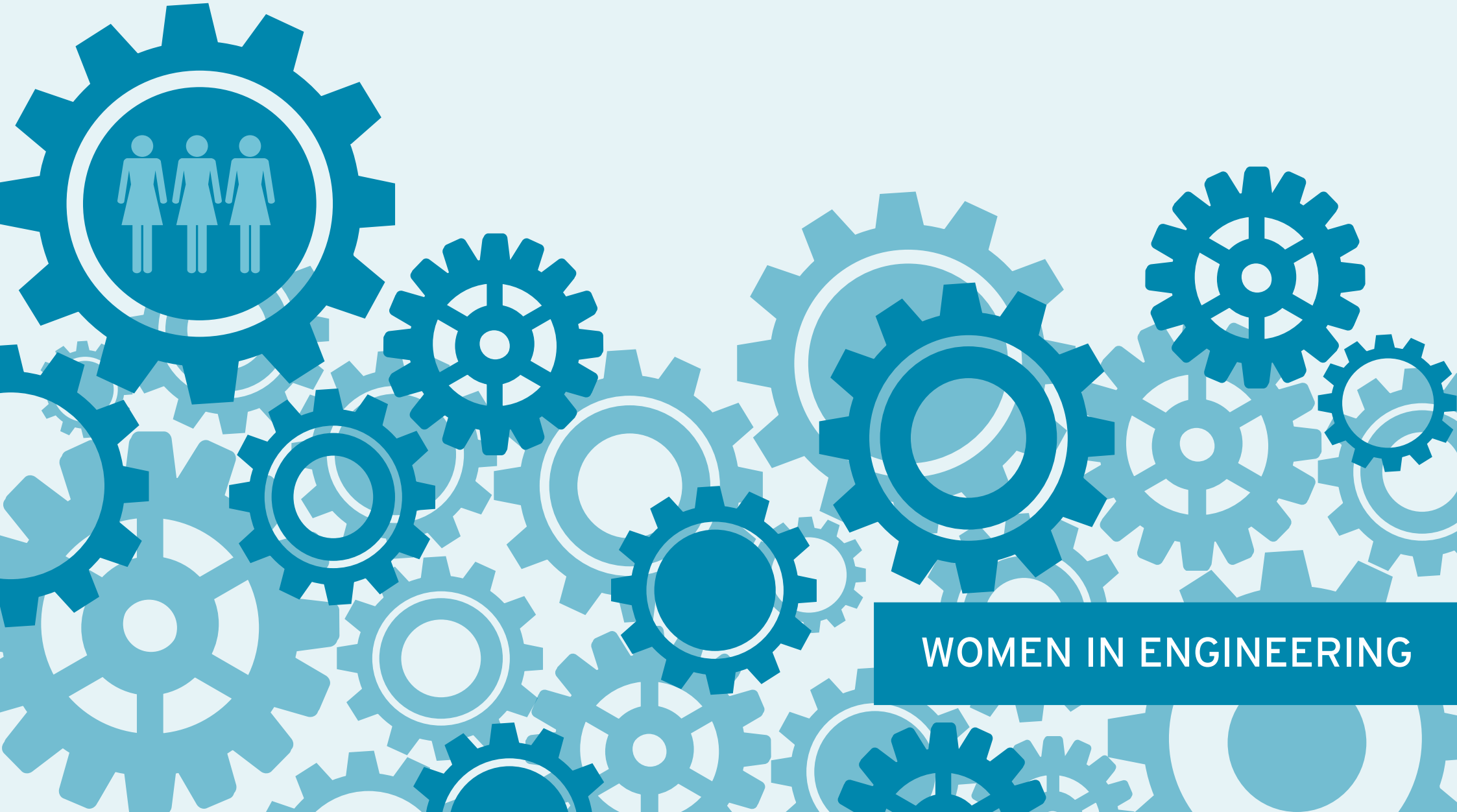
JBA consulting



WOMEN IN ENGINEERING

International Women in Engineering Day

2017 launches the fourth year of the International Women in Engineering Day campaign, created by the Women's Engineering Society (WES)

The International Women in Engineering Day is a day dedicated to raising the profile and celebrating the achievements of women in engineering.

