> BETTER PROSPECTS
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> GREAT PAY



Women into Manufacturing and Engineering

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Women into Manufacturing and Engineering

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#ltStartsWithME



PHILLIPS



Inspiring women to choose a manufacturing or engineering career

In the Humber region, there is a high demand for people with STEM (Science, Technology, Engineering and Maths) qualifications as they are very useful to our local manufacturing and engineering industries.

Manufacturing contributes 16% of our regional employment compared with 10% for England as a whole – and this number is set to grow thanks to investment in renewable energy and projects to address climate change.

About WiME

Women into Manufacturing and Engineering (WiME) is an initiative by Green Port Hull, supported by North Lincolnshire, North East Lincolnshire, East Riding and Hull City Councils, to encourage women to choose a career in these industries.

With great pay, a high number of vacancies and attractive prospects, careers in manufacturing and engineering present a wide variety of interesting and exciting roles, which play an important part in our economy.

Women bring new and different ideas to the workplace. Companies in the Humber want and need them to be part of their teams. We are living in a fast paced world where new technologies are constantly emerging. Women are great at solving problems and collaborating in teams to solve many different types of complex issues. These are the skills that will help us to change people's lives for the better.

People in manufacturing and engineering use maths, science and subjects such as D&T, computing and electronics to improve the world around us. It's therefore important to study these subjects at school so that you keep your options open.

Our events

Nationally, only 10% of the manufacturing

1 2 2 2

workforce is aged

16-24

We run regular careers events and online webinars to showcase the opportunities available to women in our area and explain why you should consider manufacturing and engineering as a career choice. www.greenporthull.co.uk/wime/videos

You will be able to:

- Meet women from manufacturing and engineering jobs and talk to them about their work.
- Find out more about routes into the many roles and current job vacancies.
- > Discover what training and qualifications you may need.
- > Learn about apprenticeship opportunities.
- Speak with careers advisors from the National Careers Service about opportunities in the Humber region.

Who are they for?

- > Women currently employed in other sectors who wish to make a career change.
- Women returning to work after a career break.
- > Female students in primary and secondary education.
- > Female students in Higher Education.
- Teachers and Careers Advisors for school children and adults.

Manufacturing and engineering – the facts

Manufacturing is the production of goods, from their beginnings as raw materials, to after-sales services.

Manufacturing today is usually high-tech production on a large scale. Most manufacturing processes are automated to ensure products meet quality standards and can be produced in large volumes to meet demand. Advanced manufacturing involves the use of technology to improve products and processes.

Engineering is the application of scientific, social, and practical knowledge in order to invent, design, build, maintain, research and improve structures, machines, devices, systems, materials and processes.

The discipline of engineering is extremely broad and encompasses a range of more specialised fields of engineering, each with a more specific emphasis on particular areas of applied science, technology and types of application.

> Team working is important, as is a collaborative nature. Working in manufacturing and engineering allows you to solve problems, make a positive lasting difference, improve people's lives and influence the future.

What you could earn

84%

of women engineers are extremely happy with their career choice

The average weekly pay in the manufacturing sector is approximately **17% higher** than in the wider economy.

The average graduate starting salary for engineering is over **£27,000**, a fifth more than for all graduates

According to The Engineer's 2018 Salary Survey, the average salary for all engineers is **£47,896**.

In the oil and gas sector, the highest-paid sector in engineering, this rises to £53,900.

Engineers in the energy, renewables and nuclear sector earn an average of **£52,653**.

Average annual salary for graduates by subject

£45,604 Medicine

£35,984 Physical/environmental subjects

£34,008 Maths or computer science

£30,004 Business and Finance

£30,004 Education

£27,976 Humanities

£27,508 Technology

£26,416 Linguistics, English and classics

£21,008 Media and information studies £45k



£34,995 Architecture

£30,420 Languages

£30,004 Social sciences and law

£28,600 Agricultural sciences

£27,976 Biological sciences

£27,508 Medical related subjects

£21,944

£21k

The opportunities

Engineers and manufacturing professionals are needed across a variety of key sectors here in the Humber region. From technicians maintaining vital pieces of machinery, scientists making new discoveries, to engineers managing large-scale projects, there are plenty of exciting career opportunities.



