



Sloan Career Cornerstone Center

Profiles of Civil Engineers



Lynda Fuqua, E.I.T.

**Associate Engineer
Klotz Associates, Inc.
Houston, TX**

Education:

B.S., Civil Engineering, University of Houston

Job Description:

"As an Associate Engineer, I work primarily in site development. I am involved in developing local sites, reviewing drainage information, conducting hydrology studies, bridge inspections and designs, and road design work."

Advice to Students:

"The most important thing that students interested in civil engineering should do is to go and visit with practicing civil engineers and find out what they do."

Video Transcript 1:

"I just chose the best one that I thought would be best for me, and that was Klotz Associates. Because they gave me a variety of work. I like variety in my work. I don't like to just do one thing. Being stuck behind the computer. I like to get out and be with people. I like to do all sorts of work, so my job never becomes monotonous. They were willing to give me that, and they also understood I would be eventually on my way to my PE pretty soon, and they were going to put me in project manager in the near future after doing that. They don't hire anybody that they cannot at least promote two times. And so they meant I had movement. I could go up in the company, and that was very important to me. Someday I want to run a company. I told them that. I want to run a company, and I guess they seemed to have the kind of company that I'd like to run."

Video Transcript 2:

"We work as a team. When we have big projects we all pull different parts of it. There are some things, though, that we work on all by ourselves, individually. And that's a lot of fun. You can take a project from the very start and take it all the way to the end and then when it's finished you can go and say 'I did that. That was my job.'"

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Interview:

Fuqua: The only constant in the professional lives of civil engineers is that they never have typical days. Every day is different, bringing new challenges and unique demands, and the nature of these demands varies according to the specialization and seniority of the engineer. On the other hand, most report they work in teams, they spend time on things not necessarily well described in their titles, they concern themselves with continuing education and their networking part of the time, and women and minorities report a better environment than may once have been the norm in engineering. Virtually all engineers spend some part of every day doing some routine administrative tasks, and newly-graduated engineers may be surprised to find they will most likely file, type, send e-mail, make phone calls, take notes in meetings, and many other ordinary chores. Civil engineers have a wide array of specialty areas to choose from. The titles civil engineers hold are far more broad than most people know and their duties are even more diverse.

Q: What do you do in work?

Fuqua: I'm an associate engineer at Parks Associates. I do a lot of things. I'm more in the site development area. So I develop a lot of local sites here in Houston. We also have been doing some hydrology and hydraulics, like the area we're in, where we're on-call for the city. We review all their drainage information. I've done a little bit of that. And then we've also been working on the Houston Bikeway System, and we've been real active in that, especially downtown by Herman Park, which is a great park here in Houston. And we're developing a really nice bikeway which have a lot of things brewing, a lot of bridges, and so that's mostly what I am doing, is making sure we can get under the bridges. We also do the bridges, my team, and so we're doing a lot of bridge inspections and bridge designs, and I do road design work, and in the past I've done a lot of getting variances and conditional uses and such.

Q: How did you get your first job?

Fuqua: Actually, I was a full-time student at the University of Alaska, Anchorage, when I got my first job, and I didn't want a job. I'm a mother. I had my son to take care of, and so I said, well, I don't want to work. But I had an engineer come and say do you want to work for me? And he gave me an offer I couldn't refuse. I could work whenever I wanted to, as often as I wanted to, and work at home, work anywhere. And so I said, okay, I'll do it. Eventually it worked into a full-time position there, and I went to school then part-time. So they ended up giving me their full-time. When I left Alaska and came down here. I networked through CE, and I went to every Houston branch meeting that they had, and I've been real active in the local University of Houston ASCE. I got to know a lot of presidents and owners of companies and principals. When I was graduating, I had straight out offers. If I wanted to come work for people, they would hire me. Instead of interviewing four people, I went and interviewed companies and I found out the companies I wanted to work for when they gave me offers, and I just chose the best one that I thought would be best for me, and that was Klotz Associates.

Q: Why did you chose them?

Fuqua: Because they gave me a variety of work. I like variety in my work. I don't like to just do one thing. Being stuck behind the computer. I like to get out and be with people. I like to

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do all sorts of work, so my job never becomes monotonous. They were willing to give me that, and they also understood I would be eventually on my way to my PE pretty soon, and they were going to put me in product manager in the near future after doing that. They don't hire anybody that they cannot at least promote two times. And so that meant I had movement. I could go up in the company, and that was very important to me. Someday I want to run a company. I told them that. I want to run a company, and I guess they seemed to have the kind of company that I'd like to run.

Q: How'd you end up in Alaska?

Fuqua: I'm a Californian. Southern Californian. My dad was a banker. He got a very high position in a bank up there. The economy was booming up there, and he moved up there. I got tired of being a poor starving student. He could make a lot of money up there. I said, okay, I'm going up there, and that's where I went, and it's gorgeous up there. Really beautiful. I stayed there.