We have been publishing several blog posts reflecting the life of women who work for JBA, and the choices they made to pursue a career within the engineering sector.

of the engineering workforce is female

Maxine Zaidman
Technical Director

At the time when I was making those all-important decisions about further education choices, in the late 1980's, there was a big push to get more women into the engineering sector. I was quite interested. However, the pamphlets would always show pictures of ladies wearing hard hats and site boots, and carrying clip boards.

Those 80's pamphlets got it so wrong!

Engineering is so much more than learning the recipe for concrete - it encompasses a broad range of water management roles and skills, and covers topics as diverse as grey/green/blue water-use strategies and flood forecasting. It's an environment that all women can truly flourish in. I now tell people I work in water engineering and I think the description fits: I'm very proud of all my engineering achievements during 14 years with JBA!

Contact: Maxine Zaidman

48%

of young woman do not consider careers in STEM sectors

Anne-Marie Moon
Principal Coastal Engineer

Following a Master's Degree in Coastal Engineering at Southampton University I started my career as a Coastal Scientist at the Channel Coastal Observatory where I toured the beaches of the South Coast of England, managing and undertaking coastal surveys and taking the data back to the office for processing and analysis. I then moved roles to work in an engineering consultancy as a Coastal Engineer.

Throughout my career I have been lucky to work on a great variety of projects from sand dune management to coastal and estuarine strategy studies and the design of rock breakwaters across the world.

Since joining JBA in Newport I have continued to expand my experience and being Welsh have particularly enjoyed working on Welsh projects with clients including Natural Resources Wales and Welsh Government.

Contact: Anne-Marie Moon

Less than
10%
of female engineering professionals in the UK

Lynsey MacLeary

Assistant Analyst

Three things I like about my job are:

1. Problem solving: Given the nature of my job, I'm almost always working with incomplete datasets. I enjoy pulling together information from different sources and filling in the gaps.

2. The great outdoors: Working on computer-based tasks can be mentally draining, but site visits provide a great opportunity to get out and about and see parts of the country I might not usually see otherwise.

3. Steep learning curve: I joined the industry relatively recently, but I've learned a lot in a short space of time. There are always opportunities for building up new technical skills and getting involved in projects and fields that I'm interested in.

Contact: Lynsey MacLeary

In 2010, nearly

100,000

female STEM (science, technology, engineering, maths), graduates were unemployed or economically inactive

Ellie Charles

Senior Analyst & Team Leader

What are you doing today, Ellie?

The same thing I do every day...is never the answer!!

Currently I manage £500,000 worth of projects that will improve flood forecasting system performance, flood resilience services and flood risk understanding in England. So, day to day I coordinate - anything can crop up!

With a background in mathematics and modern languages, my route to engineering was non-standard, but was navigated by a desire to work in a technically challenging, yet practical, field. I pursued my passions at undergraduate level then fine-tuned my future career path through a targeted master's degree.

Contact: Ellie Charles

15.8%

of engineering and technology undergraduates in the UK are female

Alexandra Scott

Programme Manager

My route into JBA and an engineering related role is simply a result of pursuing opportunities that looked really interesting! When I finished my degree I took a year out to do some exploring and realised that I definitely wanted to work in the environmental sector so I applied to the Yorkshire Water graduate scheme. It provided fantastic experience of many different roles including asset management, investment planning, water distribution and waste water treatment optimisation.

As Programme Manager, I facilitate collaborative research between industry and academia as well as delivering educational and outreach activities in schools and the community. We use physical models of rivers and coastlines to demonstrate the key principles of flood and coastal risk management. It's great to be able to help students learn about flood risk and water safety by playing with wave tanks and hydraulic flumes!

Contact: Alexandra Scott

Physics

is a key requirement for engineering programmes. It is ranked as 17th most popular A Level subject amongst girls

Anneka Lowis

Senior Analyst

After studying Geography at Lancaster University, I was keen to find an applied career that was related to my degree. However, at this stage it wasn't immediately clear what I should focus on so I took a year out to go travelling. I decided to study for an MSc in Environmental Water Management. I joined JBA's graduate development programme.

At JBA I have contributed to a wide variety of projects and have developed skills in a number of different areas including hydrology, hydraulic modelling and GIS. At the beginning of my career I was involved in a number of large scale projects that gave me the opportunity to acquire software development skills.

