies' work, because each airport has unique elements and challenges—from environmental to infrastructure, he adds.

To simulate a breach, the technology being tested is set up—preferably in the exact area where the airport is looking to improve situational awareness, Hollis explains. An operator from Safe Skies, who has been trained by the vendor of the technology, runs the system, while a test subject simulates an intrusion at different profiles or speeds. Data is collected about whether the system performed as it is designed to.

At SJC, Safe Skies evaluated eight systems from six different technology classes: thermal cameras, thermal cameras coupled with video analytics, behavioral video analytic systems, pressure sensor buried cables, laser detection systems and wireless cameras.

Testers evaluated each system for about two weeks. In that time, hundreds, if not thousands, of simulated intrusions were



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performed to provide the airport with statistically valid detection rates for each of the evaluated systems, Hollis says. Following each session, Safe Skies provided SJC with a report on how the system performed against operational concerns such as perimeter security intruders.

Safe Skies independently evaluates and writes a report for each system. “We don’t compare the systems,” emphasizes Anderson. The reports it produces are given to the airport and are also available, by request, to security coordinators at other airports.

Security Procedures & Protocols

Installation of the new, improved fence line involved careful planning and phasing to ensure the continued safety and security during construction, Lockhart notes. Contractors built a temporary fence line parallel to the existing fence, then poured the new concrete and constructed the new fence.

SJC also used the elevated awareness that followed the breaches as an opportunity to review its security policies and procedures with employees at the airport. “We did some additional training of staff,” reports Lockhart.


In addition, the airport increased perimeter inspections by operations staff, contract guards and the San Jose Police

Department. “Everyone at the airport was reminded they play a part in our security program,” he says. “The old, ‘see something, say something’ motto is still very apropos.”

“We even heard from our local residents and businesses,” Barnes adds. “We really appreciated the community bringing their concerns to our attention.”

Lockhart says that in general, airports need to look at what they are doing about security on a day-to-day basis. He also encourages fellow operators to evaluate how they can potentially do it better—despite limited funds.

SJC officials are grateful for the support their enhancement project has received from local congressional leadership, which helped secure FAA funding. “We need to continue to be vigilant and look at every portion of every program and project that we’re planning to see how it ties into the end result of safety and security at the airport,” Lockhart reflects.

“We needed to do better, despite meeting all federal security requirements,” Barnes adds. “It was critical that we enhance security and show and tell our customers and community what steps we were taking so San Jose International would continue to be their airport of choice in the Bay Area.” 



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Win-Win-Win: New Car Rental Facility at El Paso Int'l Benefits Airport, Agencies & Customers

BY KEN WYSOCKY



A new \$46 million rental car facility at El Paso International Airport (ELP) reflects a simple but sometimes-overlooked truth: Airports and rental car agencies both benefit when travelers can rent cars quickly and efficiently in comfortable, carefully conceived structures.



SAM RODRIGUEZ

The new three-story facility at ELP is located just steps away from the main terminal, with space for 764 vehicles. The convenient location and greatly increased capacity provides customers a much-improved experience compared to the old facility—a surface parking lot with just 246 parking stalls,

explains Sam Rodriguez, ELP's assistant director of aviation.

Making the rental process more appealing for travelers benefits the 10 on-airport agencies, which face increasing competition from off-airport competitors and alternative forms of transportation such as app-driven ridesharing services. But it's also a boon to ELP, which receives either 10% of the agencies' yearly rental revenues or a minimum annual guaranteed amount, whichever is greater.

Last fiscal year, rental car revenue totaled \$42.45 million. Of that, the airport received \$4.4 million in concessionaire fees. In addition, rental agencies pay slightly more than \$440,000 a year in ground rental fees

"It's definitely a symbiotic relationship, especially in El Paso, because they view

the relationship that way," notes Scott Goldstein, director of planning and programming for Enterprise Holdings, the rental car conglomerate that includes Enterprise, Alamo and National. Part of Goldstein's job is representing the interests of all participating agencies when an airport builds a new consolidated rental car facility (CONRAC), as was the case at ELP.



SCOTT GOLDSTEIN

"If airports don't get planes to land, we don't have customers," he points out. "Most airports understand that we need each other—that we're servicing the same customers. If you run an airport and don't have a nice rental car facility, you might



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FACTS&FIGURES

Project: Consolidated Car Rental Facility

Location: El Paso (TX) Int'l Airport

Annual Passenger Traffic: 2.6 million

Facility Size: Nearly 445,000 sq. ft.; 3 stories

Approx. Cost: \$46 million

Funding: Customer facility charge (CFC) of \$3.50 per car rental per day

Facility Location: 18 acres of land adjacent to main terminal

Projected Customer Facility Charge Revenue: About \$3.3 million/yr

Facility Features: 764 parking stalls; 14,000-sq.-ft. office building for 10 car-rental agencies; quick-turnaround area with 10 car-wash bays & 24 fueling/vacuuming stations; additional car-storage area; 12 maintenance bays; 9,000-sq.-ft. atrium lobby with hanging sculpture

Architect: Demattei Wong Architecture

Construction Contractor: Arrow Building Corp.

Approx. 2016 Car Rental Revenue: \$42 million

Approx. 2016 Concessionaire Fees: \$4.4 million

Concessionaire Fee Structure: 10% of car-rental revenues or minimum annual guaranteed amount, whichever is greater

Approx. Rental Agency Ground Rental Fees: \$440,000/yr.

Key Benefits: Ease & convenience for travelers; faster rental car turnaround times; enhanced revenue generation



Photo: Scott Weaver

encourage other forms of transportation for customers [such as Uber and Lyft].”

Moreover, travelers in cities such as Dallas, Houston, Washington, D.C. and San Francisco can choose among multiple airports. “If I have an awful rental car experience every time I go to an airport, I might opt to use another airport,” Goldstein says.

In the bigger picture, the new facility at ELP strengthens the airport’s impact as an economic development engine for El Paso and the surrounding region. “It illustrates our commitment to support travel, tourism and economic development in an increasingly competitive airport industry,” Rodriguez explains. “It’s another piece of the puzzle from an economic development standpoint for the city as a whole, because it’s important that business

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Photo: Scott Weaver

travelers can easily, quickly and efficiently rent a car and do business more efficiently in the city.”

Planning Stages

The facility, which opened in July, has been on ELP’s master-plan wish list since 2005. Planning began with a feasibility study in 2011 that determined the building could be paid for with a customer facility charge of \$3.50 per day for every car rented at the airport. The airport, which handles about 2.6 million passengers annually, began levying the fee in February 2012. Overall, the customer facility charge is projected to generate \$3.3 million per year—money that will pay off 25-year municipal bonds issued by the city of El Paso, notes Rodriguez.

The nearly 445,000-square-foot primary structure and ancillary buildings were built on 18 acres of land just west of the terminal. The site previously served as the return lot for rental car agencies at the airport. The land also included an old cargo building that was demolished to make room for the new facility.

El Paso-based Arrow Building Corp. built the structure in just less than two years. Construction was a challenge due to the tightly constrained location, right next to the terminal. During construction, the airport temporarily dedicated about 325 spaces in a short-term parking lot in front of the terminal to rental car operations. “That way consumers could walk out the terminal right to their rental cars,” Rodriguez says. “There weren’t any big hiccups there.”

Demattei Wong Architecture designed the CONRAC to match ELP’s terminal. But to Goldstein, the facility’s true beauty is how it eases the pickup and return processes. “We want customers to really enjoy the experience when they rent a car,” he explains. “They want car rentals to be as quick and easy as possible. El Paso is a perfect example of that—the facility is 15 steps away from the terminal. Customers get off of their planes, walk right by the baggage claim area and in 15 steps, they’re in the car rental facility. People don’t want to get on a bus or a train or have to wait to get to that next place.”

Designed for Efficiency

The facility also enables agencies to clean, refuel and return cars to service faster. “Before, with just 246 return parking spots, the surface lot was very constrained from an operational perspective,” Rodriguez recalls. “As cars got rented out, each agency had to bring more cars over from their own little lots located across the street from the airport. During peak business hours, they could not keep up with demand.”

With each agency maintaining its own administration offices, car storage areas,

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fueling stations, cleaning bays, etc., there were a lot of duplicated facilities—and associated vehicles shuffling between them and the terminal. “The agencies were constantly driving cars back and forth to get them cleaned and back to the parking lot, creating traffic problems,” explains Rodriguez. “Plus, the open surface lot exposed customers to weather conditions that get pretty extreme around in the winter and summer.”

To improve operational efficiency and customer comfort, the facility’s first two floors are devoted to parking spaces for rental cars. Staging areas are located on the third floor. To the west of the structure stands a 14,000-square-foot administration building that houses the 10 agencies. Beyond that is a quick-turnaround area with 10 car wash bays and 24 fueling/vacuuming stations. The complex also provides additional space for car storage and a 12-bay maintenance facility.

On balance, there are many factors to consider in creating a well-functioning CONRAC. First on Goldstein’s list is flexibility. The design must be able to accommodate the ebbs and flows of growth and attrition that agencies experience over the years.

In addition, he says that it’s critical for the quick-turnaround area—the space devoted to washing cars, vacuuming, refueling, etc.—to be close enough so cars can return to the “ready

line” quickly, but not so close that they’re visible to customers. Ultimately, shorter turnaround times mean the agencies need fewer cars in reserve. Conversely, longer turn times lead to larger and costlier inventories.

The facility also must provide the best possible in-and-out traffic flow, which he says is typically achieved with helix (spiral) or speed ramps. If the design doesn’t emphasize efficient egress and access, it negatively affects the customers’ experience. “We don’t want customers playing a game of Frogger with pedestrians, so we try to avoid cross-traffic with pedestrians and cars,” Goldstein says. “You should have one direction of flow in and another one out, so there’s no cross traffic.”

