



PROJECT PROFILE

The U.S. Steel Tower (USX)

Project At a Glance

Location	Area Served
Pittsburgh, PA	450,000 sqft

Situation

A mechanical problem arose with one of the building's primary fans, a large double inlet centrifugal fan serving 14 floors. The repair of the fan would cause major disruption and require to cut an access hole on the side of the building.

Solution

Eliminate building's structural impact and disruption by replacing the fan with a pre-engineered Q-PAC Fan System that enables an easy plug and play installation and fits through an existing AHU door.

Opened in 1971, the U.S. Steel Tower, also known as USX Tower, is a 64-story skyscraper. The interior has 2,300,000 sq ft of leasable space. Standing 841 ft tall, it is the tallest building in Pittsburgh, the fifth-tallest in PA, and the 200th-tallest in the world.

Q-PAC's Fan Integration Technology and modularity saved the 16th largest building in North America from 2 weeks of downtime, structural disruptions, and future maintenance

Challenges

Repairs of existing double inlet centrifugal fan were estimated to take up to 2 weeks of down time, which would cause major disruption for the 8,000 –10,000 people that are in the tower on an average day. The fans were installed during the building's construction in 1967. Access for repair of the 12 ft. x 10 ft., 6,000 lbs. fan, would require a hole cut on the side of the building and numerous cranes. In addition, the original AHU required a solution that could fit through a 30in wide door. The building is one of the largest LEED certified in the world. Filtration and fresh air exchanges are a requirement to sustain the building's LEED certifications.

Actions

The Q-PAC applications engineering team worked closely with our manufacturing rep, Thermaltech, to select and design a 24 fan solution to meet exact cfm capacity of the previous 1967 fan; and provide a pre-engineered fan system with power and control wiring completed for ease of installation. Q-PAC provided on-site field installation and fan system start-up support to assist the mechanical contractor, K&I Sheet Metal. The building owner was impressed with the speed and ease of installation.

Results

Installation of a Q-PAC fan system started on Friday evening and completed ahead of schedule on Sunday morning, allowing the building to be fully operational on Monday. The Q-PAC system provides a maintenance-free solution leading to major savings on labor-hours. With the additional requirements of a LEED building, the Q-PAC fan system is able to handle the extra static pressure needed to deliver the air to the space. Q-PAC brought the building's AHU up to date with "a state of the art, cutting edge, and classic" technology.

Notable Highlights

- ▶ Reduced energy use by two thirds
- ▶ Disruption-free installation
- ▶ Enough SP to meet LEED requirements

Q-PAC

For more information, visit us at q-pac.com or contact sales at sales@q-pac.com