JULY | AUGUST 2024

Airport Improvement™

AIRPORT STORIES INSIDE: ATL | AVP | BOI | DAB | DAL | MCO | MKE | OSC | RNO | SMF | SRQ | TPA | VTA

Air travel often comes with enough stresses to fill a carry-on bag. Strict security measures, last second gate changes and unexpected cancellations, just to name a few. The last thing passengers want to add to that list is constant noise and debris coming from active renovation construction.

STARC walls reduce noise typically made during renovations – we're talking up to 50% less construction noise. That's what we call an undisrupted experience.

STARC®

UNDISRUPT RENOVATION.

STARCSYSTEMS.COM
(844) 714-3155

SCAN TO LEARN MORE

JULY | AUGUST 2024

AirportImprovement™

New Engine-Testing Facility Enhances Safety, Functionality and Efficiency at Michigan Airport

PHOTO: TAMPA INT'L AIRPORT

Alaska Airlines Installs Self-Service Bag Tag Stations

PHOTO: RENO-TAHOE AIRPORT AUTHORITY

Ticketing Hall Expansion Adds Much-Needed Space at Reno-Tahoe Int'l

Atlanta Int'l Combines Modular and Traditional Build Methods for Concourse D Expansion

Sarasota Int'l Gets Creative Introducing Local Students to Aviation

VDG Drum Motors

Airport Baggage Conveyor Belt Drives

Made In USA

VDG Drum Motor

- Premium Efficiency Motor
- No Routine Maintenance
- Low Cost of Ownership

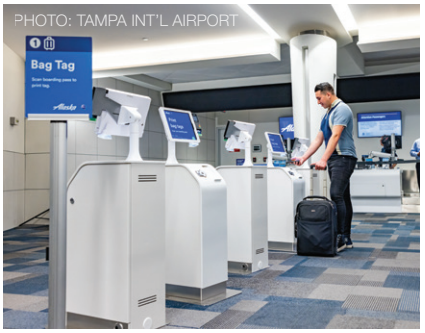
Self-contained, internally powered VDG Drum Motors provide safe and efficient operation with a low (dB) noise level while optimizing space to allow more conveyors to fit into less floor or overhead space.

Maintenance-free for 80,000 hours of continuous operation, reducing operational and maintenance costs, the VDG Drum Motor delivers a superior and reliable drive solution for all types of baggage handling belt conveyor applications where run-time is paramount.

VDG Van der Graaf

vandergraaf.com/ai | (888) 326-1476

Learn More



Get More

The Airports Division of Clear Channel Outdoor, the industry leader of airport advertising and sponsorship for over fifty years, partnered with the City of Long Beach during their terminal improvement project to create a fitting gateway into Southern California at the Long Beach International Airport (LGB). By implementing a fully customized and architecturally integrated media program that aligns seamlessly with LGB's brand and identity standards, we further accentuated this bright new space with sky-blue and sun-yellow hues via architectural resin panels and embedded LED lighting. We deliver more high quality media design to more super-premium airport partners of all sizes.

50 YEARS OF INNOVATION

Clear Channel Outdoor

AIRPORTS DIVISION

ClearChannelOutdoor.com

Publisher
Paul H. Bowers
paulbowers@airportimprovement.com
262.510.7832

Editorial Director
Rebecca Douglas
rebeccadouglas@airportimprovement.com
815.621.4525

Social Media Director
Holli Fourniquet
holli@holtcreativegroup.com

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

Circulation Director
Lisa Monday
lisamonday@airportimprovement.com

Webmaster
Matt Tews
matttews@airportimprovement.com

Contributing Writers
Nicole Nelson, Paul Nolan, Jodi Richards, Kristen Rindfleisch, Mike Schwanz, Kristin Shaw, Ronnie Wendt, Ken Wysocky

Advertising Sales
Samuel Bowers
samuelbowers@airportimprovement.com
262.347.9595

Adrienne Gibson
adriennegibson@airportimprovement.com
262.844.4368

Vicki Jensen
vickijensen@airportimprovement.com
414.331.9768

columns

advertiserindex

AIRPORT IMPROVEMENT published bi-monthly by Chapel Road Communications LLC, 212 Cardwell Court, Napa, CA 94550.

#1
WATER BLASTING CHOICE FOR AIRPORTS

RUBBER REMOVAL, PAINT REMOVAL, PAINT REJUVENATION, TERMINAL CLEANING

HOG

www.TheHog.com

1-772-214-1714

AIRPORT SOLUTIONS FROM HOG

DE-ICING OPTION

TRIPLE SPRAY BAR

HOG TUSK

HOG TRACKS GPS

Let's Be Clear

With more passengers being screened by TSA than ever before, checkpoint wait times are increasing accordingly. And the advantage that PreCheck initially offered for speeding through security just isn't what it used to be. As passengers, we look for every tactic possible to expedite the screening process and get to our gates on time.

Increasingly, I've become annoyed at having to wait in the PreCheck lane while people in the Clear lane prance past to the very front of the line. Didn't I pay good money when enrolling in PreCheck so I could sail ahead of the unanointed general population? After all, that's what enrolling in programs allows us to do. Looks like I've been out-Checked by the Clear crowd!

Fear not. This spring, a bill was introduced in California that would restrict Clear from operating at the state's airports in its current format. Essentially, the bill says that the service raises equity issues because it effectively allows wealthier people to skip ahead of other passengers waiting to be screened by TSA. The bill, which has not been codified into law so far, does include an accommodation: Airports that insist on allowing Clear to operate at their terminals need to establish dedicated lanes for its customers, rather than routing them through the PreCheck lane.

PAUL BOWERS, PUBLISHER

Frankly, I have a bigger problem with this bill than I do with Clear allowing its members to skip ahead of passengers with PreCheck. What's the big deal with this proposed legislation?

1) PreCheck, TSA's own program, does the same thing to non-members as Clear does to PreCheck customers. It allows people who pay to enroll and are pre-vetted to skip ahead of other passengers.
2) It would create a different rule in one state that affects a federal program operating in all 50 states. Bad idea.
3) Our industry is built on programs that have long provided premium services to those who are willing to pay more: first-class tickets, valet parking, airport lounges and more. It's simply a microcosm of the world in which we live.

I'll admit, this California bill caught my attention. But it won't fix anything and, in fact, could create more problems. A better idea is to allow TSA and airports to continue refining how they serve passenger guests—safely and efficiently.

Cheers!

Paul

Ticketing Hall Expansion Adds Much-Needed Space at Reno-Tahoe Int'l

BY KRISTEN RINDFLEISCH

Reno-Tahoe International Airport (RNO) opened a newly expanded Ticketing Hall in April, doubling its queue space with an additional 10,000 square feet. Beyond adding more room for queues, the Nevada airport also remodeled and upgraded its existing 35,000-square-foot hall with new public restrooms, ticketing kiosks, wayfinding signage and space for oversized baggage. A higher ceiling brings in natural daylight, improved sightlines and aesthetics—as well as more energy-efficient lighting.

The expansion is the first completed phase of the MoreRNO Infrastructure Program, the airport's billion-dollar, multi-year project aimed to meet growing demand for air travel in the area. RNO, which is owned and operated by the Reno-Tahoe Airport Authority (RTAA), had experienced five straight years of passenger traffic growth from 2015 to 2020. During the pandemic, RTAA started a planning study to identify options to modernize and expand the Ticketing Hall and reconstruct the curbside and Loop Road.

Prior to the expansion, the passenger circulation hallway was narrow, with insufficient space for airline queues, which caused congestion during peak departure times. Wayfinding was confusing due to inadequate signage and limited visibility. There were no public restrooms in the Ticketing Hall and no available tenant space for existing or future airlines, compounded by the dwindling useful life of several building systems.

The airport teamed up with RS&H for design and McCarthy Building Companies as the construction manager at risk (CMAR)

PHOTO: RENO-TAHOE AIRPORT AUTHORITY

for the architectural expansion work. Kimley-Horn provided planning and design for the Loop Road, including a complete reconstruction of the roadway to improve accessibility, safety, aesthetics and the customer experience, as well as the design of the roadway grading and drainage and the bollard system and canopy additions. Q&D Construction executed the Loop Road work and continues to improve drop-off and pick-up areas, sidewalks, crosswalks and additional exterior infrastructure for the project.

Where, How and When to Expand

The project teams determined the best option to expand the Ticketing Hall was to push out to the west, taking advantage of a very deep curb front with room to spare. “They came up with the idea to just kind of

Reno-Tahoe International Airport

FACTS&FIGURES

Project: Ticketing Hall Expansion & Renovation

Location: Reno-Tahoe Int’l Airport, in NV

Size of Expansion: 10,000 sq. ft.

Renovated Space: 30,000 sq. ft.

Cost: $31 million for Ticketing Hall interior; $17.5 million for associated exterior work & Loop Road improvements

Funding: Cash; temporary letter of credit; CARES Act grant

Construction: Oct. 2022–April 2024

Key Components: Expanded queue & ticketing space; new restrooms; relocated elevator core; energy-efficient lighting; updated mechanical system; digital, intuitive wayfinding; updated curbside signage; exterior bollards for added security

Architecture, Planning, Project Management, Interior Design, Structural Engineering, BIM Coordination, Stakeholder Engagement, Low Voltage Common Use Only: RS&H

General Contractor: McCarthy Building Companies Inc.

Exterior Design: Kimley-Horn

Exterior Construction/Selective Demolition: Q&D Construction LLC

Civil Engineering, Geotechnical Survey: Wood Rodgers Inc.

Mechanical, Plumbing, Fire Protection Engineering: Ainsworth Associates Mechanical Engineers

Electrical Engineering, Low Voltage (IT/Comm/Security): PK Electrical Inc.

Signage/Wayfinding: Selbert Perkins Design Collaborative

Cost Estimating: M Lee Corp.

Structural Masonry: Amazon Masonry

Doors & Hardware: American Door Installation

Architectural Metal Panels: Andy Russo Jr./B&B Specialties

Roofing: Commercial Roofers

Structural & Site Concrete: Concrete North

Terrazzo: Corradini

Expansion Joints: Expansion Specialties

Under-floor Ducts: Walkerduct

Fireproofing & Insulation: Gale Building Products

Curtainwall & Storefront: Giroux Glass

Ceiling Tiles: Armstrong

Structural Steel: Reno Iron Works

Electrical: Helix Electric

Inspection: Construction Materials Engineers

Bathroom Accessories: Henri Specialties

Metal Roofing: Kodiak Roofing

Metal Siding: ALUCOBOND

Glazing Supplier: Guardian Glass

Framing/Drywall/Paint/Exterior Insulation Finishing System/Acoustic Ceiling Tile: M&H Building Specialties

Survey: Mapca

Wall & Floor Tiler: National Ceramic Tile & Stone Corp.

Reinforcing Steel: Northern Nevada Rebar

Fire Sprinkler System: Overhead Fire Protection

Civil/Utilities: Reno Tahoe Construction

HVAC Ductwork & Hydronics: Ryan Mechanical

Plumbing: Savage & Son

Architectural Millwork: Victory Woodworks

AV/Security/Communications: Teledata Technologies

Elevator: Koch Elevators

Bollards: Gibraltar

Temporary Construction Walls: SwiftWall

Final Clean: CC Cleaning

Key Benefits: Increased space to handle passenger growth; improved passenger experience; enhanced security

Designers incorporated a modern mountain aesthetic throughout the new space.

reclaim 20 feet of that for the interior space and pushed out the front of the building, effectively," says RTAA President/Chief Executive Officer Daren Griffin.

DAREN GRIFFIN

At the north end of the Ticketing Hall, the elevator core was relocated to the western edge of the terminal near the roadway and redesigned. It was upgraded with blue, angular aluminum composite material cladding on the outside of the building to reflect Lake Tahoe, with a color-changing lighted tower at the top like a beacon. The elevator entry portals use angular aluminum composite material panels as a wayfinding feature for passengers.

At the south end of the hall, designers moved a fire riser room to create additional space. "That's a really complicated thing to relocate, but it was worth it," Griffin notes.

With the additional space from the expansion, RNO and its team had to determine how to rework the passenger flow throughout the entrance and Ticketing Hall. Designers likened it to the flow of water.

"Passenger hydrology was probably the key consideration in solving the problem and enhancing the experience of the airport," notes Geoff Chevlin, studio leader of Aviation/Transportation Architecture with RS&H. Congestion (or "damming from existing support spaces" in terms of passenger hydrology) had been a major issue in the previous layout, so designers added more space for airline queues.


GEOFF CHEVLIN

"During peak hours, lines were running all the way out to the entry vestibules, creating issues for airport and airline operations," Chevlin says. "By relocating the elevator core, we removed the primary obstacle, opening up the space at the confluence of the circulation, resolving the issue and allowing that flow."

To accomplish such change, RS&H and McCarthy engaged the airport stakeholders early in the process and kept them involved throughout the design. From the airlines and TSA to wheelchair vendors and concessionaires, all needed to be in the loop. "Our thought was, 'this is only going to be successful if everybody is involved—airport, airlines and supporting tenants,'" Chevlin notes.

Minimizing the impact on travelers throughout construction was a shared goal. "We partnered with the RTAA marketing team early to communicate phasing, logistics and other impacts via social media," recalls Cody Harris, project superintendent with McCarthy Building Companies Inc. The local news media also helped to reinforce this message with the general public. "We challenged ourselves to limit the 'active' construction footprint to allow ample space for passengers during the 18-month duration," Harris says.


CODY HARRIS

Doing so required full-time night shifts and intricate logistics for the remodeling work occurring outside the temporary walls. This included saw cutting and removing concrete; installing under-slab mechanical, electrical and plumbing systems; pouring concrete and demolishing/installing more than 30,000 square feet of floor tile. While this posed potential challenges, the team managed to keep the entire Ticketing Hall 100% ADA-compliant and active during this process, Harris notes. After each night's work, the teams prepped the area for passenger traffic in the morning. For example, when the flooring was removed, they installed a temporary ramp system to eliminate trip hazards.

The teams used temporary construction walls by SwiftWall to separate the public space from construction areas while minimizing noise and controlling dust. Tent enclosures were erected around the work areas in front of the ticket counters to contain the construction dust. McCarthy hired local union laborers whose full-time job was cleaning ticket counters and active passenger spaces and managing the floor transitions and protections. "This made a significant difference and drove home the communicative and collaborative culture we strived to achieve as demonstrated during interactions with the team members, passengers and airline staff at the ticket counters," Harris says.

Within the mechanical, electrical and plumbing phase, McCarthy replaced four outdated air handler units and completed ductwork for a new, larger air-handling unit. This required significant upfront planning and temporary ductwork that continued to heat and cool the Ticketing Hall throughout renovations—even after the entire exterior wall was removed during winter.

New Features

Something as simple as restrooms can really drive the customer experience, Griffin notes. RNO placed new restrooms that are quick, convenient and fully ADA-compliant in the front of the Ticketing Hall. "You wouldn't realize how important restrooms are in a space, even just a small set; but people are really excited to have restrooms in that space," notes RTAA Senior Project Manager Amanda Twitchell.


AMANDA TWITCHELL

Raising the ceiling height from 10 feet to 15 feet required 30,000 square feet of acoustical ceiling tiles. "[Previously], the entire Ticketing Hall had kind of a dark, closed feeling to it," Griffin comments. "Lifting up the ceiling does a tremendous amount to create more volume, more space; and the white ceiling tiles just make everything brighter and feel more accessible and easier to navigate."

Terrazzo flooring subtly guides travelers through the Ticketing Hall to the center lobby, and a 14-foot-tall curtain wall provides a sightline for intuitive wayfinding. Illuminated, universal wayfinding signage was also added. "We're creating an immediate interior-to-exterior connection from the drop-off point back to the ticketing counters by implementing a 14-foot-tall curtain wall that creates a visual connection from the curb to the counters," Chevlin remarks.

Updated Design and Aesthetic

The airport is establishing a "modern mountain design" that combines glass, steel and concrete with warm touches like reclaimed wood walls and wood columns. "We're really trying to make it more modern but keep it warm, like the nature that surrounds us," Twitchell says. Three sections of the walls in the Ticketing Hall use reclaimed TerraMai wood from the West Coast.

The design team used both form and materials to create the new aesthetic—the *modern* being articulated in architectural forms and the *mountain* through materials. "The design embodies the natural context of crystal-blue water, open skies, carved stone and the harmonic rhythm of tree-line forests, which are present in the Lake Tahoe area and the high desert region surrounding Reno," Chevlin explains.

Travelers are encouraged to visualize this modern mountain scene with large spans of blue glazing and angular forms of glass, metal siding and concrete contrasted with stone structures throughout the hall. Four portals sculpted with a cool gray metal siding in the spirit of granite help passengers navigate to the Ticketing Hall entry points. At the north end of the hall, a pearlescent blue obelisk rises as a beacon, cladding the elevator tower. To the south, stone and frosted glass structures housing various facilities penetrate the blue curtain wall, creating a connection between interior and exterior spaces. "A critical driver is that we make this a place that people don't just want to fly *through*, they want to come *to* and enjoy their travel experience—this is for them," Chevlin notes. "It's important when we consider people in the equation…This is something that we're doing for the community."

Throughout the Ticketing Hall, travelers see the same particular shade of blue glass, which RTAA has dubbed "Tahoe Blue," to evoke the imagery of nearby Lake Tahoe. The biggest application is on the 14-foot curtain wall. "People are kind of stunned at how beautiful that is, because it really reflects Lake Tahoe," Griffin remarks. "It adds so much more natural light compared to what was essentially a closed wall in the old Ticketing Hall. The amount of light coming through now, along with that lifted ceiling and the blue tinting, they're just really distinctive and unique—and reflect our region."

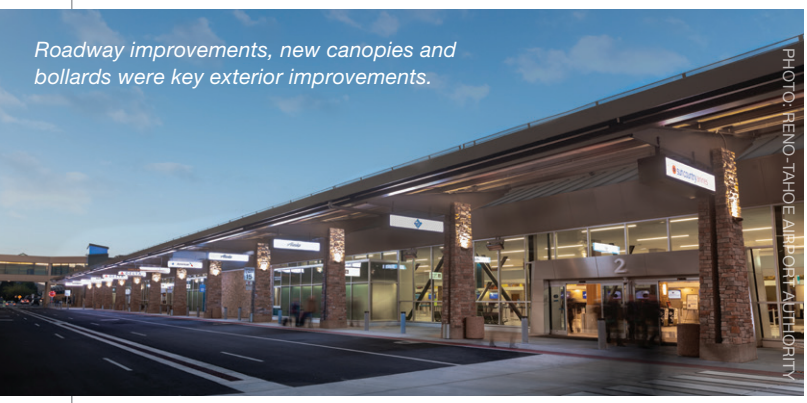
Additional wedge-shaped pieces of Tahoe Blue glass appear in every structural "Y" brace throughout the Ticketing Hall. Beyond adding pops of color, they provide compliance with ADA and accessibility code requirements.