Ports and logistics

The Humber has the busiest ports in the UK, with sites available for manufacturing and logistics hubs, as well as world-leading expertise in logistics. There are also plans to build a new cruise ship terminal near The Deep.

Green Technology

The Humber Energy Estuary houses the largest single enterprise zone in the country (at 1,238 ha) and has the potential to be a global leader in clean energy generation and a globally competitive hub for sustainable shipping, energy, and logistics.

The Local Government Association reports that 6,000 new jobs will be needed to support the Energy Estuary over the next ten years.



Chemicals & Refining

A £6billion chemical manufacturing/ processing industry economy produces bulk chemicals, fibres, paints and coatings and pharmaceutical ingredients. Two major oil refineries -Phillips 66 and Prax.

Companies are

15% more likely to perform better if they are gender diverse



Healthcare

Our region is home to giants Smith & Nephew and Reckitt new research facility, as well as a world-class medical school and university with state-of-the-art healthcare research facilities



Construction

This sector has experienced historic growth via investment generated through the Hull City of Culture 2017 and large construction projects such as Green Port Hull. Growth is forecast to continue into 2023 with major proposals including A63 improvements and flood defence work. The wider Yorkshire and Humber region are expected to need an additional 2,010 new workers each year.

Engineering and manufacturing

Advanced engineering employs 25,000 people in the region, with employers including British Steel, Howden Joinery and Guardian Industries. Siemens Mobility are in the process of completing a £200M factory at Goole, which will employ 700 people to make trains for the London Underground.



Digital

The Humber area is home to the fastest growing digital sector in the UK outside London, including digital gaming, while the C4DI centre in Hull helps and supports high-tech incubation and startup companies.

The skills gap

Nationally, engineering companies are projected to need 186,000 people with engineering skills each year to 2024

Employment trends for the Humber show that this is an increasing sector for employment.

Filling the skills gap:

186,000

the number of people with engineering skills needed per year to 2024



The annual shortfall of engineers and technicians has increased by 25% to

69,000

Source: Engineering UK Report 2016

Hannah Woodgate

Current Role:

Logistics Intern – Soon to be Direct Supply Professional.

Background:

Having had a passion for the environment since I was a little girl, it was my dream to work in renewables. I studied Environmental Science, Geography, Maths and English at A-Level then went on to study BSc Geography (Hons) at the University of Hull where I obtained a high 2:1.

My Role:

I applied for the logistics internship with little knowledge on what the role would entail. What started as a 12 month internship has now turned into the start of my career as I have been offered a permanent role as a Direct Supply Professional within the OOSM team.

Initially I was skeptical about pursuing a career in such a male driven industry. However, being part of a team that is made up of equal numbers of Male and Female colleagues showed me that the future is more diverse. I am proud to be part of a business that is not only shaping the future of energy, but is also driving diversity and inclusivity within the workplace.

Ashleigh is a research and development chemist at Ansell, a global PPE manufacturer and provider of superior health and safety protection. Ashleigh started her career with Ansell straight from graduating with a degree in Chemistry at the University of Glasgow.

66 I thought medicine would be the route for me because I have always been devoted to saving lives. I always excelled in school at practical and theoretical science and numbers, so I went to University to study the subjects that I most enjoyed, hoping that I would find a role that suited me – Chemistry, Physics and Maths. I strongly believe the flexibility of studying numerous subjects gave me the chance to hone a broader variety of skills that I use every day in my research.

There are 10 million workers each day in the world that are working in industries that need some kind of protective equipment. As a large global manufacturer, we employ 12,000 people in 55 countries, so the number of roles and opportunities are endless. Ansell provide PPE for healthcare and industrial settings, so I am achieving my younger self's goals by ensuring frontline healthcare workers are safe from viruses and engineers are safe from toxic chemicals in the workplace.

> I love working in research as no two days are quite the same! In our Hull laboratory, we are involved in utilising our specialist equipment to problem solve and innovate for many projects, collaborating with global manufacturing and Universities. This keeps my days interesting and varied, as there is always a new opportunity to learn and develop creative solutions! JJ

Ansell



Charlotte is a Marine Information Officer at ABP.