As my career has progressed I have continued to focus on software development. I have been lucky enough to be involved in a number of internal Research and Development projects, which has allowed me to develop new programming skills and spend time investigating problems and finding solutions.

Contact: Anneka Lowis

Engineering students are second only to medics in securing full time jobs

Rachael Brady

Senior Ecologist

Although not technically a career in engineering, as an ecologist at JBA I work closely with engineers, designers and contractors to ensure that developments/construction works do not have adverse impacts upon the natural environment.

This involves undertaking surveys and assessments to identify the presence of potential constraints to works such as nature conservation sites, important habitats and protected and notable species such as Great Crested Newts and bats.

An ecologist's role in a project is also to identify and provide advice on potential habitat enhancement opportunities that may arise or could be incorporated into a scheme to increase the value of the site upon completion of works. These can range from simple, quick-win enhancements such as the inclusion of bat or bird boxes on structures or hedgerow planting, to larger-scale more complex enhancements such as creation of new wetland habitat or ponds.

Contact: Rachael Brady

7%

of mechanical engineers are women

Anna Beasley

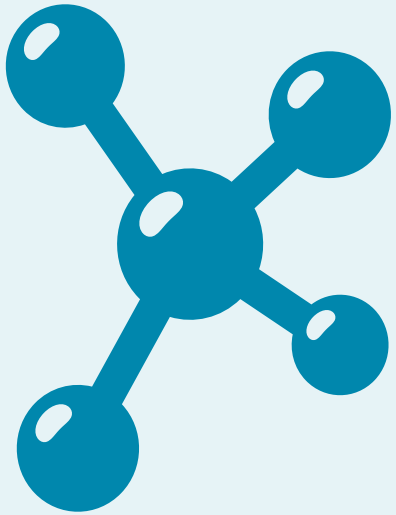
Principal Analyst

One of the best things about my job is the variation in the type of work I do. A typical day involves a combination of people management, project management, technical work and the odd site visit.

My academic background is in hydrology and catchment management, and I have many different technical 'hats' – from hydrologist to hydraulic modeller, flood risk analyst to drainage engineer, and occasional planning adviser.

Projects I am involved in at the moment range from a feasibility study for a flood storage scheme (using Infoworks-ICM to model various options); writing a SuDS planning policy document for a Local Authority; a flood risk assessment and drainage strategy for a commercial development; to various SFRAs and Water Cycle Studies.

Contact: Anna Beasley



The proportion of women studing engineering and physics has remained static since 2012

Deirdre McDonnell

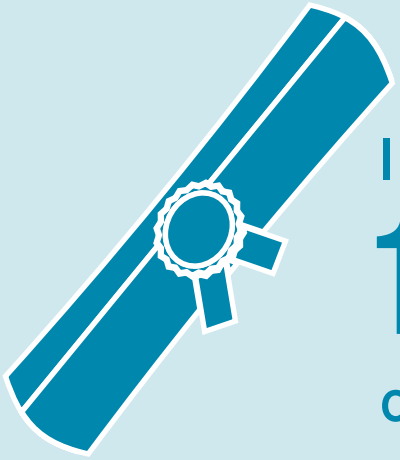
Chartered Senior Engineer

I qualified with an honours degree in Civil Engineering from University College Dublin in 2004. Following university and a 6-month temporary contract with a Local Authority I joined a civil-structural engineering consultancy firm. I spent over 7 years with this firm and then 2 further years with a breakaway company.

Over the 9 years I worked on civil-structural engineering projects across the full range of developments from commercial, to healthcare, housing, education, industrial, infrastructure etc.

My engineering role involved project managing, working on multidisciplinary teams, undertaking drainage and general infrastructure design. I also did some minor flood risk assessments and designed small scale flood management schemes.

Contact: Deirdre McDonnell



In 2008

12%

of bachelor's degrees in science and engineering

Jenny Hill

Senior Analyst

My interest in engineering was sparked during a summer placement at the Environment Agency. My role was purely admin based but I started to read the tenders I was supposed to be filing and that is when I decided this was the industry for me.

At the first big meeting I attended I noticed the gender divide. Senior ranking men were being supported by junior women. I thought then that the tide was turning in engineering and my observations over the last five years in the industry support that.

