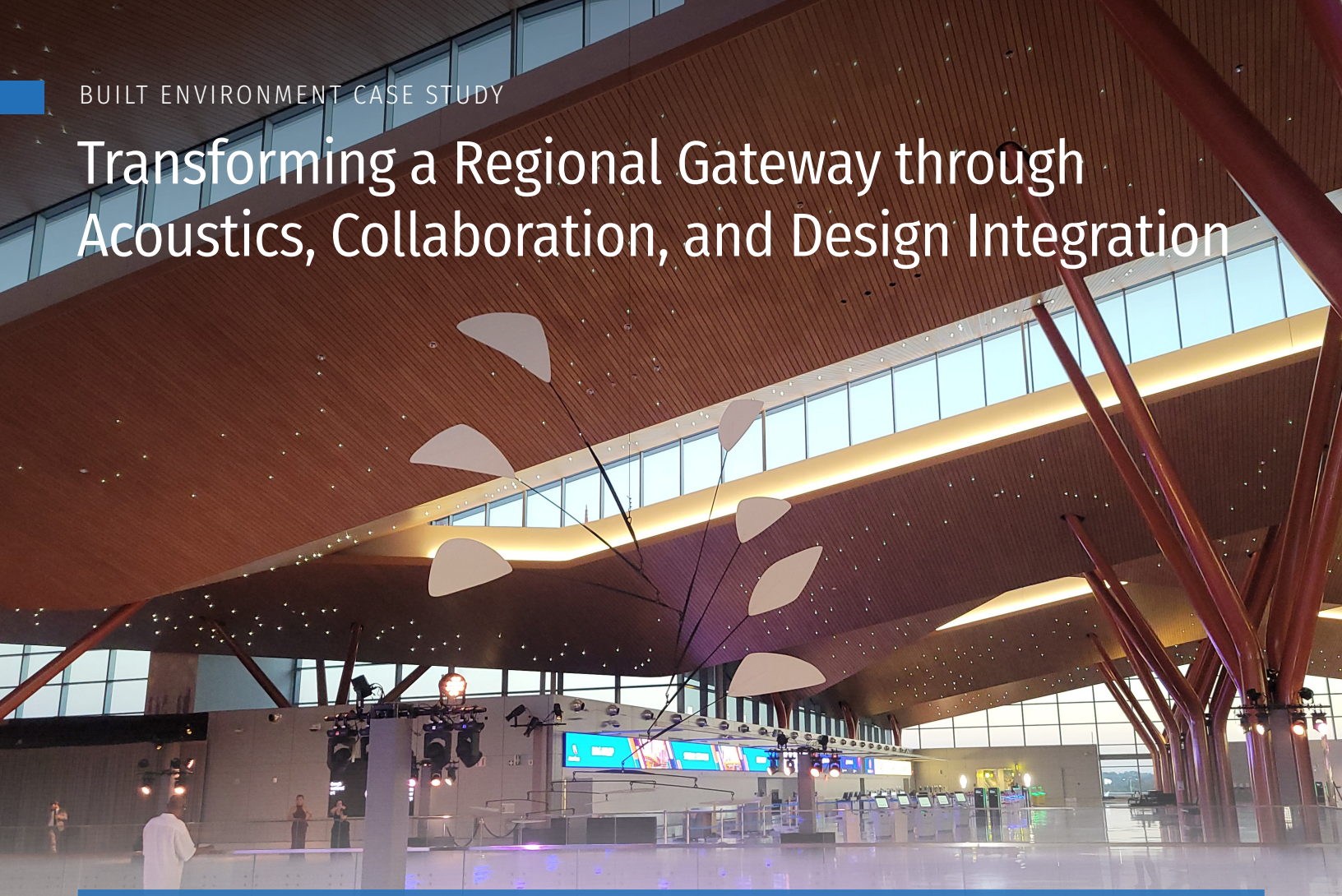
BUILT ENVIRONMENT CASE STUDY

Transforming a Regional Gateway through Acoustics, Collaboration, and Design Integration



VISION

Pittsburgh International Airport set out to create an iconic, biophilic, community-focused gateway that reflects the region's identity and supports long-term economic growth.