He also emphasizes that rental car facilities should be more than just parking garages; they should be viewed as retail spaces where agencies can maximize efficiency and make things easy for customers. Sometimes, this is achieved with larger grid patterns. By spacing the structure’s support columns 60 feet apart instead of 36 to 50 feet apart, as in standard parking garages, engineers create space for amenities such as more spacious car return lanes and 90-degree parking stalls, explains Goldstein.

“Larger grid patterns allows each car rental company to make the best use of available space,” he elaborates. “On top of that,



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Aesthetics Count, Too

When it comes to consolidated rental car centers, efficiency is king. But at El Paso International Airport (ELP), efficiency shares a throne with aesthetics.

To be sure, ELP's new three-story facility was designed to get customers in and out quickly and expedite the turnaround process for rental agencies. However, it was also designed with a host of finishing touches aimed purely at visual appeal.

The 9,000-square-foot atrium lobby features an eye-catching sculpture called *Radiance* hanging from the ceiling. Artists Norman Lee and Shane Allbritton created the artwork using hundreds of acrylic shapes based on traditional patterns of ethnic groups that have contributed to the city's diverse cultural heritage. "Depending on the time of day, light throws different colors into different places—it looks gorgeous," says Scott Goldstein, director of planning and programming for Enterprise Holdings, the rental car conglomerate that includes Enterprise, Alamo and National.

A terrazzo floor design created by Mitsumasa Overstreet helps guide customers into the CONRAC from the airport. The design, titled *The River/El Rio*, flows from the terminal through a covered walkway and into the new facility.

Designers from Demattei Wong Architecture even added special visual touches in the structure's elevator. Light boxes on three of the walls display brilliant photographs of the local scenic vistas passengers would actually see if the new structure weren't there. ✈️



Photo: Scott Weaver

Collaborative Approach

At ELP, the airport and rental agencies teamed up to develop a facility that would efficiently serve customers *and* the agencies. "By having a seat at the table, we can make sure the program works for everyone," Goldstein observes. "We all wanted a facility that everyone is proud of...that the airport is proud to have at its front door, that all our employees are proud to work in, and that, most importantly, creates a great customer experience. When customers fly into El Paso and rent a vehicle, they do so in a very convenient, well-lit facility—a place in which they feel comfortable renting a car."

Allowing rental car agencies to provide input regarding the building's design was critical to the project's success, says Goldstein. "In markets where airports don't see the value of rental car agency input during design, it's a real challenge for us," he reflects. "We don't want them to build something that doesn't work well for our customers."

That wasn't the case at ELP, he emphasizes. Airport officials were always gracious and welcoming, and the rental car agencies were involved from the beginning, reports Goldstein. The team met on a monthly basis to talk about major milestones achieved or decisions that had to be made regarding issues such as traffic flow and security.

"The collaboration we received from them [the rental car agencies] was outstanding," Rodriguez relates. "Ultimately, they're the industry experts, so they drove a lot of the 'back-of-house' design."

It would have been unwise to *not* ask for their input, he adds. ELP wants and expects rental car agencies to have clean, well-maintained cars readily available for customers, because that experience affects travelers' overall impression of the airport and the city. His bottom line: What's good for the airport is also good for the rental car agencies—and vice versa. ✈️

we also want the clearance height of the ceiling to be a little higher than a standard parking garage. After all, it's our retail space, and those few extra feet in height allow us to display our brands—hang signage that enables customers to find their agency or their specific car class or program more easily."

Goldstein also advocates specifying white ceilings equipped with LED lights to save energy and create bright environments where customers feel safe.

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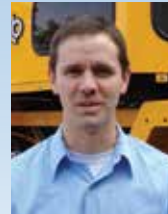
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Local Donations Help West Michigan Regional Build New Terminal

BY JODI RICHARDS

FACTS&FIGURES

Project: New Terminal; New Parking Lot; Apron Expansion

Location: West Michigan Regional Airport

Operator: West Michigan Regional Airport Authority

Total Cost: \$7 million

Terminal Cost: \$2.5 million

Terminal Size: 7,500 sq. ft.

Total Funding: Federal (34%); State (44%); Airport Authority (15%); Local Donations (7%)

Prime Consultant: Mead & Hunt

Terminal Architect: Progressive AE

Site Work & Apron Construction: Milbocker & Sons

Terminal Construction: CL Construction

Windows: Pleotint

Furniture Donations: Herman Miller; Haworth

Primary Objectives: Replace 1950s modular home with building designed as airport terminal; reflect corporate & economic success of surrounding area



Community support for West Michigan Regional (BIV) in Holland, MI, is highly visible to anyone arriving at the general aviation airport. Literally. Contributors who donated to the “Earn Your Wings” fundraising campaign will be formally recognized on a permanent display in BIV’s new Airport Business Center, the primary showpiece of a \$7 million improvement program that also added a parking lot and expanded the existing aircraft apron.

Greg Robinson, airport authority manager, explains that BIV’s facilities would not be what they are today without the financial support of local businesses, charitable organizations and community members. The project, completed in September, has been on the table for years. “The building was so out of date—it’s been a need for a long time,” he notes.

Unfortunately, donations from the community were not just a tangible show

of support; they were a financial necessity. When the project went out to bid, BIV officials determined that federal, state and airport authority funds would not cover the project’s full projected cost.

“We deleted a number of items from both sides (terminal and apron) to bring the project within budget,” Robinson explains.

Then the airport began its fundraising efforts.

Thanks to tremendous community support, the airport received enough donations to add back nearly everything that was cut. The recent influx of donations from corporations, organizations and private citizens is just one example of the support the airport has received over the years, notes Robinson. “There’s no way this airport would be developed the way it is—the runway length we have, the new terminal and apron, some of the repairs

Currently, it logs about 50,000 annual operations.

Overdue Update

The previous terminal facility was an early-1950s modular home, and the airport manager worked out of what had been a bedroom. “We outgrew the building years ago, and in no way [did] the building reflect the economic vitality and health of this area,” Robinson comments, noting that a number of large corporations maintain headquarters in Holland and the surrounding region.

“They’ve spent tens of millions of dollars improving their buildings functionally and aesthetically. We wanted to make sure that whatever we did design-wise would accurately reflect the community,” he adds.

In addition to meeting functional needs with adequate waiting areas, pilot facilities, public meeting rooms, etc., the new terminal also needed to be a positive reflection of the community.

As a result, roughly \$2.5 million of the project’s total budget was devoted to designing and building the new terminal. Other primary expenses included property

acquisition, site work, a new parking lot and expansion of an airside apron.

Mead & Hunt began working with BIV in 2005, when the airport hired the firm to conduct a terminal feasibility study commissioned by the city of Holland. At that time, BIV was a city-run airport, recalls Jeff Thoman, a project manager with Mead & Hunt. Eventually, the firm also managed preliminary engineering, environmental clearance, land acquisition and design/construction of the new terminal building; site work; and the 17,225-square-yard apron expansion. Design of the terminal building was subcontracted to Progressive AE of Grand Rapids, as the airport authority placed a high value on using a local architect.



JEFF THOMAN

To create space for the new terminal and apron, the authority purchased 15 acres of adjacent farmland. A ditch that originally ran through the project site was relocated to the north end of the airport property. After roughly 18 months of land acquisition and design work, construction began in August 2015.



and enhancements we’ve done—without additional private support,” he emphasizes.

For BIV’s most recent project, federal funds covered 34% of costs, and money from the state of Michigan, including economic development funds and airport division dollars, paid for 44%. West Michigan Regional Airport Authority contributed 15%, and fully 7% came from private donations—leaving the airport debt-free after the project.

The city of Holland owns the land occupied by BIV, and the airport authority owns its aboveground assets such as the terminal building, equipment, etc. The authority, which includes representatives from the cities of Holland, Zeeland and Park Township, was established in 2008. Until 2011, BIV was known as Tulip City Airport.

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Environmental clearance posed some challenges for the airport, Thoman notes. The site of the new terminal is adjacent to a wetland and the Tulip Intercounty Drain, which serves several counties. Mead & Hunt, in conjunction with BIV, completed an environmental assessment and ultimately only had to conduct about one acre of mitigation. The airport purchased wetland credits to offset the wetland impact, and the flood plain impacts were mitigated during the project itself through the creation of several detention ponds, Thoman explains.

BIV hired separate construction contractors for various elements of the project. Millbocker & Sons performed site and apron work, and CL Construction was responsible for constructing the building. Robinson praises both for their flexibility throughout the project. "Not only did we cut hundreds of thousands of dollars from the initial contract, but then they had to work with us in adding that back in as the construction moved along," Thoman says of the contractors. "That wasn't always the easiest."

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“Even with the reductions that were [planned], it still would have been a wonderful project,” he reflects. “But it was great they were able to find the money to bring everything back in.”

The Community’s Airport

During the design phase, airport authority members were clear that the terminal had to be impressive, because it is the first and last impression visitors have of the airport, explains Ken Brandsen, project manager with Progressive AE.

The community also played an integral role in design and planning, Robinson notes.

A committee of about 30 area residents met several times to discuss the function and look of the new facility “to make sure that it met with the economic perception of the community,” he explains.

Committee members provided a broad perspective on the region to help the design team develop its plan, adds Brandsen. Progressive AE led the committee through a series of exercises to help coalesce the final design of the facility. To some degree, the exterior mimics the wing of an aircraft, while the airside features plenty of glass to provide transparency and a welcoming feel, Brandsen says.

