



A Day in the Life...

Green Careers



How will you change
the world?

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Introduction

There is an urgent need to address the challenges of climate change. The transition to a low carbon economy will be key in ensuring continued economic growth whilst addressing these challenges.

This transition has already begun, in the UK alone there are over 400,000 jobs in low carbon businesses and their supply chains. The number of such jobs is expected to grow, the government has set an ambitious target for two million green jobs in the UK by 2030. The government's green jobs taskforce identified the 'clear pathway into good green careers' as being one of the pillars to a lower carbon economy.

We are supporting student and teachers' awareness of these future careers.

Ensuring that young people have the best opportunity to succeed, and the economy has the skills and talented future workforce required to successfully transition to a low carbon economy. At STEM Learning, we are committed to the power of STEM education to change lives.

Explore this collection of STEM Ambassador interviews looking at the daily life, career path and advice from people whose jobs, roles and careers are green careers.

STEM Ambassadors are volunteers from industry and academia who work, study or research in a STEM related industry. STEM Ambassadors support the delivery of effective and engaging careers awareness through a variety of interactions for teachers, careers advisors and young people. Helping to develop knowledge and skills.

Visit <https://www.stem.org.uk/stem-ambassadors> to find out more.



What do we mean by 'Green Career'?

A green career can be any job, role or occupation that contributes to preserving or restoring the environment and our planet. It could be any industry not just those immediately seen as 'green' such as those involved in renewable energy, energy efficiency, green technology such as electric cars, improving the environment or agriculture processes.

Jobs are varied across a whole host of industries, requiring different skill sets and offering routes and paths into a satisfying career that many may not have thought of as 'for them'. All careers need the right skills, training, knowledge and career aspiration for an individual to succeed in their chosen profession. Whether that involves on the job learning, apprenticeship, or university degree.

There is a green career to suit everyone:

Farm manager, coastal defence engineer, climate change specialist, data analyst, wind turbine technician, solar panel installer, forester, conservationist, electrical equipment repairer, architect, aeronautical engineer, meteorologist, environmental consultant, waste management specialist, energy and carbon analyst, packaging designer and construction workers building environmentally friendly and energy efficient homes.

They are all Green Careers and that is only a tiny fraction of the jobs and roles that classify as green careers.

Green careers make a difference in the short and long term, literally making the world a better place.

Gain insight into variety of green careers jobs, roles and careers through these case study interviews from A Day in the Life.





Faith Nicholls - Analytical Scientist

Describe your role in two sentences:

A tremendous amount of analytical testing is required to support a product from discovery/development and clinical trials to manufacturing and marketing. As an Analytical Scientist I am involved in method development/validation to characterise a sample in a specific and sensitive manner, for example testing concentration, purity, stability.

Who do you work for?

Centre for Process Innovation

At CPI we help companies develop, prove, scale-up and commercialise new products and processes. CPI help to create a healthier society, cleaner environment and vibrant UK economy, by ensuring every great invention gets the best opportunity to become a successfully marketed product.

What do you do in a typical day?

There isn't usually a typical day as I am on a number of different projects as well as everyone else, so I could be in the lab doing my own stuff or shadowing/helping out others and learning how to use different lab equipment as there's so much to learn. My time is usually split up between 50% lab work and 50% desk work, as I have to attend customer meetings/internal meetings, as well as write up lab reports, etc.

What do you love about your job?

I love that I receive a lot of support to develop new skills/techniques and am constantly pushed towards personal development. As well as this, I love what CPI stands for and it is great that not everyday is the same - we are all on different projects doing our own things so it is exciting to hear what each business unit is doing!

How did you get into your current role?

I graduated from Liverpool John Moores University in April 2021. In my final few months I secured a job in a COVID-19 PCR lab, however after 10 months there I felt I had learnt all that I could and wanted a new challenge/change. I remember driving past CPI a lot and thinking how cool it would be to work there so decided to browse their website to see if they had any vacancies, and saw that they were recruiting analytical scientists for their new RNA Centre of Excellence. I registered my interest and after having an interview I was successful!

What did you want to be when you were 11?

When I was 11 I had no set idea of what I wanted to do. I feel like there is a lot of pressure when you're young to know what you want to do in life, I still feel like I don't 100% know. I have always enjoyed science, but I remember wanting to be a pilot, a doctor, as well as about 40 other things!

What do you like to do in your spare time?

I enjoy spending time with my family, going to the gym, and playing games on my switch.

What is your top tip for a young person who would like a job like yours?

Try and get experience but don't stress if you can't. Yes it is beneficial to have lab experience/etc, but applying the skills you already have also helps, e.g., from part time jobs, etc. Try out different things and see what you like best, as the field of science is vast!



Daniel Walsh - Chemistry Engineer

Describe your role in two sentences:

Manage the reactor chemistry of an advanced gas cooled nuclear reactor.

Who do you work for?

EDF Energy

Britain's biggest generator of zero carbon electricity, generating zero carbon electricity from wind + nuclear + solar.

What do you do in a typical day?

Monitor plant performance using a wide range of data sources and technology to ensure optimum performance whilst minimising operational & safety risks. Review, evaluate, and document chemistry data, taking the appropriate action to ensure that adverse trends are identified and corrected promptly to ensure compliance with station, regulatory and site operating licence requirements.

Control plant performance to target conditions through establishing operational instruction and actions, for all phases of plant operation. Inform key operational decision making from a specialist perspective & provide conservative advice on safety issues.

Proactively assess tasks and operations, providing risk assessment, advice, contingency & mitigation, in accordance with relevant safety and technical legislation.

Perform plant investigations, identifying new risks and anomalies, and advocate these within the organisation.

What do you love about your job?

Technically challenging. Good sense of purpose as the business produces carbon free electricity for millions of people.

How did you get into your current role?

Initially chemistry apprenticeship after finishing A-levels, experience of working on nuclear submarines (pressurised water reactors) following completion of degree. Applied for position following completion of Masters degree and gaining membership of the royal society of chemistry.

What did you want to be when you were 11?

Absolutely no idea!

What do you like to do in your spare time?

Look after my daughter (2 months old) and walk my dog Zak through the countryside.

What is your top tip for a young person who would like a job like yours?

Seek to gain experience over qualifications. Apprenticeships are far more valuable than a typical degree in terms of applicable experience.