PARTNERSHIP

Trinity Consultants Built Environment collaborated closely with the architect, engineers, and specialty consultants to integrate acoustics into a complex, design-driven terminal shaped by nature-inspired geometry and political significance.

VALUE-ADD

Through modeling, coordination, and early involvement, Trinity delivered acoustic strategies that enhance clarity, comfort, and user experience in a space that will serve millions of travelers each year.

When Pittsburgh committed to the Terminal Modernization Program, the Allegheny County Airport Authority envisioned a facility that would represent Western Pennsylvania's cultural resurgence and economic momentum. The program repositions the airport as an iconic regional hub, connecting the Midwest to national and international travel while strengthening the region's economic future. The project also marks the first major piece of a long-term master plan that will continue shaping the airport for years to come.

The architectural concept draws directly from the surrounding landscape. Columns rise like trees from nearby forests, and the smooth, sweeping ceiling profiles mirror the rolling hills across the region. Material selections reference Pittsburgh's steel heritage, and natural light fills the interior through a biophilic approach that incorporates plantings, landscaped terraces, and greenery that will mature over time. These expressive elements form a warm, welcoming atmosphere for travelers while also creating distinctive acoustic conditions across the terminal.

VISION

The airport authority wanted a place that felt rooted in Pittsburgh while operating at the scale of a major international gateway. The team sought an environment that could welcome millions of travelers annually, serve as a source of regional pride, and elevate the passenger experience through architecture tied to Western Pennsylvania's natural and industrial history. Acoustic quality played an important role in supporting that vision, particularly within large open spaces influenced by sculptural geometry.

PARTNERSHIP

Trinity Consultants Built Environment worked closely with Gensler, HDR, luis vidal + architects and the broader team throughout design and construction. Having previously supported the airport authority on administrative offices, Trinity entered the project with an understanding of the client's expectations and communication style. Gensler recognized early that acoustic strategy would play a key role in shaping the terminal and regularly engaged Trinity when design elements carried potential acoustic implications.

Collaboration with Buro Happold was essential since acoustic performance and MEP design influence each other across expansive volumes. Coordination with Burns Engineering, Inc., who designed the public address system, further strengthened the process. The team addressed questions about speech intelligibility proactively, using modeling to study how the undulating ceiling and open concourses would affect clarity. Each consultant contributed expertise that reinforced the overall design intent and operational goals, creating a cohesive path forward.

VALUE-ADD

Trinity provided acoustic consulting for major program areas including the ticketing hall, departure concourse, baggage claim, TSA screening, and airline administration spaces. Modeling supported decisions about materiality, geometry, system placement, and acoustic treatments that remain visually unobtrusive. The analysis of the public address system helped guide the team through questions raised during construction, offering assurance that clarity and comfort would meet expectations without compromising architectural expression.

Experiencing the terminal during the opening gala reinforced the project's impact. Music carried naturally, conversations felt balanced and the atmosphere struck a tone that did not resemble a traditional airport. This confirmed that the acoustic strategy supports an environment designed for millions of annual travelers, offering a meaningful experience to a broad user group. The project also advances Trinity's continued work in aviation, which includes LaGuardia International Airport, John F. Kennedy International Airport, Columbus International Airport, and Fort Lauderdale-Hollywood International Airport.

The Terminal Modernization Program strengthens Pittsburgh's presence within national aviation and sets the stage for the next era of development at the airport. Trinity is proud to contribute to a project that reflects both regional identity and long-term investment in the traveler experience. Visit trinityconsultants.com to learn more about how our acoustics, AV, IT, security and building performance services support transformative transportation environments.

CLIENT
Allegheny County Airport Authority

ARCHITECT OF RECORD
Gensler | HDR Joint Venture

DESIGN ARCHITECT
Luis Vidal + architects

CONSTRUCTION
PJ Dick Mid-Atlantic | Hunt | Turner Construction Company Joint Venture

MEP
Buro Happold

STRUCTURAL
Thornton Tomasetti

AV / IT / SPECIAL SYSTEMS / SECURITY / LIFE SAFETY
Burns Engineering, Inc.

LANDSCAPE ARCHITECT
OJB Landscape Architecture

MASTER PLANNING
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ACOUSTICS
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