

Embodied Carbon Discussion with the Director of Building Science at Payette - Andrea Love

Introduction ([00:02](#)):

Welcome to Green Building Matters, the podcast that matters for green building professionals. Learn insight in green buildings as we interviewed today's experts in LEED and WELL. We'll learn from their career paths, war stories and all things green because green building matters and now our host and yes, he has every LEED and WELL credential. Here's Charlie Cichetti.

Charlie ([00:33](#)):

Be sure to check out the green building matters community where you can have unlimited exam prep for any of the professional credential exams. You're tackling next as well as putting your continued education on autopilot, saving time with GBS reporting your hours on your behalf. Check it out. Gbes.Com/Join. Now enjoy this episode of the green building matters podcast.

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

Hi everyone. Welcome to the next episode of the green building matters podcast. I'm your host, Charlie Cichetti and today I've got a green building professional coming to us from the Boston area. We've got Andrea Love. She's the director of building science at Payette. Andrea, how are you doing today? Great. I really appreciate you coming on. Can't wait to know more about your background and some really amazing schools you've gone through and of course, some other places you've worked and now just what have you been doing for 10 years on building science? It's just going to be amazing in our conversation today. So, but I always like to ask my guests, take us back to that origin story. Where did you grow up and where'd you go to school?

Andrea ([01:40](#)):

I grew up just South of Boston in a small town, nothing particularly special. Although I did have an architectural standpoint. It did have quite a few buildings that were designed by HG Richardson the sort of town green was designed by Olmsted. They actually named the middle schools after both of

them. So I guess architecture was sort of always kind of infused in my town, but I decided I went to architecture school at Carnegie Mellon in Pittsburgh and did my bachelor's of architecture there. I graduated in 2002 and then I went and worked in Chicago for about seven years with a few kinds of various roles, but with sort of a strong focus and interest in sustainability. After working for about seven years, I felt like I didn't have the technical background that I really wanted to really be able to leverage it to push design and also to argue with engineers when I felt like they weren't necessarily going along with the way I was thinking. And so after about seven years, I had gotten my license and I was working in Chicago. I decided to go back to grad school at MIT, a masters architectural studies program focused on building technology which is sort of half in the mechanical engineering department and half in the engineering department and half in the architecture department. So that was where I did my post professional degree and then joined At Payette, after that.

Charlie ([03:02](#)):

Cool we'll get a couple of follow up questions there. I've heard amazing things about the architecture program at Carnegie Mellon. I've actually had Vivian Lawfulness on the podcast here and some others that have gone through. How did you know you wanted to study architecture and how'd you end up at Carnegie Mellon? Can you take us through that part?

Andrea ([03:22](#)):

Yeah, sure. That's a great question. So I didn't really know, I wanted to study architecture to begin with. I was actually sort of interested in art. I'd done a lot of art in high school. I'd always been very good at math and science, but just really was interested in art and actually photography. My dad is a quality control engineer and isn't necessarily as creative and he was pretty adamant that I needed to have a major that at least had a career kind of goal at the end, not just sort of fine arts. And so that was sort of what led me to starting to look at architecture as it was a marriage of some of my interests and skills. I ended up applying to a number of schools, like most architects, I applied to a number of architecture schools and the reason I landed on Carnegie Mellon, there were two factors that really spoke to me.

Andrea ([04:06](#)):

And actually it wasn't sustainable, although Vivian was one of my professors and was very much what they were known for, but that wasn't really on my radar at the time as a high school student. The things that really spoke to me was that it was a small school in a big city, as opposed to some of the other schools I was looking at, which were big schools in very small cities. I was interested in kind of having that intimate collegiate experience, but having the resources of a larger metropolitan area or at least we can debate whether or not kids pick the big city, but it's at least the city. And then the other thing that actually really drew me to Carnegie Mellon was that they had at the time, and I believe still do, but they would allow you to study abroad anywhere that you want as opposed to having a predefined.

