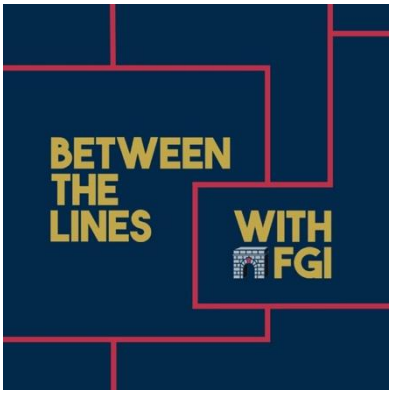

Episode 8
The Sound of Silence: Mandy Kachur
—Transcript—

[Intro music: "Skip to My Lou" by Neal Caine Trio]

Sponsorship

[00:00:17] **Bridget McDougall:** This episode of *Between the Lines with FGI* is brought to you by Specified Technologies Incorporated; your partner in barrier management solutions.

[Music fades out.]

Opening

[00:00:17] **Mandy Kachur:** The thing about acoustics is that you can design for it. You don't want to put the MRI next to some space that's quiet. You probably shouldn't have a piece of equipment that creates a lot of vibration right next to a lab where you need magnification. Maybe you can't control every situation, but there are so many other situations where you can control it. It really is an important thing to design into buildings.

[Music: "Skip to My Lou" by Neal Caine Trio]

Intro

[00:00:45] **Bridget:** Welcome to *Between the Lines with FGI*, a podcast brought to you by the Facility Guidelines Institute. In this podcast series, we invite you to listen in on casual conversations related to health and residential care design and construction. Coming to you from Washington state, the state where more than 75 percent of the country's hops are grown, is hard-working and sometimes beer-drinking John Williams, vice president of content and outreach and chair of the 2026 Health Guidelines Revision Committee.

[00:01:15] **John Williams:** And coming to you live and in person from St. Louis, Missouri, home to the largest beer-producing plant in the nation, is Bridget McDougall, associate editor with FGI, and we are here because we are just fascinated with conversations around health care built environments and all things related to what we do code-wise and regulation-wise to make them safe.

[00:01:35] **Bridget:** I do notice you said, uh, Mis-sou-ruh. I think I'm going to start saying Way-shing-ton. Way-shin-tone.

[00:01:42] **John:** Warsh-ington.

[00:01:43] **Bridget:** There you go. What we explore on this podcast are topics and questions and stories that you don't necessarily see when you open the *Guidelines* documents and read the codes. We go between the lines, so to speak, and bring you along with us.

[00:01:55] **John:** Today, we've invited Soundscape Engineering partner and principal Mandy Kachur to help us gain a better understanding of acoustic-related requirements in the *Guidelines*.

[00:02:06] **John:** Ready to dig in, Bridget?

[00:02:07] **Bridget:** Yes, I am. Always. Let's do it.

[Music fades out.]

[00:02:12] **Bridget:** Mandy Kachur, welcome to you. Thanks for being here.

[00:02:17] **Mandy:** Yeah. Thanks for having me on the podcast. This is a great honor.

[00:02:20] **Bridget:** Before we get started, tell us a little bit about who you are and what you do.

Guest introduction

[00:02:26] **Mandy:** I am an acoustics consultant, and I work on buildings. [A] long time ago, I used to work on planes [*plane engine sound*] and then I worked on cars after that [*car engine sound*], but it's buildings now. So, the main things that I do are room acoustics, which keeping the reverberation and reflections sounding good for the people inside the spaces [*operating singing*], and sound isolation, which is blocking the sound, say, from one room to the other [*muffled thud sound*], whatever the reason for that is. And then mechanical noise control, both inside the building and to the exterior for, say, noise ordinance or not bothering the neighbors [*HVAC mechanical sound*].

[00:03:19] **John:** Generally, studies inside of health care facilities have shown that average noise levels at night on hospital wards can far exceed what's recommended, which I think is around the 30-decibel level, at least [as] recommended by the World Health Organization. And sometimes even in ICU settings, those sound levels can be as high as 103. So, I guess that's during an alarm cycle or something like that. And before we talk about mitigating the noise, can you help give folks an idea of the sources of noise that we're talking about that you would expect to see in a health care environment?