Pleotint, a local corporation, manufactured the low-emissivity glass installed in the new terminal. A self-tinting film within the architectural glass automatically darkens as the intensity of sunlight on the window increases during the day. In addition to decreasing glare, the special glass also helps reduce solar heat gain.

Overall, the new building is “quite a contrast” to the previous facility, Brandsen remarks.

In addition to new offices for airport management, the terminal also includes leased space for Tulip City Air, BIV’s fixed-base operator for more than 30 years. “We’ve always had a very positive, close relationship with the FBO,” Robinson states. “We’ve always worked well together. We benefit from the synergy of us being in the same space.”

On the public side of the building, there is a large lobby, meeting/conference facilities, and functional space for receiving passengers and pilots. Robinson estimates that 95% of the airport’s traffic is corporate aircraft. The new conference rooms will provide an opportunity for those who do not fly corporately to experience the airport, he notes.

Local furniture manufacturers Haworth and Herman Miller each donated \$75,000 in furnishings for the new terminal. “Their contributions certainly send a message to



KEN BRANDSEN



those who are entering the building or holding meetings in the building,” Robinson remarks.

Exterior projects include a snowmelt system for sidewalks and a new parking lot with about 100 spaces and a cul-de-sac area for dropping off passengers. The snowmelt system was one of the elements cut from initial plans for budget purposes, but it was added back in when a donor contributed funds specifically earmarked for the winter feature.

In terms of size, Robinson says the new 7,500-square-foot terminal is “just right for what we do now” with provisions for expansion or modification as the airport and FBO evolve. “We certainly meet the needs of today, and we’ve developed an airport that should meet the needs of the community in the near future,” he observes. “But we always have to be on the lookout and try to be aware of trends and conversations that may be going on in the community.” ✈️



Rockin’ Part 150s and NEMs

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The Twists & Turns of Transitioning Terminals

BY JENNIFER BRADLEY



FACTS&FIGURES

INDIANAPOLIS INTERNATIONAL AIRPORT



Project: Moving to New Terminal

Location: Indianapolis Int'l Airport

Opening: Nov. 2008

Timeline: Chrysalis began work in 2004; stayed 30 days beyond opening

Transition Consultant: Chrysalis Aviation Solutions

Philosophy: Hire outside consultant so staff can focus on their jobs running the airport



Project: Moving to New Terminal

Location: Wichita (KS) Dwight D. Eisenhower National Airport

Program Manager for New Terminal Construction: AECOM

Transition Consultant: Chrysalis Aviation Solutions

Special Events Planner: Wichita Festivals

Timeline: June 2015
Chrysalis came onsite 1 year before grand opening & stayed 60 days afterward

Strategy: Hire transition consultant to handle details of move, so project manager can focus on construction issues

Details: Special events planner organized airport tours, VIP reception, media preview, public open house & employee family day to help showcase new terminal



Moving operations to a new terminal is a tricky task, to say the least.

More realistically, it's a massive, complicated mission for any airport executive and staff.

John Kish, executive director when Indianapolis International Airport (IND) moved into its current facility, considers the undertaking a once-in-a-lifetime experience. Reflecting on IND's 2008 move, he jokingly cites the old saying: "If you want to make God laugh, just make a plan."



VICTOR WHITE

Victor White, director of airports for the Wichita Airport Authority, experienced the challenging process when Wichita Dwight D. Eisenhower National Airport (ICT) opened its new terminal in 2015.

While some airports successfully handle moving into a new terminal with internal staff, others hire outside consultants to lead the way. ICT and IND each hired Chrysalis Aviation Solutions to help with their transitions.

"We were probably half-way through the construction period of about three years before I finally decided to pull the trigger of bringing Chrysalis in," recalls White. "I look back upon my hesitancy now and think: Wow that was crazy. We couldn't have pulled it off without them, and in so many different areas, too."

Kish agrees about the value of hiring a firm with experience in terminal transitions. "The airport staff has their regular jobs to run the airport," he explains. "There are so many little details that have to be approached, and you have to understand the psychology of all the people who are moving, so you can focus the training on how to best get the message across."

Suzanne Phelps, a managing partner at Chrysalis, distills her firm's primary function as "helping the existing team function as it should, without undue stress."



SUZANNE PHELPS

As such, the company helps thousands of employees understand how their new terminals work, interfaces with airlines and other tenants and coordinates the physical move. But that's just the start. Trials and testing, passenger



to be duplicated during the transition. "Then, they managed the logistics," says Kish. "How do you move all the ground support equipment across the airport? How do you relocate people? How do you do the training? We had to give the fire department tours of the building, and I don't mean 'look-see' tours."

Training airport employees about the new terminal had to occur without diminishing the availability of personnel at the still-functioning terminal.

To prepare for the move, the airport needed special signage, and eventually barricades, for the facility entrances. During the actual transition, employees were stationed at the new and old terminals to direct passengers. "That all needed to be done too, and Chrysalis was instrumental in coordinating all of that," says Kish.

His bottom line? Having a transition specialist on board made the airport staff feel very supported throughout the potentially stressful change. "I think people understood the need to have someone whose focus was on activating the new building, making sure it worked and then moving the folks from one to another," he says. "There are a lot of human factors to make it work without a hitch."

On the first day of operations in the new terminal, one of Kish's employees took a picture of him walking down a long corridor in the new facility. He keeps that photo on his desk. "Believe me, the new terminal makes a great difference in terms of the image of the city,"

simulations, internal and external communications, and training and supporting employees are other key aspects, notes Phelps.

"The owner, the staff, the architects, the engineers, construction managers and subcontractors all have specific jobs to do," she explains. "What often happens, though, is that because they're focused on doing their jobs well, there's no one really looking across all of those activities, making sure they come together."

The Indy Experience

Because IND's new terminal is physically located a few miles from the old, the airport "drew a line in the sand" and executed its big transition in a single evening. Passengers arriving on flights after a certain time were received at the new terminal, and all outbound passengers the next day and thereafter departed from there, too. "The choreography of that process was something we thought we could handle ourselves, but it turns out we're glad we didn't even try," Kish reflects. "Just the range of things they touched was incredible. We could not have done it with our own internal staff by any means."

One of the key logistic details Chrysalis handled was ensuring that the airport had operable computer systems ready, with enough time to test and retest them, running operational simulations before traffic began flowing through the new terminal. "We couldn't literally unplug one and carry it across the field to the other terminal. We had to have systems in and running," says Kish.

On a more detailed level, the consultant helped figure out what equipment and systems from the old terminal could be reused in the new facilities, what had to be purchased, and what would need

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To verify operational readiness, Chrysalis runs simulations to ensure that elements such as boarding bridges are installed properly before a terminal opens.



he says. "That was important to us, and it came off without a hitch."

What Happened in Wichita

In September, crews were busy tearing down the old 1953 terminal at Wichita Dwight D. Eisenhower National (ICT); and the airport's new 12-gate, 300,000-square-foot facility was already in full operation. In addition to including the largest installation of glass passenger loading bridges in the United States, construction of the new terminal also encompassed a four-level parking garage and a rental car center with covered crosswalks to the terminal.

Victor White, director of airports for the Wichita Airport Authority, considers the guidance and support Chrysalis offered during the transition between the two facilities a blessing.

"I was hesitant in the beginning," he recalls. "But it was the best money we ever spent."

The consultant's team arrived on scene long before the terminal's grand opening in June 2015,

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and spent a full year organizing and planning for the transition. Among other duties, it took inventory of all furniture, equipment, etc. in every room of the old terminal, and then planned how and when it would be moved.

While Chrysalis technically reported to AECOM, the firm managing construction of the new terminal, personnel from the transition consultant worked side-by-side with White. He says this was a good arrangement, as AECOM had construction issues to handle and didn't need to worry about details such as where signs should be placed at the ticket counters.

Consultants helped train airline employees about ICT's new building—how to operate the baggage handling systems, run the flight information displays, use the public address systems and more.

When signage requirements for the airlines and TSA emerged that were outside the original building specifications, Chrysalis handled the issue.

It also organized cleaning out the old terminal. "The amount of dumpsters we went through in the weeks before the move was incredible!" White recalls.

At the new facility, Chrysalis personnel tended to details such as working with tenants and contractors to identify needed adjustments to thermostats and motion sensors for lighting, and ensuring that retail and food/beverage tenants were settled in and trained on new systems and equipment.

After ICT's grand opening, the transition consultant stayed another 60 days to wrap up training, close out project contracts, etc.

Technology to Training

White and Kish both consider the broad spectrum of services provided by their transition consultant as invaluable.



ANN THORVIK

According to Ann Thorvik, aviation practice lead at Chrysalis, many "problems" during airport transitions are simply byproducts of the inherently complicated process. She cites a project where baggage

carts were not going to be able to maneuver the winding turns of a new ramp as an example. From design to execution, the



ICT's new terminal features glass boarding bridges and a new parking garage/rental car center.

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Hiring a Celebration Specialist

When Wichita Dwight D. Eisenhower National Airport (ICT) opened a new terminal in 2015, it was definitely cause for celebration. To make sure the associated celebrations ran as smoothly as the new terminal itself, the airport hired Wichita Festivals, the nonprofit organization behind Riverfest, the city's annual nine-day gathering that draws 455,000 people.

Mary Beth Jarvis, president and chief executive of Wichita Festivals, was struck by the wide scope of ICT's grand opening. "I really respected that the goal of introducing the community to the new airport was to create a sense of shared celebration," says Jarvis.