Above the ticketing counters, a massive 450-foot-long art piece titled *Repeated Refrains*, by Dixie Friend Gay, was installed in March 2024. Her piece uses 2D and 3D elements to create a collage of natural local elements, including the terrain, flowers, foliage, birds and butterflies. "The Reno-Tahoe area is full of rich hues, natural beauty and iconic images," Gay said in a statement. "This vibrant piece is also a representation of that richness—the textures and colors of the seasons, the micro and macro elements and the shifting landscape." The artist came to RNO several times for research, as it was important to RTAA that the art embodied the northern Nevada region.

PHOTO: RENO-TAHOE AIRPORT AUTHORITY

A long mural above the ticketing counters features natural local elements.

Ivory and sage green tile flooring was installed throughout the Ticketing Hall, with black terrazzo "river rock" and a blue terrazzo "river" as accents igniting the idea of passenger hydrology and drawing people through the Ticketing Hall to the center of the terminal. Underfloor ducts were installed to support the airline kiosks.



Roadway improvements, new canopies and bollards were key exterior improvements.

Sustainable Components

Beyond using reclaimed wood, designers brought in natural light for efficient lighting, heating and cooling. Daylight sensors reduce the amount of artificial lighting and energy needed in the new space. Multiple units in the mechanical system (including one from the 1960s) were replaced to provide more efficient air circulation.

The increased natural light and views are welcome changes for passengers and staff alike. “After we opened everything, one of the Southwest employees told their boss that they felt happier in the space, and they thought that they treated passengers better [as a result],” Twitchell remarks. “They love the natural light; they love the views and just feel like it’s a happier space.”

Teams used local suppliers as much as possible and exceeded the 10% goal for participation of Disadvantaged Business Enterprises. Construction crews also crushed and recycled around 20,000 cubic feet of concrete, recycled the existing structural steel (100+ tons) and implemented recycled floor protection throughout the project.

Exterior Updates

With the footprint of the new Ticketing Hall expanding out over the previous curbside area, the drop-off and pick-up areas had to be updated as well. The Loop Road project began with the hall expansion and is scheduled for completion this fall. Q&D Construction is demolishing and reconstructing the inner loop for drop-off and exterior loop for pick-up.

Crews from Q&D are also improving sidewalks, crosswalks and other pavement and will be installing shade and weather covers in the curbside waiting areas. “This is an inherently exciting project because we’re working with Reno-Tahoe International Airport,” says Jeff Bean, Q&D Construction president – Heavy/Civil. “The growth of the airport means growth in the community, and we’re proud to support our community partners as well as the people of the Truckee Meadows Region.”

JEFF BEAN

Digital dynamic signage by Daktronics was added in the drop-off area to identify various airline locations along the curbside. The signage can be programmed for simple text to specific airline colors and logos.

Designers specified a zero-height curb for the full length of the departures loading zone to improve accessibility and convenience for customers. “The project capitalized on the need for roadway rehabilitation to provide significant improvements to accessibility and safety,” notes Christian Heinbaugh, project manager with Kimley-Horn. “Traffic-calming measures including reduced lane widths, transverse rumble strips and elevated pedestrian crosswalks.”

CHRISTIAN HEINBAUGH

The zero-height curb meant that roadway drainage needed to be redirected away from the sidewalk area, so Kimley-Horn designed an inverse crown roadway that drains into a longitudinal trench drain, which runs down the middle of the drop-off roadway. “We worked closely with the airport’s maintenance team to develop a trench drain design that is easily maintainable without significant impact to day-to-day airport operations,” Heinbaugh comments.

To increase safety for pedestrians and help protect the terminal building, RTAA added crash-resistant bollards along existing column lines outside the Ticketing Hall and baggage claim areas. The bollards, by Gibraltar, are designed to withstand significant intentional or unintentional impact from vehicles. They are also covered with decorative covers that coordinate with the sculpted aesthetics of the renovation project.

The spacing between bollards is engineered to deter vehicles but still allow travelers with baggage to navigate easily. “It’s a

delicate balance of giving people room to move out there, but also protecting them, and I think we found the right balance," Griffin remarks. "It's unfortunate that it's something we have to go through, but public safety is our first job as an airport operator, and that includes a lot of different lenses that you look through both from inside and outside the building."

Bollards were placed to fit evenly between existing canopy columns, avoid underground utilities and allow maneuverability for snow removal equipment.

Additional canopies were added to provide shelter for passengers in the loading areas for both departures and arrivals. Kimley-Horn worked with the Ticketing Hall expansion team to ensure the canopy designs worked well with existing canopies as well as other Ticketing Hall improvements.

Challenges and Solutions

During early planning and design, it was assumed that the roof covering the large drop-off could be augmented with walls to provide protection for airport guests. However, designers later realized it was not built to be entirely waterproof. "We had to quickly figure out how we were going to make this work because it was now going to be a part of the enclosed building," Twitchell recalls. RTAA ultimately decided to use the existing roof and metal panels as the structural membrane to support a new prefabricated metal panel system. This solution saved money by requiring relatively minimal structural modifications and saved time by utilizing prefabricated components.

Multiple projects happening concurrently had the potential to complicate the work and/or lead to disjointed results; however, the Ticketing Hall Expansion team and Loop Road reconstruction team met regularly and reviewed each other's plans to ensure the two projects would merge to meet the airport's aesthetic goals and follow the MoreRNO program. Aesthetic elements like the bollard sleeves and canopy column fascia were strategically selected to unify existing elements and planned improvements at the airport.

Aviation projects can be incredibly detailed and logistically challenging, Harris notes. During preconstruction, McCarthy looked at potential challenges as opportunities. "Planning our work while keeping the space 100% operational was the biggest challenge we encountered," Harris says. "A fitting example is when we had to shut down a substation that fed power to the entire Ticketing Hall, baggage handling systems and airline communications systems. This took months of planning but was executed successfully in three hours without affecting operations."

The elevator core is clad in blue aluminum composite material as a design reference to Lake Tahoe. The lighted top changes colors.

PHOTO: RENO-TAHOE AIRPORT AUTHORITY

The firms working together as a cohesive and collaborative team made it possible to push the limits and get creative, he adds.

Chevlin notes that fluctuating material costs was one of the biggest challenges during the project. "A main concern that we deemed a great opportunity was to solve the challenge of how the design team and the CMAR working as a team with the RTAA could achieve the financial goals of the client and keep this within budget," he says. For example, the cost of the glazing for 14-foot curtain wall that covers nearly the entire 450 feet of the Ticketing Hall increased 40% in the last month of the process to establish the guaranteed maximum price. The team had to quickly decide whether to change the design or the materials to accommodate the cost increase. In resolving the issue, the team considered the potential need for value engineering—determining how to meet the project budget without compromising the programmatic and aesthetic design goals. Through simple tweaks with other materials and validating pricing with McCarthy during the draft Guaranteed Maximum Price reviews, no major changes were needed to the curtain wall.

The overall budget also posed a potential challenge. "We found a few surprises along the way but overcame them all thanks to the collaboration of the entire project team," Harris recalls, noting that the project came in more than $1 million under budget.

Advice for Others

Above all, Griffin suggests finding the right team for a Ticketing Hall expansion. "It's all about the people," he emphasizes. Initially, RTAA was apprehensive about keeping the airport open and operating 365 days a year throughout construction, especially working around the Ticketing Hall and security checkpoint. "Having a great team is really essential, because that's the only way you're going to figure it out," says Griffin.

Twitchell agrees that the project could have been more difficult and impactful on travelers if the team had not cooperated so well. "Both RS&H and McCarthy were great to work with," she notes. "McCarthy was collaborative, proactive—they put a lot of effort and a lot of thought into how we can make this all work." Passenger feedback received by RTAA indicates that the project was minimally disruptive, she adds.

Harris, representing the builder's viewpoint, similarly highlights teamwork. "Having the right culture makes all the difference, which was a major success for this project," Harris notes. "The aligned cultures of RTAA, RS&H and McCarthy created a great environment to work in." Engaging airlines and other stakeholders early and consistently involving them in planning and construction coordination meetings was also essential, he adds.

Harris also encourages other airports to consider pursuing the construction manager at risk (CMAR) delivery method instead of traditional bidding. "The CMAR process lends itself to collaboration and involvement of all parties from early design through completion," he says.

Chevlin from RS&H is a huge proponent of the method, too. "During design, the architect needs to see the contractor as their right-hand entity…and that they work closely and collaboratively together as one team, using the contractor as an integral member of the design team," he notes. "And then during construction, that flips into the contractor seeing the architect as the right-hand person, working together."

Kimley-Horn's Heinbaugh notes that communication and coordination are important with any project, but they were absolutely critical at RNO, where two significant projects were occurring at the same time within the same general space. "We knew that despite having very detailed and well-thought-out construction timing and phasing plans, schedules were likely to evolve," he reflects. "As such, it was critical to establish requirements in our specifications for the two contractors to coordinate and accommodate work on both projects, while also ensuring readily available access for the airport's customers at all times."

More to Come

The recently completed Ticketing Hall expansion is just the beginning of RTAA's MoreRNO Infrastructure Program. After the Loop Road reconstruction wraps up this year, the spotlight will shift to a new Ground Transportation Center, which will be built by a private developer. The $299 million project will replace RNO's existing rental car operation and co-locate rental cars with transportation network companies, shuttles and taxis, in a single facility located about a three-minute walk from baggage claim. Enabling work begins this summer; the new Ground Transportation Center is expected to open in 2028.

The airport is also in the early design stages of replacing both concourses and all 23 of its gates. The $570 million project, set to begin next year, will increase concessions space, add gate space for larger aircraft and upgrade technology for improved airline scheduling and shared kiosks.

"When it's all done, it will be a new airport in many ways," Griffin remarks.

The merits of blue sky thinking

Experience, Above All™

Working together to bring the sky indoors is possible with our complimentary ProjectWorks® design and pre-construction service. We can help you carve wispy clouds and control noise, too. Detailed layouts and dimensionally accurate 3D Revit® models provide seamless coordination as your project moves from design through installation. Let's turn your blue sky thinking into design innovation, visualization, and time savings at armstrongceilings.com/firstclass

Armstrong®
World Industries

New Rail Service Enhances Multimodal Connectivity at Orlando Int'l

BY JODI RICHARDS

FACTS&FIGURES

Project: Train Station/Multimodal Facility

Location: Orlando Int'l Airport, in FL

Purpose: Enhancing statewide connectivity

Recent Addition: High-speed passenger train service between Orlando & Miami

Key Asset: Multimodal facility adjacent to Terminal C

Size: 1.3 million sq. ft.

Stations For: Terminal Link airport people mover; Brightline intercity rail; ground transportation options (taxis, shuttle services, public buses, etc.); future SunRail commuter rail

Cost: $200 million

Funding: 75% Florida Dept. of Transportation; 25% airport

Constructed: 2015-2017

BRIGHTLINE STATION

Size: 3 stories, with 72,000-square-foot platform & 37,350-square-foot interior space

Features: 4 self-service check-in counters; security screening area; large skylight; information booth & ambassadors to assist customers

Construction: Jan. 2022-April 2023

Designer/Architect: Bigtime Design Studios

Architect of Record: Sonny Fornoles of Borrellil + Partner

Construction: Gomez Construction

Last September, a long-time regional transportation plan became reality when Orlando and Miami were connected with high-speed rail service. The new route provides an attractive new option for airline travelers throughout the state, and Orlando International (MCO) staked its claim as the first U.S. airport with high-speed intercity passenger rail service adjacent to the terminal.


KEVIN THIBAULT

The Greater Orlando Aviation Authority is committed to being a global leader in the evolution of mobility, says Chief Executive Officer Kevin Thibault. "The airport has always envisioned to be the mobile hub." The introduction of Brightline service at MCO affirms that vision.

A regional rail connection was long considered to be a crucial component for the central Florida airport but was not written into guiding documents until about 1977. At that point, it was described as a "possible future fixed-track mass transit system." Throughout the ensuing years, MCO leadership and the Florida Department of Transportation analyzed various iterations of what a rail connection might look like both for the airport and the state. "It wasn't until 2010 that the concept we have today really got fleshed out," explains Thibault.

In June 2012, a memorandum of understanding was created to officially define the potential rail corridor, airport station, an associated maintenance facility, and the roles/responsibilities of major stakeholders. Outlining the infrastructure required to bring a train line into the airport was a key aspect. For example, roadways needed to be moved and a series of bridges had to be built. In addition, a city-owned wastewater treatment facility was located near the site identified for the train maintenance facility. The memorandum encouraged close coordination among all parties to prevent potential conflict.

Given the complexity of the project, it's no wonder MCO's rail connection took decades to materialize. Thibault urges other airport leaders not to give up on similar efforts. "We persevered," he notes.

"We had a vision and it became reality." Partnerships among airport leadership, local government, state government and the private sector played a critical role in moving the sizable project forward, he adds.

The financial implications are commensurately large. According to Brightline, the $6 billion multimodal transportation project is responsible for creating 10,000 jobs and approximately $6.4 billion in direct economic impact to the region. Construction of the airport train station cost $200 million. Because of the long-term statewide benefits, the Florida DOT and Greater Orlando Aviation Authority shared the cost 75%/25%, respectively.

Logical Location, Long Timeline

Orlando's central location within Florida and MCO's expansive 12,000-acre footprint made them attractive candidates for a multimodal hub to serve the region and state. "It was logical to have that mobile connection here at the airport," says Thibault.

"As the airport continued to grow, we knew we couldn't accommodate it [a train station] in the existing terminals that we had," he adds. As envisioned, growth shifted to the South Complex, and the train station was slated for development there. For decades, the airport's Master Plan included infrastructure improvements to help prepare for the future train station. Projects such as filling in ponds and rerouting the airport's master drainage system were completed gradually over the years as specific capacity triggers were met.

In the early 2000s, an elevated structure for the people mover that now connects the terminal and train station was constructed on the midfield taxiway. Later, when MCO was ready to move ahead with the people mover project, the infrastructure was already in place. "All we had to do is overlay on top of that structure," Thibault relates. "It was really beneficial for us to have that already done."

Preliminary earthwork was also completed in the same early timeframe. "All those things that were done helped facilitate the efficient development of the train station at that location," Thibault says.

Construction of the train station started in 2015. Because the location was largely a greenfield site work on the new facility did not disrupt operations at the airport or on surrounding roadways. "That was a benefit for them to get the construction done in a timely manner," he adds.

The MCO Train Station, which opened in November 2017, has approximately 1.3 million square feet of space on three levels. It currently accommodates Terminal Link (the airport's people mover train), SunRail commuter rail and the recently added Brightline intercity rail. There is also room for a possible rail system serving the International Drive/Convention Center area.

The new station was designed and built to improve customer flow among multiple modes of transportation and the airport's Terminal C, which opened in September 2022. Terminals A and B are accessed via the people mover. The station also supports ground transportation including taxis, shuttle buses and public bus operations, and is connected to MCO's parking garage C.

"We really fixated on making sure that when we built the train station, we built it for all the different rail modes that could come in and out of it," Thibault says. Food, beverage and retail concessions are not currently included, but might be added in the future. "We didn't roll it out initially because we wanted to see the passenger mix that we get from the Brightline customer."

The station for MCO's Terminal Link automated people mover is a 200,000-square-foot facility that connects passengers between terminals A and B and the Hyatt Regency Orlando International Airport. The station in terminals A and B is located on Level 3, between the security checkpoint for Gates 70 to 129 and the Terminal B check-in counters. The four-minute ride includes views of the airfield, gates 70 to 99 and the air traffic control tower.

SunRail operates a 49-mile commuter system with 16 stations throughout Volusia, Seminole, Orange and Osceola counties, with a bus link to MCO. Thibault notes that future plans include a direct rail link to MCO, but nothing has been formalized. "Preliminary evaluations show that it would significantly improve the overall ridership of the commuter rail line if that connectivity were to occur," he explains.

Operated by Brightline, the new higher-speed rail route between Central and South Florida has daily roundtrips between Miami and Orlando, with stops in Aventura, Fort Lauderdale, Boca Raton and West Palm Beach, but MCO is its only direct airport stop. Founded in 2017, Brightline offers travelers a "guest-first experience designed to reinvent train travel and take cars off the road." Connecting Miami and Orlando "fulfills our ultimate business model," Brightline President Patrick Goddard has stated.

Not surprisingly, regional business and tourism industries are enthusiastic about the expansion and service.

"Passengers are consistently saying they're excited that it provides that connectivity," Thibault notes.

Brightline launched operations in South Florida in 2018, connecting Miami, Fort Lauderdale and West Palm Beach. Stations in Boca Raton and Aventura opened in 2022. The new route between Miami and Orlando covers 235 miles and takes riders three to three-and-a-half hours, depending on South Florida station stops.

The Orlando expansion involved 56 bridges (38 existing, 18 new), three underpasses, drainage installations, signal installations and 60 miles of new track. Over the four years of construction, upgrades and improvements were made to three underpasses and 156 railroad crossings. Engineers also had to create double tracks under active airport taxiways and tug roads and a new 35-mile rail alignment along the Beachline Expressway/state road 528.

The Brightline station at MCO is three stories tall with a 72,000-square-foot platform, making it the largest in the company's entire system. Inside, the 37,350-square-foot space includes four self-service check-in counters and a security screening area. Information booth staff and ambassadors help direct and assist travelers. "We want to make sure the train station is an extension of the overall 'Orlando Experience'—an elevated passenger experience," Thibault emphasizes. "An expansive

Synect added icons for the new train station to existing wayfinding displays.

skylight allows sunlight to pervade the area, reminding travelers they are, indeed, in the Sunshine State."

Designed by Bigtime Design Studios, Brightline stations are "meticulously built through the lens of today's traveler," the company says.

The airport partnered with Synect to promote the new rail service and integrate its schedule into MCO's existing network of more than 2,000 connected displays. The team developed custom visual content to greet, guide and assist rail passengers throughout the airport. In addition to providing color-coded schedule information via its flagship Passenger360® product, Synect integrated visual cues into wayfinding signs, including animated icons such as trains and arrows that guide passengers to the new station. The company's ReadySeeGo® portable totems provide guidance in areas that lack permanent infrastructure or are under construction.

"The Greater Orlando Aviation Authority continues to excel in offering innovative services and facilities to passengers," says Yahav Ran, founder and chief executive officer of Synect. "We are thrilled to support these enhancements with our flexible, engaging and fun visual solutions."

Riders have two fare options. SMART service includes complimentary Wi-Fi, multiple power/USB outlets and food/beverages available for purchase. Brightline likens it to a business class ticket from an airline. PREMIUM is more of a first-class experience with added amenities including a dedicated lounge, priority boarding, checked luggage and complimentary snacks and beverages.

A $100 million maintenance and storage facility is located on 62 acres at the southwest corner of MCO's property. Commonly referred to as Basecamp, the 138,000-square-foot facility provides much-needed space for service work (up to 16 trains daily) and storage of the rail company's vehicles. It includes a fully automated 12,275-square-foot train wash, an 80,000-gallon biodiesel fuel farm and maintenance and storage tracks that are longer than two football fields. Basecamp operates 24/7, with areas for engineers, conductors, technicians and inspectors.

The Brightline trains were produced in partnership with Siemens Mobility. The stainless-steel coaches include special ergonomic seating, contemporary communication systems and enhanced Wi-Fi.

