

Sound Recording Studios:

Sound recording studios vary widely in size, scope/need and in design. Small, home recording type studios or ones used *e.g.* for recording soloists or ensembles may be as small as $V \sim 100 \text{ m}^3$ (1000 ft^3), whereas a small chamber-music studio, with volume $V \sim 1000 \text{ m}^3$ ($35,000 \text{ ft}^3$) can accommodate a small orchestra, choir, or instrumental ensembles. A large music studio, such as the one shown in the figure below, would have a volume $V \sim 2000 \text{ m}^3$ ($70,000 \text{ ft}^3$) or even more.



The recording studio must be large enough so that the musicians feel comfortable/at ease playing their music, however sound reflection path length(s) to the microphones must be kept as short as possible.

Reverberation time is carefully controlled/tuned in recording studios. From the Sabine formula $T_{60} = 0.161V/A$, it (obviously) depends linearly on the room volume V , but also depends on the type/style/genre of music being recorded, as can be seen from the figure on the right.

Reverberation times in recording studios are usually shorter than those found in concert halls. In chamber music recording studios, reverberation times are typically ~ 0.9 to 1.2 s , whereas in larger recording studios, the reverberation times are typically ~ 1.2 to 2.4 s . Movable panels with variable absorption can be used in recording studios to alter the reverberation time.

