

Online Registration Now Open!

Early Bird Registration Ends 03.27.19



04.27.19 - 05.01.19

BUFFALO, NEW YORK

WWW.SNOWSYMPOSIUM.ORG

**OPERATION:
SNOW FIGHTER**

Aebi Schmidt
group

airport
business

OSHKOSH
AIRPORT
PRODUCTS

Airport Improvement

WAUSAU

Airport Improvement™



Piedmont Triad Int'l Grows Up & Brings Region Along for the Ride



San Antonio Int'l Builds Consolidated Rental Car Facility & New Parking Garage

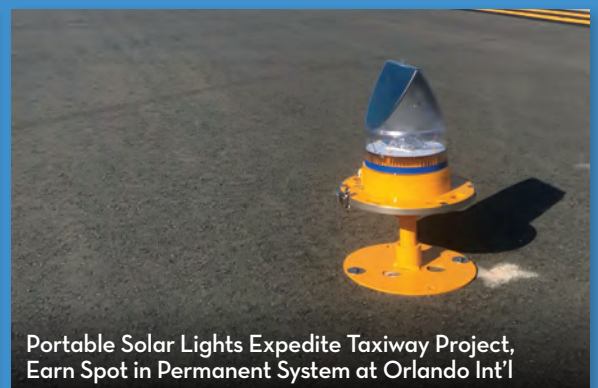
Nashville Int'l Uses Developer Model to Add Local Concessions & Street Pricing



AIRPORT STORIES INSIDE: ANC | ATL | BNA | CYS | DAL | FAI | GSO | LGB | MCO | OAJ | OAK | PQI | ROA | SAT



Cheyenne Regional's New Terminal Poised to Meet Region's Air Service Needs



Portable Solar Lights Expedite Taxiway Project, Earn Spot in Permanent System at Orlando Int'l

WINTER'S HERE! HOW'S YOUR EQUIPMENT WORKING?

Hey Ned, how's your winter been going?

Sure better than last year!

Last summer's investment in M-B audits and paid service is paying dividends in less down time. I should call them and get on the schedule for next year before it fills up.

What do you mean by that?

That sounds like good advice. Did you also hear what they are coming out with next?



....TO BE CONTINUED....

M-B OFFERS "ALL MAKES" SNOW REMOVAL VEHICLE PROGRAMS
FOR MORE INFORMATION CALL 920-242-7075 - **THAT WAS EASY!**

PAID SERVICE

| PAID AUDITS

| OEM TRAINING

KEVIN GADDIS | *Field Service Manager, Airport Maintenance Products* | Cell: 920-522-2094

AARON SCHULZ | *Product Support/Parts Manager, Airport Maintenance Products* | 920-898-1022



M-B Airport
Maintenance Products

Verisys Registrars®
Helpful Auditing

ISO 9001:2015 Certified

800.558.5800 | www.m-bco.com



080114-MBC



8 Cheyenne Area's New Terminal Poised to Meet Region's Air Service Needs



12 San Antonio Int'l Builds Consolidated Rental Car Facility & New Parking Garage



16 Alaska Creates Statewide System for Credentialing Airport Employees



22 Nashville Int'l Uses Developer Model to Add Local Concessions & Street Pricing



26 Oakland Int'l Invests in Seismic Retrofit for Int'l Arrivals Building



32 Portable Solar Lights Expedite Taxiway Project, Earn Spot in Permanent System at Orlando Int'l



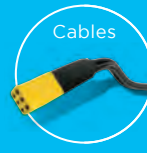
36 Atlanta Int'l Replaces Exterior Façade & Adds Lighted Canopies



40 Roanoke-Blacksburg Regional Develops Staff of Triple-Trained Public Safety Officers



46 Contract Control Tower Opens at Albert J. Ellis Airport



Simply smarter ground support

GAME CHANGING eGPU

Taking you to the next level

Introducing the ITW GSE 7400 battery-powered GPU. Ideal for gates and hangars with no fixed 400 Hz installations



Zero Emission

The ITW GSE 7400 is a gamechanger in the ongoing quest for lowering the environmental impact of airports. Zero emissions of CO₂ and NO_x at the place of use and drastically reduction of noise is the key for achieving greener airports and better working environments.

The combination of two well-known technologies has created the rock-solid eGPU tested in real life with great success at Amsterdam Schiphol Airports. Find your way to a greener airport at...

itwgse.com/7400



For greener airports and a better working environment

AXA Power, Hobart, Houchin and J&B Aviation
are now exclusively sold as **ITW GSE**

Publisher
Paul H. Bowers
 paulbowers@airportimprovement.com
 262.510.7832

Editorial Consultant
Rebecca Douglas
 rebeccadouglas@airportimprovement.com
 815.621.4525

Social Media Director
Kristin Shaw
 kristinshaw@airportimprovement.com

Creative & Production Director
Becker 505, LLC - Chad Becker
 chad@becker505.com

Circulation Director
Lisa Monday
 lisamunday@airportimprovement.com

Webmaster
Matt Tews
 matttews@airportimprovement.com

Contributing Writers
Scott Berman, Jennifer Bradley, Mindy Hamlin, Nicole Nelson, Paul Nolan, Robert Nordstrom, Jodi Richards, Mike Schwanz, Kristin Vanderhey Shaw, Thomas J. Smith, Victoria Soukup, Ronnie Wendt, Ken Wysocky

Advertising
Paul H. Bowers
 paulbowers@airportimprovement.com
 262.510.7832

Adrienne Gibson
 adriennegibson@airportimprovement.com
 262.844.4368

Vicki Jensen
 vickijensen@airportimprovement.com
 414-331-9768

Editorial Advisory Board
David Byers, Ph.D.
 Quadrex Aviation, LLC

Paul Cudmore
 Eagle Integrated Solutions

William Fife
 Peer Review Consultant

Glenn S. Januska
 Casper/Natrona County Int'l Airport

Chris Norton
 VTC

Eric Peterson
 Alliance

Donna Speidel
 Sightline Airport Marking Consultants



52 Piedmont Triad Int'l Grows Up & Brings Region Along for the Ride



62 Long Beach Airport Reconstructs Busiest Runway



58 Presque Isle Int'l Increases Connectivity With New Service From United



66 Love Field Deploys Next-Generation Wireless System

columns

Publisher's Column
Visionaries Needed

7 **Industry Insider** **70**
Management consultant Terry Ruhl examines shifts in the architecture/engineering sector.

advertiserindex

ACC	61	IATA	21
ACI-NA	69	ITW GSE	4
ADB Safegate	68	Kimley-Horn	43
Aerosweep	17	M-B Companies	2
Alliance	11	McCain Walls	15
Asphalt Systems	48	Mead & Hunt	55
AVCON	34	NASi	60
Avlite	33	Neubert	47
Baker	38	Park Assist	14
Becker 505, LLC	24	Parsons	30
Buffalo Snow Symposium	6	Pond & Company	37
Burns Engineering	19	Q&D	10
BYD	71	RS&H	49
CHA	41	Rubb	54
Crowdfind	45	Rutherford + Chekene	28
Daktronics	29	SEW	BC
Delta Airport Consultants	59	Sherwin	44
dormakaba	18	TranSystems	13
D.S. Brown	50	Trinity	35
EJ	51	Tymetal	23
Ennis-Flint	42	Varco Pruden	57
Fraport	25	Veoci	10
Fulfab	53	View	Insert
Gee	63	VRH	69
HNTB	65	Watry Design	31
Hog Technologies	7	WSP	39



AIRPORT IMPROVEMENT published bi-monthly by Chapel Road Communications LLC, 3780 Chapel Road, Brookfield, WI 53045. All statements, including product claims, are those of the person or organization making the statement or claim. The publisher does not adopt any such statement or claim as its own and any such statement or claim does not necessarily reflect the opinion of the publisher. Printed in the USA. POSTMASTER: Send address changes to AIRPORT IMPROVEMENT to 3780 Chapel Road, Brookfield, WI 53045. All rights reserved. Permission to reprint or quote excerpts granted only upon written request.

Online Registration Now Open!

Early Bird Registration Ends 03.27.19

04.27.19 - 05.01.19

Buffalo, New York



OPERATION: SNOWFIGHTER

NEC/AAAE International Aviation **SNOW SYMPOSIUM**

For over 52 years, the NEC/AAAE International Aviation Snow Symposium has been the world's premier event focused exclusively on the mission critical challenges of snow and ice removal and winter operations. Featuring cutting edge technology, AAAE accredited classes, and numerous networking opportunities, the show's entire program is designed to increase your skill and knowledge about airport winter operations. Join us in April 2019 to share your ideas and collaborate with hundreds of 'Snowfighters' from around the world.

- *Equipment Year with over 70 Exhibitors*
- *Numerous Education Ops and Sessions*
- *Airport Equipment Technician Seminar*
- *Former CIA Agent Keynote Speaker*
- *4th Annual Snow Plow Rodeo*
- *Legendary Closing Celebration*
- *Industry Award Presentations*
- *Networking Opportunities*
- *Industry Expert Speakers*

WWW.SNOWSYMPOSIUM.ORG



Aebi Schmidt
group

airport
business

OSHKOSH
AIRPORT
PRODUCTS

AirportImprovement

WAUSAU

NORTHEAST CHAPTER
NEC
AAAE

WWW.SNOWSYMPOSIUM.ORG

BUFFALO NIAGARA
INTERNATIONAL AIRPORT

Visionaries Needed

This fall, a senior VP of a mid-Atlantic airport told me that his team was having a hard time keeping pace with growing passenger traffic and flight volume. He said that in retrospect, the projects underway now should have been started much earlier, and the airport is working more to keep up with current demand than building for the future.

I get the feeling he's not alone. These days, there seem to be more airports trying to accommodate current growth than expanding for anticipated traffic in 2030. Given how long it takes to plan and build a runway or terminal, 11 years is not an unreasonable "head start."

Knowing what is needed in the future and doing something about it are two completely different things. That's why we need more visionaries. Those of us within the industry know that despite inevitable bumps in the economy, overall demand for air travel will continue to climb. It's not a question of *if* there will be an increase, but rather when and by *how much*.

Counting on local, state and federal governments to plan and push for airport growth 11 years from now is a non-starter. Generally speaking, they are not visionaries. Neither is the general public. We should *never* ask it for permission to fund a major airport project. Local citizens typically don't understand the process and often only see the cost to build...even if they're not paying for it directly. For proof, look no further than the recently held referendum on the future of Mexico City's partially built airport. Citizens never should have been asked to decide the fate of the airport. It's beyond the scope of their understanding. The airport was doomed as soon as that crazy referendum was proposed.

It's up to industry insiders to be the visionaries for our airports. So roll up your sleeves and get to work. It won't be easy, but we need you.

Cheers!

Paul



PAUL BOWERS, PUBLISHER



The World Leader in Marking Removal and Pavement Maintenance

WE HAVE YOUR SIZE!

**STRIPE
HOG
SH8000**



**STRIPE
HOG
SH7500**



**STRIPE
HOG
SK2000**




www.hogtechnologies.com



Cheyenne Area's New Terminal Poised to Meet Region's Air Service Needs

BY ROBERT NORDSTROM

 After two decades of thinking, planning and finally building, Cheyenne Regional Airport (CYS) recently opened its new \$18.5 million terminal. As part of the debut celebration, airport, community and business officials gathered with the public on Nov. 4 to welcome SkyWest's first flight into CYS from Dallas/Ft. Worth International (DFW), the first of scheduled daily flights between the two locales.

"This project was 20 years in the making," reflects CYS Director of Aviation Tim Barth. "Former Airport Director and AAAE President Jerry Olson envisioned this way back in the '90s. It was put in master plans and talked about publicly, but even after we engaged Alliance to design the terminal in 2007, it took another decade to pull the funding together."



TIM BARTH

But all those setbacks are in the rearview mirror. Today the airport's old terminal, which had a 50-seat capacity doublewide trailer for a holdroom, has been replaced with an open, airy 26,000-square-foot building with a 250-seat holdroom and apron able to accommodate three Boeing 737s.

"The old terminal was built back in 1961," Barth informs. "It was designed to accommodate 19- to 30-seat aircraft. We needed a terminal and facilities capable of supporting regional jet aircraft if we were going to help economic development flourish. The business community's No. 1 question was: 'What kind of air service do you have and how will it benefit our business?' We heard their concerns."

Airport officials also *responded*.

Form & Function

General contractor Q&D Construction teamed with architectural firm Alliance under a construction manager at risk protocol for the terminal project. (A 60-space parking lot and terminal apron was constructed under a separate contract.)

Aesthetics and functionality were key considerations throughout the design and construction process, emphasize Alliance Principal Eric Peterson and Q&D Aviation Services Vice President Duane Boreham.

Business travelers typically know their way around an airport, but when leisure passengers arrive, many are thinking about what they forgot at home and whether they have enough time to make their flight. With all of this on their mind, just walking into the airport can be a little intimidating, observes Boreham. "It can be confusing and often they just can't find their way around. With this airport, wayfinding is simple and flows very naturally. You walk in and there's the ticket counters; next to that is the security checkpoint. When travelers land and exit, they move smoothly through the holdroom and directly to baggage claim and rental car offices. It's difficult for a traveler to get turned around."

Even though the old terminal's halcyon days were far in the past and its functionality severely limited, the community felt a certain nostalgia for the old structure. (Before the airport added



DUANE BOREHAM



ERIC PETERSON



Designers added regional cues when upgrading baggage handling and check-in areas

the holdroom trailer, travelers waited in the vestibule for their flight). With this in mind, Alliance designed the new terminal to connect aesthetically with the region and the community.

“Cheyenne may have a rugged edge-of-the-West cowboy town feel, but it also has elegance and beauty,” Peterson explains. “We considered the unique geography of the airport’s location, where the high plains meet the front range. The precast block exterior reflects the rugged terrain and stone buttes. Along the curbside, a long canopy serves

as the building’s welcoming ‘front porch.’ Dynamic roof forms wrapped in dark metal project upward, creating strong silhouettes against the sky.

“Inside, the space is uplifting with ceiling heights ranging from 12 to 30 feet. Extensive use of glass helps create volume and brings in light on cold, blustery winter days. The building’s finish palette plays functional, hard-working materials like polished concrete floors and wall treatments made from salvaged snow fencing against refined materials like glazed tiles and rich wood paneling.”



FACTS&FIGURES

Project: New Terminal

Location: Cheyenne (WY) Regional Airport

Construction: April 2017-Oct. 2018

Cost: \$18.5 million

Funding: Airport Improvement Program; WY Dept. of Transportation; airport bonds; “6th penny” sales tax

Architecture & Design: Alliance

General Contractor: Q&D Construction

Sitework: Aztec Construction

Concrete: Reiman Corp.

Structural Steel: Puma Services Inc.

Heating/Venting/Air Conditioning: Commercial Design Engineering

Concrete Polishing: Concrete-Visions

Electrical: Simpson Electric Co.

Baggage Handling: Automatic Systems Inc.

Surveying: Inberg Surveying Co. Inc.

Water & Fire Services/Sewer: Mechanical Systems Inc.

Millwork & Siding: Pinnacle Cabinet & Millwork

Thermal Insulation: Moore Foam Systems

Roofing & Siding: Big Horn Roofing; Southam & Associates Inc.

Overhead Doors: Gold Label Door Co.

Glass & Glazing: B&W Glass Inc.

Drywall: Western Drywall Inc.

Ceilings & Painting: Phase 2 Co.

Flooring: Heritage Building Services

Signage: Apex Sign Co.

Fire Suppression: Rapid Fire Protection Inc.

Air & Water Barrier: MTN Inc.

Masonry: IMS Masonry Inc.

Doors & Frames: Rocha Woodworks Inc.

Landscaping: Big Bird Landscaping

Office Machines: Capital Business

Final Clean: Superior Cleaning

Decommissioning Old Terminal & Moving Service: K2 Construction Consultants

To further reinforce the regional connection, the airport acquired and installed murals and other artwork from throughout the state. "This gives travelers a great sense of what Wyoming is all about," Barth adds.

Security and baggage handling have been brought into the 21st century. The screening checkpoint in the old terminal could handle about 10 people at a time; the new terminal can simultaneously process 50 travelers. Under the old system, baggage had to be carried through TSA for screening; now bags are placed on a belt for screening.

Amenities include free parking and Wi-Fi, self check-in, rental car kiosks, a gift shop and eventually a restaurant. "We have a request for proposals out on the street and are currently talking to eight potential food and beverage providers," Barth informs. "In the meantime, we are making arrangements to install a kiosk for snacks."

Build It & They Will Come

The airport broke ground for the new terminal in April 2017, and soon after its sole air carrier filed for bankruptcy and left. Moreover, American Airlines had bailed in 2012, also as a result of bankruptcy. Not surprisingly, the loss of service left many in the community scratching their heads and wondering why CYS was building a new terminal.

"We took this setback as an opportunity to reeducate the public," says Barth. "With the diversion traffic from Denver International (DEN) and the various vacation and military charters coming through the airport, the terminal remained in constant use."

In August, just a few months before the terminal was completed, SkyWest announced it would begin daily flights to and from Dallas/Fort Worth International (DFW) in November. The Cheyenne Regional Air Focus Team helped develop public-private partnerships to secure \$2.3 million in revenue guarantees for SkyWest's first year of operation. After the year is up, the team expects the route to be self-sustaining.

Airport officials project that around 15,000 travelers will fly the SkyWest route in the first year. They also hope the airport can add more flights by next summer—additional DFW flights or new routes to Las Vegas and/or Phoenix.

Barth points out that pricing into and out of CYS is competitive, citing Nov. 7 to 9 roundtrips as an example: \$389 for CYS/DFW versus \$369 for DEN/DFW. When passengers factor in CYS' free parking and the cost/hassle of traveling the I-25 corridor to Denver, flying in and out of CYS becomes very attractive, he explains.

From a broader perspective, CYS hopes to fill the air service gap in Northern Colorado and Wyoming that occurred when Allegiant Air pulled out of Fort Collins and Casper. "When we

KEEP YOUR EYES ON THE SKIES

With Q&D Construction on your team, you can focus on what's important to you.

Our teams of aviation specialists are experts at building quickly and cost-efficiently without impacting airline or airport operations. The Q&D Aviation Group has constructed new facilities, improvements and relocations in over 100 US airports. Call us today for help with your latest project.

Q&D CONSTRUCTION
est. 1964

Connect with us here and at qdconstruction.com.

Duane Boreham - VP Aviation Group
(775) 786-2677

NCL 8197 A & B

veoci

It is time to break free from:
paperwork and incremental module costs

Other Systems vs **VEOCI**

- Safety Management System (SMS)
- Part 139 Inspections
- Work Order Management
- Emergency Management
- Lease Management
- Asset Management

Truly affordable, all-in-one operations system for any size airport

Contact us for a free demo!

203-814-1710 | veoci.com | info@veoci.com

looked at the numbers Allegiant had in Fort Collins, half the people were from Wyoming to begin with,” Barth notes.

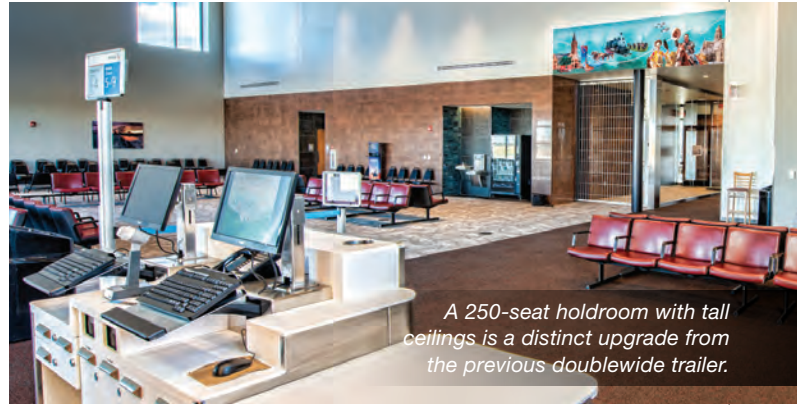
The Right Process

Peterson and Boreham both agree that following a construction manager at risk approach was a key factor in completing the terminal on time and within budget.

“We all came to the project with a collaborative and common vision,” Peterson remarks. “Communication played a big role—the willingness to listen to one another and realize that we were all on the same team working toward a common goal,” adds Boreham.

TSA was a concern at the front end of the project because of personnel changes and communication issues, recalls Barth. During a trip to Washington, D.C., however, the project team made a special effort to bring TSA into the project. “That really opened the door for us,” he recalls. “They had never really been invited to the table before. It ended up making the state and FAA believers that the construction manager at risk delivery method is a viable approach that airports should consider when going vertical with construction.”

Peterson reports that local interest in the project dramatically increased over the course of construction. While the business community understood the need for a new terminal from the



A 250-seat holdroom with tall ceilings is a distinct upgrade from the previous doublewide trailer.

beginning, enthusiasm from the broader community wasn’t evident until the terminal was built. “Air service is back and the terminal feels like it belongs,” he observes.

With the new terminal complete, Barth now wonders whether the loss of air service early in construction was ultimately a blessing. “We had more flexibility, less pressure and less of a sense of urgency throughout construction,” he relates. “We were able to take our time and do it right, construct a building that was going to be in the community for the next 50 years.” ✈️

ALLIANCE

2018 GLAAE Project of the Year
Gerald R. Ford International Airport Gateway Transformation Phase 1

Tel +1 612-874-4102 | www.alliance.us | Industry leaders in Terminal Planning and Design

San Antonio Int'l Builds Consolidated Rental Car Facility & New Parking Garage

BY MINDY HAMLIN



CITY OF SAN ANTONIO
AVIATION DEPARTMENT

FACTS & FIGURES

Project: Consolidated Rental Car Facility

Total Cost: \$178 million

Facility Opened: Jan. 2018

Prime Contractor: Turner Construction

Designer of Record: TranSystems

Electrical: VA Electric

Elevators: Schindler Elevator Corp.

Concrete: Concrete Forming Solutions

Fueling Systems: UST Fuel Systems Services Inc.

Mechanical Systems: Dynamic Systems

Related Project: 7-story, 2,600-space parking garage



When San Antonio International Airport (SAT) launched its \$178 million consolidated rental car facility project in 2015, it was a direct response to customer requests for more convenience. Before the new facility was built, each rental car company operated out of its own satellite facility and provided its own shuttle service to and from the airport.

“The customer feedback we received was that the previous rental system was inconvenient,” recounts SAT’s Aviation Director Russ Handy. “Customers had to cross a busy street and take their bags onto the shuttles. It was also very confusing to get in and out of the rental car facilities.”

The airport addressed these issues head on with the opening of its new CONRAC in January 2018.



RUSS HANDY

“Fast forward to today,” says Handy. “You have a five- to seven-minute walk to the rental car facilities. Once there, you are literally three minutes from your car.”

In addition, a skybridge connects the terminal mezzanine to the rental car lobby, which has 13 rental agencies and space for one more. An underground walkway allows drivers to walk to their cars without having to cross four lanes of traffic as they had in the past.

“From our perspective, the CONRAC freed up a lot of curb space, allowing us to completely redo traffic flow in and around the terminal,” explains Handy. “As a result, it is much more convenient and safer.”

Three in One

For prime contractor Turner Construction, building the 1.8 million-square-foot CONRAC was like three distinct projects wrapped into one: replacing the airport’s existing garage, constructing the CONRAC and constructing



PHOTO: TURNER CONSTRUCTION

a quick turnaround area where rental car companies perform light maintenance and wash, vacuum and refuel cars.

Original plans called for the CONRAC to be built on a site away from the airport's short-term parking garage. However, the project team soon determined that the structure would partially obstruct the air traffic control tower's view of the runways. Attention then turned to the existing parking structure.

"We worked collaboratively with the design team to work this piece out and began focusing on replacing the existing public parking garage," recounts Mike Kaiman, vice president and general manager, South Texas, for Turner.



MIKE KAIMAN

The solution was to build a new seven-story parking garage, with 2,600 spaces of public parking on the first two levels and rental car operations on levels three through seven.

Brett Van Hazel, capital program manager for the city of San Antonio, says that assembling an experienced team was important to the project's success.