Emily Shaw - Civil Engineer

Describe your role in two sentences:

Civil Engineers shape the world we live in, they provide us with clean water, build roads, bridges and railways. I work as part of the flooding team where we work to protect us from flooding and maintain the natural environment.

Who do you work for?

Binnies

Binnies helps our clients across the globe efficiently and effectively collect, store, move and treat water and wastewater, plan and manage watersheds and harness the energy embedded in the treatment and movement of water. We find solutions that not only manage flood and coastal erosion risk but also maintain and enhance our current environment without compromising the ability of future generations to meet their needs.

What do you do in a typical day?

My days are always varied as it depends what projects I am working on at a given time. So far during my time Binnies I have designed drains around a reservoir, I have undertaken modelling for sewers in Hong Kong to make sure they are able to cope with situations such as loss of power. I have undertaken assessments to ensure bridges are safe. I am working on a project to improve drainage in forests which involves lots of design work.

I am seconded to the environment agency at the minute for 4 days a week where I support a team creating the 2nd cycle Flood Risk Management Plans. These plans set out how organisations can work together to manage flood risk. I attend the office for 2 days a week and I work from home the rest. At Binnies I am able to have a 9 day fortnight, which means I condense my hours so that I get every other Friday off.

What do you love about your job?

It is so rewarding to know that your work is going to make a difference to people and the planet. It is an amazing feeling designing something and it has your name on it and then actually seeing it being built. Additionally I am so lucky how varied civil engineering is and that I have the opportunity to work in different sectors, not just in flood risk management. I have had the chance to rotate to a different team and I worked with the hydraulics team for 6 months working on creating models of sewers.

How did you get into your current role?

I studied BEng Civil Engineering (with an integrated foundation year because I didn't study A Level Mathematics). I did a summer placement with AECOM in between my 2nd and 3rd year of uni, where I worked with the water team. I then undertook a masters which was titled 'water, energy and the environment'.

A few weeks into my masters course I was approached by the recruitment team at Binnies via LinkedIn who encouraged me to apply for their role of graduate civil engineer. I applied and had an interview and was offered the role before I finished studying for my masters.

What did you want to be when you were 11?

When I was 11 I did want to be an engineer. I used to watch programmes with my dad about sewage treatment when I was little and I was fascinated!

What do you like to do in your spare time?

In my spare time I enjoy going away in my campervan and going on walks and wild swims. I am also a keen cyclist and I took up bouldering during the pandemic and I usually go to my local bouldering twice a week. I taught myself to crochet recently and I always have too many projects on the go!

What is your top tip for a young person who would like a job like yours?

I would say to use resources to find out more information about engineering. You can find lots of useful videos on YouTube as well as reading books. I read the following books when I was trying to learn more about civil engineering: 7 wonders of the industrial world, why buildings stand up and Brunelleschi's dome.

Work experience is incredibly important - I did 2 weeks work experience when I was 16 and I spend one week with a civil engineer and one week with a structural engineer. This experience ultimately made me decide that I wanted to be a civil engineer.

I have worked since I was 16 and I feel this gave me transferable skills and examples to talk about in interviews so that really benefitted me. LinkedIn is a very useful tool and I'd recommend getting that, it can be used to find companies and jobs, and it works the other way around too and helps companies find you.





Steve Markham - Company Director / Quality Engineer

Describe your role in two sentences:

I work with chemists, scientists and other engineers to help develop or improve materials that are more sustainable, easier to reuse or recycle which are used in the car industry. We aim to be able to recycle all the parts of a car when it has come to the end of its useful life.

Who do you work for?

STM Quality Limited

I own an engineering consultancy - we provide support to suppliers into the car factories to develop new products and improve existing ones. We help improve car quality and help make cars that are safe, reliable and comfortable to drive.

What do you do in a typical day?

My days are usually different as I work with different clients - some days I'm chairing meetings, helping people work together. Other days I could be using a computer to generate documents and share them with other people. Some days I could be working in a factory environment, training people to make the best quality product that they can. I can also be working in a laboratory conducting tests on products or materials.

What do you love about your job?

Engineers pretty much do one thing - and that's solve problems. I often work with teams of people who work together to overcome a problem with a good solution. Some problems could take months to solve, with many different people involved, all working together in a project just to solve one problem. For me, the best thing is working in, or leading a team to come up with a good solution.

How did you get into your current role?

I always wanted to work in engineering since I was a small boy as my dad and grandad both worked in engineering - my dad made press tools that shaped metal into such things as car doors, wheel-barrows or kitchen sinks. My grandad was a gun maker. I left school at 16 and began an engineering apprenticeship at a company that made weighing equipment which took 5 years to complete until I was 21.

My apprenticeship involved one year spent at a college learning more about engineering, while the next 4 years were spent in the many departments, learning from different people about their roles. I gained my first job after my apprenticeship as a production engineer - a person who designs the manufacturing process.

Since then I have had many roles in engineering, working with many different materials such as steel, fabric, electronics and plastics. For the last 17 years I have run my own engineering consultancy, working with many different clients, helping them to improve their products.

What did you want to be when you were 11?

I knew when I was even younger than 11 that I wanted to be an engineer, though I only knew what my dad and grandad did. I had no idea that there were so many different engineering industries, or different types of engineer. I was very lucky to have gone into the factories where dad or grandad worked so that they could show me the things that they made. I used to love making things with Lego or Meccano which were good toys to help me be creative.

What do you like to do in your spare time?

I enjoy spending time at home - with the type of work that I do I often spend many nights away from home during the week, so weekends are precious to me. I enjoy being outside, tending to my garden or just sitting, listening to the wildlife.

I also play drums and the piano - but not at the same time!

What is your top tip for a young person who would like a job like yours?

Being an engineer isn't just being good at understanding mathematics, science or design technology. There are skills that you need - how to communicate - and that doesn't mean just reading and writing - it means listening too. We also need to work well in teams or small groups.

We also need to keep up with understanding new technology or new materials, so an eagerness to learn is important. Do your best while you're at school and don't worry if you haven't decided what you want to do yet - many people I know have changed careers during their working life.





Anna Turitsyna - Digital Power Account Manager

Describe your role in two sentences:

I am in Technical Sales, working typically with end users in areas like Real Estate, Hospitals and Universities, to help them with energy monitoring and power management. This is with the ultimate goal to meet sustainability targets, improve visibility of their electrical network and save on energy costs.