MARY BETH JARVIS

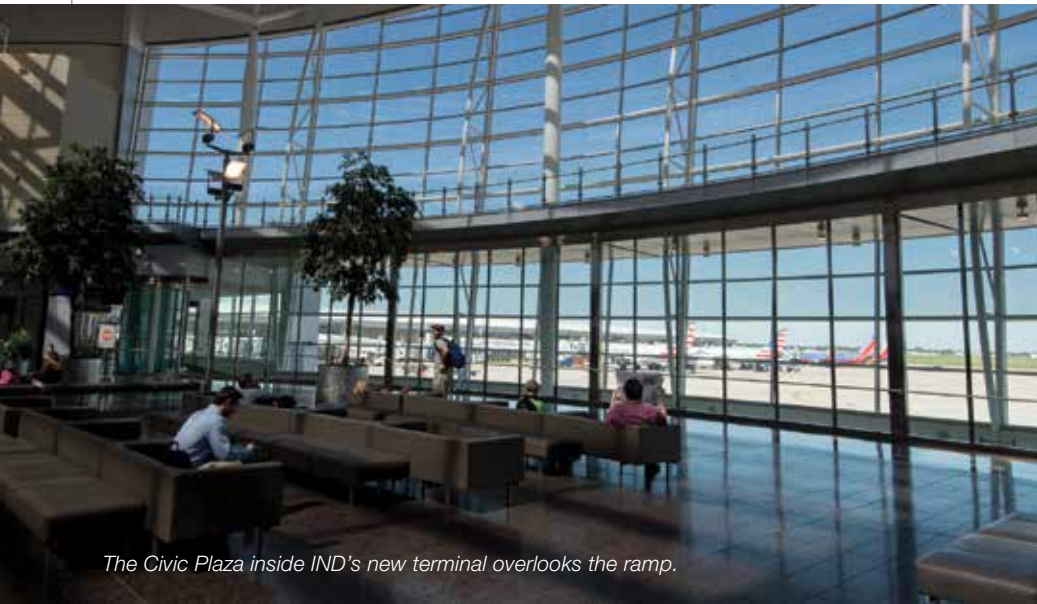
Wichita Festivals organized and staged four major events. A media day provided a sneak peek of the terminal to reporters from local newspapers, television and radio stations, and national trade magazines. A formal dedication gala allowed VIPs to mingle and enjoy music and food in the new facility. An open house for the general public attracted 10,000

people; and a similar, but more private, event gave employees the chance to show off the new terminal to their families. "They were really proud of their workplace and what they were a part of," Jarvis observes.

Leading up to, and during, each of these events, the construction team provided tours of the new facility and told the story of the project.

While many airports balk at the extra expense of hiring a professional planner for grand openings and other major events, Jarvis encourages them to look beyond costs to the lasting impression they can create: "This is what people will remember, as opposed to whatever bumps in the road they may have heard about during the process."

Victor White, director of airports for the Wichita Airport Authority, couldn't agree more. "Those kinds of things were really fun," he says of special events that helped showcase ICT's new terminal to the community and other stakeholders. "It was just an amazing experience all the way around." ✈️



The Civic Plaza inside IND's new terminal overlooks the ramp.

development of a new terminal takes years, and details simply get missed as plans change, she explains. Another example she recalls is kitchen equipment not fitting into the new space—it looked good on paper, but just didn't work.

"Sometimes, it's something as simple as working with tenants to determine the best operational location of the eyewash

station for an emergency," says Thorvik. Resolving such issues is just one type of help a terminal transition consultant provides, adds Phelps. "Essentially, we are there to observe everything and proactively resolve issues before they have an opportunity to jeopardize the success of the project, or cost money," she explains.

Based on his experience at ICT, White says that the timing of engaging a transition consultant is key. "Don't wait until a year into construction like I did," he advises. "Bring them into the process during the actual design of the building, so they can give some good advice on what not to do."

According to Phelps, most airports begin terminal transitions assuming they don't need an outside consultant. "Then, they reach a point where issues have cropped up no one could have anticipated," she explains.

The issues that arise aren't necessarily anyone's fault, adds Thorvik, noting that an outside consultant brings objectivity and transparency to the table. "Our ultimate devotion is to the owner," she emphasizes.

Transitioning to a new terminal also opens the door for new processes, notes Phelps. "It's an opportunity to change the way you do business. Our goal is that when we leave, all the stakeholders know how to do their jobs in the new environment and are 100% self-sufficient." ✈️

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FACTS&FIGURES

Project: Runway Reconstruction

Location: Coles County (IL) Memorial Airport

Runway Age: 40+ years

Dimensions: 6,500 ft. long, 150 ft. wide

Approx. Cost: \$5.3 million

Project Funding: 90% Federal, 5% State, 5% local

Timeline: 15 months—mid-July 2013 to mid-Sept. 2015; 113-day runway closure

Lead Consultant: Hanson Professional Services

General Contractor: Howell Paving

Rubblization Subcontractor: Antigo Construction

Other Subcontractors: Moore Electric; Dunn Co.; Varsity Striping; Cardinal Landscapes

Strategy: Rubblize concrete in place; use rubble as base for new asphalt pavement

Key Benefits: Speed; reduced material expense; no materials sent to landfill

Outcome: Project was completed under budget & before deadline; airport remained open for helicopter & aerial applicator traffic

Accolade: Howell Paving received 2015 Contractor of the Year/Award of Excellence from IL Dept. of Aeronautics for the project

Reconstructed Runway Rises From Rubble at Coles County Memorial BY DAN VNUK

Before Coles County Memorial Airport (MTO) in Mattoon, IL, reconstructed its 41-year-old main runway, the project team looked far and wide for the best way to keep costs down and cause the least possible disruption of day-to-day operations. The preferred strategy? Rubblization, a process that breaks down existing concrete into small, uniform chunks, thereby making it an ideal base for subsequent layers of asphalt or concrete.

With the project completed last September, airport officials report that the non-traditional method saved time, prevented the need for any materials to be hauled to a landfill and ultimately helped contractors finish the \$5.3 million project under budget and in less time than anticipated.

In addition, MTO never had to completely close. Despite a 113-day runway closure, the rural Illinois airport remained open for helicopter and crop dusting traffic throughout the entire project. Typically, the county-owned Part 139 airport averages about 35,000 operations per year, with the field's

fixed-based operator, Aerinova, helping serve a mix of general aviation, business and unscheduled charter traffic. Located between Mattoon and Charleston, the airport draws business from three major cities: Chicago, St. Louis and Indianapolis. Last year, MTO received an Outstanding Achievement Award from the Illinois Public Airports Association.

The project to rebuild Runway 11-29, plus a full parallel taxiway and apron, began in July 2015 and was completed in late September the same year. The project cost \$5.3 million and was 90% federally funded, with state and local authorities each paying 5% of the remaining balance.

MTO Manager Andrew Fearn explains that the 6,500-foot long, 150-foot wide runway was originally built in 1974 with 14 inches of concrete over a 7-inch asphalt base. "It began showing signs of distress in the mid-1990s and had undergone four



ANDREW FEARN



light rehab and patching projects over the next 15 years for a total of \$1.8 million,” chronicles Fearn. “A fifth rehab project was considered in 2013 at a cost of \$1.1 million, but a full pavement survey revealed more extensive amounts of joint failure than anticipated. The pavement had finally become too costly to maintain, and a permanent solution was needed.”

MTO consequently hired Hanson Professional Services to help chart a new course for the runway, and Jeff Litherland, PE, served as the company’s lead engineer on the project.

An analysis of various reconstruction options ruled out overlaying the existing runway, because extensive cracking made it prohibitive for use as a base. Removing and replacing the runway, the most expensive option with the greatest impact on operations, was also rejected. Costs to rebuild the existing runway with asphalt pavement were estimated at \$9 million; with concrete, projections rose to \$15 million. After careful analysis, the Coles County Airport Authority gave asphalt the nod.

Design & Construction

Hanson engineers suggested rubblization because it saves time and transportation costs by converting existing concrete pavement into the equivalent of a high

quality base layer onsite. MTO not only circumvented the expense of purchasing and transporting new base materials for the new pavement, it also saved the cost of breaking, excavating and transporting the old pavement to a disposal site.

Specialized equipment breaks up the old concrete into small pieces to produce a base for new pavement. This results in a smoother final surface than would be obtained if contractors applied new asphalt over an unbroken concrete surface, explains Litherland. The technique has been used on roads since the late 1980s, and is now experiencing wide acceptance for concrete airport runways, he reports.

Specifically, rubblizing airfield pavement is 52% less expensive than removing and replacing concrete, says Litherland. Furthermore, it reduces reconstruction time, diminishes the impact on the traveling public, and is an environmentally friendly “green” process, he adds.

“After all options were considered, it was evident that rubblization and a 4-inch minimum asphalt overlay would mitigate the existing concrete pavement failures,” says Fearn. “In addition, we could save time, material and cost by repurposing material on site.”

Hanson used FAARFIELD software and guidance materials from the FAA to design the project.

Let’s Get Ready to Rubble

A bid of \$4.71 million won Howell Paving the construction contract, and Antigo Construction served as its rubblization

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Rubblizing existing concrete into small pieces created a smoother final surface than if contractors had applied new asphalt over an unbroken concrete.

subcontractor. Larry Leitch, senior vice president of operations for Howell, notes that his company has worked with rubblization on projects for the Illinois Department of Transportation since the early 2000s, so it was confident in the design strategy Hanson promoted.

The FAA recognizes rubblization for runway projects in Engineering Brief 66: "When used in a flexible pavement section, the intent of rubblizing existing concrete pavement is to prevent reflective cracks typically associated with hot mix asphalt overlays placed directly on existing PCC [Portland cement concrete]

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pavements. Reflective cracking is prevented by obliteration of the existing pavement distresses and the destruction of the existing slab action.”