BRETT VAN HAZEL

"The designer of record, TranSystems, is well-versed in creating CONRACs," says Van Hazel.

"One reason we selected them is because they had such a good history in designing CONRACs."

Turner Construction was tapped for the same reason. "Turner had just finished the CONRAC in Seattle, and that was very attractive in their proposal," he adds.

Extra Challenges

With plans set to build the CONRAC on the site of its short-term parking garage, the airport moved forward with construction of a new seven-story parking garage. Shortly after crews broke ground, the project team ran into its first "hiccup."

"When we first tore down the garage and cleared the site, we experienced underground water," explains Van Hazel. "The design team did core samples of the site to understand the subsurface. We were not able to fully capture everything as we discovered underground water across almost the entire site."

Ultimately, the team was able to address the issue, but the unexpected water negatively impacted the project schedule.

The specialized systems needed in the CONRAC also posed extra challenges for the construction team. "The quick turnaround area, in particular, required multiple systems, including car wash facilities, oil and lube systems and vehicle lifts for oil changes to ensure stormwater safety," says Kaiman.

The new CONRAC has room for 14 rental agencies.



PHOTO: TURNER CONSTRUCTION



PHOTO: TURNER CONSTRUCTION

A skybridge connects the rental car center to the mezzanine level of the terminal.

Communication & Collaboration

According to Van Hazel, ongoing communication with the rental car companies was crucial for the project to be a success.

“We were basically the middlemen between all of the stakeholders,” he explains. “We would bring experts from the rental car agencies and the airport into large design meetings where we would go page by page through the design and talk through the elements of the construction program.”



Increased revenues

Get more income from your garage via premium and conditional pricing. Our *Park SelectRate™* API is all you need. No need for expensive gate systems and costly loss of spaces.

Top-flight guidance for parkers and owners alike.

Patented parking guidance system solutions that increase parking revenues, efficiencies and customer satisfaction. Already proven in major airports.



Added security and safety

With our *Park Surveillance™* API, our M4 smart-sensors and L4 lightpipe sensors can capture streaming video whenever motion is detected in a space. Or continuously if desired.



Automated license-plate inventories

Our LPR-enabled, camera based system maintains a real-time inventory of every vehicle in your garage. While eliminating the need for costly walkthroughs or Mobile LPI.



57 West 38th Street, 11th Floor New York, NY 10018
+1 917-793-5400 www.parkassist.com

A member of the TKH Group



Find Your Car™ completes the wayfinding loop.

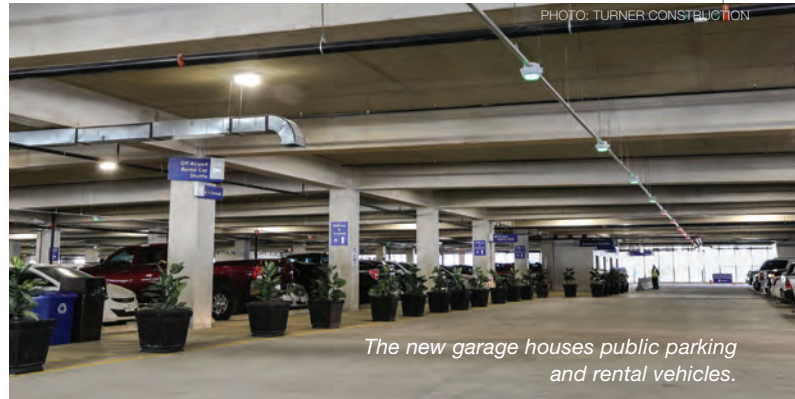
With our breakthrough *Park Finder™* API, parkers can locate their vehicles by simply typing their plate number into a touchscreen kiosk, a smartphone app or an enabled pay station.

PHOTO: TURNER CONSTRUCTION



The quick turnaround area required special systems for proper wastewater treatment.

PHOTO: TURNER CONSTRUCTION



The new garage houses public parking and rental vehicles.

Input from the local managers for the car agencies was also important.

“We would get input from the managers’ past experience and find out what they needed and what was a challenge for them,” says Van Hazel. “We did this at every design iteration.”

Apparently, the collaborative approach worked. “The rental car agencies were thrilled,” reports Handy. “It increased their efficiency by having everything in one place. As long as it was feasible financially, they were all for it.”

The Customer Experience

When the project scope changed to include demolition of SAT’s existing parking garage, the airport team also took the opportunity to explore other ways it could improve the customer experience.

“We tried to look at this from the customer’s experience,” remarks Handy. “Frankly, we capitalized on the opportunity by adding elements that were not in the initial project.”

Add-on elements included widening/repaving roadways and installing new road signs. Murals that portray San Antonio’s rich 300-year history were added outside the CONRAC building and in the rental car customer service area. Michael Menchaca created murals with images that portray San Antonio’s 300-year history.

“This is not just a garage, but also something our community can be proud of,” says Handy.

Next up for SAT? A \$25 million, private and corporate capital project that will feature seven hangars totaling 100,280 square feet. The multi-hangar development initiative will be the largest single project of its kind in the airport’s history. ✈️



FROM LEFT TO RIGHT: Boston Intl Airport, MA | Honolulu Intl Airport, HI | Denver Intl Airport, CO | San Francisco Intl Airport, CA; BOTTOM: San Diego Intl Airport, CA

McCain Walls® Modular Solutions

We understand how crucial it is to stay on schedule without disrupting travelers during construction, while also using sustainable products to promote eco-friendly airport initiatives.

Exceed your goals by installing McCain Walls reusable, reconfigurable, and recyclable modular wall systems, the premier solution to green partitions.

Our aluminum walls are installed, relocated, and dismantled faster than traditional drywall, reducing building material waste and emitting zero VOCs.

McCain Walls systems’ flexible and versatile, patent approved design provides endless configuration options to meet any airport project needs and transform the look of unsightly construction into a fresh and innovative space.



PROUD TO BE PART OF AIRPORT PROJECTS ACROSS THE U.S.

ATL Hartsfield-Jackson Atlanta Intl Airport
 BOS Boston Logan Intl Airport
 DEN Denver Intl Airport
 FLL Fort Lauderdale-Hollywood Intl
 HNL Honolulu Intl Airport
 LAX Los Angeles Intl Airport
 LAS McCarran Intl Airport
 PHX Phoenix Sky Harbor Intl Airport
 SMF Sacramento Intl Airport
 SAN San Diego Intl Airport
 SFO San Francisco Intl Airport

TEMPORARY BARRICADES & PARTITIONS | MODULAR WALLS | ARCHITECTURAL INTERIORS | SMALL BUILDINGS

www.mccainwalls.com | 760.295.9230 | info@mccainwalls.com

Proudly made in the USA by McCain Manufacturing, U.S. Patent No. 10,072,411

[Twitter](#) [LinkedIn](#) [Facebook](#) [YouTube](#)
 followMcCainWalls




Alaska Creates Statewide System for Credentialing Airport Employees

BY RONNIE L. WENDT

FACTS & FIGURES

- Project:** Statewide Employee Credentialing System
- Location:** Alaska
- Scope:** 2 int'l airports; 237 rural airports
- Owner/Operator:** Div. of Statewide Aviation, AK Dept. of Transportation
- Cost:** \$1.5 million
- Funding:** Int'l airport revenue fund; state general fund
- Program Design & Implementation:** GCR Inc.
- Key Benefits:** Automated credentialing; single integrated system for all airports; facilitates TSA regulatory compliance; provides continuous access

 "If you've seen one airport, you've seen one airport" is a popular saying in the industry. The sentiment is especially true in Alaska, where the state operates two very different airport systems: the Alaska International Airport System, comprised of Ted Stevens Anchorage and Fairbanks International, and the rural system, which includes 237 smaller airports. Naturally, different regulations apply to the different

systems; but matters become even more complicated when certain requirements apply to subsections of the systems.

Employee credentialing is one such area. Fifteen of the 200+ rural airports must adhere to the same TSA secure credentialing standards as their international counterparts; the rest have different standards.

In addition, each international airport operates its own credentialing system,

and the rural airports, while on the same credentialing platform, maintain it as a standalone system at each site.

Add into the mix the state's propensity to lose power and Internet connectivity for days at a time, and standardizing credentialing proves even more difficult. The state, however, is working to remedy the situation. The Division of Statewide Aviation for the Alaska Department of Transportation & Public Facilities (DOT&PF) and its technology partner recently launched a \$1.5 million secure employee credentialing system for all DOT&PF operated airports in the state.

Working with its technology partner, GCR Inc., the state has already rolled out the integrated program at Fairbanks International and 12 of the 15 rural airports required to have similar credentialing measures in place. The remaining rural airports and Ted Stevens Anchorage International will go online in the months to come.

"Anchorage is the last because it's the largest and most complex airport we had to deal with," explains Jeremy Worrall, airport operations superintendent for the Statewide Aviation Division. "They have around 10,000 badges and that's a much bigger lift."



JEREMY WORRALL

Overcoming Initial Resistance

"Prior to this project, both Anchorage and Fairbanks operated their own credentialing systems, and all of the rural airports were on a system of their own. Though the rural systems used the same system, they were not connected in any way. There was a separate standalone system at each airport," states Worrall.

With the various systems continuing to age as TSA credentialing requirements increased, the time had come to consider replacing them. Though plenty of credentialing options exist, the DOT sought to go beyond entering information and printing out cards, Worrall explains. "We could have gotten another standalone system [for each airport], but we wanted a smart system that had more capabilities, was more airport oriented, could meet the TSA's existing credentialing requirements and fit into the complex and changing airport credentialing world."

It became clear quickly that a single connected system for all airports made sense. However, not everyone agreed initially. One of the first steps was getting everyone to buy in to creating a singular system used by all. Some questioned why the state's smaller airports needed a system like one used by an airport the size of JFK International. While such airports maintain thousands of badges, some of Alaska's smaller airfields need less than 100.

"But those smaller airports must adhere to the same rules as the larger international ones," states Worrall. "They are required to meet all of the same requirements for credentialing."

Even so, he says it took "quite a bit of discussion, planning and leadership to get everyone to agree on that direction."

With agreement reached, the work of executing the new system began.

"We had to develop a common language for badges and badge statuses," says Tobie Curry, project manager of GCR's AirportIQ Secure Credentials. "We had to go through each status and come to a consensus on how that would be represented in the system."



TOBIE CURRY

Then & Now

Credentialing a potential new hire is a multi-step process: obtaining fingerprints and information for a background check; sending that data to TSA and the FBI; waiting for the results of the security threat assessment (STA); training for cleared individuals; and, finally, issuing a badge after training is complete.

"This process could take one to two weeks," says Curry. "But at the remote sites, credentialing staff may only be on site every third week or so; so that often extended the length of time it took to get a badge."

FOD*BOSS - FOD GONE



Photo courtesy of NASA

- ✦ **Unbeatable performance**
- ✦ **Removes nuts, bolts, washers, stones, sand**
- ✦ **No motors, vacuums, magnets**
- ✦ **Sweep widths 8', 16', 24' / 2.4m, 4.8m, 7m**
- ✦ **Efficient and fast - up to 30mph / 50kph**
- ✦ **Works on all surfaces - wet or dry**
- ✦ **Low cost, portable, reliable**
- ✦ **Maintenance free**
- ✦ **Easy to use**

contact@aerosweep.com
or visit www.fodboss.com

This product is subject to one or more of the patents and/or patents pending as listed at www.aerosweep.com





The new system creates an integrated, automated system for all airports in the state.

The state Transportation Department also needed to badge some officials for multiple airports, which required duplicate data entry under the old system.

A central data repository shared between airports was one way to get around these problems. With the new system, airports can share data such as background checks and fingerprint information.

“The state asked for a single repository of data that was set up for redundancy and high availability,” Curry says. “We had to include the capability for all airports to put information into the system. This way, if a person is working in Barrow but needs a badge in Gustavus, Gustavus can bring that information forward and share the background check and TSA results. They can share the information instead of requiring the person to go through another seven- to 10-day waiting period for a second background check with the TSA and FBI.”

Before the state’s new system went online, the only way to share information between airports was on paper via fax. “If you were in Anchorage and you wanted somebody at Petersburg to be able to use your background check or TSA to clear this person, they would have to send a letter on letterhead to the St. Petersburg airport,” Curry says. “It was paper-based and involved a lot of emails and phone calls.”



Installation at Fort Lauderdale-Hollywood International (FLL)

One way to simplify the travel experience.

NEW Exit Lane Corridor with Advanced Smart Technology

- 3D imaging tracks activity within the one-way corridor.
- Highly sensitive stereo sensors detect breach attempts, suspect persons and objects.
- Open ceiling for easy integration of airport sprinkler and smoke detection systems.
- Stainless steel construction.
- Configurable security zones to meet airport security requirements.

See us at
 AAAE/ACC Airport Planning, Design and Construction Symposium
 Denver, CO February 20 – 22 Booth 406
 Visit dormakaba.us/AI-ELBC



Once an airport received needed information, an employee had to key the information into that airport's database. "A lot of the same information, all the same biographical details had to be typed into each system; and sometimes there was a third system that data had to be entered into," says Worrall. "There was a tremendous opportunity for error, a ton of wasted effort. It was very time-consuming and repetitive.

"The integration brought all of this under one umbrella," he adds. "Fingerprints are processed directly within the system, and it's no longer a separate system. Outbound background checks are automated now. People don't have to do that. And there is integration with service providers that manage those background checks."

Moreover, the new system is completely paperless.

Every airport has access to a website portal where authorized signatories can apply to receive badges for employees. Representatives from airlines, ground handlers, etc. fill out online badging applications for each new hire, and the portal electronically submits information to the airport badge office. The badge office then schedules an initial enrollment session—a face-to-face visit where an airport designee gathers the new hire's identification, takes fingerprints and photographs, and collects other pertinent information. This information is electronically dispatched to the designated aviation channeling service for processing, which returns results electronically.

"It's all automatic now," says Worrall. "Before we had to move files with thumb drives, email or fax things, and type information in several times. Now, as soon as they finish the initial enrollment step, the system automatically sends out the information that's needed for the background check. Once the approvals are in place, the system automatically generates an email to the badge applicant and their signatory that the background checks are clear, and they can come back to the airport to complete their required training and get their badge."

The time savings is significant, reports Curry. Previously, the entry process alone could take up to 45 minutes, now it takes just 15 minutes.

"With the new interface put in place for the designated aviation channeling service, we're



Considering **Burns** Just Ask Our Clients!

“ Burns has been a long-time partner with us on numerous programs. Their aviation leadership team consistently provides exceptional technical solutions. ”

– Katherine Goudreau, Managing Director, Corporate Real Estate
American Airlines

Burns is a nationally respected provider of specialized engineering services, bringing highly-technical, sought-after engineering expertise to complex transportation and critical infrastructure projects.

Burns

burns-group.com

Inspire. Create. Deliver.

seeing background checks come back within a few hours, and STAs back in one to two days,” he adds.

The system is also integrated with the training provider, so airport personnel know at a glance what training each new hire has completed and what is still needed. “It can identify required training that is for everyone, training that is required by the authorized signer, and other airport-specific training,” he specifies. “Let’s say they need non-movement driver’s training; the airport connects that link to the training so that the icon is added to the person’s badge once he passes the training.”

The system also ensures that the right documents are in place for the specific type of training each person is to receive. “If the badge needs a driver’s type endorsement, we won’t let them print a badge with that endorsement without a valid driver’s license in the system,” explains Curry.

Required Redundancies

In late November, an earthquake shook Alaska, knocking out power and Internet across the state. However, extreme winter weather often does the same thing, making communication difficult for days at a time.

“There are routine, frequent and sometimes long internet outages in Alaska,” Worrall explains.

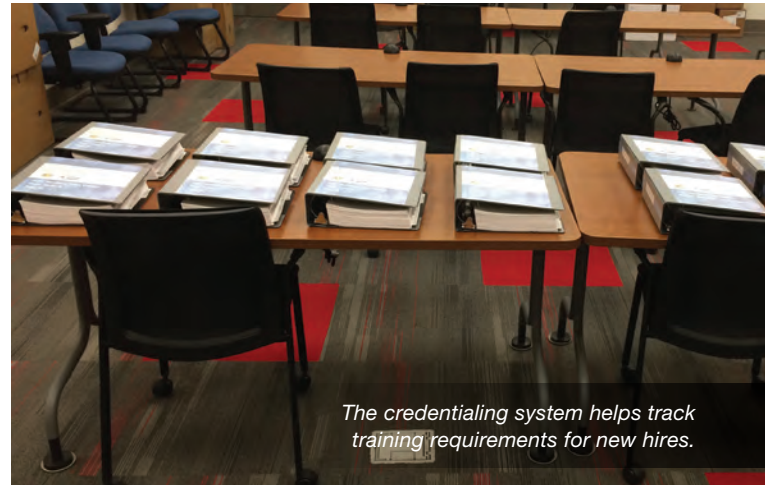
With that in mind, how do Alaskan airports rely on a cloud-based system for credentialing?

In a word: Redundancy.

A partial version of the credentialing system that is loaded onto each workstation allows airports to operate a limited, or mini, secure credentialing system when the internet is down. This system only contains the data for that airport, and is periodically uploaded and synchronized with central repository. “Any changes that happen in the central database are also pushed down to the local database,” Curry says.

This step continuously takes place in the background. If the internet goes down and an airport cannot access the web-based application, personnel can switch to a locally hosted site that allows them to make changes within the system. “This data is stored locally until the connectivity is back up, and then it is pushed up and submitted to the designated aviation channeling service,” Curry explains. “They can even disable badges on site because they can communicate with access control from the local station.”

Worrall notes that new records aren’t sent out for background checks when the internet is down, but airports can still perform many basic functions. “We can enter new information and it can sit in the system and wait for the next connection to be transmitted. This means that in most cases, we won’t have to turn customers away because of an internet outage,” he relates. “We may have to wait until the internet is restored to submit new background checks, but with this offline capability we can still work within existing badge population as well as continue to meet our TSA regulatory obligations.”



The credentialing system helps track training requirements for new hires.

Data at the central repository is also protected by redundancy. There are two data centers: one in Fairbanks and one in Anchorage. Each site has physical servers that house all the data for the airport system, and the system is duplicated on two servers at each site. If a server fails, the data moves to the center’s second server. If both machines are lost, the data moves to the other location.

“Everything is replicated back and forth,” says Curry. “There is a lot of high availability and redundancy in the network.”

The large geographic span of Alaska also complicates matters. “With Alaska’s size and the distance between sites, network latency can be a problem,” says Curry. “We had to make sure we were only passing the minimum amount of data and using the minimum amount of bandwidth, so the system could still be responsive to the end user.”

One More Phase

Eventually, the Statewide Aviation Division would like the system to credential workers to work at multiple airports in just one step. “This is rural Alaska, so airline folks from one airport may go out to help another airport,” Worrall comments. “FAA technicians, for example, support the NavAids at all the rural airports; they don’t have folks based at every single one, they travel there.”

Currently, such employees must be credentialed at every airport and carry a separate badge for each. The new system will make this process easier. “We can now take a background check from one airport and charge ahead with badging at another airport because the system already has that information and knows they’re good,” Worrall explains. “But we are still badging them for another airport. We are still having to train them again. We are still going through those steps.”

The next phase of the project will develop a multi-airport credential. But first, Alaska DOT needs to clear TSA hurdles to gain federal approval, notes Worrall.

“We will have to demonstrate how we can manage this and stay within TSA regulations,” he says. “But we hope to move forward with that in the next year.” ✈️

What's in a View?



For most of history, humans have lived in harmony with the outdoors; remember, we are originally an outdoor species. But over the course of history, we've found a way to create our own shelters, as a way of separating us from the elements to protect ourselves. First came walls, doors, roofs and floors. Then we discovered that melting sand could make sheets of glass – a solid material you could see through. Windows were not always accessible to everyone in the early days and were indeed a source of luxury and pride for those who could afford them.

Now a staple of modern architecture, glass has kept some of its magical allure – creating a barrier to the outside world, yet still inviting in the views and natural light to lighten even the darkest of rooms. Recently, we've seen bigger and clearer windows appearing in airport designs as the demand increases for a better passenger experience. "The challenge is providing

access to the desired light and views throughout the day when some of the time heat and glare can make parts of the airport uncomfortable or even unusable" says Andy Kuchel, VP of Aviation for View, Inc. "Traditional, inefficient solutions to this problem like frit and shades detract from the aesthetics and experience."

Based in Silicon Valley, View manufactures a new generation of smart windows that let in natural light and views, enhance passenger experience and increase usable space. View's glass is installed across 35 million square feet of buildings space with another 35 million in progress. Airport customers like DFW, SFO, BOS, SEA, CLT are proving that this technology is at the center of the nexus for modern airport design – addressing multiple benefits such as innovation, energy savings, passenger experience, efficient space utilization, and increased non-aeronautical

revenue through increased dwell times all without compromise.

"While dynamic glass technology, that adjusts itself to light and heat is already 50 years old, it never managed to move past small applications, such as airplane windows. That's where View stepped in, developing large scale, reliable self-tinting smart windows, powered by a sophisticated intelligence engine that responds intuitively to outside conditions, day or night," says Kuchel.

"Someday, every airport window will be smart for many reasons," says Kuchel. "There's no reason to install windows and then cover them up with blinds and shades to the detriment of the occupants' health and wellness." The company has yet to come across anyone who says, "I love my blinds".

view[®]



VIEW BY THE NUMBERS

450

SUCCESSFUL INSTALLATIONS

250

INSTALLATIONS IN PROGRESS

35 MILLION

SQUARE FEET OF GLASS

800+

EMPLOYEES

750+

PATENTS

A Tale of Four Airports

How four airports with unique needs found their solution from View.

Today's traveling public demands technology and service standards in the air and in the airport terminal that rival those outside the travel experience. Savvy airports realize this and invest time and effort to develop innovative ways of meeting these demands.

To this end, airports continuously work to identify solutions that improve the passenger experience, while reducing operational expenses and improving revenue streams. View's smart windows fit the bill on all counts. The high-tech dynamic glass system reduces glare and unwanted heat within a terminal, providing a more comfortable environment for passengers while reducing an airport's carbon footprint.

"View is proud to be at the forefront of the movement to create delightful human experiences," says Kuchel. "In addition to the tremendous growth in commercial offices, healthcare facilities and universities, we now see airports rapidly adopting View to transform their occupant experience."

BOOST PASSENGER EXPERIENCE

Dallas-Fort Worth International Airport (DFW) is a standout among its peers. This bustling airport, which serves an estimated 67 million passengers a year, takes its commitment to the passenger experience very seriously. So much so, in

fact, that the fourth largest U.S. airport teamed with Cornell University to study passenger behavior to learn why passengers sit where they do within a terminal. Their research uncovered two reasons behind a passenger's decision on where to sit:

- 1) They don't want to feel crowded. Passengers will sit in less crowded areas if it means they can avoid sitting next to a stranger.
- 2) They sit where there is a view and access to natural light.

The airport took this information to heart and began investigating why passengers were avoiding certain areas within its terminals. It found that while banks of floor-to-ceiling windows provide passengers with a pretty view, they also push passengers away when the scorching Texas sun streams in. The reasons for this became clear when further research revealed surface temperatures on seats and floors in the area climbed to over 90° F.

The study led the innovative airport to View, which hit both points without compromise. By installing dynamic glass in two east-facing locations in Terminal A, the airport lowered hold room temperatures near the windows by an estimated 20 degrees on sunny days. Surface temperatures on seats and glass also plummeted by 10 to 15

degrees. This allowed more passengers to sit near the windows in seats that were once too hot for comfort. In turn, it eased congestion in the hold room and satisfied passenger desires to see out.

Meanwhile, Terminal A's Twisted Root Restaurant uncovered other benefits. Keeping the area cool and glare free near the windows kept passengers around longer. Dwell times increased by 83 percent, and alcohol and food sales soared by a whopping 102%!

Andy Kuchel, vice president of aviation for View, reports he's not surprised by these results. While restaurant patrons could look out a large bank of windows, he says, "during certain times of the day, the low eastern sun would come glaring in and make the restaurant a miserable place to sit."

