



Chicago's oldest and largest not-for-profit theater, is a recipient of the Special Tony Award for Outstanding Regional Theatre, and recognized internationally for its artists, productions and educational programs.

PROJECT PROFILE

Goodman Theatre

Project At a Glance

Location

Chicago, IL

Area Served

171,000 sqft

250,000+ patrons/year

Situation

20-year-old, belt-driven DWDI fans with limited VFDs added 10 years ago were failing the building and limiting their controllability of the units causing inefficiencies and disruptions.

Solution

Q-PAC provided a solution that fit inside the AHU, significantly lowering the HVAC system's weight, provided variable speeds for each fan, and built in redundancy.

Q-PAC provided a quiet solution with variable fan speeds allowing for efficient and consistent heating and cooling of the Chicago-based theatre.

Challenges

The 20-year-old, belt-driven fans failed to provide the building with fan speed variability and the redundancy that are especially important for Chicago's potentially extreme weather conditions. The building's facilities manager continuously dealt with fan failures that left the entire theatre without air. The fans needed to be replaced by a solution that would fit in the existing, small AHUs, meet weight requirements, provide complete redundancy, variable fan speeds for each unit, and offer a quiet operation. The original systems were not built on rubber pads to absorb sound, and the theater experience for their patrons was impacted.

Actions

The Q-PAC team worked with our Chicago-based manufacturers' rep, ThermoSystems, mechanical contractor, Atomic, and design engineer, McGuier Engineering, to select and design a replacement for the theater's belt-driven fans that provided a kitted, "plug-and-play" solution with a simple and less disruptive installation. The facilities manager was pleased to reduce labor expenses and optimize resources, including the elimination and repurposing of a temperature control technician and very minimal requirements for electrician hours for the installation.

Results

The retrofit installation of three fan arrays was completed within a day. The Q-PAC system provided a quieter solution with variable speeds and redundancy. The variable fan speeds allowed each fan to be adjusted for more efficient and consistent heating and cooling throughout the building, resulting in significant energy and cost savings. Q-PAC's solution provided the facilities manager with peace of mind, exceeding the project's desired air quality and sound experience before the grand reopening after the COVID-19 pandemic.

Notable Highlights

- Optimized resources and reduced expenses
- Quieter operation
- Variable speeds and redundancy
- Heightened air quality allowing peace of mind