

"Acoustics of Building"

The acoustic properties of a confined space such as a hall or room have marked effects on speech and music.

It is well known that in some halls the speech delivered is quite intelligible to a listener. Such halls are said to be acoustically good. On the other hand, in some halls the speech is an intelligible and confusing. Such halls are said to be acoustically bad.

M. C. Sabin in 1911 gave the essential features for good acoustics :-

- (i) The sound heard must be sufficiently loud in every part of the hall.
- (ii) The quantity of the sound must be remain unaltered.
- (iii) The successive syllables must not overlap.
- (iv) There should be no undesirable echoes.
- (v) There should be no concentration of sound in any part of the hall.
- (vi) Undue noise must not be present.

To fulfill these acoustical demand the following conditions are necessary :-

(1) Optimum reverberation :- A common defect in halls and auditoriums is the undue persistence of sound. A short sound made in a hall reaches a listener directly as well as after successive reflections from the walls. The listener therefore receives a series of sounds of diminishing intensity. Similarly when a prolonged sound is made in the hall, some of the sound waves reach the listener directly, while others reach after successive reflections. The listener therefore receives an increasing sound intensity.