Andrea ([04:47](#)):

Like these are the two places you can go to. They had a few relationships with different universities, but they had an open policy where anyone could kind of figure out where they wanted to go, right. Kind of a description and application and present it to the department and then they would decide whether or not to approve that. I knew I wanted to study abroad and I was really interested and intrigued in the option of being able to study abroad anywhere that I chose to go to. So that was actually the other factor that led me.

Charlie ([05:14](#)):

Thanks for walking us through that decision making process. I think that's important. There's a lot of young professionals getting out of high school or now getting out of college that just passed their first elite exam. We have a lot of listeners here that are coming in that part of their career right now. So tell us about sustainability though. So you've got that degree, the undergrad went to Chicago, practicing architecture, but , we're missing, what was really weighing on your heart. You're like, gosh, I really want the technical side of these high performance buildings. You went back, you got your postgraduate, but where along the way did sustainability start coming up and were you like, okay, I'm going to do green building.

Andrea ([05:51](#)):

Yeah. So I would say that very much at Carnegie Mellon was when I really became aware of sustainability and the importance of buildings' role in the

built environment. Like I said, I took classes with a lot of the great faculty, like Vivian at Carnegie Mellon that were really pushing sustainability. So it became something that became one of my interests. I think it really solidified as something that I was interested in kind of focusing my career on my fourth year when I studied abroad, I did a program that we went to India, South Africa and Brazil. So it was called the internationals honors program. I was the only architect on it. So I did a kind of independent studio afterwards with one of the professors when I got back. But it was focused kind of on urban planning and environmental ecology.

Andrea ([06:35](#)):

Having mostly been in the US and Europe prior to that, it really sort of solidified for me that the impact that not having good planning can sometimes have in particular in a lot of these informal communities that existed in many of these cities. I learned a lot about sustainability, obviously throughout my time at Carnegie Mellon, but that really, to me became a turning point when I was interested in really focusing that as part of my career. And then when I came back in my fifth year I was fortunate that Carnegie Mellon was participating in the first solar decathlon competition, which if you have students that are probably familiar with it, it's been going on now for many years. I won't date myself, although I guess I just did. I was fortunate enough to kind of help lead the Carnegie Mellon team and do a lot of the research on the materiality that we were going to do for the construction and things like that. That was kind of another key thing and really showing and allowing me to kind of delve in and figure out and think about how, how we can design differently.

Charlie ([07:36](#)):

Well, that's, yeah, it's more than just an aha moment. It was just there, it was part of your learning there at Carnegie Mellon and hopefully by the time you were in Chicago, LEED.

Andrea ([07:46](#)):

Yeah. I was very fortunate that I was sort of the right person at the right time, not to try to diminish any accomplishments I may have had, but a lot of times it's just luck. And so I happened to graduate, like I said, in 2002, which wasn't a great time to find a job right after 9/11, but it was right when LEED

first came out. I came out and even though I was a college student who just graduated, I've gone to Carnegie Mellon and I kind of had a strong focus on sustainability and building performance with a number of my activities there and had a strong interest. I kind of showed up in Chicago and went just when people were starting to wonder, like, what is this LEED thing?

Andrea ([08:26](#)):

What is sustainability? And so one of the first things they did was take the LEED exam. So I was one of the first to actually take the exam because I was an unemployed, recently graduate, graduated student looking for something to do. I suddenly had a skill and a knowledge set that everybody was like just at the right time when everyone was really trying to figure out what is the LEED thing and what is happening. I was fortunate and able to kind of leverage that through a series of different firms and places that I worked in Chicago, where I was always able to kind of focus on sustainability and be the sustainability expert, which often actually gave me the ability to, I feel like when you're new and you're a recent graduate, you're often mostly learning from everyone else around you.

