



The ENGINEERING CAREER COACH PODCAST SESSION #13

How to Improve the Quality of Your Engineering Design Work and Boost Your Confidence

Show notes at: engineeringcareercoach.com/quality

Anthony's Upfront Intro: You are listening to *The Engineering Career Coach Podcast with Anthony Fasano Session #13*. In this session I will help an engineer who has been making some technical mistakes improve the quality of his design work and also boost his confidence in the process. Let's do it!

Episode Intro: Welcome to the *Engineering Career Coach Podcast*, where it's all about helping real engineers to overcome real challenges and get real results. And now for your host, who is on a mission to inspire as many engineers as possible, professional engineer and certified career coach, Anthony Fasano.

Welcome everyone to the *Engineering Career Coach Podcast*. This is your engineering career coach, Anthony Fasano and I want to welcome you to this session of the show. For those of you engineers out there looking for some career inspiration I do send out free career advice and inspiration through daily and weekly emails, which you can read about and sign up for on my website at engineeringcareercoach.com/freeresources. So please take advantage of that.

I'm really excited about today's session. I hear from a lot of engineers who lack confidence because of their technical abilities may not be as sound as they want them to. So in this show I'm going to help an engineer try to improve his technical skills and the quality of his work and also boost his confidence in the process.

So before we jump right in to our motivational moment to kick off the show, I just want to briefly mention an event that I'm putting on through my *Institute for Engineering Career Development*. The event will take place in Austin, Texas in late April. The URL for the website is engineeringevent.com and essentially I'm going to bring together a dozen or even more of the most successful engineers in the United States, have them sit on panels on different topics and let younger engineers be able to talk to them and ask them any questions that they'd like about their career, about how they achieved certain goals, to get that guidance, to get that guidance that's very elusive in your engineering career. I think that that's very, very important and they will be available to you at the event.

The ENGINEERING CAREER COACH

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We're also going to have a keynote speaker on the second day, Brett Harward, the author of the book *The 5 Laws that Determine All of Life's Outcomes*. So it'll be a big personal development push that weekend as well. So please check it out, engineeringevent.com. We have early bird rates in place till the end of February, which is a few days away and a special bonus that you can get if you register by then, which you can see on the website if you scroll down towards the bottom. So with that let's jump right in and start the show off with our quote.

Anthony's Motivational Moment: For today's motivational moment I selected a quote that really encompasses everything about this show. And the quote is as follows, 'Quality begins on the inside then works it's way out,' by Bob Moawad.

Now the reason I like that quote, especially for this show is because we are going to help an engineer in a few minutes here who lacks confidence in his technical abilities, which affects the quality of his work. What I'm going to try to do is help him to put some procedures in place to boost his confidence to make him feel better about himself on the inside, which will translate to his work, the actual work. And also put some procedures in place to ensure that the quality of that work improves.

So I really like this quote because I believe in it. I believe that in order for you to do good work you have to believe in yourself. It has to come from the inside out. That's something that you'll see that I really try to take that approach when I do coach this engineer in the next segment.

So before we jump in to this segment, let me just remind you that at the end of this show I will have, as always, a career changing tip and the career changing tip for today will help you to put consistency into your career by doing one simple thing. With that let's jump into the coaching segment and help Vic improve the quality of his work and get that confidence boosted.

Coaching Segment:

Anthony: Alright, now it's time for the coaching segment of the show, which is my favorite part of the podcast because we get to talk to an engineer out there in the industry and we try to help him/her to overcome a current challenge in their engineer or help them to try to achieve a goal that they're pursuing.

And today's guest is Vic from Texas. Vic is a structural engineer. He has an EIT certification and is currently preparing to take the professional engineering exam. He graduated in 2008 and is twenty-nine years old. Vic wanted to come on this show to talk a little bit about productivity but also the

quality of his work.