Aviation Remains the Focus

Thibault emphasizes that even as the Greater Orlando Aviation Authority worked on adding more rail service, it never lost sight of its primary goals at MCO.

"As we continue to grow as a community, and as a region, we have a unique opportunity to leverage our assets and provide a premium transportation network while also remain true to our mission, which is to seamlessly connect Florida and the world through exceptional experiences, collaboration and creativity for our nearly 60 million passengers," he concludes.

SYNECT

ENGAGE PASSENGERS
ENHANCE OPERATIONS
AUTOMATE PROCESSES

FROM CURBSIDE TO GATES
AND BACK

MCO
CHECK-IN

LEARN MORE
Scan QR code
for info

DFW
MULTILINGUAL
WAYFINDING

LAS
SECURITY
CHECKPOINT

OUR SOLUTIONS ARE ELIGIBLE FOR PFC FUNDING! LEARN MORE AT
SYNECTMEDIA.COM/PFC

Alaska Airlines Installs Self-Service Bag Tag Stations

BY KRISTEN RINDFLEISCH

Airports with significant service from Alaska Airlines are now dotted with new self-serve machines for passengers. The Seattle-based carrier recently removed ticketing kiosks and replaced them with stations solely dedicated to printing tags for checked baggage. The initiative affected 79 airports throughout the U.S, including the airline's five hubs.

The move to self-service bag tag stations was made to provide a simpler, faster check-in experience for travelers while reducing paper use/waste and shifting toward a more paperless system. On average, passengers previously spent three to four minutes at Alaska Airlines ticketing kiosks. Now, most generate their boarding passes on cellphones or at home and spend just 45 seconds per transaction at the new bag tag stations.

JOSIAH REIMERS

The widespread equipment trade-out was developed to replace aging ticketing kiosks while also supporting the airline's Transformation Initiative, which aims to reinvent lobbies and get customers through the lobby and to security in five minutes or less. "In order to do that, we needed to replace our existing kiosks with new, innovative products that could help deliver on that goal," says Alaska Airlines Project Manager Josiah Reimers. "It really has created the environment that we are looking for in our lobbies, which is ease. We want the travel experience as easy as possible."

PHOTO: TAMPA INT'L AIRPORT

FACTS&FIGURES

Project: Self-Service Bag Tag Stations

Sponsor: Alaska Airlines

Location: 79 U.S. airports

Cost: Component of carrier's $2.5 billion airport improvement program

Deployment Schedule: 1st quarter 2023–1st quarter 2024

Key Components: Fabricated millwork kiosks on stainless-steel bases, with iPads, boarding pass scanners & bag tag printers; updated self-service software

Kiosk Footprint: 21½ " x 16 ½ "

Program Management: J.A. Watts Inc.

Deployment: Reliant Corp.

Millwork Design & Fabrication: Architectural Casework Inc.

Tag Printers: Zebra

iPad Holders & Boarding Pass Scanning Software Development Kit: Aila

Key Benefits: Faster check-in for travelers; less paper waste; ADA-compliant machines

The recently completed bag tag station program is part of a larger $2.5 billion investment Alaska Airlines is making in the airports it serves. For this initiative, the airline partnered with J.A. Watts Inc. for program management, Reliant Corp. for deployment and Architectural Casework Inc. as the millwork designer and fabricator.

Development and Testing

Beginning in 2020, Alaska Airlines' internal product development team began designing and building the back-end product for new bag tag stations. The team launched small pilot initiatives to test early versions, which helped guide development. One of the first test airports was Palm Springs International (PSP) in California, because

it offered a variety of travelers, a mix of age groups and heavy throughput during Spring Break.

The airline also tested early versions of the system at Indianapolis International Airport (IND), because its catchment area has relatively fewer smartphone users. The new kiosks require travelers to initiate the bag tag transaction by scanning their digital boarding pass, so the small subset of travelers without smartphones must check in online and print their boarding passes before coming to the airport or rely on ticket counter agents for a printed boarding pass.

In early 2023, Alaska Airlines began a formal pilot program at Palm Springs International Airport and San José Mineta International Airport to put a bag tag station prototype through its paces and make final adjustments. In April 2023, the airline officially launched the new equipment at Portland International Airport (PDX), the first of its six hubs. "It was a dream launch, really went very well," Reimers recalls. "All the work that we had done to prepare for that moment really paid off." The team then followed up with a full-scale rollout in June 2023 and essentially took the remainder of the year to complete implementation throughout the contiguous U.S.

Team Effort

Executing such a massive equipment trade-out required careful planning, phasing and coordination. "This was a beast of a project," Reimers says, "and there were multiple different swim lanes of complexity involved." Discussions within Alaska Airlines that identified the need to enlist external experts for certain functions significantly contributed to the project's success, he adds.

For instance, Architectural Casework Inc. brought years of millwork expertise to the project. After working on the design and helping create prototypes for the bag tag kiosks, the company fabricated approximately 330 total bag tag kiosks in about nine months. As Architectural Casework completed the millwork at its manufacturing facility in Michigan, batches of kiosks were shipped to Reliant in Seattle.

The Reliant team then checked, stored and inventoried the kiosks; pulled and prewired additional equipment (except for iPads and printers); prepared the bag tag stations for shipment or delivery; and collaborated with J.A. Watts Inc. to create installation routes. Bag tag kiosks for airports in Alaska were shipped via Alaska Air Cargo to Anchorage for further distribution. Those bound for the "lower 48," were loaded for each into a

24-foot truck and delivered to the airports. Reliant was the tactical workhorse, with staff driving across the country in calculated, organized routes for deployments.

At each airport, Reliant removed old self-service ticketing kiosks, delivered the new bag tag stations, installed the remaining tech equipment and tested the iPads and printers to make sure they were working correctly. The company also provided troubleshooting as needed to ensure systems were running smoothly. "We saw excellent, consistent results with Reliant's deployment," Reimers reports. "It was a project goal for us to ensure that the deployment across all of the 70-plus stations was done consistently so we could have a reliable product down the field."

The ticketing kiosks Reliant removed were taken back to its facility in Seattle, where workers gutted, recycled and disposed of them properly.

Deployments were completed successfully and four months ahead of schedule, reports Scott Nguyen, chief executive officer of Reliant Corp. "We worked cohesively as a team to narrow down the scope of work," he says. The company held weekly meetings to discuss the scope of each station in each wave and to devise a game plan to address potential issues that might arise.

As program manager, J.A. Watts' responsibilities included scheduling, defining procedures and overseeing deployment. This involved crafting bids, ensuring design accuracy, validating bids and coordinating on-site installations. The company also oversaw nightly installations, trained local staff and troubleshot issues during system implementations.

Throughout the deployment schedule, J.A. Watts faced challenges obtaining existing drawings, which required staff to perform on-site surveys and sketches. Staff collaborated with Alaska Airlines to prioritize kiosk layouts and ensure compliance with the American With Disabilities Act and DOT regulations. After establishing these parameters, the team evaluated layout options based on passenger convenience, constructability and cost-effectiveness. With approval from Alaska Airlines, J.A. Watts assisted with the airport approval process, submitting defined scope of work documents and drawings. Notably, more than 90% of the airports approved the bag tag station projects based solely on these submissions, highlighting the thoroughness and effectiveness of the approach. J.A. Watts performed design work at all of Alaska Airlines' non-hub airports, which helped save additional time.

Reagan National is one of the 79 U.S. airports that received self-service bag tag printers.

Working in Waves

RYAN HOUSTON

Alaska Airlines structured its deployment initiative in waves, with each team completing installations at up to 10 airports per trip. This strategy demanded precise orchestration of airport approvals, contractor arrangements and project management. "[Alaska Airlines] had a good partner in Reliant for the implementation and installation," says Ryan Houston, program manager with J.A. Watts. "I think that was really critical to the success of this project."

Cathie Attebery, director of Airport Development at Alaska Airlines, directed the project team to build flexibility into the deployment schedule. The nature of work in each wave would be similar, but the number of stations, project duration or route could change as each airport bag tag station was completed. The airline also worked with its own policy and procedure team and training team to coordinate with the planned waves. "It was really getting everybody on board with this flexible approach," Reimers recalls.

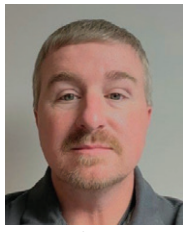
That set the groundwork for making adjustments when one wave's work was completed early, so additional stations could be added to it. "It was a massive collaborative effort, but it really started with Cathie's idea of not locking us into a rigid schedule,'" he says. This flexible approach allowed Alaska Airlines to maintain some rigor in scheduling but adjust stations earlier or later as needed.

In addition to wave scheduling, the project team benefited greatly from the ready availability of equipment from Architectural Casework Inc. and the willingness of crews from Reliant Corp. to live out of a truck for weeks at a time when deploying the bag tag kiosks. By strategically planning and integrating new airport additions into their existing scheduled waves, J.A. Watts was able to complete closer to 10 airports per wave rather than three or four as originally expected, helping the whole project finish ahead of schedule.

Intentional Design, Minimal Footprint

Alaska Airlines and its project partners went through multiple design iterations to achieve the right blend of efficiency and simplicity. Saving space in airport lobbies and easy on-site assembly were also key requirements.

When the airline deemed an early prototype to be too big, Architectural Casework cut the footprint roughly in half by stacking components and compacting the overall design. A stainless-steel base was added to provide stability for the slimmer-profile unit.



DAN BEAMISH

The company worked directly with Alaska Airlines to meet the carrier's expectations for functionality and aesthetics. The kiosk had to accommodate a scanner unit and bag tag printer, with routing out on the backside and a flush front. "That was all very time-consuming, but in the end, we were able to make it happen," says Dan Beamish, general manager of Architectural Casework Inc.

Beyond operational performance, accessibility was also important to Alaska Airlines. The final design exceeds Transportation Department requirements and is completely compliant with the Americans With Disabilities Act. The airline worked with an external agency to perform accessibility testing and incorporated feedback from individuals with varying degrees of abilities into the design process. "We were fortunate enough to not only have the right inputs to make decisions around this, but we also have in-house expertise and a passion for it," Reimers comments. "We've innovated in a way that is inclusive for anyone who needs to use the bag tag station."

Using 3D software and CNC-operated machinery, Architectural Casework created models to test each new design, ensuring that

moving parts could function properly and size specifications were met. The company uses this method to achieve uniformity across hundreds of products. "Our tolerances are very consistent from one unit to the next," Beamish notes.

Post-Change Reaction

Reimers reports that the new bag tag stations have earned overwhelmingly positive feedback on customer surveys. In addition, data collected at airports where kiosks were deployed indicate a 10-point jump in self-service within one week. Travelers are generally more inclined to access their boarding passes from home or via mobile devices, Reimers explains. Across the board, Alaska Airlines saw 22% to 50% increases in self-service within months of deployment. "The data shows that guests were adopting this new product because they were embracing the requirement to get a boarding pass before they came to the airport or use other self-service functions," he notes.

Airline employees are also inspired by the equipment change. "Our agents have been so impressed with the improvements this device has brought to the lobby, they are now flooding us with ideas of how the [bag tag station] could potentially make things even easier for them."

Airport Involvement

Tampa International Airport (TPA), one of the many locations that received bag tag stations, is pleased with how the new option is affecting guests. "TPA is always happy to work with our airline partners to improve the passenger journey through our facilities, and the new baggage kiosks at Alaska Airlines are an example of using thoughtful design and technology to make check-in as convenient as possible," says Joshua Gillin, senior manager of Communications for the airport.

New kiosks were also installed at Milwaukee Mitchell International (MKE). As with other tenant improvement projects, MKE's Business Development and Properties Team facilitated the application submission, conducted a design review and issued airport construction permits. Prior to installation, the MKE team met with Reliant about project objectives, safety, security and other issues to ensure coordination and minimize disruptions to ongoing airport operations.

J.A. Watts worked closely with MKE personnel throughout the deployment. "The Business Development and Properties Team monitors project progress and facilitates the resolution of issues and answers questions impacting the project or impacting airport operations," says Matthew Hoffman, director of Business and Commercial Development at MKE.


MATTHEW HOFFMAN

Difficulties Faced

One of the inherent challenges of the project was transitioning from kiosks that allowed travelers to perform almost any self-service function (checking in, printing boarding passes, changing seat assignments, upgrading their service class, etc.) to one that only prints bag tags and collects payment for checked bags. This meant that Alaska Airlines had to update its mobile app and website platforms

enable functions previously handled by the kiosks. “Not only were we developing a product at that same time, but we were also working with other teams to ensure that they were absorbing this functionality,” Reimers recalls. The teams also took the opportunity to determine if there were other improvements to be made at the same time as these updates. “The bag tag station would not have been successful without other teams,” he says.

Inclement weather that affected road conditions during the mass deployment was another challenge. Deliveries in remote areas of Alaska that are only accessible via plane required significant coordination to pack and ship the materials and hardware in advance and then fly crews in to remove the old kiosks and install the new. “It was the way we established a very collaborative culture that allowed us to break through those challenges,” Reimers reflects.

Maintaining a steady supply of kiosks for deployment was the responsibility of Architectural Casework, and the company bulked up its production capabilities to support the downstream logistics of Reliant and ultimately help keep installations on schedule. “The communication back and forth was fantastic,” Beamish reports.

From a program management standpoint, Houston notes that any project spanning across dozens of airports and involves several different teams and resources is bound to be challenging. Often, new equipment had to be started up overnight to minimize the impact on travelers. That meant the airline’s IT team had to be available in case equipment didn’t come online or connect properly. “A lot of resources get spread thin on something like this and specifically IT,” Houston remarks. “IT for any airline has a lot of work to do everywhere, and then you add in a big initiative that requires a lot of time for them.” To alleviate some of that stress Reliant and J.A. Watts provided on-site IT coordination and assistance. “We were knowledgeable enough to help troubleshoot on site and be on the phone to have them walk us through what buttons we need to push,” he recalls.

The hurdles faced by Reliant were mainly limited to faulty equipment or configuration issues. To head off potential equipment problems, crews kept additional parts on hand. “Our teams always carried spare equipment in each wave so we could address the problem immediately,” says Nguyen. “As for configuration or network challenges, we worked with Alaska’s network and field service team to troubleshoot and remedy problems immediately.”

Navigating various airport approval processes also proved challenging, Houston notes. While some responses were speedy,

others took months—and one outlier required 10 months. Because kiosk deployment was often a small project compared to other airport developments, J.A. Watts focused on making consistent progress amid competing priorities. To facilitate the process, Houston made it a priority to meet face to face with the airport team. "I feel like once you build trust in that partnership, it makes the conversations a lot easier to work through the various approvals," he comments.

A Learning Experience

Given the reduction in time Alaska Airlines passengers are spending at the new bag tag–only kiosks, Beamish suspects other airlines may move toward similar equipment. "I think it's kind of a game-changer for the industry," he remarks. "The wonderful feedback I know they've gotten from customers kind of makes the overwhelming process worth it."

Houston notes that the traveling Reliant teams provided consistency and quality for the countrywide deployment, even with the use of local electricians at each airport. "We wanted to make sure that Alaska Airlines was getting the same product across the board," he says.

Houston also highlights the critical importance of communication, especially since COVID-19, and emphasizes the value of face-to-face interactions to build trust and alignment among project stakeholders.

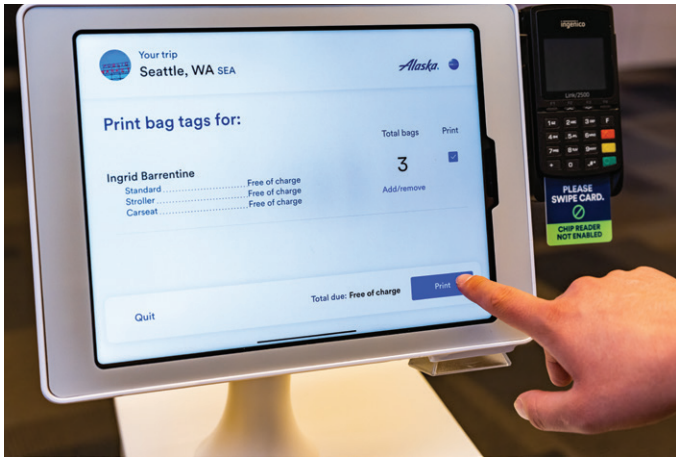
PHOTO: MILWAUKEE MITCHELL INT'L AIRPORT

The Business Development and Properties Team at MKE coordinated with contractors before and during installation.

Pre-installation meetings were used to keep everyone on the same page and evolved from brief calls to more extensive discussions to mitigate risks and unforeseen on-site issues. “It makes it a lot easier if you take the time to meet with folks in person, walk them through the project, [explain] what our initiatives are,” Houston reflects. “That way, as you start working through the project, that trust is established. You’re able to have honest conversations to make sure that everyone’s in alignment before we get [the kiosks] installed.”

Houston also emphasizes the crucial role of careful, early planning. “This type of program [for a large airline with so many locations] is not as easy as it sounds.” He found that it was important to clearly define deployment priorities and timelines, while also being flexible to handle unexpected problems like contract issues or weather delays. Having a variety of contractor partnerships can encourage competition while improving quality and efficiency, he adds.

For Alaska Airlines, success of the bag tag station deployment boils down to collaboration and assembling the right team. “You build the right team of people who can get it done, and then at that point, you can accomplish almost anything that you need to do,” Reimers remarks. “Focus on building your team and ensuring that you’re fostering as much collaboration as possible.”



Passengers spend an average of 45 seconds per transaction at the new kiosks.

PHOTOS: TAMPA INT’L AIRPORT

AEROCADE®
AIRPORT BARRICADE

- LOW-PROFILE
- FOD-FREE
- INTERCONNECTED

LOW-PROFILE, HIGH VISIBILITY AIRPORT BARRICADE

The Aerocade® Airport Barricade is a low-profile, water-filled, channelization device used to delineate work zones for construction and maintenance on airport runways and taxiways. The Aerocade® can be interconnected end-to-end for use as a demarcation device and can be accessorized with warning lights and flags.

The Aerocade® Low-Profile Airport Barricade is designed to FAA Advisory Circular 150/5370-2G.

WWW.VALTIR.COM
888.496.3625

VALTIR

Scan for More Info

New Engine-Testing Facility Enhances Safety, Functionality and Efficiency at Michigan Airport

BY KEN WYSOCKY

FACTS&FIGURES

Project: Ground Run-up Enclosure

Location: Oscoda-Wurtsmith Airport in MI

Design Consultant: Blast Deflectors Inc.

Project Cost: About $7 million

Funding: Kalitta Air LLC

Footprint: About 2 acres

Dimensions: 48 ft. high; 268 ft. wide in front, 198 ft. wide in back; 315 ft. deep

Features: U-shaped enclosure with curved rear wall that deflects engine exhaust upward; more than 200 vents in sidewalls & 1 large vent on rear wall that create headwind for testing, regardless of what direction wind is blowing outside the enclosure; curved edges on top of walls help reduce turbulence inside the enclosure

Construction: June 2023-Feb. 2024

Concrete Work: B&B General Contracting Inc.

