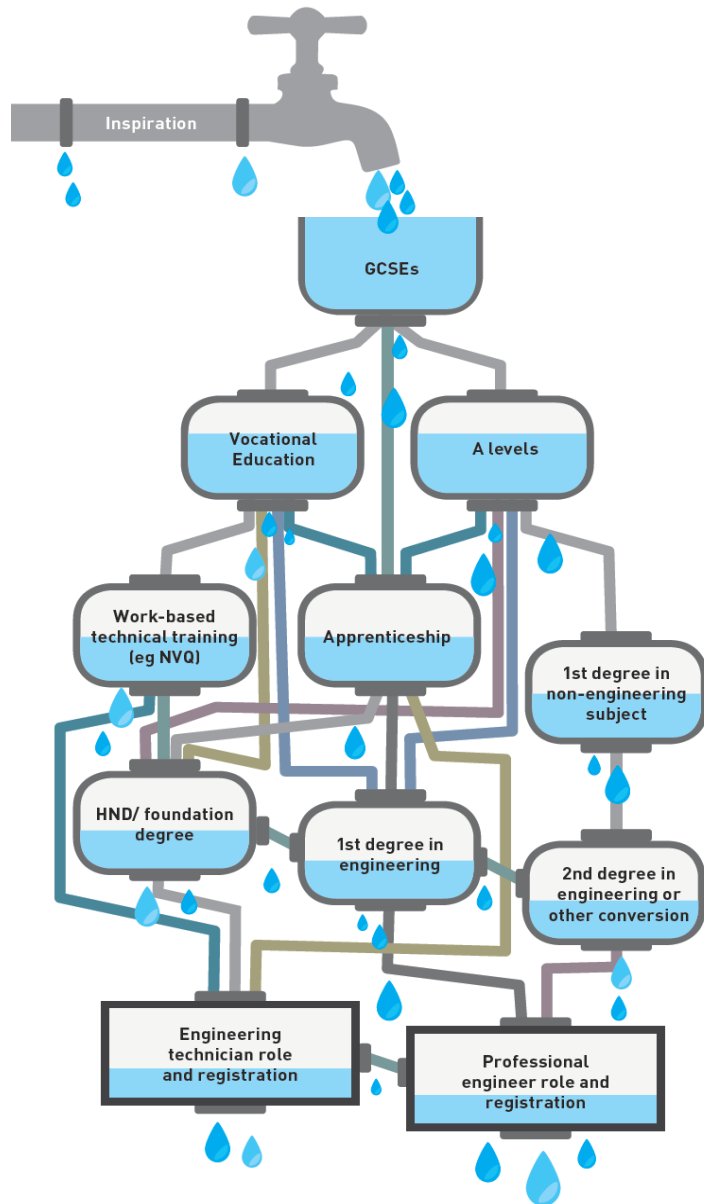




Professor John Perkins' Review of Engineering Skills





The challenge

Engineering is pervasive

...engineering drives technological progress

...engineering skills are in demand throughout the economy

It would benefit the economy to substantially increase the supply of engineers entering the labour market

•The report makes 22 recommendations for action by Government, the profession and industry across the engineering “supply system”

•A call to arms:

“It is time for concerted action by the profession, industry and Government, to achieve the goals for engineering which we all share.”



The Government response

Immediate impact

- £30m for innovative proposals from employers to develop engineering skills in areas of shortage

Inspiration

- Tomorrow's Engineers Week: partnership of 70 organisations
- £250K to develop Tomorrow's Engineers employer engagement for nationwide roll out

