CBC Headquarters
Application: AHU Silencers (Centrifugal Fans)

CHALLENGE

- Unacceptable Installed Performance
- Unacceptable Performance
- Low Frequency Noise

This $250 million design build project included approx. 150 acoustically sensitive spaces consolidated into a high rise building. Detailed mechanical rooms and duct designs were not complete by the time building construction contracts were awarded. Separate acoustical consultants for the developer and tenant (CBC) were responsible to ensure the design noise criteria were achieved.

To reduce costs and speed up design and final completion, 55 on floor AHUs were substituted for the original concept of remote mechanical rooms to serve studios and offices. CBC had multiple existing studio locations being consolidated into a single building, which were all served by remote fans, there was considerable concern that the noise criteria would be met.

The major challenge was to reduce 63 Hz octave band noise from the AHU forward curved fans to meet the specified noise criteria.

SOLUTION

V-A supplied application engineering & product to meet specified noise criteria, mock-up testing & design/testing of low frequency silencers

V-A supplied all the mechanical noise & vibration control products required to achieve the specified noise criteria. We were responsible for analyzing all the duct systems and selecting/supplying all the necessary products to control fan, AHU, variable volume box and breakout/breakin noise. 1400+ silencers were supplied along with a considerable square footage of HTL duct.

A full size mock-up of the on floor mechanical room and adjacent office were constructed at the V-A facility. A typical 27,000 CFM AHU with V-A silencers, supply ducting, VAV box and diffuser assemblies were installed to simulate exact site operating conditions. Witness tests verified acceptable performance. 25 low frequency silencer designs and locations were tested in the mock-up described above to achieve the project noise criteria.

Full scale CBC mock-up for acoustic/aerodynamic testing in V-A’s facility.