He clarifies the resulting revenue boost may differ from location to location. "You can't just stick our smart windows everywhere and expect a revenue increase of 102 percent," he says. "But in areas experiencing this type of problem, View windows can make a huge difference."

FUTURE FORWARD FOCUS

When Charlotte Douglas International Airport (CLT) opened its newest concourse in the summer of 2018, it welcomed in high ceilings, wide walkways and abundant seating with

soaring glass windows. One technology propelling the airport toward its goal of better serving passengers, business partners and the environment is View.

Here, airport officials knew from the start that providing a premier passenger experience and leveraging cutting-edge technology were paramount for the 230,000-square-foot expansion of Concourse A.

With that in mind, the airport, which serves 46 million passengers a year, joined a growing list of leading airports adopting dynamic glass when it included this technology in its \$200 million expansion. They installed dynamic glass in the new 11-gate concourse to increase passenger comfort by adjusting the tint of the glass automatically up or down throughout the day. Doing so, reduces glare and unwanted heat within the terminal while also trimming the airport's carbon footprint.

"Charlotte Douglas installed View in a transient area. The main goal behind the installation is very experiential," says Kuchel. "It's a very hot climate, but they wanted lots of windows and they didn't want to use blinds. For them, the installation was about providing a very experiential, open feeling while allowing in lots of natural light."

It was also about showcasing the region's growing economy fueled by a rapid increase in tech companies and tech jobs. The airport showcases this future forward focus by using the panels of dynamic glass to spell out CLT in large 15-foot letters. This is done by making the tint of the glass slightly different with adjacent windows.

ROOM WITH A VIEW

One of Boston Logan International Airport's (BOS's) claims to fame is its gorgeous view of the harbor and the cityscape behind it. Preserving the view was top of mind when the Massachusetts Port Authority voted to approve the improvement project to Terminal B.

"Terminal B has an amazing view, and the airport capitalized by installing banks of windows in a huge atrium area where concessions are centralized," says Kuchel. "They also installed windows along the full length of the concourse."

The windows kept the view intact for the airport's estimated 33 million passengers but using dynamic glass ensured the spaces were still usable. Kuchel explains the concourse gets quite narrow in spots and the sun and glare in these areas often made them uncomfortable to sit in. "The airport wanted to maximize the natural light coming in while controlling it for the comfort of concessionaires and

passengers. Customers want to spend time near the windows, but if there is a lot of solar heat coming through, what are you going to do? Pull down the shades and eliminate the view?" he asks.

Adding View created a premier concession area with a harbor view in what was previously unusable space along the narrow concourse. "View makes this space habitable and enjoyable for passengers, and as such, they spend more time there and more money," he adds.

The award-winning space comfortably seats 400 customers in two spacious levels, while promoting passenger wellness by allowing in abundant natural light.

FRIEND OF THE ENVIRONMENT

As the sun shines in San Francisco International Airport (SFO) renovated Terminal 1, its windows automatically start to darken. On the flip side, when it is cloudy outside, the glass remains clear. The airport has installed View into more than 58,000 square feet of windows overlooking the bay.

People often imagine San Francisco weather as cloudy, rainy and forever stuck in the 50 to 60° F range. But in the summer, temperatures can climb to 90 to 100° F for weeks at a time. Banks of windows letting in natural light provide passengers with an expansive view, but they also drive up inside temperatures, increasing the need for air conditioning and boosting the terminal's energy consumption.

Likewise, on days when the sun stays hidden, areas of the airport remain dreary and dark, requiring interior lights to go on.

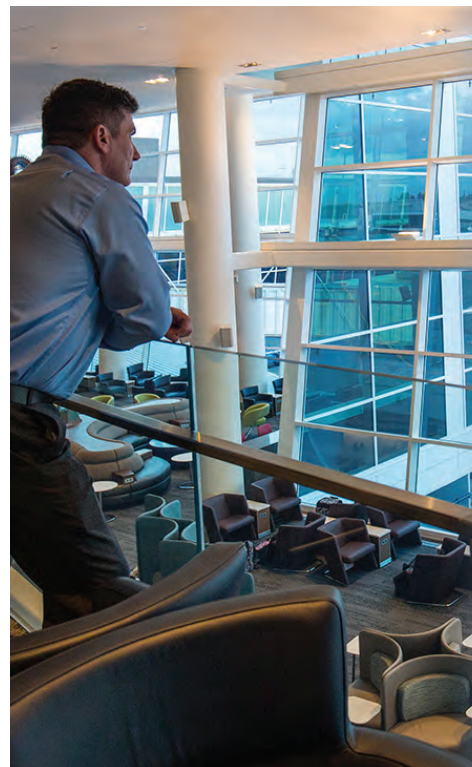
Both factors increase energy consumption, expanding the airport's carbon footprint and raising energy costs.

Installing View as part of its 1-million-square-foot Terminal 1 renovation helped the airport create a world-class travel experience while achieving its goal of leadership in energy efficiency. SFO is famous for being cutting edge in its terminal designs. It has led the way in airport sustainability since 2011, when the U.S. Green Building Council certified its groundbreaking Terminal 2 as LEED Gold, making it the country's first airport terminal to achieve that goal.

The revamp of Terminal 1 strives for net zero energy usage and a premium passenger experience. Installing View in its 14-foot-tall, all glass façade helps the airport on its way toward achieving these goals. View has helped the airport save \$900,000, driven by a 25 CFM reduction in ventilation.

Though the airport initially selected View to deliver superior occupant comfort and a premier passenger experiences, a full life-cycle analysis uncovered another benefit; over time the glass will more than pay for itself through energy savings, improved occupant comfort and better employee performance.

"Our goal is to set a new standard for passenger and employee experience and operational flexibility. Incorporating dynamic glass at San Francisco International Airport helps us achieve that design objective," says Kirsten Ritchie, sustainable design director and principal at Gensler, the architectural firm leading the (SFO) project.



VIEW BY THE NUMBERS

- 83% INCREASE DWELL TIME
- 102% INCREASED CONCESSIONS REVENUE
- Up to 7% REDUCTION IN TERMINAL ENERGY CONSUMPTION
- 15° COOLER ON SEATING SURFACES

Expertise & Experience

View recently added aviation technology expert Andy Kuchel to head an aviation focused business within the company. Along with Kristi Crase the team brings a depth of knowledge and years of experience in the aviation sector. Both were formerly with Quantum Secure, part of HID Global, where they led the aviation strategy to define and evangelize an identity-based security solution category for airports.



KRISTI CRASE



ANDY KUCHEL

We sat down with Andy to learn how View's efforts are creating a meaningful impact on the aviation industry.

What benefits does View bring to the aviation industry?

As mentioned in the cases above, airports are grappling with a number of challenges that View directly and indirectly addresses. The traction we are seeing in airports is a direct result of this multi-faceted benefit. Each airport may have more or less focus on one or more of these areas when selecting View.

Passenger Experience in the face of growing passenger volumes and changing loads – By insuring all parts of the airport are comfortable and usable, we insure maximum passenger comfort with natural light and views and maximum utility from every square foot while for hold areas, concessions, etc.

Non-Aeronautical Revenue – delightful spaces make concessions more attractive and increase dwell times and revenues.

Regional Economic Development – as airports continue to up the stakes on supporting their regions growth plans whether by tourism or business development. Airports are looking for ways to show modernity and showcase their regions culture and values. What can be better than providing delightful, unobstructed views of the cityscapes, natural scenery, and climate to give a more local feel to a community member or traveler alike.

Energy efficiency / Sustainability – reduced HVAC loads and power consumption contribute towards airports environmental goals

Innovation – As a platform for increasing Internet of Things (IoT) capabilities, View plans to deliver on the true promise of a smart building over the coming years.

What makes the company's products unique compared to similar solutions?

Traditional methods to address heat and glare include expensive and maintenance-prone shading systems, ceramic frit patterns, and/or external building elements all of which contradict the ambitions of airports on all the fronts already mentioned. Enough said about that in 2019.

As the leader in the electrochromic glass industry, we pride ourselves on our full-service approach. Our core product offering is a complete smart glass system used in the exterior building façade. The system components (insulating glass units (IGUs), control network, rooftop sensor, and Intelligence software) are the same for all building types, but the system performance is optimized for each specific application. The Intelligence software - which predictively and automatically optimizes the glass is custom developed for each installation. The View expert team develop a specific algorithm taking into account the building location, orientation, and climate as well as the planned use including hold areas, concessions, checkpoints, kiosks, cameras, etc. to insure optimal conditions uniformly across the days and years.

How does the company's products make use of the latest technologies?

At View, our R&D teams are really just getting started. With the refinement of the most advanced and most widely adopted dynamic glass offering, we now look to the road ahead and how to our system founds the future of smart building. View is an internet connected device at the building scale that delivers on the promises of IoT. Every pane of glass is connected to the cloud and our Site Operations Center which allows for continuous state monitoring of both the glass and the local conditions. The system is also monitoring regional weather data and predictively adjusting to optimize the performance. With this

connectivity in place, we are beginning our next phase of offerings starting with View SmartProtect glass break monitoring service, with many more to come over the next few years.

Can you tell us about any new airport projects you have worked on?

The industry interest is increasing daily as our aviation customers are helping spread the word. Over the last 18 months, we have delivered full scale projects at Seattle Tacoma (SEA), Charlotte Douglas (CLT), San Francisco (SFO), Dallas Fort Worth (DFW) and Boston Logan (BOS) airports. Memphis International (MEM) will start their expansion plans with View in 2019. All of these airports chose View for slightly different primary reasons going back to the multi-faceted aspect of what we offer, but all enjoy the overall benefits of a delightful airport.

What does the next few years hold for View?

At View we are focused on rapidly expanding our product features in the IoT areas and in line with airports needs. We will be participating in a proof of concept work with our airport partners to conduct further research on potential impacts on innovations coming to airports including new services in hold areas, facial recognition of passengers, flow optimizations technology, increased kiosks use (APCs), etc.

How can interested airports, designers, and consultants learn more about View?

The View Aviation team will be attending a number of aviation events this year, so please look out for our booths and sponsorships. We are also hosting a number of public educational webinars with our airport customers and industry thought leaders, but of course we are happy to connect and help set up the right engagement for you. Please reach out to Andy Kuchel or Kristi Crase to learn more. .

Andy Kuchel: O +1.408.753.5154
Andy.kuchel@view.com

Kristi Crase: O +1.303.255.1655
Kristi.Crase@view.com



AVSEC WORLD

MIAMI, FLORIDA | 26-28 FEBRUARY 2019

Take the Fast-Track to the Hottest Topics in Aviation Industry Intelligence and Security!

27-Year Proven Track Record

450+ Professionals & 48 Nationalities

40+ Speakers & 3 Different Tracks

Join us at AVSEC World 2019 in sunny **Miami, Florida on 26 - 28 February**, for the most up to date information on key security topics that impact the way you do business every day.

This year's targeted workshops, panels and presentations will transport you past the chatter and straight to the hub of what matters to you the most, like: Human Trafficking, Digital Security, Security Performance (the SeMS experience), ICAO Working Group on Innovation and much more.

For registration and information, please visit: www.iata.org/events/avsec

For sponsorship and exhibition opportunities, please contact:

Michael Huntington, Business Development Director - huntingtonm@iata.org



MIA

Nashville Int'l Uses Developer Model to Add Local Concessions & Street Pricing

BY SCOTT BERMAN



PHOTO: NASHVILLE INTERNATIONAL AIRPORT



Visitors at Nashville International Airport (BNA) will have new and more diverse food/beverage and retail options in the new year. The concessions update focuses on adding locally authentic options and signals a change for the Tennessee airport that serves 14.9 million passengers annually.

The Metropolitan Nashville Airport Authority awarded a 10-year concessions contract to developer Fraport USA in August 2018. Under the auspices of the Authority, Fraport will handle the design, construction, lease and management of about 108,000 square feet of concessions space once the program is fully developed in 2023. Leases and construction are set to begin in February 2019, with openings slated for later in the year.

Doug Kreulen, president and chief executive officer of BNA, emphasizes that local restaurateurs and retailers will independently own and manage their brands at the airport.



DOUG KREULEN

This is a distinct change for the airport. The previous concessions model generally

did not encourage independent, local ownership of food/beverage and retail shops. Another new policy, "street pricing," requires concessionaires to price items at levels equivalent to what consumers/passengers would find for the same items at similar locations outside the airport.

The idea is to harness home-grown talent, taste, authenticity and enthusiasm to invigorate BNA's food/beverage and retail shops. Increased sales will then provide another source of fuel, so to speak, to power the airport's economic and employment engine for Nashville and the surrounding region. Announcements about what businesses will be coming to BNA are expected within several months.

Why change strategies now? As Kreulen puts it, "It was perfect timing. Our existing master concessions contract was expiring, and we were looking for an opportunity to improve customer service and increase participation from local and Airport Concessions Disadvantaged Business Enterprises (ACDBE)."

Ben Zandi, president and chief execution officer with Fraport USA, says that the "reimagined program" for the airport will elevate the customer experience for retail



FACTS&FIGURES

Project: New Concessions

Location: Nashville Int'l Airport

Scope: Approx. 108,000 sq. ft. once program is fully developed in 2023

Contractor: Fraport USA

New Strategies: Developer model; street pricing; increased involvement by local businesses, products & services

Term of Contract: 10 yrs

Associated Investments: \$17.4 million by Fraport; \$30 million-\$40 million from subtenants

Timeline: Leases & construction begin Feb. 2019; new concessions slated to open later same year

Contractor Design Consultant: LGA Partners

2018 Customer Satisfaction Survey: Phoenix Marketing Int'l

and dining throughout reinvigorated areas of the facility. Moreover, he feels that the new approach will amplify BNA's role as an airport that "reflects our city's warm and welcoming environment."

A Time of Change

The concessions initiative is also a sign of other changes unfolding at the airport—namely a \$1.2 billion growth and expansion plan called BNA Vision. The plan is implementing projects designed to "keep BNA a world-class airport for a world-class city." Major elements include a new parking/transportation center and expansion projects in Concourse D, the ticketing lobby and baggage claim areas.

Growth in the region's overall population and BNA's passenger volume is driving it all. Airport officials expect traffic to grow from about 15 million passengers now to at least 23 million by 2037, an increase of roughly 50%.

Within that context, the concessions initiative is a shift in direction that, in many respects, leads right back to BNA's locale. Nashville businesses, with their cuisine, beverages, services and products, will bring the unique character of the city and its region to millions of travelers each year.

Fraport USA, previously known as Airmall, works with numerous U.S. airports to introduce branded retail programs and street pricing models. The company has developed and is managing retail and food/beverage operations at Baltimore/Washington International Thurgood Marshall Airport, Cleveland Hopkins International, Pittsburgh International and JetBlue's Terminal 5 at John F. Kennedy International Airport.

"At all of our programs, we seek to lease to local businesses," Zandi remarks. "We believe that the airport should reflect the sight, sound and flavor of the city and neighborhood. The airport should be an economic engine for the local community and businesses, therefore the profit will stay in the city...We are making the program accessible to businesses big and small. Every single concession space will be available to single operators."

He sees the shift occurring at BNA as an example of a larger trend. "In our industry, it's common to put together large packages of space and lease that space to large companies," Zandi explains. "It's efficient and relatively quick. However, making the program available to more great businesses of Nashville will lead to an authentic and uniquely Nashville experience for the travelling public. This is a key component of [the Authority's] BNA Vision.

"The response has truly been humbling," he continues. "We received



BEN ZANDI

over 425 proposals for space in the airport, with the vast majority having a strong local and ACDBE component."

Appetite for Innovation

"One of the most exciting aspects of this project is that it's coming at a time of expansion that is shaping the future of airports and airport concessions," says Vivica Brown, Fraport USA's vice president of operations for the BNA program. Brown, an airport and financial services veteran who joined the company in November 2018, reports that there is an appetite for innovation and transformation within the industry. "Dynamic retail and food and beverage programs play a huge part in enhancing the passenger experience and providing a sense of place," she says.



VIVICA BROWN

Creating a sense of place at BNA has been a multi-pronged process. The arrival of new airport authority board members and Kreulen's appointment as chief executive in December 2017 coincided with a growing awareness of the need to examine BNA's customer service.

In a related development, there were interesting findings in BNA's standard customer survey, which was conducted by Phoenix Marketing International. The survey showed that food/beverage and retail was performing at 20% below other categories within the airport. According to the survey, passengers see BNA as well above average. In fact, its overall satisfaction score of 94% towers above the firm's 85% nationwide airport benchmark. Concessions, however, lagged behind, with approvals in the low- to mid-70th percentile, Kreulen reports.

Those findings acted as starting blocks for a series of actions. "We did a complete look at all concessions models," recalls Kreulen. Eventually, airport officials found that the developer model held the

We Close Openings
Greenwich, NY Pearland, TX

Manufacturing High Security Gate Systems & Providing Complete Technical Assistance Since 1985

- Closing openings from 4 to 500 feet!
- Designed and tested as systems
- Services from project design to commissioning

Tymetal Corp.

Gate & Operator Systems
800-328-GATE
www.tymetal.com



New concessions are expected to open later this year.

most promise. “We believe the developer model will give us increased sales, improve customer service, create a sense of place about Nashville and allow for more local and ACDBE participation,” he remarks.

While the original goal for participation by disadvantaged businesses is 22.6%, Authority officials estimate that the new concessions agreement will ultimately produce ACDBE participation of 40% over the life of the contract. Furthermore, Kreulen notes that competition among vendors will inherently create better customer service.

That said, some concerns were raised about whether there would be enough local interest and whether local businesses could handle the additional requirements of working in an airport environment. Given the board’s nine-to-one approval of switching to the developer model, such concerns were apparently allayed.

“Once the investment is fully realized, we will have invested \$17.4 million in the program, with a further \$30 to \$40 million invested by the individual subtenants,” Zandi shares. Fraport USA will upgrade space and build concessions areas in terminals A, B and C; subtenants will build their own spaces within those areas, “just as they would on the street,” says Zandi. “We guide subtenants through the design, permitting and construction process; however, they are free to use any licensed contractor they choose.”

Fraport hired architectural firm LGA Partners for design services. Updated artwork, selfie stations and other new amenities are planned once the concessions redevelopment is completed, says Brett Kelly, a Fraport vice president.



BRETT KELLY

Renderings depict a sweeping, open space, unified in its forms and finishes. Individual units will likely include regionally themed eateries, clothing retailers and possibly a wine bar—all with distinctive looks.

A Look Ahead

Work to execute the plan continues. In November, the team convened its first meeting with the new Nashville Advisory Council, a group of local leaders and professionals from Nashville’s business, culture and thriving arts communities. In late November, the team released a solicitation for the food/beverage program and received active response. “We’ve been on the ground talking with local restaurant owners about this for months,” reports Zandi. “And over the next few weeks, we’ll be evaluating the responses in order to make a final recommendation to the airport authority.”

Whatever specific form the proposed program takes, the Authority will review Fraport’s plan to ensure that it meets the group’s larger strategic objectives.

Kreulen predicts that the new developer model BNA is using could become an industry trend. “It gives airports more local control of participation, management and, ultimately, the success of its concessions plan,” he reasons. “The moment you arrive at BNA, we want it to be clear that this is Music City, with all the sights, sounds and tastes the Nashville brand implies.”

Stakeholders clearly are enthusiastic about the new concessions model and other changes at BNA. As Fraport’s Brown says, “It’s an exciting time.” ✈️

IS YOUR BUSINESS IMAGE EVERYTHING IT COULD BE?

Becker 505 specializes in marketing and design for the aviation industry. Let us create your corporate identity, advertisements and marketing campaigns so you can get back to what you do best — running your business!



CALL OR EMAIL US TODAY FOR A FREE QUOTE AND CONSULTATION
 INFO@BECKER505.COM | 608.205.2788 | BECKER505.COM

Your feet may never touch the ground.



The future is here.

We call it the Fraport Experience. It's the unique entertainment we offer – from interactive play and live music to passenger lounges and local flair. And it's the superior customer experience we bring to travel and travelers every day, through 31 airports in 11 countries and four continents around the globe.

Fraport has changed travel for the passenger. We recreated modern airport retail when we introduced street pricing, exceptional brands and creative competition to U.S. airports. And we continually reinvent the experience with new brands, innovative technologies, and the authentic appeal that comes with a true sense of place in regional food, retail and design.

We also work closely with airport authorities to better reach and serve people in motion – from passengers and crew to ACDBE owners and the communities who look to our airports to be an economic catalyst for their region.

Better Airports. Better Communities. Better Travel for All.

Oakland Int'l Invests in Seismic Retrofit for Terminal 1

BY JODI RICHARDS



I  OAK

Park Close. Fly on time.

FACTS & FIGURES

Project: Seismic Retrofit/Terminal Renovations

Location: Oakland (CA) Int'l Airport

Terminal: 1— Building M102

Approx Cost: \$100 million

Funding: Passenger facility charges

Construction Began: Mid-2014

Substantial Completion: Oct. 2017

Structural Engineer: Rutherford + Chekene

Architect: MWA Architects

Associate Architect: YHLA Architects

Owner's Construction Rep: Consolidated CM

General Contractor: Turner Construction

Steel Fabricator: Olson Steel

Casting Production Team: Cast Connex/
Bradken

Moving Services: Visions Management

Accolade: Seismic retrofit project received the Excellence in Structural Engineering Award from Structural Engineers Association of Northern California—Award of Merit, Retrofit/Alteration



Passenger traffic has been on a steady rise at Oakland International (OAK) over the last five years, and airport officials are working to make sure the facilities can meet current and future demand. Recent projects have targeted structural integrity and the customer experience as top priorities.

In mid-December, Director of Aviation Bryant Francis expected the California airport to finish 2018 with about 13.8 million passengers. While still under its 2007 record

of 14.6 million, OAK will likely surpass 14 million in 2019, he adds.

As part of the airport's Moving Modern program, Terminal 1 received much-needed seismic retrofit improvements and updates to the TSA security screenings lobby. The project also modernized the adjacent administrative



BRYANT FRANCIS



offices and access to the recently expanded International Arrivals Building. When planning and executing the program, the Port Authority and its partners focused on improving the passenger experience, extending the useful life of the building and increasing safety for passengers and airport staff while minimizing disruption to critical airport operations.

Updating the Existing Terminal

Terminal 1 is home to ticketing and baggage claim operations for 10 airlines as well as 16 boarding gates and U.S. Customs and Immigration facilities for international flights.

Joan Zatopek, OAK's aviation and planning development manager, explains that the Port of Oakland took stock of all airport facilities in the mid-2000s and determined that Terminal 1, the oldest operating terminal, required infrastructure investment. Having wrapped up a major expansion and renovation of Terminal 2 in 2007, it was time to put the focus on Terminal 1, notes Zatopek.



JOAN ZATOPEK

The entire Terminal 1 campus was identified as needing renovation. Because Terminal 1 is comprised of three '60s-era concrete structures, it needed significant structural upgrades to meet current seismic standards. Unfortunately, 2008 was not a good year for air travel. Like many other airports, OAK saw a steep decline in passenger numbers. "The economy went south, we lost some airlines and 30 percent of our traffic from our peak in 2007," relates Zatopek. A 2007 planning study had examined the facility to determine what aspects needed renovation or replacement, and the Port came up with a package of improvements, prioritized based on need. The economic decline prompted the Port to narrow its list of terminal improvements to those of the highest priority.

"We had to really pick and choose what we could spend our monies on," recalls Zatopek. "Through engineering analysis and focusing on life-safety, we selected the (lobby retrofit) project because of the seismic vulnerabilities."

Built in 1962, Terminal 1 has "good bones" but was lacking from a life-safety perspective, she explains. The biggest objectives were meeting current seismic standards and fire alarm/fire suppression code requirements. Port officials explored the option of constructing a new facility but chose to renovate in-place for economic reasons, despite the complexity it would add to the project. In-place replacement, versus a retrofit/renovation, wasn't a viable option because—at the time—OAK did not have "swing space" or "empty chairs" to move passengers and airlines around during construction.

"It wasn't feasible," explains Jon Cimperman, project manager with the Port. "We were using the whole building at the time."

