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Classroom Acoustics on a Budget

Sound quality and understanding speech in a classroom environment is important. If students are not able to clearly hear instruction in a classroom they are not able to learn – or learn nearly as effectively as they should. If this is the case, the room needs acoustical treatment; there is no way around that. But what if the budget for the project is limited – or non-existent? Believe it or not, there are options.

I received a call from a man in California named Jason who said that he had voluntarily taken on the task of finding out how to control the echo and reverberation of a classroom at his child's school. I can't recall whether or not this was being done simply to make the space more comfortable and improve the sound quality and speech intelligibility in the room, or whether there was a special needs student that needed this treatment, but either way, something needed to be done in the classroom and there was an extremely limited budget if there was any at all.

> ***"The hanging of the panels was a success. The room is glossy paint over plaster and lots of bare walls – it was very BRIGHT sounding. As soon as we did one wall, I noticed a difference on each side – quieter, warmer, less bright, more cozy sounding. Kids, teachers, administrator all noticed a difference."***

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Jason explained to me that these classrooms were common in the fact that they had a hard, VCT tile floors, painted sheetrock walls, and a hard sheetrock ceiling. When the classroom was filled with young, noisy, and excited children, it continued to get louder and louder, to the point of discomfort. I've been in rooms like this and I know exactly what he was experiencing. I usually refer to problems like this as the "cocktail party effect" where people continue to increase their voice level so they can be heard over the background noise and this causes the background noise to rise, which means they have to talk even louder to be heard – and the problem continues.

Because the budget for the project was so limited, there were only a few options. It was decided that the Echo Eliminator panels made from recycled cotton were the only likely choice. Because these panels are made from recycled cotton, they are one of the lowest cost, Class A fire rated products on the market. Not only are they very cost effective, they are also very effective at absorbing sound. Most of these panels are installed by adhering them directly to the structure but; in this case, the teachers and administrators did not want such a permanent solution. Jason decided that he was going to install some grommets and use some hooks he had seen, which was a great idea.

The cotton panels are not the most "finished looking" or "aesthetically pleasing" products on the market, but honestly, third-graders don't really care. Their understanding of spoken word and physical comfort is, or should be, much more important than how pretty a room is. After the panels were installed and the teachers were able to experience the change of the sound quality and feel of the room, all of the sudden these panels weren't so bad. In fact, I received a call a

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short time later asking me for a quote on a second set of panels for an additional classroom. I can't remember the exact dimensions of the classrooms, but twenty-two panels of the 1" #3 lb. Echo Eliminator were used.

Below is a short e-mail that I received from Jason shortly after the panels were installed into the first room, as well as pictures from both.

Ted,

The hanging of the panels was a success. The room is glossy paint over plaster and lots of bare walls – it was very BRIGHT sounding. As soon as we did one wall, I noticed a difference on each side – quieter, warmer, less bright, more cozy sounding. Kids, teachers, the administrator all noticed a difference. Of course, we could have used more panels, but cost was a factor – so this is a big improvement. Here are some pics from the job. As you can see, I punched two grommet holes and hung the panels on the walls (you can see all the fire sprinklers on the ceiling.) We used Ook brand picture hanger hooks – they have very slim nails that went straight in and the 30 pound hooks were big enough to hold the 1/2" grommets. Plus, if there was any alignment issue, we could pivot the hooks on the nails a bit to adjust.

Jason

If you have any questions or need any information about any of the products or applications discussed in this article, please feel free to contact me. I would be happy to do my best to help you. Ted Weidman, Acoustical Surfaces, Inc.
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