Acoustical consultants specified special HTL silencing construction and testing to achieve ultra-quiet results.

PROBLEM: Ultra-critical sound criteria

An opera hall and three other auditoria in one complex posed special problems. Because of limited space, large mechanical rooms were located immediately adjacent to the ultra-quiet spaces. The challenge was to reduce the fan noise so special double concrete walls were not required.

SOLUTIONS: Acoustical consultants specified special noise control

Vibro-Acoustics supplied a noise and vibration control package

Acoustical consultants specified special designs for the 66 fan systems requiring high transmission loss (HTL) panels for ductwork, silencers and enclosures to reduce sound break-out and break-in. Special designs included a panel range of 4" to 8" thickness having a weight up to 30psf.

PROBLEM: Unreliable performance rating

The special panel constructions specified had never been tested.

SOLUTION: Testing in Vibro-Acoustics' laboratory

The acoustical consultant witnessed the transmission loss testing, to the ASTM standard, of the heaviest 8 inch panels assembled into a 14' wide by 10' high wall system. Smaller panels, typical of duct wall size, were tested and a TL design index was developed for HTL duct wall application.

PROBLEM: Unacceptable installed performance

After Vibro-Acoustics received the order for the silencers, enclosures and vibration isolation for the 66 fan systems, we were asked by the contractor to bid on prefabricated HTL duct systems as an alternative to contractor site built systems.

Vibro-Acoustics supplied noise and vibration products, testing and project management for the 66 fan systems and the 20 mechanical rooms for the National Arts Complex.

SOLUTION: Vibro-Acoustics responsible for project management

Our successful bid included full time project management responsibilities and the on-site layouts of all the 66 fan enclosure systems and critical connecting ductwork requiring HTL construction and silencers.