

Doreen Betoldus

**Mike Merrill:**

Hello, and welcome to the Mobile Workforce Podcast. I'm your host, Mike Merrill, and today we are sitting down with Doreen Betoldus. Doreen is the current president of NAWIC and also the manager of Water Project at Jacobs. In today's episode Doreen and I are going to talk about sustainability and the important role it plays in the future of construction, as well as the role that technology plays in sustainability and also best practices for sustainability that contractors can be using. Thank you for joining us today Doreen, looking forward to the conversation.

Doreen Betoldus:

Oh, thanks so much for having me, Mike.

Mike Merrill:

You bet. This is going to be awesome. Number one, congratulations on being the president of NAWIC, that's super awesome. We love NAWIC here on the Mobile Workforce Podcast. And I just wonder, can you give our listeners a little bit of a heads up of what NAWIC's about, and maybe what your role entails of?

Doreen Betoldus:

Sure. NAWIC stands for National Association of Women in Construction. We are currently still a women only organization. We're about a member of about 5,000, we're national, we're also in Guam and Alaska, so it started in 1955 by a group of women in Fort Worth, Texas. And has grown to about 118 chapters at this time, so that's basically it's woman only for now, but that doesn't mean men can't join our events and things like that.

Mike Merrill:

Well, that's awesome. What is happening in NAWIC this particular year?

Doreen Betoldus:

This year we're kind of... My focus has been in vision equity as well as focus on our own NAWIC infrastructure actually. And as always, we focus on leadership education and networking, so envision equity has been our call this year, and that was based on my own experience of about 45 years in construction and getting equity in construction in that industry has been kind of tough, but we're getting there, so this year I just wanted to do that call to action for everyone to envision equity. And that's what we're focused on.

Mike Merrill:

Oh, that's fantastic. I love that. Do you have some specific events that focus on that or other events that you're attending or exhibiting at this year or speaking?

Doreen Betoldus:

Yes, actually we started a diversity, equity, and inclusion committee about a year ago during Anne's year. And this year they have put out a lot of education on DE&I, both for us as a association and also for industry that can join us. And this year the annual conference, that's one of our tracks is equity as our culture, so we are definitely putting education out there. You will see it on all sorts of social media as well as at our conferences.

Mike Merrill:

Oh, that's awesome. We know Anne's been a guest on the podcast and actually ran into her at a Foundation Accounting Software User Conference recently, so that was fun.

Doreen Betoldus:

Yes, that's good.

Mike Merrill:

I didn't expect to see her there, but it was a new position she had taken, so it was a pleasant surprise.

Doreen Betoldus:

Yes.

Mike Merrill:

And it was actually the first chance I got to meet her in person.

Doreen Betoldus:

Oh, really? That's great. Yeah, she's our media press president. She's still on the board, so she's doing lots of work with us this year, for sure.

Mike Merrill:

That's awesome. She's great. Well, love the great work you're doing. And it makes me wonder what can our listeners do to get involved in NAWIC, whether it be directly as members, or in more support?

Doreen Betoldus:

Lots of ways, so to become a member you mainly just go to nawic.org and you can find a chapter, you can also just Google NAWIC and your city. Where on Facebook, there's lots of ways to find a local chapter. You can get in contact with somebody from a local chapter. You can go to events, kind of test us out if you'd like. Go to some events, meet some people. But the best way to become a member is just go to our national website, nawic.org, and find a membership application, and fill it out, and pick your chapter, and you're in like Flynn. Then we also have corporate sponsorships. We have sponsorships where corporations can support actually Jacobs, my company became a platinum sponsor this year and that entitles them to 50 memberships, so we're bringing in those memberships right now, so that's another way to become a member.

Mike Merrill:

Wow, that's awesome. We highly encourage the listeners to not only get involved directly, but if they're

or other members of your team and women within your organization that might be interested in this, we highly encourage you to go to nawic.org and sign up.

Doreen Betoldus:

Thank you, appreciate that.

Mike Merrill:

Yeah, you bet. Let's talk about your particular role and maybe kind of the topic we want to discuss in the podcast today, and that is sustainability. Why is that so important to you, particularly?

Doreen Betoldus:

Well, because it's been sort of a passion for me for a long time, and I know I'm in construction, it doesn't sound like that's the most environmentally friendly thing, but I was a child of the seventies, kind of giving away the age here. And the environment was a very big subject then as it is now, and always wanted to do something in the environmental arena. I ended up going to school and getting my education in civil engineering. And at the time it was called civil and environmental engineering. And I ended up focusing, our senior project was designing a waste water treatment plant, so I kind of ended up in that direction. I started, I love construction just being out in the field.