The central utility plant was also identified as "highest risk" and scheduled for replacement. A new central plant building with advanced energy equipment and management systems to maximize performance and efficiency are now in place.



JON CIMPERMAN

Seismic Standards

The Port developed a goal for the seismic retrofit around a life-safety performance criterion of collapse prevention. Marko Schotanus, senior associate with structural engineering firm Rutherford + Chekene, and his team evaluated the building to the airport's standard, designed a structural solution and developed construction documents for the renovation of the central lobby building.



MARKO SCHOTANUS



Using prefabricated cast steel column collars helped reduce disruptions inside the terminal during installation.



bolted around each of the 48 columns. For installation, crews used a custom chain hoist to pick up the roughly 3-ton collars at four points and lift the column, explains Jamison Curry, associate principal at Rutherford + Chekene. The collars were then bolted to the existing roof ribs and grouted into place and bracing was assembled.

Rather than retrofit the entire facility at once, crews worked on one side of the building at a time. Steve Stretchberry, airport planning consultant and airports client manager for Rutherford + Chekene, notes that the phasing schedule extended the construction timeline, but it ensured safe and efficient operations in Terminal 1 throughout the project—a primary goal of the Port.

With structural upgrades focused on the outside of the building, there was very little encroachment on the footprint and interior operations, adds Schotanus.

Prefabricating the collars also helped maintain operations inside the terminal by allowing for easier installation with minimal noise and fumes from welding. “If it was built in place, rather than prefabricated, it would have been a significant impact to operations,” Stretchberry explains.

The 1960s design of the original roof allowed rainwater to pool, so designers created a flat roof with a global drainage plane to improve the roof’s reliability and simplify maintenance. The replacement roof also helps to support the collars.

Dancing Construction

One of the more challenging aspects of the program was the construction that needed to occur on top of the TSA security checkpoint. “That was a feat,” emphasizes Zatopek.

The security checkpoint has an open mezzanine above it, and part of the structural retrofit required the placement of the extensive lattice of structural steel—about 1 million pounds throughout the building—directly over the operating checkpoint. To accommodate the work, crews erected a temporary platform on top of the security checkpoint. Known as the

To develop a solution that would meet OAK’s needs, the design team built a detailed computer model that simulated all the loads that the building can experience over its life, and then analyzed the structural components to ensure that they would be able to resist those loads.

Crews installed vertical seismic force-resisting elements at the perimeter. These new elements include special reinforced concrete shear walls at the crawlspace and first story, and buckling-restrained braced frames at the second story. Columns and local areas of the existing concrete floor slab were improved using fiber reinforced polymer. A new structural diaphragm was created at the roof level with the addition of a horizontal truss system comprised of hollow structural sections connected at column locations using a cast steel column collar.

Each cast collar is made of two prefabricated identical halves that are

Structural solutions that
**keep your customers
moving**



RUTHERFORD + CHEKENE
Structural & Geotechnical Engineering

Contact Us:

Steve Stretchberry
Airport Client Manager
sstretchberry@ruthchek.com

www.ruthchek.com

(415) 568-4400

“dance floor,” the platform allowed the project team to “dance” construction overhead, without impacting operations below.

The construction team also employed inventive solutions below the dance floor to minimize operational disruptions. In addition to erecting temporary barriers to separate passengers from the construction, workers performed louder tasks such as welding in small pods that acted like soundproof booths. “There was a lot of creativity, thought and coordinated elements,” observes Cimperman.

A deliberate and methodical phasing sequence of construction allowed the terminal to remain open and operational, but also did not weaken the building before the team could reach its ultimate goal of strengthening it, he adds.

Dismantling the Tower

An eight-story tower with an air traffic control tower cab at the top previously sat in the middle of the two-story Terminal 1. Each floor had roughly 1,000 square feet, but by the time cross bracing and other seismic enhancements would have been added to bring it up to current standards, the square footage would have been diminished greatly. Upgrading the tower, which was neither ADA-compliant nor up to current seismic safety standards, just didn't make sense, Zatopek relates.

“Aesthetically, it was innovative in the '60s,” Cimperman comments, but it was not adequately designed to withstand large earthquakes.

A new FAA control tower, capable of handling both the south and north fields, opened in 2013, eliminating the need for the tower on top of Terminal 1.

Extracting the eight-story tower from the core of the terminal was a monumental challenge, Cimperman notes. The concrete structure was removed in a slow, deliberate, safe and controlled manner, he explains. “This wasn't a wrecking ball or TNT. It came down in buckets to keep the building safe and make sure that we didn't have too much disruption from noise and vibration.”

Added Benefits

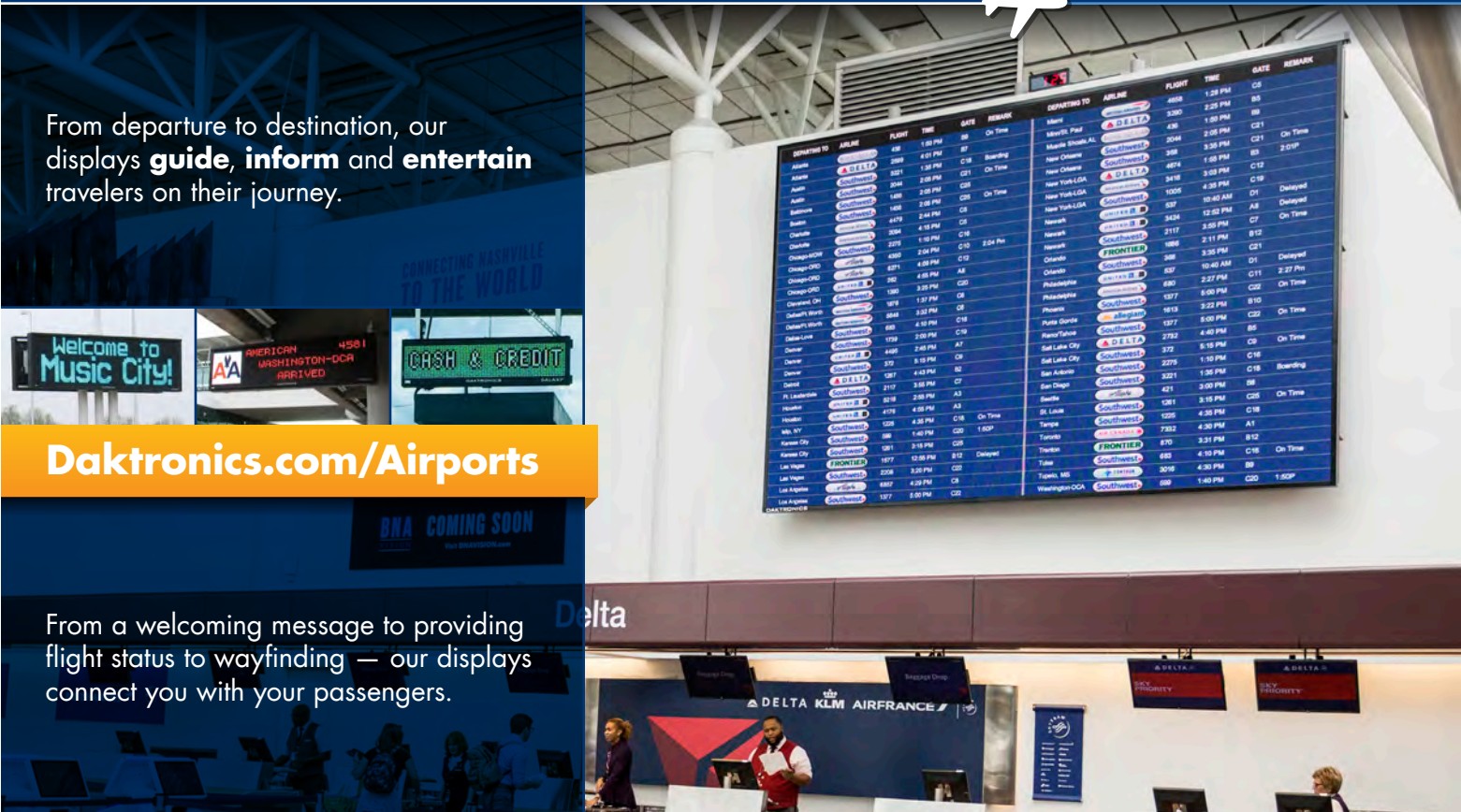
Upgrading the infrastructure of Terminal 1 was another important aspect of the project. As with most facilities of its age, the building needed improved efficiencies in facility maintenance and the power distribution, lighting and heating/venting/air conditioning systems, supported by the central utility plant, says Zatopek

The recent retrofit project, which included the airport's administrative offices, also allows OAK to accommodate more of its aviation department staff under one roof on the second floor of

INFINITE POSSIBILITIES



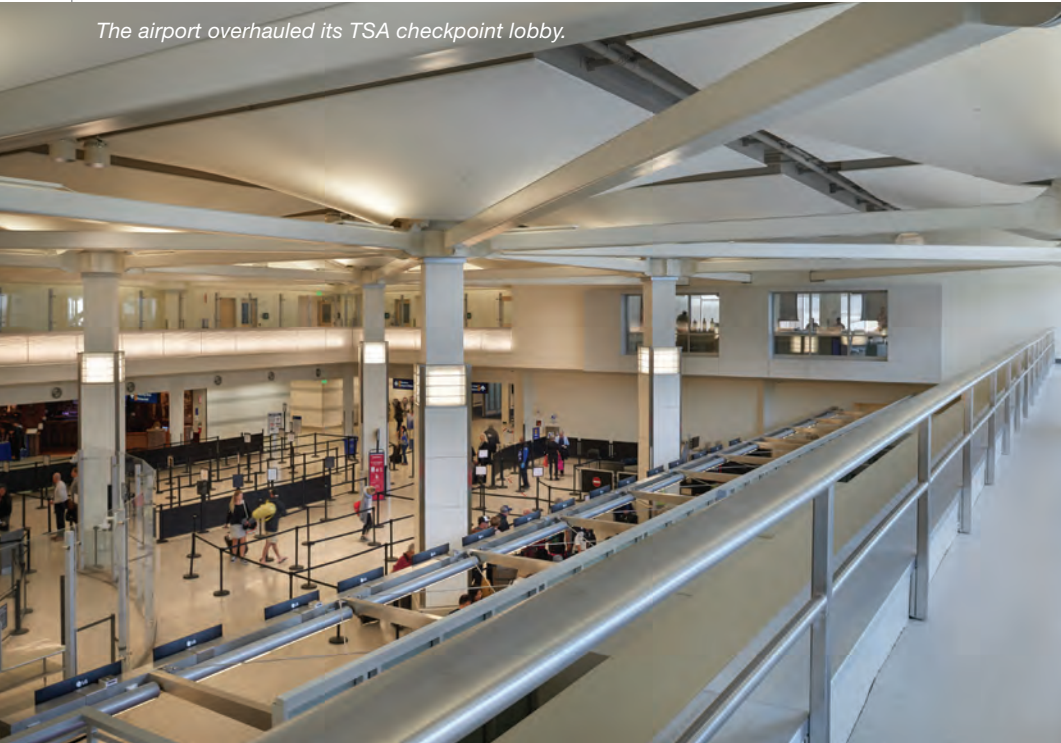
From departure to destination, our displays **guide, inform and entertain** travelers on their journey.



Daktronics.com/Airports

From a welcoming message to providing flight status to wayfinding — our displays connect you with your passengers.

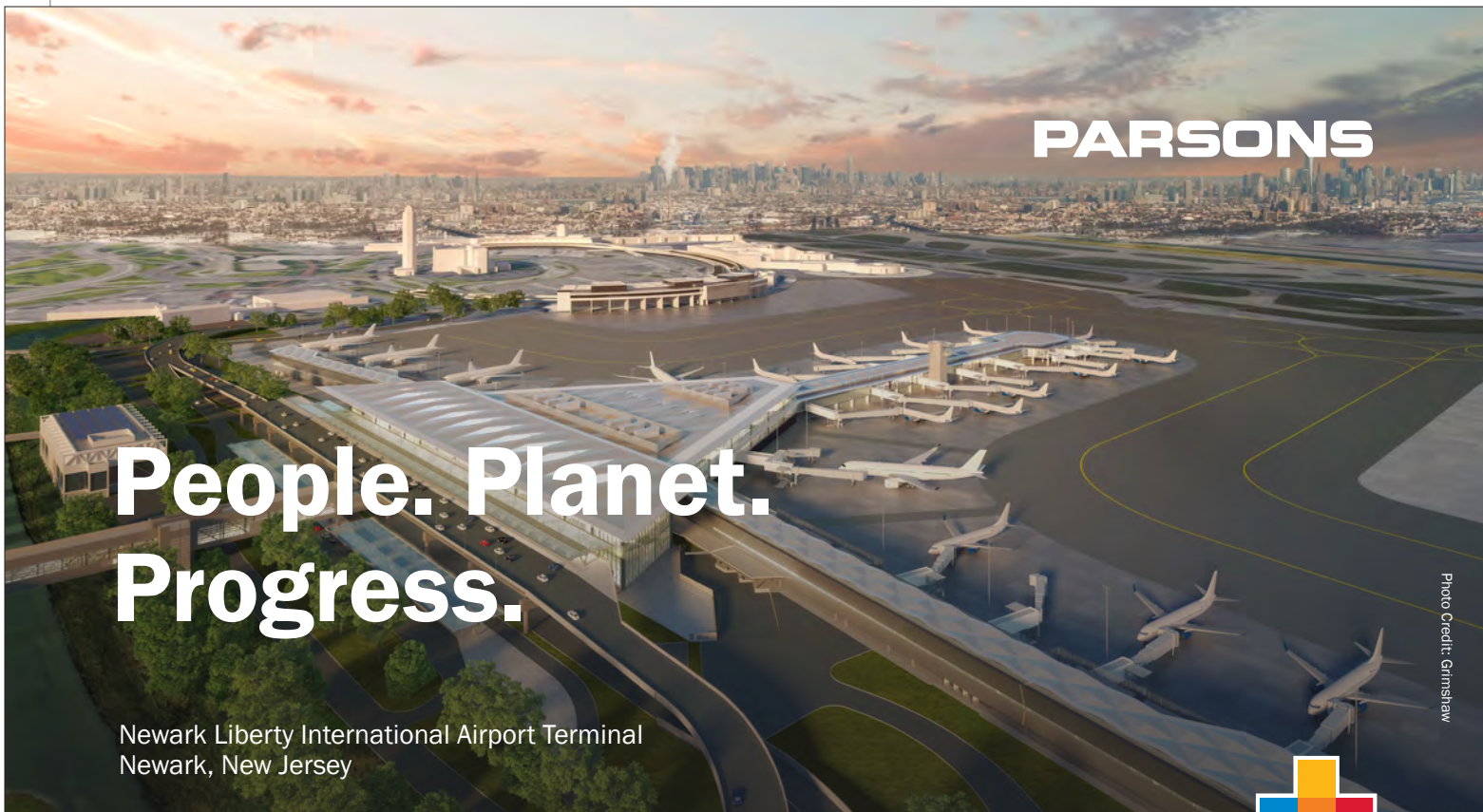
The airport overhauled its TSA checkpoint lobby.



Terminal 1. Previously, staff was in four different locations, including the Port of Oakland headquarters and the airport's north field. "It's made for a much more efficient and effective operation for us overall," Francis notes.

A window wall system increases natural light throughout the space, while upgraded restrooms, new elevators, signage enhancements and a full redesign of the second-floor administration offices and public meeting space add to the aesthetic and functional enhancements.

During renovations, the airport added a temporary modular structure adjacent to the north side of the terminal to house the administrative departments that had been located on the second floor of the building. The airport hired a professional move management company to orchestrate the transition from the



Newark Liberty International Airport Terminal
Newark, New Jersey

parsons.com

PARSONS
Parsons PLUS envision more 

Photo Credit: Grimshaw

terminal into the trailer and back again to ensure that personnel could remain up and running without interruption.

Partnership

"I don't think anyone could overestimate how difficult doing a retrofit on this building would be," Zatopek reflects.

Given the length and complexity of the project, Cimperman says that partnership with all stakeholders was vital. "Teamwork, collaboration, being accountable when things didn't go right and being accommodating for things that needed to occur—that created a trust."

Airport officials worked with TSA to establish the maximum number of lanes that could be out of service at any given time. Of the six lanes, at least four needed to be operational during certain hours to accommodate the terminal's busy schedule.

"Traffic patterns changed, and we had some of the 'peak of peaks' during the tail end of construction," Zatopek recalls.

Careful phasing was aided by the delivery method employed, construction manager at risk, Schotanus adds. With the contractor involved from the design phase, the team was able to explore different solutions without getting too far into one that could have negatively affected operations. "Having that seat at the table and that interaction helped the collaboration," he explains.

Schotanus says OAK's project demonstrates that it is possible to successfully retrofit existing terminals—even buildings that are 50 years old. "It's important to understand that there are significant challenges that come with it," he advises. "But if you plan ahead and have a collaborative environment, it can all work out well."

Incorporating Sustainability

Sustainability was a guiding principle on all aspects of the terminal retrofit, notes Zatopek. An energy management system, lighting controls, LED lighting, heating/venting/air conditioning upgrades, use of sustainable materials and energy-efficient water fixtures all help to control lifecycle costs.

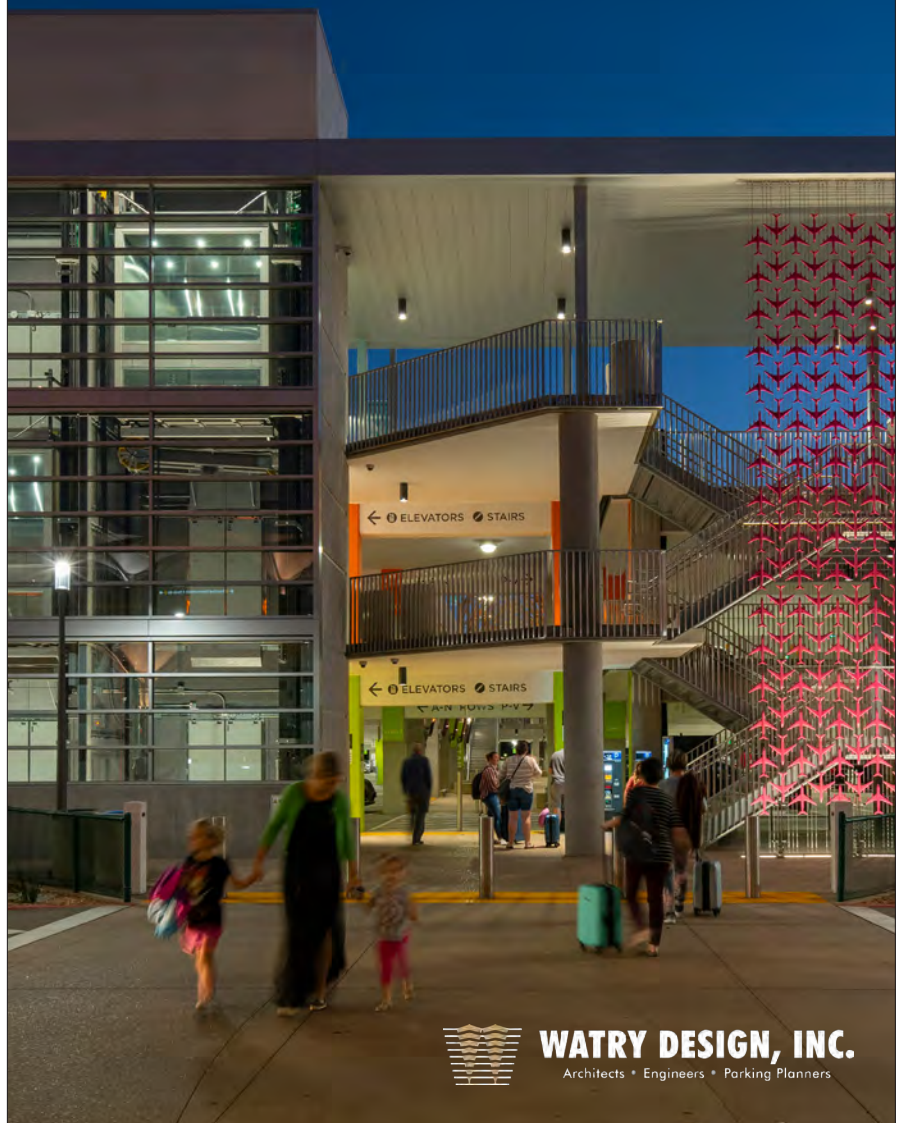
The central utility plant project was designed and constructed using the principles and standards of the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) system, and the Terminal 1 Renovation Project followed LEED standards. The project team has applied for LEED certification of the reconstructed second

floor mezzanine under the commercial interiors performance category. Officials project that the entire program will extend the life of Terminal 1 by 30 years.

In addition to the sustainability efforts and seismic enhancements, aesthetic upgrades are bringing Terminal 1 into the 21st century, says Stretchberry.

"It's a step in the right direction in terms of putting more and more of a focus on the customer experience," agrees Francis. The next step will be continued renovations to restrooms and an entirely new concessions program. ✈️

Parking Design to Enhance the Passenger Experience at San Diego Airport



WATRY DESIGN, INC.
Architects • Engineers • Parking Planners

Portable Solar Lights Expedite Taxiway Project, Earn Spot in Permanent System at Orlando Int'l

BY KEN WYSOCKY



**GREATER ORLANDO
AVIATION AUTHORITY**

FACTS&FIGURES

Project: Taxiway Pavement Renovation

Location: Orlando Int'l Airport

Est. Annual Operations: 337,000

Cost: \$20 million

Runway Funding: 75% FAA; 12.5% state; 12.5% airport revenue

Engineering/Design Consultant: AVCON Inc.

Project-Oversight Consultant: WSP

Prime & Paving Contractor: Middlesex Corp.

Key Component: 100 temporary, portable solar-powered taxiway lights

Cost: \$120,000

Light Mfg: Avlite Systems

Electrical Contractor: H.L. Pruitt Corp.

Construction Completed: Dec. 2018

Key Benefits: Temporary lights allowed taxiway to open earlier; saved time & money because no trenching/cabing was required; solar lights integrated with airfield lighting system

Faced with the prospect of an unacceptable delay to reopen a newly repaved taxiway, Orlando International Airport (MCO) got creative. Instead of waiting two or three months for new centerline lights to arrive, the project team pressed ahead last July and used temporary, portable solar-powered edge lights to make the major taxiway functional in just a few hours.

An electrical contractor bolted the solar lights to the taxiway's asphalt shoulder and set them to dusk/dawn mode, which enables them to turn on and off as dictated by lighting conditions. The taxiway opened for airfield traffic shortly afterward.

A few months later, MCO took the unusual step of integrating the solar lights into its overall airfield lighting control system. As such, whenever a controller in the air traffic control tower turns the airfield lights on or off, the solar lights follow suit—a major convenience, says Tuan Nguyen, MCO's manager of engineering.



TUAN NGUYEN

The airport purchased 100 portable Avlite AV-70 taxiway lights, plus chargers, mounting kits and two radio-control boxes for about \$120,000, not including labor for installation. Nguyen estimates that it would have cost twice as much to install conventional conduit and high-voltage cables to set up temporary electric lighting until taller top-can sections for the new centerline lights arrived.

"It would have been very costly to keep the taxiway open that way," he explains. "We wanted to open it as soon as possible, because any time you take a taxiway out of service, it increases traffic on the other taxiways, which places a burden on the system."

MCO is Florida's busiest airport, handling 850 to 1,000 operations a day and nearly 46.3 million passengers annually.

The major link between two of MCO's four runways, Taxiway J runs east and west on the northern end of the airport. It was closed for about a year as part of a multi-phase, \$20 million mill-and-overlay project. The FAA paid for 75% of the cost, while the Florida Department of Transportation picked up 12.5% and MCO paid for the balance.

The repaving was completed in mid-July. At that point, measurements were taken for the new centerline light fixtures, which required taller top-can sections to accommodate the higher elevation of the new pavement. A two- to three-month wait to get new top-can sections prompted MCO officials to consider other options to open the taxiway more promptly.