Construction Contractor: Spence Brothers Construction

Key Benefits: Safer engine testing; eliminates need to coordinate tests with arrivals & departures

A new $7 million ground run-up enclosure is boosting safety and operating efficiency at Oscoda-Wurtsmith Airport (OSC), a general aviation airport in northeastern Michigan, along the Lake Huron shoreline.

The roughly five-story structure was completed in February 2024 by Kalitta Air LLC, the airport's largest tenant and employer. The ground run-up enclosure (GRE) provides the cargo carrier with a safe place to test jet engines running at full bore without endangering personnel and smaller aircraft that might accidentally come too close to a powerful blast of engine exhaust.

"You don't want to be behind a 747 at full run-up power," says Airport Manager Jack Brown. "It would blow you into the next county."

JACK BROWN

Kalitta currently owns two dozen 747s and five 777s, and is awaiting delivery of six more 777s. OSC is home to its biggest maintenance, repair and overhaul station, which services about 150 aircraft a year. Workers there perform three to five ground run-ups per week, each lasting anywhere from 15 minutes to two hours.

Previously, technicians ran engine tests on various ramps at the 2,300-acre airport. But that negatively affected traffic at the one-runway facility because smaller general aviation airplanes had to use the main taxiway to get from their hangars to the main runway.

"It required a lot of coordination with Kalitta," Brown recalls. "We'd also have to notify general aviation pilots using UNICOM."

As the cargo airline expanded its operations with new hangars and other infrastructure, less ramp space was available for engine testing, and need for a new location became more and more acute.

"As we grew, we ran out of safe, FOD (foreign object debris)-free spots to run the engine tests," explains Steve Vette, Kalitta's line maintenance

STEVE VETTE

manager at OSC. “I had seen these GREs at other airports, so we started inquiring about them around 2020.”

Blast Deflectors Inc. was hired to design the structure. B&B General Contracting Inc. performed the concrete work and Spence Brothers Construction built the facility, starting in summer 2023.

Thrust Tamer

Testing large jet engines in well-trafficked areas can be risky business. A GE90 turbofan jet engine, for instance, can generate up to 115,000 pounds of thrust.

In fact, a 2007 episode of the television show *Mythbusters* showed a Boeing 747 jet engine blowing over a taxi, a school bus and a small airplane.

Staff members at OSC have witnessed such power firsthand. “One time, an engine blew a loose, roughly 50- by 100-foot section of asphalt right out of one of our ramps,” Brown says. “We found chunks of it 800 to 1,000 feet away.”

Matt Anzai, sales manager at Blast Deflectors Inc., explains that GREs offer

a safer alternative. Airplanes back into the U-shaped structure so exhaust from their engines is directed at the curved rear wall, which essentially renders potentially dangerous engine thrust less hazardous by deflecting it skyward, explains Anzai.


MATT ANZAI

Some GREs are acoustically treated to absorb and reduce noise as well, but that wasn't the case at OSC because it's in a rural area with no nearby residences.

Aerodynamic Design

The design of a GRE begins with an analysis of prevailing wind speeds and direction, which helps determine an optimal location. At OSC, that turned out to be on the east side of the airfield, facing west.

The height and size of a GRE are guided by the size of aircraft that will use it, and whether or not noise attenuation is required. The structure at OSC occupies about two acres of land (leased to Kalitta by the airport) and measures 268 feet wide at the front, 198 feet wide at the back and 315 feet deep.

Because technicians need optimum testing conditions, GREs are designed to facilitate the movement of smooth, turbulence-free air into the engines.

"Jet engines ingest a lot of air, and tests don't go well with tailwinds," Anzai comments.

The likelihood of a crosswind spoiling test conditions is minimized with strategically located vents on the two sidewalls. The vents create a headwind inside the structure, no matter which way the wind is blowing outside. Naturally, the number of vents needed varies from airfield to airfield. "It's a function of aerodynamic needs," Anzai says.

Kalitta's structure at OSC has more than 200 sidewall vents, and one large vent on the rear wall. The tops of the walls are rounded to further reduce turbulence.

"With just three walls, it doesn't look very complex," Vette says. "But there's way more to the facility than meets the eye. It's much more than just three walls."

No matter how well designed a GRE is, there still are times when it can't be used because of wind conditions. Vette estimates that Kalitta's structure at OSC is usable about 85% of the time. This provides much more availability than before, when technicians could only run tests when there was a headwind coming from the right direction.

In total, Blast Deflectors Inc. has designed 21 GREs for North American airports and 60 worldwide.

Built to Last

The structure at OSC is made primarily of roughly 471,600 pounds of corrosion-resistant galvanized steel. The 16-inch-thick concrete pad it stands on required approximately 4,000 cubic yards of concrete—enough to fill about 400 cement trucks.

"It's designed to withstand bearing one of our aircraft fully fueled and loaded, which weighs nearly a million pounds," Vette reports.

Both he and Brown are pleased with how the GRE has affected safety and functionality at the airport.

"It's been really nice," Vette says. "Our guys are happy that they can run engines at high power without worrying about air traffic. They don't have to talk to other aircraft that are coming in or worry about missing a call from a pilot." (There's no air traffic control tower at OSC.)

"The facility also brings down the noise level because the exhaust deflects straight up instead of horizontally," he adds. "But in the end, it's all about safety—safety for aircraft, safety for personnel and safety for anyone at the airport."

Brown says that if Kalitta allows other carriers to test engines at OSC, the airport could increase landing fees and collect other revenue. But that's a minor consideration compared to the increased safety aspects, he emphasizes.

"The GRE has made our airport safer for everybody," Brown says. "Big aircraft and little aircraft aren't a very good mix, but we all have to get along here because there's one runway. And this facility helps everyone get along great.

"This really has taken our airport to a different level in terms of safety. It's a feather in our cap."

To see the ground run-up enclosure at Oscoda-Wurtsmith Airport in action, visit youtube.com/watch?v=lwM7naZec3Y.

Crews used about 471,600 pounds of galvanized steel to build the ground run-up enclosure.

Safety Management Systems at Airports

BY JODI RICHARDS

In Part Two of our two-part series on Safety Management Systems, we focus on FAA requirements for airports. Early adopters are reporting positive results, and—spoiler alert—collaboration will be key to compliance.

FACTS&FIGURES

Dallas Love Field

Project: Creating & Implementing Safety Management System

Sample Location: Dallas Love Field

Strategy: Early engagement through research, regulatory review & FAA collaboration

Consultant: Landry Consulting

Software System: Veoci

Key Benefits: Enhanced safety; reduced liability & costs because issues are identified before they become hazards; streamlined response to potential risks; improved morale & motivation about improving safety

SACRAMENTO INTERNATIONAL AIRPORT

Project: Creating & Implementing Safety Management System

Sample Location: Sacramento Int'l Airport, in CA

Strategies: Participation in early FAA pilot program; leverage training programs; take metered approach to risk assessments & program rollout

Software System: ProDIGiQ

Measurable Result: Reduced foreign object debris

Key Benefits: Enhanced safety; increased participation via confidential reporting system; dashboard summaries facilitate ongoing improvement

Following the FAA Safety Organization's final rule for Part 121 airline operators in 2015, the agency published its final ruling on Safety Management Systems (SMS) for some Part 139 airports in February 2023. It applies to airports that are:

- classified as a hub; or
- have a three-year rolling average of 100,000 operations per year; or
- have international operations other than general aviation-only traffic.

An SMS emphasizes safety management as a fundamental business process to be considered in the same manner as other aspects of business management, says FAA materials. It is the formal, top-down business-like approach to managing safety risk, which includes a systematic approach to managing safety, including the necessary organizational structures, accountabilities, policies and procedures.

By recognizing the organization's role in accident prevention, SMS provide both certificate holders and the FAA:

- a structured means of safety risk management decision making;
- a means of demonstrating safety management capability before system failures occur;
- increased confidence in risk controls through structured safety assurance processes;
- an effective interface for knowledge sharing between regulator and certificate holder; and,
- a safety promotion framework to support a sound safety culture.

Ramping Up

FAA took a methodical, collaborative approach to the new SMS requirement, beginning with FAA-funded pilot studies at more than 30 airports. Those that participated in the pilot studies were eligible for Airport Improvement Program grants to cover the cost of developing an initial SMS plan but did not need to apply for a grant to participate.

The first pilot occurred in 2007, the second in 2008. In December 2009, FAA announced its plan to conduct a Part 139 SMS Implementation Study to examine how airports implement the elements of the Safety Risk Management and Safety Assurance components throughout their airfield environment.

Using lessons learned from the initial pilot studies, FAA issued a Notice of Proposed Rulemaking in October 2010,

which netted valuable comments that prompted the agency to develop an improved proposal. To allow additional comments on those revisions, FAA issued a Supplemental Notice of Proposed Rulemaking in July 2016. The final rule issued last year is based on the comments received following that notice and a third open comment period in 2021.


RON REICHEL

Sacramento International Airport (SMF) is one of the airports that participated in an initial SMS pilot program and spent more than five years developing its system. SMS Manager Ron Reichel joined Sacramento County Department of Airports in October 2017, bringing with him prior SMS experience from the federal level. "They were being proactive," Reichel says of SMF leadership. "They were trying to get ahead of it. The rule wasn't out yet, so we had time to build the program slowly without having timelines associated with it."


JAVIER CENTENO

Dallas Love Field (DAL) is another frontrunner in SMS compliance. Javier Centeno, superintendent of Airport Operations at DAL, explains that leadership at the airport had a strong desire to enhance safety and be proactive, so it closely monitored the development of the SMS rule over the years. In late 2020, the city of Dallas, which owns and operates DAL, engaged Landry Consulting to develop and implement all the components of an SMS. "We are lucky to have leadership support, which is a big thing," Centeno notes. "Without that support, we couldn't have been ahead of the game."

Landry has been actively involved in SMS research and development since 2007, including contributing to regulatory review and FAA collaboration.

Relying on Relationships

FAA notes that one of the defining characteristics of an SMS is the emphasis on risk management. Through reporting and data collection, airports can analyze, assess and control risk. The concept of SMS is all about decision making, according to FAA. It has to be a decision maker's tool, not a traditional safety program separate and distinct from business and operational decision making.

Further, the agency wants safety to move from both the top down and the bottom up. Everyone from the receptionist and ramp worker to pilots, managers and FAA inspectors has a role to perform.

"SMS is based on relationships," Reichel stresses. "You have got to build trusted relationships. The first time you talk to somebody about a problem shouldn't be the first time you've ever talked to them."

Beginning with senior leadership, Reichel worked his way through the SMF organization to ensure that all teams, especially frontline personnel, understood the requirements and what would need to be done to meet them. "You need senior leadership commitment for it to work," he says. Likewise, the SMS manager has to build trusted relationships with airport tenants. "You can't have efficient or effective communication unless you trust each other."

During his presentations and conversations, Reichel would explain what SMS is and then ask people, "If you were king for a day, what would you change?"

The answers helped create an organizational structure and identify risks, and allowed Reichel to start building a reporting process and documentation tool in a slow and deliberate manner. "We were pretty busy with hazard reports the first three years," he recalls. "I would say, pace yourself as you go forward. That's what we did."

The next step at SMF was reaching out to airport stakeholders, including the airlines, airfield maintenance staff, planning and engineering departments, ARFF personnel, ground support equipment operators, security and access control personnel and more. The wide cross-section of participants helped build a Safety Action Team to share information and develop objectives and goals for the emerging safety program. "SMS has really progressed in the airline industry," notes Reichel. "So when you talk to the airlines, it's going to be an easier conversation. They're already familiar with it."

Overall, however, Reichel stresses that it was a slow process. Talking to various stakeholders was very valuable because it's a great way to share information, identify potential issues and develop action items, he adds.

A risk assessment that affects other tenants on the ramp, for example, would involve all of those stakeholders to discuss issues, decisions and potential follow-up actions. "I try to use a round robin technique to make sure everybody has a chance to speak," Reichel explains. "Everybody has a vote." Once a hazard that requires action is identified, the group performs a risk assessment and discusses potential mitigation strategies.

Assurance, one of the SMS regulation's key tenets, has caused some confusion in the industry. For Reichel, assurance has several components: a confidential reporting system, annual assurance audits, the ability to analyze numerous sources of data, and continuous communication with leadership. By compiling data from airside notices of violations, incidents, and hazard reports onto a single dashboard or spreadsheet, an airport can recognize possible trends, red flags or areas that might need addressing. At SMF, personnel chart the airport's safety objectives on the same dashboard to easily compare the data and bring about continuous improvement and positive change.

Reichel advises other airports to take a metered approach to risk assessments rather than trying to perform too many too quickly. "You can oversaturate your groups," he cautions. "You have to be patient. A quick implementation may overwhelm staff and stakeholders."

Finally, Reichel stresses the importance of implementing a confidential reporting system or portal. He suspects that small airports may be able to rely on paper forms for this, but larger airports will likely have to tap their IT department or bring in an

outside vendor. SMF is currently implementing ProDIGIQ software for its SMS, Part 139 and maintenance work order systems.

What's Happening in Dallas

The team at DAL started its SMS journey in 2020, which Centeno says has provided the airport a lot of time to think about the process.

With the guidance of Landry Consulting, the airport conducted a safety inventory of existing processes and procedures, and also established a systematic review process and project schedule. The goal was two-fold: to educate the airport team and to ensure it was meeting regulatory requirements.


JOANNE LANDRY

In 2021, DAL and Landry developed a gap analysis that provided a roadmap for improvements, and created an audit inspection checklist and organizational chart to develop an implementation plan. Meetings with external and internal stakeholders were conducted, and roles and responsibilities of all parties were established. An accountable executive was also identified, as required by the 2023 FAA regulation. Joanne Landry, principal at Landry Consulting, says it's important to focus on building the compliance pieces like software and processes, but also to keep in mind the end user—the people who will be "living SMS" versus implementing it.

The team began drafting an SMS manual as well as a logo and website to build airport-wide engagement. In 2021, DAL executed an agreement with software developer Veoci to develop a cloud-based system for collecting and managing its SMS data. "We wanted a solution customized to our facility, not a universal software, with reporting features to collect safety information from all users," Centeno says.

Working together, DAL and Landry developed an SMS plan specific to the airport, which was then digitized into the Veoci system. Landry built a process flow diagram with detailed steps and functional requirements for reporting, analyzing and mitigating hazards. The airport digitized the process map page by page.

Centeno recommends using a custom system like this but acknowledges that developing one requires more time and resources.

The Aviation Operations Technology Division was responsible for funding, deployment, development and overall project management of the Veoci platform. Project Manager Paul Sullivan notes that his team's primary mission was to make sure the application modules were rigorously tested against conflicts in process, data and workflows. The result is an operational platform that connects every division to a Part 139 work order and a general work order system.


SCOTT ROSEN

Scott Rosen, Veoci solutions engineer at the time of the project, notes the Veoci software keeps track of the entire safety reporting process for compliance. "Anything that takes place with a recorded safety hazard or risk is going to be reported through our system," he says. DAL safety personnel then determine the level of the risk.

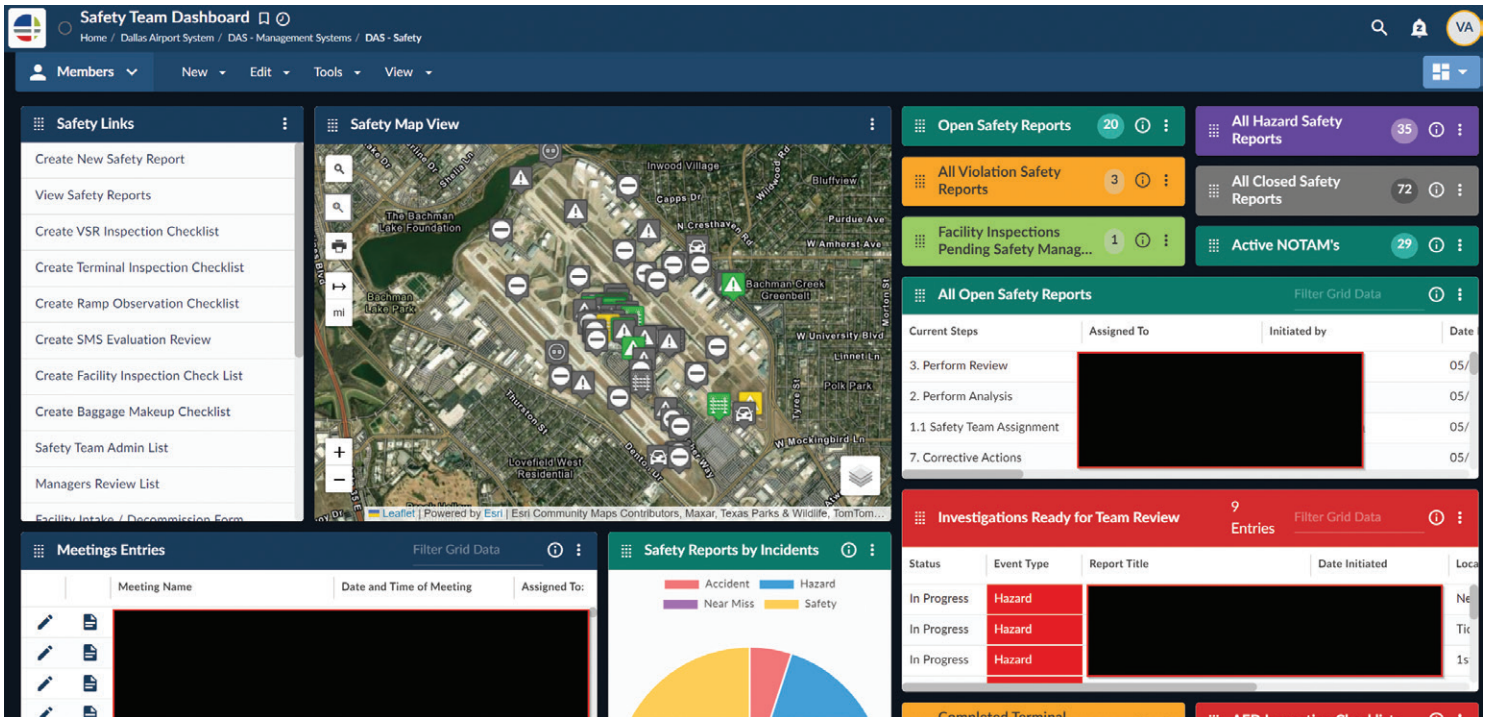

MIGUEL ESCALON

Miguel Escalon, quality and safety management systems manager at DAL, explains this data-driven system allows the safety team to analyze information, constantly improve and mitigate situations, and try to minimize risk.

The software keeps track of an entire workflow process from start to finish, Rosen adds. "Anytime some sort of safety risk comes into the system, it follows a series of steps based on the severity of that risk." Because DAL's system is integrated with Part 139 operations, any time a hazard is reported, staff can reference the information across the entire system. "It creates a streamlined process of capturing all the information related to a safety event and also enables them to automate more of their solutions," Rosen says.

"As airports seek new solutions and they need an SMS process in place, our system helps alleviate a lot of those pain points like communication, reporting and effectively knowing where all that data is located," he adds.

So far this year, DAL has received approval of its implementation plan and is continuing to implement the functions of its SMS manual. "We have done some small pieces, step by step, but it's a new system and it will require time," Centeno says.



