

PROJECT SOLUTIONS

Project: Waterpark Office Building
Application: AHU Silencers (Axial Fans)

25 compact mechanical rooms in office tower dictated that 22,500 CFM horizontal axial fan / silencing systems expand into occupied ceiling spaces to achieve NC-35.

PROBLEMS: Low frequency noise
 Excessive energy consumption

The specified noise criterion was NC-35 including the ultra low frequency octave band centered at 63 Hz. Minimum energy was also an objective. Breakout noise through the ceiling adjacent to the mechanical rooms was the critical path.

SOLUTION: Axial fan / silencer package supply

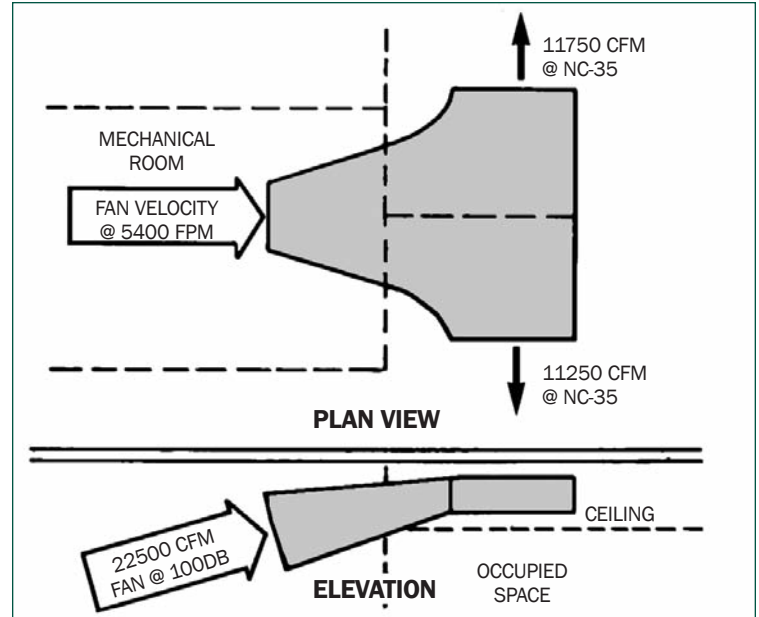
The consulting engineer specified variable pitch-in-motion axial fans for minimum ultra low frequency rumble and energy consumption. Gradually expanding from the fan, silencers were designed to minimize aerodynamic losses. The resulting transitioning “y” discharge silencing, in turn, reduced both generated noise and energy losses.

PROBLEM: Unacceptable installed performance

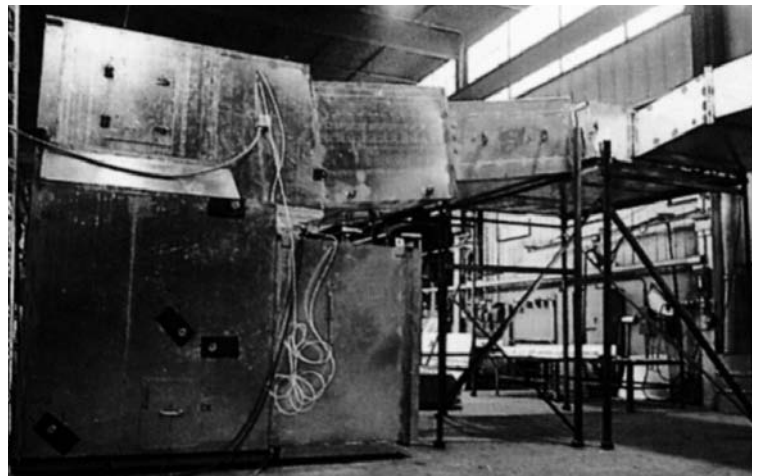
To ensure performance, a prototype fan / silencer system was specified to be factory tested and witnessed by the consulting engineer.

SOLUTION: Prototype testing

Vibro-Acoustics built and tested a complete full scale prototype system, including air handling unit and inlet discharge silencing systems to prove performance before shipment.



Schematic shows critical transitioning “y” silencer required to achieve NC-35 and low energy consumption.



Prior to production, this unit was tested for optimizing aerodynamic and noise control performance.