Andrea ([09:06](#)):

But because I had this sort of specialized knowledge that in industry didn't really exist that prolifically and a lot of my roles, I was able to obviously learn a lot from a lot of the very smart and talented people I was working with, but also kind of have something that I could give. A specialty that I could add to the conversation. I was fortunate to kind of just have this knowledge and background right when it was, everybody was looking for it. But I think that really propelled my career to advance at a much faster rate than it probably would have been able to if I graduated five years earlier or later.

Charlie ([09:35](#)):

Yeah. Andrea right place, right time and work down. Talk about some mentors, anyone along the way that had an influence? Maybe really enjoyed following their work or some of their lectures or books or maybe you had some in-person mentor, someone that really you would call a mentor.

Andrea ([09:53](#)):

Yeah. I would say that I've had a number of different mentors in different ways. There's two people, John Albrecht who worked for the city of Chicago and then Ran Ekman who at the time was working for OWP Architects. Both of them I worked with and were really strong mentors and strong influences on myself and my career. Sort of giving me opportunities, like I said, not a lot of junior people were often being given, being at conferences and kind of roles on projects that were just amazing and were very helpful and kind of providing guidance in shaping my career trajectory. I would say more recently that my mentors now are, there's a group of sustainable design leaders from most of the major firms around the country, that's organized through building green, the website newsletter.

Andrea ([10:43](#)):

We get together usually once a year for like two or three days and then there's also a pretty active email chain list that goes on. I would say that I learned a lot from that group, that kind of collective knowledge of everybody who has similar roles to me at different organizations that we all, it's a very open and sharing kind of safe space. I think we all really learn from each other and there's so many amazing, talented and incredible people that I feel like I learned a lot from. Hopefully I offer something in return that I would say has continued to kind of be mentors. There's so many amazing people in there that I feel like can continue to be mentors to me and kind of help me.

Charlie ([11:21](#)):

Validate ideas. Thank you for sharing. This is a humbling question, but what are some of your proudest achievements so far in career and life? What pops to your mind? What's on the highlight reel?

Andrea ([11:37](#)):

There's so many great ones. I would say most recently we were fortunate enough to win four COTE top , 10 awards and the last four years, that for me, was very personally satisfying and a great achievement because when I started at Payette, you made your smart goals. One of the smart goals I had was I said, I wanted to win a COTE award. If someone focused on sustainability as an architect it's sort of the highest award you can get because it's really the one that's focused on that fusion of design and

performance. It's not just all about the performance, but it's not just about the design. It's the marriage of the two, which is where I really think good architecture exists. That was kind of a goal that I just set a lofty goal that, I won't say who now, but at the time one of the people I was talking with told me that they didn't think that was an achievable thing, given what we worked in and I said, well, it's good to dream to get to kind of aim. We really just need to kind of set our focus and see what we can do. And so for me, that was probably one of our proudest achievements. I would couple that with a close second, or maybe a tie with we won the AIA firm award in 2019. So I guess that was only last year, but it seems like so long ago. It's for the entire firm and our portfolio over the last 10 years. So I certainly don't want to take all their credit by any such imagination, but we were recognized for our kind of focus on the fusion of design and performance. Feel very fortunate to be part of an organization that this is their focus and to get to kind of play a role in assisting in that achievement.

Charlie ([13:09](#)):

Well, it's so important in my opinion, to look back on the highlight reel, share some of those exciting moments that kind of throw you forward, too. So congrats, those awards. Tell us more about today and your company Payette. Tell us what we need to know about the company? What's keeping you busy kind of day to day. How do you spend your time?

Andrea ([13:30](#)):

We're a 170 person firm located all in Boston, one floor when we actually are all in the office. We have a very kind of collaborative, we do work nationally and internationally, but really just from one location. We're a large firm and we're able to kind of support some large firm resources, but small enough that everybody really knows each other that I think can work in a fairly intimate way despite our size. So I'm fortunate. I lead our building science group. There are four of us right now in that group and we kind of have two major roles in the office. One is we work a little bit on all of our projects, pushing issues of sustainability and building performance, particularly early in design. Fortunately, I get to work on a little bit of everything, which is great and kind of see where we are on everything and trying to kind of push things forward from a sustainability standpoint.