For what it's worth, I have a theory on why. There is a lot more to our jobs than maths and physics. Yes, it is a fundamental part of what we do, but communication and management skills are also an essential part of my job. Now, more than ever, partnership and community engagement is important and people who can excel in both maths and social skills will succeed. I think it is this diversity in the job role which is attracting and retaining more women in the industry.

Contact: Jenny Hill

The word engineer comes from a latin word meaning "cleverness"

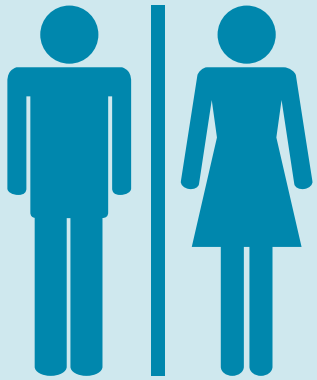
Joanne Chillingworth

Chartered Senior Analyst

In my role as Project Manager I liaise with the client, facilitate workshops, instruct technical modelling work and review results.

Working in engineering offers me the opportunity to contribute to managing the impacts of flooding. Our work really makes a difference in the local and national context, as well as to people's lives, which can be very rewarding.

Contact: Joanne Chillingworth



DIVERSITY MATTERS

Katarzyna Wrzosek

Engineer

Everyone remembers the time when they had to make that decision, what will I do with my life?
What exactly do I want to do in the future?
And the most important, what will make me satisfied for the next 40 years?
I had no clue at all. All I knew was that I wanted to do something important in my life, but what?

In 2008 I decided to study at the Faculty of Civil Engineering, Mechanics and Petrochemistry, Warsaw University. Then in November 2015 I joined JBA's Isle of Man office. Since I have been with JBA, I've designed a Sewage Treatment Plan and worked on a number of smaller jobs such as designing driveways and bridges.

Working on engineering solutions allows me to use my knowledge and gives me job satisfaction. I would recommend all young women consider engineering. Times have changed, and it's not just for men. It's not the easiest profession, requiring responsibility and sacrifices, but it also makes you satisfied and proud of yourself.

Contact: Katarzyna Wrzosek

20%

of industrial engineers are women

Rachel Hopgood

Engineer

How can we, as engineers, respond to recent "unprecedented" flood events and plan for the future?

This was the question asked at the Institution of Civil Engineers (ICE) South West flood conference entitled "Reflection, review and recalibration of the South West's flooding plan" which I recently attended in Exeter. The event focussed on whether, in light of recent flood events in the North of England, we need to rethink our flood risk strategy in the South West.

Throughout the day the need for creative thinking was highlighted. One of the final speakers of the day concluded that we need "as many people with good ideas as possible" to be encouraged into our industry. To me, this fits well with our "Women in Engineering" theme in this blog series - we are missing a trick if we do not encourage as wide a range of people as possible to join us. This is how we will meet the challenges of the future.

Contact: Rachel Hopgood

64%

of engineering employers say a shortage of engineers is a threat to their business

Rachelle Ngai

Assistant Analyst

Surrounded by modellers, hydrogeologists and hydroecologists day-in and day-out, my work never seems conventional. Many people ask me what I do – and my reply more often than not these days tends to be, "a bit of everything". I have worked on a range of projects that have pushed my boundaries, tested my intelligence – and on occasion tested my patience!

I have looked at climate change models and applied them to climate change risk assessments; I have looked at multiple planning authorities' climate change strategies, climate change adaptation plans and even flood risk assessments to assess how they were preparing for climate change. I have recently become Climate Change Champion for JBA's Saltaire office, learning more about how other projects across the company are integrating climate change.

As I continue developing my career at JBA Consulting, I am excited about the experiences, achievements, and even potential frustrations in the days, weeks, months and years to come.

Contact: Rachelle Ngai

Only

36%

of STEM teachers felt confident in giving engineering careers advice

Alice Gent

Assistant Analyst

When I started at JBA nearly 3 years ago, following a BSc Geography degree from Lancaster University and an internship at the IUCN in South Africa, I considered myself a geographer or environmentalist, not an engineer. However, since working on a variety of different projects at JBA, I have a far greater appreciation of the role which engineering plays in environmental work.