FF I joined ABP in spring 2019 at the age of 22, having always had a passion for the shipping industry. After leaving school, I briefly went to college but didn't complete any qualifications. However, since working in the shipping industry I have taken and passed a number of exams, from the Institute of Chartered Shipbrokers and that's really helped me progress in my career.

I don't think qualifications are the be all and end-all of the shipping industry. As long as you have the basic GCSEs of Maths, English and Science, then you can do anything. Whether that's across the industry or outside. I'd never talk anyone out of further education, be that A-Levels or a degree, but I think it's important to note that there are alternative routes whether that's vocational studies while you're at work, or apprenticeships.

A typical day in my role as a Marine Information Officer involves speaking to a lot of different people. I'm the intermediary between vessel traffic services (VTS) and the local ships' agents who represent all the vessels coming in and out. My role is split into two different responsibilities. One is communicating with the agents and collating all the information they give us, and the other side is communicating all the information that we've received to the pilots, which consists of translating all the information we've got into times and locations for where the pilots need to be.

I've been aware of ABP since I was a little girl really because both my dad and grandad worked there, so I'm really proud to be working for a company that has got such a big presence in the local area.

The best part of my job is seeing things from start to finish. We'll hear about every ship arriving a few weeks in advance, and then we'll be dealing with everything involved in that -communicating with the agents, VTS, the pilots and sometimes the vessels themselves. We'll be involved at the port from when the ships arrive to when they sail, so it's interesting to see everything as it unfolds. \$

Claire is a Logistics Coordinator at RWE, a world leader in renewables.

66 RWE are in the process of building the largest offshore wind farm. Currently under construction, there are 90 turbines to be built, all which stand over 180m tall. Once it's generating, it will provide the power for 800,000 homes. The offshore wind farm is 20 miles offshore and at the peak of activity it will employ around 3,000 people in various roles.

I'm sure there are many students who maybe didn't achieve what they wanted to in their GCSE results or not quite sure if they've picked the right A-Levels or course. I was very much one of those people – my exam results were quite average. I was not particularly academic and I struggled to concentrate when sat for long periods of time with people talking to me.

My first few jobs included conference management and working in a box office, which I enjoyed, but I found myself working endless hours for a wage that was never going to make me financially independent, which was a big career driver for me. A large manufacturing company built a plant in Barton called Kimberley Clark, and I knew that they were a great employer who paid well, so I took a leap of faith and applied.

After a rigorous employment process, I was successful and started there not knowing what my role was going to be doing. However, after three days of learning to drive a forklift, it made me realise that I really enjoyed the physical aspect of work. I ended up climbing the ladder and doubling my salary that I was on at my previous role. Once I decided this was the career for me, I formalised that with some qualifications, trained myself up in multiple job roles and am now a Logistics Coordinator at RWE.

> I feel like I have the best job in the world, as I now have a career that makes me financially independent and working in the best industry in the world. I'm really keen to encourage anybody into the industry for the same reasons. **J**

Courtney is 18 years old, and a wind turbine technician apprentice at renewable energy company Ørsted.

66 Ørsted are a Danish company that develops, operates and maintains wind farms all over the world including the UK, United States and Taiwan. We're best known for our renewable energy and are the global leader in offshore wind farm development. We're also the most sustainable company in the world, which is great for us, and for those looking for a career focused on making a difference.

I've always liked hands-on work and to get stuck in so I wanted to pursue subjects that would lead to a career. Law, forensic science, and engineering interested me, so I considered studying Psychology, Biology and Maths at A-Level. However, before I made my decision, I attended a careers fair, which is where I first came across Ørsted.

I ended up leaving school at 16 to go and work there as a wind turbine technician apprentice. As part of this, I started a BTEC engineering level 3 at college, and I'm currently in my third year of the programme.

My role at Ørsted consists of me working offshore in the North Sea on the turbines. Before you go offshore, there's an intense three-week training period that includes survival, working at heights, manual handling, first aid and fire training. There are so many risks with working offshore, so safety is a priority.