Noise-related concerns in health care settings

[00:03:54] **Mandy:** Sure. A lot of them are the staff or from the equipment that they have to use. But we're concerned at FGI about the building itself and trying to make the environment as good as possible for all of the users in the space. So, that would entail putting absorptive surfaces in such that the sound reflection, it doesn't build up in the space; that conversations don't echo down the hall, disturbing many patients instead of maybe just the one patient that's trying to listen to the nurse speaking; and then, of course, sound isolation, so that if you have a private conversation in one room, the people in the next room aren't hearing it, or maybe they're trying to sleep and they can't because they hear voice.

[00:04:39] **Bridget:** You know, it's interesting. I read a few, papers, one of them you coauthored, about folks are reluctant to disclose information about their health or how they got there if they think that other patients can hear them.

[00:04:54] **Mandy:** Yes, that's absolutely correct, especially in smaller towns. The one study had where they knew the person next to them in the ER and didn't disclose all of the possible things that the doctor could use for diagnostics because they were afraid that the neighbor would hear.

We've also had our firm called. It was a doctor's office inquiring about speech privacy because they had a patient leave. They said, "I can hear what's going on in the next room," and they just got up and left. They didn't want to be in a space where they knew they could be heard. I've also personally been in doctor's offices where I've pointed out to the doctor, "Hey, I can hear everything in the next room." Both doctors said, "We've been telling our

management this, and they don't listen. They do nothing about it." So, the doctors are aware

that this is a problem. It's the administrators that, I mean, they have so many things to worry about, they just haven't put it to the top of HIPAA privacy, which of course is law. You need to protect somebody's information.

The patient experience and HCAHPS scores

[00:06:01] **John:** And beyond that being law, we also now have a metric that tracks patient satisfaction to HCAHPS scores, which most hospitals will be familiar with. And one of the questions that they ask is, "During this hospital stay, how often was the area around your room kept quiet at night?" So, those HCAHPS scores are often tied to reimbursement. So, there's a real incentive behind making these spaces quiet. Do you have any thoughts on that?

[00:06:28] **Mandy:** Yes, as soon as they were tied to financial implications, then, yes, we found more interest in making sure that the acoustics were improved in spaces. I can't say that it's been an avalanche of people coming to us and asking about it, but I think the awareness is increasing. And then also, there was a correlation study done where if people were more satisfied with the noise at night question, they tended to rate the whole experience higher.

[00:06:58] **Bridget:** Yeah. And let's go ahead and break down that acronym now for anybody that needs it: [pronounced] "H-caps;" H-C-A-H-P-S, it stands for the Hospital Consumer Assessment of Healthcare Providers and Systems survey. It's a list of 29 questions that's given to a random sampling of adults after a hospital stay, and it aims to measure patient satisfaction. The interesting thing about this tool developed by CMS, by the way, is 30 percent of hospital reimbursement is held aside and then given back to the hospital based on their scores. So, mitigating noise directly impacts the patient experience, which impacts funding.

Let's shift to some of those tables in the document, shall we?

Acoustic-related tables in the *Guidelines*

[00:07:42] **John:** So, inside of the FGI *Guidelines*, there are a number of tables and a number of directives that help us look at things that you can do inside of the built environment during the planning stages and construction stages to help mitigate some of the impacts of noise—noise, transmission, noise intelligibility. So, I'm really curious. When it comes to some of these things like making sure the room is quiet at night or making sure that conversations are private, where would you go first to look at that? What table?

Understanding sound transmission class

[00:08:11] **Mandy:** It's actually a combination of tables because the background sound level where the listener is, in this case, the patient who wants to get some rest, is important. And then the sound isolation table, so the STC of the partitions, and quite frankly, the door, because you need to block sound from the corridor, also. So, the combination is important.

STC is sound transmission class, and it is a single number reduction of a spectrum of transmission loss where you test a partition or a door or some element of construction, and it's how much sound does it block.

[00:08:59] **Bridget:** So, we've got a table in the *Guidelines* that addresses this component. It's called "Design Criteria for Minimum Sound Isolation Performance Between Enclosed Rooms," and that's where you'll see the STC ratings listed for spaces between rooms. Can you give us an idea of what these numbers mean in context? For example, I see the space between patient rooms and MRI rooms requires an STC of 60, but between a patient room and corridor, it's 35. What does that mean?

