

PROJECT SOLUTIONS

Project: Ajax-Pickering Hospital
Application: Diesel Ventilation

Low frequency rumble from hospital diesel ventilation system well controlled by special silencing system.

**PROBLEMS: Low frequency noise
 Environmental noise**

Noise from the diesels radiates out the ventilation gratings to the outdoor environment and the hospital windows above. Standard silencing could not provide the 63 Hz acoustic insertion loss specified by the acoustical consulting engineer.

**SOLUTIONS: Low frequency silencers
 Prototype silencer tested**

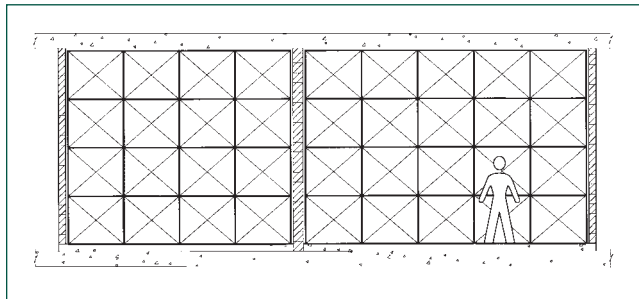
Vibro-Acoustics designed a composite silencer consisting of very thick splitters for low frequency noise control, a plenum section and standard acoustic splitters, all installed in series. A full size prototype silencer module was tested in the Vibro-Acoustics lab which is qualified for testing at 63Hz.

PROBLEM: Breakout noise

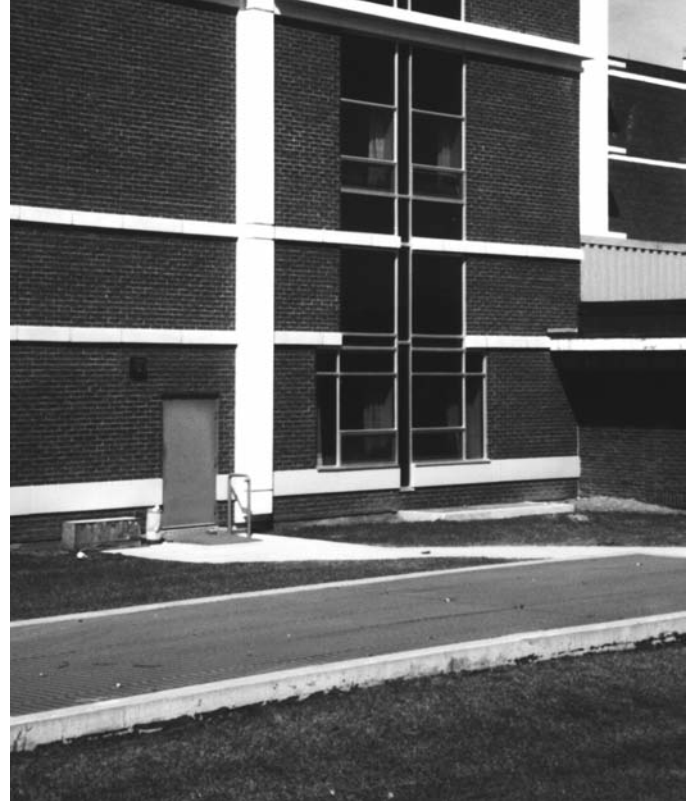
Potential low frequency flanking through the silencer walls was a major problem.

SOLUTION: HTL control products

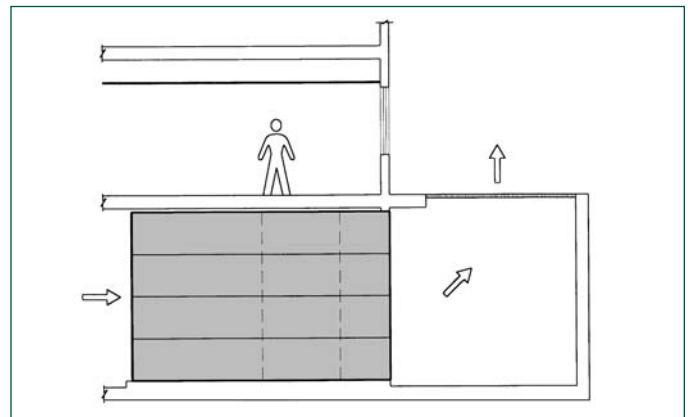
Concrete silencer outside walls, the concrete house-keeping pads and 1/4" flashing plates were all supplied by Vibro-Acoustics as a packaged design. (See the arrangement drawing).



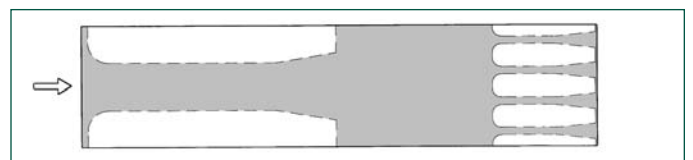
Left Side: Diesel discharge silencer bank of modules (overall 15' wide x 13' high)
 Right Side: Diesel intake silencer bank of modules (overall 19' wide x 13' high)



Hospital windows are directly above the diesel intake and exhaust grating.



Side view: Exhaust silencer bank 13' high x 20' long.



Top view: Exhaust silencer module consisting of (from left to right) very low frequency module, plenum and low/mid frequency module.