

Case Study: Lafarge Canada Cement Quarry

A Unique Lafarge Project Cements Silence



January 2012 saw the completion of an intensive engineering project that Noise Solutions was chosen to carry out for [Lafarge](#), North America's largest diversified supplier of construction materials.

Extensive research for the project at the cement plant in Exshaw, Alberta, Canada began in 2009. This included exploring a combination of active noise control scenarios, as well as conducting monitoring surveys at four nearby residential located 240 to 500 meters from the plant. The surveys revealed that the Exshaw facility was not in compliance with the Energy Resources Conservation Board's (now the [Alberta Energy Regulator](#)) permissible nighttime sound levels of 48 dBA.

One of the largest noise sources at the Lafarge Cement Plant was the K5 Gravel Bed Filter Stack, which is essentially a giant chimney. After more than a year of collecting data, modeling, engineering and manufacturing, Noise Solutions installed a massive 14,500lb, 25 foot tall stack silencer, designed to absorb noise-causing vibrations from one of the stacks.

Another significant noise source that needed to be addressed at the Lafarge site was the compressor room and vacuum system. Noise Solutions' acoustically treated building ventilation inlet hoods were installed to attenuate the problem areas.



The installation, which also included 13 silencer modules on three large roof vents, was highlighted as a priority to Lafarge as a result of forum discussions from both plant employees and residents in the Exshaw community. These ongoing discussions eventually launched the Community Liaison Committee, which included eight members of the public and three of the plant's senior management staff, to ensure better communication and enhance public perception of the plant's operations within the community.

Shortly after the install of the Kiln 5 Stack Silencer and treatment to the hood vents, the town of Exshaw received Lafarge's President's Award in recognition for their outstanding leadership in Health and Safety.

Various seasonal conditions can affect the sound propagation efficiency between a facility and residents. Noise Control Regulation Directive 038, regulated by the former Alberta Energy and Utilities Board, allows for only 50 dBA during daytime hours and 40 dBA during nighttime hours.

Although a post-noise control site assessment has shown the treated noise sources have hit their noise reduction targets, work with Noise Solutions and Lafarge is ongoing at the Exshaw Plant, with more equipment to be built and installed, as well as a final noise impact assessment which will determine the final cumulative reduction overall for the site.

Noise Solutions unparalleled turnkey operation has once again achieved success at providing innovative noise control to create balance and harmony between industry and community.

Large-scale custom engineering jobs, such as this one with Lafarge, or the work Noise Solutions has already completed with [NASA](#) and the [ASRC Federal Space and Defense](#) (formerly ASRC Aerospace and ASRC Management Services) has given these skilled professionals an extensive repertoire of experience when faced with complicated or unorthodox scenarios.



[Watch a video](#) of the enormous Noise Solutions silencer being carefully raised above the kiln and strategically placed inside.