[00:09:30] **Mandy:** So, a higher STC would require a better wall, a heftier wall, maybe several layers of gypsum board, maybe staggered studs or a double stud wall. The exam room to a corridor, on the other hand, being STC 35, that takes into account the door because doors are particularly bad at being able to block sound. And if you have an unsealed door, which for infection control reasons, you can't have seals around a lot of the doors, particularly in hospitals—so, you'll have an inherent leak through the door, and the top of the table, you'll notice like a little tiny sub C there, meaning the composite. So, it's the composite of that wall with a door, with a light—with any sort of penetration or opening. Hopefully, you can plug all those up so that they're not contributing to the low, but you can't do that when you aren't able to put seals on doors. That's why the exam room to corridor is lower.

[00:10:35] **Bridget:** Aren't patient rooms the very places though where you're looking to have speech privacy? What do you do about that?

Sound masking

[00:10:41] **Mandy:** So, when you're trying to block sound or give that patient improved speech privacy because of the low STC rating on doors, you have to ideally provide a different means, and that would mean raising the background sound level. [A] sound masking system would be a good way to do that because it adds broadband sound that people are kind of familiar with accepting. It tries to mimic to some extent HVAC sound, and concentrated in the speech frequencies so that it makes it harder to hear the sound that is coming out of that room. Now, you can put sound masking in the patient rooms, also, and then that smoothes out the transient sounds that are occurring outside of the room. This is a contested thing. Europeans think that this is not a good way to do it, that you should just reduce the sound overall. And, ideally, yes, that would be the case. Everybody would walk around very hushed and quiet.

[00:11:41] **Bridget:** Is that akin to a white noise?

[00:11:43] **Mandy:** That's correct. Yeah.

[00:11:44] **Bridget:** When we had a baby, we had a little white noise machine and then, everybody in the family needs one now. And I've got a little travel one. Once you go sound masking, you can't unsound mask yourself. It turns out.

[00:11:56] **Mandy:** Yeah. Some people like it very much, and it's very helpful again to get rest and sleep and, uh, distraction reduction. But some of the maybe not as sophisticated hearing aids will amplify all sounds, and that's why you hear people with hearing assistance complaining about that they can't go to a restaurant and converse very effectively, and that's because of all the background sound coming at them from all directions.

A caution about material selection

[00:12:22] **Mandy:** The other thing I guess I'd like to point out about the table is that you have to be very careful about what stud gauge that you're using because the different stud gauges affects the STC rating. So, stiffer studs transmit more sound through the wall. And some of the historical data had always been to the advantage of *how can we make this wall the best acoustically*? So, you put 25-gauge studs, 24 inch on center, and you come up with a wall: one layer gypsum board each side, five-eighths, say, type X, with insulation in the middle, somewhere in the high 40s. But, as soon as you start using lightweight gypsum board, and you put the studs 16 inch on center, and now they're 20-gauge because nobody wants to deal with all the problems of installing 25-gauge—now you've got a wall that's in the low 40s. So, you've really degraded the ability of that wall to block sound. And you need to be careful on what data set you're using, and you have to make sure that whatever you're specifying is what will actually be installed in the field.

Assessing STC ratings

[00:13:30] **Bridget:** So, these sound levels and STC ratings, how do you check them?

[00:13:35] **Mandy:** Well, If the owner would like commissioning done, or if they hire an acoustics consultant during the design stage, then they would come out after the walls have been sealed up, doors are installed. You could actually do a test to see how things are performing. We recently did that on a classroom building.

You could, for speech privacy, do a quick and dirty test and just recreate the environment that it'll be used under. So, put somebody in one room where the doctor, somebody's hard of hearing, you know, act like that, and the doctor's talking loud to try to get across the idea so that people can hear them, what they're saying, and then have this person listening in the next room. Is it blocking the sound? Can you hear some words? Can you hear everything? So, that would kind of be an indication of whether or not you're complying with HIPAA.

Understanding average sound absorption

[00:14:25] **John:** Let's consider another table. We have another table: 1.2-4, "Minimum Design Room Average Sound Absorption Coefficient."