Andrea ([14:21](#)):

The other half of our time we help facilitate and meet internal research efforts. The firm sees the value in taking time to invest in questions that we may see over and over again in a project, but don't have that project trajectory to really delve in and understand to kind of step outside of a project, trying to answer these questions that we know have paid dividends for our projects going forward. We kind of help facilitate that as well. On the project side, we have a number of really interesting projects really that are just getting going. We were fortunate to win a few projects right at the beginning of this pandemic, so they've been really interesting to see. I'm trying to figure out how we work and continue to work in this remote way.

Andrea ([15:02](#)):

We're doing one at the University of California, Berkeley which is really interesting because Berkeley has really aggressive sustainability goals and to abandon fossil fuels and all sorts of other things that we do. I guess I should have said our typology. We have a pretty narrow focus even when we are a large firm. We only do academic science and healthcare buildings. There are some of the most energy intensive typologies that are out there, which is why I think sustainability is that much more urgent for our practice, but also kind of has, I think some challenges, technical challenges that other typologies may not experience. We have some interesting projects that we're working on with Berkeley and down in Louisiana at LSU and Tulane some here in Boston. So yeah, there's a lot of interesting stuff we're doing right now.

Charlie ([15:50](#)):

So amazing schools and universities,

Andrea ([15:53](#)):

Not a lot of visiting right now, but historically I have gotten to visit a lot of great places and now I just see them virtually

Charlie ([16:02](#)):

The research, I want to follow up on because that's been a few other podcasts guests that work with kind of mid to large architectural firms. Andrea, it's fascinating that there's this research team that, maybe sometimes it's a dual role or maybe sometimes, you have a researcher or so

is that research and that data stays within better decision making for you and your clients. Do you ever publish any of that? Tell us just a little more on the research side.

Andrea ([16:33](#)):

Yeah, our research model is we don't have dedicated people working on research. It's done really by the whole office, the idea with small research teams kind of focusing on specific questions, the idea is that in the typical architectural staff, they might have two or three hours a week that they would spend on this. Some ways it might be none because there's a deadline and some weeks there might be more because things are slow for their project, but it kind of fills in that gap of time in between. We'll have a small group of people that spend kind of looking at specific questions, but we share all of our research. It's all available on our website. We think that if we share our research and if we all share research, we will all advance and don't really see a value in kind of holding it internally and not sharing.

Andrea ([17:17](#)):

I think we actually get more kind of PR and marketing value actually from sharing it where it becomes associated with us as opposed to keeping a cloister within our office. So one example would be one of the things that we were struggling with was trying to understand where in the Northeast, so this is maybe a little less of a problem in Atlanta, but one of the things that need to found kind of anecdotally was that if we had really high performance glazing, we could get rid of perimeter heat for a comfort standpoint. So in the Northeast, it's very cold. If you have a lot of glass glasses, all thermally, you often have to put in perimeter heat to kind of counteract that thermal discomfort. But if we could invest in some kind of a high performance glazing system, we can often get rid of it.

Andrea ([17:53](#)):

We started off with this kind of naive goal of just creating a chart that was sort of percent glazing and new value. And then would hopefully, say whether or not it was comfortable. So that early into the design, we could understand whether or not our design was achieving thermal comfort and not meeting kind of the supplemental system that costs money and maintenance and took space and it's ugly and the results of that downsides

to it. We ended up creating an online tool because it turned out a little more complex in my naive first attempt thoughts. So it's an online tool that anyone can use and you actually get about 500 hits a month. I talked to people all the time and they were like, Hey, I was just using your tool, which is always great to hear. And so, yeah, it's pretty, it's being used fairly widely right now throughout the industry and actually around the world.

Charlie ([18:32](#)):

Wow! And you have to share. It's great that you made a tool that the industry can benefit from. My next question is what's around the corner. Andrea, if you had a crystal ball, what should we be reading up on now? What do you see trending? What do we need to read up on what's coming in the green building movement?

