FAQ's

1. **Explain the design principles to be adopted for Broadcasting studios.**

   The fundamental principle behind broadcast acoustics is that the treatment should improve communication and bring intelligibility up to the very highest level. Applying acoustic treatment to the wall surfaces. This will eliminate flutter echo, significantly reduce first order reflections and vastly improve communication. Treating the wall surfaces will reduce the reverberant field which in turn will improve intelligibility over the air. In Broadcasting Studio most of the energy is centered between 300Hz and 2000Hz; in order to control the reverberant field in this frequency region, the acoustic panel choice must be effective from 300Hz and up.

2. **Explain the design principles to be adopted for Concert Hall.**

   For classical or orchestral music, a higher reverberation time would be appropriate (approximately 2 sec), for a rock concert, a lower reverberation time would be appropriate (approximately 1 sec). Find a happy medium, perhaps 1.5 sec. It is vital to control the reflections from the back wall; it's usually necessary to splay or tilt the back wall to avoid slap back. Control the reverberation time on the stage. Ideally, the reverberation time in the stage area should be the same as in the house. Since the stage area might have a higher ceiling than the rest of the auditorium, more absorptive materials might be required in this area. Beware of potential noise impact to your space from exterior sources and/or excessive HVAC noise.

3. **What are various constructional measures to be taken for noise control?**

   Different materials provide different levels of transmission loss and, thus, different levels of diffusion of sound. Dense, heavy materials increase the mass of floors and walls, allowing less sound to pass through. A break in framing or a resilient drywall connection breaks the path of vibration for the sound wave, causing it to halt. Wood joist floor-ceiling systems transmit a lot of impact sound. Adding fiberglass insulation will improve their capability of blocking impact sound, as will decoupling by using a wire-suspended drywall ceiling. Lightweight concrete flooring is generally good at reducing airborne sound transmission, but it does not do as well blocking impact sound. Resilient underlayment beneath floating floors can isolate the finished flooring from the concrete slab.

4. **Describe about the sound reinforcement systems for building types.**

Generally, a sound reinforcement system is used to enhance and distribute live or prerecorded sound over a wide area. The key aim of sound reinforcement is to allow the sound to reach a larger or more distant audience while retaining or enhancing the quality of the existing audio, rather than just amplifying it. Sound reinforcement systems can vary from complex setups comprising of many microphones, multiple arrays and complex mixing and signaling processing systems, to something as simple as a small public address system, consisting of a single microphone connected to an amplifier and loudspeaker.

Microphones - which respond mainly to sound coming from one specific direction are frequently used in sound reinforcement systems, these pick up a maximum of sound from the speaker and also lead to a reduced risk of acoustic feedback.

Loudspeakers - Multiple speakers (or whisper speakers) are generally more useful in very large spaces where excessive resonance or echo hinders clarity. The number of speakers required will depend upon the size and layout of the building.

Amplifiers - In Amplifiers a preset control should be provided to limit the overall amplification to prevent instability ("feed-back") in the worst conditions. An amplifier with little response to the low and high audio frequencies is generally required, but if music is to be played through the system then a broader response is preferable. The amplifier can usually be placed anywhere convenient.