

Sarah Gudeman, LEED Fellow | Director Of Sustainability at Morrissey Engineering

Introduction ([00:01](#)):

Welcome to Green Building Matters, the original and most popular podcast focused on the green building movement. Your host is Charlie Cichetti, one of the most credentialed experts in the green building industry. One of the few to be honored as a LEED Fellow each week. Charlie welcomes green building professionals from around the globe to share their war stories, career advice, and unique insight into how sustainability is shaping the built environment. Settle in, grab a fresh cup of coffee and get ready to find out why Green Building Matters.

Charlie ([00:34](#)):

Hi everybody. Welcome to the next episode of the Green Building Matters Podcast. I'm your host, Charlie Cichetti based here in Atlanta, Georgia. Today my guest is coming to us from Omaha, Nebraska. I've got Sarah Goodman. She's a recently minted LEED Fellow, very passionate about the natural environment. She's a mechanical engineer. Sara, Welcome to the show.

Sarah ([00:54](#)): Thank you for having me

Charlie ([00:55](#)):

Excited to just learn more about you and how you got to where you are in this green building movement. Sarah, take us back. Where'd you grow up? Where'd you go to school?

Sarah ([01:04](#)):

It's funny. I grew up here in Omaha and here I am still though. I was not born here originally. I was born in Austin, Minnesota, where my parents

moved so that my father could manage the nature center there. We'll probably talk more about that later, but from there a job change, he moved to Omaha to be the state director for the nature Conservancy. I grew up here since I was five. I went to Marion High School here in Omaha, which was a private all girls Catholic high school. I went to Iowa State, for mechanical engineering, which was a big shift from all women to pretty much all men. It was like 5% of females back then.

Charlie ([01:46](#)):

The nature Conservancy that's kind of my follow-up to is so we know where you've been most of your life but what about sustainability? Was it from your youth? Was it a college professor that inspired you about buildings or green buildings? Did you have an aha moment? How'd you start becoming sustainability minded?

Sarah ([02:05](#)):

It's only recently. I've recognized that there wasn't really an aha moment for me and it's kind of just been ingrained in everything in my whole life. There's old family movies of me laying on the dock at our family cabin in Iowa, waiting with a fishing net for the bottle to float down the river so I could scoop it out and stuff like that. That's pretty much how I grew up. I always loved math and science and then got into engineering, thanks to some teachers that encouraged me in that direction. Ended up in engineering and picked engineering mechanical because I didn't know what I wanted to do. For internships, I really wasn't focused on sustainability. I worked at MidAmerican Energy and at Caterpillar on diesel engines, but I took some courses at Iowa State that were a bit more aligned with my interests, like renewable energy and alternative energy and a collaborative sustainability course. Almost 20 years ago, it wasn't probably as prevalent even then. I started my career in AAC back in Omaha, at Ivin Engineering and they were at the time doing a lot of work in other markets like California and Illinois and places where LEED was really huge. I learned

about it from there. As soon as I learned what LEED was and what green buildings were I was totally hooked.

Charlie ([03:39](#)):

LEED has done so much for us over the last 21 years now, since those first LEED projects came online around the year 2000. Mechanical engineering, do you really love the design side of it? Have you gotten into energy efficiency? I'll ask you about Passive House certifications, but what was that early part of your career? Was it more design? What is your career kind of like now? How are you spending your time?

Sarah ([04:04](#)):

It's really interesting. I've followed a non-traditional path in a lot of ways which is good. I got into the industry certainly more in the design role, like HPAC Plumbing Design as a mechanical engineer. Since I didn't come from an architectural engineering background and coursework, I had to get up to speed really quickly, just in terms of what are all these things that go into a building? I was coming at it with an engineering mindset, but not with the technical knowledge of what goes on behind the walls in building. In a lot of ways I was a lay person at that point. I focused pretty much on mechanical systems design exclusively. Two years into my career, I came to Morrissey Engineering, we were 20 people then.

Sarah ([04:56](#)):

We do most of our work here around Omaha and then regionally and some national work, but it's a lot more locally focused. I was able to get up to speed really quickly and take on as much responsibility as I wanted, which was great. I was allowed to make mistakes and learn from them and focus on the things that I was interested in, which was sustainability. We had some LEED projects that we were designing and I got into energy modeling and then kind of became more of like a LEED project administrator role and then kind of fulfilled the sustainable design and mechanical systems

design role for those projects internally. It kind of evolved to like project management of sustainability projects. Anything from commissioning to energy to indoor quality and then working with our really good lighting group and daylighting modeling and all of the everything. I feel like I'm not not knowing something that I am interested in just like never. I get a little spread thin because I have so many interests.

