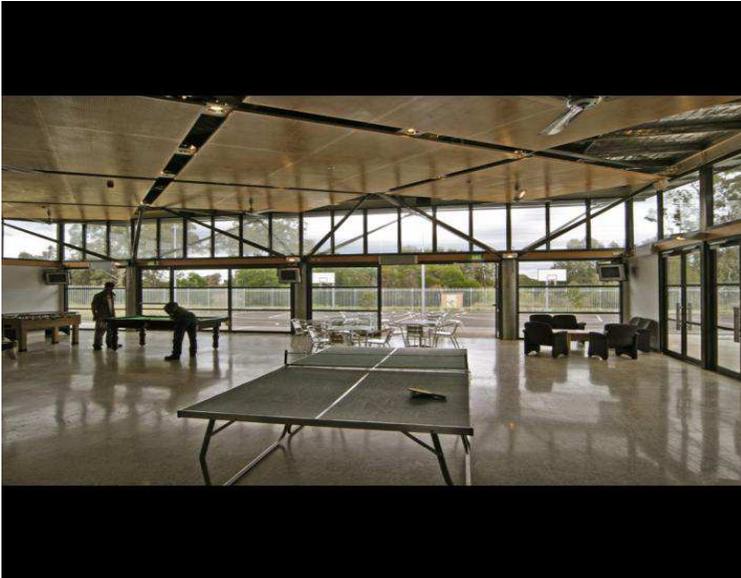




# ACOUSTICS TO INDOOR SPORTING FACILITIES

## Goal

To properly absorb excessive noise in this naturally loud environment to protect the users and minimize distractions and help to ensure the audibility of the PA system.



Because of the size and the materials typically used in this type of space, a gymnasium can become very reverberant, causing a tremendous buildup of noise and difficulty understanding the PA system. Absorptive materials are needed to help control this reverberation. Ceiling and/or wall treatments are necessary. If the space is also used for assemblies, meetings or other activities, reducing the reverberation time is even more critical. The reverberation time needs to be below 2 seconds if you are just concerned with gymnasium noise, but in order to facilitate other activities, a reverberation time of 1-1.5 seconds is ideal.

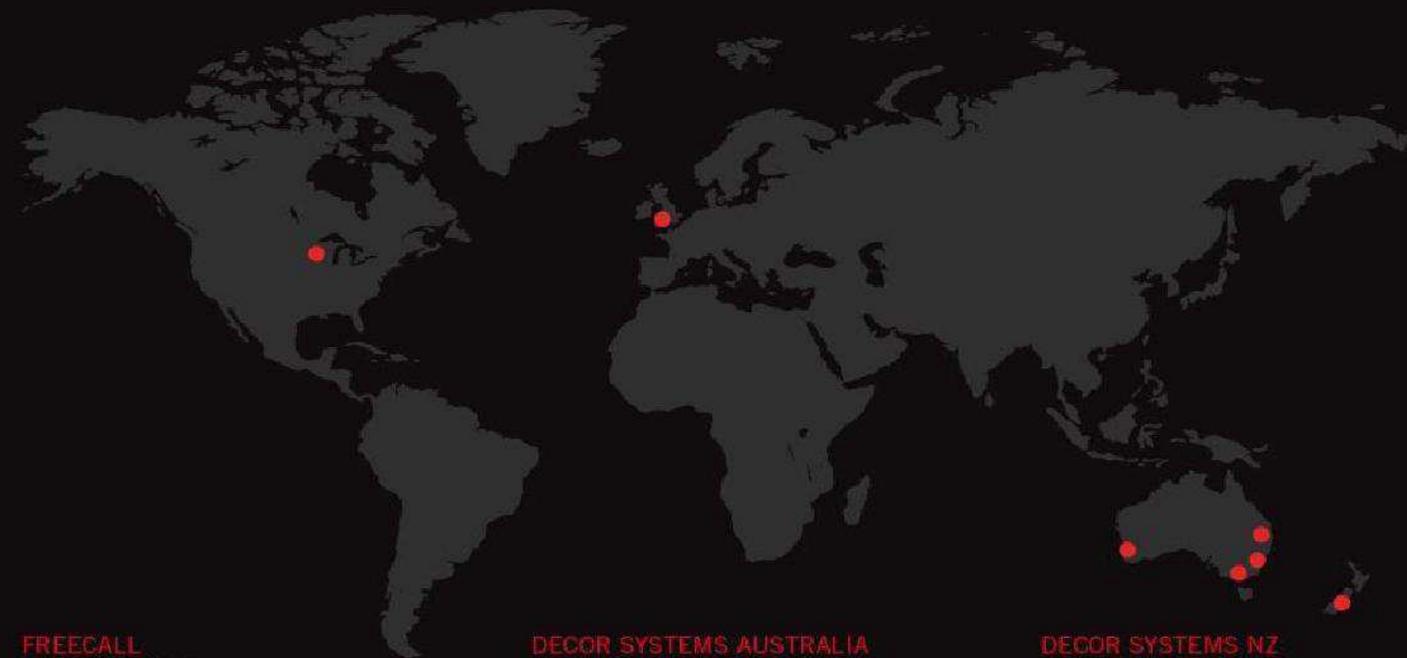
A reverberation time of above 2 seconds is unacceptable. Given the activities taking place in a gymnasium, and the equipment used for these activities, durability is a critical factor when choosing acoustic materials.



Even if everything else is controlled perfectly, the space might be negatively impacted if the background noise (e.g. HVAC system) is too loud. To help protect your design, the NC level should not exceed 35 to 45 (when used only as a gymnasium), 35 to 40 (when used only as a multipurpose room). When specifying NC, specify an actual rating, such as NC 20, rather than a range, such as NC 20-30. Although specifying a lower number will ensure minimal background noise, it might be cost prohibitive to achieve. Be realistic about the amount of acceptable noise and the project's budget when specifying an NC level.

Noise from the gym could potentially impact the surrounding spaces. Try not to locate quiet spaces (such as a library, or classroom) next to a gymnasium. If this can't be avoided, it is critical to ensure a high STC rating.





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