And that became my expertise is working on water and wastewater infrastructure projects, and I'm moving into the city. And then later on in life, I actually got my MBA and I got it in sustainable business. And that was through, I was reading *The Soul of a Business* by the man from Tom's of Maine and the *Let My People Go Surfing* from the guy from Patagonia, right. I read those books and I was like, oh, I need an MBA in sustainability. And so I went and got my MBA in sustainability in 2011 and as best I can I bring that education to my work.

Mike Merrill:

Well, that's awesome. It always means a lot more when we have a cause and something we're passionate about, and then it pertains directly to your profession. That's a unique situation, and congratulations on that. Tell me this, obviously, Jacobs is a huge

company, your role is... Is it director of water, is that, or what's the role?

Doreen Betoldus:

They call me a manager of projects, so I manage several projects, several project managers, I manage project managers and projects themselves, and I'm focused on water infrastructure. There's two agencies I kind of work with, which is the New York City Department of Environmental Protection and also the New York City Department of Design and Construction. The New York City Design and Construction, DDC. I'll just use the acronym, DDC does more of the sewer infrastructure, sewer water, and highway infrastructure. And DEP is all the water, wastewater infrastructure, so I've been working with those agencies for the past 20 years or so. I manage those construction projects, I have staff that I manage and I also do some business development as well.

Mike Merrill:

Wow. Busy lady.

Doreen Betoldus:

Yes. Yes. I have to agree with that.

Mike Merrill:

Well, so tell us this, obviously sustainability within construction is a pretty important thing. Why is it so important that our listeners pay attention to practices that really support sustainability as it relates to the different things that they're impacting in construction?

Doreen Betoldus:

Well, because it's almost like it's going to be a mandate. And actually here in New York, a lot of our regulations are built around sustainability. Many years ago, they had put out a plan in NYC. A lot of regulations came out. One of them is very familiar to us. They call it Local Law 77, which requires trucks to have the best available technology to manage their exhaust fumes. We also have waste management specifications that are... they have to put in a plan to recycle a certain amount, so in New York City, it's almost a mandate here. And I

think it's going to be a mandate everywhere. And for construction, I think it's just, we might talk about this a little bit more later, but it's just a money saving as well. I mean, as it increases efficiency, it's better for the environment, better for their people. Safety is also a part of that. It encompasses all of that, so it's just better. I mean, it's just the way we're going and if we want to move forward as an industry, we really have to focus on it.

Mike Merrill:

As it relates to sustainability, do you think there are any false narratives out there that people try and avoid this? I mean, obviously if it's cleaner, if it saves them money, if it's friendlier on the environment, what's the drawback? What could anybody argue against participating in this?

Doreen Betoldus:

Actually, I think it's more so that it's, I think they know it, but they don't know it in their bones kind of deal. Construction has so many old habits that die hard. I mean, even old equipment and old and they try to keep those margins, so there might be sort of the fear of stepping into that unknown a little bit, until they try it. For instance, when BIM came out, some contractors grabbed it right up and said, we know this is going to save us monies. Others just didn't want to make that initial investment. They don't know what the return on investment is. I think that's the problem.

Mike Merrill:

Okay. Yeah, that makes sense. Fear of the unknown or what they're not used to.

Doreen Betoldus:

Right.

Mike Merrill:

You mentioned materials and sourcing those locally and that obviously saves on fuel, shipping costs, labor. What are some other areas that contractors can be more sustainable?

Doreen Betoldus:

Well, there's just keeping a sustainable site. Erosion control, dust control, odor, there's that. There's in the hiring of your people, hiring local staff, also a diverse staff. That's also sustainability. You know, diversity is part of that. And when I went to school it was People, Profit, Planet, so it's your people, also the community, it's what your impact is on the community. The community, I used to teach CM Masters students, and I used to have them talk about stakeholders. And I said, they're silent stakeholders, but any of these stakeholders like say, say frogs or fish in the water, they can hold things up. For instance, also nesting, they can hold up the job. Community complaints, they can hold up a job, so having sort of that stakeholder involvement and involving the community in what you're doing and making sure you're serving the community at the same time, you're building right in there, in there and kind of help that, not in my backyard kind of deal, so those are some of the other things they can do.

