

## **Cloud-Based Construction Infrastructure Software with Balaji Sreenivasan**

00:00:01

*Introduction:* 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 and one of the few to be honored as a LEED Fellow. Each week, Charlie welcomes a green building professional 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.

00:00:33

*Charlie:* Hey, everybody, welcome to the next episode of the Green Building Matters Podcast. I'm your host, Charlie Cichetti. We get to interview green building professionals. Sometimes maybe a technology professional. That's what we're going to talk about today. It's all about infrastructure. We're talking about construction technology, and we've got a special guest with us from Austin, Texas. Balsji Sreenivasan with us and he's with Origo. It's a software company, and I can't wait to get into his story. How are you doing today?

00:01:05

*Balaji :* Hey, Charlie. I'm doing great and thank you for having me.

00:01:07

*Charlie:* Well, thanks for being on. A lot of our audience, I've mentioned, is architects and engineers and contractors and real estate professionals. We're going to talk about the built environment, but it's kind of a unique conversation with the work that you specialize in. I ask all my guests if you would take us back, where did you grow up and where did you go to school?

00:01:27

*Balaji* : I'll take you right back to where I grew up. I was born and raised in India. I did my engineering at night 3G in India. I came over to the States for my masters at the University of Florida, Gainesville. I started my company roundabout a few years after I graduated, and the focus was really to automate the process of construction inspection, which was back in 2003 in a very, very novel concept. And that's how the whole company got started by that little idea of taking that small problem in the field and using technology to solve it.

00:02:07

*Charlie*: Those are the best companies in solving those problems. How did you know you wanted to focus on infrastructure, construction? Had you worked in that field or how did you know that field?

00:02:19

*Balaji* : I'm an engineer at heart. I like building stuff and I like designing stuff. I was introduced to AutoCAD, design tools and design of assets and building materials during my whole engineering program. I haven't really worked in infrastructure, but I felt like the biggest opportunity for automation was in this massive industry called infrastructure, where there was over a trillion dollars of money being spent and there were very, very few tools outside of design really involved in helping people be more efficient. It was more a combination of business opportunity and core skills that I had an interest that got me to infrastructure.

00:03:09

*Charlie*: I went to Georgia Tech, got into construction and real estate in green buildings. Construction has not been nearly as innovative as other industries, right? It's been lagging behind, so it's exciting to see what you've been doing for 19 years now. The question I usually ask on the green side is how do you get more sustainability minded, I guess for you is how about the entrepreneurship side? Did you always know you wanted to start a company or how did you start?

00:03:37

*Balaji* : I like solving problems, and I've always liked solving problems. When I was a kid I had the opportunity to take a step back, I had a job right out of college. I used to work in a design engineering firm, and I had this idea to create this paperless concept because I figured we could be so much more efficient that maybe we were working in that form. I didn't really get the opportunity to execute that vision because a lot of the folks there were still a little old school. I got the sense that I could end up being like everyone else here or I could get out there and do something on my own and solve this problem that I felt was universal to a lot more industries and enterprises. I'm a big risk taker, Type A. I got out. I have bootstrapped the business. Started a company with solving one core problem, which is creating the paperless concept on the job site and inspection, and over the last many, many years, we've really expanded that to be a complete enterprise platform for the entire construction lifecycle.

00:04:46

*Charlie*: That's great. I love entrepreneurship, bootstrapping, it's now a good momentum you have. Did you have any mentors or anyone that kind of maybe opened a door that had influence on you as you were getting into your career?

00:05:01

*Balaji* : I was fortunate early on when I started my company that I had a fantastic set of angel investors and they're still with us in the business today. I've learned a lot more from them than I have from school or from other academic programs. One person that I would have to mention is my president, Chairman Ravi. He's an entrepreneur himself, started a fantastic company in the 90s and telecom and started to ascend. I think there's a lot to be learned in the journey of an entrepreneur from another entrepreneur. Learning to be frugal, learning that cash is king, learning that customer is king and some core concepts that got sunk in early on made a big deal of a

difference in terms of how I looked at the world and how I designed these products.

00:05:56

*Charlie:* That's great advice because sometimes they try to repeat it over and over. I get it. From my experience with mentors, but especially, that angel investor taking a bet on you, the person, let alone the industry and the tool and the software to the person. It's about encouragement, I think human nature. We all need more encouragement, but especially in entrepreneurship. It sounds like you found some mentors and angel investors that have been very encouraging. Let's say there's someone listening, and maybe they do want to carve an entrepreneurial path. Any advice on how to maybe find a mentor or in your case, an angel investor, did that just come up organically? Were you kind of like what you're doing? Do you want some help? How does that conversation go?