Who do you work for?

Schneider Electric

Schneider Electric are a global company, specializing in energy management and digital automation, and producing both hardware and software solutions. Their mission is "to be your digital partner for Sustainability and Efficiency."

What do you do in a typical day?

Days can vary - some days I am on site, either meeting with customers to discuss their plans and ambitions, or doing site surveys to understand what equipment they have on site. Some days, I am working on quotes and proposals, which involves working out what we need to do in terms of hardware and software delivery, as well as engineering effort. Some days, I am networking with others in the business to understand how my specialism works with other's specialisms so we can provide a more comprehensive solution to the customer.

What do you love about your job?

Every day I get to support my customers around the country with their problems, and try to help them solve them.

How did you get into your current role?

I studied electrical engineering at university, after being interested for many years at school on how energy plays a large part in our sustainable future. After meeting Schneider Electric at a graduate fair, I applied and got a place on the 2020 graduate scheme. Following 1 year of placements in their Digital Energy division, I began my permanent role in Digital Power in 2021/

What did you want to be when you were 11?

I always knew I wanted to be an engineer of some sort, and I was lucky my family worked in maths and science already, to expose it to me at a young age. I always found technological innovations interesting and how they could be used to solve real problems around the world, but when I discovered electronics I knew this was the path I wanted to go down.

What do you like to do in your spare time?

I enjoy travelling and trying new foods, both by cooking at home and going out to new restaurants/cafes. I am a fan of the gym and going on hiking routes. Recently, I have been looking into foraging in the UK.

What is your top tip for a young person who would like a job like yours?

Find ways to learn about what's happening out there in the "real world" and reach out to those people to learn more - attend events (there are usually lots free and many have moved online) which explain new innovations in simpler ways for the public, read articles of what inventions people have come up with, find documentaries and shows that deep dive into technologies.



Hazel Comyn - Geo-Environmental Consultant

Describe your role in two sentences:

I am primarily involved with investigation and remediation of contaminated land. Work is project based, mostly supporting urban development to provide sustainable ground remediation, soil management and waste minimisation solutions.

Who do you work for?

Ramboll

Ramboll is a global engineering, architecture and consultancy company, providing multidisciplinary solutions across Buildings, Transport, Energy, Environment & Health, Water, Management Consulting and Architecture & Landscape. Ramboll is dedicated to delivering solutions that are environmentally, economically, and socially sustainable and is committed to ambitious climate action. Sustainability is embedded in all roles in the business to drive innovation and facilitate sustainable change in the industry.

What do you do in a typical day?

No day is the same! Typical tasks will include e.g. researching the history of a site to find out about likelihood of historical contaminative industry, researching the environmental setting of the site including geology, groundwater resources, and surface water and ecosystems nearby a site which may be affected by ground contamination if there is any. Another day might involve going to a site with a digger and/or drilling rigs to see what is under the ground and take soil and water samples and put in groundwater monitoring wells.

Another day may be going to a construction site to e.g. monitor progress of earthworks and ensure any contaminated soils are being managed properly and all soils and being managed in a sustainable way. Other days may be based in the office writing reports, analysing data from the soil and groundwater testing, and advising clients and the engineering design team on solutions to help the site development.

What do you love about your job?

My job is highly varied, I can be out on site or office based and I typically work on numerous projects at any one time, all in different parts of the country and all with different interests or issues. I work with people with many different specialties including other environmental disciplines; geotechnical, civil and structural engineers; and construction contractors on site. I particularly enjoy development work where we see brownfield derelict land getting cleaned up and put back into use.

There are now numerous new buildings, where I can say I did the early ground investigations and helped plan safe and sustainable development of the plot and saw the development all the way through to completion of the new building. I am also proud of the fact that my job and the jobs of all those around me can make a difference in terms of environmental impact.

A career in any aspect of the engineering or consultancy roles in Ramboll can be a green career. Whilst the construction industry is not known for its green credentials, there is such a vast scope for innovation and improvements in all aspects of the industry that any role, from the more environmental side of the business through all aspects of engineering, can be as 'green' as people can make them. The industry needs people with a desire for 'green' careers and the innovation and passion that comes with that to make the leaps in sustainable design and construction practice that we urgently need.

How did you get into your current role?

I chose maths, physics and geography A-Levels mostly because I was good at maths and interested in physical geography. In choosing what to do next, I had no idea about careers but I liked the physical geography best and looking at geology courses at university, the idea of all the field trips and being outdoors appealed so I did a degree in geological sciences.

From this I knew I didn't want to go into the oil and gas industry which was really the only career talked about at the time. I did a short module on engineering geology as part of my final year and on talking to my lecturer found out about the engineering and environmental consultancy industry.

I spent a year doing some contracting work with ground investigation companies and got a place to do an Engineering Geology masters course. From my contracting work, I had come across a lot of talk about contaminated land as a fairly new topic at the time, splitting away from traditional ground engineering, so completed my project in contaminated land risk assessment and was employed as a graduate after finishing this at one of the companies I had had a short contract placement with the previous year. My role started running site work and specialising in contaminated land assessment work. I have remained in the industry since.

What did you want to be when you were 11?

I had absolutely no idea! I definitely did not know that the world of environmental consultancy existed.

What do you like to do in your spare time?

I enjoy being outdoors, I go running and cycling with friends and have even recently done a triathlon. We also have an allotment where we enjoy growing our own food but most of my spare time is really taken up with my kids.

What is your top tip for a young person who would like a job like yours?

Pick the subjects you are most interested in and you feel you are best at and you are most likely to succeed. People I work with directly, generally all have a degree but are from all different backgrounds across the range of traditional sciences, geology, geography and environmental science.

Whether it's the more mathematical side of things, data analysis, or digitalisation such as Geographical Information Systems, or the less mathematical e.g. biology, ecology, environmental policy, there is a role for everyone and people from all different backgrounds can get involved in all different aspects of environmental consultancy.

There are now increasing numbers of apprenticeships and vocational courses too so again if the academic route is not for you, there are others ways to get involved. In fact, it is the diversity which makes it a great industry to work in. So don't feel you have to conform or follow a course which might not be for you, there are routes in for everyone.





