



Acoustics, Noise & Vibration Control

**Thornton Tomasetti**

## **Meeting Acoustic, Noise & Vibration Requirements of FGI 2018 Guidelines for Design and Construction of Hospitals and Outpatient Facilities**

### **Summary**

The 2018 Edition of the Facility Guidelines Institute (FGI) Guidelines for the Design and Construction of Hospitals provides extensive and expanded requirements for the acoustic, noise and vibration performance of healthcare facilities. This seminar summarizes the main requirements of this document and what implications they have on the design of hospitals and other healthcare spaces.

The basics of acoustics, noise and vibration control are also covered, with an emphasis on patient and staff privacy and comfort. Noise control for external sources is addressed, including traffic and helicopter noise. Control of noise and vibration transmission from building-service equipment is discussed, covering mechanical, electrical and plumbing systems.

Vibration criteria for patient and staff comfort and increasingly sensitive equipment are discussed. Space planning for Operating Rooms and MRI and CT scanners is discussed in the context of meeting vibration requirements of the FGI and manufacturer specifications. Finally, advanced methods of predicting footfall-induced vibrations are discussed, highlighting the availability of these tools to assist in the space planning of sensitive areas.

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

### **Learning Objectives**

1. Develop an understanding of the acoustic, noise and vibration requirements of FGI 2018 Guidelines for the Design and Construction of Hospitals.
2. Develop an appreciation of acoustic, noise and vibration criteria, and how they can drive the design of health care facilities.
3. Understand how to reduce the transmission of unwanted noise and vibration from outside and between interior spaces in a health care facility. Sources of noise and vibration can include mechanical, electrical and plumbing services, footfall, transportation, and construction.
4. Learn how an acoustic, noise and vibration consultant works interactively with the design team to produce a facility that is both visually appealing and compliant with the FGI.

Presentation length: 60 minutes.

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