Q: When did you know you wanted to become an engineer?

Fuqua: When I was in about fifth grade, I wanted to be an architectural engineer. I've always been fascinated with structures, of any kind. And I like solving problems. I think that's the biggest thing. I love solving problems. I like problem properties because I will find the way to make it work. I don't know why. It's just something I decided I was going to be. I planned my whole life to be it. It took me a little longer than I originally planned. I've had a couple of kids along the way. But I just wanted to be an engineer. The thing is, school didn't tell me I wanted to be an engineer, it was being around people. My friends had fathers that were engineers. I think my dad wanted to be an engineer originally, and that might have been some of it. But I just love it. I like doing it.

Q: Has it been difficult as a woman in a male-dominated area?

Fuqua: Yes, actually because of my age, when I first went away to school, it was in 1981, and I was told I would never get on. And I was told to get out. And I was basically run out of my first school. It was tough. I'm a fighter, though. I will always come back and fight for what I believe in. It was tough at that time because I guess I was sheltered, and I didn't realize my dad told me I could do anything I wanted to do. I believed him. And when I ended up in a place that told me I was female and I didn't belong and that I shouldn't be there, it was real disappointing, and I fought my way back, and I don't find that bias now like I used to. There are still some old-school folks. But I find that eventually I can get around them, too. That eventually, okay, you've proven it. There is no job I won't try to do, and I never fall back on the fact that I'm a woman and therefore I can't do. I might have to do it different than a man, but I can do anything that I put my mind to. I don't think per se harder for a woman now. I think it's gotten a lot easier. The school is very supportive. Even the University of Alaska, Anchorage, my faculty have always been very, very supportive of me. And the other thing is they were very supportive because they know that I have children and family. Not that I didn't have to take my tests and turn in my papers and everything.

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Q: How about the work environment?

Fuqua: It's fine. And actually, like at Klotz, they make sure that you don't get harassed. He would not allow it. Our boss would not allow it, and so they know. I mean we joke around. We have a good time, and I think that's one thing. I do know how to joke around and have a good time, and women that are a little bit more uptight about the way men joke around might have a worse problem. But I have never found a man that I've worked with that when I said that's inappropriate, I don't like that, they did not stop. And so I don't find a problem. But of course, I step out and say, that's enough, I don't think that's appropriate.

Q: Do you work in teams?

Fuqua: Here we work in teams. We each have our project manager who is under a principal, and our principals are broken up according to what kind of work. Our public works and our site planning and our roads are under one principal. And all our water and waste and drainage is under another principal. Then they have their project managers under them, and then our managers, they then divvy up the work amongst their teams, and our team was three engineers with a principal engineer, and a project manager. Now it's grown to we've got four engineers. Actually, I guess we're not all engineers. We have some designers. And so, it works really good. We work as a team. When we have big projects, we all pull different parts of it. There are some things, though, that we work on all by ourselves, individually. And that's a lot of fun. You can take a project from the very start and take it all the way to the end, and then when it's finished you can go and say I did that. That was my job.

Q: So what's the basic typical day for you? Long hours?

Fuqua: No, not in my company. My company believes you come in, you work your eight hours. You're 40 hours a week. You work hard while you're there, and you don't work on a weekend. We don't. I go in at 7 and leave at 4, Monday through Friday. And I work hard when I'm there. But I never have to stay late. I guess every once in a while I have to stay late. I don't have to. But I stay late every once in a while, but I never ever work a weekend. There are companies, I know, that people have 10, 12 hours a day, and they work on weekends, and my boss just doesn't believe that. He believes if you put in your hard work, then you should go home, and I'm a hard worker, and I do my work, and I get it down, and I go home.

Q: What is the future of civil engineering?

Fuqua: The hot spots? I know that environmentally, environmental things have been the hot spots for engineers right now. We've been sitting through some different talks at the Houston branch, and they're talking about automating cars so you can put your destination in and it'll drive you there. So they're talking about different types of roads where you will follow the road pattern with your car, and your car will pick up different things. And it can feel where other cars are around you. I believe transportation is going to become really unique pretty soon. Of course, anything that has to do with your environment, because we are getting environmentally conscious, I think, is real important. I know that electronics, things that we are producing in civil engineering, electronically now, have been the real highlight. And computers are moving civil engineering into a new realm.

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Q: Do you see any changes you need to keep abreast of?

Fuqua: I think the continuing education there, our type of work has to do is stay up with the computer programs, the new ones that are coming out. How to run them. Geopack just came out, and we've sent people to delve into that.

Q: Where do you see yourself five years, 10 years from now? Doing what?

Fuqua: In five years, I see myself as a project manager. And in 10 years, my son should be in college, and I'm hoping to be either running my own company, or running somebody else's company. My plans are to own my own company or run somebody else's company.

Q: What would that company do?