Rubblizing reduces the existing Portland concrete pavement into particles by at least 75% as determined by visual inspection. The largest dimension cannot exceed

3 inches at the surface, 9 inches in the top half of the previous pavement, and 15 inches in the bottom half of the pavement, explains Antigo Construction President Matt Shinnars.



MATT SHINNARS

Because it was rubblizing thick airfield concrete, Antigo pre-cracked the PCC pavement with a single-hammer guillotine breaker device to help achieve the required size rubble pieces. Crews then completed the concrete breaking process using

a 16-hammer MHB Badger Breaker® developed in-house by the contractor. Next, workers used a grid roller to further pulverize the concrete particles at the surface and begin the compaction process, followed by a 25-ton pneumatic-tire roller and smooth drum vibratory roller for final compaction and seating.

“One of the key benefits of the rubblization process is that it is ‘green,’ as the existing concrete pavement and base is recycled in place,” says Shinnars. “It reduces the need for new materials; there is also a reduction in truck movements and equipment usage. We’ve experienced good, long-term performance of the asphalt overlay, and the asphalt surface can be replaced as needed over time leaving the rubblized layer as is. Finally, the accelerated construction reduces impact on the travelling public and reduces associated emissions.”

Special effort was made to keep the subgrade dry during rubblization. An old,

but still functional, underdrain on the 29 side of the runway was kept and replaced afterwards, and a new underdrain was installed on the 11 side.

During construction, the runways were closed for 113 calendar days while crews worked concurrently on both sides. “Weather was a huge factor and we were fortunate to have a dry period for most of the project,” recalls Leitch. Ultimately, though, he credits the crews, other contractors, engineers and airport for the project’s success.

“Rubblization worked exceedingly well, and time will tell on its longevity,” says Fearn, with cautious optimism. “I am extremely satisfied with the runway rehab project and its outcome. The project went smoothly thanks to the excellent planning and preparation by Hanson Professional Services and an outstanding group of contractors led by Howell Paving.” ✈️



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New Software Helps Los Angeles Int'l Prepare for Future Interline Baggage Handling Requirements

BY RONNIE GARRETT



Los Angeles
World Airports

FACTS&FIGURES

Project: Interline Baggage Tracking System

Location: Los Angeles Int'l Airport

Annual Passengers: 30.6 million

Owner/Operator: Los Angeles World Airports

Baggage Handler: Aero Port Services

System Vendor: Brock Solutions

Software: SmartBag Tracking Solution

Implementation Began: Oct. 2015

Of Note: Software assists LAX's 53 airlines in complying with IATA Resolution 753 requirements



Mishandled bags cost the airlines money—lots of it.

According to SITA's most recent annual Baggage Report, there are approximately 6.5 mishandled bags per every 1,000 passengers, for a total of 23.1 million mishandled bags annually. Skift Magazine reports that baggage snafus cost the airlines an estimated \$2.3 billion in 2015.

The challenge of tracking bags becomes even more complicated with interline bags that arrive on one airline and depart on another. As these bags transfer between airlines, they're also moving across the airport from one terminal to another, upping chances for mishandling along the way.

Even so, airlines are steadily improving their performance, with reductions in mishandled bags reported year over year. The recently adopted International Air Transport Association (IATA) Resolution 753 sets the stage for continued improvements in baggage handling by 2018, and tasks airlines to be able to track all baggage from start to finish.

Specifically, Resolution 753 requires airlines to:

- demonstrate delivery of baggage when custody changes,
- demonstrate acquisition of baggage when custody changes,
- provide an inventory of bags upon the departure of a flight, and
- be capable of exchanging these events with other airlines as needed.

"This resolution basically demonstrates delivery of the bags when custody changes," summarizes Walter Vergara, chief marketing officer at Aero Port Services, the firm that provides interline baggage handling services for numerous airports, notably Los Angeles International and John F. Kennedy International.

Vergara notes that the requirements of Resolution 753 are a vast departure from what currently occurs at many airports—if handlers miss a baggage scan, there is a "gray area" of time when a bag's whereabouts



WALTER VERGARA

are unknown. "A bag might be gone for 40 to 60 minutes, then show up somewhere else; or it could be misplaced completely and sent to a different location," he says. "With this new resolution, airlines will be required to keep constant track of that bag."

Airports such as Los Angeles International (LAX) are readying now for the upcoming change. On October 1, 2015, LAX launched Brock Solutions' SmartBag Tracking Solution, a cloud-based mobile application that allows baggage handlers to scan each interline bag transfer as it is picked up and dropped off. Currently, all 53 airlines at LAX use the system. With about 30.6 million passengers per year, baggage handlers at LAX transfer more than 250,000 bags per month.

Before adding the new system, Aero Port Services had relied on software from a different vendor for about five years. The baggage handling contractor had recently asked that vendor to submit a bid for a new contract when Aero Port Services officials heard about Brock's product, which was already operating in other terminals at the airport.

"Their software [Brock's SmartBag Tracking Solution] was a little bit more daring for the future we knew was coming," explains Vergara. "It worked in real time, so the airlines can know in real time where their bags are. It would have taken our current vendor a fair amount of time just to catch up to where Brock's solution was at."

Phased Transition

Because LAX and Aero Port Services had an existing software system in place, they had to clear a few hurdles before transitioning to Brock's. "It would have gone a lot smoother if we weren't already working with another company," Vergara acknowledges.

Given the circumstances, the organizations chose to implement the new software gradually. "We had the system running Oct. 1, 2015, but some of the reports weren't available. They were phased in," explains Robert Enriquez, interline operations manager at Aero Port Services. "As we progressed into the first six months, different phases kicked in and more and more reports became available."



ROBERT ENRIQUEZ

During the first phase, the team got the system running, which enabled 120 interline baggage ground handlers at LAX to scan bags and read baggage transactions in real time. "That's all we required at that time because we didn't give Brock all that much time to get it done," says Enriquez.

The second phase involved importing baggage source messages into the system and establishing a live data feed. This phase gave handlers access to inbound and outbound information on their mobile scanners. In the final phase, a business analytics tool became available, along with invoicing capabilities and an airline reporting function.

According to Enriquez, the phased approach worked well. "We deal with 53 airline clients," he remarks. "If everything had started online Oct. 1, it would have been overwhelming and I'd probably still be trying to catch everyone up with the system. The way it

was done worked pretty well because everyone got to learn at their own speed.

Information is Power

In retrospect, Enriquez says that the previous system's biggest limitation was a lack of information. "All of the airlines are using multiple systems and none of those systems really communicate with each other. We could scan bags, but we didn't know what time the flights came in. There was a lack of information as far as BSMs [baggage source messages]," he explains. "The key benefit of the new system is that the more information the airlines and the baggage handlers have, the better the system is going to be."

Aero Port Services was attracted to Brock Solutions' experience (25 years in business, 10+ in the airport sector) as well as its SmartBag Tracking system, which allows baggage handlers to use a rugged mobile scanner to scan bag tags and view information about each bag. Now, handlers at LAX can check a bag's inbound flight number, the amount of time it has to make its connection and the assigned location for that bag's outbound flight. Armed with such information, handlers can make more informed decisions about the delivery of individual bags. In addition, each scan they perform creates a data point in the system's centralized SmartSuite database, which establishes a detailed transaction history for every piece of baggage that passes through LAX.

"Because the system tells how many minutes they have to get the bag to its destination, they can prioritize their work," explains Cliff Burchfield, who heads business development at Brock Solutions. "The system also keeps track of all information about each bag. We know who picked it up, when they picked it up and where they were. If there is ever an issue, an airline can look back up to five years. This information is helping airlines track down missing bags, which is more common than most people realize."



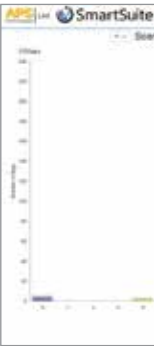
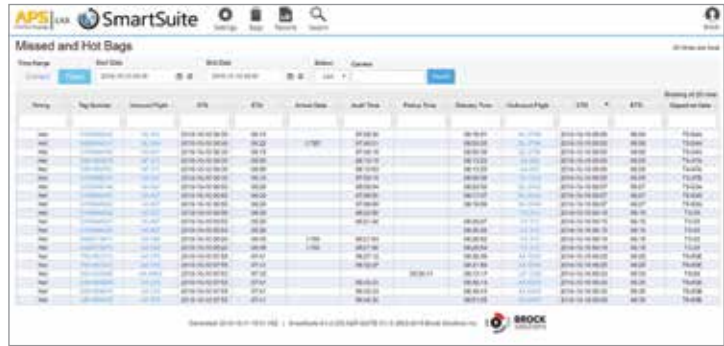
CLIFF BURCHFIELD

Access to such information aids planning. Dispatchers can be more proactive about inbound flights, notes Enriquez. On-screen information tells them how many bags are coming in, and how many are expected to come in hot (with less than 45 minutes to make their connection). "They are able to communicate that information into the field so that supervisors and drivers can make the necessary adjustments, whether it be waiting at a pickup point for a bag or going to the aircraft side to make sure we're getting these bags connecting," he explains.

The new system also helps when mistakes inevitably occur. If handlers miss-drop a bag, they immediately receive an error message. "In the past, we would have had to wait for the airline to advise us that it wasn't their bag," comments Enriquez. "Instead of being reactive, we're now able to be proactive and move bags as efficiently as possible."

