

OPINION

HOW ENGINEERING CAN TAKE ITS PLACE IN THE SPOTLIGHT

Engineering is at the core of modern society, underpinning every sector and contributing at least £280 billion to the UK economy. More young people from a diverse range of backgrounds are needed in the profession to ensure that the UK maintains its place as a global leader in innovation. John Hayes CBE MP, Minister of State for the Department of Transport, outlines how the government-led Year of Engineering in 2018 aims to raise awareness of the excitement and variety that engineering offers.



The Rt Hon John Hayes CBE MP

The American president Herbert Hoover, who began his career as a mining engineer, once travelled to Oxford to debate whether the city's university should include engineering in its teaching. He argued that our country lagged far behind his own in the standing that we afforded engineering, and that "not until Oxford and Cambridge recognised engineering as a profession equal to others would engineering secure its due quota of the best brains".

Recounting the experience later, he wrote that: "Soon after the Oxford discussions, I returned to America. At my ship's table sat an English lady of great cultivation, who contributed much to the evanescent conversation... We were coming up New York Harbour at the final farewell when she turned to me and said: 'I hope you will forgive my dreadful curiosity, but I should like awfully to know – what is your profession?'"

"I replied that I was an engineer. She emitted an involuntary exclamation, and 'Why, I thought you were a gentleman!'"

Hoover did not let this experience dampen his enthusiasm for promoting education in engineering. As he put it: "engineering training deals with the exact sciences. That sort of exactness makes for truth and conscience. It might be good for the world if more men had that sort of mental start in life."

I agree, adding only that it would be better still for the world if more women and young people from black, Asian and minority ethnic (BAME) backgrounds received training in engineering.

In fact, Hoover's vision is mirrored in the core vision of our landmark campaign to make 2018 the Year of Engineering. The government is joining forces with hundreds of organisations to boost the standing of engineering as a profession and increase the numbers of women and BAME people choosing engineering as a career.

It makes sense to choose 2018 as our Year of Engineering. In transport alone – my field of responsibility – 2018 is the year

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that Crossrail, Europe's largest engineering project, opens to passengers; it's the year that we complete Thameslink; and the year that construction begins in earnest on HS2 (High Speed Two), which, in inheriting Crossrail's mantle as Europe's biggest project, will do for the country what Crossrail is doing for London.

These are just a sample of the government's colossal infrastructure investment programme, bigger than any in living memory. However, it is not just the scale of what we are seeking to achieve now; 2018 heralds a new era of engineering of all kinds. We are anticipating – and already witnessing – breakthroughs in medical, space, automotive, food, agricultural and other fields of engineering, many of them fuelled by the rise of big data, machine learning and artificial intelligence. The engineer of 2018 and beyond will be as likely to wield a virtual reality headset as a spanner.

So, one might say that there has rarely been a better time to be an engineer in Britain. Yet paradoxically, we also face a serious shortage of people entering and remaining in the profession. The engineering profession has said that it needs 265,000 skilled entrants a year, every year, until 2024, simply to keep up with demand, because so far nothing like that number of people are entering the industry. Half of engineering companies say that the shortage is having a significant effect on productivity and growth.

That is bad news for engineering and bad news for Britain, and it will make achieving our infrastructure ambitions much more challenging. Yet for some, it is a particular

loss. There are those in our society who would thrive as engineers, but for a variety of reasons fail to break into the profession. Such lost numbers means that only one in eight engineers is female – one of the worst ratios in Europe – and only one in 20 is non-white.

The Year of Engineering is our chance to turn this around, to get many more young people from all sorts of backgrounds inspired by what they could achieve. We want recruits of all ages to join the industry, but we know that students encounter the biggest barriers to entry while they are still young. Before they even start secondary school, many girls start to describe engineering as a job for boys. Shortly after, they are expected to make subject choices that will define their careers, often inadvertently barring themselves from pursuing an engineering apprenticeship or university course.

Next year, as pupils in schools and colleges up and down the country choose their future careers, I want engineers and engineering firms to speak up, loud and clear, that engineering is for everyone. I want companies to open their doors for student visits and work experience. I want engineers to speak at school assemblies and careers fairs. I want young people and their families to take a closer look at engineering, and to discover that the profession is about imagination, creativity and opportunity. A hundred years or more since his visit to Oxford, I want us to say afresh with Hoover that: "It is a great profession. There is the fascination of watching a figment of the imagination

emerge through the aid of science to a plan on paper. Then it moves to realisation in stone or metal or energy. Then it elevates brings jobs and homes. Then it elevates the standards of living and adds to the comforts of life. That is the engineer's high privilege."

Over 300 organisations have already pledged their support, and in January we will be launching the campaign with a week of events in schools, museums and communities across the country. A year of engineering open-door days, exhibitions, school visits and a great deal else will follow. There is much to be done, and by our enterprise and endeavour much we can do, and so make the Year of Engineering memorable not just for 12 months but for the future it shapes, crafted by a new generation of engineers.

BIOGRAPHY

The Rt Hon John Hayes CBE MP was reappointed as Minister of State at the Department for Transport following the general election of 8 June 2017, a position he has held since 15 July 2016. The position includes responsibility for transport skills, and he is the lead minister for the Year of Engineering. He has been Conservative MP for South Holland and The Deepings since 1997.

The Year of Engineering launches in January 2018. To find out more, visit www.dft.gov.uk/year-of-engineering-2018 or follow @YoEgovuk on Twitter.