Andrea ([18:49](#)):

I think the thing that is really starting to gain momentum and rightfully so is a focus on embodied carbon. I think right now the discussion seems to be mostly amongst the sort of sustainability evangelists, the ones that are really focused on sustainability, but there's been a strong, strong focus within those within that kind of cohort of really starting to incorporate embodied carbon into our design process and how we think about buildings. I think for a long time we looked at buildings and said, thinking holistically about carbon and climate change and the impact buildings have. If you look over a 60 year lifetime span of a building, the vast amount of carbon emissions really come from the operational carbon. And that was where we started our focus, right? So we started with energy modeling and trying to reduce energy.

Andrea ([19:32](#)):

But I think as we kind of understand more the urgency of climate change, that we don't have 60 years, according to the ITCC. The report that they put out in 2018, we need to globally cut our carbon emissions in half by 2030, and eliminate them completely by 2050. If we look over that kind of critical time period between now, and 2030, the vast majority of the emissions, actually even from energy intensive buildings, like redesign is really going to come from the embodied carbon in that 10 year time period that goes through that big hit upfront. We can't ignore it and so it's something that I

think is starting to really grow as a focus for firms and across the industry and I think we'll continue to push to become more mainstream throughout the practice.

Charlie ([20:14](#)):

You heard it here embodied carbon. It's one thing if a program like LEED encourages you to do a life cycle analysis, it's another thing if you're working with maybe a client or developer that gets it's not just operational carbon, but I think some of the studies show by 2030, probably 2035, that's when we're going to crush, right. Our buildings get more efficient than you're right. The embodied carbon will be the biggest pain point. So we need to get a jump on it now.

Andrea ([20:41](#)):

Not to say while we figured out operational carbon, we should all go home, but we have net zero buildings. We know how to do that. We need to do it and we need to do it more. There's certain typologies and climates and others that have challenges but it's that solid and we should sit back and relax, but as operational carbon goes to zero, the embodied carbon is still there. We need to make sure that we're making smart decisions. I think actually, maybe to continue on some of these trends, I actually think that the dialogue needs to shift to be more about carbon and holistically about carbon. What are these trade offs between if we make a super insulated passive house wall with lots of insulation, is that kind of embodied carbon investment warranted and does it pay itself off in terms of the operational carbon? And sometimes it doesn't, sometimes it doesn't, but I think we need to kind of start thinking about it holistically or like, what is the carbon impact?

Charlie ([21:35](#)):

That's a good point. It's a different kind of ROI calculation. I love it. Let's talk a little bit more about you. What would you say is your specialty or gift?

Andrea ([21:44](#)):

That's a good question. I would say, I think my specialty or my gift is that I can kind of marry the technical design of buildings with the kind of design side, the artistic side. I don't think I'm the best designer in the world, but they

don't nor am I the most technical person around sustainability. But I think I operate in a space that very few people actually feel comfortable existing sort of with a foot in each camp. I think that's my sort of specialty is to be able to take the technical knowledge that I gained when I was at MIT and nothing worked as a building scientist and to be able to apply it to design, as opposed to just thinking like an engineer, just thinking like an architect, but really kind of living in that in between worlds.

Charlie ([22:26](#)):

No, that's good. That makes sense. What routines or rituals do you have? Do you have any good habits?

Andrea ([22:33](#)):

Probably not. I would say the things that I really try to focus on other than just sort of personal things to try to keep my own sanity. I would say really focusing on early design. I spend a lot of my time really trying to make sure, at this point it sort of becomes how we work. So it's not an active need, but when I first started making sure building science is part of conversation building science from the onset of design even in interviews and kind of marketing proceeds because there's a lot of times that images for the projects or concepts are set really early. Being able to make sure that we're part of that and informing that. I'm really focusing on early design, I don't know if that's a ritual.