Displaying multiple data streams on a single dashboard has proved advantageous at DAL.

While the airport has implemented some pieces of its SMS, others are still pending. Escalon notes that DAL is one of the few airports to include occupational safety in its SMS program, applying it to terminal areas and remote buildings. The program also covers Dallas Executive Airport and the elevated Dallas Heliport/Vertiport, which are also operated by the city.

Positive Results

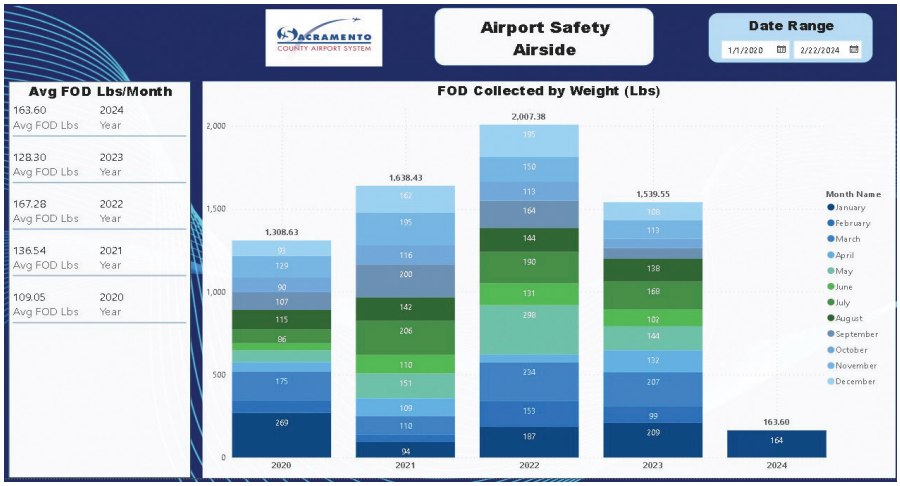
According to FAA, an SMS provides the framework to support a positive safety culture and includes repeatable and systematic processes to proactively manage safety. Furthermore, decision-making processes are structured, consistent, defendable, measurable and data driven. Hazards are identified and safety risk controls are implemented before an accident or incident occurs. Safety assurance processes provide a means for continuous safety oversight, allowing for efficient, smooth and safe airfield operations.

At SMF, the new regulatory requirement is having a positive effect on the safety culture and is encouraging further engagement on the issue. "It increases employee morale and motivation," Reichel reports. Once employees see that reporting a hazard leads to positive action and makes their job safer, they will be more motivated to report, he explains. "If you're fixing things, it makes them feel good and gives the SMS credibility."

The reduction of risks associated with foreign object debris (FOD) had been particularly noticeable. In 2018, the airport averaged 267 pounds of FOD per month. In 2023, with SMS components being implemented, it averaged just 128 pounds per month. "Over the years, we were able to really, really energize our tenants, and we've got tons of support now," Reichel explains. "That's a big win."

Leaders at DAL are similarly optimistic about the effect SMS has had on the airport—especially employee morale and performance. "I see more opportunities because of SMS, and we are excited as a team," says Centeno. "Everyone wants to be recognized and supports the data-driven system."

Communication, collaboration and action have allowed employees to see



Foreign object debris is one of many safety issues that SMF tracks.

firsthand how an effective SMS can benefit them. "We see a new safety culture starting now," Centeno reports. Sharing information with internal and external stakeholders is extremely important, he adds.

From a management aspect, Centeno notes that SMS lowers liabilities and costs because the airport is identifying issues before they become hazards. "It's a big improvement for operations."

Collaboration is Critical

Centeno and Reichel recommend participating in industry workshops and working collaboratively with other airports and FAA when developing and implementing an SMS.

Centeno emphasizes the importance of collaboration, even though every airport is unique and faces its own distinct challenges. Airports can learn from one another, but the strategies for internal and external collaboration will differ for each, he explains.

"SMS improves collaboration for identifying and mitigating safety issues," says Reichel, again noting the need for internal and external collaboration.

For airports unsure where to begin, Reichel says the implementation plan in Advisory Circular 150/5200-37A lays out all the requirements and is a great place to start. "If you follow Appendix C of this AC and build your plans based on it, you'll have a compliant program," he assures. Reichel also suggests reaching out to other airports to create networks and learn from their experiences. "I've learned a lot from my peers and have been able to incorporate their lessons learned and best practices into our program," he relates.

Centeno says that DAL has received phenomenal guidance and support from FAA partners and advises other airports to work with their local FAA inspectors. He also suggests reaching out to airport colleagues who have already been through the process.

"Fundamentally, safety improves when airports and airlines work together to resolve safety issues," adds Landry. "The most effective way I have seen the collaboration work is through safety working groups and committees, recurring meetings, logging and tracking safety issues and creating work groups that assess and resolve the issues together." Open sharing among airports has been immeasurably beneficial, she adds.

Reichel encourages SMS managers to complete SMS training from sources like AAAE and USC Viterbi. He also recommends *The Effective Facilitator* by Leadership Strategies to help new SMS managers with formal risk assessments. "[It] gives some valuable insight on how to facilitate a meeting with multiple participants," he notes.

Training and resources are critical to success, Landry agrees. "Someone doesn't become an SMS expert overnight. The most effective way we've seen is education and skills development through workshops and case studies."

ProSafeT

GET YOUR AIRPORT READY WITH PROVEN FAA AND AIRLINE SMS EXPERTISE

Proudly Serving Sacramento International Airport, the First Airport with FAA-Approved SMS Implementation Plan

Visit www.prodigiq.com or
email safety@prodigiq.com

Hartsfield-Jackson
Atlanta International Airport®

FACTS&FIGURES

Project: Terminal Expansion

Location: Hartsfield-Jackson Atlanta Int'l Airport

Concourse: D

Airport Owner/Operator: Atlanta Dept. of Aviation

Project Cost: $1.4 billion

Funding: $40 million FAA Airport Terminals Program grant; passenger facility charges; airline rates & charges

Scope: Widen concourse from 60 to 99 feet; extend length by 288 ft.; increase gate seating from 5,400 to 6,400

Project Manager: Joint venture of WSP, H.J. Russell & Company and Turner & Townsend

Architect: Corgan

Construction Manager at Risk: Holder-Moody-Bryson-Sovereign

Start of Design Work: April 2022

Start of Underground Utility Enabling Projects: Nov. 2023

Module Construction Began: Jan. 2024

1st Module Transport: April 24, 2024

Expected Opening of Phase 1: Sept. 2024

Anticipated Project Completion: Summer 2029

Atlanta Int'l Combines Modular and Traditional Build Methods for Concourse D Expansion

BY JODI RICHARDS

Serving more than 100 million passengers annually, it's no secret that Hartsfield-Jackson Atlanta International Airport (ATL) is a critical piece of the worldwide aviation network. So when the busy airport requires expansion or renovation, one of the biggest considerations is minimizing impact to operations. When it was determined that Concourse D, at 40+ years old, would require improvements to continue meeting current and future demand, officials recognized it would take innovation and creativity to make it happen.

Opened in 1980, Concourse D is one of five original concourses in ATL's domestic terminal. It is the airport's narrowest concourse, with a circulation corridor of 18 feet and holdroom seating for 5,400 passengers. The concourse was originally designed with 40 gates to handle 19 regional aircraft and 21 larger aircraft. But even after renovations over the decades, Concourse D remains dramatically undersized.

The current expansion program scheduled for completion in 2029 will:

- double holdroom size and increase seating to 6,400,
- widen the main corridor to 29 feet,
- raise the ceiling height,
- expand the boarding level by 75%,
- increase concessions options,
- double the size of restrooms, and
- add new building systems.

The width of Concourse D will be expanded from 60 feet wide to 99, and the new ceiling height will be up to 18 feet and taper down at the concourse edges to 14 feet to create more volume in the space. Additional glass on the walls will provide more ambient light, making the entire concourse brighter, airier and more open.

FRANK RUCKER

"Sixty feet may have been fine in 1980, but today it's just so tightly packed," relates Frank Rucker, ATL's senior deputy general manager. "By greatly expanding the floor area, there's more room for passengers to maneuver, and it's going to be such a better passenger experience."

When all is said and done, the concourse will include 34 aircraft positions, which is actually six fewer than before. The difference is that all will be for Group III aircraft, rather than a mix of Group II and III gates, so the overall capacity will be greater.

Cost for the game-changing expansion is estimated at $1.4 billion. The innovation and creativity that ATL

Designers expanded the overall concourse width from 60 to 99 feet. The main corridor is now 29 feet wide.

officials knew would be needed is coming into play regarding the construction method. The project team is combining modular and traditional strategies, including the use of 19 prefabricated modules built on a six-acre lot adjacent to the airport. One by one, the completed modules are being transported across the airfield overnight to Concourse D for installation.

Preliminary Negotiations

The need to renovate or reconstruct Concourse D was identified in 2015 when ATL was in the process of negotiating airline leases. Leadership evaluated several expansion and/or redesign alternatives, and in 2016 narrowed the field to two options for further exploration and refining. In 2021, airport leaders chose a strategy that would use the existing structure, but refurbish and widen it.

In March 2022, project validation was completed and the construction manager at risk (Holder-Moody-Bryson-Sovereign joint venture) was brought on board to start preconstruction tasks, constructability reviews, phasing schedules and gate impact analysis. Because the original structure was built in the 1970s, the team knew a lot of work would be needed to meet current building codes, including updated seismic code requirements.

The operational impact of using a modular/traditional hybrid method was key to discussions about construction. Airport leaders had detailed conversations with tenants, particularly Delta Air Lines, regarding how many gates could be taken out of service at one time without causing extreme disruption. “It was a lot of volleying back and forth,” Rucker recalls.

The initial volley was ATL requesting half of the concourse, which would have meant demolishing and rebuilding 20 gates at one time. But that was met with a resounding “no.” The airlines lobbed back with a counter proposal involving just four gates at a time. That would have pushed the project completion date to 2031, which the airport felt was too long to wait for relief.

In addition to considering how many gates the concourse could have out of commission at any given time, the project team had to factor in other facilities, such as restrooms and concessions. “You can’t run an airport without those things,” says Pete Pemantell, vice president of Operations for joint venture member Holder Construction. “It’s not just about holdrooms and passenger throughput; it’s passenger experience as well.”

PETE PEMANTELL

Working collaboratively with stakeholders, the project team analyzed countless options to determine how many gates the airport could afford to lose without negatively impacting airline operations or the passenger experience. “When we were brought on board, not only were we studying which design to go with, we were also looking at different scenarios to find that sweet spot,” Pemantell explains. The goal was to facilitate efficient construction without financially impacting the airlines or compromising the passenger experience.

"Our main intent was to keep the existing building and existing operations as much as possible," says Gopi Swaminathan, associate principal with project architect Corgan Aviation.


GOPI SWAMINATHAN

After working through several construction scenarios, the airlines and airport agreed to take eight gates out of service for construction at a time. To mitigate the operational impact of losing eight gates, ATL constructed three additional gates on the north end of Concourse E and transferred some of its low-cost carriers there. "That reduces the probability that we'll need eight gates at a time," Rucker says. "It's probably more like a five-gate range, but we're continuing to evaluate as we go through the project."

The airport is funding the lion's share of the $1.4 billion project with airline fees and passenger facility charges, in roughly a 50/50 split. A $40 million FAA Airport Terminals Program grant was secured to help offset the cost of the new Concourse E gates.

Out-of-Box Thinking

Rucker says ATL is fortunate to have creative minds on the project team that proposed using modular construction, but it wasn't a decision the airport came to lightly. Leaders explored the idea extensively with the project architect and structural and mechanical engineers. A team also visited Dallas Fort Worth International Airport (DFW), which used modular construction for a four-gate expansion in 2022. "We came back fairly energized and said modular could be a component of the work," Rucker recalls.

[A full run-down of the DFW project is available online in the September 2022 issue of *Airport Improvement* magazine.]

"We wanted to deliver the building at a faster rate than what we usually do on a traditional development, so that is when the business case for modular construction started to make sense," Swaminathan explains.

"We know it would be less costly to knock down half a concourse at a time," adds Tom Nissalke, ATL's assistant general manager of Planning and Development. However, that option would have had a greater impact on operations.

The prime benefit of combining modular and traditional construction is efficiency—modular pieces are created at a remote site while crews simultaneously work on the foundation and infrastructure pieces at the project site.

"We are an airport first, a construction site second," Rucker emphasizes. "We have to consider the operations and the impact."

"A lot of the focus was on how to mitigate the impact to airline operations," Pemantell affirms. "With modular construction, you can hold off closing gates a lot longer because you're starting the construction on a remote site." That's very attractive to airlines because of the decreased operational impact.

From a logistics standpoint, modular construction allows work to occur off airport grounds, which means crew members do not need to go through security checkpoints to enter and exit the job site. Beyond saving contractors time, it increases productivity because work does not need to be scheduled around airline operations. Safety is also enhanced significantly because work does not occur on an active airfield. "You kind of work in your own little bubble and can control the construction a lot better that way," says Pemantell.

Mod Squad

Expanding Concourse D is a complex project for the program manager, a joint venture of WSP, H.J. Russell & Company and Turner & Townsend.

"The integration of modular and typical sticks-and-bricks construction is a unique concept," notes Chris Rogers, senior vice president of Aviation at WSP serving as program manager for the program management team. In addition, ATL's high passenger and operations levels require extra coordination to make the hybrid approach a success.

CHRIS ROGERS

To manage the complexities, the project team assembled a group of key stakeholders that meets regularly to collaborate, review and check/recheck project components. Established early in the planning process and dubbed the Mod Squad, this group was key in working through the design phase, initial engineering and plans for moving the modular units. "Initially, we were just talking conceptually, and then we had to start talking real technical details—the engineering from a structural side," Pemantell relates.

The hybrid construction style requires more-than-usual planning and collaboration to ensure that materials are available and that both construction sites are in sync. "Those two jobs are working parallel and eventually have to meet somewhere," he explains. "There are some logistical challenges trying to do all that on site and off site."

For example, once the design of the modules was finished, decisions had to be made about how much outfitting would be completed prior to transport. Those discussions relied heavily on what building components could withstand moving across the busy airfield.

To help prepare for that complex operation, contractors performed extensive verification testing and practiced lifting one of the modular buildings with the same equipment that would later be used for the move. This allowed technicians to survey the structure with a laser scanner to check for changes.

Among other things, the test lift allowed architects to verify that materials installed, including the curtainwall system, didn't incur any damage. Despite positive results, the test lift was just a lift, and not a move. So the team still collectively held its breath during the actual move. "It was a big win for all of us to see the module when it cleared the site and started moving toward the destination," says Swaminathan. "We did not see any problems with the materials or the moves themselves."

In addition to staging a test lift, the Mod Squad developed a 68-page "run of show" document. It included detailed logistics and a long list of contingency plans for the first move, and a minute-by-minute schedule for the days before and after. "We did not take moving across runways and taxiways at ATL lightly," emphasizes Edmund Ramos, vice president of Project Management for WSP and deputy Concourse D project director. "We know that every minute shut down impacts efficiency."

EDMUND RAMOS

"We did our due diligence to prove we could move a building across the airfield," adds Todd McClendon, the company's senior vice president of Aviation for WSP and area director for Concourse D and E.

"By the time we got to the night of, our plan was dialed in, and everybody was ready to go," Pemantell says.

TODD McCLENDON

All Systems Go

At 4:30 p.m. on April 23, the construction team held a "go/no-go" meeting, and by 5 p.m., it determined that everything was ready—equipment, weather, operations, etc. "Basically from that point on, it was all systems go," recalls Pemantell.

Beginning at 12:15 a.m. on April 24, the first of 19 building modules began slowly making its way from the fabrication yard across the airfield to the terminal on a Mammoet self-propelled modular transporter. The large robotic vehicle was accompanied by a procession of lead vehicles with flashing lights, engineers walking alongside to monitor the load, a foreign object debris patrol team, and chase vehicles carrying tools, replacement parts and other contingency supplies. "After an hour and 15 minutes, we had made the full trek north and brought the module up to Concourse D," reports Pemantell.

Mammoet's huge transporters are built for precise and delicate movement, with full 360-degree motion. The vehicle positioned the module into place within 1/8th of an inch, parallel with Concourse D and the base plates over structural columns. "The last inches were the hardest," Pemantell recalls. "Getting it exact was pretty tedious work." Once the building module was positioned, crews laser scanned the building to make sure there were no structural issues. After that was verified, another team moved in to begin welding the columns to the base plates.

Phase 1 is made up of five modules that form an approximately 800-foot frame and were slated to be set in place at Concourse D at the end of May 2024. At that point, interior

work will commence, including "stitching the structure together," tying in utilities and installing passenger boarding bridges so that portion of the concourse can go live in September. Rucker notes that it will be a "rough finish," as the final build-out cannot occur until the boarding level of the existing Concourse D is demolished.

The building modules weigh about 700 tons each and vary in size depending on where they will be located along the concourse. Their content also varies. Some have restrooms, while others contain concession space or gate areas.

"They are tremendous structures in themselves," says Rucker. Each frame is outfitted with as much of the electrical, IT infrastructure, HVAC ductwork, exterior cladding and windows as possible.

The timeline is aggressive, as the Phase 1 modules are scheduled to be anchored and welded in place onto the existing Concourse D. Within 90 days after the last of the five modules is set, the interior will need some finishing, but the addition is slated to be 100% complete from an exterior/gate standpoint.

Like the module moves, the "90-day sprint" has a detailed playbook, and WSP is responsible for leading and coordinating the team to achieve the shared goal of opening the new gates this September.

Phase 2, which will extend Concourse D, is programmed to take about one year; phases 3 and 4 are scheduled to wrap up in fall 2027. These phases will combine modular and traditional construction. "It's quite a complicated process," Rucker remarks.

Once all the modular pieces are moved and the newly expanded Concourse D is weather-tight, crews will demolish and reconstruct most of the boarding and apron levels under the structure. Only the original apron-level columns will remain. In some areas, temporary systems will be deployed as parts and pieces of the new structure are added and the old systems are taken out of service.

Elevating the Passenger Experience

Rucker and other ATL leaders see the Concourse D Expansion as a unique opportunity to elevate the passenger experience. To achieve that goal, Corgan and the design team used benchmarking studies of other airports to determine the size of facility needed to achieve the airport's desired service level.

Swaminathan says that first and foremost, passengers want comfortable holdrooms and seating. Additionally, they expect volume, natural light and free movement across terminals and concourses. What they *don't* want is to walk a lot. "It has to be a very comfortable place that you would prefer to spend time when waiting for the aircraft," he says.

Passengers also expect a variety of nearby concessions, intuitive wayfinding and adequate and appropriate signage, he adds. "They want the journey to be as seamless as possible."

Prior to recent construction, Concourse D had 40 gates, with a mix of Group II and III designs. When the project is complete, it will have fewer gates—34—but the seat count will increase from 5,400 to 6,400 because all gates will be Group III.