00:06:41

*Balaji :* You have to build your network. You have to constantly be building your network. These angels, they seem like they've popped out of nowhere, but if you go back and join the dots, they are an outcome of many of the contacts that cultivated over the many, many years. One advice I would give to people is to be curious. When you're curious, you tend to listen more and you tend to talk to people and not be dismissive and you never know what they're going to say, which person they're going to bring up, which one introduction they're going to make. The investors I ended up with were all connections made to me, to other people I met and conversations that had. I would always be curious, ask a dozen questions, and sit back with them. I guess that that mindset lets you meet more people. If you have a know it all attitude, you tend to meet fewer people and you tend to live within your own network and it doesn't really grow much. Get the word out.

00:07:42

*Charlie:* That's great advice to summarize. Thank you for that. If you look back, what are some of your proudest achievements so far?

00:07:49

*Balaji :* I think the fact that we were able to build and get this vision that I had in my head of solving a need to be real. I mean, that's phenomenal. You start a company and you have two or three people in your startup. When you look back five, six years down the line and you have enterprises, you have cities, you have counties actually betting on your platform to plan to deliver billions of dollars of capital programs that's refreshing. I think that's really what I wake up to saying that this little idea that I had in my head is now really a product. It's out there. People are using it. They're betting, they're paying real money for the product, which is not really money is an outcome. I would say, but it's a good outcome. It's really proof that if someone's willing to bet money on a product that you build, it means you solve the real problem. That's a big achievement for any entrepreneur to see the product or service to be delivered, make a huge impact on society and see people using it and referring to it as an amount of reverb and conversations and makes you feel really good that, "hey, I started that."

00:08:56

*Charlie:* So that's a brand. That's the answer. Let's talk about today. Tell us more about your company. You cloud based enterprise, construction, but focused on infrastructure. Does this tell us about the company kind of where you're at, where you're going in your business?

00:09:14

*Balaji :* Yeah, thanks for that, Charlie. If you look at construction tech, a lot of a lot of folks tend to associate construction tech with contractors. They tend to associate it with material, the channel associated with the actual act of construction by AGC. What we really focus on on Aurigo software is the construction lifecycle seen from an owner's perspective. We are construction tech for the owner, and the owner could be public or private.

While the challenges are kind of similar, they're looking for different jobs to be done. An owner starts with figuring out where to put their money on which projects to invest in, what the priorities for that construction program are, and what the sustainability goals are. What the program goals are and what the community impact goes are and then they get into deciding which contractor shall I use and then they figure out if I'm going to have to deliver this project in a given time and budget. Everything that the owner is doing is from a program planning budget, an outcome perspective and more a top down approach versus a bottoms up approach. It's very, very data driven. Owners or repeat owners like a city or a county or a state transportation department or even Chick-Fil-A, for example, are spending a lot on retail outlets. We're constantly building stuff. They are in the business of building and they're in the business of looking at the data that they harness during the previous building experiences so they can get to be better builders. What we do is give them a cloud platform that automates the entire process of planning, prioritizing where their construction dollars are going. Making sure that their construction goals are being met. Sustainability goals, environmental goals, program goals, efficiency goals and then streamline the actual construction process itself. We call ourselves the capital program and project management software, and we sell to both public and private owners. We are hosted entirely on the cloud, so we work with DWG and our customers pretty much have to have a browser to access our software. We have a mobile app that's downloadable on the Android and iOS that they can use for offline field data collection. What we really do is take that data straight from the design field, from an Autodesk or AutoCAD design environment using a digital twin philosophy and let data from design travel through the whole lifecycle. Anyone in planning or in construction or in maintenance can access that data or that design data through the whole program. So that's really what we do. We help owners celebrate these programs with a better but higher level of quality, and our whole goal is to help owners build a better tomorrow.

00:12:08

*Charlie:* Thanks for walking us through that. It sounds like you've got a lot of great clients, users, big capital projects, and I love that you've got sustainability and efficiency. There's goals and they're being tracked as you're right, sometimes we might work on a one off LEED building. But if we had this whole master plan that we zoom out and we're also having impact, it sounds like that's a lot of what you're doing. Are there some projects or some clients who were allowed to name or just give us some?

00:12:39

*Balaji :* Today we are the number one vendor in the large capital project government space. If you look at state departments of transportation, we have Utah State, we have Massachusetts, Iowa, Wisconsin, you have quite a few large states built by the Ministry of Transportation in Ontario, in Canada. They're spending anywhere between one and four billion dollars a year on their VIP programs, and they're literally running all of their capital planning, project delivery and execution using our platform. One of the recent wins we had was a testimony to our efforts. So far in our journey was the win with the Federal Highways Authority. They are one of the largest beneficiaries of the new infrastructure bill, and they better our platform over an 18 month RFP procurement. As part of that engagement, it's a 10 year engagement. They will be using our platform to deliver all the first funded projects across the U.S.. Those are types of examples that we do. We do roads and highways, light rail and transit, water authorities and then cities and counties.