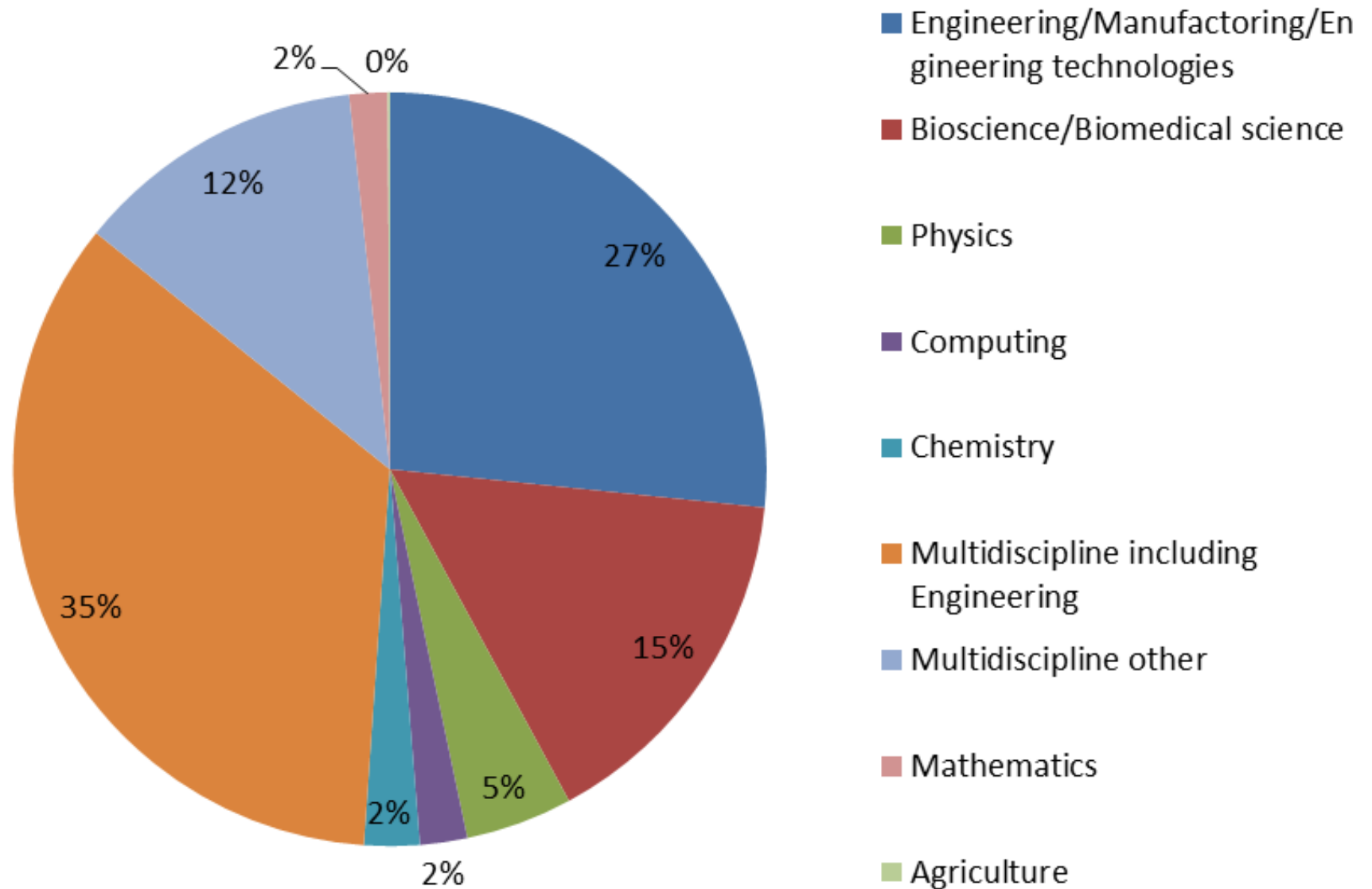
Vocational Education

- Trailblazer Apprenticeships in engineering
- £18m elite training facility at Manufacturing Technology Centre, plus High Speed Rail, Nuclear, ...