Amelia Browne - Graduate Environmental Consultant

Describe your role in two sentences:

I help businesses to evaluate and reduce their environmental impact by visiting their warehouses, factories and offices and interviewing their employees. I often write reports after these site visits, but I have also facilitated presentations and workshops for the businesses and their employees to promote environmental awareness and really make a change.

Who do you work for?

Ramboll

Ramboll is a global architecture, engineering and consultancy company founded in Denmark. I work in the Environment & Health division, with a focus on environmental projects.

What do you do in a typical day?

My days are really varied - sometimes I will be on site visits and interacting directly with clients, and other days I'll be writing reports or preparing presentations.

What do you love about your job?

I really feel like I am making a difference to companies' environmental impacts and help people to understand why sustainability is important. I enjoy getting out of the office and going to visit clients' sites to see my work in action and to act as a 'detective' to figure out how they can do things better.

How did you get into your current role?

I gained an integrated master's degree from the University of Leeds in Sustainability and Environmental Management. I worked in a few companies throughout university as an intern and lived in Canada for a year, which gave me the confidence and knowledge when going into interviews for graduate roles after university.

What did you want to be when you were 11?

A vet!

What do you like to do in your spare time?

I love exploring the Dales and finding new hiking trails. I also write for a sustainability website, so a lot of my evenings are spent researching innovative environmental technologies and positive climate news stories.

What is your top tip for a young person who would like a job like yours?

Don't be afraid to get out there and start emailing companies looking for work experience placements (even if they are a couple of weeks long, or unpaid). Get a CV ready and start reaching out to places - you might end up gaining experience somewhere you'd never have thought of before.

For example, one summer I worked at a monkey sanctuary in Cornwall... it was definitely a talking point in my interviews even a few years later! Also, think about how your personal actions could be made sustainable and how you can show employers that you genuinely care about the environment (or whatever you are passionate about!).



Deborah Kenyon Roberts - Independent Software Engineer

Describe your role in two sentences:

I work as an independent software engineer on a freelance basis, and I design, build, test and deploy software applications (apps) and databases used in Permaculture design and educational activities.

Permaculture is an initiative, a movement, and a set of frameworks and techniques that allow us to design all our living systems (food production systems, communities, organisations) to be greener, fairer, and more sustainable by using less energy and resources.

Who do you work for?

Self-employed, working on a freelance basis.

As a self-employed person, I do not have to answer to corporate interests, which allows me to focus on the needs of the people (and planet!) which I serve. I use my technology and software engineering skills to collaborate with others in the Permaculture movement both on a paid and unpaid basis: I have worked as volunteer, project co-creator, and paid freelancer.

What do you do in a typical day?

When creating software, there's no typical day but there is a typical project. Software projects run through stages (the 'software development life-cycle') from idea, analysis, design, code, test, to deploy.

To develop an idea for a new app I do market research, either online or by talking to others. Or instead, the idea comes from the customer: what they need, the problem to be solved, what the software must do (known as the 'requirements'). The idea then moves into analysis and design, where we agree in detail what features the software should have, and how best to deliver them. From there, the software code is written and tested to make sure it meets the requirements.

I work closely with the customer at every stage, using the 'Agile methodology' of software development. This means working from a customer-centred view and involving them frequently so they can see the software working and give early feedback or request changes if needed. There's always a project management element to the work, and a project budget (how long it will take, how much it will cost, how much I should charge).

Software engineering is a highly collaborative and creative activity, but it can be frustrating at times pouring over lines of code: testing, identifying bugs (finding out why it's not working!) and fixing them.

Finally there's all the usual marketing and admin that needs to be done when working for yourself: finding new customers, keeping records and accounts, and so on.

What do you love about your job?

It's very rewarding to be able to work in this way, in this kind of role. Most importantly, it allows me to spend my time and effort in ways which align with my values, and which help others who's values match my own.

By using my skills and knowledge gained in technology roles as well as through studying an MSc in Software Engineering part-time with the Open University, I can put my skills to work in ways that help a significant part of the UK's green movement.

Designing and developing Permaculture-based software apps can help more people to learn about, and practise, Permaculture more easily and effectively. That ultimately translates to more people adopting green and sustainable lifestyles.

I'm especially interested in developing software that can help businesses to adopt Permaculture practices - so that they can become more sustainable, and use less energy and resources.

How did you get into your current role?

My previous technology career was as IT Director for a privately-owned for-profit business. I really enjoyed my role: it was both intellectually stimulating and challenging. But I felt increasingly frustrated by the fact that the company was only prioritising profit, whereas my values in business are to focus on a triple bottom line of 'people, planet, profit'.

I could have looked for another technology management role in another company whose values more closely aligned with mine. There would have been nothing wrong with doing that, of course. But I also wanted to develop a career which had a number of different strands to it, so that I could focus on all the things I'm really passionate about in life (of which Permaculture is one).

It made sense for me therefore, to leave the corporate world to become a freelancer, or - as I prefer to describe it - to develop for myself a portfolio career which enables me to do work that uses all of my different passions.

What did you want to be when you were 11?

Because of my love of food, I always wanted to be a Chef. I also had a long-held love of the natural world and would have loved to become a Small-holder.

I had a dream to have a sustainable small-holding where I could grow all my own fruit and veg, and cook/serve it in my own restaurant on-site. I hadn't heard of Permaculture at the time, but if I had I suspect I would have wanted the small-holding, the food-production, the restaurant business all to be designed and run along Permaculture lines.

What do you like to do in your spare time?

My other great passions in life are food and music. I'm (cautiously) learning to play the piano again after quitting piano lessons in my teens (my mum suggested at the time that I'd regret giving up piano lessons - and she was right).

I've also started food blogging, as a growing advocate of raw foods and wild food foraging. Increasing the amount of plant-based foods we eat is excellent for our own physical health as well as for the health of the environment. Win-win!

What is your top tip for a young person who would like a job like yours?

I would say that it's probably important to have a good solid career background working for other organisations, as this will provide you the 'experience bank' you can later draw on as a self-employed software engineer. Taking part in Hackathons and other voluntary collaborative opportunities to hone skills in both coding AND collaborating with others is also a great way to develop your skills and experience.

The other key thing which is necessary is creative problem-solving skills. Any way in which you can develop these will hold you in good stead (even if it's problem-solving outside of the realm of software development). Training your creativity and honing your skills in ideation - creating ideas, innovating, thinking outside the box, finding novel ways to solve existing problems - will put you in a strong position as a software engineer.



