Time and dollar savings were achieved and the design noise criteria were met for the huge* CBC broadcasting center.

**The largest architectural commission ever awarded in Canada which consolidated CBC radio and television studios from 24 different locations.*

PROBLEM: Unacceptable installed performance

This 250 million dollar design build project included approximately 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.

SOLUTION: Vibro-Acoustics supplied application engineering and product to meet the specified noise criteria

The specification was a noise criteria type, not product. Vibro-Acoustics supplied all the mechanical noise & vibration control products required to achieve the specified noise criteria. Included was the responsibility to analyze all the duct systems and to select and supply all the necessary products to control fan, AH unit, variable volume box and breakout/breakin noise. More than 1400 silencers were supplied along with a considerable square footage of HTL duct.

PROBLEM: Unacceptable performance

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

SOLUTION: Mock-up testing

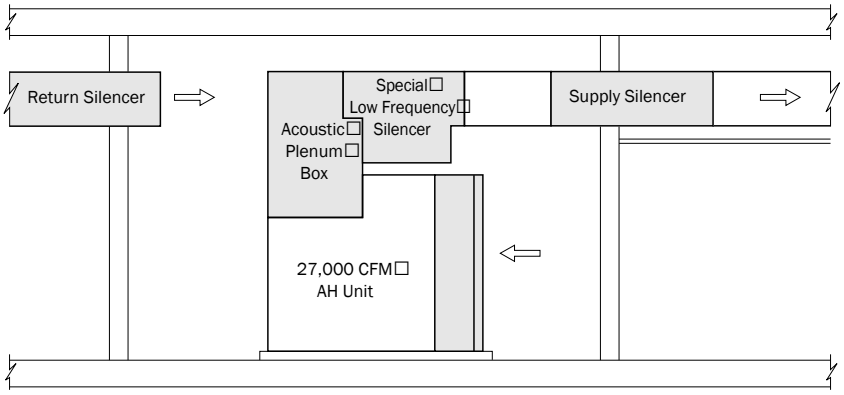
A full size mock-up of the on floor mechanical room and adjacent office were constructed at the Vibro-Acoustics' facility. A typical 27,000 CFM air handling unit with Vibro-Acoustics' silencers, supply ducting, VAV box and diffuser assemblies were installed to simulate exact site operating conditions. Witness tests verified acceptable performance.

PROBLEM: Low frequency noise

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

SOLUTION: Design and testing of low frequency silencers

A series of 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 Vibro-Acoustics' facility (see also **PS 4-4***).*