Ørsted does a lot of careers fairs like WiME because we want to get young people like myself involved in what we do. I personally love working offshore and I don't know why anyone wouldn't want to do it! **JJ**



Bryony is a lead process engineer at Phillips 66.

SET I got into chemical engineering through a pretty traditional path. I loved maths and science at school and then went on to do Maths, Physics, and Chemistry at A-Level. Whilst I knew I wanted to do something that used those subjects, I didn't know exactly what that was.

When looking at university courses, I came across a Chemical Engineering degree that showed the different career paths for students and there were so many. I decided to do that degree and keep my options open career-wise. During my studies, I did two summer placements at the Humber Refinery as part of Phillips 66 and, when I left university, I secured a role as a graduate engineer there.

I've now been at Phillips 66 for 12 years and have done a variety of different roles, from looking after some of the process units on site, to planning refinery operations. I've even been fortunate enough to have an international assignment where I spent 12 months working out in Malaysia. I now lead a team of four engineers.

At the Humber Refinery, we look after our staff well and do try and do things to reward the hard work that goes in. We currently employ more than double the national average of women engineers and, given that this site employs over a thousand people, that's a lot of women on site!

We currently employ more than double the national average of women engineers and, given that this site employs over a thousand people, that's a lot of women on site!



Delyth is a chemical engineer at Phillips 66.

C At GCSE level, I really loved science and maths and that's where my strengths were. As a result, I did work experience in medicine, as that seemed like an obvious career choice for me, but I hated it. However, I was fortunate to have some good career advisors and they gave me some good suggestions on careers to consider.

I ended up trying a placement in engineering and loved it – so much so that I went on to study Engineering at the University of Wales in Swansea, then achieved a Masters Degree in Chemical Engineering.

Phillips 66 then took me on as part of a graduate placement. That was nearly 16 years ago and, in that time, I've done a huge variety of different jobs with Phillips 66. I always joke that they need to do a documentary about engineering, as we'd probably get a lot more people into the industry.

My top tip for the girls out there is do plenty of work experience because you really don't know what the job is going to entail until you go and actually get some hands-on experience and shadow those doing the job. Follow your passion - you don't want to be working for 35 years in a job you don't enjoy. Find what you want to do and go for it – and if you're lucky enough that it pays well, even better!



Delyth Willia

Jo works as a Warehouse Operative for Siemens Gamesa Renewable Energy, a leader in the renewable energy industry, working to provide the world's best offshore and onshore wind turbines and services.

•• I first started my career at Siemens four and a half years ago. What felt like a gruelling test to get a job made me realise why these processes were in place. It wasn't because I didn't have the experience of building wind turbines (but to be honest who does!) it was because Siemens Gamesa wanted to employ the right mix of people. Whether that be young or old, skilled trades or non-skilled, men or women. Their aim was always to establish an inclusive culture by employing a diverse mix of people and skills.

I felt I brought a balance to that dynamic. I initially started off my journey at Siemens Gamesa as a Packer. In basic terms, that's someone who builds a wind turbine blade using a variety of products and procedures. I had no formal training on how to read or decipher technical drawings and instructions, but I soon learnt with help and guidance.

After a couple of years, I became a Packing Buddy, which meant any new staff were mentored by myself to pass on the skills and knowledge I'd gained. However, my current role is a Warehouse Operative, which means working with new people and learning to use new equipment. Siemens Gamesa gave me the opportunity, despite me having no formal warehouse background or skills. I'd like to believe they saw my ability to learn like I did all those years ago when I became a Packer.

It's been a pleasure to work at Siemens Gamesa and the trust and belief in me has been second to none. The company is present in more than 90 countries and I've very proud to say I work for the leading provider in wind power. I'm also happy to work in an ever-evolving and growing sector, which has a positive future. This is proven by the Government's commitment to the renewable energy industry and a further pledge for our sector to increase the representation of women into the workforce by 2030. **3**



Karen worked hard to become a Senior Supervisor at KWL.

SE After showing a strong interest in woodwork at school, the careers officers suggested I consider construction. My school had a visit from Hull City Council, who demonstrated what was involved with building trade jobs. This helped me realise that this line of work was for me.

