

Using American ALDES Ventilation Equipment in Airport Noise Mitigation Programs

FAA Noise Mitigation Programs on the Rise

Today over 200 U.S. airports are involved in FAA noise mitigation programs designed to minimize the impact of aircraft noise on the dwellings surrounding these airports. Treating existing structures for noise typically results in very tightly built structures that demand ventilation, and operable windows are not a ventilation option here. For years, American ALDES has been providing ventilation solutions for airport noise mitigation programs.

In 1999 the FAA spent \$241 million on noise mitigation around U.S. airports, and the federal funds earmarked for these programs are increasing. While the programs are federally funded, local port commissions and municipalities usually administer them. The process may vary in different municipalities, but the private sector usually handles the design work and the municipality or private consultants provide construction management and program administration. The construction work is then contracted out to local construction companies.



*Multifamily Project, Del Rey Plaza in Los Angeles.
One of several related projects totaling over 900 units, with BV150 Blending Ventilators.*

mitigation programs. Currently he works as a project manager for Corlett, Skaer, and DeVoto Architects Inc. of Los Angeles, designing noise mitigation plans for some of the estimated 24,000 to 26,000 housing units impacted by LAX. Since 1990 Herz has designed mechanical ventilation systems for over 6,000 houses and apartment units near airports.

Mitigation Strategies

The primary goal of the FAA program is to lower the noise level in impacted homes. Noise measurements are taken prior to the application of any sound treatments. Once the level of impact is determined, a mitigation plan is developed. The solution often includes the replacement of windows and doors, and sometimes the addition of one or two layers of drywall to block the sound. Sound travels many of the same paths into a house as outside air does, so air-sealing measures can help make the house quieter.

“Basically the solutions are the same for single-family homes and multifamily units,” says Herz, “but the logistics are more difficult in apartments and condominiums.”

Mechanical Ventilation Needed

While tighter doors and windows, and good air sealing measures can make a quieter living space, indoor air quality becomes a problem unless a mechanical ventilation system is installed. Outside air must be introduced and circulated, or the air inside a home becomes stagnant and unhealthy. Even in the mild climate of southern California, air quality problems are hard to solve by opening windows – the most common residential ventilation system. Open windows also defeat the intent of sealing the structure to reduce noise. Without mechanical ventilation there is little air movement, odors remain, levels of pollutants build, and moisture can become a problem. This encourages the growth of unhealthy and damaging molds and mildews.

“We know that with the installation of the sound treatments, air infiltration is going to decrease,” says Herz. “So to maintain indoor air quality, mechanical ventilation is part of the designed noise mitigation package.” In Seattle, Los Angeles, and most FAA programs around the country, ventilation performance standards are set and a list of approved systems is maintained by the contracting agency. A contractor chooses a ventilation system or ventilation components from the approved list and installs the system according to the mitigation design, with input from the homeowner.



*Rick Herz, project manager
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Leading Authority in Noise Mitigation and Ventilation

With a background in construction management, Rick Herz has spent the last decade designing noise mitigation strategies for churches, schools, and residences around SeaTac International Airport in Seattle and Los Angeles (LAX) International Airport. In Seattle, he worked for the Port of Seattle with responsibility for design, construction management, and program administration. In Los Angeles he worked two years for Wyle Labs, a private sector lab that developed the model specifications for the FAA's national airport



Single Family Project. Typical two-bedroom, single-family project near LAX with BV150 Blending Ventilator

ALDES Ventilation Solutions: The BV-Blending Ventilator

Working with retrofit projects means constantly facing installation challenges. Herz has installed ventilation equipment in bathroom ceilings, hallways, closets, and special enclosures built on the exterior of buildings. "We have problems in multifamily buildings because there are limited places to install equipment," says Herz. "I pray for big attics!"

One of the ventilation systems on the approved ventilation systems lists for LAX and Seattle is the ALDES Model BV Blending Ventilator -- a quiet, compact unit designed to provide fresh outdoor air blended with indoor air drawn from the bedrooms. Specifically designed and built for the sometimes-difficult airport authority retrofit projects, the BV mixes indoor and outdoor air before distribution to the main living areas.

Through blending of indoor and outdoor air, the outdoor air is tempered to provide greater thermal comfort during both heating and cooling seasons. The BV also includes a standard pleated filter upstream of the fan to filter both the recirculated indoor air and outdoor air before distribution -- an asset in an urban environment. The BV provides slight positive pressurization of the structure, reducing the risk of backdrafting gas water heaters, furnaces, or other combustion appliances.

Airflows in the blending ventilator are controlled by a unique Constant Airflow Regulator (CAR) at each takeoff that automatically regulates the amount of outdoor air and return air introduced to the system. The CAR is a passive flow control device with a 20-year life span that comes in multiple sizes to meet a variety of airflow needs. An energy efficient fan with permanently lubricated ball bearings ensures low energy costs and maintenance-free operation.

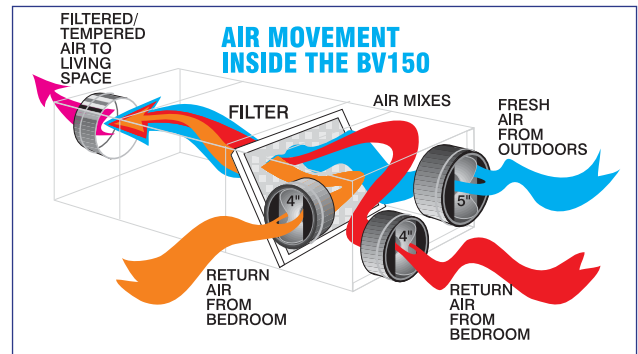
The BV units are designed to meet ASHRAE Standard 62 recommendations when installed according to the sizing instructions provided by American ALDES. The BV150 can provide ventilation for a two- to four-bedroom house or apartment unit, and the larger BV300 can provide ventilation for three- to six-bedroom houses up to 3,200 square feet.

Installation Flexibility

With a depth of only 8½ inches, the BV150 can be installed horizontally

between ceiling joists, in a dropped ceiling, or suspended from a ceiling in an attic or a crawl space. It can also be installed vertically against a wall, or in a closet, mechanical room or laundry area. Because of a specially designed blower, heavy steel construction, and acoustic insulation of the fan, the BV is quiet enough for installation close to the living spaces of a home.

The American ALDES blending ventilators come complete as kits that include all the required system components. According to Herz, ordering the complete system as a package simplifies the job for the contractor. "The package makes it cleaner for installation because everything that is needed is there. It's assembled so the contractor can pick the package that fits the needs. One of the comments that came back to me from a field inspector at LAX was, 'It's clean, it goes in, and it works. There's no fooling around.'"



Satisfied Owners

Even in significantly different climates, the positive comments from owners are the same. "In LA I've received positive feedback from home inspectors on the resale of houses," says Herz. "People like the systems. They're quiet, they provide air circulation, and they break up the stagnation."

"In Seattle, there were owners who had existing moisture problems and were reluctant to accept the ALDES ventilation systems. They wanted large capacity forced air furnaces because they didn't think the low-flow system would do the job. After the ALDES system was installed, they were very happy with its performance."

American ALDES...A Ventilation Leader

Model BV Blending Ventilators are just one example of the many ventilation solutions American ALDES manufactures. Contact American ALDES for details on other unique ventilation products and a distributor near you.



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