San Diego Elementary School Environmental Impact Reports

Wieland Acoustics worked with one of Southern California's prominent planning companies on the preparation of Environment Impact Reports (EIRs) for three new elementary school sites in San Diego. We were tasked with preparing the noise portion of the EIRs.

The Issues

Each of the three proposed school sites lies in an established residential area. This raised three acoustical issues that needed to be addressed in the EIR. First, the potential impact of increased traffic noise on the residential communities near the sites. Second, the potential impact and annoyance caused by noise associated with children playing outside, as well as by bells and whistles used at the schools. And third, the potential impact of construction noise on the nearby residences.

In addition, each of the three school sites had its own unique issues to be addressed. For example, one site is located directly adjacent to a freeway, while the other two are within earshot of freeway noise. Another site borders on a commercial/industrial area and is exposed to noise from industrial fans, truck loading docks, and a recycling center that processes, among other things, scrap metal which is sliced and crushed. The San Diego Trolley line also runs right by the site.

These noise sources are different from the traffic noise (though often just as loud) in several ways. They tend to be periodic (as opposed to the constant noise of the freeway), they start and stop suddenly, and they typically generate noise at a higher frequency. These differences increase the potential for annoyance.

How do we ensure that the noise levels inside the classrooms and in the play areas won't interfere with the children's ability to hear, concentrate and learn? The simple answer is to plan ahead.

The Solutions

Good noise control begins at the planning stage, which is why acoustical consultants appreciate the chance to get involved before, rather than after, the fact. After the fact, mitigation measures can be costly or impractical to implement.

For the sites we studied, the process should begin with the proper layout of the buildings, play areas, etc. Buildings can be used as barriers to buffer play areas from traffic and industrial noise. They can also be used to shield nearby residents from the noise of children in the play areas. Parking lots can be used to provide some distance between noise sources and receptors, thus decreasing noise levels. Sound-rated windows and doors can be used to maintain an acceptable noise environment within the school buildings.

It all starts with a good planner who has the foresight to anticipate the acoustical issues, and a good acoustical consultant who can recognize the most appropriate, cost-effective methods to make it all work.