

Challenge:

Kaiser Permanente – the largest not-for-profit health plan serving over 8.6 million members with 2008 revenue of \$40.8B – was looking to improve their medical office building standard, in particular for exam rooms. In addition, they wanted to comply with HIPAA (Health Insurance Portability and Accountability Act) to address the protection of personal health information. Finally, they wanted to find a way to reduce construction costs while maintaining a consistent privacy standard.

Speech Privacy Can Be Objectively Measured Using Articulation Index (AI) and Privacy Index (PI)

Speech Privacy Levels	AI	PI
Normal	≤0.20	≥80%
Confidential	≤0.05	≥95%
Secure	Special consideration required.	

Levels as per ASTM E - 1130 Standard for Speech Privacy
 AI varies from 0 (absolute privacy) to 1.0 (perfect intelligibility, no privacy)
 PI is a related rating system and the inverse of the AI
 An AI of 0.15 is a healthcare standard versus an AI of 0.20 for open office as a standard.

The challenge was to develop an alternative to their previous slab to slab building standard that would work with architectural details, reduce cost and still meet the HIPAA requirements.

Solution:

Lencore Acoustics Corp. – a leading manufacturer of sound masking systems – had worked with Kaiser Permanente’s Manager of Standards in over 40 facilities. For this Kaiser Project, Lencore leveraged a simple approach by asking, “What do you want to achieve?” Lencore listened to the challenges and the specific requirements of Kaiser and custom designed the system around those needs.

The result: A specific acoustical solution by room type – verified by an independent acoustical consultant – that surpassed the acoustical requirement. According to Kaiser’s acoustical consultant, they exceeded the standard with the Lencore solution. Furthermore, by looking at alternative construction, significant cost savings were realized. This solution is now provided as an option in the new National Standards Book released by Kaiser in May 2009.

Outcome:

Kaiser describes the successful outcome as providing significant cost savings through alternative construction while maintaining their privacy requirements for HIPAA. They anticipate hundreds of thousands of dollars in savings.

Lencore’s solution provided Kaiser with a superior patient experience while allowing them to consider alternative construction methods resulting in significant cost savings.

Independent Commentary:
The Use of Sound Masking
 by Erik Ryerson of Shen Milsom & Wilke, LLC Chicago:

“Based on a client’s requirements, sound masking is a very viable solution when used in conjunction with the architecture. It really is about understanding the application and then determining whether or not the right solution is a combination of increasing the level of noise in a controlled and predictable way within the space to increase speech privacy. It is not the right solution for every application but I certainly support it when appropriate.” Ryerson went on to describe his approach to speech privacy and the type of construction utilized. “The introduction of sound masking should have a positive effect on moving the sliding scale towards ‘Good’ or even ‘Excellent’ speech privacy in floor-to-ceiling applications.”

Construction Savings

Calculating general cost savings is difficult due to the variance across the country as well as the construction standards¹, however, here is an example provided by Pepper Construction for a typical 10’x10’x12’ metal stud, drywall with insulation room:

- Slab-to-Structure: 12’x10’ times 4 walls = 480 sf x \$8.40 per sf = \$4,032 per room
- Floor-to-Ceiling: 9’6”x10’ times 4 walls = 380 sf x \$8.30² per sf = \$3,154 + \$100 (approx. \$1 per sf for installation of sound masking solution) = \$ 3,254
- **Savings** = approximately \$778 per room or **19.3%**

¹Check with your local general contractor for actual construction costs and local requirements

²Significant ACT cost savings exists in using an underpinned system