Sharing Information

In order for LAX's system to work as intended, Brock Solutions needed access to flight data and all the baggage source messages



The new system provides a host of data for the airport, airlines and baggage handlers.

from the airlines. Currently, it receives flight information directly from OAG, the company that provides such data to airlines, government agencies and many travel-related businesses. Brock uses a variety of baggage source message feeds to receive all baggage information required for SmartBag Tracking to be effective.

The flight data provides crucial information about which flights are on time, which are delayed, which are going to be canceled, which passengers are rebooked, etc., explains Vergara.

The baggage source messages tell Aero Port Services' cart drivers the information they need to correctly transport bags for the airlines. With the new system at LAX, drivers know where the bags came from, where they have to go and how many minutes they have to connect. "They can make real-time decisions on how they're going to get that bag expedited to the airline," says Enriquez.

When baggage has been physically transferred and sorted, a baggage processed message is then sent to the system.

"These steps give the system an entire history of the bag as it traveled throughout LAX," Vergara remarks. "Now, baggage handlers know if there was a bag that was misconnected, and they are able to make corrections and resolve those problems. That is the biggest benefit of this system—it helps us make smarter decisions. It empowers key personnel to make the necessary decisions to make sure bags make it. The number of misconnects at LAX is reduced because we're all working together."

Airlines also have access to the system, so they can better track their bags, adds Enriquez. Specifically, carriers receive hot bag and missed bag reports. "If an airline wants to know, for example, how many



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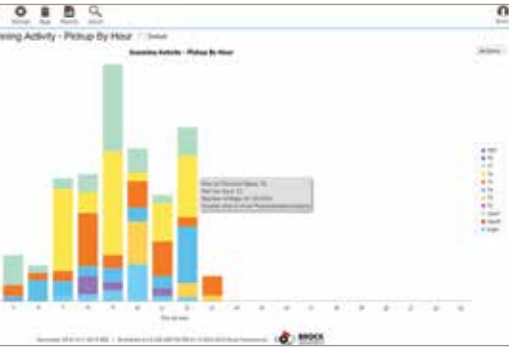
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of the bags APS (Aero Port Services) touched were misconnected, they can log in to the system, select the missed bag report for their airline, and see those bags,” he says. “And, they can drill down further and see why they were missed.”

Brock Solutions is in discussions with the various BHS operators at LAX to eventually integrate the SmartBag Tracking system with LAX’s other software systems. By doing so, Burchfield says

airlines will have a “complete story of all the bags at the airport, not just the transfer bags but the originating ones too. Once we interface with those other systems, we can start to understand the bag’s entire journey from end-to-end.”

Data Analysis

The system’s business analytics tool allows airlines and Aero Port Services to run specific reports. Enriquez uses it to run a bags-per-hour report, which helps him identify trends. He can see the number of bags handled per terminal, overall driver performance, how each driver’s performance compares to peers (bags picked up and delivered correctly), and more.

Airlines, in turn, can pull reports to see average delivery times, where misconnected bags occur, etc. There’s even a late delivery report that details bags delivered outside of the service level

agreement between Aero Port Services and the airlines.

“There are so many different types of graphs, reports or charts you can create. It’s just a matter of what you want to see,” says Enriquez. “You can even customize reports based on your own specific needs. But it’s all available within the business analytics tool.”

He also leverages the reports for decision-making about issues such as staffing. If traffic in the Tom Bradley International Terminal is on the rise, he can add handlers accordingly. If traffic is trending down elsewhere, cuts can be made there. “It really helps improve our overall effectiveness,” he reports. “There is no waste of manpower.”

The airlines, Aero Port Services and airport meet monthly to review the data, with each carrier only privy to data about its own operations. ✈️

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FACTS&FIGURES



Project: Post-Security Animal Relief Areas
Detroit Metropolitan Airport

Terminal: McNamara

Operator: Delta Air Lines

Installation: 2014

Consultant: Arconcepts

Contractor: The Petersen Companies

Product: Porch Potty

Terminal: North

Owner: Wayne County Airport Authority

Installation: 2016

Cost: \$130,000

Design Consultant: Arconcepts

Contractor: The Petersen Companies

Advisory Consultants: Paws with a Cause; Leader Dogs for the Blind

**Philadelphia Int'l Airport**

Location: Terminals A-F

Temporary Measure: 7 portable units

Cost: \$7,500/unit

Product Mfr: Proctor Production

Long-Term Solution: Prototype area co-located with human restrooms under construction near Gate D3

Cost: \$75,000

Est. Completion: Jan. 2017

Designers: Kelly/Maiello Architects; CDA&I Architecture and Interiors

Contractor: Daniel J. Keating Co.

Advisory Consultants: Liberty Resources, Int'l Assoc. of Assistance Dog Partners; Coalition of Assistance Dog Organizations

**Rhode Island Airport Corporation**

T.F. Green Airport-Providence, RI

Location: North Concourse

Cost: Minimal, largely built with on-hand materials

Design & Construction: Airport employees

Advisory Consultant: Dynamic Dog Training Services



Airports Find Various Ways to Provide Relief Areas for Service Animals, Pets

BY THOMAS J. SMITH

If you build it, they will come.” In this case, however, the “it” is not a baseball diamond in an Iowa cornfield, but animal relief areas inside airports.

Since August, all U.S. commercial airports have been required to provide a post-security service animal relief area (SARA); and airport operators are responding with a wide variety of options. Specially constructed facilities range from small, utilitarian spaces in obscure areas to entire rooms with finish materials that match nearby human restrooms. Self-contained ready-to-install commercial units are another viable solution.

Although the requirement was designed to accommodate passengers traveling with service animals, pet owners and handlers working with law enforcement dogs also stand to benefit.

For decades, outdoor relief areas were the norm, but the need—and demand—for indoor facilities has grown as airport security has tightened. Previously, passengers traveling with service animals or pets typically had to leave an airport’s secure zone to find a suitable relief area for their animals. Passengers with tight connections were often hard pressed to locate and travel to outdoor relief areas and pass back through TSA checkpoints in time to catch their flights.

Last August, the Department of Transportation (DOT) adopted a final rule requiring the every airport install at least one post-security service animal relief area in each terminal. The rule gave operators until August 2016 to comply or risk \$27,500 fines.

While the DOT does not mandate specific sizes, designs, materials or maintenance standards for the areas, it does require them to be wheelchair accessible. It also requires airports to consult with local service animal training organizations for suggestions about designs, materials and locations.

Open Doors Organization, a nonprofit that raises awareness of wide-ranging issues facing consumers with disabilities, has been consulting with airports about service animal relief areas for 16 years—both gratis and for a fee.

Eric Lipp, director of the Chicago-based organization, notes that post-security areas require more planning than their outdoor, pre-security predecessors. “The indoor design needs to be really thought out,” Lipp advises. “It needs to be accessible to those in a wheelchair—they need to be able to reach down and cleanup after their animal. There should be good irrigation and a regular cleaning schedule.”



ERIC LIPP

Lipp further explains that there is a conflict between two current laws: the Americans with Disabilities Act (ADA) and the Air Carriers Access Act (ACAA). While ADA holds airports responsible for compliance, ACAA places the onus on airlines.

The early pioneers were airlines and airports that took the initiative not because anyone was forcing them, but because they wanted to do the right thing, notes Lipp.

Now that animal relief areas are a federal requirement, cost and logistics are hot topics. After consulting with dozens of airports around the globe about pre- and post-security facilities, Open Doors notes that construction costs can vary widely. According to Lipp, the most significant expenses often include extending water and sewer lines and the corresponding concrete work that follows. Airports may also lose future revenue if concession space is used.

With the compliance deadline looming, numerous airports unveiled new animal relief areas this spring and summer. Minneapolis-St. Paul International Airport took a “holistic approach” by locating its post-security animal relief areas near rooms for nursing mothers, notes Lipp.

Airport Improvement talked to three airports of various sizes, in various parts of the country. Each approached the challenge differently.

Airline Steps Up In Detroit

At Detroit Metropolitan (DTW), an airline took the lead in one terminal and the airport in the other. DTW also has three pre-security outdoor relief areas.

Delta Air Lines, which operates and maintains the McNamara Terminal it uses as a hub, installed an indoor relief area there in April 2014, “[Delta] saw a need to help their connecting passengers with service animals and pets so they did not have to leave the terminal,” explains Dale Walker, the airport’s ADA coordinator and deputy director of Facilities, Design and Construction.



DALE WALKER

The carrier carved out 360 square feet of a wide-body holdroom adjacent to restrooms and installed two pre-fabricated units called Porch Potties. Each unit is connected to the sanitary sewer system and is equipped with a pop-up sprinkler, similar to those in underground lawn watering systems, that rinses the area’s surface at the push of a button. Similar units are used by pet owners living in high-rise apartment buildings.

Each of the units at DTW is wheelchair accessible and has a model fire hydrant. (See sidebar on Page 57.) The area also includes a sink for handwashing.

In the North Terminal, DTW used vacant concession space to meet the DOT requirement. The new station is adjacent to restrooms, which allowed easy access to water and sewer lines. According to Walker, the area was built from scratch for about \$130,000—including demolition of the previous concession space and modifications to the existing HVAC system, to provide adequate exhaust.

The 320-square-foot room is partially open to the concourse, with a relief area at the back behind a partition that contains a sink. The raised kidney-shaped relief area is about 10 feet long and equipped with pop-up sprinklers. “The biggest change was to build a larger platform to accommodate more than one dog at a time, while maintaining wheelchair accessibility,” Walker explains.

DTW hired the same designer, Arconcepts, that had designed Delta’s facility; and the same general contractor, The Petersen Companies, also won the bid for the North Terminal facility.

The airport consulted with two Michigan-based service animal organizations about both areas: Paws with a Cause and Leader Dogs for the Blind.