So what I'm going to do is just read you off Vic's statement on his application and I'll have him explain it a little bit more in his own words -- "I am in a situation where I am transitioning from a structural EIT to a structural engineer and I fear that when I have those responsibilities that I will be unable to perform due to my lack of productivity in my current position. I tend to make small mistakes over and

over. The mistakes are not the same, they change project to project. At times I do not add key structural details to plans when I should be well aware that I need to add those details. If only I'd just stopped for a second and thought things through. By having all these issues it affects my self esteem and really causes a downward spiral on my productivity, which in turn causes great doubts that I am capable of being a good structural engineer." So with that let me welcome Vic in. Vic, how you doing?

Vic: Doing good Anthony.

Anthony: Good. So I just read kind of your challenge and I appreciate you coming on because I think that this is a challenge that a lot of engineers struggle with in the fast paced world that we're in today. But why don't you tell us a little bit more about this, kind of in your own words here and explain it to those engineers out there listening.

Vic: Well, my responsibilities are to design and draft and so as I'm drafting at the back of my head I'm close to understanding, know what are the key elements that need to be drafted and what are the key details that need to be shown. For example, let's say if I have a slab and if I have a foundation that I needed to show on my drawing, I would forget the joint line and substance point line. It's just simple things like that and Well's templates for structural details.

It kind of makes a great effect on my productivity because once I make those mistakes it just bogs down on if I'm able to do the type of work when I have full responsibility of approving these drawings. And so, yeah, I just don't know if I'm capable of doing that.

Anthony: Alright, so for those of you out there listening I think that this is a great opportunity for everyone listening, and obviously for Vic to help him out with this. And there's a couple different things going on here. First of all, Vic is kind of victim to what a lot of engineers fall victim to in today's world, is that it's not just the engineering anymore that engineers have to handle, it's the drafting and everything else that goes into the project. A large part of that is because of budgets, because the budgets are tight. So the less people that work on the project the better for the bottom line of the project. The other reason is just because it's just an evolving industry and now younger engineers

are expected to be able to do everything from drafting, the designing, the presentations and so on and so forth.

So this is a challenge that I know that Vic, you're not alone in dealing with and hopefully we can kind of work through this with you and help a lot of other engineers out there in the process. So one of the things that I would ask you Vic is, I understand that you have taken on some more responsibilities now and you're kind of multitasking, where you're doing designing, drafting, a lot of different things at the same time. Do you have any type of quality controls - for example, quality, QAQC, lists or checklists? How does that work?

Vic: I really don't have any type of checklist. I just, because it's such a fast pace, get it out of the door as soon as, quick as you can. I'm not really prepared to have a list. I guess it's the lack of what to expect and what to look for whenever, what needs to be at least, what's the most important thing that needs to be on these drawings or the structural drawings at least. That's probably the big part of it.

Anthony: Vic is your, tell me a little bit about your company. Is it big, small? Give me a little bit of an idea of the size of the company.

Vic: The size of the company is probably more of a micros, or probably six people.

Anthony: Alright, so that tells me a lot. So couple things here, that we can help Vic with here is if you were working in a larger company they would have quality control checklists and you would have to go through certain standards and procedures to get a job out the door and it'd be very difficult for you to miss some of the things that you're explaining to me.

So one of the things that I would tell you to do, not even recommend that you do, I would tell you to do - and for all of you out there, especially those of you that work in smaller companies - take a Saturday or take a night, one night in the evening and stay at work late and take a look at ten to fifteen past projects that you've submitted, that you've gotten out the door, that are final. Look at the details, look at the different aspects of the design and make a list of everything that happened repeatedly - whether it was the footing detail, checking the rebar on the footing, adding a detail for a certain joint or an expansion joint detail and I would try to make a list of things that happen over and over and use that list with your current project.

So that when you get to your project and you're rushing through it and they're pushing you out the door, you can say, "Okay, I have to run through my ten, twenty, thirty point checklist to ensure that I'm hitting everything."