00:13:45

*Charlie:* Got it. Thank you very much. We're. You've been very excited with the recent infrastructure bill and the passing. Will that be something that you can support? Is that right up your alley or is it complicated and will take time?

00:13:57

*Balaji :* I tell everyone, we've been training for this moment for 19 years, so

00:14:03

*Charlie:* Very well said. That's great. I like to ask, where are we going next in the world of green building sustainability. How about your world with infrastructure and resiliency and so much more? What are you reading up on? What's around the corner? Kind of in the industry? You focus on what's next.

00:14:23

*Balaji :* I think those two worlds are converging. Everyone out there, if they're not thinking of sustainability, are thinking about how to have an infrastructure asset that can protect the environment and not to beat it, not really create more work. Use sustainable materials. They're not thinking of building a better tomorrow if they're not thinking on those lines. Our whole vision is about building a better tomorrow and how do you build a better tomorrow? You build a better tomorrow by planning with the confidence you build with quality and and you maintain with efficiency. All of our products really cater to those. We use AI. We use the cloud and we use a lot of native mobile apps to essentially harness data sitting in different silos across the entire construction lifecycle to let people make better decisions at every stage. That's really what we do. We help planners and investment managers make the right decisions. We have construction managers make the right decisions, and we do this by sharing data from these different pods. Literally today you have designers working in their own world. You have capital planners using a different set of tools. You have construction managers and project engineers using different tools. A lot of times data is lost in translation and that's half the reason why projects are delayed. There's a lot of rework and quantity is usually impacted. One of our goals really is to deliver a single ubiquitous cloud platform, which can take data from the earliest conceptual design stages up through ribbon cutting. We deliver one platform where not a piecemeal offering where we're trying to stitch together five different products. It's one single cloud platform that users can literally go from phase one through these files



00:16:14

*Charlie:* The predictive predictive analytics, the machine learning, what can you do is just a simple example of something maybe your team has been able to do, but that's just like, Wow, OK, I didn't know we could even do that. Do you have a simple example?

00:16:27

*Balaji :* I'll give you a couple of things that we're doing. There's something called project sentiment analysis. When project managers are exchanging communication with contractors, you use these architects and owners. There is a simple type called a project status of project stub. They're all going to point that towards green, saying, "Yep, it's all good", but you really don't know what the double click on that is as to how healthy that project really is. We are using natural language processing, and maybe we actually scan all of the communication that these contractors architects are exchanging between each other. We know what the sentiment of the project is. So is that a smiley face? Is it a sad face or are people angry at each other? What's the actual ground reality of that project? Help kind of gives you a lot more insight as an owner saying, Am I addressing my noninterest? Machine learning is also looking at patterns in your projects. For example, we have customers in Wisconsin building in the cold winter months, and we have other customers in other parts of the world, like in Toronto, in Ontario having similar weather patterns. And so we can literally learn from a data usage cash flow usage project, delays in winter season, months of certain orders and apply that and give insights to other customers. We don't really touch the actual data when we look at the patterns of the data. And then we're able to help owners make better decisions, saying if you were to start a project sometime in November, when the temperatures are between X and Y, then here is the chance of your project getting delayed and here's what's likely going to happen. Here are the risks you're going to look at. We have over 40 -50 thousand projects and over 300 billion dollars of

construction data on our platform, and we're able to use that to make predictive analytics for our customers.

00:18:12

*Charlie:* It's amazing when you answer my question. You're really doing some pretty cool stuff. Thanks for that. How about your day to day? How do you spend your time and your role as the founder and CEO? Is it business development or is it set in the vision? Is it hiring? Like what's taking up some of your time data?

00:18:35

*Balaji :* I think in the last 12 to 18 months, I tried to do more of working on the business and in the business. By that, I mean, I'm taking myself completely away from the day-to-day. We have an excellent set of. We are at a company stage right now where we're small. Grab that small 450 people. I have quite a few people running different functions for us who are very, very capable, mature leaders. What I'm trying to do more is take a step back and say, what are we going to do or what kind of a company are we going to be in 2030? And to do that, you have to think about what the jobs our customers are going to be doing in 2030. There are some jobs that are going to exist and there are some new jobs that are going to exist that don't exist today, and there are some jobs that exist today that won't exist 10 years from now. Trying to think about that, to give you an example, is one of the things that we're betting on is we're betting on the fact that critical inspections in the field, underwater inspections on high critical bridges or highways will actually get people replaced into human inspectors looking to replace Pantano instruments.

00:19:41

*Charlie:* What I just heard and to our listeners, is let's hear the CEO 450 person firm. You give yourself permission to search, right? That's part of the vision for working on the business. As I heard, you gave you some time to think and probably a lot more of the team. It's pretty cool that you're able

to thank and kind of predict if you. I agree with everything, I'm a big fan of drone work and automation, et cetera, et cetera. What would you say is your specialty, your gift?