I started in September 1988 as an Apprentice Joiner with Hull City Council, alongside 21 others – 20 boys and just one girl. Being a joiner was considered very different for a girl to do at this time. I never thought I may have found it hard to fit in being a woman, I just took it all in my stride.

My career started when I got a full-time contract at a depot refurbishing empty homes ready for the new tenants. I was then promoted to supervisor in the year 2000, and then in 2007 I was transferred to KIER. doing the same role and then back to KWL in 2012. In 2018 I was promoted to Senior Supervisor.

In all my years working in construction, I've only ever dealt with one man who thought it was wrong for women to work in this field. Everyone else has been fantastic and I've made some very good friends over the years. I'd encourage any woman to go for it. I'm still in construction 33 years later which must mean something!

My advice would be to always be confident in your own ability, and just because you're female doesn't mean you can't do manual jobs. If you fancy a challenge and don't want to do the same job day in, day out – then I can definitely recommend construction. **J**

G I'd encourage any woman to go for it. I'm still in construction 33 years later which must mean something!

Natasha is a Senior Electrical Design Engineer at OSL Consulting Engineers.

CSL is a well-established and respected independent engineering and design consultancy company with experience providing specialist engineering solutions and services. Our key capabilities are applied to the energy intensive industry, so we've got a lot of experience and expertise in onshore and offshore oil and gas production.

I went to college to do A-Levels in Biology, History and Law which aren't your typical engineering subjects. When I was at college, I decided I didn't want to go to university straight away, so I started looking at engineering apprenticeships because I wanted a hands-on role and to be able to earn whilst I learnt. So, I found an apprenticeship with a local company called Dale Power Solutions, where I did an advanced apprenticeship which allowed me to go to college one day a week and spend four days in the workplace.

After my advanced apprenticeship, I moved on to a higher apprenticeship, which allowed me to do my foundation degree, and full BEng (Hons) in Electrical and Electronic Engineering at the University of Hull. After graduating and becoming a fully-qualified Electrical Design Engineer, I moved on to study part time for a Masters in Power Distribution Engineering, which I finished in August 2020 at Newcastle University, graduating with Distinction.

> In August 2020 I moved to OSL to become a Senior Electrical Design Engineer. In June 2021 I successfully became registered with the IET as an Incorporated Engineer. What I've found about my career so far is that it didn't matter what I'd done at college or what GCSEs I'd taken, it was the fact I had the drive and passion for engineering, and I really enjoyed the subject, which has led me to where I am now. 55

Tracy is a Principal Engineer at Select Plant Hire, part of the Laing O'Rourke group, a privately-owned construction company.

I always had an interest in engineering. After a chat with my tutors at college, where I studied Maths, Further Maths and History at A-Level, I decided that civil engineering was a career I wanted to pursue. One summer, I just decided to hand my CV into the local Grimsby depot of Select Plant Hire on the off chance of getting work experience – which I did – and enjoyed it that much I went on to study the subject at Durham University. I completed this placement between my third year and starting my 4th year masters, this placement enabled me to see that I wanted to work for a contracting company as opposed to a consultancy role after university and see what is involved in a civil engineer role.

As a Chartered Civil Engineer, my first job after graduating was a Site Engineer, working at Heathrow Terminal 5. Since then, I've done various roles, including becoming a Senior Engineer, then going into project management. I wasn't initially chartered, I graduated 2005 and became chartered in 2011 after continuing my professional development while working as a site engineer/senior engineer.

When I then returned to the Grimsby area, I went back to Select Plant Hire to run the business – at the same depot I'd done work experience at 13 years' earlier! More recently, I've moved back into a technical role and loving getting back into the engineering side of things looking at projects across the wider Select business.

Part of my current role is looking into innovative solutions for the Select business going forward, whether it be the design development for modular accommodation units or compliance for our welding operations. No day is the same, which is good, and the breadth of projects I'm able to get involved in is great.

My advice is that if you have the opportunity to hand your CV in anywhere, just do it. When I handed in my CV to get work experience, I didn't realise the depot was part of this amazing company. Back then I had no idea the sort of opportunities it would open for me.

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Bindiya and Charlotte are both Development Engineers at Smith & Nephew.