Higher Education

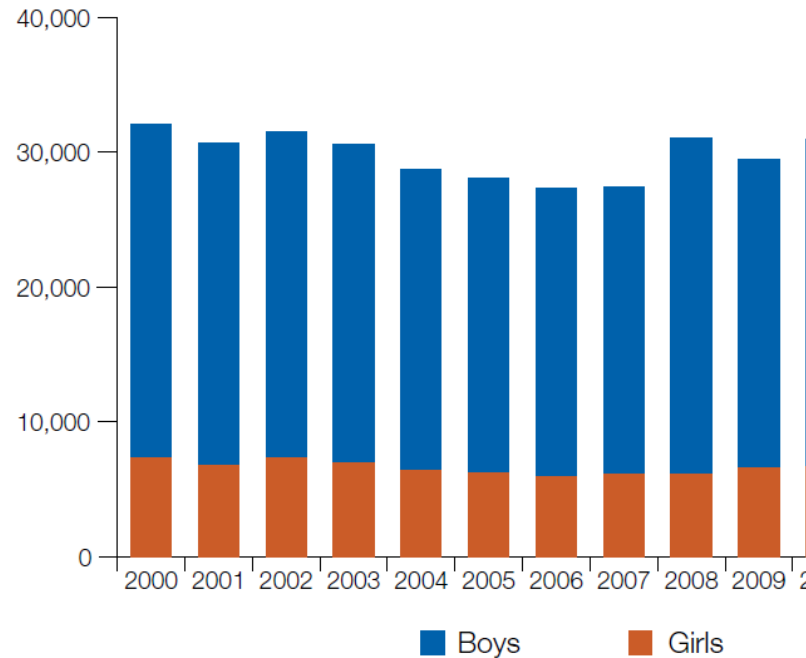
- £200m investment in STEM teaching capital fund
- £185m for teaching in high cost subjects, including engineering
- ELQ exemption for part time students studying engineering

Total STEM capital 2015-16 requested by subject group

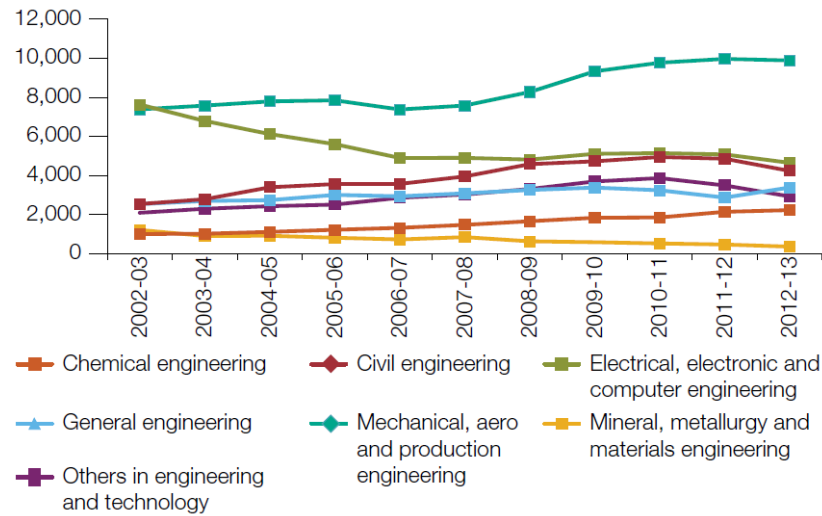


UG Recruitment – a Zero Sum Game?