Charlie ([23:23](#)):

You probably have some checklists. You probably know like, what's your routine to just get it right up front, set it up and it'll be easier down the road. So that makes sense. We are in this crazy 2020. Any wellness tips do you get out or stay active or meditate? Any other kind of pro tips there?

Andrea ([23:49](#)):

Oh yeah, I'm a big runner. So that's been sort of my way to get out. I try to go for a run pretty regularly just to get outside of the house outside of the home school having around me and working in my basement and all the fun.

Charlie ([24:05](#)):

Running. I love it. Thank you for sharing. Let's talk about the bucket list. I'm a fan of bucket lists. Are there one or two things you could share, maybe some travels and expeditions. Maybe you want to write a book. I don't know, bucket list.

Andrea ([24:22](#)):

I would love to travel, but that doesn't seem like I can reach at the moment. We did actually, I don't want to shamelessly plug our book, but we did just publish a book on the Fusion of Design and Performance it's available on Amazon and I wrote a chapter in it. So I guess that just came off my bucket list. I would say from a professional standpoint, the things that are on my bucket list right now, as I've really been focusing on trying to increase the embodied carbon knowledge across our firm, like I said, it's a new, a new thing that we've really been thinking about. One of the challenges, at least for Payette, how we've been working is that a lot of the tools and things that exist are really better later in design and design development.

Andrea ([25:06](#)):

We have a pretty good idea of what's in the building. What are you doing? They're kind of plugins to Reddit. We aren't usually on Reddit early in design. I'm often trying to focus on early design when we're making key decisions. So we've been having a research project that we're doing, where we've been looking at, say taking different common systems that we might use and just trying to kind of document them. So we have that knowledge kind of upfront early in the design. So we have a little online tool that people can go on the website as well and go and look at it. Taking, for example, 20 of the most common facade types you might use and to start to kind of have it so we can have as an apples to apples comparison of you're designing, deciding between, say a brick building or a metal panel building, a stone building or a terracotta building, what is the difference in embodied carbon and how is that going to impact the overall design? So we can have that information kind of quick and easy early in design. So that's something that I've been working on and I'm continuing to work on. I would say the other thing has really been trying to figure out, like I said, we're in the Northeast pretty cold climate. We do energy intensive buildings, but really to get towards our sort of carbon free future, we need to get off fossil fuels. And so what does that mean for our topology and sort of the buildings we design

and how can we kind of have fossil fuel free buildings that are ultimately powered by renewable energy. So that's something that we've been spending a lot of time trying to figure out how you have a kind of large building with cheating loads in the Northeast that could operate efficiently.

Charlie ([26:36](#)):

I think your team's focused on the right things. I love that you're sharing these tools so everyone I'll put a link to the website, make sure you go check out some of these tools we've been talking about in the podcast today. So post pandemic when it's a little easier and safer to travel, what's one destination though, Andrea, that you just got to get.

Andrea ([26:55](#)):

Oh, that's a good question. I don't know. My husband and I have been talking for years about wanting to go to Machu Picchu and we haven't made it. I feel like that's a ways away because I have a four and six year old and so they need to kind of hike on their own steam. So I feel like it will be a little while before we're going to make it there. So I don't know. When we take family vacations, we have to figure out exactly what's appropriate with them.

Charlie ([27:23](#)):

My three boys that are 12, 9 and 7 and yeah, I couldn't carry them up. You're talking about it and go somewhere fun when it's, when it's good to do that again. Now books. We're definitely going to put a link to the book that your team would be amazing. Is there another book though? You'd recommend it doesn't even have to be about green buildings, just a book you'd recommend.

Andrea ([27:46](#)):

Well, I read a lot of books, but actually I usually use my readings to sort of escape architecture. So I've had a number of good books recently, but they were just kind of fun fiction books.

Charlie ([27:58](#)):

To understand the podcast guests I'd say about 80% are nonfiction and the 20% are fiction. So I've had some good fiction recommendations.