EE Since being at school, I've always enjoyed problem solving and designing creative inventions, so chose to study Maths, Biology, Chemistry and Psychology at A-Level. I then went to university to do a Medical Engineering degree, as it brings together Engineering, Science and Medicine.

Once I finished my degree, I joined Smith & Nephew's graduate scheme. That meant that every three, six or nine months, I was able to change what job role I did within the company and try out different areas.

I now work as a Development Engineer in wound care, which involves making products to help wounds heal quicker. I design and develop new medical products, making sure they are safe to use on people and, most importantly, how it heals the wound. I've also worked in operations and manufacturing.

If you're quite inquisitive and have got a curious mind, then engineering is something you'd enjoy. There's lots of problem solving involved and it's a very creative role. **39**

Charlotte

SET I always wanted to be part of the medical world ever since I was young. The thought of helping people progress from a state of illness to fully enjoying their lives and to be able to do everything they always wanted is an amazing feeling. So, I decided to study Science and Maths at A-Level before going to do a Medical Engineering degree at The University of Hull.

One thing I always get asked is if I did work experience. I did a placement year at Smith & Nephew when I was studying and would encourage anyone thinking about it to grab the opportunity with both hands! It's the best thing I did and helped me develop on a professional level that I never could have done with a degree alone.

I felt completely different after doing work experience. My confidence in speaking to people grew and I found it learning easier by 'doing' rather than sitting in classrooms all the time. I enjoyed it so much they couldn't get rid of me, so I ended up staying there for another four years. I now work as a Development Engineer in the research and innovation team.

A lot of people ask 'what do I need to do to work at Smith & Nephew?'. I work with chemists, biologists, software specialists, and electronics, mechanical and medical engineers, like me. We cover everything, so there's always a career opportunity at Smith and Nephew. **55**

What next?

23%

of people employed in the UK manufacturing sector are dy in women

If you are interested in a career in manufacturing or engineering, whether you are a student, already in work, or looking to return to work, there are a variety of options you can take to begin your new career.

- Talk to your careers advisor about subject choices or further education.
- Visit your local Jobcentre Plus and ask about retraining or current vacancies.
- Attend a WiME event to meet women who work in manufacturing and engineering and talk to companies about potential training and employment opportunities.
- > Call the National Careers Service on 0800 100 900.

Resources

There are many different sites you can use to look for **jobs and training opportunities** and a quick search will give you plenty of options.

We have put together a quick list of links that may also help you, including some sites that will give you plenty of background information about the opportunities for women in manufacturing and engineering.

Local Job Resources

- > Green Port Hull www.greenporthull.co.uk/jobs
- > Hull City Council jobs and careers www.hullcc.gov.uk/jobs
- > LMI Humber www.lmihumber.co.uk
- > Log On, Move On https://www.logonmoveon.co.uk/
- > Lincs 4U https://www.lincs4u.co.uk/
- > Lincs 2 https://lincs2.co.uk/

National Job Resources

- > Find A Job www.gov.uk/jobsearch
- > National Careers Service https://nationalcareersservice.direct.gov.uk/
- Find an apprenticeship www.gov.uk/apply-apprenticeship
- > All About Careers www.allaboutcareers.com
- **Cogent Skills** www.cogentskills.com

Background Information

- > Women's Engineering Society www.wes.org.uk
- > Women in Science & Engineering www.wisecampaign.org.uk
- > Humber Offshore Wind Cluster https://www.humberoffshorewindcluster.co.uk/
- > Women in Engineering www.womeng.org
- > Tomorrow's Engineers www.tomorrowsengineers.org.uk

Videos

Watch resource videos on a variety of subjects at https://www.youtube.com/user/GreenPortHull

Green Port Hull "Job Roles in Offshore Wind"

Renewable energy is a relatively new and rapidly changing sector, generating considerable ongoing investment and development, and the current labour market is starting to reflect this.

As the supply chain develops and businesses win more work, the variety of career opportunities also widens.

We are therefore pleased to offer our publication 'Job Roles in Offshore Wind' to provide an insight into the potential future landscape of our local jobs market.

Download at www.greenporthull.co.uk











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