Tariq Umar - Lecturer in Construction Project Management

Describe your role in two sentences:

I am a lecturer in Construction Project Management where in I teach undergraduate and postgraduate students and conduct research in the area of Engineering Sustainability, Climate Change, Renewable Energy, and Waste and Resource Management.

Who do you work for?

University of the West of England

The University of the West of England (UWE) is a partnership university, delivering learning teaching and assessment; research; enterprise and innovation and public engagement activities. It has existed as a publicly funded university since 1992. It is the largest provider of Higher Education in the South West of England with around 30,000 students and 3,500 staff, approximately 2000 of which are directly involved in teaching and research.

What do you do in a typical day?

Usually, my working day starts by reporting to my workplace at 8:30 am. However, each day includes different activities related to teaching, research and meetings. Teaching normally takes place in the classroom, but laboratory experiments are conducted in the relevant laboratory. Apart from regular class hours, each day has specific hours designated for office hours and advising. This time is for the students if they want to see me in relation to academic queries or they want academic advice related to their course or programme.

I make sure that I have at least three hours for my research-related activities. Research activities include meeting with collaborators, conducting laboratory experiments to obtain results, reviewing literature, writing research proposals and papers, and revising research papers based on the comments received from the reviewers and editors.

My current role also requires me to work on a number of committees, either as a committee member or chair, meaning I need to attend those meetings. As an approved mentor for the Institution of Civil Engineers (ICE), I need to spare some time to review the progress of the graduate engineers who are working towards membership.

What do you love about your job?

Academic roles in universities are usually complex and challenging in nature. Students being human are gifted with different levels of abilities, so some students may pick things easily and some of them will struggle. When it comes to teaching and learning, each student becomes important to me as I need to ensure that they get the best learning experience and complete their studies in the required period of time.

Similarly, I do want to mention research as one of the challenging aspects of my current role. The civil engineering and construction management disciplines are advancing, but this advancement is quite slow when compared to other branches of engineering, which can restrict research opportunities. I therefore need to target key areas where there is a potential for research and then find gaps in knowledge to focus on for that research.

Active research collaborations with researchers around the world including the United Kingdom, United States, South Africa, Oman and India have helped me overcome the challenges associated with the research.

I love both aspects, teaching and research of my job because it help me to develop new construction managers and solve real world problems, contributing to the society and gaining personal satisfaction.

How did you get into your current role?

Engineers have a key role in facilitating the comfort of life of mankind through their engineering projects and innovation. I developed a keen interest in engineering, especially civil engineering, when I was in secondary school. I was always inspired by engineers constructing roads and buildings and used to make models of buildings and houses out of empty cartons. At that time I began to seriously consider pursuing further study in civil engineering.

I started my career in 2003 as a Junior Engineer in a local municipality in Pakistan having completed a Higher Diploma in Civil Engineering. During this job I was able to complete a Bachelor (Hons) degree in Civil Engineering in 2008. I then moved to London where I completed a Masters in Civil Engineering at the University of East London in 2009. At this time I also worked as a Research Assistant in the Soil Structure Interaction Group at the university, which allowed me to polish my research skills.

I then returned to Pakistan and joined Cantonment Board Walton (a local municipal organisation) as Senior Engineer. Two years later (in 2012) I moved to the Sultanate of Oman and worked as a Lecturer in Civil Engineering and Construction Management in a private higher education institution for eight years. In September 2020, I returned to the UK and joined my current employer. I was awarded a PhD in Construction Management from London South Bank University in 2019.

What did you want to be when you were 11?

I loved Civil Engineering from my primary school age. I used to create houses and bridges modeled from empty cartons. When I saw construction workers in a building and or road projects, I used to think about how they change the natural environment to a built environment - making the earth a good place to live.

What do you like to do in your spare time?

I love to take my children to the local park where I play with them and visit the ice cream van! I also write in my free time.

What is your top tip for a young person who would like a job like yours?

There are great opportunities in all areas of STEM, Civil Engineers do amazing jobs and execute complex engineering projects around the world. Civil Engineering is a profession where you can have a chance to address key issues such as climate change and global warming and contribute to improving the quality of life. Do some research to find out what it is all about. If you are interested, pursue a degree and become a professional engineer with the Institution of Civil Engineers. Honestly, you will love your career.





Lisa Tidswell - Manufacturing Development Manager

Describe your role in two sentences:

I help Caldera build their manufacturing. But, as we're a small team it means I do everything from buying things (parts and machines) to making models of how much things will cost, to looking at how everything and everyone in the business fits and works together.

Who do you work for?

Caldera Heat Batteries

Caldera is a Climate Tech start-up. We make the Warmstone heat battery which uses low carbon electricity whenever it is available to warm a solid core, storing this energy efficiently until the heat is needed by houses or industry.

What do you do in a typical day?

There is no typical day. Although there are some regularly repeating tasks for me. We start every morning with a full team meeting to understand what everyone's priorities are for the day. Then I usually buy a few things for the business - it might be pieces of equipment (like a helium leak tester, or new fabrication plant, or a new CAD workstation), or often materials to support our manufacturing (like steel, or pipework), or one-off things to trial or test.

But outside this, I might be working on: writing an application for a new grant, or working on an existing grant - building a product cost model to understand a potential manufacturing scenario - researching equipment or manufacturing processes - writing or reviewing request for quotation documents (RFQs) - importing or exporting something from the UK - attending a strategy day, supplier visit, management meeting or trade show - discussing the research and testing needed for the next steps or even sweeping the floor if there are visitors coming and my day's priorities are not as important as everyone else's!

What do you love about your job?

I love the variety and challenge that comes with every day. Because we are a small team, we all have expertise in different areas plus several broad and general skills. This means everyone gets involved in things that challenge them and help them grow both as a person and as a professional every day. I also get to directly contribute to things like the overarching company strategy, customer, and investor conversations. I even get to be involved when we are running experiments, building things, testing things, or discussing new research.

How did you get into your current role?

A combination of luck and skill! For the luck, I was in the right place at the right time to meet the CEO when he had a requirement for my skillset. To develop those skills, I studied physics and mathematics at university, and worked in a research laboratory while I studied.

After university, I started working on an entry-level purchasing/systems job for a company that manufactures doors and windows. From there onto supply chain work in a wine bottling plant, material / planning and logistics, and cost accounting in an automotive supplier, and then here to Caldera.