00:20:10

*Balaji* : I don't know. I guess one of the things that I would say I have a unique ability is to look at large problems and break them down in a simple case. I guess that's one of the things that comes naturally to me. I don't have to work as hard at it, so I try to use more of my time doing those sorts of things and not focus on the minutia or the execution.

00:20:30

*Charlie*: That's great. Thank you. Any good habits, routines, rituals you could share?

00:20:35

*Balaji* : I think one of the things that I do is I like to start my day early, so it's just something that's been a part of my routine ever since I guess I was in my right out of college. I am an early person and so I like quiet time. I get a lot of work done before seven a.m. Before my team gets in, I would usually use that time initially during the startup days to get all of my me time work done before the team starts coming in. And today that discipline has helped me use it to meditate, focus a little more on what I want to get accomplished during the day before the whole rush kicks in. And so that's what's super useful for me, that 30 minute, just me time in the morning before I get started and walking through everything that I want to get done that day, help me prioritize what I should be saying yes to and what I should be saying.

00:21:24

*Charlie*: No, it's great. I'm a fan of the bucket list. Could you share one or two things on your bucket list? Maybe some adventure travel writer wrote a book. I don't know what are one or two things on your bucket list?

00:21:36

*Balaji* : I would love to write a book, honestly. It is actually on my bucket list of things to do, but don't know what. I'll do it. I would love to teach at a school, I've tried doing it before. We actually have a program, a foundation that my chairman and I started calling a lender there. I'm not giving you guys a plug in for that, but I've got a charitable foundation and we invest our own money and we're helping children in India who are not from such good backgrounds gain access to primary and secondary education. One of the things that I'd like to do is actually spend a little more time on that foundation and actually give more of my time to it. We're just giving money and I would like to give more time to it.

00:22:16

*Charlie*: That's fantastic. What a good cause. Speaking of books, is there a book you'd recommend to our podcast listeners?

00:22:23

*Balaji* : I actually follow a lot of the books that I see pop up on, Gates notes. One of the books that I just completed reading was, I want to say, Klara and the Sun. It's actually by an author, Kazuo Ishiguro. A lot of trouble is an easy kind of friend to a girl who's not really well, and it takes place in a very distant future. We hear a lot of stuff that tech is getting evil, and this is really a book that shows that tech need not be evil. It's interesting to see how it could actually be a companion to people in the future. It makes you think about what superintelligent AI and robots could do in the future if they actually have good intent verses about intent. It's a tribute book, but I am reading that I just finished it.

00:23:17

*Charlie*: OK, well, we're going to put a link in the show notes. That's a great recommendation. Thank you. Two questions as we start to come to a close. Career wise, is there any career advice you wish you had known earlier?

00:23:29

*Balaji* : One of the career advice is learn for the sake of learning. Don't learn to get a degree. Actually learn. I wish someone had told me that I think I was so focused on the formal education process. I did go to a good school and everything else. I was so focused on that that I I think I spent a lot of my time after graduating, learning the concepts that I really needed to learn. I would say use that time to actually learn. One thing, and I take risks, take risks early on. By that, I mean it's going to be the same effort when you solve a problem. You're better off solving a bigger problem than a smaller problem because the outcome and the benefits would be that much greater. Don't go chasing a small problem to solve big problems that can actually have a larger impact on society.

00:24:24

*Charlie*: That's great. Well, lastly, let's say there's someone to listen to our podcast or our interview or chat here, and they're inspired to get into this, this movement. Maybe it's infrastructure construction technology, sustainability. What words of encouragement do you have? A third just now jumped in, and maybe that's a career change. Or maybe they're young in their career.

00:24:43

*Balaji* : Never too late to be an entrepreneur, you know, never too late. Don't let age come in the way of that. You're always an entrepreneur for the first time when you start. It's kind of like being a dad. I would say, jump right in if you do. The biggest risk you would be taking is not taking one. If you feel you want to take some, take a risk and start a venture, it's never too late.

00:25:09

*Charlie*: Oh, it's great. Hello, everybody. I'll put a LinkedIn link in the show notes. Make sure you connect here. What does this podcast mean to you?

Check out Auriga software and everything here with this growing firm, and thanks for your time today. This is great. Thanks, Charlie.

00:25:26

*Charlie:* 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 to continue to listen every Wednesday morning to a new interview with a green building professional here in this industry. We're just some pro tips that we want to make sure that you are getting straight from us straight to you.

00:25:52

*Charlie:* Thank you for listening to this episode of the Green Building Matters Podcast at GBES.com. Our mission is to advance the Green Building Movement to best in class education and encouragement. Remember, you can go to [GBES.com/podcast](http://GBES.com/podcast) or 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. 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.