A-level physics candidates by gender²⁵



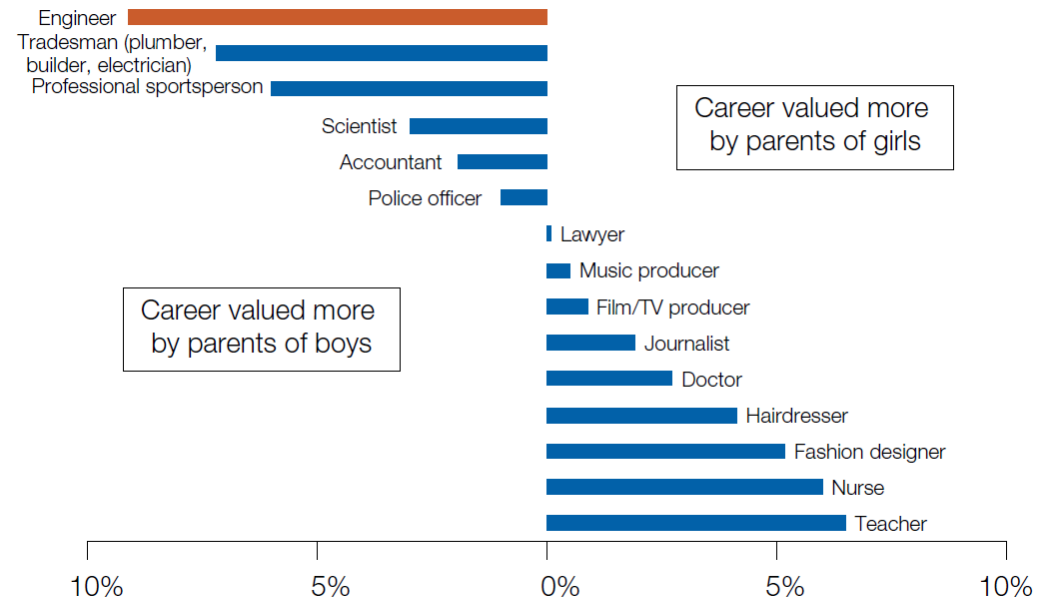
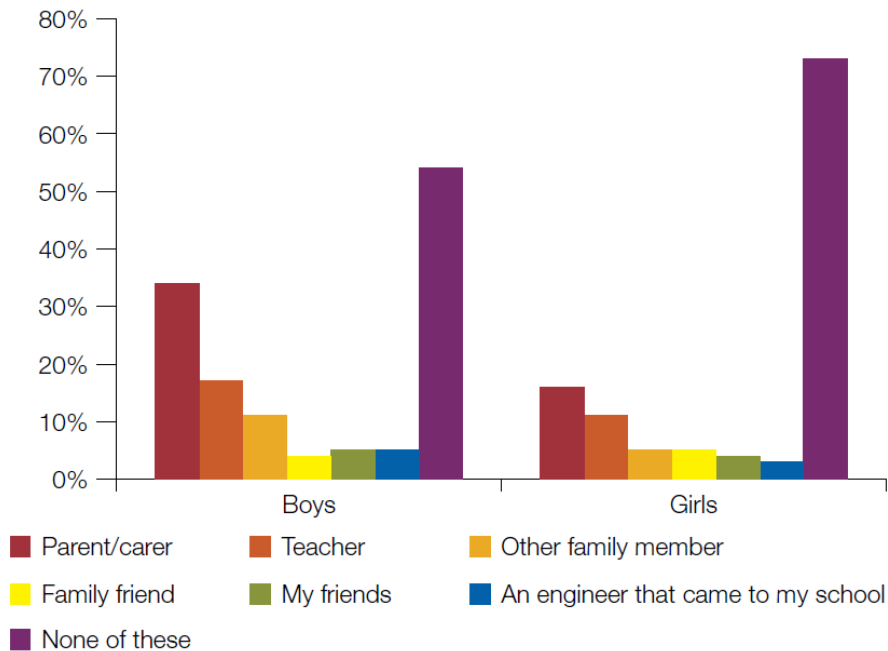
UCAS acceptances in engineering and technology 2012³³