I took transferable skills, enthusiasm, and a keen desire to learn new things to each job - which allowed me to move up, be offered additional challenges, and complete an MBA while working.

What did you want to be when you were 11?

When I was 11, I wanted to be a horse vet. I worked towards this goal all the way through to the end of my first year of university.

At this point, though I realized (having taken biology, chemistry, physics,

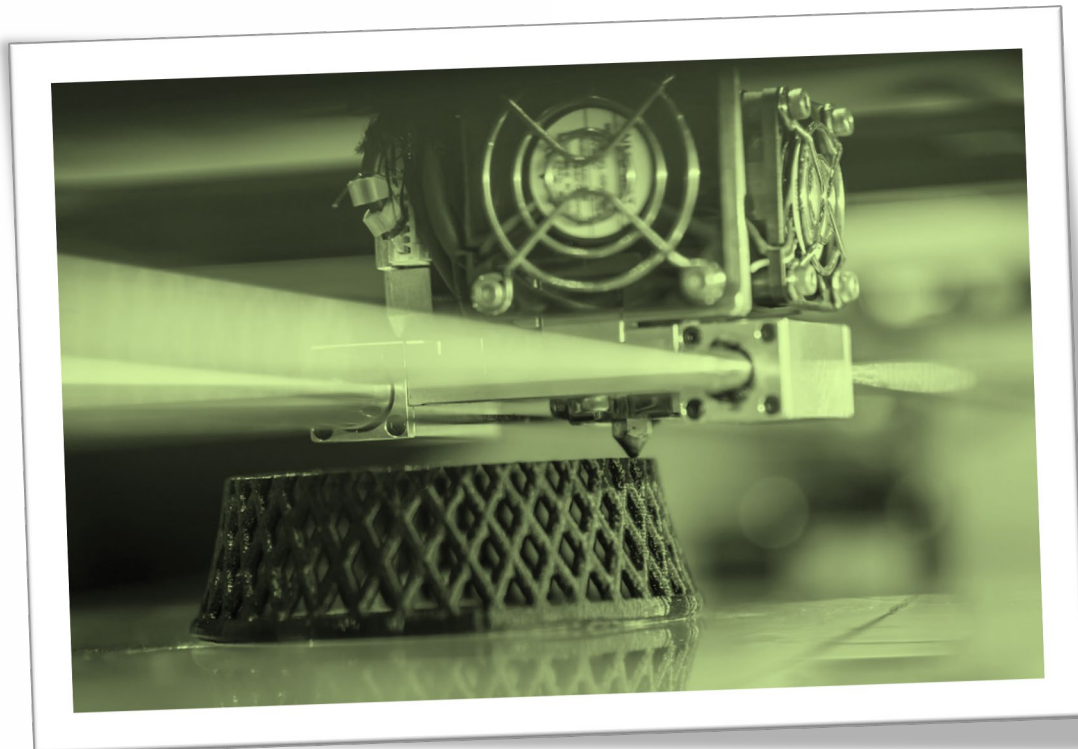
mathematics, and English in my first year), that I enjoyed physics and math much more than biology!

What do you like to do in your spare time?

I'm a keen runner (3 marathons under my belt), and I've recently gone back to Crossfit as an extra endorphin rush. I spend most summer evenings and weekends sailing with my boyfriend on his restored 1911 French fishing boat and reading adventure novels when we're at anchor.

What is your top tip for a young person who would like a job like yours?

Don't be afraid to explore the interesting things that challenge you. Having a broad skill set and a willingness to work outside your comfort zone is an advantage in a start-up where you might be asked to try your hand at something new on a daily basis.





Fiona Bunn - PhD Researcher

Describe your role in two sentences:

I am researching ways to recover a group of critical metals that are important for "green technologies" from waste using the amazing capabilities of bacteria and biology.

These metals are used in technologies such as electric cars, smartphones and wind turbines, so demand will be rising dramatically in the future and a "circular economy" for these metals (the rare earth elements) will be increasingly important.

Who do you work for?

University of Edinburgh
A university with a variety of research interests.

What do you do in a typical day?

My days are generally filled with some reading of the scientific literature, planning experiments, meeting with my supervisors and the lab group and doing lab work and analysing experimental data. I also have periods where I need to write up my work and make presentations.

What do you love about your job?

I love that I get to follow my interests and that I can contribute new innovations to science and society. I enjoy interacting with other scientists who are motivated to contribute to solutions for making our future "greener" and improving sustainability.

How did you get into your current role?

I studied Biology, Chemistry, Maths and Further Maths at A-level, then completed an undergraduate degree in Natural Sciences at The University of Cambridge, specialising in Biochemistry. I then moved to Edinburgh for an MSc in Synthetic Biology and Biotechnology and stayed on for a PhD in a similar field.

What did you want to be when you were 11?

I didn't know what I wanted to be when I was 11, but I was interested in science, and thought I would like to do something to help the world. I also love the outdoors, so at one stage I wanted to be a Mountain Rescue worker!

What do you like to do in your spare time?

I love running as it helps me to relax, socialise and stay fit! I get to compete all over the world and explore the local area. I also enjoy tutoring school students in science subjects as it is really rewarding to meet so many motivated students and help them achieve their potential.

What is your top tip for a young person who would like a job like yours?

Always ask questions, even if you think they might be stupid, as this helps you really understand and learn. A scientist's job is to ask questions and then try to discover the answers, and this is something you can practice from any age!



Octavia Brayley - PhD Researcher

Describe your role in two sentences:

I am a Biological Sciences Ph.D. student at the University of Birmingham. My research involves utilising various experimental techniques, such as soil sampling and DNA sequencing, to investigate the effects of an invasive species of insect in Antarctica, as well as trying to understand how this insect is able to survive such extreme conditions and how climate change might impact its distribution in the future.

Who do you work for?

University of Birmingham

The University of Birmingham is a research-intensive Russell Group institution, with over 28,000 students. Among its staff and alumni are 10 Nobel Laureates.

What do you do in a typical day?

I don't really have a typical day in my job, which is something I love as I never quite know what's going to happen! I have only recently started my Ph.D. so at the moment, most of my day is filled with a lot of reading so I can start planning my project and understanding the current research in my area. I often have meetings with my supervisors to discuss my research plans and I always make time during the day to go and grab a coffee with friends. In a few months, my days will be busy with lab work, analysing data, and writing scientific papers to be published.