Personnel from AVCON Inc., the company that designed and engineered the repaving project, say the MCO project set a precedent.

"I've been in the industry since 1987 and this is the first time I've ever seen solar lights controlled by an airfield lighting system," says Carl Johnson, senior aviation lighting specialist for the company.



CARL JOHNSON

The strategy made perfect sense to Jeffrey Trottier, business development manager for Avlite. "When integrated with airfield lighting, the control boxes allow for seamless operation," says Trottier. "There are no separate controls required for the solar lights."



JEFFREY TROTTIER

Making a Connection

Two antennae installed as part of the system play a key role. In essence, two control boxes located in two airfield electrical vaults were hardwired to the airfield lighting system. As a result, when a controller turns the regular airfield lights on or off, the control devices then send a signal to the antennae. In turn, the antennae relay the signal to the solar lights.

The lights are self-contained, battery-powered units with LEDs that get recharged either by sunlight or by plugging them into charging stations while they're not in use. At MCO, they're stored on racks inside electrical vaults.

Congratulations MCO

Expanding and Innovating with New
L-863 Certified Solar LED Taxiway Lighting



Airfield and Approach Lighting Solutions



Avlite[®]
www.avlite.com

The repaving project was completed in mid-July.





Engineers & Planners
www.avconinc.com
 888.282.6699

More than a consultant

A trusted partner who is passionate about aviation, dedicated to the industry, and committed to your airport



TRANSFORMING
 Today's Ideas into
 Tomorrow's Reality

Full Service Airport Planning
 & Engineering Since 1988





If the lights aren't integrated into an airfield lighting system, they can be turned on and off manually, via a switch on each lamp. The lights also can be operated via radio signals emitted by a hand-held remote control that "talks" to radio chips in the lights. Lastly, the lights can be programmed to turn on and off automatically as needed (at dusk and dawn, respectively, for example) thanks to photoelectric-cell technology.

Trottier notes that the lights provide valuable workaround options in a variety of challenging situations. "They can be used during any kind of emergency," he remarks. "Say there's a storm and an airport loses power, you can quickly restore light to get a taxiway back in operation...or during a taxiway paving project, you can take a chunk of runway and turn it into a taxiway...or, if a snow plow knocks out several hundred feet of taxiway lights, you can use these lights to keep the taxiway up and running until it's safe for electricians to make repairs. They give airports a lot more flexibility."

Not Your Father's Solar

According to Trottier, the technology embedded in AV-70 lights isn't new, but it provides better performance than before. "The technology for solar panels, LED efficiency and battery technology has improved significantly," he reports. "The lights now can operate outdoors for extended periods of time and still meet FAA standards for intensity of temporary lights...even with four or five days of heavy cloud cover."

Avlite's temporary solar lights are used all over the United States and Canada, though Trottier acknowledges that using

them in Alaska and other far-northern regions can be challenging, due to lack of sunlight. “It all depends on how they’re used,” he says. “Sometimes they’re only used on-demand at smaller airports, which isn’t a problem.”

The lights can be set up in minutes, he adds. If used for temporary lighting, they can be mounted on heavy vinyl mats for better stabilization. “There are no special tools or ground-handling equipment required,” Trottier says. “You can just put them in a pickup truck and start setting them up.”

For permanent installations, the lights can be bolted directly to pavement using a frangible mount. Because the lights come in white, red/green and amber/white, some general aviation airports use AV-70s as permanent lighting throughout the airfield.


“You can light an unattended (non-towered) airport,” he adds. “It’s a very cost-effective lighting system—about 25% of the cost of a conventional wired lighting system because there’s no trenching or cabling needed or electricians required. And they’re safer to install because no one has to handle high-voltage cables.”

Teachable Moments

Nguyen first learned about Avlite’s portable solar-powered lights technology during an Illumination Engineering Society Aviation Lighting Conference he attended two years ago. “I realized the potential right away,” he recalls. “So after we selected a design engineer, I shared the product information with AVCON so they could investigate it further.”

MCO officials are very pleased with how the lights performed, and Nguyen envisions using the lights more in the future. “If we ever have a similar project, we don’t need to spend money to buy lights because we can reuse these,” he notes. “It saves everybody money, including the FAA and Florida DOT.”

What could other airport officials learn from MCO’s experience? First of all, Nguyen recommends completing the integration with standard airfield lighting early during a project, so the system is in place when a need for temporary lighting arises. “Earlier definitely is better,” he emphasizes.

In addition, he warns that obtaining FAA airspace approvals for erecting antennae is a time-consuming process. (The two antennae at MCO are 45 feet tall.) As such, he suggests applying for airspace approval well before a project begins. 

Airport Construction & Maintenance Solutions



We offer a full line of innovative products to meet FAA Advisory Circular standards.

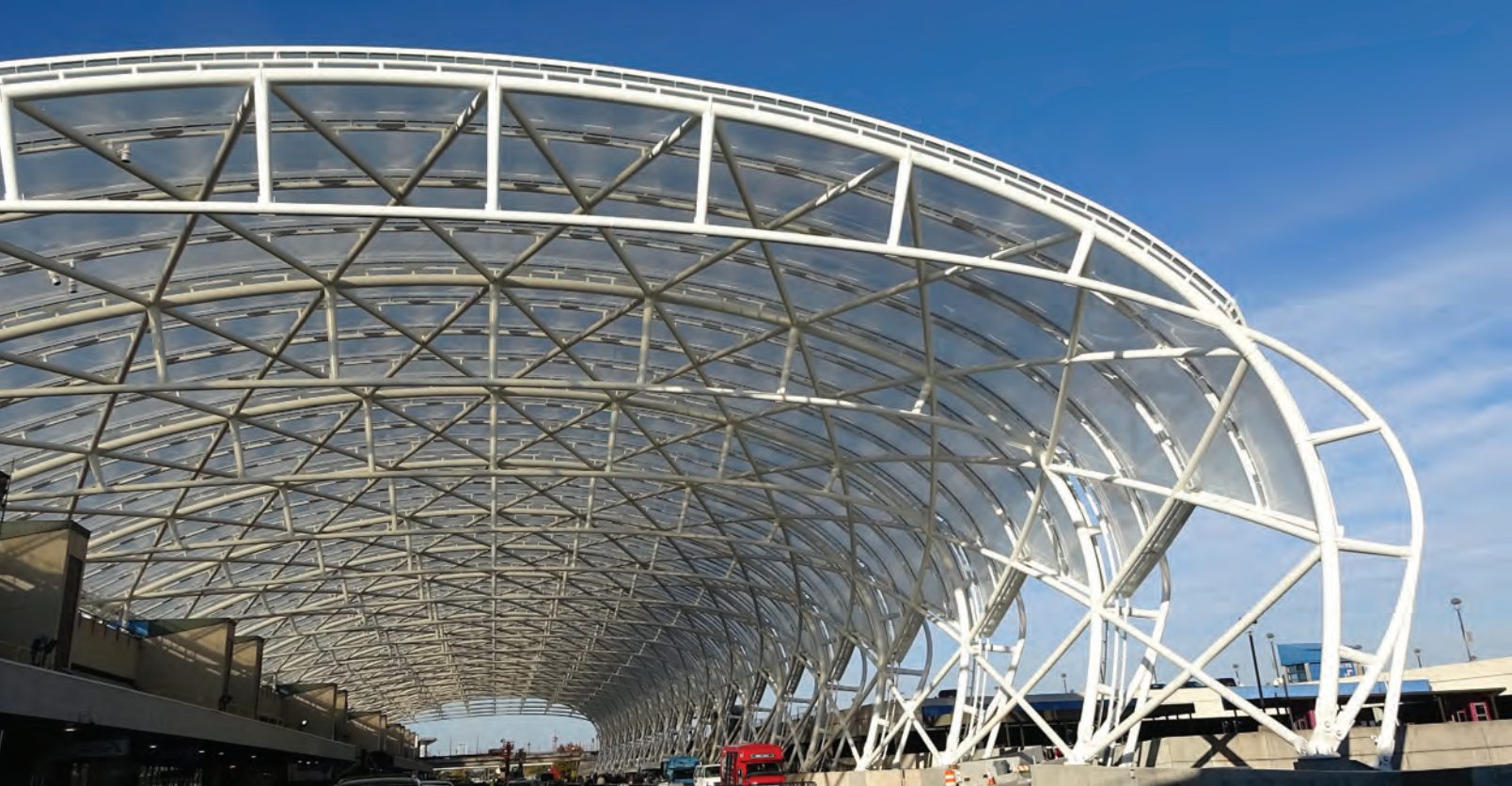
- Aerocade™ Low-Profile Airport Barricades
- Safe-Hit® Certified Airport Taxiway Markers
- Yodock® 2001 & 2001MB water-filled barricades to delineate work zones for construction and maintenance



TRINITY
HIGHWAY
 RENTALS

trinityhighwayrentals.com

888.496.3625



Atlanta Int'l Replaces Exterior Façade & Adds Lighted Canopies

BY THOMAS J. SMITH

FACTS & FIGURES

- Project:** New Canopies & Exterior Façade
- Location:** Hartsfield-Jackson Atlanta Int'l Airport
- Cost:** \$130 million
- Funding:** Interim funding, commercial paper
- Special Feature:** 3,700+ LED blubs that light canopies in multiple colors
- Construction Manager:** New South-McCarthy-Synergy
- Design Team:** HJ+P (joint venture of Stanley Love Stanley Architects, Chasm Architecture & HOK)
- Demolition:** Atlas Demolition
- Steel Fabrication:** Beck Steel
- Steel Erection:** Derr & Isbell
- Deep Foundations:** Berkel
- Civil Engineering/Sitework:** Brent Scarbrough
- Electric Contractor:** Cleveland Electric
- Concrete:** Ely Construction
- Roofing Material:** FabriTec
- Misc. Steel:** IMMEC
- Drywall & Framing:** Knight Construction

 Hartsfield-Jackson Atlanta International Airport (ATL) is in the midst of a \$130 million project to keep visitors dry as they enter/exit the terminal buildings and enhance their overall experience.

The North and South Domestic Terminals are mirror images of one another, each with eight lanes of traffic at their doorsteps and minimal protection from the elements. To solve the problem, ATL is erecting a canopy on each side that will span the roadways and sidewalks.

"When it now rains, there are sheets of water that come down on those unloading a car, and you really get wet," says Jorge Cortes, ATL assistant director of Planning and Development. "By providing the canopy, we really provide an increased level of service for all our passengers."

This simple approach creates massive flexibility for the airport, notes Ripley Rasmus, the HOK

principal architect in charge of the project. In the future, the system can adapt to potential changes in airline operations, the use of autonomous vehicles and refinements of curbside security.

In late November, the canopy project was about 50% completed. Construction crews were finishing up punch list items on the North side, and workers had begun erecting 19 steel trusses on the South side. The team expects to finish the steel work in April 2019.

Gary Summerlin, ATL's design manager for the project, notes that some passengers driving under the new North Terminal canopy wonder why it is no longer raining. Even during a torrential downpour that dumped 6 inches of rain over just a few hours, passengers arriving and departing the North Terminal stayed dry. "It is like a large umbrella," he remarks.

On the Sunday following Thanksgiving, two passengers endorsed the new feature on Twitter. "The canopy looks fantastic," wrote



JORGE CORTES



RIPLEY RASMUS



GARY SUMMERLIN

one customer. Another re-Tweeted that observation and added, "I was thinking the same thing. So beautiful! Really impressive."

The new canopy is also reducing maintenance, because crews no longer have to continually mop up water being tracked into the terminal during storms.

The steel erection took about six months; adding roofing materials, painting and installing lights took another two months, explains Dan Hobson, project executive for the construction joint venture of New South-McCarthy-Synergy. New South and Synergy are both based in Atlanta; McCarthy is based in St. Louis. New South has been involved in construction projects at ATL for 29 years.

Other elements of the \$130 million modernization will include re-cladding the landside exterior with a new façade and building four sky bridges that "fly" through the space of the canopy and link the upper levels of the parking decks to the terminals. All the improvements are expected to be completed by the second quarter of 2021.

In addition to enhancing the passenger experience, project designers hope to create an iconic structure on the city's horizon—and from the air. Replacing the 40-year-old façade of pre-cast concrete panels with metal and glass panels is one step in burnishing the exterior image of the building. The second is the installation of 3,708 LED lights to illuminate the canopy.

Bright Lights, Big Canopy

Each canopy is 900 feet long, with a space-age polymer roofing material: ETFE (ethylene tetrafluoroethylene, a fluorine-based plastic). Architects specified two layers to provide shade with a silver frit pattern on the outside layer, Hobson explains. Space between the two layers is inflated, creating a pillow-like look on the outside.

The ETFE allows overhead views of planes and the sky while providing shade, notes Rasmus. It also reduces solar gain by 50%. The equivalent of three football fields of the polymer material will be used to build the two large canopies.

ETFE, manufactured in Shanghai, was used in several of the venues for the Beijing Olympic games. The fabric-like material was also used in Atlanta on the new Falcons Stadium, but without the second layer to create the pillowy effect.

Lights are being installed every 12 feet on the cross beams between the trusses and are directed up to the translucent ceiling to create ambient lighting for the area below the canopy. However, the main purpose of the canopy lights is the effect they create to those approaching the airport.

The airport opted for LED lamps with programmable color options. According to Summerlin, the addition of color added a very nominal cost. As part of the lighting contract, ATL purchased adaptable software to create 12 different color themes with the lights.

"The addition of color will add more interest and help the airport emphasize the various holidays," Cortes explains. "It will make the airport more appealing, and it will be a nice level of service for the passenger to come into."



Lights under the translucent canopies will change colors to reflect holiday themes.

ATL plans to select color patterns based on the calendar and holiday themes. The effects will be controlled by photocells and pre-programmed dates. At the moment, the airport's pre-programmed list does not include displays for any of the region's professional or college sports teams.

White will be the everyday color for the canopies, and it makes the airport "glow" from a distance—by land or air.

POND
Pond has the expertise to
keep your airport running

Architects
Engineers
Planners
Constructors
Pondco.com

While much of the work outside the North Terminal is complete, crews are still adjusting the lights and patterns. Summerlin notes that the white lights are energized as each bulb is installed. In November, three patterns had been tested and adjustments were still needed. The project team expects crews to complete the light installation on the South Terminal by the second quarter. The airport has not decided whether to turn on the patterns in the North Terminal before the South side is ready or wait until everything is complete.

The light bulbs are rated to last at least 10 years.

Per code, there are standard lights on light poles and directional signs to illuminate the area for passengers and drivers. There will also be fill lights from the trusses directed toward the renovated entries.

Erecting the Canopy

Before construction on the canopy could begin last spring, crews completed 16 months of site work. Portions of each parking garage were demolished to make way for the piers needed to support the 194-foot trusses. Although one side of each truss touches the terminal building, all the weight is placed on the new piers.

Each square pier is 21 feet tall and 11 feet wide. Micropiles, some up to 75 feet deep, are integral components of each pier system.

Each truss is 194 feet wide and 73 feet tall. The steel was rolled in Chicago and the trusses fabricated in Lubbock, TX. Each completed truss was then cut into five pieces to ease shipment and installation. On site, crews re-assemble the pieces to create three pieces: the column, mid-span and long-span. Crews are able to install just one section per night, and it takes three consecutive nights to erect one truss.

Once a truss is erected, crews then spend 10 days building the 48-foot-wide bay between each truss with 10 x-shaped cross beams. They also install additional steel to support the ETFE. The last step is installing the polymer roofing material. There are 18 bays in each canopy.

Because each truss spans eight lanes of traffic at the front door of the world's busiest airport, crews effectively had just six hours of active construction each night, from 10 p.m. to 4 a.m.

"We could not shut down the movement of the passengers in and out of the building, and safety was our primary concern," emphasizes Hobson. "Everyone from the general manager on down said the project was not to impact the passenger." Work on the North Terminal canopy sometimes closed two to three lanes in each direction, but it never shut down all the roadways.

Michael Baker

INTERNATIONAL

We Make a Difference



Providing a full complement of aviation services to airports and clients of every size

Planning • Environmental • Airfield/Landside Design • Airfield Electrical/NAVAIDs • Architecture
 Construction Management • Program Management • Asset Management • Pavement Management
 Mobile/Static LiDAR • Laser Crack Measurement System • UAS/Drones

MBAKERINTL.COM

“This is a logistics project with a construction component” became a catchphrase among team members. “To the airport’s credit, they spent a lot of money to make sure that passengers could still get in and out of the airport,” Hobson remarks.

Steel erection is adjusted on a daily basis to accommodate ambient temperatures and the expansion/contraction of the steel components. Engineers calculate that the structure can expand or contract up to 3 inches.

Limited by airspace restrictions, crews use hydraulic cranes to lift the steel. Again, precise daily calculations are needed because the cranes are placed on a bridge rather than a solid surface. “Months of engineering went into making sure we would not exceed the weight that the bridge could support,” recalls Hobson. “The contractor had to order special cranes to make it work.”

Building the North Terminal canopy taught crews lessons they are applying to the South. “It is unusual in construction to build the exact project twice in a row,” Hobson comments. Crews familiar with each step are more effective and efficient in building the South canopy.

Hobson estimates that the second canopy will consequently take one month less than the first. Not only does he expect the total work time to drop to 10 months, he also predicts it will be

completed more efficiently in a typical work week rather than the seven-day weeks it took to get the North side done.

Façade & Sky Bridges

Because the façade contractors could not work under the canopy as it was being built, construction on the North Terminal façade started after much of the canopy was completed. Hobson reports that about one-quarter of the North façade was completed by late November. On the other hand, crews got started on the South façade before crews moved in to start building the canopy.

The airport is also rebuilding each of its 12 entries—raising the ceiling to bring in more light and create grander entrances.

“We believe this project will be successful in recreating the brand, identity and experience of the Domestic Terminal, creating a new 50-year future for these facilities as ATL faces an era of unprecedented change in airline industry and the culture as a whole,” Rasmus comments.

Crews are scheduled to begin constructing the four sky bridges in the first quarter of 2019 and be completed by mid-2020. Work will begin on the North Terminal and then alternate between the two terminals, ending on the South Terminal. ✈️

Improvements include a 5-gate addition to Terminal T, new parking facilities, an extended people mover and new curbside canopies. ▶

Hartsfield-Jackson will be transformed through ATLNext, a 15-year, \$6 billion capital program. ▶

ATLNext will provide a greatly improved experience for 100 million passengers annually at the world’s busiest airport. ▶

ATLNext
Hartsfield-Jackson Atlanta International Airport
Client: Atlanta Department of Aviation
WSP’s Role: Program Management

Question
today
Imagine
tomorrow
Create for
the future

We’ve planned, designed and managed the construction of airports from coast to coast.

Find out what we can do for you.

wsp

wsp.com/usa

Join our team! 



Roanoke-Blacksburg Regional Develops Staff of Triple-Trained Public Safety Officers

BY JENNIFER BRADLEY

FACTS&FIGURES

Project: In-House Public Safety Dept.

Location: Roanoke-Blacksburg (VA) Regional Airport

Strategy: Cross train personnel for police, fire & emergency medical service duties

Cost Savings: \$350,000/yr

Debut of New Dept: July 1, 2018

Development Timeline: July 2015–June 2018

Staff: 14 cross-trained public safety officers; 1 police officer (held over from previous structure)

Schedule: Officers work 24 hours on, 48 hours off; each 24-hour shift includes 8 hours of police work & 16 hours at firehouse



Roanoke-Blacksburg Regional (ROA) has implemented a new emergency services program to keep customers safer than ever despite increasing passenger volume.

Until recently, the western Virginia airport contracted an outside company for on-call fire protection and employed seven conservators of the peace to work standard rotating shifts. In September 2016, ROA's department was officially designated a police department by the Virginia Department of Criminal Justice Services, and all officers were sworn in as police officers. Now, an in-house team of 14 public safety officers provides police, fire and emergency medical services 24/7, and one police officer remains on staff.

An impending 2018 deadline for the previous fire services contract prompted ROA Executive Director Tim Bradshaw to consider the structure change. After years of planning, purchasing equipment and hiring/training personnel, the airport opened its new emergency services department in July 2018, and triple-trained safety officers completed their first shifts. In early December, ROA was on pace to serve more than 650,000 passengers in 2018 and close the books on its busiest year in more than a decade.



TIM BRADSHAW

A New Model

When Bradshaw became ROA's executive director in 2014, he arrived with knowledge about all-in-one public safety departments from previous positions at Eastern Iowa Airport in Cedar Rapids and Louisville International. "I was able to see a brand-new department start up in Kentucky and learn from a well-entrenched department in Iowa," he explains. "I saw the benefit of having highly trained, highly qualified people to perform those tasks, because they can react to anything."

He began with a feasibility study to determine whether establishing such a department at ROA was even possible. A financial analysis showed switching would have a major positive impact, even with initial expenses for training and equipment.

"When it was all said and done, this change saved the airport about \$350,000 a year," Bradshaw reports. "For a small airport, that's a big number. I think it's given us the opportunity to use our resources wisely—not only with staffing, but with our physical assets as well."

With three years before ROA's fire services contract would expire, the new executive director got to work. First, he needed someone to take the lead on the project; and he didn't need to look far or long. Benjamin Cook, a recently retired police chief from a nearby community, was ready for a new challenge. "He was hired just to do this, and really did the lion's share of work needed to stand this department up on its own," he says of the airport's new chief and director of Public Safety.



BENJAMIN COOK

Cook was happy to tackle the task of establishing a new emergency services department for the airport. In addition to 39 years of fire service, he also had additional experience in law enforcement and emergency medical response. "The job description fit everything I'd done my entire career," he remarks.

It was also a unique, once-in-a-lifetime opportunity to build a public safety department from scratch—and not just one, but three-in-one. "It works really well in a location like ours, especially in the airport setting where maybe an officer wears more than one hat anyway," Cook comments. "It was really good to be able to create the department and everything for it: the patches, uniforms, badges, equipment, all that stuff."

To manage the aggressive two-year implementation schedule, Cook subdivided the tasks and deadlines into six-month increments. Developing job descriptions and hiring candidates proficient in all three disciplines required extra attention. For instance, someone with a theft conviction may work as a firefighter, but not as a police officer. Strict vetting procedures were established to ensure that the right people were hired, he notes.

"Hiring is probably one of the most difficult things to do," Bradshaw adds. "One didn't make it through the academy... another was in and decided it wasn't for him. It's hard to get the right candidates for this job."



In particular, Cook looked for professionals who were well qualified to manage a wide variety of situations. "We needed people who can protect others from things that are unpleasant, communicate effectively and be able to react to a really dangerous situation with the appropriate level of response," he explains. "They also must not be afraid to go into a situation with an active airplane crash and multiple victims."



Airside/Landside/Facilities

Bringing Design Concepts to Reality

CHIA
design/construction solutions

Responsibly
Improving the
World We Live In

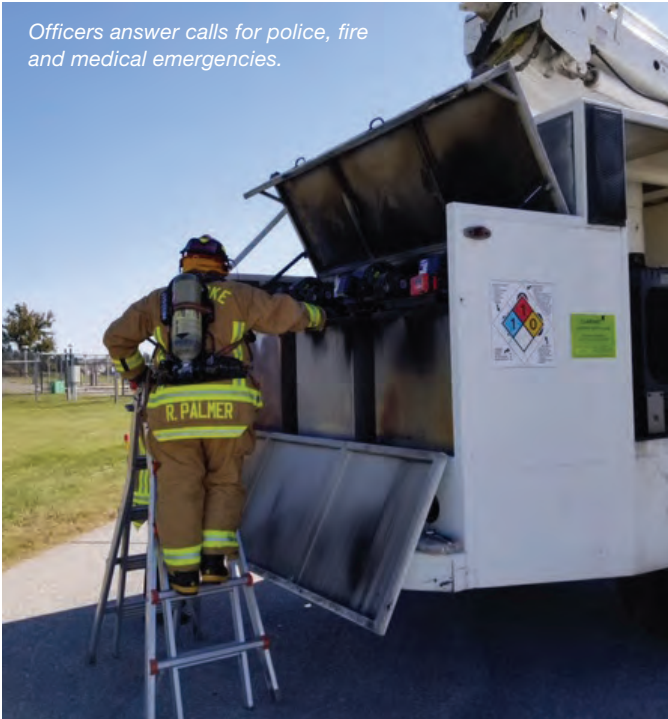
chacompanies.com #theCHAWay



Paul Puckli
Market Development Leader
703.625.4889
ppuckli@chacompanies.com

Mike DeVoy
Aviation Market Leader
317.694.9672
mdevoy@chacompanies.com

Officers answer calls for police, fire and medical emergencies.