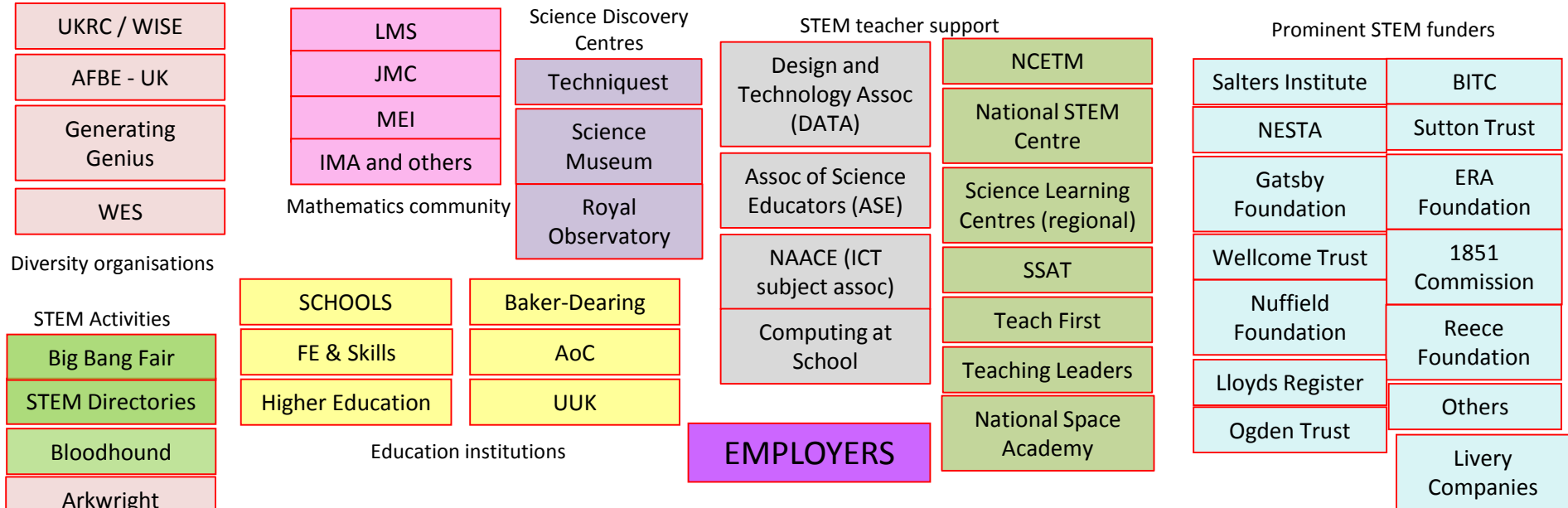


Inspiration – how are we doing?

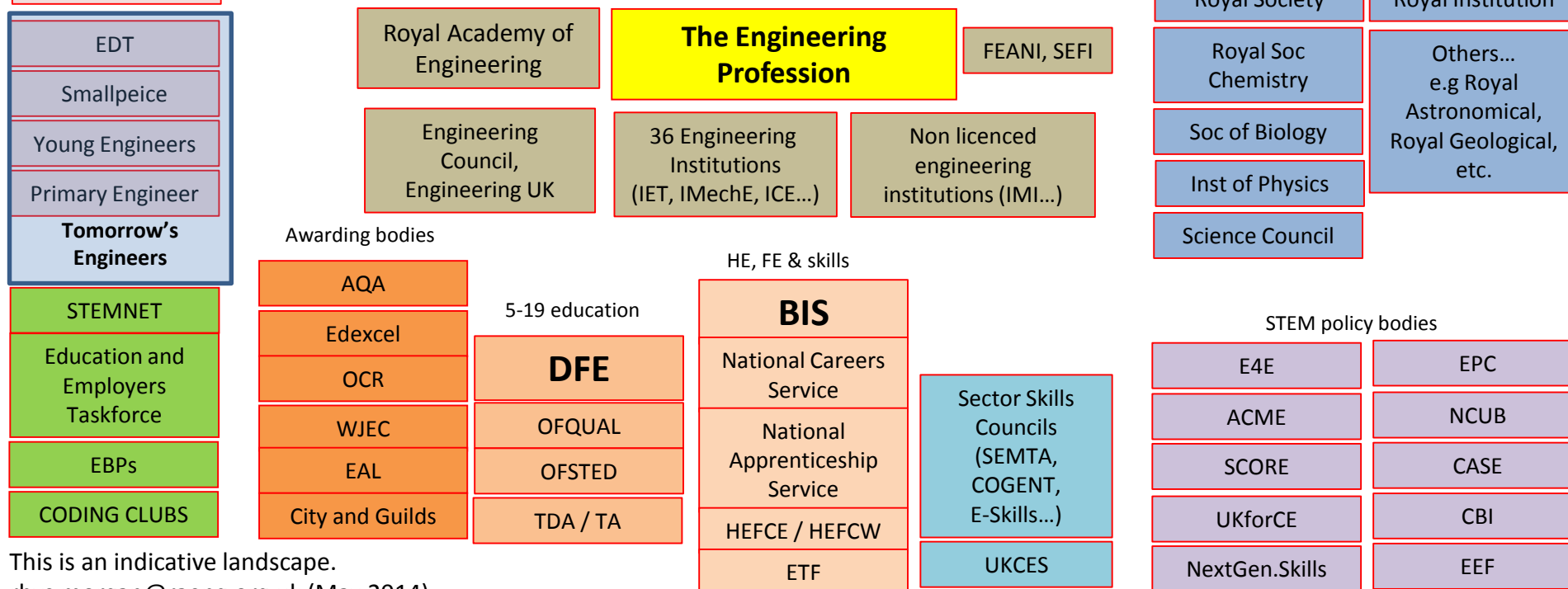
Who has encouraged boys and girls to consider a career in engineering?¹⁴



