

## **Acoustical Treatment**

### ***General Requirements***

Proper control of sound is essential to the function of an educational environment such as FSU. Pursuant to this fact, the Design Professional shall determine, in conjunction with University representatives, appropriate sound control characteristics on a space by space basis and provide acoustical privacy from space-to-space consisting of, but not limited to, (1) partitions full height up to the underside of structure above (not up to suspended or dropped ceilings), (2) carpeting, acoustical ceilings and other sound absorptive surfaces as appropriate to the use and maintenance of the space, (3) protection of openings such as solid core wood stave doors with sound seals, (4) control of ambient noise and (5) other measures required to accomplish sound control goals for each space, as set forth by University representatives and these guidelines.

Specific spaces that will always require sound control measures shall be, but are not limited to, the following: offices, interview rooms, conference rooms, classrooms, seminar rooms, and lecture halls. Consideration shall be given at the early planning stages of a project to the location of sound sensitive spaces in relation to spaces that are sources of ambient noise, such as mechanical rooms, lobbies, break rooms, food service areas, loading docks, elevator shafts, restrooms, trash disposal areas, outdoor areas where people gather, high traffic outdoors areas, and nearby noise producing equipment such as generators. Where site conditions and other planning considerations make it necessary to locate sound generating functions near those with sensitive sound control requirements, special consideration shall be given to the separation of these functions with effective sound transmission barriers.

### ***Acoustical Treatments for Classrooms***

1. To prevent noise transmission, there should not be a common wall or ceiling between any classroom or lecture hall and the restrooms. If that is unavoidable, then additional measures must be taken to prevent noise transmission.
2. Classrooms shall be located away from sources of high noise levels (e.g., mechanical rooms, elevator shafts) as noted above.
3. Structural columns and other obstructions shall not be placed within the seating areas of classrooms and lecture halls, so as not to obscure sightlines to the instructor or projected images. In renovations, the Design Professional should avoid laying out classrooms such that structural columns are within the seating area. If that is absolutely unavoidable, then the Design Professional should consult with University representatives on ways to minimize the impact of such columns.
4. Corridor walls (or common walls with other unsecured rooms) shall run from floor to underside of structure above. Special consideration should be given to wall or partition construction above the ceiling lines on the corridor side of the room.
5. Walls in classrooms and lecture halls should have a minimum sound transmission class (STC) rating of 50. All walls must extend to the floor above or to the roof construction, and not stop at the ceiling. (This reduces noise transmission as well as improves security.)
6. Higher STC ratings and special wall-construction details must be included whenever classrooms are located adjacent to, above, or below restrooms, mechanical rooms, elevator shafts, bus stops, athletic facilities, or other sources of high noise levels, or where the

classroom function generates a significant amount of noise (e.g., a music classroom).

7. The mechanical system supporting general-purpose classrooms should generate a background noise level of no more than NC 35 (preferably designed to NC 30), and should provide at least six changes of air per hour with an NC (Noise Criterion) rating less than 30. Ducts need to be sized large enough to permit low air velocities. Select diffusers with NC ratings below 25. Design longer duct runs to reduce mechanical noise and reduce the transmission of sound between classrooms. Locate mechanical equipment away from classrooms. Other suggestions may be found at [www.ashrae.com](http://www.ashrae.com). Ambient sound levels measured at 48" AFF at all points throughout the room should have a Noise Criterion (NC) rating of no more than 35 (preferably 30). Background noise should not exceed 45dB-C. Although the space should be designed to an NC of 30-35, it does not have to be certified. (FSU reserves the right to certify a random sample of rooms to ensure that this standard was met.)
8. See also "General Classroom Design" included in these Guidelines.

END OF SECTION