

AIRPORTS & PARKING GARAGES/DECKS TODAY

PHOTO: CD P COMMERCIAL, LLC

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The atrium ceiling in a new concourse at Phoenix's Sky Harbor Airport Terminal 4 features soft, noise-reducing baffles made from recycled plastic water bottles. The benches feature wireless charging stations and are made from 100% FSC wood and steel framing with recycled content.

Funding Improvement

Durability and Sustainability Drive Airport Construction

By Marge O'Connor

WHAT'S INSIDE

- ♦ Airport Improvements Focus on Technology and Sustainability
- ♦ Stabilizing Canal Banks Near Miami International Airport
- ♦ Pittsburgh International Airport's Terminal Modernization
- ♦ Raising a Runway to Get Funding

High-Tech, Sustainable Airport Upgrades

Design and construction for airports across the U.S. will go on for a long time. These much need improvements will emphasize sustainability, durability and environmental concerns.

Funding for the upgrades comes from two programs. The FAA's Airport Improvement Program (AIP) supplies \$518 million and the bipartisan infrastructure law allocates \$20 billion for airport improvement projects not covered by the AIP. "One part of the AIP is entitlement dollars, where large and primary airports as well as smaller ones receive grants for design and construction based on enplanements/cargo or population size. The other part is a discretionary pot for capital improvement. Airports compete for those dollars. This pot is provided separately by Congress and can be used in the competitive environment

to complete projects," says Shannetta Griffin, FAA's Associate Administrator for Airports.

All the funding applies to planning, design and construction but has an added dimension. "The AIP program, which supplies \$3.2 billion annually, has always been equitable, but the bipartisan legislation has enhanced that. The funds are intended to help change the dynamics of smaller and disadvantaged areas by making things more resilient, sustainable, environmentally sound and equitable. It will allow needed food and medical supplies to get to those communities via air cargo and passenger services," says Griffin.

During the pandemic-related slowdown, the federal government provided a financial cushion to offset lost funds. Now, airports are eager to move forward on much needed projects.

"This push toward expanding eligibility for terminal and vertical projects reflects what our partners said in our survey about industry needs," says Sr. VP of Safety and Regulatory Affairs at Airports Council International, North America, Chris Oswald.

Vice President of Aviation for McCarthy Building Companies, Inc., Mark Crosby also emphasizes the need for improvements. "Old terminals were built with lots of concrete and limited natural lighting. Now we're using 'smart' windows that adjust the light coming into terminal passageways, waiting areas and concessions, where lighting can change comfort levels and impact concession revenue. Advancements in construction as far as sustainability, energy efficiency, expanded WiFi infrastructure, and even touchless technology, should be part of any future facility plans," says Crosby.

McCarthy recently completed a new concourse and connector bridge at Phoenix's Sky Harbor Airport Terminal 4. LEED Silver certification is being pursued, with energy-saving measures like electrochromic glazing that changes window tints based on outside temperatures and the sun's angle. Also, old concrete was reused onsite for backfill, and all reinforcing steel was recycled.

Airports also need to add more comfort and efficiency. "Two things customers complain about are restrooms and parking. Now, restroom stalls are larger to accommodate luggage, and garages have parking guidance systems that direct customers to where space is available," says Crosby.

Efficiency is critical across the board. "Growing fleets of EVs for airport ground equipment and evaluating energy use is more of a focus now. Key elements for our members are implementation of more automation in HVAC systems, passenger flow systems and baggage handling," adds Oswald.

Options abound for airport improvements. Now, the funding will make things happen. ♦



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Z-Shaped Sheet Piles Are Used to Stabilize the Banks of the Tamiami Canal

A small, local business, just entering the world of steel sheet pile driving, was awarded the contract for a new bulkhead at Miami International Airport.

Quality Construction Performance, Inc. (QCP), based in Miami, is proud of their work with the engineers at Nucor Skyline. They designed a special sheet pile connector that would allow threading to the existing sheet piles which had a different interlock and were at a right angle to where the new wall needed to be driven. The Nucor Skyline Z-type sheet piles were 55 ft long and embedded 46.5 ft into the ground to stabilize the soil bordering the Tamiami Canal west of NW 42nd Court in Miami.

The South Florida Water Management District would not allow access to drive the sheets from within the canal, so the sheet piles had to be driven from the opposite bank using a 250-ton Kobelco Crane CK 2500-II with a 170-ft lattice boom, as well as an ICE Vibratory Hammer 44B with 595G Power Unit.

For more information on using Nucor Skyline steel sheet piles in your next project, visit www.nucorskyline.com. ♦



Z-type sheet piles used for ground stabilization on the grounds of Miami International Airport. A special sheet pile connector was designed to allow threading to the existing sheet piles which had a different interlock.

PHOTO: QUALITY CONSTRUCTION PERFORMANCE, INC.