[00:14:34] **Bridget:** Say that three times fast!

[00:14:36] **John:** Yeah, right. This is a different metric. How is that different from STC, and how does that contribute to this intelligibility or noise transmission equation?

[00:14:46] **Mandy:** Right, so sound absorption is the quality of a material to reduce the energy, the acoustic energy, that's incident upon it. Probably the easiest way to think about it is a soft surface versus a hard surface. Hard surfaces tend to reflect sound and soft surfaces tend to absorb sound. In a health care setting, absorption can be an issue because of, again, infection control and worrying about biologically . . . growth . . . or I don't know how to say . . .

[00:15:17] **Bridget:** We just say "the ooey gooey grody stuff."

[00:15:20] **Mandy:** Yeah. Right. Yeah. Nowadays, there are products that are specifically made for health care environments that are cleanable. So, some of the issues for infection control are addressed through that; even bleach-cleanable, some fabrics, and that's how hopefully more of these materials will get introduced. There's also membrane absorbers that are wipeable. They tend to not be as useful acoustically because they're not as broadband. They don't absorb sound over a larger frequency range, but these things are possible for health care settings.

As acoustics consultant[s], we look at the entire spectrum, but in this particular case, we're concerned with speech in a hospital. And so, we're looking at this design coefficient being in the speech range, and it's an average over all the surfaces. There are health care facilities that will have carpet, but most of the time the flooring is hard. And so, that comes into the factor. But if you have a very absorptive ceiling, then that averages with the hard floor, and you're coming up with these average absorption coefficients. Of course, you have to include the walls, also.

[00:16:31] **Bridget:** So, from layman's terms, looking at the table, I can see that telemedicine rooms and waiting areas have a slightly higher design coefficient than the rest of the things in the table, with the atrium being the lowest. I would guess that the atrium is kind of the loudest space, but you want to have the quietest space be your telemedicine rooms and waiting areas. Is that right?

[00:16:53] **Mandy:** Yeah, I wouldn't describe it necessarily as quietest and loudest. It's the most reflective or the least important for speech. So, an atrium is not so important because it's mostly people walk through it. They don't stay there. Maybe they're having a

conversation with somebody, but it's a short, it's a small distance and they can hear. You're not doing major presentations in the atrium that's a highly reflective space.

For waiting areas, the absorption coefficient is high. Maybe there are a lot of people talking in the waiting room, and you don't want that sound propagating down to the patient rooms and disturbing them. So, you're trying to absorb as much energy locally as you can.

In the telemedicine room, it's for speech clarity. So, when you're talking, somebody can understand what you're saying, and you're not getting a lot of reflections off of the walls. If you do have multiple people in that telemedicine room, you don't want to have the conversations from the other individuals bouncing into your conversation. So, that's why the absorption coefficient is higher. So, the higher the coefficient, the more sound is being absorbed.

The difference between 0.15 and 0.20

[00:18:00] **Bridget:** Can we talk about something that happened last cycle? So, this is reflective in the 2022 documents. So, the same table, which exists in hospital, outpatient, and residential, if you were to open all of them and all three documents, you're going to see slightly different numbers. And some of that is because of the way that the specific document groups voted on proposals. Right?

So, we've got in the hospital document, a lot of these spaces are at 0.15: corridors, medication safety zones, nurse stations, that kind of thing, um, procedure rooms. But then in the outpatient document, those are at 0.20. Can you weigh in on that at all?

[00:18:43] **Mandy:** Yeah, the increase doesn't seem like a lot, but because we're averaging it over all the surfaces, it actually is a substantial increase. So, if you've got a corridor where you've got a hard floor and hard walls, then an increase of 0. 05 in the design coefficient, it's significant. And you'll be able to hear a difference, again, maybe keeping sound from propagating down the hall and disturbing less people. And it's just the difference between knowing which ceiling tile—that might be the difference between NRC, which is noise reduction coefficient, NRC 0.55 tile to a 0.70 tile. I don't do estimating, so I don't know how much of a cost difference there is between those, but I think those are pretty standard NRC ratings, and there shouldn't be much cost implication at all.