Transitions & New Hires

Like Cook, other retired police officers were also interested in new opportunities at ROA. Candidates without specific police experience had to successfully complete an extensive 18-week police academy.

The airport gave existing staff members the option to continue working as conservators of the peace or transition to new roles as police officers only with new responsibilities and work schedules. Most were near retirement, and Bradshaw wanted to acknowledge their service while also transitioning to a new multi-coverage department.

Six staff members completed training for additional disciplines; one continues to work as a police officer. As ROA executives searched for others to fill the ranks, they found that some applicants had fire experience, some had police and some neither.

Bradshaw reports that department personnel (12 male, three female) earn very good salaries. "We want to pay them well," he says. "They are highly trained and can respond to any emergency we have."

Officers work a rotating schedule of 24 hours on/48 hours off. Each 24-hour shift includes eight hours of police work and 16 hours at the firehouse. Daylight police officers work at the terminal from

A Practical Approach to AOA Safety

Optimize value, performance, and guidance with proven pavement marking materials supplied from **one** source.



ENNIS-FLINT
The Mark of Traffic Safety®

AIRMARK® PREFORMED THERMOPLASTIC

- AirMark® Preformed Thermoplastic for Multi-Colored Markings at 175+ Airports
- Benefit Cost Analysis Available

PAINTS

- Fast-Dry and High-Build Waterborne & Solvent Based Paint
- FAA Listed Buy-America

www.ennisflint.com

Ennis-Flint ISO 9001: 2015 Manufacturer • 4161 Piedmont Parkway, Suite 370, Greensboro, NC 27410 • sales@ennisflint.com • 800.311.8118

7:00 a.m. until 3:00 p.m., and then work as firefighters until 7:00 the next morning while colleagues from the fire station cover the terminal.

The overlapping duty structure provides built-in flexibility. For instance, one day while police officers were already engaged at the terminal, fire station personnel investigated a suspicious vehicle at another building. Two of the four team members on duty at the fire station slipped on guns and vests right over their fire uniforms and station gear to answer the police call, and the airport maintained required staffing at the firehouse. "We have our own back up," explains Cook.

Triple Trained

ROA paid for all the officers' police academy, aircraft rescue and firefighting (ARFF) and emergency medical training. A designated captain/training officer tracks compliance, certifications, etc. in all three disciplines for each team member.

Regulatory requirements span a variety of areas, from firearms proficiency to airfield response time. Meeting medical standards is particularly challenging, notes Bradshaw. "That's not something you can do every so often," he advises. "They go through an EMR (emergency medical responder) certification, which includes a very difficult written test, and then have a practical test on top of that. It's essential to have someone paying attention to those details."

CONTINUED ON PAGE 45



Ongoing equipment exercises include water supply and pump training.

Offering a unique combination of airport planners, airfield design experts, parking specialists, and transportation professionals, Kimley-Horn develops customized solutions to fit your airport's needs.

To learn more, please visit www.kimley-horn.com/aviation or contact our National Aviation Practice Leads:

Carlos Maeda
Orlando, FL
321.438.6647

Pam Keidel-Adams
Mesa, AZ
480.207.2670

J.J. Morton
Chicago, IL
312.212.8487

Kimley»Horn

Expect More. Experience Better.



High-Tech Lost & Found

Returning items lost by customers is a low priority compared to safety-critical tasks such as screening baggage and passengers, or clearing runways of ice and snow. But it's an urgent matter for the senior citizen who forgot his glasses at the ticketing counter or the business traveler who left her laptop charging in a holdroom.

Roanoke-Blacksburg Regional Airport (ROA) streamlines the process of reuniting customers and their errant belongings with Crowdfind, a lost and found software/service company. Airport staff use a mobile app to snap pictures of lost items, and then post photos with short descriptions and found dates on the ROA website.

Airport visitors can track down their belongings by checking the online lost and found inventory list, which is organized into general categories such as mobile devices, keys and clothing. They can then file a claim online or call the airport to initiate a return. The airport asks for distinguishing details (passcodes for phones, sizes and brands for clothing, etc.) to help fraudulent claims.

According to Crowdfind, logging a lost item into the system can take just five to 10 seconds. When an airport visitor claims a recovered item, the company's software creates an automated

workflow to facilitate its return. Airport staff enter the property owner's address and select a shipping option; the software automatically prints a shipping label, processes payment and sends a tracking code to the package recipient. Invoicing for shipping is sent directly to the property owner.

"This makes everything so much easier," reports ROA Executive Director Tim Bradshaw.

The annual subscription for ROA's new lost and found app and service is less than \$2,000. Crowdfind President Dan Sullivan notes that the system eases anxiety for airports and travelers alike, and reduces the amount of time it takes to reunite owners with their lost belongings.

ROA was the company's first airport client, and Salt Lake City International now uses the service as well. Crowdfind officials report that several other U.S. airports may follow suit.

"If my son loses his truck, that can be a bad day," jokes Sullivan. "That's part of what we're trying to do—make the travel experience better for people." ✈️



DAN SULLIVAN

NEW LED TECHNOLOGY RUNWAY CLOSURE MARKERS THE GOLD STANDARD FROM SHERWIN INDUSTRIES

LONG LASTING LED | FAA CERTIFIED | MADE IN AMERICA | IMMEDIATE DELIVERY



Sherwin Industries, Inc.
AIRPORT RUNWAY SUPPORT

804.275.6900 | SHERWININDUSTRIESINC.COM

Public safety officers split time between the fire station (pictured here) and the terminal.



CONTINUED FROM PAGE 43

Some FAA-required fire training is presented by instructors within the department who were previously certified at the ARFF-certified Blue Grass Airport in Lexington, KY. The team also utilizes programs by the Virginia Department of Fire for two onsite live-burns per year. The state provides instructors and access to a training simulator free of charge; ROA only pays for the propane used during the week-long training scenarios.

Given the overall cost of training, officers are required to sign promissory notes stating that they will repay some of the expenses incurred by the airport if they leave prematurely.

Bradshaw and Cook are confident that the airport has the right people trained and in place. Both are also learning to embrace the department's expanded scope of authority. Cook cites its first theft case as an example: He had to remind the applicable officer to proceed with interviewing the suspect himself vs. turning the matter over to city police. The officer completed the investigation, recovered the stolen property and cleared the case.

"I think for a long time the fences around the airport defined their boundaries," Cook explains. "Sometimes we have to go beyond the fence to solve a crime."

The boundaries officially changed when ROA added state-certified police officers to its ranks in July. Cook's existing relationships with police, fire and emergency medical agencies throughout the greater Roanoke area proved to be a huge plus for establishing and running the airport's new department. As ROA's chief and public safety director, Cook continues to prioritize professional networking. "You really have to establish and maintain those relationships with people you will call to back you up," he notes.

Because most of the airport property is within the city of Roanoke, its agencies are immediate second responders. "God forbid we had a fire and were really restricted on our water supply," Cook muses. "They would be an integral part of providing more water."

At the new department's six-month mark, Bradshaw was pleased with the proficiency and confidence of Cook and his team. "When we did our disaster drill, I saw them really step up and learn it," he says. "We went through our FAA inspection, and they did a great job."

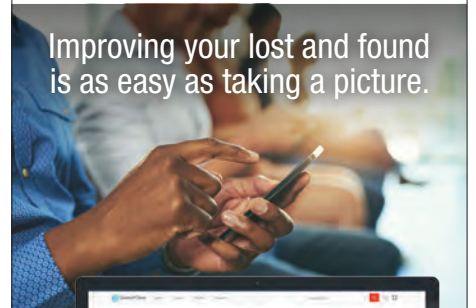
Bradshaw also sees the ROA team validating the very concept of staffing a public safety department with cross-trained staff. "I think that other departments around the community were kind of skeptical when we started doing this, but I think they see the benefit now," he says. "It was fear of the

unknown, and many didn't know what to expect on the other side, especially since many were past police officers. We've worked together, and we took this trip together."

"It's a great model for us," adds Bradshaw. "We have people here 24 hours a day who are watching over things, who can respond to any type of emergency we have." ✈️

Crowdfind

Improving your lost and found is as easy as taking a picture.



CROWDFIND.COM



FACTS & FIGURES

Project: Air Traffic Control Tower

Location: Albert J. Ellis Airport—Richlands, NC

Cost: \$6 million

Size: 6 stories/91 ft. tall

Funding: \$2 million from FAA Airport Improvement Program; \$2.4 million from state of North Carolina; \$1.4 million from passenger facility charges

Split Costs: Airport covers design/construction costs & ongoing building operation expenses; FAA pays cost of contract controllers

Construction: Dec. 2017–Sept. 2018

Commissioned: Nov. 1, 2018

Project Consultant: RS&H

Building Contractor: Daniels & Daniels Construction

Lead Technical Design: RS&H


Communications Consultant Responsible for Specifying Minimum Equipment List: CTBX Aviation Group

Tower Operator: Robinson Aviation Inc. (RVA)

Est. Building Operation Costs: \$25,000/yr.

Contract Control Tower Opens at Albert J. Ellis Airport

BY VICTORIA SOUKUP

 It took a decade, but Albert J. Ellis Airport (OAJ) finally has its own air traffic control tower—a six-story, \$6 million structure that officials hope will increase airspace efficiency and bring more air service to the small airport on the eastern coast of North Carolina.

Commissioned in November 2018, the new facility is the 256th tower operating under the U.S. Contract Tower Program. As such, OAJ paid to construct the tower (with help from state funds and federal grants) and foots its ongoing maintenance costs; FAA pays the salaries of the contract controllers who work there.

“This new tower enhances safety and improves efficiencies during busy periods,” says OAJ Airport Director Chris White, A.A.E. “More planes can now come and go during heavy traffic hours, and it opens the airport to accept larger and more air carrier operations, more cargo and more general operations. Some aircraft operators restrict the size of aircraft that can operate in an airport that is non-towered. This removes that restriction for Albert J. Ellis.”



CHRIS WHITE

The \$6 million construction cost was partially paid for with \$2 million in FAA Airport Improvement Program entitlements and \$2.4 million from the North Carolina Department of Transportation—Division of Aviation. The remaining funds came from passenger facility charges. White estimates it will cost the airport about \$25,000 per year to operate the building (insurance, electric utilities, refuse/janitorial services, etc.).

Because of the costs, OAJ was not on track to have an FAA-staffed tower. According to Spencer Dickerson of the American Association of Airport Executives/ U.S. Contract Tower Association, an FAA-staffed tower can cost three times more than a tower staffed by an outside contractor. “Without this program, OAJ wouldn’t have a tower,” he states.



SPENCER DICKERSON

Dickerson says that over the past 15 to 20 years, the program has added air traffic control service at 150 previously non-towered airports. “It’s good for safety, it’s good for taxpayers and it provides more air traffic efficiencies throughout the system,” he explains.

Accommodating Mixed Traffic

White explains that it was essential for OAJ to have a tower because of its proximity to Camp Lejeune, a Marine Corps base with 50,000 active duty troops, and Marine Corps Air Station New

River. The airport averages 106 daily operations—mostly from passenger aircraft and slow-moving rotor aircraft.

“But we also have Marine Corps charters and several squadrons of V-22 Osprey that come to OAJ to train,” he says. “You mix higher-speed commercial aircraft with slower-speed military aircraft, and then add in corporate and general aviation aircraft, and you have an interesting mix that benefits from a tower as far as separation and efficiencies for aircraft coming and going.”

Airport officials began the tower project in 2008 by submitting a formal application for a contract tower to the FAA. “You have to go through a complex benefit-cost analysis to be accepted into the program,” White says. “You have to prove it has more benefit than cost.”

The airport’s application was accepted one year later, but the project stalled due to a program slowdown, weak economy and lack of funding. The airport proceeded with a redevelopment

RUNWAY CONSTRUCTION WORK?



ETL
Intertek
FAA & ETL APPROVED!

SERVING AIRPORTS FOR 21 YRS

How will you handle your Runway Safety Plan?

NAC covers it!

- Safety Plan Requirements
- FAA Certified Products (many sold to contractors do not qualify)
- Placement Details

Our experienced certified airport planners will work with your contractors to make sure they’re following FAA standards. Don’t risk getting your project delayed or shut down for non-compliance. Call NAC today.

 **BUY AMERICAN STANDARDS**
1916-49, Chapter 501

MBE - State of Florida Certified Business Enterprise

NAC
NEUBERT AERO CORP.
Airport Products & Services

www.airportnac.com
727.538.8744
info@airportnac.com

ISO 9001-2015 Certified for its Quality Management Systems in design, manufacture and supply.
Copyright © 2019 Neubert Aero Corp. NAC Dynamics, LLC. Brooksville, FL, USA

program that included a new passenger terminal building, an executive terminal and other facilities while continuing to strategize about adding a tower.

By 2014, the program gained forward momentum, and OAJ solidified funding commitments and began siting and environmental work with consultant RS&H. Airport officials worked diligently with the state legislature and Department of Transportation for a \$2.4 million grant, recalls White.

Tarryn Little, project manager for RS&H, says the firm was involved from the beginning—assisting with the FAA application, helping secure funds, performing the site study and modifying the Airport Layout Plan.

“Back in 2009, we decided where we wanted the tower to go and placed utilities and roadways to preserve the site so that nothing would be constructed under or near it,” says White. “And we were fortunate that our ideal site was the site selected, as it was the highest natural point on the airport property. When you have a flat airport, that’s important. Even 10 feet will make a difference.”



TARRYN LITTLE

The site’s elevation helped decrease construction costs, because taller towers require more elaborate and expensive foundations. The highest point of OAJ’s structure, including the antennae, is 91 feet. The controllers’ eye height is 60 feet.

Reduced Design Costs

RS&H based the design for OAJ’s tower on other contract towers it had designed. “We’re familiar with these types of buildings and used a similar design at Ellis in order to save on design costs, with modifications based on location, preferences, needs and, of course, the height,” Little explains.

The airport chose a “stout” cast-on-site reinforced concrete building to help the new facility withstand hurricane-force winds that can strike the North Carolina coast. “The wall panels were picked up with a crane and built on-site like an erector set,” recalls White.

The first floor contains fire and jockey pumps; the manager’s office occupies the second floor; the third floor houses a training room; the air traffic control equipment room is located on the fourth floor; the fifth floor is a break room; and the sixth floor the cab or control room. The tower can accommodate two to three controllers at a time and currently operates 15 hours per day, from 7 am to 10 pm. Operational hours can be expanded based on traffic projections.

HIGH PERFORMANCE ASPHALT PRESERVATION TREATMENT FAA AC P-608 COMPLIANT



FOD ISSUE?



STILL AFRAID OF THE DARK?

Asphalt Pavement
Preservation at Night!

Rapid Cure Treatments

Minimize Closure
Times and Lost Revenue!

SAFE: Over 800 runway projects safely treated. Environmentally responsible

PROVEN: 25 years servicing the aviation industry

EFFECTIVE: Mitigates asphalt based FOD & surface oxidation

SAFE
PROVEN
EFFECTIVE



asphaltsystemsinc.com ASPHALT SYSTEMS INC.™

CALL THE PRESERVATION EXPERTS | 801.972.2757 | ASI CAN HELP!



Despite setbacks from Hurricane Florence, construction was completed in September 2018.



A PARTNER YOU CAN TRUST.

Airports choose RS&H again and again because we deliver on our promises. We help you solve the challenges of today and achieve your vision for tomorrow. From the entrance road through the terminal to the end of the runway, **we do it all — all for you.**

rsandh.com



ARCHITECTURE | ENGINEERING | CONSULTING

Protecting & Preserving

New and Existing Airfield Pavements

D.S. Brown has over 50 years of experience of supplying the highest quality joint sealants and concrete repair materials to airports worldwide.

Delpatch™ Elastomeric Concrete



Primary Applications:

Partial Depth Spall Repair
Airfield Lighting Retrofit

- Permanent
- Safe
- Flexible
- Durable
- Easy
- Fast
- Chemical Resistant
- Cost Effective

Please contact the D.S. Brown Company to learn why you too, should rely on Delpatch™ Elastomeric Concrete.

Delastic® Preformed Pavement Seals

- Meets FAA P604 ASTM D 2628 & CRD-C 548
- Longest Lasting Joint Seal
- Jet Fuel and Waterblast Resistant
- Keeps FOD and Moisture out of the joints
- Reduces Faulting
- Reduces Joint Spalling

For over 50 years, our most discerning customers have realized the superior performance of Delastic® Preformed Pavement Seals.



JIM SLATE

Construction was delayed because bids came in higher than expected. RS&H consequently worked with the low bidder to value engineer its plans on several items, and construction eventually began in December 2017.

As specified by the design, the contractor had to complete most of its work before the FAA could install equipment. "There were some pretty hard dates we were required to follow in order to finish the project on time," comments Little.

Just as construction neared completion, Hurricane Florence struck, damaging the building's elevator. "The FAA could not perform its work without an elevator, so the contractor actually paid to have people carry all the FAA's equipment up the five flights of stairs," she recalls.

Operational Issues

Robinson Aviation Inc. (RVA), which has partnered with the FAA for more than 30 years, operates the tower at OAJ and employs its air traffic controllers. Under a territory agreement awarded by the FAA, the private company operates 100 contract towers throughout the south and southeastern United States.

Jim Slate, vice president of Air Traffic Services, reports that staffing is the company's main challenge. "We're not able to teach people how to be air traffic controllers; we have to find people who already are controllers," he explains, noting that most Robinson Aviation employees are retired FAA controllers or retired military controllers. "At certain times, it is tough to find candidates."

As a result, contract towers tend to have high turnover. "Since we hire a lot of people who are retired, they only work for a finite number of years before they fully retire," he remarks. "That requires us to have a constant hiring process."

Time is usually of the essence. "Once a tower is equipped and ready, the FAA will give us a short amount of time to relocate controllers, ensure they are familiar with the airspace and officially open the tower," says Slate. "No airport board wants a new tower to sit there for a long period of time without being open."



www.dsbrown.com | 419-257-3561

The new tower currently operates from 7 a.m. to 10 p.m.



Hurricane Florence added a special complication to the OAJ tower opening by rendering many local housing options inhabitable due to flooding and other damage. “The hurricane hit when the controllers were getting ready to move in,” Slate recalls. “It was a challenge to find affordable housing.”

Filling a Need

Currently, 256 airports in 46 states have contract towers. Two (OAJ and North Texas Regional Airport – GYI) opened new facilities in the second half of 2018, and Dickerson predicts that two to three more will add contract towers annually over the next few years.

Most federal contract air traffic controllers are former FAA or military controllers, and 70% are veterans. All are FAA-certified and undergo the same training and are required to follow the same operation standards as FAA-employed controllers.

According to Dickerson, the 36-year Contract Tower Program has strong bipartisan support in both houses of Congress. “The bottom line is that without this program, many airports would not have towers. If you have a certain level of operations or weather issues or typography or unique airfield configurations, it makes sense to have active controllers at an airport.”

At OAJ, the new contract tower is aligning the airport with current traffic and supporting future development. “We were one of the busiest airports in the country in terms of people served without a tower,” says White. “We really pushed for it and it’s been the theme of our entire redevelopment program. It’s not a build-it-so-they-will come type of program. It’s a build-it-so-they-can come program. We’ve removed facility constrictions and operational constraints so the airport can continue to grow.” 



How do you measure easy?

Open a 400 lb cover with less than 35 lb of force.

Learn more about infrastructure access solutions at ejco.com or call 800 626 4653
Made in the USA

Piedmont Triad Int'l Grows Up & Brings Region Along for the Ride

BY PAUL NOLAN



FACTS&FIGURES

Project: Landside Development

Location: Piedmont Triad (NC) Int'l Airport

Major Tenants: FedEx; Honda Aircraft; Cessna; HAECO Americas

Local Impact: Aerospace industry contributes \$5.9 billion/yr to local economy; about 17,700 local residents work for large aerospace firms or companies that support them

Airport Land Available for Development: 1,000 acres

Development Strategies: Control growth; lease land strategically to preserve large parcels for future tenants

Of Note: Guilford Technical Community College provides trained workers for local aerospace companies



Like the youngest brother who grows up in a family of star athletes, Piedmont Triad International Airport (GSO) is used to being overshadowed by its bigger North Carolina brethren. With approximately 1.7 million annual passengers, it serves a fraction of the traffic handled at Raleigh-Durham International and Charlotte Douglas International (about 11.6 million and 46 million annual passengers, respectively).

But little brothers ultimately grow up, establish their own identity and make headlines of their own. GSO has certainly done so.

Located in central North Carolina, GSO is the centerpiece of an area that has grown into an aerospace hotspot. Over the last two decades, the area has become a prominent U.S. hub for aircraft manufacturing, aircraft parts supply, and maintenance, repair and overhaul facilities.

Local Economic Driver

The Piedmont Triad of Greensboro, High Point and Winston-Salem is home to more than 50 aerospace companies that employ 5,700 people. Kevin Baker, executive director of Piedmont Triad Airport Authority, notes that economic impact studies indicate another 12,000 people in the region work for companies directly related to the aerospace industry. Together, these businesses are estimated to infuse \$5.9 billion into the local economy each year.



KEVIN BAKER

"I call us the Sesame Street airport, because we're the one that's not like the others," Baker quips. "Our first mission is to provide the best possible passenger

always say 'yes.' If a company needs interstate access and 100 acres next to a runway—and they need it next week—we are ready to say yes," Baker says.

Based on the current ratio of employees to existing companies, Baker projects that as GSO continues to attract businesses, the total number of workers in the Piedmont Triad region who work for an aerospace-related company could hit 30,000. That's increasingly significant, given that the median household income in the region is \$47,026 and the average salary at a company like Honda Aircraft is \$75,000.

"These are good jobs that are adding to the local economic base and raising that tide," he says. "We want to make sure that we can always have those types of companies here."

Controlled Growth

After working as a civil engineer and aerospace consultant for two decades, Baker accepted the deputy director position at the airport authority in 2008, and took the lead role in 2010. He has emphasized controlled growth during his tenure, and plans to continue doing so. Baker has had conversations with two aircraft manufacturing companies that are considering establishing facilities at GSO, but he could not reveal their identities.

"We can support a whole lot of economic growth, but it has to be done the right way. We have detailed plans on how that will happen in an orderly fashion. It will never work out like that because I'm never that lucky," he jokes. "But we've got contingency plans. You don't want a smaller company to drop 20 acres in the middle of 1,000 because it may ruin your larger site."

Local and state governments are helping make the region an attractive home for businesses. For instance, significant investments are being made to improve the interstate highway network adjacent to GSO, which will create easy access to/from industrial sites around the airport. Major highways such as I-40, I-85 and I-74 are already in place, with connectors under construction and coming online in the near future. The network will be complete by the end of this year, opening up numerous additional opportunities for industrial sites with immediate interstate highway access.

North Carolina Department of Transportation, the city of Greensboro and Guilford County all contributed financially to the recent construction of a state-of-the-art hangar by HAECO Americas. (See sidebar on Page 56.)

Filling the Worker Pipeline

One of the biggest attractions to the Piedmont Triad region for aerospace

experience we can, but we are not entirely focused on the transportation mode that most airports focus on."

Prominent aerospace businesses that have located at GSO include FedEx, Honda Aircraft Company, Cessna and HAECO Americas, which manufactures aircraft interior products and provides aircraft maintenance, repair and overhaul services.

Baker estimates that up to three-fourths of his job is working with businesses that have established operations at GSO, as well as recruiting additional companies to fill the 1,000-plus acres of airport property that remain available for development. "About six or seven years ago, the airport identified that the aerospace industry is doing nothing but growing, so we planned ahead to be able to



Hangar & Door Experts
EXPERIENCED | TIME-TESTED

FULFAB
since 1957
AIRCRAFT HANGARS

START TO FINISH EXPERTISE
Single-source for Design, Manufacturing, Erection & Service

800.274.0144 | **FULFAB.COM**



A local community college helps provide workers for aerospace companies in the region.