What do you love about your job?

I get to combine my love for research and teaching into one job and every day is exciting and interesting. My Ph.D. research is a totally new area of investigation, so nobody else in the world is studying what I am, which is pretty cool! This also means I don't know exactly what I am going to discover, which makes my job super exciting.

Through my job, I get to travel to scientific meetings and conferences around the world which is so fun to meet other scientists and present my work to them. I will also be going to Antarctica in 2024, which will be an incredible experience. I also get to give presentations to students at schools around the country which is so rewarding and I love knowing that I might have inspired someone to get involved with science and biology.

How did you get into your current role?

Although I always wanted to be a marine biologist when I was younger, my love for science disappeared when I started secondary school. So, I only took combined science at GCSE. David Attenborough's series on Africa was released at a similar time to me completing my GCSEs, and it was this programme that made me realise I wanted to study science after all!

I studied Biology, Chemistry, and Geography for my A-Levels (I also completed an Extended Project Qualification), and this was tough as I was behind with my scientific knowledge. I also don't do very well in exams, but I put a lot of work into my subjects and got the grades I wanted.

I then went on to complete two degrees at the University of Bristol; a bachelor's in Zoology, and a master's in Biological Sciences. I knew by this stage that I was passionate about teaching and research so I decided I wanted to do a Ph.D. which would help me get a job as a researcher and lecturer in the future.

When I was at college completing my A-Levels, I completed an EPQ on Antarctic marine biology, and this sparked an interest in this area of research for me. I, therefore, began applying for PhDs in this subject area and after three years of trying, with about 30 rejections, I finally got funding for my current project.

This goes to show that even at a high level in academia and education, people often have to deal with failure, so never give up on your dreams. If you really want to do something, keep going and you will get there!

What did you want to be when you were 11?

I wanted to be a marine biologist! I was obsessed with dolphins and whales and used to watch all of David Attenborough's documentaries which really inspired me to get involved with science and research.

What do you like to do in your spare time?

In my spare time, I get involved with the dance society at university- ballet is my favourite style. I also like to spend time outside and I enjoy going for walks. I like to keep fit and go to the gym a few times each week. I am also a part-time science tutor and I teach GCSE and A-Level Biology to students. I have recently started volunteering for an environmental media organisation and I help with their social media presence and website articles.

What is your top tip for a young person who would like a job like yours?

If you don't ask, you don't get. Email, email, email! Many of my previous work experience placements have been offered to me because I emailed lots of people. So if you're interested in an organisation, a company, or a scientist, send them an email asking them what they might have available. You never know what opportunities you can get if you ask the question.





Stephanie Holland - Project Documentation Engineer

Describe your role in two sentences:

I work within Project Engineering, working on all aspects of documentation that supports a project during its lifecycle. Producing, editing, managing, recording, approving and working directly with Project Managers to help their projects go smoothly and professionally.

Who do you work for?

Eaton

Eaton are a power management company. Currently focusing on backup power, electrification, EV and renewable energy support. Eaton is a global company with a huge drive on sustainability and improving technology for future generations.

What do you do in a typical day?

I can be working on support requests from my team, working on producing documentation or being on sites as a support resource. It's quite varied!

What do you love about your job?

I get to use all my skills, knowledge and I get to be an important part of a team.

How did you get into your current role?

All of my experiences throughout my career have made this job perfect for me. My engineering degree gives me the edge with this technical role.

What did you want to be when you were 11?

When I was 11, I wanted to be a teacher. But I also wanted to be creative and make things. So an art or a design teacher would have been ideal!

What do you like to do in your spare time?

Walking my dog, baking, painting and photography.

What is your top tip for a young person who would like a job like yours?

Get as much experience as you want to, do some volunteer work and never be afraid of asking questions!





Ling Lim - Research Fellow

Describe your role in two sentences:

I look at how planes affect the air we breathe (air quality) and changes the weather that we experience (in the longer term this would be climate change).

Who do you work for?

Manchester Metropolitan University
Higher education provider

What do you do in a typical day?

Most days, I work in front of the computer since I perform calculations with computer programs that I write. I use these programs to, for example, represent the number of planes flying around globally, the fuel used in each plane under different conditions and then, find ways for the planes to use less fuel. I also spend a lot of time on the phone with colleagues from around the world.

What do you love about your job?

I am part of a global team of scientists, engineers, mathematicians, policymakers, etc. working hard towards making flying more environmentally sustainable. The knowledge that I need for my job is also changing all the time, so I keep learning new things from those around me. It is never boring!

How did you get into your current role?

The traditional route: first degree -> doctorate -> post-doc

What did you want to be when you were 11?

Lawyer and maybe even a Fashion Designer (I can't quite remember!).

What do you like to do in your spare time?

I love Geocaching – it is like a treasure hunt, and it is available all over the world! So far, I have done 88,644 km on my Geocaching trail!

What is your top tip for a young person who would like a job like yours?

We should be willing to investigate and learn new things, so that we can come up with innovative ideas. It is fine to fail along the way if we keep trying and learn from the failure. We also cannot solve a complex problem by ourselves – we always need help from others.





Emily Butterwick - Sustainable Development Lead Adviser

Describe your role in two sentences:

I help to conserve nature and create more green spaces for people and wildlife. I work on projects in West Anglia and protect wildlife using policy and legislation.

Who do you work for?

Natural England

It is responsible for ensuring that England's natural environment, including its land, flora and fauna, freshwater and marine environments, geology and soils, are protected and improved. It also has a responsibility to help people enjoy, understand and access the natural environment.

What do you do in a typical day?

I have meetings with colleagues to discuss projects, plans and strategies. This can range from supporting one another with complex planning casework to discussing how we are going to help deliver a nature recovery network across England. I'll spend some time working through casework, ranging from housing developments to solar farms.

I also work on Nationally Significant Infrastructure Projects (ranging from nuclear power stations to off-shore wind farms) to make sure that we gain wins for the environment. I might then spend time at one of the National Nature Reserves that I work to protect.

Part of my role involves supporting the Equality, Diversity and Inclusion network by providing events to support wellbeing. I'm currently planning a yoga and forest bathing session for our area team meeting.

What do you do in a typical day?