[00:19:35] **Bridget:** So, it's possible that we're talking about a small cost difference, but we're talking about a much greater increase in speech intelligibility.

[00:19:44] **Mandy:** That's correct. Yeah, it depends on what the application is. It could improve intelligibility. It can reduce disturbance, again from the sound propagating where it shouldn't be going.

Understanding exterior noise class

[00:19:55] **John:** Just curious about the table for exterior noise class, and I imagine that this is exterior noise class that you would look at during design of a brand-new facility or maybe [during] feasibility testing [before] buying an existing facility. Can you talk about how exterior noise class factors in and what we're trying to do there in the *Guidelines*?

[00:20:18] **Bridget:** Is this the "Exterior Ambient Sound with Design Criteria for Sound Isolation of Exterior Shell and New Construction" [table]? Is it that table?

[00:20:27] **John:** It's that table.

[00:20:28] **Bridget:** Again, man, we've got the names on the tables, but yeah, break that table down for us, Mandy.

[00:20:33] **Mandy:** Sure. This table is just trying to block out sound that could be distracting to patients or residents, depending on which volume you're talking about. And it's trying to simplify what sounds could be coming in and trying to keep the interior of the building quieter and distraction-free or annoyance-free. It's something that an architect can use to design the building shell.

If you have a space that's maybe less acoustically sensitive or louder in nature, then maybe the table could overdesign some spaces, or if it's particularly sensitive acoustically, then it might under design slightly. The table is a good guideline for handling the majority of spaces. If an owner wanted to go space by space by space and try to save some money by, say, not buying expensive windows for all locations, then I would recommend hiring an acoustics consultant to help sort that out.

[00:21:35] **John:** Well, you've mentioned that a couple of times. It sounds like these tables are engineered to look at, maybe kind of an off-the-shelf approach to understanding how speech impacts transmission or noise reflection or like in this table, something that is a handy tool to use that belies something that is much more complex. Is that accurate?

[00:21:55] **Mandy:** That's absolutely, 100 percent correct. We try to keep the tables simple enough that we're using design parameters that architects and engineers are familiar with. As an acoustics consultant, our analysis goes much deeper than the tables that you're seeing.

Acoustic consultant input during the functional program process

[00:22:15] **Bridget:** We've asked folks in previous episodes: who are the right people to have at the table during that functional program discussion? So, who would you say would be good to invite to the table to consider acoustic aspects of planning and design?

[00:22:32] **Mandy:** Well, sorry, thinking self-serving. I don't want to sound like, "Oh, you should always have an acoustics consultant around" because that's what I think. I think you should. It's really not a lot of time, for an acoustics consultant to give that input early in the project. but it can save a whole lot of money and hassle later on.

[00:22:51] **Bridget:** I mean, it's a lot better than later on down the road having all of your patients say, "Man, we can hear everything that you're saying on these calls," or "Hoo! I can't sleep in my overnight stay because I'm directly above the HVAC system." I don't know if that's exactly possible, but . . .

[00:23:06] **Mandy:** Oh, yeah. I've fixed both problems in health care facilities. I just recently had an MRI right next to a medical staff room and patient room. And, yeah, the doctor was very, very upset. I've had situations where HVAC units are above a doctor's office and they didn't have the proper noise control, and the doctor refused to pay a rent on the space because it was unusable to him.

Understanding vibration transmission

[00:24:23] **John:** So, I had a question. You mentioned vibration and there's a table about vibration transmission inside of health care facilities. And I'm curious, is that there because of acoustics? I've heard that it's there because of image quality on certain diagnostics equipment, but is there any other reason for that?

[00:24:40] **Mandy:** That's exactly right. It's image quality. So, trying to keep the image quality up. There are some recommendations for just general perception of vibration. You'll notice [in the table] the patient room and other patient areas are slightly less. Micro inches per second is the velocity of the floor. And that's perceived by people, if they're lying down, they're more sensitive to vibration than if you're standing up. And so that's why the 6000 is there because, especially in inpatient facility, you're going to have a lot of people lying in beds.

[00:25:19] **Bridget:** This is the nerdy stuff that I absolutely love. I never would have thought about that.