Andrea ([28:06](#)):

All right. Well, I recently just finished two books. Actually. They were both really good. One was called Clap When you Land, which was about a family that sort of half in New York and half in the Dominican Republic. It's about a plane that went down actually shortly after 9/11. And so everything got it, wasn't terrorist related. And so everything got kind of overshadowed by everything else happening in the world. It was written actually all in pros like poetry, but it's written like a kind of fictional novel. So it was a really interesting side of that. I thought it was a really good book. Another one, I just read the Vanishing Half, which I thought personally really interesting was about these two twins. One who ends up passing as white and one who ends up passing as sort of black skin.

Andrea ([28:46](#)):

I have a mixed racial family and my children both kind of present as different races. And so that was one that was personally very interesting to me. But I guess from a professional standpoint, I did read a book recently that I thought from a design standpoint was interesting and it was called Invisible Women has about data bias in a world designed for men. I think the title or something like that. It was all about the way we collect data that often ignores gender differences or women in general that there's all sorts of ways that this leads to fundamental flaws in design that don't account for women and our differences. And so as a designer, most of the examples are things like seatbelts and shelves that we can't reach and things like that they weren't necessarily architectural, but I thought an architect it was really interesting as a way, just to think about what are the data gaps that we have, whether it be, say things like thermal comfort in our models that may not account for different genders or different races or things like that. How does that gap, that data gap then impact our designs. And so I thought that was as a designer, a really interesting book

Charlie ([29:46](#)):

Those are all great books, we will put links in our podcast, show notes and enjoy your comments. My boys are mixed as well. So I'm going to check out that book you recommended. As we started to come to a close a two part kind of closing. One is there anything you should have known earlier in your career?

Andrea ([30:09](#)):

The thing that I wish or that I think would be helpful to know early in my career is about just being proactive and finding what interests you and what you want to do. I feel like there were many times early in my career where I was more passive and so people would kind of project what role they thought I wanted on a project. Say I was going to project management, maybe she'd do project management versus, or whatever it might be. I was very timid and shy and just happy to get a role on a project most days. I think it would have been better if I was more vocal and trying to, and it's good to kind of expand to many things, but I think being vocal in what I wanted and what I thought was interesting and what kind of would get me out of bed in the morning and trying to both figure out for yourself, but also like then being able to articulate that to your firm and others that you work with, like, this is where I'm interested in trying to find that sweet spot of your interests and your skills in a way that can kind of can help your organization

Charlie ([31:03](#)):

Love that. That's really powerful. Let's say there's someone listening right now and they're a young professional, and they're going to jump into this green building movement. Any words of encouragement for them?

Andrea ([31:15](#)):

I would say that I think it's a target rich environment. There's lots of things that we as an industry need to advance and push forward. And I think as a young person jumping in, I think it's a great opportunity to actually be in a similar situation that I was. So if someone was graduating right now and you spent a year learning everything about embodied carbon, you would know more than most professionals about embodied carbon. There's lots of things like that in sustainability and building performance right now whether it's, while you're in school or early in your career, kind of however, you may be able to gain that knowledge. I think that sustainability is still fairly young and there's still lots of lots of knowledge gaps in our collective knowledge and in the industry in general. And so I think young people have a great opportunity to really come in and to be able to fill those gaps and to be very useful from the onset of their career because they can, they can, they can become experts because there aren't many experts and there's very little knowledge, it's easy to become an expert kind of quickly. I would say that's

a good way to really kind of help ingrain yourself in this sustainability role in a firm to become an expert.

Charlie ([32:28](#)):

I've really enjoyed our talk today and everyone else that's been listening has enjoyed learning about Andrea. So, Andrea I just want to say thank you for your time today.

Charlie ([32:40](#)):

We will put links to everything we discussed in the tools, the books, but this has been Andrea Love, director of building science. Andrea, thanks so much. 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 we're stoked. And just so glad you 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.

Speaker 3 ([33:17](#)):

Thank you for listening to this episode of the green building matters podcast@gbs.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. And 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. And we'll see you on next week's episode.