Charlie ([06:08](#)):

Stay curious. I know with engineering, you probably love to be a problem solver. How can I apply this? It's a new solution. For those listening, we have listeners all over the world that maybe aren't as familiar with where you're located and some of your projects. How do some of your designs vary? Heating months rather than cooling months. Are you more focused on one thing than the other? What do you have to deal with on projects there in your region? Then some other places you've worked.

Sarah ([06:38](#)):

We're here in Omaha, Nebraska and in the middle of climate zone five a. We talk about how we get to design for both extremes, really hot humid summers and really bitterly cold terrible winters. It's a challenge with a lot of the things that are at the forefront of people's minds now in terms of sustainable design, like electrification and then looking at our grid and our power companies here in a little bit of a different market. I say generally it feels like talking with people in other markets, we're like 10 years in the past. You're not behind because behind implies that we don't know what's going on and we do. The momentum in the market really feels like it's kind of drafting along.

Sarah ([07:33](#)):

There's a lot of reasons for that. It's the climate challenges of designing for really challenging climates. It's the cost of energy, costs of water, and things we haven't had to deal with some of the more pressing issues in other places

like water scarcity. It's not maybe as urgent as other people are designing for urgency. It's interesting. There's different challenges in different areas of our country. We need to be mindful of that. There's different appetites for different priorities on different projects.

Charlie ([08:13](#)):

Thanks for giving us the lay of the land there where you are. Connect the dots a little bit to where you're at now. You've been there over 13 years and accelerated your sustainability career. Tell us more about your firm and some of the things that keep you busy.

Sarah ([08:29](#)):

We're a design engineering consulting firm primarily. Mechanical electrical systems, engineering technology, a V it design. We do quite a bit of commissioning work. We've gotten into a lot of mission critical commissioning and high performance buildings. We are commissioning staff from a really interesting diverse background of facility operators, testing, adjusting, balancing and controls. At the same time we have a good sustainability group too. We've been able to function in any and all consulting roles that would influence sustainable design except for several architectures. The Passive House and certainly with enclosure, commissioning becoming more prevalent there's a lot of opportunities there and that's something I'm trying to learn more about because I recognize it as a need because we need more building scientists in the world. The engineering mindset we're willing to apply to any challenge because we don't have unanswered questions. We love solving problems.

Charlie ([09:43](#)):

You've got to push for building scientists research, some of the Lawrence architecture firms too. They have these entire research sites that tell many, we're not just stuck in our ways. Here's how we've done it. We train you to do it this way. Let's put some research of our own behind this. I'm glad that as a firm, you're staying curious. You mentioned passive outside. I

understand you've got some credentials around it. Maybe even helped certify some Passive House projects. Can you just speak to that a little bit?

Sarah ([10:12](#)):

I have not yet gone through a certification. This is probably my most recent professional credential. I'm one or two in the state currently. I want to say out ahead and have an answer ready when people start asking those questions. I want to be ahead of that thought process a bit. I do have a couple of projects that we're talking about and there's a builder I've been talking to here locally that they used to build getting back to market. They used to build energy star certified rated homes, but then people weren't really that interested in it. They're like, "We'll still do the things we think we can do."

Sarah ([10:57](#)):

We've had a recent energy code cycle upgrade in Nebraska or state energy code change from 2009 IECC to 2018. That's going to be a change. It's going to push things in a different direction. I wouldn't be surprised to see more Passive House. Certainly. If you see one example or if you build it, they will have a different mentality. Once people understand that comfort is the biggest thing with minimal air leakage, thermal bridging and things like that in a cold, warm, hot, humid, and everything climate. You just want to be comfortable in your buildings.

Charlie ([11:38](#)):

The toughest part of your job as a mechanical engineer is everybody's got different metabolism, different clothes and radiant temperature. It's tough to keep people comfortable. When you look back though your career, what are a couple of accomplishments that you're really proud of?