Mike Merrill:

What about like waste management, is that another area that you run into?

Doreen Betoldus:

Oh, definitely waste management, with like the lead GA and also with the envision, these are both sort of scorecards for environmental. One is for envision is for infrastructure and lead is for the building. They have those kind of parameters where you can win points or whatever, and become certified for the waste management. Waste management is another place where they can save money through recycling, resale, reusing soil, rather than shipping it off and bringing in new.

Mike Merrill:

Sure.

Doreen Betoldus:

If it's not contaminated or whatever, so there's a lot in waste management that can be managed and they can do a lot better with.

Mike Merrill:

Yeah. And clean energy, that's kind of a hot topic. What are some clean energy methods that companies can invoke?

Doreen Betoldus:

That's probably a little tougher one because they don't want to let go of old equipment, but say like electrical equipment, electrical tools. I wanted to look up before this podcast to see if there's such a thing as a solar generator, but I don't know if that would be strong enough. And also they can, if it's possible, see where they can plug in, you know what I mean? Normally on a construction site, you're setting up temporary power and you're plugging into. Contractors can see if they're plugging into a system where they can purchase solar or wind power rather than, so that's one way. And obviously just being on site, so again, in New York City, it's mandated that they can't idle more than three minutes on the job site, they have to shut down the machines. Also, they can use ethanol, different types of fuels. If they're using fossil fuel, they can use a different type of fuel that burns cleaner, things of that nature, LED lighting for any kind of temporary lighting on the site. Correct? Yes.

Mike Merrill:

I mean, I know when I hear the term sustainability, I'm thinking of maybe the physical structure, but are there some other areas that contractors can be sustainable aside from the physical building?

Doreen Betoldus:

In the materials that they use, as we discuss where they come from and also what the materials are, but that comes from the designer, right? The designer has to. Also, things the contractor can do during construction. One of the things required say in lead is to... Like HVAC duct work has to be covered up, so dust doesn't get in so that when you install it, there's no dust coming out of it, so there's things like that the contractor can do being very careful. Also, sort of just in time delivery, bring things in right when you need them, rather than having them sitting around, that's also a very efficient and sustainable way to manage work.

Mike Merrill:

Yeah, that makes sense. And I think finally we're seeing, I think the tides turned to contractors becoming much more paperless, so we're not cutting down so many unnecessary trees, and then paying a company to shred the documents, and then dispose of the paper that we never utilized, right.

Doreen Betoldus:

Yeah. And also there's all the technologies, the BIM technology, the drones, the robotics, there's much more that can be used on site to create safety and do things more efficiently.

Mike Merrill:

You mentioned BIM before. And I think, think that's a really big one in eliminating waste of all sorts, right?

Doreen Betoldus:

Right.

Mike Merrill:

I mean, maybe you can share with the listeners from your perspective, where does BIM save companies time, money, energy, fuel, et cetera?

Doreen Betoldus:

Mm-hmm (affirmative).

Mike Merrill:

Yeah. What a Testament, a building damage, maybe valve damage. I mean, with supply chain issues, what if they couldn't get another valve? I mean, who even knows that how big that snowball would get?

Doreen Betoldus:

Correct. And those valves I think, were coming from France or someplace.

Mike Merrill:

Oh, that's crazy. Wow. That's one of the best examples I've ever heard of something like that. It's not even related to, it's more related to the process, not a collision of plumbing and maybe exhaust pipes or HVAC or whatever else, it was something completely different.

Doreen Betoldus:

Which we avoid a lot of those.

Mike Merrill:

Sure.

Doreen Betoldus:

But it was like, we had to see how this thing was going to operate. Yeah, the digital twins, I think have much more data and they kind of, I'm not an expert on these. I've seen the BIM work, I haven't really seen the digital twin work. But I know the digital twins, they actually kind of simulate operation as well, they're like BIM on steroids. That's what I think it is. But there's a lot more data. They put in a lot more operations in there. And those are much more visible of how a place is going to operate and impact its community.

Mike Merrill:

Yeah, I love that. What about digital tracking like in apps, and cloud-based computing, and technologies?

Doreen Betoldus:

In my world we're not all the way there yet, but we do use electronic say document control systems, which is hopefully getting us paperless someday. We're not completely paperless. I even have paper on my desk. I have to say, I should be reading off an iPad or something. It's just some of us don't want to let go of it too well. But we are avoiding the... We used to have like, you would hand in a payment and it used to have five copies for the five different people who were going to be reviewing it. Now you just kind of send one in and keep one copy, right. So things are improving, but there are apps out there, there's artificial

intelligence. And just recently I saw demonstration of one for inspection where it's almost like you talk to Siri or Alexa and you tell them I'm at site such and such, and I'm inspecting.