I love getting to work with local communities, volunteer groups, councils and businesses to talk about the environment. I being involved in government processes and working together with likeminded people. I love making lasting change to people's lives, their neighbourhoods and their workplaces. I get to connect others with nature and share the love I have for conservation.

What do you love about your job?

The journey here hasn't been the most straightforward. I finished school with three A-Levels in History, Media and English. After failing on my first try at University, I ended up working part time and studying at my local college to gain my diploma in Science. I had enough UCAS credits to get into Lincoln University studying Zoology. I loved this course because I got to study all different aspects of biology, chemistry and physics but through the lens of plants, animals and fungi.

After graduating, I got a job with my local council as an Environmental Enforcement Officer. It was an entry level job but I got the experience I needed to apply for the jobs I loved. Firstly, I worked for the Environment Agency for a year, protecting Land, Air and Water in England. After that, I worked for a year at the Woodland Trust as a Creation Officer, helping to plant new woodlands all across the UK. Once I had the relevant skills (from my studies and voluntary work) and experience, I made my way to Natural England. I'm now half way up the ladder in my field

What did you want to be when you were 11?

I wanted to be a singing, horse riding actress who designed her own clothes! A career in STEM didn't seem possible for me. I remember thinking when I was doing GCSEs that I'd be a hair dresser. I had no idea someone like me could work in STEM, now I wake up every day excited to go to work. I'm so glad I didn't end up doing what I thought I would at 11!

What do you like to do in your spare time?

I like to be creative, whether that's writing music, embroidering, painting or making a bug hotel!
I like to play video games and watch things on Netflix that I enjoy.

I like to volunteer with STEM and my local conservation group.

What is your top tip for a young person who would like a job like yours?

Don't give up hope. You are absolutely capable of having a job like mine. You may experience failure or disappointment along the way but these are just part of being human. Try to find time to volunteer in nature.

There are plenty of conservation charities looking for support, the more things you try, the better you'll get. You'll gain new skills, confidence and a better understanding of what kind of career you'd like to pursue in the Environment sector.

Have a look at some websites like the wildlife trust and see if they have any events that you like the sound of. They offer days in nature, courses on different techniques for observing and identifying wildlife, creative projects... all sorts! Have a look and get stuck in





Emma Thorpe-Bailey - Town Planning Consultant

Describe your role in two sentences:

I work with land owners and developers to secure planning permission for new developments, such as new homes, schools and leisure centres. My job involves managing competing demands for land, and making sure that all new developments follow relevant environmental and sustainability policies.

Who do you work for?

Be First

Be First is an urban regeneration company that has been set up by the London Borough of Barking and Dagenham. Be First manages the Borough's estate renewal and new home building programme.

What do you do in a typical day?

My job requires me to be a good problem solver and to operate in a very collaborative way. In a typical day I would have meetings with a range of different people, such as architects, local people and local planning authorities to discuss new development projects. I would also write reports justifying new planning applications or provide advice to clients. Finally, I would go out on site visits, exploring the land that I am going to be working with.

What do you love about your job?

I love that I get to positively influence where and how people live. For all of the new homes and places that I work on, I make sure that they are sustainable as possible, form the types of energy that the use, through to the right use of trees to manage flooding risk and to encourage more wildlife to move in. I know I am making places nicer, cleaner and greener to live in.

How did you get into your current role?

I really enjoyed studying geography at school and seeing how our urban, rural and coastal environments change over time. I studied City and Regional Planning at Cardiff University and then Spatial Planning at UCL.

What did you want to be when you were 11?

Either a florist or a police officer, because I loved nature and helping people. I use both of these in my current job, but in a way that can have effects that are lasting years and decades, as new homes and green spaces around them will last a very long time.

What do you like to do in your spare time?

I like to spend time in my vegetable garden, growing new sorts of tomatoes and potatoes.

What is your top tip for a young person who would like a job like yours?

I'd recommend going out and exploring their local area and asking, what works? what doesn't work? how could this place be made better for the people living here?

I'd also recommend looking at Apprenticeship opportunities. The Royal Town Planning Institute's (RTPI) website has lots of resources for young people looking to get into planning, either through apprenticeships, university education, or working.

Green careers information and support

The following resources are supportive of green careers and general careers awareness. Click the buttons to access the resources or copy and paste the links shown below.

Green Careers Virtual Careers Fair

Visit a virtual careers fair that highlights green career opportunities and explores the work of those mitigating and adapting to the challenges of climate change.

Green Careers
Virtual Fair

Climate Ambassadors

Climate Ambassadors is an initiative to mobilise experts within the climate sector to engage with young people and educators and raise awareness of climate issues and the green careers committed to resolving them.

Climate
Ambassadors

Catalyst Magazine

Science journal for 14-19 year olds and their educators, exploring innovative science, industrial developments, associated careers and career paths. Catalyst links the world of work with curricular learning with articles and interviews. Content is supportive of climate change and the people working towards #NetZero and a sustainable future.

Catalyst Magazine

Climate Change Educational Partnership

The Climate Change Educational Partnership (CCEP) supports the delivery of climate change related lessons and activities. It provides inspiring resources, CPD courses and opportunities for schools to engage with Climate Ambassadors who work within climate change settings.

Climate Change
Educational
Partnership

Learn more about Green Careers

Our collections of Green Careers and Climate Change resources are free to access and include videos, case studies from people working in green careers, activities, and resources to use in the classroom, at home or with a community.

Case Studies, Activities
and Green Careers
Information

Links for the above items:

- Green careers virtual fair: <https://stem.exhibition.app/climatechange/>
- Climate Ambassadors: <https://www.stem.org.uk/climate-ambassadors>
- Catalyst Magazine: <https://catalyst-magazine.org/>
- Climate Change Educational Partnership: <https://www.stem.org.uk/climate-change-educational-partnership>
- Green careers case studies and activities etc: <https://www.stem.org.uk/cxhreo>
- Green career video case studies: <https://www.stem.org.uk/cxhrep>
- General careers support: <https://www.stem.org.uk/cxhreq>

Video Case Studies,
Interviews and
Industrial Context

General Careers
Support and
Awareness

Careers Awareness, led by STEM Learning

Achieving world-leading STEM education for all young people across the UK.

For more information on the programmes, CPD, publications and careers support available from STEM Learning, visit our website

www.stem.org.uk

