

# Let's hear it for the girls

*With female representation in the UK engineering sector the lowest in Europe more needs to be done to encourage women into the industry. Claire Cameron reports*

DESPITE a gradual shift in the role of an engineer in the past few decades it remains an industry that is heavily dominated by men.

Engineering UK recently estimated that 1.82 million new engineers would be needed by 2022, claiming gender-balanced companies were 15 per cent more likely to perform better.

At just six per cent, the UK has the lowest percentage of women working in the sector in Europe.

And a recent study by Recruitment and Employment Confederation found more than half (54 per cent) of engineering employers believe the skills shortages has become more obvious in the last 12 months – with the lack of women applying for jobs cited as one of the main factors.

According to reed.co.uk, 120,991 women applied for UK engineering vacancies last year compared to 1,043,507 men.

But specialist recruiter Randstad CPE is hoping this figure could be about to change for the better.

Its study found women will account for more than a quarter (26 per cent) of all workers in the UK construction industry – including engineering – by 2020, and it's a proportion that 'could grow further given the right cultural change', it states.

According to the research, however, there are still many barriers to break down with a lack of awareness the greatest reason (43 per cent) preventing women from joining the construction and engineering sectors, followed by a lack of role models (42 per cent) and a 'macho' image (41 per cent).

## So what needs to be done to encourage more women into engineering?

"Well, not what we've been doing to date," admits Jessica Wade, a member of the Women in Science and Engineering (WISE) young women's board, which has seen the number of female A-level students drop from 24 per cent to 21 per cent since the 'buzz' around recruiting women into science, technology, engineering and maths (STEM) started in 1985.

WISE, which aims to inspire girls and women to study and build careers in STEM,



Waldeck's members promote the #notjustforboys campaign

is on a mission to get one million women in the UK workforce, and Wade says: "We've got to get well-trained ambassadors and experts to come out of their labs and offices to talk to and support young students in extended research projects and mentoring.

"Work experience, weekly science clubs and commitment to national challenges and competitions are an easy way for companies to take part."

For Sue Wright, managing director of Waldeck, challenging the misconception that engineering is a hostile environment for women is the industry's biggest hurdle.

In recent months, Waldeck, one of the UK's leading strategy, design and implementation consultants, has been actively involved in promoting women in engineering across social media campaigns.

This has included activities at sites to promote the UN's first International Day for Women and Girls in Science, #WomenInStem and #NotJustForBoys.

"Sadly, it has taken a long time for key players in the industry to recognise the deficit of women in engineering," says Wright.

"But steps are finally being made to attract females into the industry.

"Historically, there have been far fewer women recruited into engineering than men

– something I believe is due to fewer women applying for roles, rather than a failure to recruit them post-application.

"Perceptions must change from the roots upwards, and Waldeck engages with students early on, when they are making key decisions at school and university.

"At Waldeck we are proud to have female digital engineers working across our most prestigious projects, including Crossrail's redevelopment of London Bridge station.

"We currently have a 31 per cent female representation including senior operational directors and executive board members, a figure we are constantly trying to improve upon."

The Rolton Group also employs a number of female graduate engineers from a variety of backgrounds including project managers Roisin Clarke and Victoria Dobbs.

But when the leading multidisciplinary engineering consultancy recently advertised for its apprenticeship scheme in Built Environment Engineering it did not receive any applications from females.

And 26-year-old Dobbs, who has worked at Rolton for three years, believes more needs to be done to banish the idea of engineering being a man's world.

The key to this, she says, is readdressing

the education system from an early age because schools and universities have an important role to play in encouraging more women to consider a career in engineering.

"In school, girls are expected to do home economics while boys do woodwork and technical drawing. Those barriers need to be taken away and all subjects should be opened up to boys and girls.

"I also think there should be more talks in schools to encourage girls to seek out a job in engineering and the construction industry. It could open their eyes to something they hadn't thought about."

Meanwhile Wade, who works closely with the Institute of Physics, Royal Academy of Engineering, STEMettes, Greenlight4Girls and the UK Space Design Competition to promote equal opportunities for school girls, also believes unconscious biases play a big part in holding back women from taking a job in engineering.