Maintenance of self-service animal relief areas is sometimes an issue, notes Walker. “Service animals are well-trained and their handlers are more conscientious about picking up solids,” he says, adding that pets and their owners are not always as dutiful. “They don’t always use the Porch Potty, and instead sometimes go elsewhere in the facility. Regardless, with more service animals and pets traveling these days, the relief areas seem to be a welcome addition.”

Philly’s Dual-Track Efforts

With seven terminals, Philadelphia International Airport (PHL) had more work on its hands to comply with the new DOT requirement. In July, it placed a portable animal relief unit behind the security checkpoint in each terminal while a team worked on the design and construction of a prototype for a more permanent solution.

For years, the airport has had seven “pet ports” in grassy areas outside the terminals.

“We wanted to find a short-term solution that meets the requirement but also a long-term solution that works in our terminal complex and benefits all passengers and law enforcement officers,” explains Craig Hinton, PHL’s airport engineering assistant manager. “We worked with various stakeholders to find the best place in each terminal where the units would be accessible and used.”



CRAIG HINTON

The portable units, fabricated by Proctor Productions, cost \$7,500 each, including materials and installation. Each of the three-sided 8-foot-by-7-foot units has a green artificial turf area, drainage grating, a faux fire hydrant and a sealed base to catch waste.

There is no running water in the portable units, but maintenance crews clean them each night. Workers remove the turf and replace the absorbent pads beneath, and then clean the turf and base.

After the DOT adopted its final rule, PHL formed a committee with representatives from its ADA-compliance team, risk assessment, legal, engineering, facilities and planning. The committee researched several different pre-fabricated portable units and consulted with Liberty Resources, the International Association of Assistance Dog Partners and the Coalition of Assistance Dog Organizations.

Philadelphia Int'l is providing portable units while it tests a more permanent solution.



Only one of the seven portable units has been moved because its initial placement was too close to stores and restaurants, Hinton notes. "Our custodial staff reports that they are still being called to deal with animal waste in the holdrooms and corridors, so we are still pushing out the word on the new portable units."

According to observations by PHL staff, the portable units are typically used once a day. With more than 31 million annual passengers, the airport processes nearly 1,100 departing and arriving flights per day.

As part of its continual program to upgrade restrooms throughout the airport, PHL is incorporating a prototype animal relief station into the restroom block near Gate D3. When complete, the area will include four restrooms: men's, women's, a companion care room and a service animal relief room. The animal relief facility is anticipated to cost \$75,000, reports Hinton.

Kelly/Maiello Architects and CDA&I Architecture and Interiors are designing the space, which will have the same finishes as the adjacent human restrooms. Daniel J. Keating Co. is the general contractor for all the restroom improvements.

The permanent facility will include an at-grade patch of artificial turf, a recessed drain pan with a hose to wash the area, a hands-free hand washing station and a dog bowl water dispenser.

The D3 facility is scheduled to be completed in January.

As PHL upgrades other restroom blocks, it will consider incorporating more service animal facilities. "It is an open question as to how many more locations," Hinton says. "We want to see how well the portable and permanent facilities work."

In-House Solution at T.F. Green

As a non-hub facility with about 3.6 million annual passengers, T.F. Green Airport (PVD) in Providence, RI, has a much different perspective on, and approach to, the new DOT requirement.

Historically, there has been little need for one, explains Alan Andrade, senior vice president of Operations and Maintenance.

Previously, a grassy area outside the terminal was the designated spot, and there were never any requests for other facilities, adds Andrade. The August compliance deadline and a changing passenger profile, however, have altered the airport's strategy.

"Now that the airport has international destinations, there is a greater likelihood of a need," notes Andrade. In 2015, PVD served 25,888 passengers on international flights, which entail more time for passengers and their animals at the airport.

Anticipating the August 2016 deadline, PVD formed an in-house committee that devised an in-house solution.



ALAN ANDRADE

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Airport tradesmen renovated a storage closet on the North Concourse, primarily using materials already on-hand. They removed existing walls and erected half-walls to create a 10-by-15-foot space and extended water and sewer lines to the repurposed space. A grass-like surface covers roughly one-quarter of the space, which also includes a self-flushing system, hose, sink and mini fire hydrant. (See sidebar to the right.)

The airport has not estimated cost for the project.

When crafting the space, PVD consulted Dynamic Dog Training Services, the local firm that provides relaxation dogs for the airport's patrolling PVD Pups program.

To date, employees note that more therapy dogs than service animals use the airport's new indoor relief area. ✈️

Fake Fire Hydrants: Clever Decor or Space-Wasting Cliché?

The animal relief area installed in the McNamara Terminal at Detroit Metropolitan Airport in 2014 includes a small model fire hydrant; the area built in the North Terminal this year does not.

"We have not put any such thing there," says Dale Walker, the airport's ADA coordinator and deputy director of Facilities, Design and Construction. "There are recommendations to use a rock or fire hydrant, but we are waiting to get feedback on the experience [from passengers]."

While the fire hydrant is a widely recognized symbol as a favorite place for dogs to lift their legs, some mock their use in service animal relief areas. Eric Lipp, director of Open Doors Organization, is squarely in the "anti" camp. Open Doors is a Chicago-based organization that raises awareness of various issues facing consumers with disabilities.

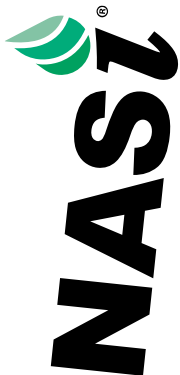
Lipp explains that Miami International Airport put a fake fire hydrant its large, park-like outdoor relief area years ago, and since then, many other airports have followed suit.

"There is the misconception that dogs are attracted to fire hydrants. That is not true," says Lipp, suggesting that airports could just as well use trees as decorative props.

In light of the recent Department of Transportation requirement for U.S. airports to install post-security animal relief areas, more and more airports will likely be debating the issue. "Indoors, space is a huge matter," Lipp advises, noting that fake fire hydrants can prove to be obstacles that dogs have trouble circling. ✈️



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Dallas/Fort Worth Int'l Achieves Carbon Neutrality With Holistic Environmental Practices & Partnerships

BY NICOLE NELSON

 During the last decade, Dallas/Fort Worth International Airport (DFW) has amassed a host of awards for its eco-friendly programs. One recent accolade both punctuates and encompasses the entire lot: carbon neutrality, as recognized by the Airport Carbon Accreditation program of Airports Council International. (See sidebar on Page 60 for more information.)

In August, DFW became the first North American airport to achieve the highest level of the worldwide program, officially putting to rest its storied past of environmental challenges. Given the impressive accomplishment, it's easy to forget that sustainability wasn't always such an ingrained part of the Texas airport's culture. But its journey to net zero status was long.

Back in the 1970s, air quality tests associated with the Clean Air Act revealed that ground-level ozone levels in the Dallas/Fort Worth area exceeded national standards. Like many other urban centers, it was classified as being in non-attainment for ozone, primarily for emissions generated from mobile sources (vehicles). As a result, local authorities were asked to develop strategies to reduce a wide variety of vehicle emissions, and the airport came under scrutiny.

In the mid-1990s, DFW embarked on a new master plan to identify the infrastructure improvements needed to accommodate the region's growing demand for air service. At the same time, difficult economics prompted airlines to increase pressure on airports to reduce their overall costs.

Amid DFW's financially demanding conditions, attitudes toward environmental programs began to change, notes Executive Vice President of Operations Jim Crites. "We identified that while we needed to keep

growing the airport, we were also working to reduce emissions and save money, all at the same time," recalls Crites, who joined the airport in 1995. "In that challenging environment, we came to realize everything that a holistic approach to sustainability could mean, and how we could use those concepts to meet all of our challenges."



JIM CRITES

Early Efforts

These days, DFW has expanded its environmental practices from mere compliance to programs that link operational efficiencies and cost avoidances to boot.

One of the first substantial endeavors was DFW's clean fleet program, which essentially converted "dirty cars" to cleaner alternative fuels (compressed natural gas) and hybrid-electric technology.

Interim measures to convert airport fleets to compressed natural gas occurred through a collaborative program with the FAA and the Texas Commission on Environmental Quality.

DFW also focused on its rental car operations, consolidating two major rental car areas and their associated bus operations into one. "Since the majority of our regional



FACTS & FIGURES

Project: Certified Carbon Neutrality

Location: Dallas/Fort Worth Int'l Airport

Partners: Airlines; FAA; EPA; TX Commission on Environmental Quality

Achievement Date: Aug. 2015

Accrediting Authority: Airport Carbon Accreditation Program of Airports Council Int'l

Independent Administrator: WSP Parsons Brinckerhoff

emission issues were caused by vehicles, we thought by addressing our own vehicle emissions, we might enable other stakeholders within our region to reduce their vehicle emissions as well,” Crites says. “By consolidating into one (facility) and having one bus fleet, (rental car providers) reduced their miles driven by over 50%. Then, we worked with them on getting the next level of engine technology to reduce their emissions.”

Despite significant gains regarding vehicular emissions, the airport still wasn’t where it needed to be, notes Crites. DFW consequently expanded its focus to the airlines, and once again the FAA provided the assist—this time in the form of grant funding to electrify bag tractors used on the ramps. The conversion significantly reduced the tractors’ emissions and drove down operational costs.

“In doing so, (the air carriers) had a better operation and a lower cost of doing business,” Crites relates. “That is what sold it for them.”

Net Zero Heroes

Time and again, DFW managed to replicate the win-win scenario that linked increased operational performance with decreased cost and emissions. And word got out.