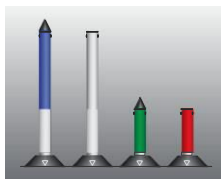
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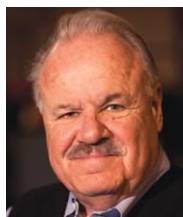


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On the Scene: National Steel City Constructs Pittsburgh International Airport's Terminal Modernization Program

By Bob Dunn, Chief Executive Officer, National Steel City

As we enter the third quarter, I am pleased to provide an industry update on National Steel City (NSC) and our many accomplishments to date, including working on one of our nation's leading airports, Pittsburgh International.

We successfully and safely completed our portion of Kansas City International Airport's Single Terminal project in Missouri last year with partners at United Rentals and Ironworkers Local 10. Shortly after that, we landed our next large infrastructure project for Pittsburgh International's new Terminal Modernization Program. On this, we are working with Ironworkers Local 3 and in partnership with Sippel Steel Fabrication, Ambridge, Pa., and Mascaro Construction Company and PJ

Dick, both based in Pittsburgh.

Blue Sky News, the official publication of Pittsburgh International Airport, featured a story earlier this year on how we installed 100 tons of steel in just hours—specifically, lifting two 50-ton steel girders into place.

To provide more perspective on this project's scale, NSC Site Manager Kevin Garner shared some key statistics on materials used in this project, including:

- the use of 16,000 tons of structural steel;
- 32 20-in. quad columns and six Y columns for the main column structure, with an additional 120 structural steel columns;
- approximately 200,000 structural bolts;

- about 50,000 linear ft of welding; and
- nearly 1,000,000 sq ft of decking.

Other leading airport projects in our portfolio include: Miami International Airport's South Terminal, where we erected 24,000 tons of structural steel in the floor deck while simultaneously working on the J Concourse in that terminal; and Detroit Metropolitan Airport's Midfield Terminal, where we erected 15,000 tons of structural steel within the 2,000,000-sq-ft terminal, with 74 jetways and 2 miles of people-movers.

Through it all, safety has, and always will, remain paramount. NSC Corporate Safety Director Chris Bowden and his team have helped preserve a culture of safety that today is among the nation's most effective and respected. Earlier this year, NSC was given the Thomas J. Reynolds Safety Award by The Association of Union Contractors (TAUC).

To be eligible, winning contractors must earn a DART rate below 1.2, which is 25% below the Bureau of Labor Statistics (BLS) national average of 1.6. Based on a review of NSC's application and OSHA logs, NSC's DART score was 0.

NSC also was recognized by the Mechanical Contractors Association of America and CNA as part of their excellence awards, where we earned the MCAA Award for Safety Excellence. We couldn't be more proud of our safety record and our leadership on this mission-critical company value.

We thank our customers, industry partners, colleagues and friends for being integral to our success and invite you to visit www.nsc-us.com to keep up with our latest news, industry offerings and company updates. ♦



At Pittsburgh International Airport, NSC teams installed 100 tons of steel by lifting two 50-ton steel girders into place in just hours.

PHOTO: BETH HOLLERICH. REPRINTED WITH PERMISSION FROM BLUE SKY NEWS/PITTSBURGH INTERNATIONAL AIRPORT



Pittsburgh International Airport (PIT)

International Terminal Modernization Program

16K tons
structural steel

200K
structural bolts

50K
linear feet
of welding

1million
sq ft of decking

Partners

**Iron
Workers**
LOCAL UNION NO. 3



SIPPEL Steel Fab
AMBRIDGE, PA

Kansas City (MCI) New Terminal

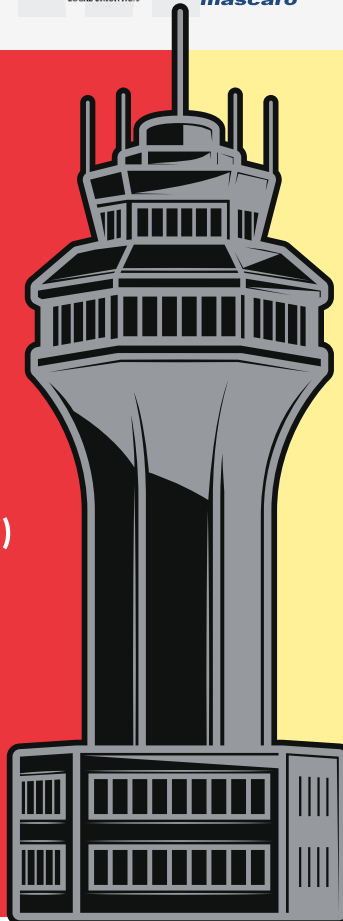
Partners: United Rentals & Ironworkers
Local 10; 11,500 tons of structural steel

Miami International Airport's (MIA) South Terminal & J Concourse

24,000 tons of structural steel in floor deck

Detroit Metropolitan Airport's (DTW) Midfield Terminal

15,000 tons of structural steel within the
2 million sq ft terminal with 74 jetways and
2 miles of people movers



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*The Association of Union
Contractors (TAUC) with a (0)
Zero DART (Days Away
Restricted or Transferred) score*

MCAA Award for Safety Excellence

*Mechanical Contractors of
America and CNA*

Raising a Runway Helps Community Airport Get Funding

The city of Tarkio, Mo., was selected for Federal Aviation Administration supplemental funding for Gould Peterson Municipal Airport, provided it could quickly update its layout plan (ALP) to ensure the facility would be compliant with FAA requirements. City officials turned to longtime engineering partner Olsson Inc. to address the airport's nonstandard combination of relocated and displaced thresholds.