Sarah ([11:57](#)):

This year has been a big year for me. Obviously, the LEED Fellow was a big deal. I think that going back through that application process, which I'm sure you've talked to other other LEED Fellows about, it's kind of arduous. I've heard a lot of people say, and I feel the same way, when you go back and have to document or to try to document the impact you've made over 10 plus years of your career, specifically in that area, it kind of starts to add up and you're like, "Oh yeah, I have done some stuff." A lot of times we get trapped in the mindset of not doing enough. We feel like it's not enough or it's not fast enough or it's not a big enough of an impact, but it's been reflective and good in those ways. I also got an award recently from my high school. I mentioned, I went to Marion here in Omaha and they had an alumni award that I got to receive at a dinner. My family was there and that was really special as well. A year ago I was made a partner here at the firm as well. There's a lot going on for me in a good way.

Charlie ([13:07](#)):

What a year, even when in crazy times you've had a lot of success. Thanks for sharing all those and congrats on all those. Curious about the LEED Fellow process. You're right. It's kind of humbling to say, "Let me show you my 10 plus years I did this this year and this decision. " You're kind of like, "wow, this has been a good run." I'm glad you got to go through that process and welcome to the LEED Fellow club. It's a big deal, Sarah.

Sarah ([13:32](#)):

Thank you. Even if I hadn't gotten that, it makes you recognize the impact you can have on people because that's what it's all about. You're educating and influencing and then trying to improve things.

Charlie ([13:50](#)):

Let's talk about the future. If you had a crystal ball, where do you think this green building movement is shifting? What are you reading up on or maybe researching? What's coming?

Sarah ([14:00](#)):

You kind of touched on it earlier. We're kind of right in the middle of the health and wellness movement. The momentum and ball started rolling years ago. Similarly, I think where we are at now on Passive House and getting that credential. However, many years ago, I was one of the first five, WELL APS in the state. WELL has become more prevalent and Fitwell. Those kinds of health and wellness focused programs. As a result of the COVID-19 pandemic, the interest on those has just ballooned. The health safety ratings and kind of continuous, certification and performance programs like ARC and future evolutions of LEED.

Sarah ([14:45](#)):

WELL has one now also. I think people kind of want to understand it was all driven by air quality, but people want to understand the ongoing performance of buildings at a different level. Beyond just earlier we kind of gravitated to energy and paybacks. There was a little life cycle cost interest there. People are starting to look more at triple bottom line cost benefits for decision-making, but then ongoing operations are gonna become a huge interest because there's a gap in the market for operations of buildings. We're focusing a lot on design and making good design decisions, but we've got the prevalence of technology. Buildings are getting more complicated and then we hand them over at some point to someone we don't know, in some cases ongoing operations and facilities management is kind of a huge area of need. Resiliency, we have to future-proof or plan for the future of these buildings and spaces and beyond just the physicality of them. We're going to be looking at future climate scenarios and designing. If we're trying to build a 50 year, a 100 year building, what is that going to look like?

Charlie ([16:00](#)):

I agree with all those predictions. Everybody, take note here, you put a lot of thought into it and it's all coming some of it faster than those others.

LEEDS have been good to us. We referenced that a lot here, but it's not the only program. It helped us all have a common language. It's helped some projects set goals that might not have otherwise had some sustainability goals and paved the way for some of this other stuff you're talking about. What would you say you're best at, what's your specialty or gift?

Sarah ([16:32](#)):

Analyzing things beyond the point that they need to be? People that know me say it's kind of an ongoing joke, I say, "Oh, I have a spreadsheet for that" or "We could calculate that" or "Could we make a program" or "Could be automated" or "This could be more efficient." I read a book a while ago and referenced the Facebook mantra at one point, "Done is better than perfect." To be done with something and finish something. We've gone through several strength exercises and one of mine is I'm gonna have a maximizer. I'm always like, "Could this be better? How could it be improved?" That is my constant mindset, which can be exhausting. Knowing when something is good enough is kind of a challenge of mine, but also a strength that's constantly improved.

Charlie ([17:27](#)):

That's one of life's hardest questions is how good is good enough. We all wrestle with that, but now just that engineering and kind of even architecture mindset is efficient. Maximizing is putting out the best. It's good to strive for the best. Thanks for sharing that. Do you have any good habits, routines or rituals?