Swaminathan describes the architecture of the building as efficient, and the transition from the existing Concourse D to the modular units as seamless. There are some challenges with pairing the two buildings, but he notes that design adjustments are being made to ensure the existing building will look as good as the new one. The newly expanded Concourse D is also designed to be more energy efficient and code-compliant.

Enabling projects included relocating the sanitary sewer and adding a new branch of main water and a telecom duct bank. "We had to essentially relocate those site utilities because they were under where the new addition would be," Pemantell explains. Moving the utilities farther away from the building opened a 30-foot space and allowed the construction team to "really start flowing into the main project." Additionally, some exits had to be relocated and new stairs constructed to meet code requirements before the first eight gates were closed.

The new concourse will include 19 prefabricated modules built on a lot adjacent to the airport and transported one-by-one across the airfield.

Harbinger Project

Following the first move of modular pieces, ATL's Nissalke reports that the airport team is extremely pleased with the process and expects subsequent moves will include the same level of rigor and focus.

"The team did an excellent job of thinking through every aspect," agrees Rucker. "We're not out here to not achieve excellence."

The Concourse D project shows that modular construction and/or a hybrid of modular and traditional is a viable way to expand existing facilities, he adds.

Rogers, of WSP, considers modular construction a "game changer" and expects more airports to consider it.

His colleague McClendon agrees, adding, "I'd tell any client not to shy away from this delivery method. Anything you can do landside is a huge benefit. We've seen the value."

Pemantell feels that modular construction makes sense for many airports. "Not every project lends itself to modularity like this one did, but I think it's becoming a lot more feasible for more airports. I think it's the future of aviation construction."

Now that the project team is comfortable with modular systems and how they respond to a move, Swaminathan says there are discussions on how progressive project designers can be with future construction. "If the buildings or phasing would allow us to push the building to be more complete, we want to take that approach and try to add as much as possible in the module to reduce downtime on the actual site," he explains.

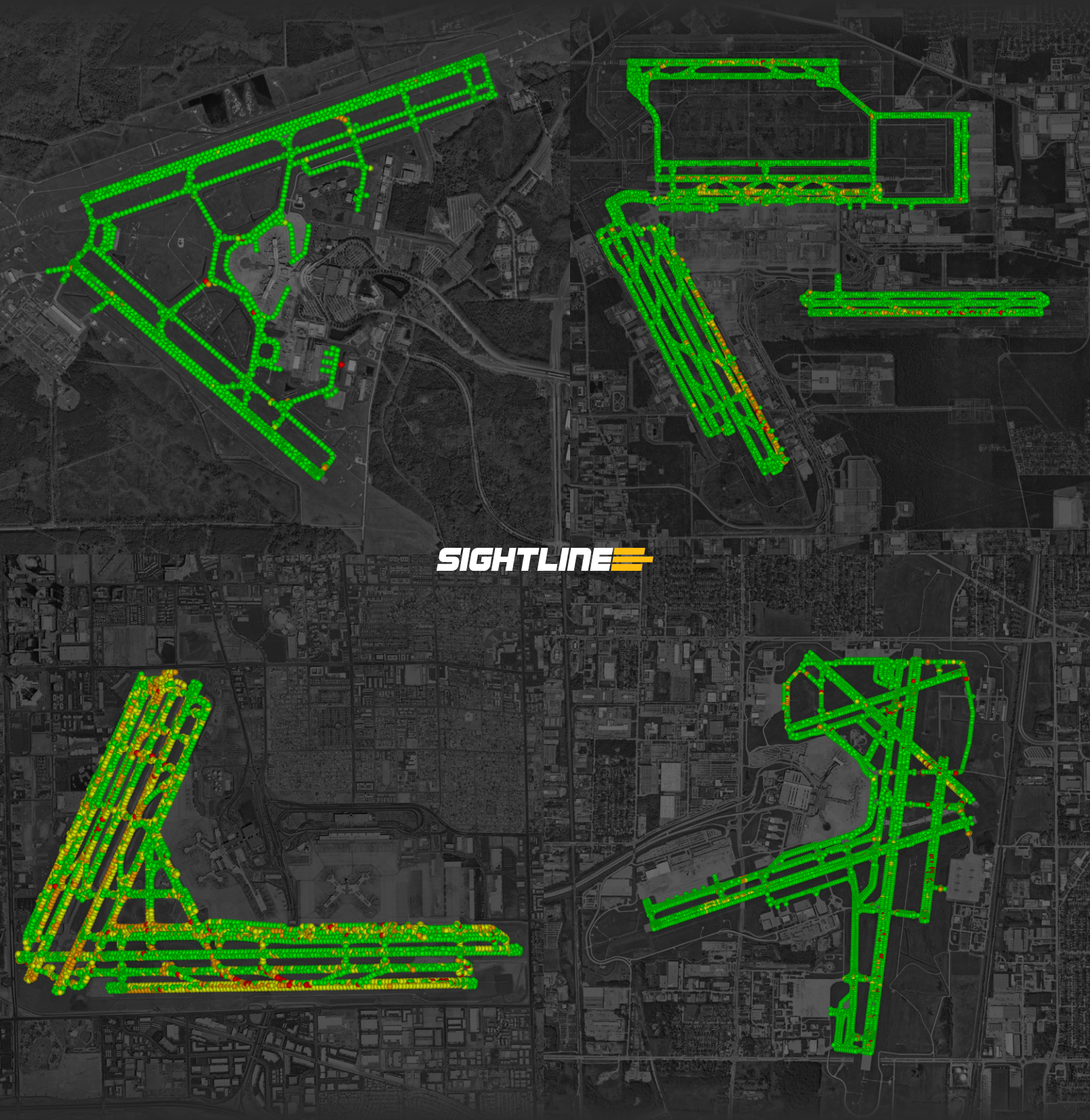
Ramos emphasizes that the quality and workmanship of the Concourse D extension will help dispel the negative stereotypes many people have about prefabricated buildings. "We've been able to demonstrate that we can ensure a higher quality project because it's built off site, and we're not constrained by operations or space," he explains.

Modular construction uses standard, tried-and-true materials, notes McClendon. "There's not a single material that we're using that's not part of our standard kit of parts—from the roofing to the glass to the metal exterior to the ceilings on the inside. We did not compromise our standards to support the modular concept."

The willingness even to explore an alternative construction method should be commended, McClendon adds. "The collaboration among the Department of Aviation and the carriers to see this project happen gave us the tools to go out and figure out the best way to do it."

For the Concourse D expansion, the best way just happened to include modular construction.

What do these airports have in common?



They use Sightline's airfield marking assessments.
Find out more at **sightline.us**

(For the AvGeeks: clockwise from top-left: JAX, IAH, MKE, LAS)

Daytona Beach Int'l Implements State-of-the-Art Security Measures

BY RONNIE WENDT

FACTS&FIGURES

Project: Comprehensive Security System Upgrade

Location: Daytona Beach Int'l Airport, in FL

Total Cost: $15 million+

Funding: $14.5 million Bipartisan Infrastructure Law

Construction: May 2023 -July 2024 (est. finish)

Engineering/Consulting: Faith Group

Construction, Installation, Systems Integration: Birdi Systems Inc.

Facial Biometrics: Alcatraz AI Facial Biometrics

Physical Security Information Management: Qognify Situator

Physical Access-Controlled Security Management System: LenelS2 On Guard

Federated & Integrated Credentialing Systems: Birdi Systems Inc.

Smart-Key System: CyberLock CyberKey

Key Benefits: Enhanced security via new fully integrated end-to-end system with multiple components

Passengers tend to think of airport security as TSA checkpoints and police K9s, but much more goes into keeping the public and airport personnel safe. From increasingly sophisticated terminal cameras and access control technology to employee credentialing and thermal imaging, airport security systems leverage advanced technologies; and even the most innovative and cutting-edge systems eventually wear out or require major upgrades.

That's exactly where Daytona Beach International Airport (DAB) found itself a short time ago. Its existing security system hardware and software were nearing obsolescence with respect to software compatibility and upgradability, and several existing platforms and integrations were subject to instability within the next few years. But the Florida airport was not caught flat-footed. Recognizing the system's natural lifespan, it had conducted a comprehensive evaluation and study three years ago. This research yielded a suite of recommended solutions for a new security and access control system.

One member of DAB's security project team for the recent upgrade notes that the existing security system was operating fine, but the technology was aging and needed updates. "Anything we can do on the back end to enhance security and better address security threats adds more layers of security for the traveling public. Advances in technology make security better. With the upgrade, we will have better video streams, better bandwidth and faster security responses."

Multi-Phase Approach

The airport used a multi-phase strategy to implement new integrated security systems. Moreover, it used a design-bid

procurement process to maximize the design for multi-platform integration while maintaining cost efficiencies and leveraging innovative design concepts.

"Integration was necessary at the software and network layers between multiple third-party systems," says Moninder Birdi, president of Birdi Systems Inc., which handled construction, installation and systems integration for the project.

LOU MARTINO

In May 2021, DAB held a series of workshops with Faith Group, an engineering and consulting firm, to review its security needs in detail. "Once we got through the design phase, we went through a funding phase and looked at what was available in grants and other funding," says Project Coordinator Lou Martino. "Then we put together a request for proposals and started making those designs come to life."

The last phase resulted in a fully integrated system replacement, paid for in part with $14.5 million in Bipartisan Infrastructure Law funding. The new security system includes an advanced access control system, biometric facial recognition cameras and video management, physical security information management, an ID management and credentialing system, perimeter intrusion detection enhancements, and a programmable smart key solution.

Updating the AOC

The project also moved and reconfigured the Airport Operations Center (AOC) and included various office space renovations, which enabled the airport to co-locate several key operational functions that were previously isolated.

The original AOC was very compartmentalized and located in a space that was not ideal for this type of facility, notes Martino. Because of the facility's limited size, there wasn't adequate room for large numbers of security personnel to work together in it when an event occurred.

JOSHUA RAVER

Joshua Raver, airport security coordinator, explains that the airport previously operated Airport Control and an AOC in separate areas. When there was an emergency, everyone who needed to be involved couldn't fit into either area. Messages were exchanged between the two centers using emergency radios and employees moving between the spaces.

The relocation and expansion allow for a more advanced design and collaborative work environment that can accommodate eight to 12 individuals. By eliminating certain hallways, Faith Group was able to gain an additional 900 square feet of space for new furniture, workstations and a separate conference room next to the AOC.

The facility was also fitted with low-profile access flooring, which raised the floor off the concrete but minimized the depth needed for cable raceways to maximize the center's ceiling height.

"The new airport operations center is fitted with a state-of-the-art audio/visual system that provides visual displays of the complex integrated system for situational awareness," Birdi says. "The A/V system integrates the displays in the AOC and the local conference room."

The completed project allows both departments to operate from the new AOC. "So, when there's an emergency, the AOC has direct communication with all control staff," Raver says.

The enhanced security system also included civil and site work to move vehicle gates, modifications to the perimeter fence line, and installation of new camera poles.

Many of the recent security enhancements are invisible to passengers.

"A big dollar component of the project was upgrading the infrastructure to manage all the new technology," says Jason Wallace, senior IT program manager for Faith Group. "We installed new cabling and electrical out to camera poles, vehicle gates and pedestrian gates."

Top-Tier Technology

According to Wallace, DAB's new system will redefine airport security standards when it is completed and functioning in July.

"This project is a state-of-the-art security system model for airport security technology," he asserts. "Very few airports have all of these cutting-edge systems in place today."

Faith Group teamed up with the airport to define its needs and then worked to leverage innovative solutions, especially in biometrics. The artificial intelligence (AI) facial recognition system from Alcatraz AI Facial Biometrics is highlighted as the most cutting-edge component. The AI-powered facial recognition and authentication system uses machine learning to streamline use for airport employees.

"Before, we had bio-readers that read your eyes as you went through the door," Martino says. "The new system scans your entire face instead of just the eyes."

The facial biometric scans are faster, adds Wallace, noting that it would take several minutes for a group of four people to enter through the same door with iris scans. "You no longer have to align your eyes for a scan before the door is unlocked, and repeat that process if it didn't work," he says. "All you need to do is walk up to the door, and the system will scan your face, then allow you to enter."

The project also added Qognify Situator, a modern physical security information management and situational awareness system that integrates multiple unconnected security applications, automates workflows and processes, and provides device control for airport staff. It links access control events to the video management system and promptly displays relevant camera footage on screen to enhance alert responses.

"Typically, you look at video, data and access control information separately," Raver says. "The [physical security information management system] lets us integrate those things together. We now have a single dashboard that lets us see everything we need to see."

The system improves camera views and bandwidth for higher resolution images that personnel view on an immersive video wall with three 85-inch displays that run 24/7. "We use the video wall to watch everything from camera feeds to access control logs, weather conditions and alerts and emergency service activations," Raver explains. "The video analytics capabilities of the system will make things a lot more productive for video surveillance."

Wallace highlights the project team's collaboration with the Volusia County IT Department to satisfy security requirements and achieve video redundancy. Video footage is stored onsite and in a separate physical location to ensure continued access if one system fails.

The foundation for the entire system is the Physical Access-Controlled Security Management System by LenelS2 OnGuard. This system handles the authentication and authorization process for individuals entering or leaving secure areas. It also acts as an alerting and alarming function for unauthorized access attempts or security breaches.

In addition, the airport installed a CyberLock CyberKey system on infrequently used doors. This system uses high-tech smart keys to provide real-time control to these access points. The keys can be programmed to only work at certain times, have expiration dates, and are assigned to specific people for easy tracking.

"It's a tremendous advantage to have programmable keys," Raver reports. "Now, we don't have to worry about changing the locks because someone lost a card key. If someone loses a key now, we can disable that key."

Birdi Systems installed a Federated and Integrated Solution that automates ID management and streamlines credentialing.

Typically, airport workers take a security test in one system, but access another system to receive their credentials. "This system integrates the testing solution with the badging solution so that when badges are issued, we know testing has already occurred," says Joanne Magley, DAB's director of Marketing and Customer Experience. "These systems are not separate anymore."

When employees quit or are terminated, the technology allows airport staff to promptly deactivate their badges.

The shift to a Federated and Integrated Solution prompted a few operational changes. The airport added an external portal to streamline and modernize the badge application process. It eliminates the need for paper and facilitates remote applications, but required a thorough training program, to help everyone prepare for badge appointments.

Outside the terminal, advanced security cameras were installed to continually scan the airfield, taking pictures at varying distances over set intervals. "They then piece it all together into one image that's available for viewing," Wallace says. "Operators can zoom in and see things as far as 300 meters away, which lets them conduct video surveillance in real time and review security incidents after the fact. If someone jumps the fence and enters the airfield, for example, they can see it in real time as well as piece it together later."

Testing and Training

A test lab designed and developed by Faith Group and Birdi proved to be an integral part of the project. It housed a fully functional and integrated security system, and was used to test individual units and end-to-end performance.

The entire system is scheduled to go online in July and will undergo an additional round of testing after 30 days in operation. During that time, on-site and remote training for system administrators and operators will be held.

"All users have different levels of access to the system, whether they are in the badging office, police officers or airport maintenance staff, and each must be trained appropriately," Wallace emphasizes. "As with any airport project, there's plenty of coordination getting things installed and operational."

The result will be a sophisticated, integrated system that keeps passengers safe without them ever noticing it.

The added layer of security fits in with DAB's efforts to deliver a positive passenger experience.

"In 2021, we did a $14 million major terminal renovation project that added new terrazzo flooring and carpet, let in more natural light, put in new ticket counters, and added a lot of amenities for passengers. Now we are doing a parking lot project," Magley says. "All these projects combined keep our security and our customer service features state-of-the-art to provide a great experience for travelers."

FACTS&FIGURES

Project: Increase Parking Capacity

Location: Boise Int'l Airport

Total Cost: $60 million

Owner & Funding Source: City of Boise, ID

EAST PUBLIC GARAGE

Size: 5 levels

Capacity: 1,148 spaces

Opened: July 2023

EMPLOYEE GARAGE

Size: 5 levels

Capacity: 700+ spaces

Opened: April 2024

Design/Architect of Record: CSHQA

Construction: MacAlvain

Structural Engineer/Engineer of Record: Walker Consultants

Civil Engineering: Ardurra Group

Geotechnical Consultant: Terracon

Key Benefits: Much-needed additional parking capacity to accommodate increased customer volume

Boise Airport Expands Parking for Growing Local Population

BY KRISTIN V. SHAW

Nicknamed Treasure Valley for its vast natural resources, Boise, ID, is having a moment. The Boise metro area consistently shows up on lists of the fastest-growing areas in the U.S., and Boise Airport (BOI) is making investments to handle the associated traffic increases.


SEAN BRIGGS

Deputy Director of Parking and Landside Facilities Sean Briggs, a local native and 10-year airport veteran, isn't surprised that the area is booming. "Boise is a great place to live," Briggs says. "We have phenomenal weather, and it's a clean, safe city. The growth of the region is pretty impressive."

As the local population surges—to the tune of about 80% in the last decade, Briggs says—BOI is opening its arms widely to welcome additional travelers. Like an expanding family, the airport needed an addition to its "house" to provide space for more vehicles. As part of a multiyear capital improvement plan to increase parking, terminal and gate capacity, BOI commissioned a five-level employee parking garage with more than 700 spaces, and a five-level, 1,148-stall public garage. Dubbed the East Garage, the public parking facility includes a new administrative office and parking exit plaza.

It's not a "build it and they will come" era for BOI. People are already showing up in droves, and having enough parking is already improving the overall passenger experience. Getting to this point required

a great deal of patience, grit and strategy. Now that both garages are finished, the BOI team can take a breath and start planning for the next influx.

Function and Form

The airport spent $60 million of its own money to design and build this two-year project. Both new structures were engineered to be highly functional and visually stunning: the employee garage, which faces a nearby highway, is adorned with a river design to represent the Boise River Valley. Not far away, the rooftop spaces of the East Garage afford views of the city skyline, nearby foothills, airport terminals and airfield runways. Ardurra Group, the civil and landscape firm that worked on the project under designer/architect of record CSHQA, helped enhance the aesthetics.

JUSTIN BILBREY

"I really liked how the landscaping turned out in front of the employee garage," says Justin Bilbrey, a designer from Ardurra. "We installed some custom 8-foot-wide planters along the north side of the garage facing the freeway, and it serves as a nice visual."

The garage project has been in the works for quite some time. The airport kicked it off with design work in 2019 and had planned to start construction in 2020, but the global COVID crisis decimated travel for several months. Taking a beat, BOI executives decided to pause the plan until they could get a better feel for when traffic might return to pre-2020 levels. When the project resumed in 2021, they came up with a strategy to help airport operations continue unabated.

The airport signed a two-year lease for a nearby parking lot, purchased shuttles and hired drivers to transport employees back and forth. Valet parking added about 200 spaces for the public, and BOI braced for a squeeze. During Spring Break this year, close-in parking was completely full, and the economy lot had fewer than 100 spaces left at peak. Not surprisingly, managing demand and inventory was in sharp focus. Behind the scenes, the project required traffic pattern adjustments.

"For the construction of the East public garage, we had to reroute short-term parking traffic through the existing garage," Briggs explains. "We cut out a wall and built a temporary road to reconstruct the exit and toll plaza, which was unique and challenging."