Therefore, to me, engineering plays a pivotal role in the environmental sector and it is important to appreciate the range of projects and people – male and female – as well as the different professions – hydrologists to civil engineers to ecologists – who are involved with successful projects in this sector. As Edith Clarke, the first female electrical engineer, said in 1948:

"There is no demand for women engineers as such... but there's always a demand for anyone who can do a good piece of work."

Contact: Alice Gent

7%

of electrical engineers are women

Women of the Groundwater Team, Saltaire

Alice Davis
Hydrogeologist

Susan Wagstaff
Technical Director (Hydrogeology)

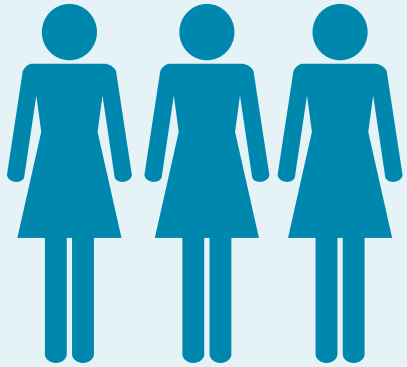
Eleanor Haresign
Senior Hydrogeologist

JBA's specialist groundwater team of six includes three women, and the team works across a wide range of projects, from borehole assessments and wetland restoration, to groundwater modelling and monitoring, as well as inputting to other JBA projects with a more engineering or geotechnical focus. We get to work with a variety of people, including the public, site contractors and regulators, as well as the clients, which gets us both out in the field in all weathers and behind a desk in equal measure. Groundwater can sometimes not be visible but it's always under our feet, and it's rewarding to contribute to the ongoing protection and management of this natural resource whilst optimising the best use of what it has to offer us.

Contact: Alice Davis

Contact: Susan Wagstaff

Contact: Eleanor Haresign



Laura Ludwinski

Software Engineer

I completed both my undergraduate and postgraduate studies at Aberystwyth University. In my final year of my Physical Geography degree I chose to specialise in Geographical Information Systems (GIS) and Monitoring & Modelling Hydrological Systems and went on to complete a MSc in Remote Sensing and Computer Science.

I joined JBA in October as part of the graduate scheme within the Systems and Software Development team at Belle Vue Mills office, Skipton. In my short time at JBA I have been involved on a wide range of projects which have allowed me to use and improve my Python skills and I have been able to gain experience with large national datasets, SQL scripting and spatial data analysis using FME.

Contact: Laura Ludwinski

34%

of chemists and material scientists are female

Rachel Huitson-Little

Director

When I joined one of our now retired directors on site for some work experience during the flooding in Leamington Spa back in April 1998, I would never have dreamt that nearly 20 years later I would be writing a blog as a Director myself...

So how did I get here?! Dedication and determination of course, but the real secret has been the continued support and encouragement throughout my career at JBA. People inspiring me, believing in me and encouraging me to believe in myself.

As a Director I am fortunate to lead a wide range of experts across many engineering, environmental and water management disciplines. In just the same day as writing this blog, I had conversations about ecological surveys and bat survey equipment, through to engineering opportunities on the north wales coast and hydraulic modelling studies to inform future investment and maintenance decisions around pumping operations. Not many people can say that! And how many people won't be inspired by realising it is all related to engineering?

Contact: Rachel Huitson-Little

In 2010,

3.8%

of women accounted for engineering apprenticeships

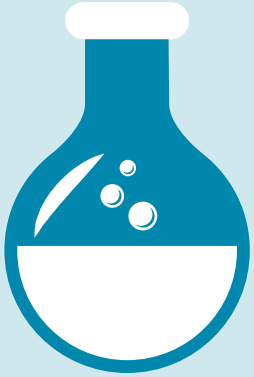
Marta Lubiejewska-Jones

Chartered Senior Engineer

I manage a team working on projects investigating solutions to flood risk and drainage issues; this involves working on a variety of private and public sector projects including Flood Risk Assessments for mixed use developments, road drainage schemes, Sustainable Drainage Systems and foul drainage, watercourse diversions and culverting and environmental assessments.

