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Troubleshooter's Guide to Speech Privacy in Offices

Acoustical problems in the workplace have some of the most elusive solutions. When conversations conducted within a private office or conference room can be understood in adjoining areas, the functional goal of the space is not being met.

Sound travels as energy from the talker's mouth to the listener's ear. Within a fraction of a second, the sound of speech strikes every surface of a room multiple times. This invasive energy finds its way through the acoustical weaknesses in the built environment very much like water finding its way out of an unsealed tank. There are several first steps to implement when attempting to improve privacy from one space to another. Listed below is the ADI Workplace Acoustics "Top 5 List" of acoustical troubleshooting tips:

■ **Number 5: Window Mullions & Perimeter Heating Units.** Raise the blinds and put your ear over against the window. If there is any air space between the end of the wall and mullion, you have a big acoustical leak. If the gap is narrow, caulk it from top to bottom. If it is more than a quarter-inch, get some dense foam "backer rod" at a building supply store to fill the gap and then caulk it.

When walls cross over perimeter radiators, there are frequently large air gaps within the cowling of the units. Stuffing pink insulation in the hole will likely not solve the problem. Look for a High-STC Melamine Composite Foam. This material, cut very precisely to fill the gaps, will do the best job possible in attenuating sound as it passes through the cowling.

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■ **Number 4: Return Air Grilles.** Return air grilles are open passages into the space above the acoustical ceiling. If sound is passing over walls through the grilles, placement of a simple boot over the opening will reduce the sound transmission while allowing the air to recirculate. Boots may be purchased or fabricated out of spare ceiling tile.

■ **Number 3: Walls Below the Ceiling Grid.** When walls terminate into the underside of the ceiling grid, there is an air gap that allows sound to pass over the wall and under the ceiling. If the gaps are very pronounced, a contractor may be able to bring the grid and the wall closer together. If allowed by the building management, caulk will help reduce the sound transmission through the air gaps. Placing fiberglass insulation batts above the ceiling will provide very little improvement.

■ **Number 2: Poorly Sealed Doors.** Most doors have an air gap at the bottom and fit loosely into the surrounding frame. Place a solid rubber sweep on the bottom of the door, assuring that it makes contact with the floor. Add gasketing around the full perimeter of the frame to eliminate large air gaps. With the door closed look for daylight (or use a flashlight) to show where any gaps may remain.

■ **Number 1: Sound Masking.** With some or all of these steps taken, speech privacy still may not be increased to acceptable levels. The next step is to investigate the benefits of a sound masking system.

Sound masking is an electronic system that provides a smooth background sound in the office. Most modern commercial offices are very quiet. With a low ambient sound level, it takes very little sound from an adjoining space to be distracting. Sound masking raises the ambient level slightly to cover the sound of speech. A quality sound masking system consists of speakers installed above the acoustical ceiling or below a raised access floor. The speakers are spaced to provide uniform sound throughout an office suite or building and are wired back to a central component group usually located in a server room.

When competently installed and properly tuned, sound masking is an unobtrusive tool to increase privacy.

To understand how sound masking works, picture yourself at the beach. The surf provides a pleasant background sound. Conversations may easily be understood at close range. But when you walk just 10 or 15 feet away, you will have a hard time understanding the conversation over the sound of the waves.

Sound masking works similarly; however, sophisticated electronics are used to shape the sound so that it is very effective at a low volume.

When troubleshooting acoustical problems, let your ears help you. Every office will be unique. Your ears will help you to determine the priority of acoustical weaknesses. Have a colleague stand in one office and count down loudly from 50 while you move around in the adjoining office and listen for where the sound is coming through most clearly. Moving around is important. Your ears will help you hone in on the location. Tackle the worst problem first and then move on. Sometimes, one thing will improve the problem enough to satisfy the occupants. With others, it will take a series of steps.

By using a balanced approach of augmenting physical barriers and deploying sound masking, most problems can be resolved without breaking the bank.

• *ADI Workplace Acoustics provides AIA CEU Accredited educational programs at no cost to industry professionals.*