Soundproofing & Acoustics for Pubs and Clubs

It is very important to distinguish between sound absorption and soundproofing as many times customers think that to reduce the amount of sound leaving a room or passing through a wall or ceiling simply sticking on 'foam tiles' or egg-boxes will help. It won't!

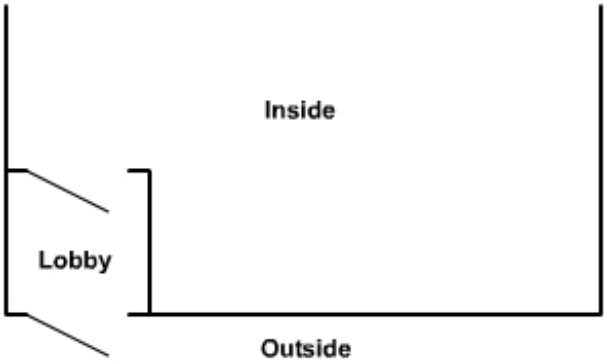
Sound absorbing materials like acoustic foams reduce the noise within a space. They reduce the amount of echo and general clatter making conversations easier to hear. These materials work by allowing sound to pass through them relatively easily which turns the sound to heat so reducing the energy. Conversely, a material or system, that provides good soundproofing is usually non-porous and a good reflector of sound.

Noise will always travel through the smallest gaps or crack and will always find the weakest part of a structure to escape from. Generally this would be through cracks around windows and doors, through thin windows and doors, through any holes in walls, through ventilation ductwork or extractor outlets etc. etc.

DOORS
To reduce sound leaking through / around doors install acoustic seals around the sides and top of the frame and a threshold seal for the bottom of the door. There are many types available but generally a good quality surface mounted seal is sufficient. Doors need to be solid cored fire doors not lightweight hollow cored doors for this to be effective.

If sound is escaping through front or back doors a lobby type arrangement is a good idea where there are effectively two doors in / out of the premises separated by a small lobby. Generally when one door is opened the other door will be shut so the sound is less likely to escape.

WINDOWS
Windows are another cause for concern. Thin single glazing doesn't stop much sound passing through so secondary glazing is the best option. This simply involves installing a second window spaced away from the existing window (as far as possible). If this is not possible then it may be worth looking at replacing the windows with good quality double glazed units although this wont be as good as secondary glazing.



HOLES
Don't have holes in walls for ventilation unless you build some kind of box around them or sound will spill straight out. The box needs to be lined with acoustic foam and well sealed against the wall to be effective. Ideally another box should be constructed on the outside as well for best performance.

DUCTWORK
Duct work can carry sound from inside a club to the outside which may annoy local residents. Cover the ductwork with some form of acoustic lagging to contain the noise within the pipes. Also don't have the end of the ductwork pointing directly towards someones house. Noise does have directional qualities so pointing the outlet duct upwards is a better option.

SPEAKERS
If speakers are mounted directly onto walls or floors then vibrations will transfer from the speaker into the structure of the building very easily and this can also cause problems. The vibrations will re-radiate on the outside of the building possibly causing a noise nuisance. The solution is to mount the speakers via something soft like neoprene rubber to reduce this interaction.

STAGES
Stages that are hollow can resonate. This can cause problems so insulate underneath the stage in the empty space and add some heavy damping sheets ontop of the stage to reduce vibrations.

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WALLS
Lightweight plasterboard stud walls don't generally stop much sound passing through them unless they are constructed with high performance acoustic materials. Blockwork or brick walls are far heavier so much better at stopping sound especially if they are rendered rather than just dot & dabbed with plasterboard sheets.

It's also worth noting that lightweight insulation such as fibreglass etc is great for heat insulation but useless for sound insulation.

SOUND ABSORPTION
When lots of people start talking and they have to shout to be heard when a club gets busy is because the sound is bouncing off reflective hard wall / floor / ceiling surfaces. The answer here is to install acoustic panels or acoustic foam on the walls and ceiling to absorb the excessive noise. Hard wooden floors cause much more problems than soft carpeted floors.

Reducing the noise levels inside a pub will reduce the amount of noise trying to escape through the walls and windows etc. so is in a way beneficial to soundproofing.

Article written by Gary Peskett, Technical Director © Custom Audio Designs Ltd 2005

For further advice on soundproofing for pubs and clubs contact the UK's leading soundproofing and acoustic suppliers - Custom Audio Designs Ltd on 0870 747 5511

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