Vic: Okay. Okay.

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Anthony: To take it one step further - because on this show what I like to do is help engineers to really take the next step in their careers, move up where they want to go in their companies - is that I would actually talk to your supervisor or your boss and explain to him that you're doing this. Because this is something that can be implemented for the whole company if it's done properly and it could save your company a lot of time, a lot of money, a lot of potential legal issues, so you're going to be ensuring that the quality on the projects is of a higher standard.

So that's one thing that I can say is whenever you're making errors like that repeatedly - for any of you out there - and you're missing little things like that, quality control measures are critical, especially when you're tasked with doing a lot of different things at the same time, which probably all of you listening to this show are. Alright, and I've had experience with that, not just in my engineering career, although I did have experience with that. I was on a quality assurance control committee in my company and we put together these types of checklists and it dramatically increased the quality of the work at our company - number one. Number two - now that I have my own business I do a lot of the coaching, speaking and things of that nature, I have checklists in place as well to make sure that I do everything that I say I'm going to do and everything that I commit to doing. I mean I write a daily email known as the **Daily Boost from your Professional Partner** for thousands of engineers every morning and if they get to their office and they don't have that email then that's not good for them and they don't get their inspiration. So I need to have a checklist myself to make sure that I'm doing everything that I want to do and I think it applies for everybody. So Vic, I hope that that one point is helpful for you. Do you think that that's something you could try to do?

Vic: Oh yeah. I can definitely do that. I think it'll be really, really helpful.

Anthony: Alright, good. That's something you can spend some time with and as time goes on you may expand the list, you may think of things and add to the list. But the bottom line is you just need to start, you need to get a list going. So that's one of the things that I think will be very helpful for you. the other thing that I want to talk to you a little bit about is the idea of your capability of being a good structural engineer. Obviously you've been doing this now for three or four years. Do you like being a structural engineer Vic?

Vic: Yes, I do.

Anthony: Okay. What do you like about it?

Vic: The challenge and the solving the problems.

Anthony: And you've, how has your career gone so far in the first four years would you say?

The ENGINEERING CAREER COACH

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Vic: Up and down. In the beginning, first two and a half years there was a bit of a struggle because I really didn't have a good mentor I would say. And also the job market was bad and so we weren't getting many projects, so I couldn't continue my education of learning the structural engineering aspect and my mentor was extremely busy. And that was also a very small company and at the same time I had to moonlight to make ends meet.

Anthony: And how's it going there?

Vic: Going good, going good. I really enjoy working.

Anthony: You feel good there?

Vic: Yes, I do.

Anthony: You know I mean obviously - and I know that you're not alone because a lot of people out there have probably been through something like you went through at the beginning in your career, especially with the economy right now and a lot of engineers unfortunately don't have work. But the bottom line is Vic, is that you went through that low in your career, it was real low and you got through it and now you're at a point where you're working for a company, which sounds like a good company. It's a small company. It sounds like they've entrusted you with a lot of responsibilities. It sounds like if you make some of these changes we talked about, it sounds like you're going to be in a really good position to succeed because you're in a good spot and that's what you have to think about. Think about that you already had the low in your career. You're beyond that now.

Alright, the problem that you have I think can be solved with a couple of good quality control systems in place and making sure that you're diligent and you're determined to make sure that the quality of the work is right and you're paying attention to that, alright. But what I don't want you to do is, I don't want you to doubt your abilities to be a great structural engineer because I think, based on talking to you here for the last ten, fifteen minutes is that if you can make it through a low in your career like you've just described to me and you've got to the point where you're now at a company and it sounds like you're in a way thriving because they've entrusted you with these responsibilities, which tells me that they trust you and they like you, then I think you're on a solid path.

You're taking the PE exam in a couple of months and you're moving everything in the right direction. So the one thing that I want you to focus on, on a daily basis is I want you to think about the opportunity that you have here. I want you to think about what you've overcome and I want you to focus on your goal. Right now you have a PE license in the near distance. You can see it. It's right in front of you. Okay?

