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The Environmental Acoustics Magazine

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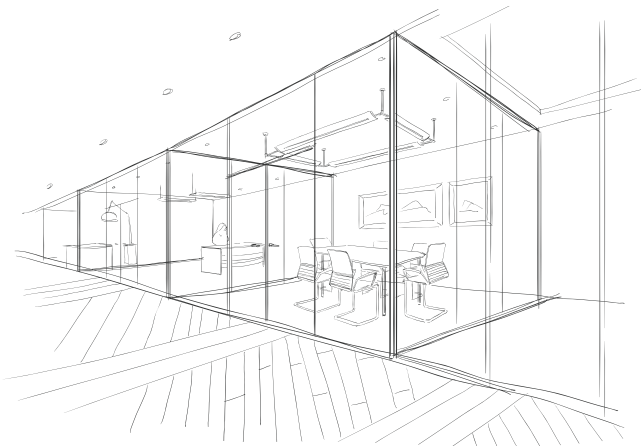
THE GAPS

Private offices and meeting rooms are supposed to provide occupants with visual and acoustic privacy. While the first goal can easily be achieved, the latter often proves elusive. Modern design and construction standards don't always provide a high level of physical containment. To preserve flexibility, floor-to-ceiling walls or demountable partitions are used. Budgets also limit wall options.

In any case, even if walls are built deck-to-deck, voices find their way from one room to another through a variety of pathways: gaps along the window mullions, ceiling and floors, as well as the plenum, ductwork and return air grilles. Even minor penetrations can significantly reduce the walls' performance. Of course, an open door is a room's biggest Achilles' heel. While the walls of a typical office range from 40 to 55 STC, the room's composite STC (STC_c) rating drops to around 7 when the door is open.

If a closed room fails to provide privacy, some argue that it was inadequately designed, poorly constructed or maintained. While those might be contributing factors, this failure can't solely be attributed to cracks in the walls' armor because privacy isn't determined by isolation alone. As set out in ASTM E2638, *Standard Test Method for Objective Measurement of the Speech Privacy Provided by a Closed Room*, a person's ability to clearly understand a conversation isn't only dependent on the level of the speaker's voice, but on the background sound level in the listener's location. In acoustical terms, this is called the 'signal-to-noise ratio.'

Traditional closed room construction attempts to provide privacy by simply reducing the signal. While walls lower the volume of sounds as they pass through them, they don't completely stop noise transferring from one side to the other. And if the background sound level in the adjoining space is lower than the speech entering it, the conversation will still be heard and potentially intelligible.





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