

Metal Panels Provide Maintenance Complex with Strength, Durability and Sustainability

Metropolitan Knoxville Airport Authority | Knoxville, Tennessee

AIRPORT

CHALLENGE

Between check-in, security, boarding and baggage claim, the average traveler likely doesn't realize all the behind-the-scenes work that occurs daily to keep airport operations running smoothly. There are dozens of buildings that require constant upkeep, snowy runways that have to be plowed, landscaping that needs groomed, parking lots that demand repairs. The need is constant. At the Metropolitan Knoxville Airport Authority, the buildings that housed all the maintenance vehicles,

equipment, and personnel were antiquated and becoming cramped. A decision was made to tear down the old buildings and replace them with a larger, more efficient, all encompassing Airfield Maintenance Complex. With several years of experience as a facility manager, the last seven at the airport, Doug Hill understands the impact a building's roof and walls have in the overall performance and sustainability of the facility. "We wanted to construct a building that would last 50 years and using quality materials was one of the first steps in achieving that," he explained.

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Doug Hill
Facility Manager

SOLUTION

Michael Baker Jr., Inc. (Baker) was retained to plan, design and develop the construction documents for the new construction project. For the exterior of the building, Baker determined that high-performance metal roof and wall systems were the best way to guarantee long-term performance. Robert Moore, project manager at Baker, explains, "We wanted a material that would be durable, long-lasting and provide a good building envelope solution. It was also important to maintain the architectural and performance standards that had been established of using metal on roofs and walls throughout the airport."

Based on the architectural specifications requiring a high-performance metal standing seam system with exceptional resistance to wind pressures, Garland's R-Mer® Span was recommended for installation on the roof and walls. The 22-gauge, 12-inch wide steel panels provide the durability and watertight integrity needed to achieve the airport's performance objectives, both in terms of longevity and sustainability. The metal panels are continuous with no end laps, a critical feature to ensure leak-free protection. The roof design features a metal deck with four-inch polyisocyanurate insulation to increase the building's energy efficiency. The Regal White panels, which span 85 feet at their longest, are ENERGY STAR® qualified for their reflectivity and UL Environment certified for their inclusion of pre and post-consumer recycled content. Additionally, the R-Mer Span panels are 100 percent recyclable at the end of their life cycle.

By using R-Mer Span on the wall assembly, it not only provides superior strength and durability, but also offers airport officials the flexibility of knowing that single panels can be removed and replaced should they become damaged. Mike Ford, a Garland representative who assists the airport with exterior maintenance of their facilities, explains, "They wanted a system that was incredibly versatile and that's what R-Mer Span offers them." Ford coordinated the installation of more than 100,000 square feet of metal with contractor Bristol Engineered Metals, LLC of Duluth, Ga. Denark Construction of Knoxville, Tenn., served as the general contractor on the project.

The Airfield Maintenance Complex was designed with the goal of achieving LEED® Silver certification. In addition to using highly reflective, recyclable metal panels on the exterior of the building, there were many other efficiencies incorporated into the building. There is a rainwater runoff collection system, a geothermal heating/cooling system, and pervious pavement in the parking lot to help reduce runoff. "We're going to be able to operate this new facility for a lot less than other facilities on the property, and that's just a good thing," Hill explains.

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Project: Metropolitan Knoxville Airport Authority

Location: Knoxville, Tennessee

Garland Rep: Mike Ford

Architect: Michael Baker Jr., Inc.

Contractors: Bristol Engineered Metals, LLC and Denark Construction

Materials Used: R-Mer® Span