Sarah ([17:46](#)):

I'm a lot and staying physically active. Pre COVID times I was a cardio, kickboxing and strength training instructor here in Omaha for like, for like 10 years. A big part of my routine just so happened that early 2020, we were doing a basement remodel and my husband also enjoys working out and lifting weights. We were like, "Maybe we should put a gym down here just because we have little kids." It seemed like that would be good if we

both didn't have to do any kind of the gym shuffle in the morning. Then all the gyms closed and we've been lucky that we were able to continue that and that's what we do now.

Charlie ([18:33](#)):

I saw that on your LinkedIn. 10 years, cardio kickboxing. I hope you get back into it when the time is. Anything else work-wise before I hit you with a few more questions about you? Projects or anything that's really inspired you? We could go back, I forgot to ask a little more about some mentors you called a couple out. Why don't we do that? Can you tell us, have you had any mentors?

Sarah ([18:56](#)):

Yeah, certainly. There's an engineer here, Ron, Furbach, who I worked with early in my career. He's somebody that people think of as having an ability to stay calm under pressure and work through with a technical mindset to a solution. George Morrissey here started our firm and has really given me leeway to grow our sustainability offerings and go in a lot of interesting directions. They've certainly been mentors for me in my career. Going back to high school, our high school physics teacher, Bruce Esser. At the time he was huge and would say all the time, "Women can be engineers." He was a huge proponent of women can be engineers, you can be engineers.

Sarah ([19:44](#)):

A lot of us were like, "What is engineering? I did not want to work on bridges. All I knew and I don't know if this engineering thing is for me." He saw a lot of potential in me and others. I have a lot of friends from high school that are now engineers because of him teaching us how to apply math and science in a way that you can really shape the world and make a difference.

Charlie ([20:11](#)):

Yeah, that's really cool. Even tying it all the way back to high school because we do a lot of education at gbes.com or online education companies. We do LEED practice tests, WELL practice tests, continuing ed. It's great to see, not even just college students get into this, but high school students. I'm happy to hear this is happening, where you are as well. What are some projects? Is there a cool project you could mention that you're working on or one of your favorites you've worked on?

Sarah ([20:38](#)):

The favorite project question, maybe it's kind of a cop out answer, but I always refer to our office here, Morris engineering office building. We call the 4940 building because that's our address. It was the first LEED platinum certification in the state. We use it as a living laboratory. If there's things like, wind energy is a good example. When we moved in, we thought we would do a small wind turbine and a small solar and then compare the output. When the vertical axis wind turbine question gets brought up, we get to talk about that intelligently. It was not a good experiment. It was not a great outcome and things like sub-metering and air quality monitoring.

Sarah ([21:23](#)):

We do all those things here and we can talk about them. There's a couple of interesting projects that we're on right now as well. Locally, we're working on the Joslyn Art Museum addition and renovation, which is also pursuing a sustainability certification. Another interesting project here locally is the Belmont Industries global headquarters building, which is doing, dual WELL and LEED certification. There's a lot going on that is really interesting. The LinkedIn building here we're working on too, and they're putting in, but it's going to have most electric vehicle charging stations anywhere within a huge radius. They're going to be solar EV charging carports. It's going to be so awesome.

Charlie ([22:18](#)):

Hopefully it starts to have that ripple effect. I'd love to check out that LinkedIn project too. I'm happy to hear about LEED and WELL. Not every developer is doing that, but it's great that you've got some clients that really see the benefits of both. Sarah, as we get to know each other more, I'm a fan of the bucket list. What are one or two things maybe on your bucket list, any adventure or travel, or do you want to write a book about what's on the bucket list?

Sarah ([22:54](#)):

I used to want to write a book, but now as we get older, we recognize all we have is time and the time becomes shorter. I think bucket list items become more and more interesting because if you'd asked me that a week ago or two weeks ago, I think one of my goals was that I wanted to ride RAGBRAI. I don't know if you're familiar with the register's annual great bike ride across Iowa. It's basically a big party bike ride for a week across the state of Iowa. In our home gym, in the basement, I have a Peloton and I was riding it Monday and my husband and I recently did a really long bike ride.

Sarah ([23:37](#)):

It was like 30 miles, which isn't really long to some people, but for us it was pretty long. You'd have to ride 60 miles a day to do RagBrai. I was like, I don't know if I can do that anymore. That might be across. We also have a family goal of visiting all of the national parks. We bought a little travel trailer last year. I was just looking at last night, like counting the little dots and we have a map that we color in after we visited all that. That's going to be an ongoing thing.