RUBB BUILDING SYSTEMS



THE RUBB HANGAR ADVANTAGE

- Virtually maintenance free
- Energy efficient Thermohall® insulation
- Proven cost effective reliability

Over 30 years of building the best... Can you afford to not have a RUBB

1.800.289.7822 | info@rubbusa.com | www.rubbusa.com

companies is the talent-feeding system provided by Guilford Technical Community College (GTCC). The school offers five separate degree programs related to aerospace jobs, plus continuing education courses for aerospace professionals. It also provides custom training for aerospace companies in the region.

The looming pilot shortage that is expected to affect the worldwide aviation industry has been well-publicized. Lesser-known, however, is the current shortage of aerospace mechanics. Nicolas Yale, director of the aviation programs at GTCC, says the pipeline thinned after 9/11 due to airline consolidation and an industrywide downturn.

GTCC enrolls about 500 students in its aerospace programs, and most are from the region. Yale reports that local and national aerospace companies hit campus with job offers in hand before students even graduate.

“They’re all fighting for that one person they need,” he explains. “I tell students coming in

that there are no guarantees in life. But if you finish any one of these programs, you'll be employed.

"We've had companies recruiting out of our classrooms before they're done. I've actually had to push back at them a little bit and say, 'Let them finish their degree.' The one or two companies that show up first grab all of them, and I have to tell the other businesses that our students are all hired."

Symbiotic Relationship

GTCC has been part of the community for more than four decades. It opened the T.H. Davis Aviation Center at the airport in 1989 to replace a smaller facility that had been in operation since 1970. The facility has 36,000 square feet of classroom/lab space and a 12,000-square-foot hangar that was renovated in 2016. Currently, it houses eight aircraft, a helicopter and more than 20 system trainers for the various labs. It also has dedicated shops for engines, welding, composites, electrical components and sheet metal finishing.

Richard Kendall, chief executive officer of HAECO Americas, says GTCC is a critical contributor to its work force and one reason the maintenance, repair and overhaul provider located its North American headquarters at GSO. "If you read any articles about airplane maintenance in North America, virtually everyone mentions the shortage of qualified, experienced manpower. That's a problem we share with the rest of the industry," he laments.

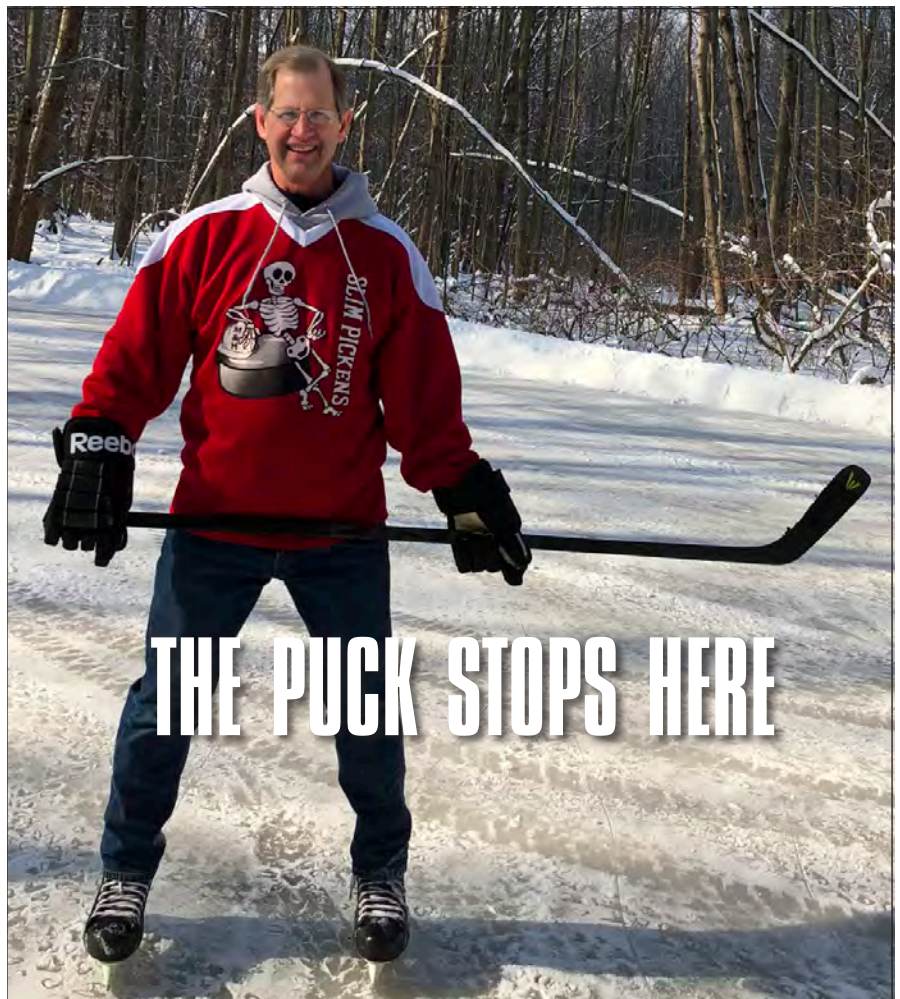
HAECO Americas, a subsidiary of Hong Kong Aircraft Engineering Company, partners with GTCC to develop training programs for its mechanics' certification. Yale says many companies in the area rely on the community college for customized training programs. Some last just a week, others are 10 weeks long.

Yale, a former avionics technician himself, is grateful for the symbiotic relationship the school and the local aerospace industry have established. Furthermore, he says the industry as a whole needs to expand its efforts with schools like GTCC to increase enrollments, or companies will continue to scramble for skilled workers. It's a win-win opportunity that can increase enrollments and halt the escalating salaries that aerospace companies must offer to recruit and retain the best workers, explains Yale.

"Most colleges and technical schools do not have deep pockets for recruitment and advertising, plus many have restrictions on where they can recruit. If the industry joined them in this effort, the payoff would be on both sides and the cost would likely be lower than fighting in the open market. But the payoff has a time delay they have to get used to," Yale advises.

Not surprisingly, Baker is a big proponent of increased coordination between GTCC and the companies that

rely on local graduates to fill their payrolls. "The companies doing this kind of work—whether it's building an airplane like Honda, or maintaining them, like HAECO or Cessna—need these employees. There are probably 20 to 25 cities in the U.S. that have the kind of bench strength in that industry that we have here. Having the machine that is perpetually creating new employees to be able to work in these businesses cannot be understated. That's a key to everything." ✈️



Heading up Mead & Hunt's Aviation Services Group has its challenges, but Ron Engel consistently pulls off a hat trick, keeping clients, employees, and the FAA front and center. Ron and the team are always ready to assist with your airport's goals.

517-908-3107
ron.engel@meadhunt.com

Mead&Hunt

\$60 Million Hangar Features Function, Sustainability & Style

No one expects airport hangars to be architectural marvels; but when HAECO Americas decided to add a fifth hangar at Piedmont Triad International Airport (GSO), company officials wanted to make the building more than just a super-sized airplane garage.

HAECO Americas, which provides aircraft maintenance, repair and overhaul services and related products, established its North American headquarters at GSO when the company purchased the facility from a hedge fund in 2014. (The company, previously known as TIMCO, was founded by local owners in 1990.) More recently, however, the company wanted to expand its services and knew that a larger hangar was necessary.

The result is a 250,000-square-foot state-of-the-art structure that was ready for use last January. The spacious hangar can accommodate up to eight next-generation narrow-body aircraft, or two next-generation wide-body aircraft and two next-generation narrow-body aircraft. It is the largest hangar at HAECO Americas' facilities—almost twice the size of each of the other four hangars the company currently operates at GSO.

HAECO began working with Ghafari Associates on the conceptual design and contractor selection in August 2016. The design-build team included BRPH as the architect of record and BE&K Building Group as the design-build contractor.

The finished hangar earned silver level certification by the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system. One of its signature features is an energy-efficient translucent wall that contributes to the building's aesthetic, performance and sustainability goals.

"Sustainability is something we specified when we started the project," says Richard Kendall, chief executive of HAECO Americas.

The Lightwall, by Exterior Technologies, provides extensive light transmission and capitalizes on naturally available daylight to reduce the demand—and associated costs—of electric lighting. The company markets the translucent wall as a modern, durable and economical solution for building envelopes that works especially well for hangar doors.

Total construction cost for the hangar is estimated at \$60 million. HAECO Americas received a \$4 million grant from the North Carolina Department of Transportation, which was mainly used for grading work

prior to construction, plus \$400,000 each from the city of Greensboro and Guilford County, where GSO is located. HAECO Americas funded the remainder of the project.

Piedmont Triad Airport Authority leases the land to HAECO Americas. "The public body has to own the land and any improvements there," explains Kevin Baker, executive director of the authority. "We own it on paper, and they have rights to its use for 50 years."

Official ownership notwithstanding, Baker is confident leaving execution of the hangar project in the hands of HAECO Americas and its partners. "The way I look at it is if they're proud enough to put their name on the building, I'm confident that I'll be proud to have it on our airport property," he remarks.

Operational flexibility was key for HAECO Americas. "It has a large floor area with minimal obstructions. We can get two or three wide-bodied aircraft plus a number



RICHARD KENDALL



of narrow-bodied aircraft in at one time,” reports Kendall. “It’s vital for us to be able to move people between different aircraft in different spaces as flexibly as possible. Also, being able to have as many aircraft under one roof as possible increases that operational flexibility and efficiency.”

While narrow-bodied aircraft are the bread and butter of domestic traffic in the United States, HAECO Americas wanted to make sure it had the capacity for wide-bodied aircraft such as the Boeing 777 and Airbus A-350 as the market for larger airplanes emerges.

HAECO Americas services commercial and cargo airplanes, as well as U.S. Air Force aircraft. At full capacity, the new hangar is expected to employ 500 aircraft technicians and support staff, bringing the company’s total workforce at its GSO facilities to approximately 2,200 people. ✈️



The new hangar can accommodate up to eight next-generation narrow-body aircraft.

Photo: Triad Business Times, courtesy of EXTECH.

FACTS&FIGURES

- Project:** New Hangar
- Location:** Piedmont Triad (NC) Int’l Airport
- Tenant:** HAECO Americas
- Size:** 250,000 sq. ft., with 176,000 sq. ft. of open floor space
- Capacity:** Fits up to 8 next-generation, narrow-body aircraft or 2 next-generation, widebody aircraft & 2 next-generation, narrow-body aircraft
- Est. Cost:** \$60 million
- Funding:** \$4 million from NC Dept. of Transportation; \$400,000 each from city of Greensboro and Guilford County; HAECO Americas funded rest
- Architect:** BRPH
- Conceptual Design:** Ghafari Associates
- Design-Build Contractor:** BE&K Building Group
- Translucent Wall:** Exterior Technologies
- Hangar Doors:** NORCO Industrial Doors



Photo: Triad Business Times, courtesy of EXTECH.

Varco Pruden’s Attractive & Affordable AVIATION INDUSTRY FACILITIES



We help get your building plans off the ground. Whether you need a hangar, aircraft maintenance, FBO, or air cargo facility, Varco Pruden Buildings and their coast-to-coast network of authorized builders work as a team to provide a high quality building, on time and on budget.

Varco Pruden, a pioneer in the steel framed building industry, can offer your organization:

- ✦ Lower material and labor costs.
- ✦ Faster completion schedules.
- ✦ Flexible designs for interior space.
- ✦ Choices of exteriors such as brick, stucco, glass, wood or steel panel
- ✦ Nationwide network of independent authorized builders

With our value-engineered steel framed building systems, recycled material content and long-life “cool paint” choices, VP Buildings can help you meet sustainable construction and LEED certified project plans as well. Energy-efficient structures can help curb operating costs.

Visit us online to request this free brochure about Varco Pruden’s aviation and transportation facility capabilities!



Building Solutions... one relationship at a time.



Find Out More. Visit www.VP.com/ad/AIN

Varco Pruden Buildings is a division of BlueScope Buildings North America, Inc.

Presque Isle Int'l Increases Connectivity With New Service From United

BY NICOLE NELSON



FACTS & FIGURES

Project: Commercial Jet Service

Location: Presque Isle Int'l Airport (formerly Northern Maine Regional Airport at Presque Isle)

Airport Owner: City of Presque Isle

Air Service Development Consultant: Volaire Aviation Consulting

New Service To/From: Newark Liberty Int'l Airport

Frequency: 12 nonstop roundtrips/week

Carrier: United Airlines

Start Date: July 1, 2018

Funding Support: Essential Air Service Grant

Approx. Subsidy: \$4.8 million/yr

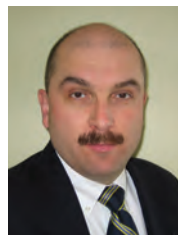
Key Benefits: Enhanced service for regional residents; connectivity with other domestic & int'l destinations via United hub



A long-term effort to improve service for residents of Northern Maine has ultimately resulted in the award of commercial jet service by a legacy carrier to the recently rebranded Presque Isle International Airport (PQI).

Following six years of service to/from Boston Logan International Airport (BOS) via the now defunct regional carrier PenAir, the U.S. Department of Transportation fulfilled PQI's wishes by authorizing United Airlines to provide 12 nonstop round trips per week via 50-seat jet aircraft to Newark Liberty International Airport (EWR). The associated Essential Air Service grant officially commenced July 1 for a two-year term.

Securing the new service was like winning a trifecta for the airport formerly known as Northern Maine Regional Airport at Presque Isle. "I can't tell you how exciting it was to get, for the first time, a major network carrier; for the first time, jet service; and for the first time, a major network hub," says PQI Airport Director Scott Wardwell. "We are very excited for what's going to happen to the market in the future."



SCOTT WARDWELL

Networking

Prior to the recent United Airlines arrangement, the last time PQI had any semblance of network service was before airline deregulation, when Delta Airlines connected Presque Isle, Bangor, Portland (all in Maine) with Boston and New York City.

Jack Penning, managing partner of Volaire Aviation Consulting, jokingly describes the service as 727s making a "milk run" down the coast.



JACK PENNING

"It wasn't the same kind of hub and spoke service that you see today," he muses.

In recent years, Penning spent many hours working with PQI staff to recruit an appropriate essential air service carrier that would fulfill the more modern travel needs in Northern Maine.

"Scott Wardwell is one of the hardest working airport directors there is, and he has been banging the drum that Presque Isle can support jet service since I met him," says Penning, noting that the relationship between PQI and Volaire dates back two years. "He trusted us, we trusted him, and we got it done."

Proving that there was regional business potential that would support air service was



crucial to securing a new carrier, explains Penning. While Presque Isle is a small city with less than 20,000 people, the region includes a population of nearly 200,000. Volaire performed a number of studies and focus groups to determine what was, and was not, working with PQI's previous air service. The consultants investigated how the airport's brand resonated throughout the community and probed for specific areas in need of improvement.

Volaire's research determined that the PenAir Boston route was significantly curbing the region's overall development.

"PenAir had very limited agreements with other airlines, so you had to buy two tickets to go virtually anywhere. You had to leave security in Boston, then go recheck in on your second ticket, check your bags in again, and go to your next flight," Penning explains. "What we saw is that the route only carried traffic to Boston, and that handcuffed economic development for all of Northern Maine."

Armed with this knowledge, PQI met one-on-one with more than 50 airlines in an effort to find the right carrier for its market. Overall, the process took about four years.

"We were actually thinking we had a different airline interested in a different hub, because United played it very close to the vest," says Penning, referencing a proposal for SkyWest service from PQI to Washington Dulles International Airport (IAD). "But then, just before the bids were due in January, United said that we had convinced them, and that they would like to begin service this summer to Newark."

Chosen from a field of five other airlines—Boutique Air, PenAir, Silver, SkyValue and SkyWest—United proved to

be the clincher. Not only was it the sole legacy carrier, it was also the lowest bidder, with a requested annual subsidy of \$4,780,955. In comparison, incumbent carrier PenAir's annual subsidy bid exceeded \$6 million.

Special consideration was given to bids with service to BOS because many local citizens had come to rely on PenAir's service there; but ultimately, the Presque Isle City Council and Airport Advisory Committee sought the best proposal to meet the overall needs of the flying public and the best option to connect local passengers to the larger national air transportation system.

Despite SkyWest's proposal of service to IAD, airport leaders felt that United's proposal to EWR would better serve passengers traveling to BOS and beyond. United's service to EWR—a slots-controlled airport that ranks as the carrier's third third-largest U.S. hub—will provide customers with access to the airline's extensive domestic and international route network.

The image shows the logo for Delta Airport Consultants, Inc., which features a stylized airplane wing and the company name in bold. Below the logo is the website address www.deltaairport.com. To the right of the logo is a list of services: Planning, Engineering, Environmental, Industry Analysis, Program Management, Construction Administration, and Business & Financial Planning.

**DELTA AIRPORT
CONSULTANTS, INC.**
www.deltaairport.com

Planning
Engineering
Environmental
Industry Analysis
Program Management
Construction Administration
Business & Financial Planning

"It just so happened that our lowest bid, which was United, was our best bid in terms of the schedule, the connectivity, where it went, and the type of plane," Penning remarks. "So the community wholly recommended it."

New Carrier


In addition to gaining the support of Presque Isle's elected officials, United also benefited from its solid reputation for reliability in the essential air service program, says Penning.

"I am excited about it because it changes the landscape of connectivity for the whole region," adds Wardwell. "All of a sudden, the region is connected to the entire world, and that means that companies can get in and out much more quickly, which means that for economic development purposes, Presque Isle and Maine are ripe places for businesses to locate."

Officials from United are similarly enthusiastic about gaining a new market. "United Airlines is committed to connecting our customers easily and conveniently to destinations around the U.S. and beyond," says Ankit Gupta, the carrier's vice president



Airport officials were pleased to formally acknowledge new service from United.

of Domestic Network Planning. "We are thrilled to be the airline connecting Presque Isle to our hub in Newark, where we offer even more choice and more opportunities to travel to the destinations that are most important to them." 



THE SCIENCE OF DE-ICING®
PREMIUM LIQUID AND SOLID AIRFIELD ANTI-ICERS & DE-ICERS



ALPINE®
RF-11

- Meets the latest edition of SAE AMS 1435
- Nontoxic and nonhazardous to plant and animal life
- Long term storability
- Versatile for most spray systems
- Potassium acetate product

ALPINE®
RF-14F

- Meets the latest edition of SAE AMS 1435
- Has the lowest environmental impact among most runway de-icers
- Long term storability
- Advanced and versatile potassium formate based

NASI™
SF

- Meets the latest edition of SAE AMS 1431
- Environmentally friendly, less corrosive
- Economically sound
- Lowest working temperature among approved airside solid de-icers
- Irregular shaped pellet

GEN3 64

- Meets the latest edition of SAE AMS 1435
- < 10% corrosion to aircraft carbon brakes
- Low electrical conductivity
- Enhanced holdover
- No corrosion on GSE equipment

www.nasindustrial.com
contact us: 800.622.4877, Ext. 310

© 2018. "NASi" is a trademark of NACHURS ALPINE SOLUTIONS.



GLOBAL BUSINESS SUMMIT

23 – 24 JANUARY 2019 ✈ WASHINGTON, DC

The Global Business Summit prepares companies to expand their global presence and provides the tools needed to succeed in a global market. Elite keynote speakers and topics will cover the current status of global markets, alternative financing, cultural pitfalls, and more.



INSIGHTS FROM GLOBAL AVIATION EXPERTS

MORE INFO >> www.ACOnline.org

 @ACC_HQ



Long Beach Airport Reconstructs Busiest Runway

BY MIKE SCHWANZ



long beach
airport

FACTS&FIGURES

Project: Runway Reconstruction

Location: Long Beach (CA) Airport

2017 Operations: 260,000

Commercial Passengers: 3.8 million

Runway Rebuilt: 8R-26L

Dimensions: 3,918 ft. long; width reduced from 150 to 100 ft.

Cost: \$19.1 million

Funding: \$15.3 million FAA; \$3.8 million airport

Project Timeline: 9 months

Engineering Consultant: HNTB


Construction Manager: Jacobs Engineering

General Contractor: All American Asphalt

Airfield Lighting: ADB Safegate

Signs: Lumacurve Signs

Related Project: Re-designating runway name to reflect slight shift in earth's magnetic field

 Closing the most-used runway at one of the busiest airports in southern California requires a great deal of advance planning, teamwork and coordination. That was the challenge facing Jess Romo, airport director at Long Beach Airport (LGB), for the first nine months of 2018.

During that period, Runway 8R-26L was closed for a much-needed reconstruction. At 3,918 feet, it's the airport's shortest runway, yet it handles more than 220,000 operations per year. It is used primarily for general aviation, charter flights, corporate jets, flight schools, law enforcement and rescue operations.

"Besides serving as a commercial travel hub, our airport is a powerful economic

engine that stimulates and supports both local and regional industries," Romo explains. "A great deal of coordination was needed to redirect and continue operations while construction moved forward."



JESS L. ROMO

During construction, all flights were diverted to LGB's other two runways: 8L-26R and 12-30. Runway 8L-26R is the airport's 6,192-foot east/west option; Runway 12-30, which runs northwest/southeast, provides 10,000 feet and is primarily used by commercial airliners and cargo jets.



Pre-Construction Prep

Planning for the project began before Romo was hired at LGB. “I started here in September 2016, but much of the groundwork had been done several years before,” he says.

In 2011, the airport hired engineering consultant HNTB to identify reasonable and practical measures for improving airfield safety and reducing runway incursions. The firm’s airfield geometry study yielded several recommendations that were adopted by the Long Beach City Council in 2014.

Officials then asked HNTB to conduct advanced planning on near-term

safety improvements and prepare an airport layout plan that would receive FAA approval. The first major project in the plan was reconstructing Runway 8R-26L, in accordance with the recommendations from the prior planning studies.

Tony Fermelia, HNTB’s design project manager, explains the background circumstances: “There were numerous runway incursions at LGB. At the time, LGB had



TONY FERRELIA

five runways. It had a large general aviation population and several flight schools with training ongoing constantly at the airport, and there were several near misses. Some of this was because of the geometric layout of the airfield. As the complexity of an airfield increases, the potential for pilots to lose situational awareness of their location on the airfield increases. By keeping the airfield geometry simple and meeting FAA design standards, pilots will be less likely to execute aircraft movements that can lead to a hazardous situation.

“It was apparent to us that the airport didn’t need five runways,” he continues. “That made things difficult for the airport to maintain, the tower to control and the pilots to determine their location on the field. In addition, the main commercial runway (12-30) intersected Runway 26L-8R at an acute angle, which was dangerous. Therefore, we suggested shortening the runway to eliminate its crossing with air-carrier Runway 12-30, so there was no crossing or intersection of that main runway.”

Fermelia and his staff gave airport officials several options to consider, but repairing the pavement of 8R-26L was prioritized. “It had deteriorated over time, and was well past its expected lifetime,” he explains.

GSB®: Eligible for AIP Funding Under P-608!

**Proven:* 950+ Airfields & 600+ Runways!
 FOD Mitigation / Potential 400% ROI
 For ALL Airport Pavements, Including NEW!

***Doubles Pavement Life**

Call Us! 800.747.8567 • www.geeasphalt.com

Project engineers reduced the width of Runway 8R-26L to 100 feet and improved its shoulder areas.



Several other additional enhancements also were recommended. For example, Runway 8R-26L was designed to Airplane Design Group (ADG) II runway standards, which require a minimum width of 75 feet. However, in an effort to improve safety and to visually distinguish it from adjacent 75-foot wide taxiways F and J, the HNTB team recommended increasing the width to 100 feet.

“I was pleased that the airport officials accepted our suggestion to add compliant run-up areas, sort of like a cul-de-sac,” Fermelia notes. “This area allows up to six general aviation aircraft at a time to warm up their engines. This is especially valuable at LGB, since there are so many students taking flying lessons.”