[00:25:24] **Mandy:** Yeah. And one other comment about if you look at the residential edition, the vibration table in there is, it takes on a much different flavor, and that's more in impulse insulation class: IIC. And the reason it's different there is . . . is that's in building codes, so IIC is how vibration is classified there, and you don't have any of these imaging issues in residential.

[00:25:51] **John:** We don't have the MRIs suspended on the second floor of an assisted living facility necessarily.

[00:25:57] **Mandy:** Correct. Yes.

The broadening landscape of acoustic terms

[00:25:59] **John:** Mandy, when I first started out, and admittedly, this was many years ago, and I wasn't focused on acoustics, there were a couple of acronyms that you needed to know. You needed to know sound transmission class, sound pressure level, NRC, CAC was just coming on board. Now, there are so many different characteristics. Why is that? Was I just not aware of those back in the early '90s, or are we learning more about acoustics and the things that we need to track?

[00:26:25] **Mandy:** Probably a little bit of both. Maybe some of the terms that have come to the surface. You're trying to more accurately describe what is happening. As you mentioned earlier, acoustics is a very complex topic, and trying to encompass everybody's perception and trying to characterize how a space should be designed is a difficult task if you're just reducing it to these numbers. So, some of them have probably become more familiar or fallen into more use because of, say, speech privacy concerns, maybe directly related to HIPAA or people realizing that this is an issue. There are other ones that maybe were only used within the acoustics community, and then maybe are used more widely now. I think also that manufacturers are under more pressure to produce the test data nowadays than they were before, and you'll see that published more frequently.

[00:27:25] **Bridget:** When I thumb through the *Guidelines* and look at all of these acronyms and everything in these tables, how fluent do you think designers and architects are in these terms?

[00:27:35] **Mandy:** Well, I know it's complex. There's a lot to know about this. It depends on, I guess, how deeply you dig into it and maybe if you've worked with an acoustics engineer in the past, then maybe they've taken the time to explain some of the terms.

I remember a project I did where I explained to an architect that porous absorbers do not block sound, and what I mean by that, is everybody's under the assumption that if you just put fiberglass here or there, that your noise problem is going to go away. No, it depends on what your noise problem is. Is it a structure-borne noise problem? Is it an airborne noise problem? Is it a reverberation problem? And each one of these requires its own solution. Twenty-five years practicing, he said he had never been told that there's a difference between those materials because everybody calls it "soundproofing" or "acoustical," and those terms mean lots of things.

[00:28:40] **John:** And to your earlier point, a lot of what these tables do is try to make it simpler for folks and try to, not necessarily lower the bar, but maybe make it more accessible, more understandable, and if you've got the awareness, maybe more achievable.

[00:28:55] **Mandy:** Oh, absolutely, yes. We are so thankful that we were able to expand on the historical. There was only an STC chart for many, many, many years in the FGI *Guidelines*. And then when we were invited to expand upon that and get all of these tables in, I think it helps everybody, especially the end users and the owners and the patients to have a better acoustic environment. [It's] just so much more healing and less stressful to

work in. We're very thankful that these are in there. If we can try to get our complex topic across to more people, even if the terms aren't perfect and these simplifications aren't describing the entire picture, it's way better off than we were before.

[00:29:45] **Bridget:** What are some of the biggest mistakes that you see out there from folks that are just not acoustic savvy when it comes to building patient care spaces?

[00:29:54] **Mandy:** Oh, there's so many different mistakes that can be made.

[00:29:57] **Bridget:** Really?

The easiest mistake to avoid

[00:29:57] **Mandy:** Yeah, so you've got sound isolation mistakes. You've got room acoustics mistakes. You've got HVAC mistakes. Over the years, yeah, we've seen them all, really. What's the easiest thing to avoid?

[00:30:10] **Bridget:** Yeah, there's the question. What's the easiest thing to avoid when building spaces?

[00:30:16] **Mandy:** I think that getting the structure part, the walls correct, is more important than, say, getting the acoustics within a space. Because you can always add wall panels. You can always change out ceiling tiles to be more absorptive. The big dollars are when you finish the space and now you've got to cover up your finishes with another layer of gypsum board, or you have to pull off a layer of gypsum board and something to the wall to improve it. And the same goes for HVAC. I try to encourage getting the sound isolation and the HVAC right the first time. Obviously, we want the room acoustics to be right, too, but that's a much easier thing to fix after the fact.