The asphalt road was in place for four to five months while crews built the new pedestrian bridge, toll plaza and ticket office. Then, the temporary road was dismantled and the garage wall rebuilt. After the ticket office and surface parking were ready, traffic resumed on its original path.

D vs. O

Walker Consultants helped the design team win the project bid with an alternate ramping system it says saved BOI $3 million to $5 million. Instead of sticking with the circular ramp in the original proposal, Designer Darrell Gallegos and the team from Walker suggested a ramp that looks like the letter D from above, because its conventional framing decreases construction time and cost. In contrast, a circular ramp would have required much more concrete due to its shape and construction requirements.

DARRELL GALLEGOS

BOB STANLEY

JILL SINGER

"The existing garage has two single-threaded helices—one inbound and one outbound," explains Engineer of Record Bob Stanley. "For the size structure we were building, the original concept had shown two more helices, and that was going to be overkill. Instead, we combined those into one singular helix. It's more constructible and still drives well."

Formwork and concrete construction are very expensive, Stanley explains, so to have two sets of formwork would have negatively impacted the budget.

"With the D ramps, we are able to accommodate the same amount of traffic and not take up a larger footprint," notes BOI Project Manager Jill Singer.

After winning the bid, the CSHQA/Walker/Ardurra team started mapping out the plan.

"At any airport, the challenge is to try to keep the airport running every single day during the process," says Stanley. "We figured out a phasing plan that made sense to minimize disruption and came up with three main phases of the project."

As the project progressed, BOI knew the crowding would get worse before it got better.

"I think the biggest challenge was that we had to take parking stalls out of our overall capacity," says Briggs. "We were at a point where we were strained already and had to remove parking stalls."


MARTIN HAHLE

Martin Hahle, the architect of record from CSHQA, was attuned to the challenge. "People had become so accustomed to readily finding a parking space in the past, and they would be shocked when there wasn't parking available," he explains. "They'd miss flights because they didn't have time to park at a remote lot. Now, the community is very excited and the new parking structure has restored the airport to a place where they could count on having parking available."

On that note, Stanley emphasizes the importance of working with project partners that have experience in the airport sector. "There are a lot of things happening at an airport, and you really do need to have people who are experts in this to guide the process to keep the costs under control and make sure there are no surprises," he advises.

Environmental Twist

A capped landfill on airport property presented the project team with an added challenge. BOI commissioned a soil report from environmental consulting firm Terracon to evaluate the risk for volatile organic compounds (VOCs) and help determine how to proceed.

"We put in a VIMS [vapor intrusion mitigation system] in case something became a VOC that needed to be monitored," Singer says. "We thought that was cheap insurance. We have all the piping, so if and when the Idaho Department of Environmental Quality requests a courtesy monitoring report in five, 10, or 15 years, we have the ability to do that monitoring."

Terracon oversaw the testing and material removal while excavating 18 to 20 feet deep in the landfill area.

"They removed any waste material that would organically break down over time and release gases," Hahle says. "And we positioned the garage to have very little overlap with the landfill."

Documenting and testing the soil around the landfill was critical to define any unknowns, Stanley emphasizes. Engineers determined what kind of weight that patch of land could hold, and Walker consequently recommended a ground improvement process that compacts the soil to minimize settling after the structure is built. In addition, engineers chose rectangular footings, rather than drilled footings, to spread the weight evenly and impact smaller areas of the ground.

From there, Walker specified post-tension concrete structures, which use high-strength steel cables to allow concrete to span longer distances and remain highly durable, lowering the overall cost of ownership. Project designers selected precast concrete panels for the exterior barrier walls because they're manufactured under controlled conditions with forms that create a smooth product with minimal imperfections.

Takeaways

Singer says the team learned a great deal by working closely with the airport's utility departments and securing their buy-in early on.

"We were coming out of post-pandemic workforce issues, and everyone was about two years behind," she recalls. "We needed to work with utility contractors to relocate telephone cables, water lines, gas and more. Understanding timelines and working together were the biggest lessons learned. We can have the best schedule in the world, but if we don't have buy-in from the utility stakeholders, it's just a chart with pretty colors."

Team members agree that oversight and communication were also key factors. Differentiating between "needs" and "wants" helped the team distill the plan, and building in contingencies for things like permit costs provided valuable breathing room.

Project leaders acknowledged the reality that mistakes happen, Singer explains. "Having those contingencies built into the budget and creating an approval process to use those

allowances was a great way to have those conversations right up front."

Briggs and Singer praise the general contractor, MacAlvain, for being communicative about its concerns from the start.

"You go in with the best intentions," Singer says. "Everyone starts as best friends, because you want to do the best thing. Then you have to figure out how you're going to build that relationship. You want to finish by shaking hands and looking forward to the next project."

Ultimately, both parking garage projects were finished on time and on budget. So BOI leadership can breathe a sigh of relief while the airport begins recouping its investment.

"Parking revenue counts for more than 30% of our total revenue," Briggs says. "Already we've seen parking revenue increased 25% year to date. We also have fewer expenses: fewer shuttles, less fuel and less maintenance overall."

Bilbrey, from Ardurra, is pleased by the outcome and sees the additional parking as a way for BOI to prepare for the future.

"The population has grown like crazy out here and as part of that, the airport is getting busier," he says. "As they look to add new flights, I think this is just good for everybody here."

The new employee garage has more than 700 parking spaces.

Already in the midst of more improvements to accommodate growing traffic, BOI is replacing its current rental car facility to clear the way for a major concourse expansion. The new seven-level consolidated rental car center, designed by HDR and Dattei Wong Architecture, is expected to have more than 1,000 read/return spaces, self-service customer kiosks and an enclosed walkway that connects to the terminal. Total cost is estimated at more than $90 million.

Sarasota Int'l Gets Creative Introducing Local Students to Aviation

BY PAUL NOLAN

srq SARASOTA BRADENTON INTERNATIONAL

FACTS&FIGURES

Project: Take Your Child to Work Day

Location: Sarasota Bradenton Int'l Airport, in FL

Airport Owner: Sarasota Manatee Airport Authority

Cost: Minimal—T-shirts, badges, meals & snacks

Key Objective: Engage & educate children of airport employees & airport business partners

Participation: 28 children (up from 17 in 2018)

Age Range: Kindergartners-high school students

Project: After-School Aviation Program

Location: Team Success Charter School, adjacent to Sarasota Bradenton Int'l Airport

School Enrollment: About 600 students, grades 6-12

Program Enrollment: To be determined this fall

Key Objective: Teach students about aeronautics; highlight aviation career opportunities

Given the daily hustle and demands of operating an international airport, it can be tough finding time to build relationships with the greater community. However, leaders at Sarasota Bradenton International Airport (SRQ) on Florida's Gulf Coast know that such efforts are not just vital to developing a positive service-oriented identity; they can also be effective early recruitment tools to support the long-term success of the airport.

The forward-thinking team at SRQ is grooming future members of its workforce decades in advance with two community outreach programs: an enhanced annual Take Your Child to Work Day and a unique partnership with a secondary school.

Team Success, a Sarasota charter school for underserved students, is opening a new campus this fall for students in grades six through 12 on property adjacent to SRQ that is owned by the Sarasota Manatee Airport Authority. As a nod to its airport neighbor and landlord, Team Success will offer an after-school program that highlights aviation careers and aeronautical subjects like the mechanics of flight and aviation history. According to the program director, material from the after-school sessions may pave the way for future aviation classes.

Tomorrow's Workforce

As leaders at SRQ explain, a key step to engaging their future workforce is introducing students to a wide range of aviation career opportunities while they are still young. That's one reason Marketing and Community Relations Administrator Susan Reimann promptly organized activities for Take Your Child to Work Day when she joined the Marketing and Community Relations Department in 2018. Previously, the airport did not participate in the national event observed each April. Since Reimann started working there, SRQ has sponsored a new slate of activities every year.

Reimann recalls bringing her daughters to work with her in the 1990s, when she was at Dulles International Airport. "It was huge deal for them. They loved the experience," she recalls. "When I got this position, I thought it was important we do that here."

The first such event at SRQ drew 17 children of Airport Authority workers, ages 6 to 18. This past April, 28 children, ages 5 to 19, came to work at the airport with parents. Many airport departments got involved to make the day a success; aircraft rescue and firefighting (ARFF), Airport Police Department, Human Resources, Facilities, Engineering, Purchasing and Properties all played a part.

Always working to enhance the lineup, SRQ Properties enlisted the participation of two airport tenants for this year's event: Unipak Aviation, a privately owned repair station specializing in maintenance, repair and overhaul services, manufacturing and aircraft on ground services; and Boca Aircraft Maintenance, which provides maintenance and general services for FAR 135 air carriers, corporate and personal aircraft.

Donuts, Pizza and Hands-On Activities

The 2024 event started with breakfast provided by HMSHost and welcome remarks from SRQ President and Chief Executive Officer Fredrick J. Piccolo. Each child also received a T-shirt and an official-looking airport access badge. After breakfast, they headed to the Airport Police Station and Airport Operations for a tour.

The children were then shuttled to Unipak Aviation for a tour and to Boca Aircraft Maintenance, where they ate again—this time, donuts, water and soda. (In retrospect, event organizers realize they need to coordinate food plans better next year, but the children certainly enjoyed the extra treats.)

At the Boca Aircraft Maintenance hangar, participants got to board a Learjet. They also got to check out its engines, which they had seen components of earlier at Unipak Aviation. While some of the kids had been on commercial airplanes before, seeing a corporate jet up close was a highlight of the day, says Diane M. Drakulich, property leasing manager for Sarasota Manatee Airport Authority.

A new middle/high school is scheduled to open adjacent to the airport this fall.

Other activities included a tour of the ARFF facility, where participants boarded a fire truck and had the chance to test their aim with a fire hose. A visit to the ARFF maintenance facility provided an opportunity to climb aboard more heavy machinery—always a popular part of the day.

DIANE M. DRAKULICH

Broadening Horizons

The annual event gives young participants a better perspective of what really goes on at an airport, and introduces them to a wide range of careers they might not otherwise know about.

"Most people think when you come to an airport, you have pilots, flight attendants, ticket counter workers and people moving bags on a ramp. There is so much more than that," Reimann emphasizes. "I don't think people realize that we are like a small city. We have electricians and plumbers and our own fire and police departments. We have air traffic controllers in the tower and people working on communications. [Take Your Child to Work Day] opens young people's eyes to all the things that happen at an airport and gives them a good idea about all the career opportunities associated with aviation."

Airport workers who accompanied their children for part or all of program learned something as well. Drakulich notes that the day was a noticeable morale boost for employees because they gained an appreciation for how vital the airport tenants—and their role—is to the aviation community. "Susan [Reimann] and I received so many emails from the parents who were there with their children and the excitement they felt afterwards," she remarks.

Year-Round Education Partnership

Airport officials hope the Team Success after-school aviation program will generate similar excitement. Jake Loomis, Social Studies Department chair and director of the after-school aviation program, explains that Team Success is a Title I school that is federally funded and focuses on raising the achievement level of children from low-income households.

It opened in 2010 exclusively for kindergarten through fifth-grade students but later expanded to include middle and high school as well. Enrollment has grown steadily to about 1,200.

When Team Success was looking for a site to build a new campus for grades six through 12, a vacant 15-acre parcel adjacent to the airport seemed like a good fit. The Airport Authority and Team Success at SRQ reached a lease agreement in 2020, and the school is scheduled to open this fall with about 600 students.

When the Airport Authority sent the lease agreement to FAA, the agency

Students ages five to 19 were exposed to a variety of aviation careers at the airport's annual Take Your Child to Work Day in April.

recommended that the school implement an aeronautical curriculum and aviation immersion program.

The Airport Authority also entered into an agreement with Manatee County School District in 2020, which will be the new home for Manatee Technical College.

Loomis has taken the lead in creating an outline for the after-school aviation immersion program curriculum. Students will learn about aviation history as well as many aspects of operating an airport, from security, air traffic control and working with the airlines, to the importance of monitoring weather and wildlife containment.

In addition to its support role for the after-school program, the Airport Authority will work with tenants to create internship opportunities for older students. Drakulich says the ultimate vision is to create an aviation community that serves as a direct pipeline for students at Team Success and Manatee Technical College, and ultimately into aviation careers.

"We need to get these kids excited at an early age so they don't miss opportunities. There are things they can be involved in now to help shape their future," she remarks. "We're running out of mechanics and other important workers in aviation. Kids may think about becoming a pilot or flight attendant, but they don't think about the people on the ground and in corporate positions. Through this partnership, they'll see there is so much involved in running an airport or an airline."

Loomis is optimistic about the positive impact the new campus will have for older students. "Team Success has become a niche for low-income, minority students, so we see the importance of exposure beyond traditional education," he says. "Because of the population we serve, a lot of our kids see fewer options in terms of careers. This is another way for them to broaden their exposure to career opportunities.

"Exposure to aviation can also lead to travel, which broadens your horizons and world view," he adds. "That's important for our kids, many of whom have not left the county much less the country."

Loomis notes that the aviation community as a whole has been extremely helpful and welcoming to the school and its administrators. In addition to receiving primary support from SRQ and other airport businesses, the school has received offers of help from the Young Eagles, a division of the Experimental Aircraft Association; the Civil Air Patrol; and the Florida Goldcoast Ninety-Nines, an organization that promotes the advancement of women in aviation.

"I didn't realize the aviation community is such a vibrant one," he exclaims.

Between Team Success at SRQ and the airport's annual Take Your Child to Work Day, local students interested in aviation are bound to set sky-high goals.

SMART AIRPORTS & REGIONS

NEXT AIRPORTS AND REGIONS

CONFERENCE & EXHIBITION

9TH ANNUAL SMART AIRPORTS & REGIONS CONFERENCE & EXHIBITION

10 - 12 July 2024 | Denver, Colorado, USA

HOST

DEN

Affiliate Partner

IAP CoP 2024 Forum

Diamond Sponsor

Platinum Sponsor

Platinum Sponsor

Ribbon Cutting & WIFi Sponsors

Gold & Pre-Conference Workshop Sponsor

Cruising Altitude Sponsor

Gold Sponsor

Gold Sponsor

Gold Sponsor

Gold Sponsor

Gold Sponsor

Gold Sponsor

Gold Sponsor

Gold Sponsor

Gold Sponsor

Gold Sponsor

Lanyard Sponsor

Silver Sponsor

Silver Sponsor

Silver Sponsor

Silver Sponsor

Silver Sponsor

Silver Sponsor

Silver Sponsor

SMART Sponsor

SMART Sponsor

SMART Sponsor

SMART Sponsor

Refreshment Break Sponsor

Refreshment Break Sponsor

Refreshment Break Sponsor

Media Partner

Media Partner

Media Partner

Media Partner

Media Partner

Media Partner

Find out more on smart-airports.com/sar

FACTS&FIGURES

Project: New Terminal

Location: Newark-Heath Airport, in Ohio

Annual Operations: 13,000

Terminal Size: 4,300 sq. ft.

Cost: $2.7 million

Funding: 75% FAA; 20% county, 5% state

Construction: June 2022-July 2023

Engineering/Design Consultant: Crawford, Murphy & Tilly

Prime Contractor: Robertson Construction Services

Associated Projects: Community box hangar; 13 T hangars; terminal apron/taxi lane; airfield electrical vault; new maintenance facility; relocating buildings away from main taxiway

Electrical & Lighting Equipment: Jess Howard Electrical

Storage & Maintenance Hangars: Slaybaugh Construction

Maintenance Hangar Relocation: Dingey Movers

Environmental Systems Manager: EHS Company

T Hangars: Robertson Construction Services

Airside Ramp: Kwest

Demolition of Old Terminal: GM Construction

Terminal Security Fence: Ables Fence

Camera System: Mid-Ohio Security

Phone & WiFi Systems: Centratech

FBO: Aviation Works

Newark-Heath Airport Makes Major Upgrades

BY MIKE SCHWANZ

Located about 40 miles east of Columbus, OH, Newark-Heath Airport (VTA) is in one of the fastest-growing areas in that state. Currently, the general aviation airfield logs about 13,000 operations a year, but traffic is expected to escalate based on Intel's plans to invest $20 billion in the area, including a large manufacturing plant that will produce semiconductor chips. The company expects to create up to 3,000 new jobs in the next few years—including many high-wage software engineering positions.

To meet a likely surge in activity at the airport, VTA officials knew they had to improve several facilities. But before any changes could be made, they had to satisfy federal regulations concerning the airfield layout. "The FAA had ruled that our old terminal, maintenance building and a few other buildings were too close to the taxiway, and had to be moved or removed," states Terry Treneff, president of the Licking County Regional Airport Authority. "Any new renovations had to resolve those issues."

TERRY TRENEFF

For help navigating the FAA requirements and its own wish list for a new terminal and other improvements, VTA hired engineering consultant Crawford, Murphy & Tilly. It was awarded a five-year contract in late 2019 and began planning in January 2020.

Key projects included:

- new terminal;
- community box hangar;
- 13 new T hangars;
- terminal apron/taxi lane;
- new airfield electrical vault;
- new aircraft maintenance hangar facility;
- relocating existing maintenance building about 300 feet away from the terminal and main taxiway; and
- demolishing a few older buildings.

"This project had several [interrelated] moving pieces," Treneff remarks. "For example, we could not tear down the old maintenance building until the new maintenance building was up and running. Our FBO could not be moved until the new terminal building was completed."


GREG HEATON

The centerpiece of the entire plan was building a new $2.7 million terminal. "In our planning meetings with airport officials, we wanted to create a gateway into our region that would reflect its growing prosperity and importance," explains Greg Heaton, vice president and Aviation Group manager for Crawford, Murphy & Tilly. "We wanted a building that is much more upscale and distinctive than is found at a typical general aviation airport."

The new facility was built about 450 feet away from the old terminal, comfortably separated from active airfield areas. At nearly 4,300 square feet, it is more than three times the size of the old terminal, with a spacious lobby, conference room, pilot lounge, kitchen, FBO office, restrooms and storage. Designers incorporate plaques and photos highlighting the history and geography of Licking County.

The new FBO maintenance hangar is 64 feet wide by 78 feet long and includes a shop, restroom and storage space. It is located just 50 feet from the main terminal.

One of the more unusual aspects of this project involved relocating the airport's existing steel maintenance building. Crews lifted the building off its foundation and used four radio-controlled mobile jacks to move the building, and then place it on a new foundation and slab about 300 yards away from the taxiway.

"We had to wait on moving this building until the new terminal building and the new maintenance hangar were finished, so the FBO could continue to operate. In the end, just moving the old building instead of building a brand new one saved us a lot of money," Treneff explains. "I had a bid of $1.1 million to build a new hangar, but using this method the cost was only $190,000."

Now in its new location, the old maintenance hangar is used to store tractors, trucks and mowers.

Unexpected Funding Source

The project at VTA was one of the first two in Ohio to receive funding through the FAA Airport Terminal Program grants, a new funding source included in the Infrastructure Investment and Job Act (IIJA) passed in 2022. The $1.85 million awarded for this project, along with a $383,000 Airport Improvement Grant, was pivotal in helping the county upgrade VTA.