Vic: Yeah.

Anthony: You have a potential to do big things in this company because they've given you these responsibilities. And if you can take them and be successful with them and do some of the things that we talked about here, you're talking about a young structural engineer who's going to be what, thirty years old next year, potentially with a PE license in a small firm, doing a lot of great things in a small firm and handling those types of things and maybe even implementing an entire quality control system for your company. I think that you're in a good spot.

Vic: Okay.

Anthony: What are you feeling right now?

Vic: Yeah, yeah. You brought up quite a few good points and, yeah. Good points, very true what you're saying and I could start seeing it a little more that way and not doubt as much and have a good process going on. As you mentioned, the quality control looks to be a good place to start.

Anthony: The one thing to always remember Vic, in your career and even in your life is that everything that happens to you is just an experience right?

Vic: Yeah.

Anthony: And it's what you take from it is what it does for you. So in other words, you can mess up a set of plans and you can get in trouble for it and you can let, you can dwell on it for the rest of the year and say, "Man, I'm not going to be a good structural engineer - I'm missing these details," or you can say to yourself, "You know what listen, I like structural engineering. I think I'm good at it. I think I've got opportunities. So I've got to take this experience, I've got to look at it. I've got to learn from it. I've got to make sure that it doesn't happen again, whatever it takes." Alright?

Vic: Yeah.

Anthony: And that's the mindset that I want you to take from now on in your career. If something happens to you I don't want you to say, "I'm doubting myself." I want you to say, "Listen, I know I'm good. I'm confident in myself but what I need to do is take this experience I just went through and I need to learn from it. I need to write down everything that happened to me and make sure it doesn't happen again. I need to get on the phone with my mentor or talk to my colleagues or my friends or my coworkers and ask them what do they do so that this doesn't happen to them. And I just need to learn. I need to get back on track."

And that's what I want you to do because believe me, believe me I've talked to a lot of younger engineers and there's not a lot of younger engineers that are going to be thirty years old, potentially with a PE license, having some of the responsibilities that you have in a small company, which means you have the ability to advance in that company because it's a smaller company and there's probably a lot of opportunity. So I want you to keep all these things in your mind as you move forward.

Vic: Okay.

Anthony: Is that helpful for you Vic?

Vic: That helps a lot. That helps a lot. And another thing that I doubt - I guess it goes hand in hand with having the responsibilities as a structural engineer - is to say I find a better job or something to that extent. How am I going to be able to perform? And that's where I start doubting myself. If I'm doing these little common mistakes, I shouldn't be doing that at my next, to say next stop in my career.

Anthony: Right. You're exactly right. And how do you think you can ensure that you don't make those mistakes Vic?

Vic: Doing the few things that you had suggested.

Anthony: Right, but not only just doing them but doing them now, starting them now and doing them consistently. Alright. Because what you're going to do Vic, is you're going to do something called creating a new habit. The only way to create a new habit in your career or your life is to do something for more than twenty days in a row. Alright.

Vic: Yeah.

Anthony: Now that's just an example. This is a little bit of a different situation because you're not going to necessarily be checking plans everyday.

Vic: Yes.

Anthony: But the point of it is that if you do something everyday for three, four weeks or a month, it's going to become engrained in you and at every level of your career you're still going to do the same thing.

Vic: Yeah.

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Anthony: So it's kind of something I'm going through myself right now and I've written a couple blog posts about it, is I'm going through something called 'a year without', which is something that I got from the Zen Habits blog, which is a great blog for those of you out there that are interested in that. And what you do is you give up one thing every month during the course of the year just to see how you deal with it, if you really need that in your life or not. So far I gave up television the first month and basically after the first few days it was easy and that was three months ago and I haven't looked back at that yet. But the reason is because I did it everyday for thirty days and it became my new normal.