The previous ALP called for extending the airport's runway, but the city was unable to purchase additional property within the FAA grant deadline. The airport engineers at Olsson came up with a creative option for a new, longer runway that would fit into the airport's 93-acre footprint.

The solution? Raise the runway and shift it south so the approaches clear both an adjacent highway and a county road, neither of which could be moved.

With Olsson's assistance, the city met the FAA deadlines and received a \$7-million grant, which fully funded the project to rebuild the runway, taxiway and turnaround, and replace all lights and navigational aids.

The grant required adherence to strict deadlines. Olsson managed the time schedule through frequent coordination with the FAA, the Missouri Department of Transportation and environmental review agencies. This allowed the team

to keep the project on track and ahead of schedule. Olsson designed the new runway and taxiway and provided construction oversight to ensure both were built to high-quality standards. The runway opened to air traffic in September 2021, with a new lighting system and electrical vault designed by Olsson. ♦



A new raised runway was part of an airport improvement project in Tarkio, Mo., that was fully funded with a \$7-million grant from the FAA.

PHOTO: COURTESY OF OLSSON ASSOCIATES

Translucent Panels Add Daylight, Thermal Performance to Heathrow

Building with translucent materials is a frontier that—like the sky—has unlimited potential and a reason to be explored. As the architectural and construction industries have embraced the importance of daylighting spaces, there is continued reliance on the original daylighting material: transparent glass windows. But as preferred materials for planes and aerospace exploration have changed, the go-to for daylighting has also evolved.



Kalwall Skyroof cladding, composed of translucent, fiberglass-reinforced sandwich panels, bring daylight and improved thermal and blast performance to Heathrow's Terminal 4 International Departure Lounge and check-in desks.

A perfect example is London's Heathrow Airport Terminal 4, where 18,836 sq ft of Kalwall Skyroof cladding was used above the terminal's International Departure Lounge and check-in desks. It replaced transparent glass skylights that were more than 30 years old.

The choice was obvious. Transparent materials have many drawbacks that create challenges with energy efficiency, structural integrity and glare. Translucent, fiberglass-reinforced sandwich panels like Kalwall's offer the best of two different worlds. They diffuse full-spectrum nature light to provide glare-free daylighting deep into spaces. And they offer thermal performance and solar heat gain control that can match that of a solid wall.

The Kalwall translucent sandwich panels are fully Aviation Security in Airport Development compliant with regard to blast performance, and they improve the solar control and insulation for the space below. In fact, Kalwall 100 panels were specifically chosen for the Heathrow project because they exceed code requirements and achieve a .15 U-value and a .09 Solar Heat Gain Coefficient, effectively future-proofing the project for energy codes.

Visit Kalwall.com to learn more about the benefits of translucent daylighting. ♦

PHOTO: ALEX UPTON

Safety and Visibility Are Key Needs in Airport Construction

Whether an airport project is new construction, repair or replacement, the methods and materials of choice all need to provide safety while the work is in progress and afterward, when the facility or runway is in use.

A well-known construction safety solution is the Aerocade Airport Barricade, a low-profile, water-filled, collapsible device that delineates work zones for construction and maintenance on airport runways and taxiways. It can be interconnected end-to-end for use as a demarcation device and accessorized with warning lights and flags.

The barricade is used for airport construction and maintenance, runway and taxiway projects, and as a navigational aid in and around the airfield. The Aerocade, a product of Valtir, LLC (formerly Trinity Highway), is also designed to meet the FAA Advisory Circular 150/5370-2G.

“Whether long- or short-term, we are excited about all of our rental projects, like the recent two-month rental project at Bradley International Airport where our barricades were used,” said Valtir Rental and Sales Representative Eileen Gregory. “We received nothing but compliments for our service and company.”

Convenience and safety factors include: reflective sheeting for increased visibility, which can be accessorized with warning

lights and flags, and is collapsible and stackable for more efficient transportation and storage. The FOD-free design offers jet blast resistance when properly filled with water.

Valtir, LLC, is a global supplier of commercial highway products including guardrails, end terminals, cable and steel longitudinal barriers, crash cushions, truck and trailer mounted attenuators, water-filled barricades, sign supports and delineators. Valtir's products are tested to, and eligible for, reimbursement under established U.S. federal crash test standards and FAA Advisory Circulars, and our products meet FAA's American Made Designation.

For more information, visit www.valtir.com. ♦



These Aerocade FOD-free, low-profile barricades are used at Bradley International Airport in Windsor Locks, Conn.

PHOTO: VALTIR, LLC



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photo: Mark Herboth

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Today's LEDs may last up to 50,000 hours, but Kalwall will continue harvesting sunlight into museum-quality daylighting™ for a lot longer than that. The fact that it eliminates glare and enhances visual acuity, while insulating more like a wall than a window, is just a nice bonus.

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