"Originally, we expected to have to get a long-term loan to do these improvements," Treneff explains. "But just as we were seeking financing, we received the extra funding from the Airport Terminal Program. This allowed us to make all of the improvements in our original plan without going into debt."

In the end, FAA covered about 75% of the project cost, with the county and state picking up the rest of the tab (20% and 5%, respectively). Final cost of the terminal project was about $2.7 million.

Added Environmental Challenges

Designing and constructing the new terminal over an environmental sparge system presented special challenges.

Decades ago, an oil production facility located north of the airport leaked toxins into the underground water table. In the 1990s, the Environmental Protection Agency identified and began tracking a sizable plume of benzene in the ground, and an underground oil remediation sparge system was installed to address it. The sparge includes a system of PVC pipes buried at shallow (1 to 3 feet) and deeper positions (10 to 11 feet), as well as monitoring wells and valve access points throughout the airport's former and current terminal areas. The system introduces high-pressure air beneath the contaminated soils and recaptures it in the upper pipe network. This creates a remediating effect on the benzenes and facilitates the collection of discharging methane gases for proper disposal. The approach is somewhat similar to the system of pipes that stick out of the ground at landfill areas.

When designing and constructing the new terminal and maintenance hangar facilities, the project team avoided the pipe system whenever possible and relocated elements when required. Observation well points and valve access points were considered key locations. Designers also added a vacuum piping system under the building to eliminate the vapor odor.

The porous nature of the soil at the building site was another challenge. The ground would not provide sufficient support for the new terminal's foundation system, so Crawford, Murphy & Tilly evaluated several alternate solutions. Ultimately, engineers designed rammed aggregate piers to support a traditional building foundation. The system uses soil displacement to strengthen soft soils through a method that prestrains and prestresses it. Although such systems are common in certain regions of the country, they are rarely needed on construction

Designers focused on making the new terminal more upscale and distinctive.

projects in central Ohio given the state's geology. A specialty contractor, Geopier, assisted in the design and construction of the support system.

Lastly, the highly aerated soils required extensive coordination and review with local environmental offices because the soils had infiltration rates far beyond standards. Due to the complex pipe network and contaminated soils, below grade detention areas or underground storage that allowed leaching or exposure to groundwater were not viable to meet stormwater requirements. Careful calculations were required to achieve required volume, and extensive coordination was needed to find a solution of contained underground storage that threaded the needle of pipe networks, observation wells and geopiers at the crowded building site.

Heaton reports that the complex system has worked seamlessly without any environmental issues since the new terminal opened July 2023. It allows for continued remediation while meeting stormwater requirements and ensuring the health and safety of airport patrons.

More Improvements

Other ongoing projects include new area lighting to provide additional security and safety, pavement construction, installation of a new drainage system and additional airfield lighting.

"The terminal was just one of eight projects we have in the works, and each of those required a different budget and funding request. This was a real balancing act," says Treneff. "But the new terminal, hangars and maintenance building have been very popular among our clients. And when these other projects are finished in the next year or so, we will have a beautiful airport and will be well set for future growth."

HEADLINE SPONSOR

MAIN 2024 SPONSORS

2024 SPONSORS

EXHIBITORS & SUPPORTERS

PARTNERS

Wilkes-Barre/Scranton Int'l Builds New Quick-Turn Facility for Rental Car Operations

BY NICOLE NELSON

After a long time coming, an updated quick turnaround facility for consolidated rental car operations at Wilkes-Barre/Scranton International Airport (AVP) became fully operational last fall.

"Now that we put it in place, the customer experience has just skyrocketed," says Carl Beardsley Jr., executive director of the Pennsylvania airport. "It is so much better than it used to be."

CARL BEARDSLEY JR.

An $11 million project transformed a 2.68-acre plot of land that had been an eyesore for decades into a new support center for the six rental car companies that serve customers at AVP. Crews demolished an old car wash and built a quick turnaround facility with three wash bays (two automatic, one for hand washing) and six fueling positions containing three pumps – each with two hoses per rental car brand.

The 10,580-square-foot building was developed by Conrac Solutions, designed/planned by PGAL, and constructed by LR Costanzo to align aesthetically with the adjacent terminal. Operationally, there was an emphasis on increasing efficiency by decreasing turn times for processing vehicles.

Internal Purpose, External Care

Although the new facility is a back-of-house operation where crews receive vehicles and prep them for renting again, it still has public-facing features. Beardsley is especially proud of the paved walkway with a protective canopy that shields customers renting and returning vehicles from inclement weather.

"We are definitely seeing improvements all around," he remarks. "Our customers and the people who live in this area have never had a facility where they're able to walk covered from the ready return lot all the way over to the terminal building. Until recently, it was unheard of here at AVP."

Landscaping, another amenity the previous facility lacked, was added to improve the appearance of the new building.

Worth the Wait

Executing the improvements took time—about eight years from initial explorations to the official opening in October 2023. Ultimately, the project was completed on budget with minor value engineering.

FACTS&FIGURES

Project: Quick Turn-Around Consolidated Rental Car Facility

Location: Wilkes-Barre/Scranton (PA) Int'l Airport

Owner/Operator: Luzerne & Lackawanna counties

Key Components: 10,580-sq.-ft. building; 2 automated car wash bays; 1 hand wash bay; 6 fueling positions; covered walkway

Footprint: 2.68 acres

Cost: $11 million

Project Duration: 2016 to 2023

Opening Date: Oct. 26, 2023

Owner/Developer: AVP QTA LLC; Conrac Solutions

Project Delivery Equity Financing: Provided by iCON Infrastructure; arranged by CS Capital

Facility Operator: Conrac Solutions Operators

Architect: PGAL

Design/Build: LR Costanzo Co.

Subcontractors: Ritsick Plumbing; Sproul Construction; Troy Mechanical; Urban Electrical

Not one to sugarcoat his words, Beardsley says the process was "definitely a struggle at times."

Early discussions started in fall 2015, when Conrac Solutions approached AVP about enhancing fleet turnaround services for its on-airport rental car operators. By 2016, the airport commissioned the company to complete a feasibility plan, including project cost and scope. Site selection for the proposed design/build project was also set into motion.


MICHAEL MINERVA

Michael Minerva, chief executive officer of Conrac Solutions, notes that the AVP project had a long history with numerous steps, the timing of which was often out of his team's control.

"There was an analysis of potential government funding for this project—or to subsidize it—and that didn't happen," Minerva explains. "Then COVID hit, and everything sort of stopped."

At the height of the pandemic, labor and supply chain issues threw a wrench into the works.

"We had a tough time with gaining needed parts and having a sufficient amount of employees," Beardsley explains. "Every time we thought we had everything taken care of, something else would pop up and hit us in the backside of the head. Nonetheless, it always came through."

Wait times for long-lead items such as fueling equipment and car wash systems stretched even longer than usual due to the disconnected supply chain. "You just never knew what was going to happen next," Beardsley recalls.


JEFF WEINER

Components such as pumps, vacuums and even common electrical switch gear were particularly difficult to source. But PGAL Executive Vice President Jeff Weiner was impressed with the design-build contractor's efforts to overcome prevalent supply shortages.

"LR Costanzo Company did a great job minimizing impacts, but some of the equipment needed were long-lead items, not like your traditional building materials," says Weiner. "We were all faced with price increases as well as supply chain issues."

Strong Finish

Once the sourcing issues were surmounted, momentum shifted and the project began moving quickly.

"We had a groundbreaking on Oct. 26th of 2022, and a ribbon cutting exactly a year later," Minerva reports. "I give a lot of credit to Carl Beardsley and the airport board for shepherding this project through and never losing sight of the goal."

The result is a rental car quick-turn center designed to withstand the test of time and blend with the surrounding AVP terminal. "This is definitely a utilitarian and service building, but it is done in the way that it should last decades with proper maintenance and care," says Weiner.

Minerva commends Beardsley and the airport's bi-county board (Luzerne and Lackawanna counties) for staying focused on the end result. "I know it took a lot of time, but once everybody decided to press Go, it moved very quickly and very efficiently through their governance process and through the construction phase," he says.

Reciprocally, Beardsley commends Conrac Solutions, the airport board and other project partners for doing an excellent job working through multiple issues to bring the new car rental facility into service. "The design/build team that we worked with on this project were very positive and they were able to move along when we needed them to move along," he remarks.

Move along they did, and now AVP's quick turnaround facility stands as the product of their cooperation and performance.

"Stakeholder collaboration is always important just to get to a point to have a common-use facility where there is competition between companies," Weiner explains. "What we were able to build at AVP is what was needed for the future."

Time for a Touch Up

The Traveler has been amazing and amusing visitors at Orlando International Airport (MCO) ever since it was installed in 1985. The ultrarealistic life-sized sculpture often confounds passersby. Some watch intently for the weary-looking figure to move or blink, while others mutter "Is he real?" to no one in particular.

The statue, created by Duane Hanson, recently inspired even more curiosity when a professional art conservator climbed into its display case to refresh the nearly 40-year-old piece. As Diana Galante carefully cleaned the entire surface and filled in areas where paint was missing, people hurrying through the terminal stopped in their tracks to watch the mesmerizing, meticulous process.

"It's not often I get to be part of the installation," Galante remarked.

This was not the first time MCO has refurbished its beloved bronze sculpture. Hanson and an assistant touched up his work several times before he died in 1996. Originally, *The Traveler* was installed near a bar with no barrier around it. While this enhanced the sculpture's impact, viewers often poked the artwork to see if it was actually a live person, and some threw coins at it for good luck. Eventually, the popular piece was placed in an acrylic box for protection and moved to its current location on Level 3.

The Traveler is highly representative of Hanson's work, which typically features working-class subjects dressed in everyday garb. His technique was to cast live models and then paint the

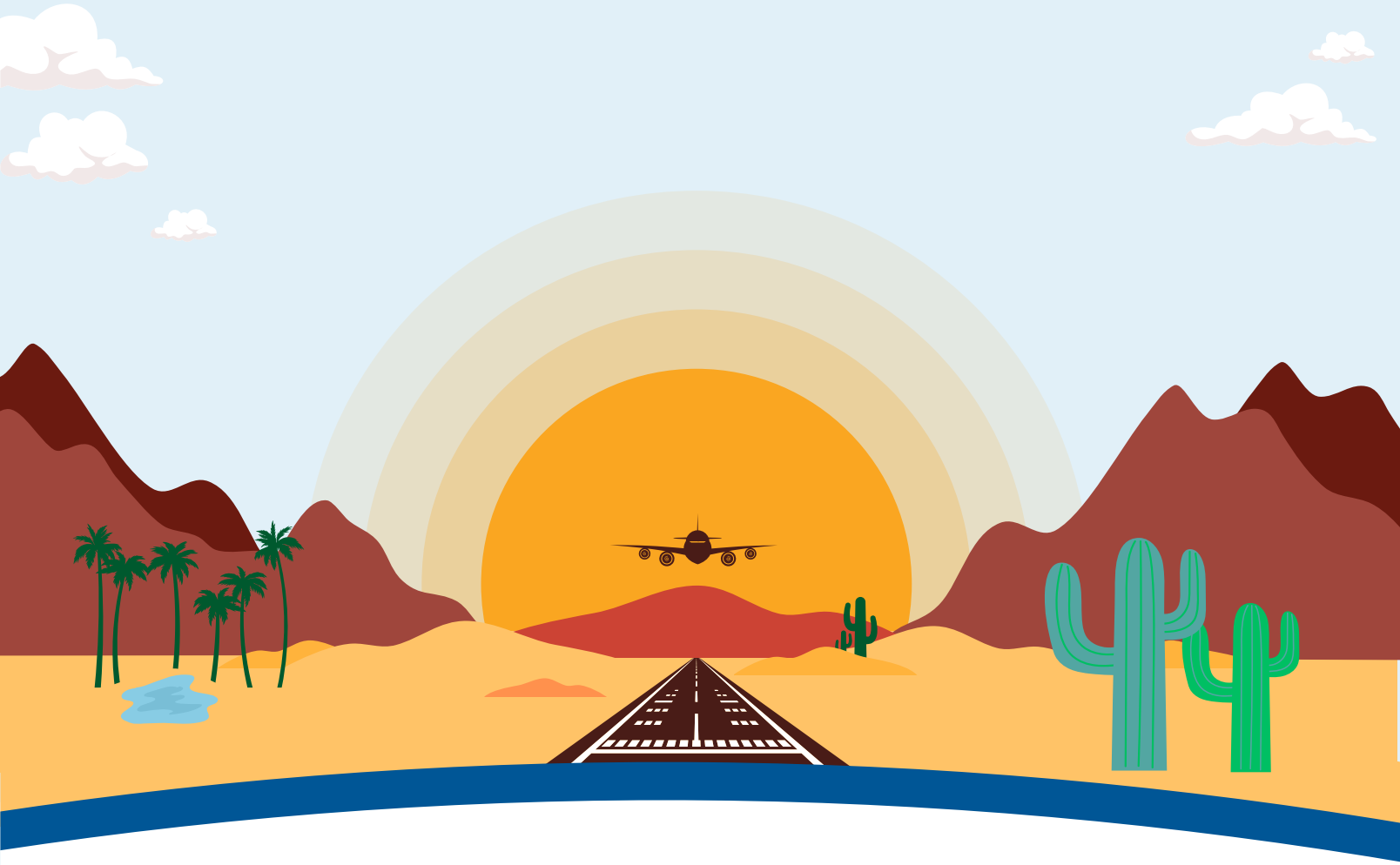
figures in exacting detail, amplifying the realism by including natural imperfections such as blemishes, bulging veins, rumpled clothing and scuffed shoes.

"My art is not about fooling people," Hanson once said. "It's the human attitudes I'm after-fatigue, a bit of frustration, rejection. To me, there is a kind of beauty in all this."

But the uncanny accuracy of his work *does* fool viewers. When MCO unveiled *The Traveler*, the crowd gasped in surprise when the model for it (one of Hanson's neighbors) stood up and walked away after sitting motionless on the floor next to the artwork for several minutes.

Nearly four decades later, the lifelike sculpture is still causing double takes.

To see a time-lapsed video of the touch-up process, visit fb.watch/pwYE5579IY/.



46th Annual Conference

Scottsdale, Arizona | October 21 - 23, 2024

Evolving Beyond a State of Good Repair

Through a diverse range of presentations, workshops, and networking opportunities, ACC aims to explore innovative strategies and emerging trends in the aviation industry while balancing leadership development, burnout prevention, equity, and more.

Registration opens soon! Visit the website to learn more.

A Bittersweet Goodbye

I look forward to July 1, 2024, with a profound sense of achievement. On that day, as I had planned nearly a year ago, I will retire from my role as general manager of Hartsfield-Jackson Atlanta International Airport (ATL). After more than three years in this demanding position, leaving the incredible people who operate ATL and form our "One Team" will be a bittersweet moment. I am forever indebted to this remarkable team, whose dedication and hard work have enriched my life and taught me invaluable lessons.

My history at ATL is unique. I began 22 years ago in Operations and eventually ascended to the airport's top position. As I reflect on my two decades of service to the city of Atlanta and ATL, I ask for your indulgence in sharing a few parting thoughts.

"Endeavors succeed or fail because of the people involved," Gen. Colin Powell wisely said. He could not have been more correct: ATL's success is a testament to its 63,000 employees, each responsible for crucial operations. As a retired United States Army aviator, I hold a special appreciation for Gen. Powell. I would be remiss if I didn't include the rest of his quote: "Only by attracting the best people will you accomplish great deeds."

It is, first and foremost, the people who make ATL such a special place.

In many ways, managing an enterprise as complex as ATL is similar to running a city. Safety and security are paramount for the nearly 300,000 passengers traveling through our facility daily. It takes the total commitment of dedicated men and women to accomplish this.

ATL's success is a testament to the power of collaboration and coordination. We are fortunate to work with some of the industry's finest professionals, including staff and leadership at TSA, CBP, FAA, airport stakeholders, contractors and the airlines. Our longstanding relationship with Delta Air Lines, spanning over 95 years, is a prime example of how mutual respect and cooperation can lead to significant growth and economic opportunities. These partnerships demonstrate what can be achieved when we all work toward a common goal: providing safe, secure and exceptional travel experiences for our customers.

The aviation industry is vibrant and robust today, in large part because of our advocates. AAAE, ACI-NA and AMAC always challenge us to engage in and innovate best practices and share our accrued knowledge across the industry. I strongly encourage continued partnership in the areas of infrastructure funding, sustainability, diversity and inclusion, workforce development and technology, as these areas will strengthen and enrich our industry.

As we look ahead, we plan for continued growth. ATL will serve 1 billion passengers in the next decade, manage 8 million aircraft movements, and—to accommodate all that—continue its $10 billion capital improvement program. Hartsfield-Jackson pays particular attention to the legacy left by former Mayor Maynard Jackson, Jr., who stated that communities should be allowed to work at ATL. Over the next 10 years, ATL will host major events, including the ACI Global Customer Experience Summit in 2024, AAAE's Annual Conference in 2025 and FIFA's World Cup in 2026. It's quite a daunting list, but ATL has done it before. I look back with pride on our past two decades of work. ATL added a fifth runway, built a new 12-gate international terminal, a consolidated rental car facility, an elevated train system and an in-line baggage screening system, among many other projects.

Balram "B" Bheodari *is retiring as general manager of Hartsfield-Jackson Atlanta International after a total of more than two decades at the airport. One of several notable achievements during his executive tenure was leading the airport through the challenging COVID-19 pandemic, from drawdown to resumption of its expansive operations.*

I was incredibly fortunate to work for visionary leaders who built upon the legacies of mayors William Hartsfield and Maynard Jackson. Mayors Bill Campbell, Shirley Franklin, Kasim Reed, Keisha Lance-Bottoms and Andre Dickens provided support, encouragement and direction. Mayor Lance-Bottoms, who appointed me to the top job, and Mayor Dickens, who reaffirmed the appointment, both hold a special place in my heart. Additionally, I would like to acknowledge one of my mentors, Ben DeCosta, a long-serving ATL general manager, for his dynamic leadership in future-proofing ATL.

As I prepare to embark on the next chapter of my life, I am filled with a sense of optimism. The one certainty I am blessed with is the unwavering support of my family, and for that, I am eternally grateful. Looking back at our industry's achievements, I am confident that the future holds even greater promise and potential.

Airport Projects Profiled Here

Featuring Airports, Their Consultants & Suppliers

AirportImprovement.com

The Show & Tell of Airport Project Work

Go decentralized.

Achieve up to 50% in energy savings while maintaining a high level of productivity.

Baggage sorters are true high-performance systems. They gently and accurately convey baggage at high speed to the right destination and are perfectly supported by our highly dynamic, intelligent, and efficient linear drives. Airports around the world rely on SEW-EURODRIVE because of our reputation for delivering drive and automation solutions that have a reliable long life of trouble-free operation and above-average efficiency. Decentralized installations of our synchronous linear motors and economical mechatronic drives ensure a high level of productivity, and deliver energy savings of up to 50%. On top of all that, our drives have quiet, vibration-free motors – a huge bonus for both passengers and staff.

Contact your SEW representative today to find your solution. → seweurodrive.com

SEW EURODRIVE