And they'll say, what are you looking at? You know, like the artificial intelligence ask you these questions and has almost like a dropdown, but you're just talking to it. You don't have to do anything with a tablet in your hand, which makes it safer to walk around and just keep something in your pocket or a microphone on you to talk with Alexa, and that Alexa fills out the form. And that goes real time to where the engineers are sitting. And if there's issues there's like real time responses to, and you can get experts on the phone right away if something's happening right then and there, so that kind of stuff is happening too.

Mike Merrill:

Yeah, that's an exciting technology. Are there some other technologies that you see coming down the pike right now that will help increase sustainability even further?

Doreen Betoldus:

I think that's the most I see right now, but you know, there are robotics that can be utilized more. I think it's just a matter of thinking outside the box where these things can be used. Drones are now already doing bridge inspection, which kind of saves on traffic, and shutting things down, and sending somebody up, and risking life and limb to do inspections. Same thing, you send divers down now it's been around for a while that you send like a robotic submarine with a camera to go down there and take a look. But now drones are going up buildings and things like that. And walking robots can go into places where... confined entry spaces, do inspection for people. Instead of sending people into a confined space, like a manhole, or a chamber, or a tunnel. Those kind of robotics can kind of be a little more nimble and keep a person safe.

Mike Merrill:

Yeah. I mean, I love the three Ps. You said people, was it process?

Doreen Betoldus:

People, Planet, Profit.

Mike Merrill:

Oh, profit.

Doreen Betoldus:

People, Planet and Profit. You're in business to make money, so there's no reason not to make money in sustainability.

Mike Merrill:

Yes.

Doreen Betoldus:

Money keeps the world turning, but people really... It's the stakeholders, it's your staff, and planet actually is your community, the environment itself.

Mike Merrill:

Yeah, lots of goodness. All positive things. I don't think there's anything to be scared of. I think a lot of people hear some of these buzzwords or they think of sustainability or these other things and they think, oh no, it's going to cost me a fortune, maybe it's a political thing or it's some other thing than what it really is. And it really just sounds to me like the way you're describing it, it's just being a better steward of the things that we have stewardship over and that we all need to get involved and work together on.

Doreen Betoldus:

And you know with the climate impacts we're having now, there's a lot more also coming down in that respect, too watching for what impact you have, like building something on the shoreline or weather predictions, I guess, better weather predictions. They're already helping us now, like we'll get alerts that winds are coming, we shut down the cranes, we're much more ahead of it now in the weather conditions. And now I know they're building GPS database systems of utilities in the ground of a lot of these major cities to see like if you're going to build in a place, what kind of utilities are you impacting and are you in a flood

zone? And those kind of impacts and is that the best place to go? Before you even get there and plan, there's sort of a sustainable aspect to that, the very proactive planning, so those kind of systems are coming our way as well.

Mike Merrill:

Yeah. And I come from the construction and development world, so I know all too well how commonly it feels like, oh, the developers have to pay for everything and upgrade all the infrastructure and then they're going to pass the cost onto the end consumer, right? Their home's going to cost more and then, I mean, there's all these other things. And now there's more streets to take care of and to plow the snow on and to maintain, and it just goes on and on and on. And I think better planning just helps us be more efficient and get there appropriately instead of anybody having to really bear the brunt of everything all on their own. With your role at Jacobs, it sounds like you've got quite a few different initiatives, equity and inclusion, you've got all these clean energy type initiatives. Are there other things that your company is doing outside of just the sustainability side of things that you think you could shed some light on for companies that maybe you're less familiar with some of those processes because they're not as large a company as Jacobs?

Doreen Betoldus:

You know, we are coming out with some new strategies and we are getting more focused on cyber and data management. We'll be a lot more focused on that. We're looking to be more innovative. We're definitely looking at the climate action and how we can think out of the box and more solutions for our clients on the construction side, all that trickles down to the construction side, we're definitely involved in digital twins.

Mike Merrill:

Sure.

Doreen Betoldus:

And obviously the equity, inclusion, and the beyond, and we're also very global and we're looking to become more agile, more globally use all our resources to become a more agile, nimble company. We're very large.

Mike Merrill:

Yeah.

