



**Eva Wilson**  
Senior Geotechnical  
Engineer  
Donaldson Associates Ltd

Eva originally planned to be an accountant but was advised by a school teacher that the excitement of engineering would be much more appealing and she admits: "The teacher was right!"

Having the opportunity to work on the Commonwealth Games site, where she investigated the ground conditions at the proposed site for the Athlete's Village has been an invaluable experience: "It was great to be involved in such a fantastic regeneration project in the city that I work in."

**"civil engineers are so vital in providing our basic needs"**



**Niamh Callaghan**  
Graduate Civil Engineer  
Transport Scotland

"I was always interested in science and maths at school, which naturally led me towards a career in engineering. However, it was the fact that civil engineers are so vital in providing our basic needs and improving our quality of life which initially attracted me to the profession."

"Always ask "why?" and actually understand the answer. Why is it constructed that way? Why has it been designed that way? You'll learn and understand so much more and in a lot more depth. "If there is no one to ask or they can't give you the answer, then research it yourself. A lot of civil engineering is research and reading to understand your chosen field."

### Scottish Trailblazers



Dumfriesshire born **Dorothy Buchanan** became the first female professional civil engineer in 1927.

She was part of the design staff for the Sydney Harbour Bridge and later worked on Newcastle's Tyne Bridge and London's Lambeth Bridge. Dorothy retired from engineering after marrying in 1930.



**Dr Mary Fergusson** OBE worked as an apprentice on bridges in Scotland for Edinburgh-based company Blyth and Blyth after

completing an engineering degree at the University of Edinburgh in 1933.

In 1957, she became the first woman to progress from Associate to full ICE Membership. She became the first female senior partner in a UK civil engineering firm in 1948.

### Choose Civil Engineering

It's not just a job – engineering is an exciting and varied career.

**If you're good at finding practical solutions to everyday problems, enjoy coming up with solutions and putting them into practice, then civil engineering could be for you.**

With a career in civil engineering, you could choose to:

- Work near home or be based anywhere in the world
- Be based in an office or on a construction site
- Work on anything, from creating flood defences, producing clean energy, building new structures, boring tunnels, designing earthquake-proof homes or planning new transport systems
- Lead design teams, run teams of construction workers, be a programme manager or a director

### Find out more

When it comes to choosing subjects in secondary school, maths and physics should be at the top of your list, along with English and ICT.

Geography, graphic communications and either design and technology or design and manufacture are also useful.

There are many ways you can become a qualified civil engineer.

Routes into the profession include going to college or university studying either full or part-time or becoming an apprentice.

**ICE**  
[bit.ly/1MWIzIU](http://bit.ly/1MWIzIU)

**Tomorrow's Engineers**  
[bit.ly/1n16wk2](http://bit.ly/1n16wk2)

**My World of Work**  
[www.myworldofwork.co.uk](http://www.myworldofwork.co.uk)

## WHAT DO WE DO...?



Are you good at finding practical solutions to everyday problems?

Do you enjoy coming up with innovative ideas and putting them into practice?

If so, a career in engineering might be for you.

The women who design and build Scotland's transport, water, energy and flooding infrastructure explain why they love their jobs:



**Emily Alfred**  
Graduate Civil Engineer  
Transport Scotland

*"I was interested in a career where you use creative thinking to design something and then watch it being built."*



**Sarah Breen**  
Senior Engineer, Arup

*"Take the time to figure out which engineering discipline really grabs you. This is a career which actually lets you change the world around you and it's rewarding to see a project you worked on become a reality."*



**Nicola Bell and Catriona Halliday**

### Engineering Officers South Lanarkshire Council

Nicola and Catriona work in the Roads Design and Contracts Team. Graduate engineer Catriona advises: *"Don't be afraid to ask questions – it can be the quickest way to learn."* Nicola adds *"I enjoyed maths and physics at school but wasn't sure what career to go for so doing and HND in Civil Engineering at college helped me to decide."*

**"Every day is different and challenging"**



**Flo Cargill**  
Technician  
Highland Council

Flo, who used to teach French and didn't start her engineering career until her mid-30s, shows it's never too late to enter the profession. Having worked on the A830 Arisaig to Kinsadel road project in the Highlands, she says: *"I enjoy not being entirely office-based – every day is different and challenging."*



**Frances Ratcliffe**  
Consultant Engineer  
Fife Council

*"I was always curious about how things worked, loved science and was fascinated by the Forth bridges when I was younger."*

*"An industry representative came to my school to talk about construction when I was a teenager and I thought 'I'd like to do that!' If you want to be an engineer, just do it!"*

**"It's great just how diverse your career can be"**



**Surekha Tangutoori**  
Design Engineer (Structures)  
Consulting, Amey

Surekha designs structures for clients and is currently designing underground shafts which will minimise flooding. She says: *"I love being able to say 'I did that' when I stand in front of a bridge or building at the end of a project."*

*"We spend a long time designing things in the office on paper so seeing it in real life, many times bigger than the drawings, is exciting."*



**Emma Dickson**  
Engineering Manager and Professional Head of Civil Engineering, Carillion PLC

Projects Emma has worked on include the electrification of the Glasgow to Edinburgh railway line. She says: *"It's great just how diverse your career can be – I've carried out many different construction roles but keep discovering opportunities all the time."*

**"I'm always learning"**



**Tiffany Wong**  
Student Engineer  
Carillion PLC

Currently doing work experience, Tiffany advises: *"Anyone interested in the industry should get as much experience as possible – it's never too early to start looking for placements."*



**Katie Hall**  
Graduate Civil & Structural Engineer, AECOM

Having worked on a wide range of projects, from football stadia in Saudi Arabia to a small timber café in Scotland, Katie says: *"The real learning starts on the job. We work in teams which include different professions and encompass a wide range of experience so we're constantly sharing ideas and learning from one another."*



**Fatemeh Mehrbakhsh**  
Senior Structural Engineer  
Wood Group PSN

Structural engineers generally work in teams and look at the way a structure is to be built.

Fatemeh currently works offshore in the oil and gas industry: *"Civil engineering is a rewarding career and you can develop an extensive range of skills."*

*"Team working is another good aspect of my job and so I'm always learning about new technologies to keep up to date."*

**"you can develop an extensive range of skills"**



**Wendy Pring**  
Managing Director of KCP Ltd

Wendy's company specialises in waste management and finding solutions to environmental problems.

Most of us don't really think about how we dispose of waste but doing so in a safe and environmentally friendly way is vital for our planet's sustainability.

Wendy adds: *"As an engineer, you have the skills and technical knowledge to take ideas and develop them to improve the lives of people, regardless of which branch of engineering you follow."*

**"I love working outside and on different sites"**



**Rheanna Urquhart**  
Technician, Global Infrastructure Ltd

*"I knew I wanted to do some sort of engineering and civil engineering looked good."*

*"I love working outside and on different sites, seeing different parts of the country."*

*"This job could potentially take you anywhere in the world, the career progression is endless and you get exciting challenges pretty much every day."*



**Stephanie Thompson**  
Highways Technician  
AECOM

Stephanie worked in administration on various civil construction which sparked her interest: *"I wish that someone had spoken to me in school about engineering and I would have been more aware of what was involved and begun my career earlier."*

*"I plan to continue studying to gain my degree and then become a fully Chartered Engineer."*