Charlie ([24:13](#)):

I love it. The family goals too. Can get the national park pass. You can go to all of them and there's just some beautiful parts of the country here. This is an audio podcast, but my map here is, I want to go to all 50 states. I've been to 38 out of 50. I do need to go to Nebraska. Sarah might need to come and

check her close projects and go to lunch. I love those kinds of, that family goal two on the bucket list. You mentioned one earlier, we could put a link to the show in our show notes to these books, but is there another book you might recommend? It doesn't even have to be about building something. It can be just a great book. He just he loved to love to read,

Sarah ([24:58](#)):

I do kind of consider myself an avid reader though. Recently most of my books have been in an audio book format. I'm in a book club, and we have a spreadsheet for that. I am going to reference a kid's book actually, because my kids are four and six and we read a lot of books together. My six year olds kind of like getting the hang of reading. I don't know if you're familiar or if the listeners are familiar with BJ. Novak's book is a book with no pictures where it's basically just words, but then the kids think it's the most hilarious book ever because grownups have to say silly things. I think that's a great reminder to just like, not take yourself too seriously.

Charlie ([25:48](#)):

We need that more often. They know we're a serious professional in a day and slow down and laugh a little bit. I will put a link to that. That's great. Mention, I've got three boys. How old, or how old are your kids

Charlie ([26:01](#)):

Email and we'll put them all in here. For our podcast listeners, if you haven't seen in a while, we put together a list of every book(s) our podcast guests have recommended. You can trust, it's a pretty solid book list. I'll share that with you, Sarah as well. Two more things as we start to wrap up just career wise, is there any career advice you wish you to know earlier in your career?

Sarah ([26:32](#)):

Once you realize that different companies have different cultures and I was lucky in ways to have landed at one, which allows you to take a

non-traditional path and to grow into areas of responsibility and interests. If there's something to know as a young person, it's to focus on your strengths, your interests and find people that you can talk to about those things. At least for me I was learning what HPAC is when I started my career. There were some fundamentals there that you kind of have to get in place, but then you start to kind of get a handle on it and you feel like things. Maybe 8 to 10 years into my career. I was like, "Whoa, there's so much more to know and it can seem overwhelming." Focusing on getting answers to questions or finding the people that have answers that you can learn from and getting those mentors in place and finding opportunities to never stop learning. I was thinking if there's ever a day that I'm not learning something new, that would be a failure.

Charlie ([27:49](#)):

Thanks for being a guest on the podcast, I sent my podcast guests a shirt that says, "Teach everything," it's got our podcast logo on there as a reminder to make sure we're teaching as well. Let's say there's someone listening to this podcast. They've been kind of curious about green buildings, but maybe they're going to make a career move and get into the green building movement. Do you have any words of encouragement?

Sarah ([28:14](#)):

There's so much need for people in the industry, generally and specifically in all the areas of the things we've talked about like commissioning operations for facilities, air quality monitoring utilities, design everything. Finding an area that you feel passionate and interested in is probably the most important thing. And then you can just work as much and as hard at that as you want to, because the opportunities are really limitless.

Charlie ([28:48](#)):

Thanks for a peek to the future and telling us your story on how you got into green buildings. All of our listeners connect with Sarah on LinkedIn.

We'll put a link over there and just start thanks for your time today. I've enjoyed getting to know you.

Sarah ([29:00](#)): Thank you. Thanks for inviting me.

Charlie([29:05](#)):

I just want to say thank you to our loyal listeners. We actually are celebrating over one year here on the Green Building Matters Podcast. Me and the entire team were stoked and just glad to continue to listen every Wednesday morning to a new interview with a green building professional here in this industry, or just some pro tips that we want to make sure that you are getting straight from us straight to you. Thank you for listening to this episode of the Green Building Matters Podcasts at [gbes.com](#). Our mission is to advance the green building movement through best in class education and encouragement. Remember you can go to [gbes.com/podcast](#) for any notes and links that we mentioned in today's episode. You can actually see the other episodes that have already been recorded with our amazing, yes. Please tell your friends about this podcast, tell your colleagues, and if you really enjoyed it, leave a positive review on iTunes. Thank you so much. We'll see you in next week's episode.