Acoustic considerations in residential care spaces

[00:30:59] **Mandy:** I want to say one other thing real quick about residential—the IIC. The impact insulation, from, say, footfalls, when you have a multi-story residential facility is important because if you're looking at condominiums, the biggest complaint of multifamily facilities are "I can hear somebody walking around above me. I can hear somebody dragging a chair." So, in these multi-level facilities, making sure that you've taken care of floor underlayments or isolated ceilings, that sort of thing, is really important so that you're not driving the person living below the person who has a heavy walking style absolutely crazy with being able to hear the person above.

[00:31:45] **John:** They're literally waiting for the other shoe to fall.

[00:31:48] **Mandy:** Literally, yes.

[00:31:50] **Bridget:** I'm also thinking about mobility devices in those settings.

[00:31:56] **Mandy:** Yes. Anything that's going to impact the sound. Maybe it doesn't sound very loud in the space you're in if somebody's plopping a walker down or using a rollator, but if you're down below and the proper structural isolation isn't used, then it really is much louder down below than it is within the same space.

[00:32:17] **Bridget:** Well, in the next episode, we're going to interview somebody about residential dining spaces, which I think it's going to be fascinating right after speaking with you because you mentioned that . . . that those dining spaces can get so incredibly loud, and especially for talking about an aging or vulnerable population, it's that much more important to be able to get it right.

[00:32:40] **Mandy:** Sure, because it really, really, deeply has an effect on people in that this is their time for socialization. I mean, I have a perfect example: my father. We were down having lunch with others and sitting at a table. The table was too large, and so there were too many people seated at the same table. And when we left, Dad said, "I didn't talk much because I couldn't hear what other people were saying." There was kitchen noise, there was talking from the other tables, the tables were much too close to each other. It was just a really bad acoustic environment. And quite frankly, I had trouble hearing some of the people because when you're older, maybe you don't have the same voice projection, or maybe [you have] a medical condition that prevents you from projecting. And, yeah, it was not good for my father. And my father, I think, is representative of a lot of people that age where hearing isn't what it used to be. And taking effort to communicate is exhausting. And then if you start to withdraw, people get depressed, and then depression leads to bad health outcomes. It's so important to have good dining room acoustics. I can't emphasize it enough. That's been an area where we've, we being the FGI acoustics group, has done a lot of study and it really emphasized the importance.

Wrap-up

[00:34:16] **Bridget:** I think over the course of our time, speaking with you, it's really clear that acoustic considerations permeate every aspect of patient and resident care everywhere.

[00:34:27] **Mandy:** Yeah, it's one of the senses, and it's something that everybody is in tune to.

[00:34:33] **Bridget:** Think about it upfront. That's what I'm hearing.

[00:34:35] **Mandy:** Oh, absolutely. And again, getting an acoustics engineer in on the project early can help guide some of the decisions. Maybe we're not doing a lot of work up front on a project, but just the input early on in the project can save a whole bunch of effort and money down the road.

[00:34:54] **Bridget:** Thank you, Mandy. We're so grateful to have had this time to spend with you and talk all things acoustics, and we'll definitely have you or your people back on a later episode cause there's a lot to dig into here.

[00:35:06] **Mandy:** Oh, yes. Thank you. I really enjoyed our conversation today, and we would love to come back and speak to you guys again.

Outro

[00:35:13] **Bridget:** Thanks for joining us for another episode of *Between the Lines with FGI*. Do you have an idea for an episode or a question that you'd like us to answer? Please get in touch by writing to us at podcast@fgiguidelines.org.

[00:35:30] **John:** Also, if you're interested in becoming a sponsor for one or a series of episodes, you can reach out to us at the same address. It is podcast@fgiguidelines.org.

[00:35:40] **Bridget:** Many thanks to Neal Caine and the Neal Caine Trio for the use of his song "Skip to My Lou." You can find it on the album of the same name. Listen to that bass, y'all.

[00:35:52] **John:** Join us next time as we go between the lines with FGI. Bye, everybody.

[00:35:57] **Bridget:** See you next time.

[Music fades out.]