The new run-up area is about 50 yards by 25 yards—roughly half the size of a standard football field.

A few challenges cropped up during construction. “We had to avoid existing oil transition lines,” recalls Fermelia. “And there was a lot of clay that was encountered in the subgrade, which needed to be chemically treated to stabilize the material; it was like pudding. We had to treat subgrade material with a lime slurry. We also tried to improve and simplify the airfield lighting circuits and electrical pullboxes. As is the case in many airports, existing circuit routing

and mapping had not been updated, and the maintenance staff didn’t have a good understanding of the existing conditions and which wires went where.”

Fermelia is especially proud that his team’s early planning and initial cost estimating effort were right on the mark. “I am very pleased that this whole project was delivered on time and on budget,” he comments.

Funding Sails Through

Securing FAA funds for the recommended improvements was an uncharacteristically smooth process, says Romo. “The HNTB team did an excellent job of helping us prepare our proposal and spelling out exactly what had to be done,” he explains. “That made a big difference.”

In August 2017, the FAA awarded LGB a \$15.3 million grant that covered about 90% of the project’s eligible total cost. The airport paid for the remaining share, approximately \$3.8 million.



THEIR JOURNEY DEPENDS ON
SAFE AND EFFICIENT GUIDANCE.



THAT’S WHY WE’VE DEVELOPED
INTELLIGENT AIRFIELD SOLUTIONS
TO LIGHT THE WAY.

Today’s best performing airports rely on an integrated, intelligent airfield to deliver safe and efficient journeys. With lighting, tower-based control systems, and gate automation working hand in hand, airports can boost efficiency, maintain the highest safety level and meet environmental commitments. From concept and design to maintenance services, we work with you to find the right solutions to meet your goals. With ADB SAFEGATE as your partner, you’ll transform your operations and reach new heights of safety, efficiency and availability.

www.adbsafegate.com

**ADB
SAFEGATE**
Boost airport performance

Major improvements included:

- Reconstructed pavement
- Draining systems
- Signage
- Pavement markings
- Runway guard lights
- Reducing runway width from 150 feet to 100 feet
- Installing a new taxiway connector
- Connecting new run-up areas, where pilots can safely warm up small aircraft engines
- Constructing blast pads to prevent spreading debris from aircraft taking off and landing
- Grading infield areas
- Replacing existing lighting with LED lighting

In addition to the improvements above, the reconstructed runway had to be re-designated. For decades, it was designated 7R-25L, but the FAA required LGB to change it to 8R-26L due to natural shifts in the earth's magnetic field. "An airport runway designation is not subjective, but rather tied to its orientation to a magnetic north compass heading," Romo explains. "This is a key element for pilot awareness and safety."

Naturally, the "sister" parallel runway was renamed for the same reason. It is now designated 8L-26R.

Decreasing the width of Runway 8R-26L from 150 feet to 100 feet was key to making many of the other improvements. "I think one of the best changes we made was narrowing the runway," reflects Romo. "The standard at most airfields for short runways is only 75 feet wide. We used that space to improve the shoulder areas."

No changes were made to the width of 12-30, LGB's longest runway. It remains at 10,000 feet long and 200 feet wide.

Once funding was confirmed and the project was green-lighted, Romo and his staff had to prepare airport users for some unavoidable inconveniences. "We have a robust GA community, and 8R-26L is at the south side of the airport, where all the FBOs are located. Pilots liked the smallest runway, because it required the least amount of taxiing. When we asked them to use the two longer runways on


the north side of the field, we did get some pushback because it would take them longer to taxi.

"We had to do a lot of communicating and messaging with all of our clients," he continues. "Fortunately, most of the pilots knew the old runway was past its expiration date, and went along with our plan."

Positive Outcome

The famously good weather in Long Beach helped the airport project run smoothly. "We

were fortunate that during the nine-month construction process, there were very few delays. There were no weather issues, and all the stages of construction went according to plan," Romo remarks.

With the project complete, reviews from customers have been good. "In the few months since we reopened 8R-26L, I have received positive feedback from our pilots and the FBOs," he reports. "The changes we made definitely made the airport safer and more user-friendly." 

EXCELLENCE IN AIRPORT INFRASTRUCTURE

HNTB has a long history of successfully delivering a wide range of projects – including terminals and runways – to the largest airports and airlines in the country. We are pleased to aid our clients' success with award-winning design, program management and planning services.



United Airlines LAX Terminals 7 and 8



Dallas/Fort Worth International Airport Terminal D



San Diego International Airport Terminal 2 West Building and Airside Expansion

Laddie Irion
National Aviation Market Sector Leader
(813) 498-5125

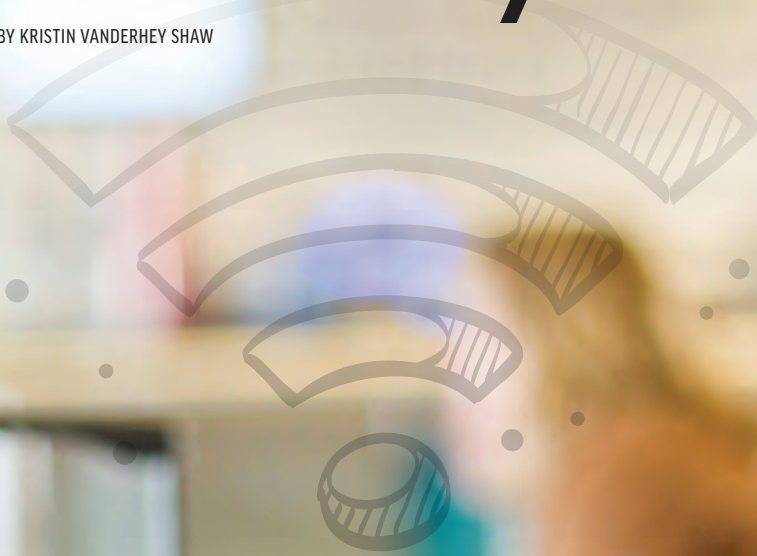
The HNTB Companies
Infrastructure Solutions

hntb.com



Love Field Deploys Next-Generation Wireless System

BY KRISTIN VANDERHEY SHAW



Dallas Love Field

FACTS&FIGURES

Project: Commercial Trial of Next-Gen Wireless System

Location: Dallas Love Field Airport

Wireless Provider: Boingo

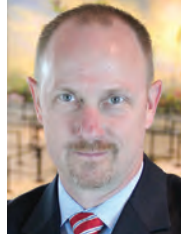
Cost: No capital outlay for airport

Implemented: July 2018

Key Benefits: Cost-effective, secure wireless service; laying groundwork for future developments such as Internet of Things



Mark Duebner, director of Aviation for Dallas Love Field Airport (DAL), worked for the city of Dallas in various capacities before joining the airport team. (He was even the top civilian commander for the Dallas police.) As he amassed experience in various posts, Duebner developed a strong affinity for cultivating purposefully open and constructive relationships with vendors.



MARK DUEBNER

As a result, he was willing to listen when the airport's Wi-Fi service provider (Boingo) approached him about participating in a commercial trial of a newly available spectrum to increase coverage and service while also cutting costs. The project that resulted is a literal manifestation of his firm belief that bilateral communication and cooperation create a culture that gives vendors the latitude to take a chance and make innovative recommendations.

"At Love Field, we look at contract management in a different way and try not to be adversarial," he explains. "We don't want to threaten or penalize our partners; we give them a chance to assess and fix. There are always problems; it's how you approach those problems that makes the difference. If you're always quoting the contract, I guarantee you're not going to have a strong relationship."

Better Connectivity

As DAL approached its 100th anniversary in 2017, officials turned to Boingo to help optimize the airport's technology roadmap. The Wi-Fi and distributed antenna system provider suggested a proposal to deploy a private Long-Term Evolution (LTE) cellular network on the 3.5 GHz Citizens Broadband Radio Service (CBRS) band. The proposal centered on a commercial trial, the first known CBRS deployment at a major U.S. airport.

Armed with special temporary authority from the FCC, Boingo saw the opportunity to test CBRS, a U.S.-based initiative that dynamically allocates 3.5 GHz on demand in a shared spectrum model. CBRS offers favorable mid-band spectrum for seamless and secure connectivity in dense, high-trafficked areas; and DAL was a solid match for that description. CBRS is also considered more cost-effective than traditional LTE.

"People were begging for more spectrum so the government has looked into making CBRS available," explains Boingo's chief technology officer, Derek Peterson, Ph.D. "The FCC realized CBRS had lightly used spectrum available and ready for use. It's new and everyone is excited about it."



DEREK PETERSON

Fifteen years ago, Wi-Fi wasn't as ubiquitous in phones, tablets and cameras the way it is today. It took time for the industry to adopt Wi-Fi. Before CBRS becomes mainstream, the device ecosystem has to catch up and roll out products with 3.5 GHz chips that can support the newly deployed spectrum.

Shifting Wireless Needs

In its entirety, DAL has worked with Boingo to implement a private LTE cellular network on the CBRS band, a multi-carrier distributed antenna system (DAS) that boosts cellular service, and Passpoint, a next-gen hotspot technology that automatically connects passengers to Wi-Fi networks without requiring log-ins or passwords. It provides an encrypted connection and includes security features.

Also of note: The CBRS pilot program didn't require any capital outlay from the airport. All Boingo needed was the cooperation of Duebner and his IT staff.

"CBRS will allow the airport to save money," says Peterson. "It's financially viable, secure and also cost-effective. We need more airwaves like CBRS and more access to them."

In 2015, DAL implemented a terminal modernization project. The \$500 million program was executed in partnership with Southwest Airlines and upgraded the terminal from top to bottom.

Wi-Fi and a cellular distributed antenna system solution were not in the project budget, but it was becoming clear an upgrade was needed. Instead of trying to increase overall funding, the airport issued a request for proposals to find a company that could create a revenue model to pay for the internet upgrades rather than burning capital outlay. The airport renegotiated an existing contract with Boingo, which was open to the change.

“The revenue sharing model was a good strategy, except the public now expects free Wi-Fi no matter what,” observes Duebner. “We offered 30 minutes free, and then the customer was asked to pay a fee. But constant complaints about having to pay for Wi-Fi were dragging down our customer satisfaction scores.”

Given the changing landscape and growing demands for connectivity from passengers, Boingo rolled out a new free, unlimited Wi-Fi model at DAL. The Wi-Fi experience was upgraded to replace free 30-minute Wi-Fi sessions with free unlimited Wi-Fi access for seamless connectivity throughout the passenger journey.

Wi-Fi, in fact, is still the No. 1 requested passenger amenity, says Danielle Aiello, vice president account management for Boingo. And passengers aren't the only ones who need the service; concessionaires and the airport itself require fast and reliable connectivity. More connectivity benefits the entire airport ecosystem and provides a key service for visitors with more dwell time.



DANIELLE AIELLO

With the new spectrum in use, DAL's customer satisfaction scores are going up, quarter after quarter. Moreover, Duebner reports that more than 45% of passengers are connecting through Passpoint.

Net Outcome: Full, Seamless Connectivity

The way many airport officials see it, they have one job—building and maintaining infrastructure to facilitate the movement of people, planes and vehicles. For Duebner, it's about moving data. Airports have to make it easier for all entities to connect freely within the facility, he stresses.

“I am a believer in operational technology,” says Duebner. “As the Internet of Things expands and we look at devices we want to deploy in every aspect of our business, we can move to levels of technology in which everything becomes a smart device. This improves the efficiency of our human capital.”

CBRS offers the airport opportunities to augment coverage and capacity without the interference and congestion that often frustrates passengers. With the newly available spectrum, the management team can conduct private communications for employees and passengers without interrupting the public side, and vice versa. Additionally, Duebner foresees the use of more Internet of Things devices and sensors, which will give the airport more agility.

Boingo personnel note that their company believes in network convergence that leverages licensed, unlicensed and shared spectrum within large public venues, like DAL. This means that in the future, a wireless network at DAL may allow users to transition from cell service (LTE or 5G) boosted by a DAS (distributed antenna system) to Boingo Passpoint (Wi-Fi) to the CBRS spectrum. That's a lot of acronyms! Basically, the intent is to reduce friction points for airport visitors and create full connectivity from the moment they arrive at the curb. Furthermore, visitors don't experience transition hops, because the handoffs are designed to be seamless and highly secure.

EVENTS ON APPROACH

UPCOMING 2019 ACI-NA CONFERENCES



Collaboration is a top priority for North American airports. ACI-NA's leadership and knowledge is driven by engaged members who seek a robust forum for dynamic collaboration and the development of industry excellence. To support that goal, ACI-NA organizes more than 20 conferences annually to help broaden the industry's knowledge and enhance professional development. Attendees can often earn continuing professional education credits at ACI-NA programs.

AIRPORTS@WORK CONFERENCE

APRIL 1 - 4
SALT LAKE CITY, UT

ACI-NA's Airports@Work Conference brings together the most complex facets of airport operations — safety, security, environment, technology, and technical affairs — for a collaborative discussion about today's challenges and tomorrow's opportunities.

JUMPSTART® AIR SERVICE DEVELOPMENT CONFERENCE

JUNE 3 - 5
NASHVILLE, TN

ACI-NA's JumpStart® Air Service Development Conference is North America's premier air service development conference. The event will begin with a full day of educational sessions, followed by two days of airport-airline meetings.

BUSINESS OF AIRPORTS CONFERENCE

JUNE 10 - 12
SCOTTSDALE, AZ

The ACI-NA Business of Airports Conference is the industry's forum to help airports and stakeholders better understand the emerging airport business model. Join us and take a deep look at workforce planning, commercial management and finance best practices, and new trends in aeronautical and non-aeronautical revenue.

2019 ACI-NA ANNUAL CONFERENCE & EXHIBITION

SEPTEMBER 15 - 17
TAMPA, FL

This event offers education and networking opportunities for North America's airport leaders. This conference offers opportunities for participants to attend unparalleled educational sessions, committee meetings and workshops, and create relationships with vendors in our exhibition hall.

THE VOICE OF AIRPORTS®

See all of ACI-NA's upcoming events at airportscouncil.org >>

“CBRS allows more segmentation and is more secure,” says Peterson. “Traditional LTE offers encryption through a device. Wi-Fi can, too, if you’re using Passpoint. But if you’re not using Passpoint, anyone could walk in with their phone, ask it to broadcast the SSID, connect to someone else’s laptop and do a ‘man in the middle attack’, siphoning data via spoofing.”

Maintaining Administrative Control

Boingo is in a neutral host position to solve wireless problems for the airport, and company officials consider everyone who walks into the terminal a customer, plus the venue itself, airport tenants and air carriers. Balancing the commercial needs for all users is its charter, says Peterson. The airport made the decision to—as Duebner describes it—“benevolently manage” the system for all players, and Boingo shepherds users under that umbrella.


“We made a decision when we built the new airport that all infrastructure was going to be under the jurisdiction of the airport,” explains Duebner. “We have held the line, not allowing other parties—airlines, concessions and so on—to build out their own. I think that’s really important, especially as we get more crowded

on the spectrum. We have been very conscious about maintaining control so we don’t have those problems, and we’re trying to stay ahead of the game.”

Currently, DAL is focused on making the right decisions for its team and is fully willing to shamelessly copy good ideas from other airports, jokes Duebner.

“Our neighbor DFW is a great airport, and it has been in the forefront of a lot of technology deployment,” he adds. “They take the lead and pass the lessons on to the industry. It’s important to me to learn from past experiences and be honest. As an industry, we shouldn’t all be making the same mistakes. We can be creative.”

That said, some areas of DAL do not have coverage with CBRS. “To me, we need to get this technology and others that are even broader down on the ramp area and in the back offices, where we don’t have coverage now,” says Duebner. “When we move to a real Internet of Things, that’s where we want to head, so that everywhere in our facility, including the ramp and outbuildings, are linked.

“Connectivity solves an operational need,” he concludes. “And it’s coming in the very near future.” 



The Power of Experience

Ensuring Operational Continuity at the World’s Busiest Airports in the Northeast



General Contracting
Construction Management at Risk
Design-Build
Comprehensive PBB Installation

Integrated Project Delivery
Pre-construction
Feasibility Studies
Consulting

For more information contact:
j.silvester@vrhcorp.com
Or call us at 201.871.4422
www.vrhcorp.com

Are We at an Inflection Point?

 The challenge of sustaining growth in the highly competitive architecture and engineering (A/E) sector is unrelenting. This growth imperative fuels the ongoing industry trend toward consolidation—whether the goal is adding new services, expanding a client base, gaining market share, expanding geographically, creating a hedge for talent, satisfying shareholders or just plain hubris.

Responding to the global financial crisis of 2008, many firms diversified to adapt to the changing economic, political and social landscape. The desire to become a full-service provider was strong, highlighted by (generally unsuccessful) mergers between engineering companies and contractors. At the same time, client organizations started facing significant stress to “do more with less,” which posed opportunities *and* constraints for A/E firms. Focusing on core markets became very important.

Today, I believe such firms—especially those involved with infrastructure development—are at an inflection point. Could a transformational shift in business strategy beyond the current industry-wide consolidation be taking place?

The A/E services industry is mature and fragmented, with few barriers to entry. Moreover, technology innovations have migrated from outside. For example, civil engineering services are being complemented more and more by systems engineering and big data analytics specialists. These technology solution innovators are likely to broaden the service provider pool for existing infrastructure clients.

A telling statistic regarding the need for improved understanding of the future industry trajectory is found in multiple surveys. In one, 90% of industry CEOs touted their respective acquisitions as marginally or fully successful—despite any apparent improvement in industry profitability over the same time period. Moreover, predictions about continued industry consolidation persist.



TERRY A. RUHL

Terry A. Ruhl, P.E., F. ASCE, previously served on CH2M's board of directors and as president of the firm's National Governments and Transportation businesses. He is currently a management consultant and also serves on the board of directors at Argus Consulting, a firm that plans, designs and constructs fuel facilities and systems for airlines and railroads.

Academic research shows that regardless of the industry, acquiring firms have generally not met intended objectives (often less than 50% success rate). In fact, merger and acquisition activity can lead to value degradation.

Under pressure to constantly grow or get left behind, A/E firms must strive to improve client satisfaction and enhance employee engagement to facilitate improvements in business performance. Succession by alternative and innovative means will also be key—especially since merger and acquisition multiples have been high. While consolidation will continue, some evidence suggests that an inflection point may be present that could lead to more alternative business arrangements, including partnerships, alliances, joint ventures, specialized segmentation and even “brokering” networks to take advantage of developing service and technology advantages.


We'll likely see more cross-industry company alliances and individual provider networks growing beyond the traditional sector organizations. The concept of brokering solutions (service and technology disruption) between broader networks will develop to satisfy client and service provider delivery expectations. For example, major technology players like Panasonic, Microsoft, Amazon, IBM, SAP, Cisco and PTC are entering the market with the Internet of Things, augmented and virtual reality and digital twin technology solutions in the smart infrastructure environment.

The entry of private equity into the professional services sector has enhanced the focus on business management, beyond what we have traditionally seen through the longtime

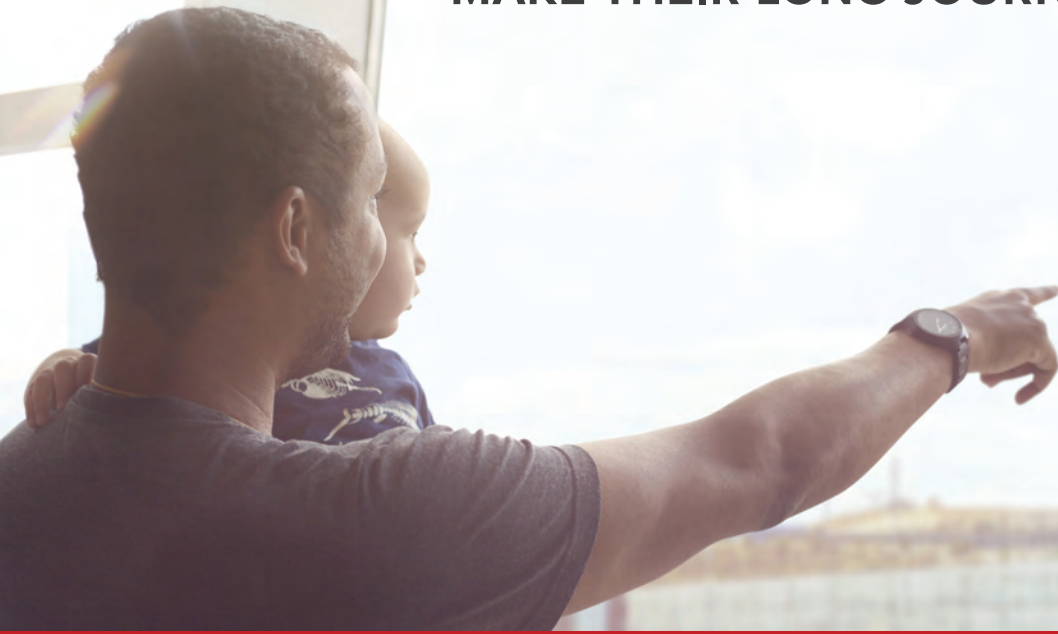
“founder's mentality,” where engineering firms were largely being led by technically oriented engineers. This trend will likely continue.

Portfolio management and the need to “prune” business activities will become progressively more crucial for maintaining a competitive advantage. As has been witnessed, divestitures could be an increasing trend. Redeploying capital to higher-margin, steady growth markets is a smart strategy for any company.

Lastly, we need to pay attention to generational workforce issues as we enter a new, technology-laced decade. Will dissatisfaction working in low-autonomy environments grow, largely due to the career and job satisfaction requirements of tomorrow's engineering work force? These factors, too, could suggest continued consolidation may be substituted by at least some form of segmentation/specialization.

Acquisitions, large and small, will still play a significant role in industry growth. However, the autonomy desired by the knowledge-based professional services sector may start to trend more toward informal and formal partnerships and alliances, and even segmentation. Some researchers extend the philosophy beyond the professional services sector, contending that future mergers and acquisitions will consist of a “potpourri of joint ventures, minority investments, alliances and incubator-type investments.” (See airportimprovement.com for reference citations.) But for those firms focused exclusively on mergers and acquisitions, more time and effort must be spent on how best to *integrate* the stakeholder companies in order to retain and markedly grow value. 

MAKE THEIR LONG JOURNEY A LITTLE MORE ENJOYABLE.



Transport your passengers and staff between terminals, parking lots, rental car offices, and even hotels—in BYD's clean, quiet, **all-electric buses and shuttles.**





Stop paying twice!

Problem: Inefficient drive systems create heat. And, hundreds of drives = a ton of heat. So, you pay for energy twice - first to move the conveyor and second to cool the air. Time to switch gears...

Solution: MOVIGEAR® Mechatronic drive from SEW-EURODRIVE. It combines an IE4 motor, gearing, and advanced electronics into one highly efficient unit minus all of the heat. For proof, just ask design engineers about LAX Terminal 4 expansion.



SEW
EURODRIVE

— Driving the World —

For over 52 years, the **NEC/AAAE International Aviation Snow Symposium** has been the world's premier event focused exclusively on the mission critical challenges of snow and ice removal and winter operations. Featuring cutting edge technology, AAEE accredited classes, and numerous networking opportunities, the show's entire program is designed to increase your skill and knowledge about airport winter operations. Join us in April 2019 to share your ideas and collaborate with hundreds of 'Snowfighters' from around the world.

WWW.SNOWSYMPOSIUM.ORG

**DON'T FORGET TO ENTER THE 2019
IDEA CORNER AND SNOW PLOW RODEO!**

- *Equipment Year with over 70 Exhibitors*
- *Numerous Education Ops and Sessions*
- *Airport Equipment Technician Seminar*
- *Former CIA Agent Keynote Speaker*
- *4th Annual Snow Plow Rodeo*
- *Legendary Closing Celebration*
- *Industry Award Presentations*
- *Networking Opportunities*
- *Industry Expert Speakers*



NORTHEAST CHAPTER
NEC
AAAE

04.27.19 - 05.01.19

BUFFALO, NEW YORK

BUFFALO NIAGARA
INTERNATIONAL AIRPORT