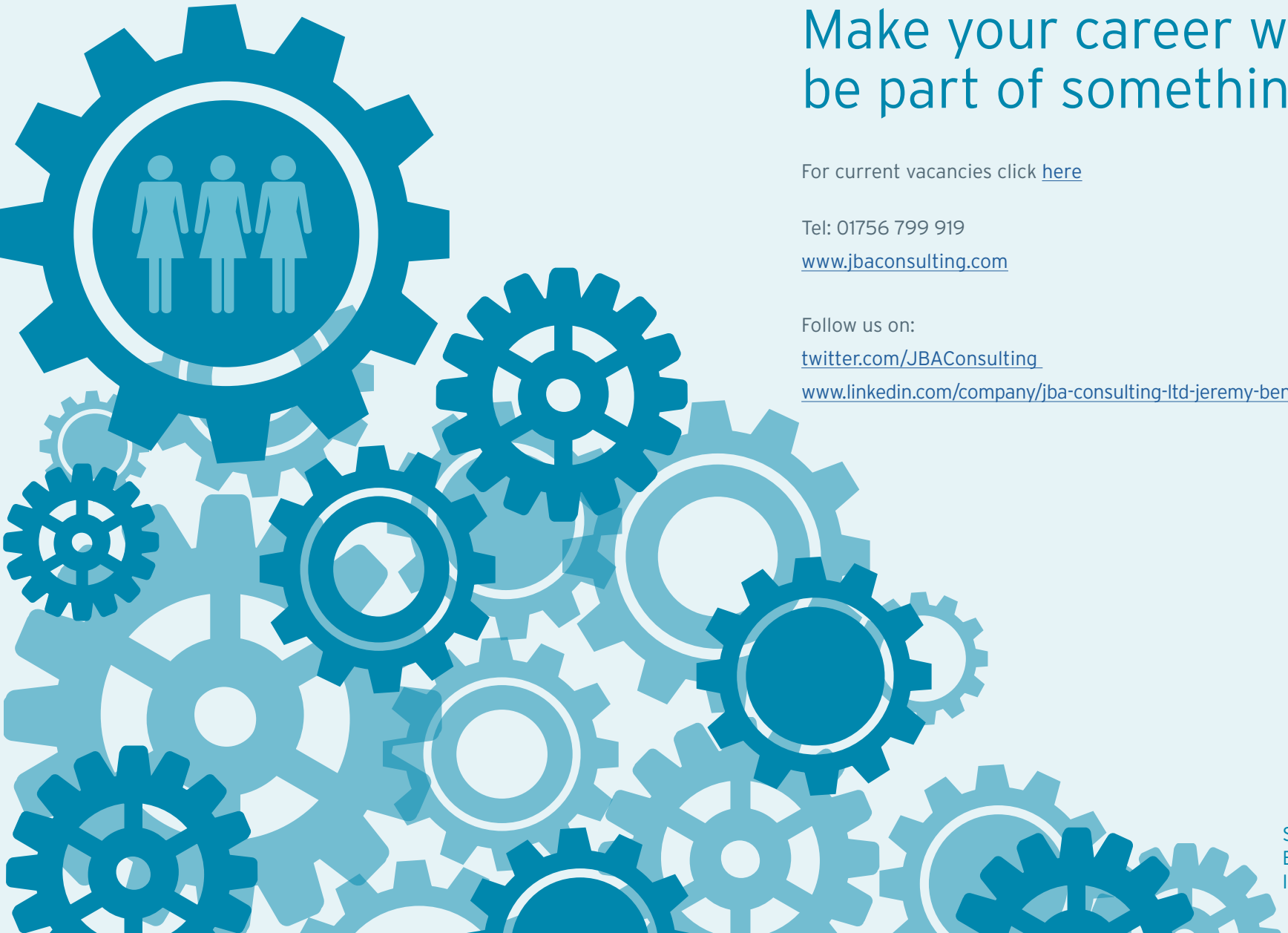
My job means my workload is diverse, day to day I could be speaking with clients or local authorities, designing a flood protection scheme or drainage system, investigating flooding issues, writing a report, supervising and advising other engineers on their work or visiting site to manage sub-contractors. Recent projects I have worked on demonstrate the breadth of studies engineers working in the water sector can be involved in.

Contact: Marta Lubiejewska-Jones



17%

of chemical engineers are women



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Statistics taken from the Women's Engineering Society and Rochester Institute of Technology