Which career would parents most like their child to pursue?



STEM EDUCATION STAKEHOLDER MAP



This is an indicative landscape.
 rhys.morgan@raeng.org.uk (May 2014)

Tomorrow's Engineers database

- Open access database to highlight school engagement

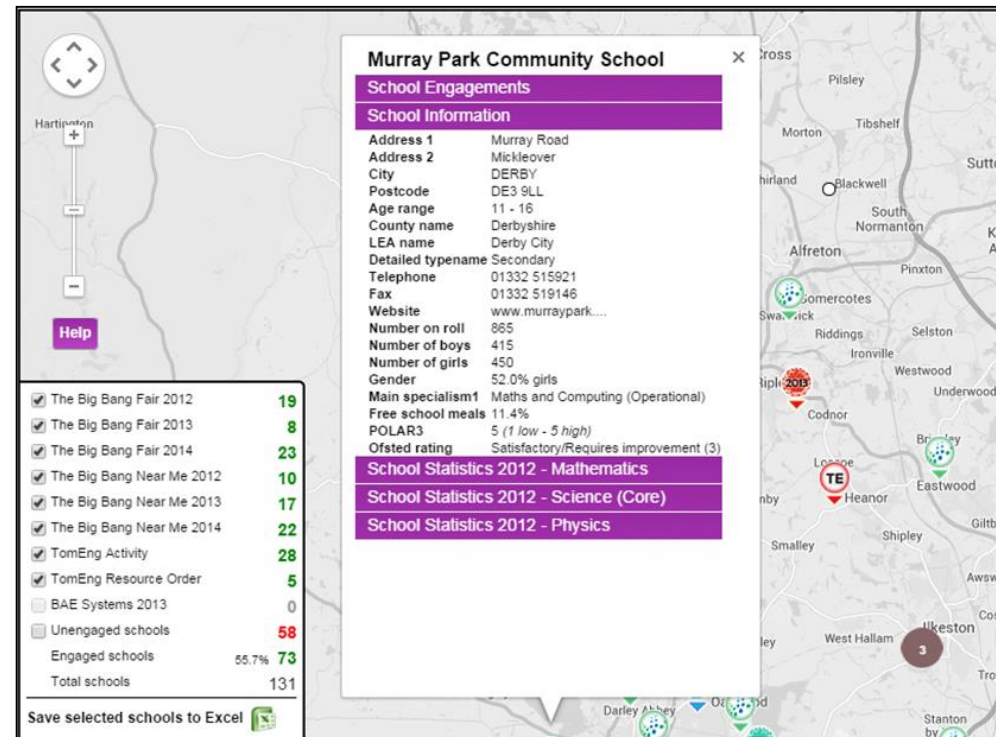
- Identify local schools

- Prevent duplication of activity

