

## Case Study

### Plant-wide Noise Attenuation Retrofit

The demand for space continues to push residential developments closer and closer to areas zoned for industry. As this occurs, manufacturers are often finding themselves faced with new environmental regulations related to noise. When this happens, maximum allowable noise levels are normally set for the plant at its property line or at the residences nearest to the plant.

A wire manufacturer in southern Ontario had to reduce its noise levels at residences near the plant because of complaints made to the local regulatory agency regarding night-time plant noise. The company had carried out a noise assessment study to identify the problem noise sources and to determine the noise reductions needed to comply with environmental regulations. Subsequently, they carried out the necessary remedial action to achieve the required noise levels.

An acoustical consulting company was hired to carry out the noise assessment. The consultant identified ten fans (mostly roof exhausters) that were responsible for the problem and the noise reductions required for each of them to satisfy the environmental regulations. dB Noise Reduction worked with the acoustical consultant to select the appropriate noise control retrofit solutions for each fan. Each design solution included the consideration of structural constraints, wind loads and pressure drop limitations, as well as, the primary noise reduction requirements. The resulting equipment selected were; three industrial grade rectangular fan silencers, five circular roof exhauster silencers with special load spreading structural stands and three acoustical barrier systems. The noise reductions ranged from 12 dBA to 25 dBA depending on the equipment. After these were approved by the company and the regulatory agency, dB Noise Reduction completed the designs, fabricated the equipment and installed it at the plant. The acoustical consultant then verified that the noise target of 35 dBA had been met and issued a report to the company, which they submitted to the regulatory agency. This all occurred over a twelve week period, within very tight budgetary constraints.

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