Grand Rapids Business Journal
The Business Newspaper of Metro Grand Rapids, Holland , Muskegon & West Michigan
JUNE 15, 2009 VOL. 27, NO. 24

Focus: Acute Care

Shhhh! Hospital acoustic upgrades under construction

By Pete Daly
Grand Rapids Business Journal

It seems like there was a scene where The Three Stooges made a huge racket in front of a hospital, next to a sign advising "Quiet! Hospital Zone."

That was before HIPAA, and before hospitals began to compete for customers. Sound transmission in and around hospitals is no joke today, and acoustic design that protects privacy and makes patients more comfortable is a major consideration in new construction of hospitals, clinics and doctors' offices.

But one expert said acoustics is still a fairly new element in health care construction and some education is called for.

"Dealing with acoustics in a health care situation is a brand-new concept for most hospitals," said Kenric Van Wyk, president and principal acoustical engineer at Acoustics By Design Inc. in Grand Rapids. Van Wyk spoke at the spring seminar on health facilities planning put on at the Amway Grand Plaza by the American Institute of Architects.

Acoustics By Design is an independent consulting firm that provides acoustical consulting services to architects, engineers, building owners, facility directors and municipalities. The company is based here but serves clients in Michigan, Illinois, Indiana and Ohio. It has additional offices in Ann Arbor and Valparaiso, Ind.

Two of its most recent projects were a facility in St. Joseph opened by Lakeland HealthCare and the Secchia Center in Grand Rapids, the $90 million medical school facility being built by the MSU College of Human Medicine.

Van Wyk called his AIA lecture "The Perfect Storm: Why Acoustics Suddenly Matter in Healthcare Design."

"The changes in health care related to acoustics are at a point today that they never have been before," he said, noting there are three main factors at play: HIPAA, AIA health care guidelines and patient satisfaction.

HIPAA, the Health Insurance Portability and Accountability Act of 1996, initially dealt with the privacy and security of written records, but the latest aspect, which is "just now really being dealt with," according to Van Wyk, "is the acoustical." For example, if doctors are conferring in a patient room or hospital hallway, discussing a patient's medical condition, it behooves them to ensure that no one other than the patient can hear what they are saying. That extends to telephone conversations.

Van Wyk noted that the arrangement of people waiting for service at a pharmacy — with a designated area in front of the counter where only one person may be at a time — is a direct result of HIPAA.

Today, acoustical engineers use sophisticated electronic equipment to diagnose and predict acoustical performance in a given setting. The design takes into account all surfaces — floors, walls and ceiling materials — and includes placement of equipment and furniture.

The second part of the storm that is bringing acoustical issues into health care construction has to do with design guidelines adopted by the AIA and LEED.

Van Wyk said the AIA invited the Acoustical Society of America about five years ago to compile its recommendations for effective acoustic design, which will be published next year in the AIA guidelines for health care. The acoustical sections of that impending publication "are already an interim standard," said Van Wyk.


Van Wyk

Many new health care facility projects today start with LEED certification in mind, said Van Wyk, and the LEED organization has already adopted the AIA guidelines as the basis for acquiring LEED design points.

According to Van Wyk, he was one of the first LEED-accredited professional acoustical engineers in the United States. His research and consultations with clients have included achieving LEED for Healthcare and green building practices in architectural acoustics, noise isolation and vibration control.

A third critical factor in health care construction is patient satisfaction, according to Van Wyk. He said the widely read patient surveys done by Press Ganey Associates Inc., are a guidance tool used by thousands of health care organizations, especially with the growing competition among hospitals to serve more patients. One of the questions patients are asked has to do with noise in and around the patient's room, said Van Wyk, adding that "for many health care facilities, that is always the lowest scored question on the survey."

"Because hospitals and health care facilities are now in competition with each other, they are starting to pay attention to the fact that people are dissatisfied with the acoustics in health care facilities — and because of that, (health care organizations) are hiring firms like ours as independent consultants to come in and look at the acoustic environment."

Acoustics engineers, if consulted in the design phase, can attenuate interior noise travel and ensure appropriate speech privacy, according to the Acoustics By Design Web site.

But there are external noises, too, that have to be taken into account because acoustic issues are "so much more comprehensive" than in the past, said Van Wyk. Often a design plan will "take into account the fact that there may be a train line or a freeway or an industrial facility operating next to a hospital," he noted.

A design study will also take into account the fact that hospitals typically have large mechanical units operating on the roof — not to mention helicopters — and those are things that can add a lot of noise to the immediate vicinity.

What impact does acoustic engineering have on the cost of health care construction?

"The acoustic design of any facility is usually not too much more expensive if done right from the beginning," said Van Wyk. "It's often using many of the same materials (as normal construction) but using them in the correct manner. The problem comes in when the facility has not been designed with proper acoustic values, and you have to try to go back in and retrofit the facility."