"Girls are just as excited by developments in science and engineering as boys," she says.

"But we are a generation of people with an uncontrollable amount of unconscious biases against people of different genders, races, sexual orientations, nationalities, disabilities, religions and backgrounds.

"From an early age girls are told careers in STEM are not for them. Teachers and parents are not supportive and they do not connect to jobs in the sector.

Wade admits the challenge will only be won if schools take ownership of gender balance.

"I don't think schools are doing a good enough job of integrating careers advice into the curriculum and poorly equipped careers advisors cannot deal with questions about the engineering industry, so students have totally unrealistic expectations about how to get into these roles.

"I'd love to see support networks for school students being set up nationally, so if you are the only girl in your further maths or physics class, you know that you're not alone."

## Breaking down the barriers – why women should choose engineering

"Careers in engineering offer some of the most exciting challenges and opportunities possibilities in the job market," said Wade.

"From developing video games and theme park rides to designing cutting-edge technology and building sky scrapers, UK engineers are in demand, and without proper training or education, women have been closing doors to this career for decades."

Wright was equally in the hunt for a



Jessica Wade

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challenging job and first joined Waldeck in a business development role after beginning her career in logistics.

"I was not concerned by my gender when applying for roles, and this is an attitude which Waldeck is actively promoting amongst young women today," she says.

Despite her dad working as a project engineer and being exposed to the industry at a young age, Dobbs did not envisage a career in engineering until towards the end of her Earth Science degree.

But after completing her Geology degree she went on to do a Masters, which included studying engineering, geology and construction engineering, before joining the Rolton Group as a graduate engineer.

But she says she has never experienced any sexism or negativity in her role.

"Women are very successful in the industry. There are so many opportunities and job variability," she says.

"I think it is more down to how you speak to people, how you interact with them and being good at your job rather than it being down to being male or female. I think my personality makes me respected amongst all of my peers. I've always received positive encouragement. I've not experienced anything in a negative way. It is just not an issue at Rolton.

"Sometimes you will turn up at a building site and someone will say something like 'Oh you are female, I wasn't expecting to see you' or 'it's nice to see a female in the field', but

there's no negativity attached to it or concern that we can't do our jobs."

Her 27-year-old colleague, Clarke, went to an all-girls school where practical subjects were not a large focus but, having found she enjoyed maths-based subjects, decided she wanted to do an engineering degree.

"I wasn't really pushing to do a Masters," explains Clarke, who studied for a Bachelor's degree in engineering and civil engineering in Ireland.

"So instead I got a job in the planning department at Cambridge Council.

"It was only maternity cover for a few months but it was a stepping stone before I took on a nine-month job in a fire system lab, which gave me the practical construction experience before I joined Rolton.

Clarke now believes apprenticeships could hold the key to solving the current skills shortage and attract more women to try out the sector.

"So many people are forced into doing university degrees but apprenticeships are a really good alternative way of gaining a route into the industry in a more practical way," she says.

## Closing the gender gap

With reports like EY's 'Fast Forward' claiming the UK's engineering sector is 117 years from gender parity and equal pay and the Young Women's Trust apprenticeship report revealing female apprentices earn £2,000 a year less than men, "it's the ideal time to make some pretty big changes," says Wade.

Both Clarke and Dobbs are among the first batch of senior women engineers to come through at the Rolton Group and the duo are already aspiring for the top jobs, admitting there is an element of wanting to succeed more because they are women.

Neither believes their gender will stop them reaching the summit.

"We have already had promotions and been encouraged," says Dobbs, who, along with Clarke, was promoted to project manager six months ago.

"I don't think we would ever not be promoted because we are female."

With emphasis in the media and the industry focused on encouraging more women into the engineering sector, Clarke believes there is plenty of hope for future success. At the moment there is a lot of momentum on encouraging more women into the industry.

"We just need to keep that going.

"If that focus continues throughout our careers then when we start to apply for the more senior roles I cannot see gender issues being a problem at all." ■