Outdated stereotypes must be ditched so that many more schoolgirls can be won over to the fact that engineering offers them exciting careers. Liz Wells reports on initiatives under way

As a profession, engineering offers pretty much everything. Good pay, the opportunity to travel or to be desk-bound if that’s more your style, and management potential. Despite these attractions, the profession is still struggling to attract recruits, especially women, who make up only 6.7% of engineers.

There is a general consensus that the main problem of attracting women into the profession lies with the educational system. Young girls don’t fully understand what an engineer is and as a result do not see the profession as an option for them.

Dawn Bonfield, executive vice-president of the Women’s Engineering Society (WES), explains: “There is one section of students who don’t know about engineering at all. Then there’s a section who know about it, have had talks at school, but don’t see it as a career for them. They won’t equate what they have done and what they have enjoyed as being for them – you need to keep giving them the reaffirmation that you are talking about them when you’re talking about a career in engineering.

“We need to do something fundamentally different at the schools level to make sure girls know more about engineering and that it’s a real career choice. Companies have a massive part to play – they need to showcase their exciting projects so girls can see what they could be doing in the future, that you can’t help but get excited about.”

Another battle the profession faces in attracting women is getting over the stereotypical view of what an engineer is and what they do. There is an outdated perception that engineers are male and that the job involves getting your hands dirty. But this view breaks down once people meet women who work as engineers and see the range of roles on offer.

Dr Helen Meese, head of engineering in society at the IMechE, says: “It’s not all about hammers and spanners and oily rags. We have to get beyond these perceptions by showing women different jobs in the industry.”

The misleading stereotypes are often perpetuated by the media, which also misuse the word ‘engineer’. The WES is calling on people to be careful to identify the type of engineer they mean.

Bonfield says: “We call a lot of people ‘engineers’, but there is such an array of engineering jobs – there are 800 on the government’s career page. We need to be clear about the difference between engineering and maintenance – that is a real off-putter, because it has negative connotations.”

The consensus is that the best way to combat these issues is to get into schools as early as possible and talk about the profession to youngsters.

Companies that do manage to attract female engineers can find it difficult to retain them. Women leave engineering for a variety of reasons, but mostly because they take on more of the caring responsibilities in the family. Once they leave the profession, it can be hard to get them back. But legislation on parental leave coming in next year is set to change things significantly.

Helen Wollaston, director of the Women into Science and Engineering (WISE) Campaign, says: “This new legislation means both men and women will be taking leave in a different way, and that’s an opportunity for employers to look at how they support their staff, particularly through having children, to make sure they want to come back.

“Work needs to be more flexible for women. And employers need to offer better support while women are on leave and afterwards too, so they feel they are still employed and still part of the employment process.”

The WES is working on a project with Bath University that aims to find out where alumni from the 1980s are now and to discover what it would take to get them to return to engineering. Bonfield explains: “It is difficult to get back into engineering...
after a career break. We find a lot of engineers go into education and teaching, or go into lower-paid work.

"There are no programmes in place to find or recover these women. They have so many skills and so much experience that they could be valuable to business. We've lost track of them."

Other aspects, such as work and company culture, also play a part. Wollaston says: "These issues are about being accepted as professionals in their own right - it can be isolating being the only woman in a team. I don't think it's deliberate, but because they have been male-dominated industries some changes need to be made to make them more inclusive. It's not just about attracting women, but about making sure women have a positive experience when they get there."

She says companies need to introduce support networks for women and to provide training to ensure that practices and behaviours in the workplace are not unintentionally putting barriers in the way of them progressing.

After years of debate, all involved seem to have concluded a more joined-up approach is needed. Meese says the IMechE would like the government to work more closely with industry and further education institutions to ensure that the pipeline of students, particularly women, is filled in the coming years.

"We need something like 87,000 a year to fulfil the needs of British industry," she says. "We need government to work alongside industry to determine what the needs are - whether it's apprentices or professional engineers - and focus through the Department for Education on driving that forward, and to push Stem subjects through schools."

The WISE Campaign agrees that collaboration is the way forward and was happy to see the government take leadership on the issue by convening a meeting at Downing Street last November that was attended by the main organisations and companies. Wollaston says: "We want to take that forward and work with the government, as well as universities, colleges, schools and the media, so we have a more joined-up approach, because there are some great things going on but it's fragmented.

"Our goal is to see that 30% of the workforce will be female by 2020 - we will get there by working in collaboration."

Talking to women working in engineering, it is clear that things are improving, and attitudes are changing, but far too slowly. The profession needs to become cleverer at getting positive messages across. In future, they hope there will be collective and prolonged effort put into the education sector to help promote careers in engineering.

Women working in the profession also hope that one day more of them will hold more senior positions - they only make up 6% of senior roles - and would like to see the pay gap of 22% reduced. However, they are realistic and realise this won't happen overnight.

Meese says: "It will be another 15-20 years before we see this happen. If we can set the footings now and build a foundation for the next generation, we hope they can accelerate the process."

Despite years of debating the problem, it is obvious there is still a great deal to be done by employers, the education system and other institutions. Bonfield says: "It's like a hurdles race, with the end of the race being a career in engineering. The first hurdle is stereotyping at school and gender-stereotyped toys. Getting through university unscathed is another hurdle, then there is the maternity/career-break hurdle. Every time someone falls at these hurdles, there are fewer who make it to the end of the race.

"The only way you can stop that is to have so many people crowding on to the start line, and running at the first hurdle, that you will start knocking the hurdles down. At the moment all we are doing is lowering the hurdles, not knocking them down - we're just making the best of the situation."

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IF WE CAN SET THE FOOTINGS, WE HOPE THE NEXT GENERATION CAN ACCELERATE THE PROCESS

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