Vic: Okay.

Anthony: So right now for you, Vic, the normal is no controls, no checklists, no guides, rush everything out the door. If you put this system into place and you make sure that you look at it at least everyday. Review the checklist everyday. Look at your plans against it everyday, even if it's just ten minutes to begin with. It's going to be something that becomes your normal and then you're going to say...It's just going to become something that you do everyday for the rest of your career.

Vic: Yeah.

Anthony: And it's going to tremendously increase the quality of your work and really the quality of the engineer that you ultimately are.

Vic: Yeah.

Anthony: But what you can't do Vic, is you can't tell me that it's a great idea and then go back to the office and get swallowed up by all the deadlines and not implement it. So you need to work hard to take the time to implement this system and get it working right away and then do it consistently. Because that's the difference between engineers that are super successful and engineers that struggle in their career up and down because if you get an idea or you get some advice or you get a recommendation, you can either take it and implement and act on it or you get overwhelmed with everything else and you forget about it and the circumstances can be very bad.

Vic: Okay yeah.

Anthony: That's one of the things that I preach to all the members of our *Institute for Engineering Career Development* is consistency, consistency, consistency. You know you can read the best book in the world, you can go to the best webinar in the world, you can get coached by the best coach in the world but at the end of the day you're the one that has to take the information and



implement it and use it. And I think, from the sounds of our conversation today, I think you're pretty excited about doing that.

Vic: Oh yeah. I'm very excited. I never had thought of doing a quality control list but that definitely helps me out. And one thing that I've realized over the past few months is I've been a little more strict on myself the past few months, having a little 'to-do list' and making a little list because I really never had a habit in the past of making a list, just only recently as in just when I started this job I started to make a list but not consistently. So what you're saying is right on about what I need to do in order to proceed.

Anthony: That's a good thought that you brought up as far as - we've talked a little bit about productivity or at least this is somewhat tied into productivity because the quality control, taking that time is going to maybe affect your productivity but here it's directly linked to the quality of your work, so it's very important. But there is a wonderful tool out there called asana.com, which is a-s-a-n-a.com - and for those of you listening, all the resources that I mentioned on this podcast today will be listed in our show notes on engineeringcareercoach.com - but it's basically a free website that allows you to maintain a really good 'to-do list' and you can track it. You can do different things with it and it's very simple and it's free and that's a lot of the good things about it. So that's something for you to check out Vic and for everyone out there to check out.

Anthony's Career Changing Tip: It is now time for our career changing tip. And the point of this segment of this show is to give you something of value that you can take, implement into your career and see immediate results. So today I recommended to Vic that he create some kind of quality control checklist that he can use on every project to improve the quality of his work and help him to avoid missing technical details that would affect the project negatively.

So what I want you to do in your career is to implement some kind of checklist for yourself. It could be a quality control checklist. It could be a checklist on how to run an effective pre-project meeting. It could be a checklist on things to do when you are starting a new project with a client, certain steps to take. Steps for writing a proposal. Whatever the case may be. And again, I'm not doing this to ask you to become a robot. In fact I think having a checklist helps you to be more creative because you don't have to worry as much about the technical details. But figure out a checklist for something in your career that will simplify your processes and help them to ensure that they're done properly and done completely. And if you come up with something or if you already use something I'd love to know what it is. Please leave it in the show notes at the bottom of this show and you can access the show notes at engineeringcareercoach.com/quality. Again, that's engineeringcareercoach.com/quality.



Anthony's Closing Remarks: So with that, I hope you all enjoyed the show. I'll remind you to take advantage of the free career resources on my website at engineeringcareercoach.com/freeresources. We have some great guests coming up in the next few shows and I will see you on the next session of *The Engineering Career Coach Podcast*.

Thank you for listening to *The Engineering Career Coach Podcast* with Anthony Fasano, transforming engineering career development one engineer at a time.

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