



Acoustics, Noise & Vibration Control

**Thornton Tomasetti**

## **Acoustic and Noise Considerations for Building Design**

### **Summary**

Acoustic considerations have a significant impact on the design of a building. From concert halls to private residences, it is desirable to create spaces that are pleasing to the ear, while not compromising the architectural vision of the building. Learning the behavior of sounds that enter a building, as well as those generated internally, is paramount in creating an atmosphere that meets the needs of the occupants.

This seminar includes an overview of the basics of sound, and how it interacts with a building. An overview of room-acoustics is presented, focusing on how sound can move within a room to produce a pleasing environment for various uses. Consideration is given to how an acoustics consultant can work interactively with the architecture team to produce a space that is pleasing to both the eye and the ear. Sound isolation techniques to block the transmission of unwanted noise are presented, with several avoidable pitfalls demonstrated. Controlling the transmission of noise from building-service equipment is discussed, covering mechanical, electrical and plumbing systems.

Select project examples will be presented which highlight the importance of these issues.

### **Learning Objectives**

1. Develop an understanding of how sound moves throughout a building.
2. Learn how an acoustics consultant can work interactively with the architecture team to produce a space that is pleasing to both the eye and the ear.
3. Understand how to block the transmission of unwanted noise between spaces in a building.
4. Learn how to control mechanical, electrical and plumbing services-generated noise.

Presentation length: 60 minutes.

To schedule a presentation for your firm, email [AcousticEd@ThorntonTomasetti.com](mailto:AcousticEd@ThorntonTomasetti.com).