

A More Peaceable Kingdom

Founded in 1907, The Marin Humane Society in Novato, California is a progressive, award-winning animal shelter. It provides refuge and rehabilitation to nearly 8,000 animals each year, but last year those numbers grew by hundreds when it opened its doors to animals that lost their homes in Hurricane Katrina. Its participation in *Operation Orphans of the Storm* provided safe haven and relief to suddenly homeless pets that were cared for and eventually offered to foster homes as their own human companions were sought.

A Quieter Welcome

Although the numbers swelled, at least temporarily, the noise factor in the adoption dog run areas of the Humane Society did not. Earlier in the summer, Deputy Director, John Reese, had overseen the installation of 70 sound absorption panels developed by Media Specialties Research, Inc.. Without them, the din could have increased profoundly. Because of them, the new residents could be welcomed and cared for without a concomitant increase in the sound level in the run areas.

“There was a big change in the sound level right away, after installing the panels in the first area of the facility; the difference was even more dramatic as the second area was finished. Previously, it was nearly impossible to hold a conversation with a prospective client in the adoption areas. Now it’s do-able, and so much less stressful. What is evident also is that the dogs are a lot calmer,” said Mr. Reese.

How Much Noise is Too Much?

While sound is the transmission of vibrations at different frequencies, noise is defined as unwanted sound. Noise is measured on the decibel scale. Noise levels, referred to as decibels on the (A) scale (written as dB(A)) are a good indicator of people’s response to noise. The U.S. Department of Labor Occupational Safety & Health Administration (OSHA) has standards by which employers must comply, including the administering of a continuing, effective hearing conservation program whenever employee noise exposures equal or exceed an eight-hour-time-weighted average sound level of 85 decibels. While personal protective equipment (PPE), such as hearing protectors, can help, a concentrated noise abatement/reduction program is also expected. More on OSHA’s regulations can be read at their web site, www.osha.gov, “occupational noise exposure, Section 1910.” Permanent hearing damage is likely to occur if a daily dose of 85 dB(A) is exceeded repeatedly.

Another measure of noise is reverberation, or the time taken for sound to decay to 60dB. Sound, after it is ended at the source, will continue to reflect off surfaces until the sound wave loses energy by absorption to eventually die out. Kennels by their very nature, frequently have poor acoustic properties, specifically hard smooth surfaces that do not absorb noise. Therefore, any noise generated tends to reverberate around the inside of the building. The longer the reverberation time, the more uncomfortable & echoing the building will be. In many kennels, and other similar hard-surfaced environments, such as

indoor swimming pools, reverberation can be as long as four to six seconds. A comfortable working environment in offices, comparatively, is usually 0.4 to 0.6 seconds.

The possibility that noise might have similar effects on dogs as on humans has been studied seriously over the past 25 years. In dog kennels, sound levels within the human hearing range can regularly reach values of 85 to 122 decibels. While the noise problem for humans can be addressed by PPE, this is of no value to the dog who can't wear ear protectors but who can detect sound well beyond the upper frequency limit of human hearing, up to four times quieter than the human ear can detect.

The sound in those dog kennels that have not addressed the noise factor is certainly at a level that is known to cause damage and stress not only in humans but also in dogs and other animals who have less acute auditory sensitivity than dogs. Most of the high level noise recorded in kennels is produced by the dogs themselves, although other events such as cleaning, high pressure hoses, doors banging and pagers may also contribute substantially to the acoustic environment. If these levels are sustained throughout the day it would seem probable that dogs are at risk from damage to their auditory systems, just as are the humans in the kennel environment. Even if dogs were not to appear to find high noise levels aversive, any physiological damage would certainly reduce the dogs' welfare and would be unacceptable.

What's A Kennel To Do?

Many kennels, and other animal boarding, shelter and hospital environments, are doing just what the Marin Humane Society did; finding ways to reduce high levels of noise for the protection of not only employees and volunteers, but also of the animals. A program to "design out" noise, rather than relying on remedial PPE that only protects humans and shuts out other sound, including conversation, is the goal. This is accomplished to a great extent, by the installation of acoustic noise abatement panels. Mr. Reese consulted with Anthony Grimani, renowned acoustic engineer, and president of Media Specialties Research, Inc.(MSR) in Fairfax, California. Mr. Grimani conducted sound tests and site surveys and consulted with Mr. Reese to determine the best placement of sound-absorbing panels to maximize their benefit. They both felt the panels needed to be washable. MSR then designed panels measuring 4' x 8', approximately two inches thick, made of mineral wool fiber and fiberglass to form a composite core "sandwich" and covered with a custom, washable, micro-perforated vinyl that resists moisture but doesn't interfere with the panels' sound absorption properties. Spray washing does not degrade the performance of the panels so routine cleaning methods did not have to be changed. These QuietKennel™ panels resulted in immediate noise reduction of approximately XXdB from an average of XXdB to XXdB. Mr. Reese continues to report that this installation has appreciably improved the environment.

How to Sound-Improve Your Facility

The typical animal facility experiences serious noise issues that usually exceed OSHA standards. The first step in determining whether your facility is human and animal sound-friendly is to take a series of measurements over a period of time to determine both periodic and average decibel and reverberation levels. Sound engineers have the

sophisticated equipment that can record these measures and will be able to consult on remediation possibilities and refer you to manufacturers with experience in kennel noise abatement.

In the case of the Marin Humane Society, the next step was to evaluate the unsatisfactory noise level measurements and design a noise reduction program to improve the environment for all users, from employees to visitors to the resident animals, including the hurricane victims who already had experienced extreme trauma. There are a number of manufacturers of sound abatement materials familiar with the scope and design of veterinary offices, kennels, shelters, and other boarding and animal facilities. Most will work with an engineer in your area to determine need and both sound and physical measurements and ship you the appropriate number and size of panels or other acoustic material that will best suit your space and needs, so you needn't be located near the company that provides the sound absorbing system best for your needs. An important component for the Marin facility, as it is for most, was washability and easy maintenance. Another consideration is color, so a question to ask before ordering is if there is color choice, and another is whether installation is included in the price of your order. This is advisable, since correct placement is key to effective abatement.

Resources

There are a number of manufacturers of acoustic products, some with experience in animal facilities. When investigating the best company for you, be sure to ask the key questions relating to your needs, as well as for an accounting of their experience and success rate with kennel and other animal facility noise reduction. A few resources are:

Acoustical Solutions, Inc.
800.782.5742
www.acousticalsolutions.com

Acoustical Surfaces Inc.
800.448.0737
www.acousticalsurfaces.com

Media Specialties Research, Inc. QuietKennel™
800.497.2087
www.msr-inc.com

Polymer Technologies, Inc.
800-850-9001
www.polytechnic.com