Fuqua: Basically, general civil. What I'm doing now. We'll do site development, road work, transportation of all sorts, drainage and hydraulics. In general, all your general civil. I've done a lot of work with water and waste water disposal.

Q: What do you do at your job?

Fuqua: When you do site development, you have to deal with a lot of aspects because you end up with a property that you're going to be putting some kind of development on. You have to figure out how your water is going to drain off the property. You have to figure out the impact of the building on the property and surrounding properties around you. So you have to calculate the effects of it drainage-wise. Also just scenery wise to see, make sure it's not going to impact things around you. Then we do a lot of parking lots and the curbs. Pretty much anything 10 feet outside the building. The architect that's with our building we build with on a property, and so that's your drain, into paving. That's your soil problems -- whatever soil problems you might have. Then we also have to deal with flood control here. We have to deal, if you're in the 100-year flood zone, which is a lot of places. And we also do a lot of work figuring out how we're going to get our drainage into the city's drainage or the county's drainage. But they only allow you so much, and you have to figure out how to paint it on the property. Site development deals with any aspect -- something that's outside your building -- and how to develop it and get it going. How much drain area you're going to have on a property.

Q: What's the important thing you tell people about what you do?

Fuqua: The only important thing that I would really say is if people interested in civil engineering, they need to go and visit civil engineers and find out what they do. I spoke at my children's school during Math and Science Week, and I was amazed that nobody knew what a civil engineer did. That's just really devastating. I started asking people, as I was going around, taxi drivers, whatever: do you know what a civil engineer does? And nobody knows. Nobody. I was working on this convention and people I'm working with would say what is the American Society of Civil Engineers? And what is a civil engineer? And I'm like everything you touch in a day, basically, we have somehow had an impact on. The road you drive on. The buildings you're in. And they have no clue. So my big thing is we need to educate our public. We need to make sure they know what civil engineers do, and get kids more interested. Kids

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know they want to be a mechanical engineer. But they do not know what civil engineers do, and they don't know that they want to do that. And that needs to be something that we need to do, as engineers, is get out there and educate our children.

Q: How do you balance work and family?

Fuqua: Well, right now I'm real fortunate. My mother takes care of my kids. But I make sure I'm home for them. At 4 o'clock I leave the office and I come home. It works out really well, especially now they're both in school because I'm working same hours they're in school. There's a little overlap. But I get home. We all love sports. All three of us. I play softball. I play women's soccer. The kids, my son plays soccer. He goes to gymnastics. My daughter's in ballet and gymnastics. We come home. We do our activities. We do our homework. My son's in the gifted and talented program here, and we work on our homework, and it just seems to work out. I have my evenings to myself. At 4 o'clock, I leave, I go home, and my whole evenings are with my children, and my weekends are for my children. And it works. It works great.

Q: What do you like least about your job and what do you like most about your job?

Fuqua: I like least getting up at 5:30 in the morning to go to work. I think that's the one thing I don't like, having to get up. In Alaska, I had a much different schedule because I could take work home, and after the kids went to bed, I could work on it. But getting up the morning, it's a total different schedule from being a student. When I was a student, I got up late, and I stayed up all night if I had to. But I never had to get up this early, and so that's been my hardest to adjust. I like the problem solving, the work. I like engineering work. I mean I love it. I love to do it, and I love to help engineer develop and see their dreams come true. And I think the fulfillment of seeing things happen and actually being able to go out and look at it and say, I had a part in that, and it's a good job, and it's going to benefit people, I think that's what I like the best.

Q: What advice would you have for your students, say, college sophomores, studying now?

Fuqua: I recommend that students take their classes more seriously. They consider their classes that they're taking as to what it's going to benefit them when they come out. So if they're interested in structures, they need to make sure they take the structural classes that will benefit them. The other thing is that a lot of students don't think construction management or economics or business classes have anything to do with engineering. And they have so much to do with engineering. And they need to take those classes, take them seriously enough that they will benefit in the end. The other thing is that I took a variety of classes like urban-regional planning. I took my water classes, and I took my structural classes. But I tried to take construction management. I tried to take all the classes that helped me. Transportation. So I wasn't taking one type of class. I took a variety of classes I felt would benefit me in my job.

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Q: Did you consider graduate school?

Fuqua: Yes, I did. Actually, I was full force going to go to graduate school. I took all my tests. I did all my applications. Because of my family situation -- I'm a single mother -- and my son is at a point, he's about ready to turn into a teenager. He got to the point he didn't want me being gone in the evenings. He needed me home. He's in his special classes, and he needed that attention. And what I did is I just made a choice that he was more important than going to graduate school right now. The other thing is here at the University of Houston, we are a transient school, and so all the graduate courses are in the evening, to accommodate the professionals. That meant I was in school four nights a week and I wouldn't basically see him because he'd be in school all day and I'd be in school all night. I felt that I had my summers when they go see their father. I can always spend that time, if I want to go to graduate school. It'll take me a while. But it took me a while to get my undergraduate.