“Somebody would come up, asking, ‘Can you improve my operation?’ Then somebody else would come up, asking, ‘Can you help me on my cost structure?’” Crites recalls. “It was one after another after another.”

A cultural shift occurred and “sustainability” was no longer considered to be a four-letter word, but rather a welcome visage in the black column of the airport’s ledger.

Crites and his staff became the unsung “heroes” as facilitators of that dialogue. In an evolutionary fashion, the links between sustainability and cost savings/operational efficiencies were optimized with more regularly captured data. This led to more informed decisions and a better understanding of both environmental impacts and opportunities to gain operational efficiencies.

Among other kudos, Crites credits his staff of “little matchmakers” for some of the most striking sustainability measures that have contributed to DFW’s carbon neutrality effort, including the procurement of renewable energy for a net reduction of 44,000 metric tons of carbon dioxide per year. DFW’s electricity contract with the Texas General Land Office requires 40% renewable energy from Texas wind farms.

Facility optimization has also been a highlight, with approximately 18,000 metric tons of carbon dioxide per year reduced through a partnership with Texas A&M Energy Systems Laboratory to improve the electricity and heating efficiency of airport facilities.

These measurements, among others, were first discussed three years ago with the arrival of Sean Donohue, the airport’s current chief executive officer. As the former chief operating officer of Virgin Australia, Donohue brought worldly environmental savvy to the table and encouraged the world’s third busiest airport to pursue certification through the Airport Carbon Accreditation program, which recognizes increasing levels of carbon management, reduction and offsetting.

Level 1 “Mapping” and Level 2 “Reduction” were attained through the quantification and demonstration of DFW’s decrease in emissions, explains DFW Vice President of Environmental Affairs Robert Horton.

“Our CEO really empowered us to pursue and evaluate this program, and when we really took a holistic view of all this data we were collecting, we realized we had absolutely been reducing the emissions—often exceeding national annual targets that are set,” Horton notes. “We realized we were doing a great job.”



ROBERT HORTON

Building on the momentum, DFW pursued Level 3, the “Optimization” step, of accreditation, which requires third-party engagement in carbon footprint reduction. Sustainable Programs Manager Ryan Spicer cites a program initiated with American Airlines in 2012 to illustrate the airport’s engagement with its largest airline tenant.



RYAN SPICER

“You must take a broader measurement view, which includes emissions from a broad scope of tenant activities,” Spicer explains, noting electrification of ground equipment as an example. “Not only do you measure what they are doing, but you engage with them in a formal partnership.”

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“We were measuring emissions on a project-by-project basis because we had to, and then we realized that a lot of the good things we were doing were having a positive impact not just on our bottom line but also on our ability to measure emissions,” he relates. “We started measuring emissions for the whole airport in terms of getting an idea of where we were and what our trends were over time, and because we were doing those things, we were able to have those conversations with our business partners and with our own internal departments. We started to realize we could make better decisions about what we’re doing, and that built us up to the last level of the program.”

In July, DFW applied for the highest level of accreditation: Level 3+, the “Neutrality” step, which requires airports to neutralize remaining carbon emissions—both direct and indirect—by

absorbing or offsetting. In DFW’s case, these efforts included procuring additional wind energy to meet all of the airport’s energy demands. For vehicle emissions, DFW invested in certified carbon offsets traded on the open market. Level 3+ status was approved in August, after net zero emissions had been certified over the course of one year.

Despite the comprehensive scope of the airport’s recent accomplishment, and all the work required to achieve it, DFW officials remain focused on the even longer-term journey ahead.

“Now the hard work begins, because we already set the bar,” Spicer remarks. “We have to really be innovative and find ways to ensure we grow in response to the community growth in a manner that is sustainable. That is what it all comes down to.” 

Greening North

The Airport Carbon Accreditation program is an industry-wide effort of Airports Council International (ACI) to help airports manage and reduce their carbon footprints. Worldwide, more than 170 airports are engaged in the effort, with participation rising steadily ever since the program began in Europe seven years ago.

In the past year, accredited airports collectively reduced emissions under their direct control by more than 206,090 tons of carbon dioxide—enough energy to power over 86,000 households for a year, note ACI officials.

The program certifies airports at four progressively stringent levels (see chart) via an independent administrator, WSP Parsons Brinckerhoff. To date, 26 airports have reached the highest level of accreditation:

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carbon neutrality for activities they directly control or can influence.

While Scandinavian airports dominate this group, one North America participant recently joined the eco-elite: Dallas/Fort Worth International.

As a whole, Europe has by far the highest participation rates, as the program has been available there the longest, but North America is showing impressive growth. Since the program launched here in 2014 with Seattle-Tacoma International leading the way, participation has more than doubled.

"Today, 20 North American airports have joined the Airport Carbon Accreditation program to lower their carbon footprint," reports ACI-NA

President and Chief Executive Officer Kevin M. Burke. "Not only is this program setting our industry on a path toward continued success in innovation and sustainability, but it's also allowing North American airports to exceed their own organizational goals to better their communities. I applaud the efforts our industry has made to become better partners in the global aviation system and their communities."

The notable imbalance of carbon accredited airports—20 in North American airports vs. 113 in Europe—mirrors overall societal and regulatory trends of environmental awareness and action. Clearly, North America has plenty of work ahead; but it's heartening to see that its airports are on the job. ✈️

Airport Carbon Accreditation Program NORTH AMERICAN PARTICIPANTS

Level 3+ Carbon Neutrality: Offsetting Direct & Indirect Emissions

Dallas/Fort Worth Int'l+

Level 3 Optimization: Engaging Stakeholders to Reduce Their Emissions

San Francisco Int'l

Toronto Pearson Int'l+

Level 2 Reduction: Managing & Reducing Carbon Footprint

Denver Int'l*

Portland-Hillsboro

Honolulu Int'l +

Portland Int'l

Los Angeles Int'l*

Portland-Troutdale

Montreal Pierre Elliott

San Francisco Int'l*

Trudeau Int'l

Seattle-Tacoma Int'l*

Phoenix Sky Harbor Int'l*

Vancouver Int'l*

Level 1 Mapping: Tracking & Understanding Emissions

Detroit Metropolitan*

Minneapolis-St. Paul Int'l*

Greater Moncton Int'l*

Victoria Int'l

Indianapolis Int'l*

Winnipeg Int'l*

* New participant in 2015/16 program year

+ Achieved new level in 2015/16 program year

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More Than Just Fundraising

When Brian Ryks, former executive director at Gerald R. Ford International Airport, approached me about spearheading the Gateway Transformation Project Fundraising Campaign, I instantly knew we were pioneering a path that no other airport had ever taken.

Gerald R. Ford International is the second largest airport in Michigan, and we are home to abundant businesses that have advanced our region into tremendous economic growth. The Brookings Institution named Grand Rapids the #6 City in Economic Performance since the recovery, and Trulia listed Grand Rapids as the #1 Housing Market to Watch in 2016. We're growing, we're thriving and air service continues to soar along with our community.

Our 53-year-old terminal building is sufficient for moving people through the concourses. However, with higher passenger volumes, increased business travel and an aging structure, we knew we needed a renovation that would make our space more welcoming, more efficient and more delightful for our guests. We also know how important ease of travel and customer service is to our airline partners. We're a better collaborator when we're improving the experience from curbside to the gate, and that's what we set out to accomplish. Simply stated, we wanted the experience at the airport to equal the community experience of West Michigan.

The Gateway Transformation Project, a \$45 million renovation project, was the solution. It will consolidate the security checkpoint; expand food,



CURT PULLEN

Curt Pullen, former executive vice president and president of Herman Miller North America, currently serves as vice chairman of West Michigan's Regional Air Alliance and co-chairs the Gateway Transformation Project Fundraising Campaign for Gerald R. Ford International Airport. Pullen is also a pilot and U.S. Air Force veteran.

beverage and retail space; add new restrooms, lighting, terrazzo flooring; and more. Ryks suggested a public-private partnership and called upon the West Michigan Regional Air Alliance, a cabinet of area business and community leaders. The Alliance appointed a team that developed a way to get the project done without requiring the airport to take on extra debt. The goal was to create an additional funding source so the airport could deliver a great experience *and* avoid assuming more costs than necessary. We set a goal for the airport to contribute \$25 million, and the fundraising committee is soliciting \$20 million through its campaign.

West Michigan is fortunate to have many successful businesses and organizations as residents, many of which have invested tremendously in helping create and enhance our vibrant community over the years. As we approached the CEOs, presidents and leaders of local companies, we heard one theme: They love our airport and instantly recognized the value of what we were attempting to do. This, in turn, has resulted in tremendous participation in the campaign.

Local companies see the same value in the airport that we see: It is the gateway to West Michigan. When a first-time guest steps off the plane in West Michigan, what will they see? Will it be

memorable? Will they feel at home? Will they feel a sense of what we represent?

When our customers, employees, business partners and families travel through Gerald R. Ford International, they will see the community's commitment to helping the airport provide a great travel experience. Visitors will also recognize what West Michigan is known for, and be eager to find out more about Grand Rapids, which was voted the "Best City to Raise a Family" (*Forbes* 2014), "Best Beer Scene" (*USA Today*, 2016), and one of the *New York Times*' "52 Places to Go in 2016."

Several companies are already supporting the Gateway Transformation Project, and there are more to come. To date, the project has raised over \$16 million, and Phase One of the construction is on-track to be complete by next summer.

We set out with a fundraising goal, but this effort has become so much more. Our community, our airline partners and tenants, our local business and leisure travelers will all reap the benefits of what started out as an idea—and what we will one day look back upon as a truly magnificent gateway to our West Michigan community and a testament of what working together can bring. ✈️

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