

Jo Smith

Associate Structural Engineer



How did you get to where you are now?

I didn't really decide what I wanted to do until I had careers advice at school. I picked the A levels I had enjoyed (Maths, Further Maths, Physics and Chemistry) but knew I didn't want to pursue any of them as a career. The careers adviser asked if I'd considered engineering and I've never looked back.

I studied engineering at Cambridge which allows you to study all the engineering disciplines in the first two years and then specialise. I chose to study structural engineering as it was the area that interested me the most.

I found it hard to get a graduate position after university and so worked at a small civil engineering firm for about a year where I drove around Essex measuring new ducts which had been installed in the road before I saw an advert for an agency who sent me for interviews. The company I work at today was the second of the three interviews I had that day.

My company started out 16 years ago and I joined six months in. We were only five people when I started

and we have evolved over the years. I have stayed because I love the variety of projects I get to work on and the people I work with. As I have progressed, I have been able to take on more responsibility and also get involved with encouraging the next generation of engineers by going into schools to talk about engineering, run workshops and show case studies which my company supports me in. As well as working on some interesting and exciting projects of course.

A day in the life of a structural engineer

The thing I love most about my job is that every day is different. I can be carrying out design work, sketching up details, attending meetings, visiting building sites or mentoring the graduates in the office.

It is my job to keep an overview of all the jobs in the office as well as managing my own projects.

During the course of my day, I interact with my colleagues but also people outside the office from different disciplines varying from architects and services engineers to contractors on site. I need to be able to switch from one project to another

when necessary as a query from site will always take priority. You are also more likely to be trusted on site if you can answer questions quickly.

What challenges do you face on a day to day basis?

I can face many challenges on a day to day basis varying from juggling different projects, solving problems and making amendments to my designs when the client has changed their mind or there has been an issue down on site.

Project deadlines are always a challenge as we are a small company and we need to be able to allocate the resources correctly and everyone wants their project to be a priority.

Where possible I sketch answers to problems myself which also helps me to think. Sketching is a great tool for an engineer as it helps you and other to visualise your ideas much more easily than by explaining it.

What would be your advice to someone who aspires to be like you?

Just go for it! There is no real substitute for throwing yourself into it and embracing the challenge. I would also try and get some work

"I love that I can walk around London and come across jobs I have worked on. This is very satisfying."



experience if you can and that will help you decide which discipline you want to go down.

The job is always interesting, there's always something different - it's a constantly changing industry. There's always a new development, materials are always changing, things like the environment are much more important now and there is greater effort going into protecting it.

Overall, I find it an extremely rewarding career and would recommend to anyone who is interested in how things work and would never count it out if you are a woman just because it is currently a more male dominated profession.

What is the biggest difference you noticed between work and university in terms of engineering?

University studies are theoretical and give you the underlying principles of what you will apply but work is much more practical and involves much more free thinking about how you can solve various problems. Interacting with your colleagues and learning from them will be some of the most valuable lessons you will pick up.

The basic principles are important though as one of the biggest challenges is noticing when you are wrong. A quick hand check using simple beam formulae can be just as valuable as a large computer model and much less likely to contain an error.

How do you approach a problem?

In the early stages of any problem, the best way forward is to sketch it out and do some hand checks. However complicated your structural model, it can usually be boiled down to some basic checks. It's always worth remembering that, in the grand scheme of things computer models have not been around for that long, whereas structural engineering has been around for centuries in many guises.

I will also discuss the problem with my colleagues, both in the office and, sometimes, outside. And they will do the same. It should also never be assumed that someone with less experience than you cannot contribute to the discussion as they may have direct experience from another company of something you have never come across. Engineering is all about

working as a team both within your office and with other companies in your project teams.

Real life example of engineering applied to your work?

Real life examples of structural engineering are all around you from your house to your place of study or work to the stations you use to get between the two. Any building you encounter (as well as other structures) is a real life example of structural engineering.

I love that I can walk around London and come across jobs I have worked on. This is very satisfying and it means you can show people the fruits of your labour when they ask what it is you actually do. Seeing structures I have designed being constructed are some of the proudest moments I have in my life, even if the structure is often covered up in the final building.



Royal Academy of Engineering
Prince Philip House, 3 Carlton House Terrace, London SW1Y 5DG

Tel: +44 (0)20 7766 0600
www.raeng.org.uk

Registered charity number 293074



MOTOROLA SOLUTIONS
FOUNDATION