Doreen Betoldus:

I'm looking forward to putting that into action.

Mike Merrill:

Yeah, you have the ability to impact a great number of people when you're as large as Jacobs, so that's wonderful to hear that leaders in our industry are looking ahead and planning for the future in a way that again is more sustainable for all of us.

Doreen Betoldus:

Yes. I agree. I agree.

Mike Merrill:

More I guess, on a personal level, what is one thing that you are most grateful for in your professional life?

Doreen Betoldus:

Before I said earlier, that my envision equity was based on my 45 year career, but that doesn't mean I haven't had great opportunities. I've had great advisors and I was fortunate enough to listen to my advisors. Took the advice when I got it and said, Hmm, they might be right about that, and they were. When I look back, I've had some very good mentors and I've had some great opportunities and opportunities still seem to come my way. And I'm just very fortunate and I'm very happy to be sitting right where I am right now as a NAWIC. And also very glad that we're talking sustainability, so this has been a passion all my life and construction is maybe not the most obvious place to be, to be sustainable, but it's one place where I can have impact.

Mike Merrill:

Well, and I think to your point, that's why we need to be having that conversation, right? There's a lot of room for improvement, so that means there's opportunity, right?

Doreen Betoldus:

Yes, exactly.

Mike Merrill:

When we talk about all of these things together and I really honestly, I don't want to miss the opportunity to say again, what NAWIC is doing and having involvement with women in construction and creating and allowing for opportunities to blossom that exist is more sustainable construction. It is tapping into a resource that is there, and available, and can be utilized, and leveraged, and be a blessing to the industry. And we need to get more women involved in our industry.

Doreen Betoldus:

Agreed. And when you think about sustainability and when I got my MBA, I'm like, how am I going to use this MBA? And I was already involved in women in construction. And I said, well, one of the steps I can help take is to help that diversity, and speak up for women in construction, and speak up for diverse teams also, so that became very important to me. And I said, as far as my diversity footprint, I mean, my sustainable footprint, that's one place where I can have impact. And that's how I kind of step forward with NAWIC to kind of, I felt it was a good organization that puts women out there. And we elevate women in construction because we can do the job and we do it pretty well, so yeah. That was very much a passion for me as well.

Mike Merrill:

Yeah. I love that. I think that's awesome. Doreen, tell me and the listeners, what do you feel like you have developed personally that has become kind of your go-to superpower?

Doreen Betoldus:

Well, Mike, I work in construction so the super of power I ended up developing and I have... it sounds like bragging or whatever, but I have an ability to, and it's not read people. It's not like I can read people's minds, but when I meet people and I sit down in a meeting and I can kind of, as people start talking, I can understand where they're coming from. In other words, I understand their motivations. When you deal with sort of, I don't want to say construction, especially in New York can be very demanding and in the past it has been very, you can deal with person, right? Construction is not just construction, it's a lot of dealing with people and personalities, so I have been able to say, read the room, keep a sense of humor, get collaboration, so I feel like my superpower became being able to understand somebody and understand their motivations and actually kind of read how they're thinking, so I can kind of help move them along and help a team collaborate, so that's become my superpower.

Mike Merrill:

Well, that's awesome. Every team can use a, it sounds like you're an air traffic controller, and a quarterback, and maybe a fullback, whatever it takes, right?

Doreen Betoldus:

Yes. I guess, a facilitator, that kind of thing.

Mike Merrill:

Sure. Yeah, I think that sounds awesome. Well, that was fun to learn a lot more about you. I guess just to wrap up the conversation, share with us what you would hope that the listeners take away from our conversation today.

Doreen Betoldus:

Well, the main thing is that there's so much more to construction. I mean, there's so much innovation coming our way and some innovation that we need. I think there's more to construction than just picking up a shovel, right?

Mike Merrill:

Yeah.

Doreen Betoldus:

I hope listeners take away that there's more career paths they can take and that we need more thought leaders, and innovators, and data scientists, and AI. You know, construction is not limited to just the guys and gals who go out there and build the stuff. And those people on the ground need those innovations, so I hope that's the takeaway.

Mike Merrill:

Love that. Well, that's a great way to end. Thank you so much for joining us today, Doreen. This was a lot of fun to get to know you.

Doreen Betoldus:

Thanks, Mike. Appreciate it.

Mike Merrill:

All right. We'll talk to you again down the road and be looking forward to it.

Doreen Betoldus:

Okay. Thanks so much.