



Memphis Air Traffic Control Terminal Freedom Tower

Memphis, Tennessee



The Memphis Air Traffic Control Terminal is a towering sentinel keeping watch over the busy air traffic at Memphis International Airport. The tallest air tower in the south, the terminal is uniquely constructed to incorporate the latest seismic engineering, due to its proximity to the New Madrid Fault. The project design and contractor performance earned the tower the Associated Builders and Contractors (ABC) *Excellence in Construction Award*, and the structure was so impressive to the community, it was later christened the "Freedom Tower" by a U.S. House Resolution.

The tower's positioning near a major fault line meant the construction materials chosen needed to possess seismic resistance. Hot-dip galvanized steel is ideal for this purpose, as it is able to meet any seismic criteria or terrorist threat that could otherwise suspend operations. Able to bend within reason without breaking, the tensile strength of steel can protect the structure from extreme damage during seismic activity, protecting the builder's investment. Eight hundred tons of structural steel, columns, 4x10 tubular rails, handrails, grating, HVAC racks, and precast concrete connections and embeds were hot-dip galvanized for the Tower.

To give due justice to this honor, the Freedom Tower took advantage of the most cost-effective, sustainable, and low maintenance corrosion protection available – hot-dip galvanized steel. The control tower is subject to the corrosive humidity of the Mississippi River area, as well as chemicals from deicing and aviation exhaust facing one of the busiest airports in the country. The high quality barrier and cathodic protection provided by the zinc coating created during the galvanizing process will protect the steel elements of this structure from the ugly and unsafe corrosion created in these conditions.

Built to accommodate the 20-year master plan of the Memphis area, the Freedom Tower's effort toward longevity goes far beyond this goal. The durable, maintenance-free life expectancy for hot-dip galvanized steel in this environment is 75 years or more, exceeding even the FAA minimum expectancy requirement of 50 years. →



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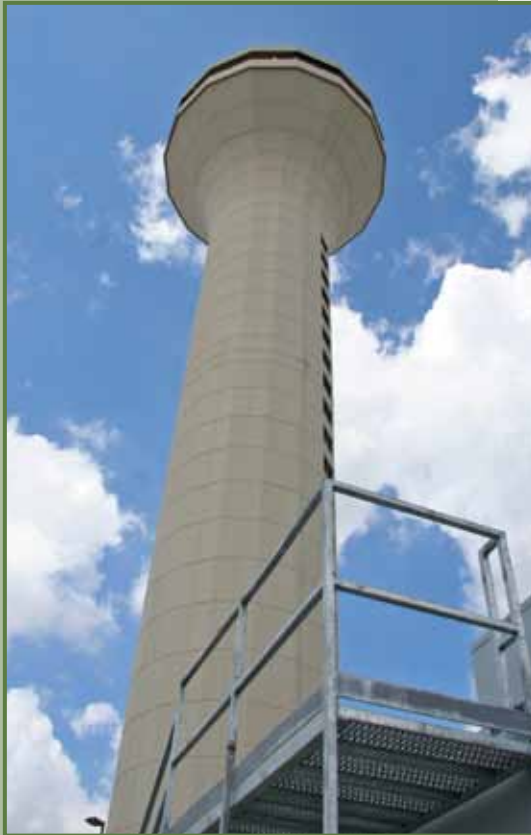


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The Federal requirement is a step toward establishing sustainable building practices, a goal which aligns to the benefits of utilizing hot-dip galvanized steel. Galvanized steel contributes positively to sustainable development initiatives because of its maintenance-free service life, 100% recyclability, and minimal environmental impact. Natural and abundant zinc, like steel, is infinitely recyclable without the loss of any mechanical properties, making it a highly sustainable building material. Additionally, because galvanizing provides maintenance-free corrosion protection often for 70+ years, no energy or materials will be wasted on routine upkeep. Galvanized steel works in tandem with the government's sustainable development goals.

In addition to promoting achievements in sustainability, galvanized steel worked to ensure the Tower was erected smoothly and in quick order. Memphis International Airport is the main

transportation hub for FedEx Corp., providing cargo transportation to scores of cities across the intercontinental U.S. and numerous nonstops to Europe, South America and Japan. It also serves as a passenger hub for Delta Air Lines Inc.

This new facility will enable air traffic controllers to continue providing the safest, most efficient service to passenger and cargo flights at Memphis and surrounding airports. The cost effective, low-maintenance sustainability provided by galvanized steel means this project will serve as a model for future FAA construction. The 336-foot tower, replacing the 200-foot existing structure, will stand strong against any seismic events and resist corrosion for generations to come. 🌱



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