- Highlight low attaining schools

- Identify schools which are hard-to-reach

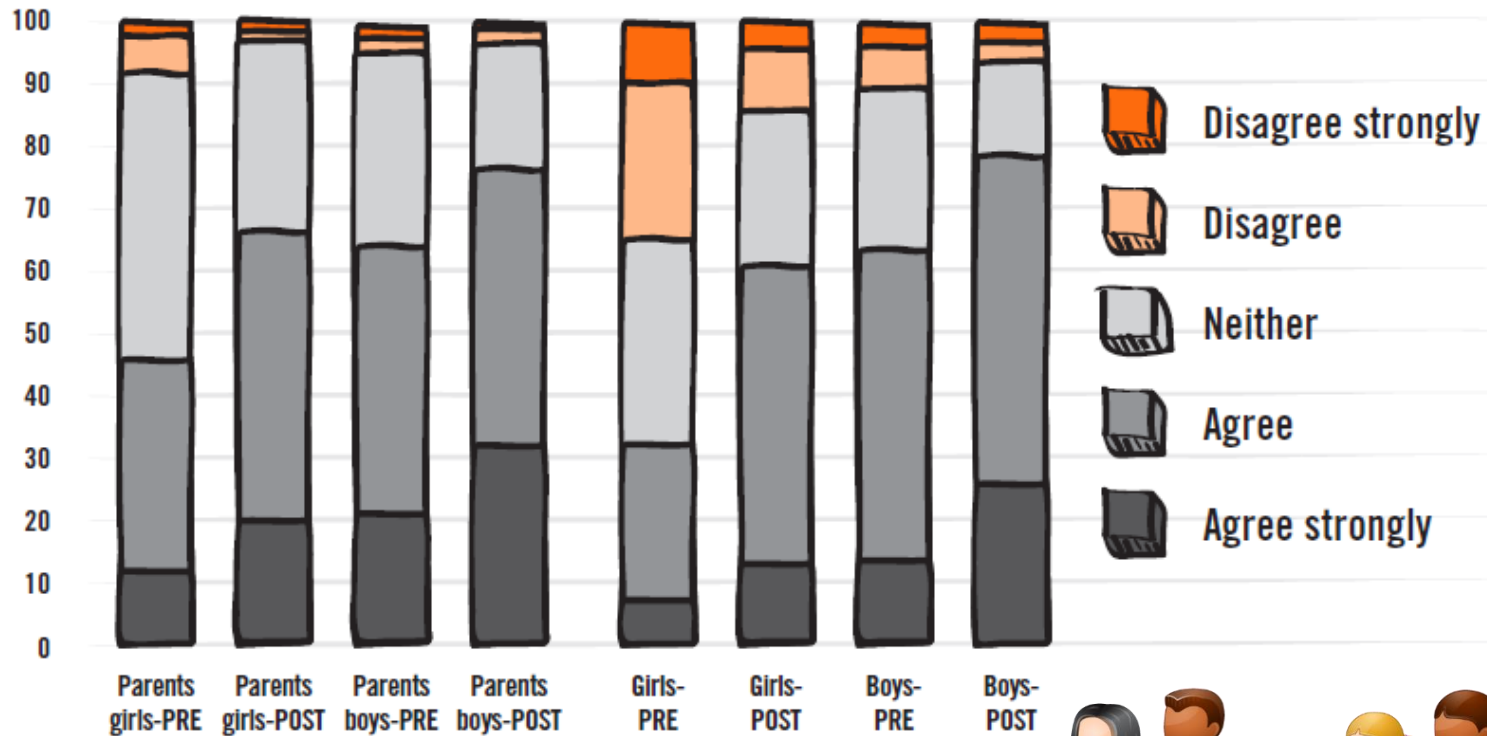
- Success will be in the usage by all stakeholders



Informed opinions of engineering

PARENTS - I would encourage my child to go into Engineering

CHILDREN - I would consider a job in Engineering



Base: Parents (1007)

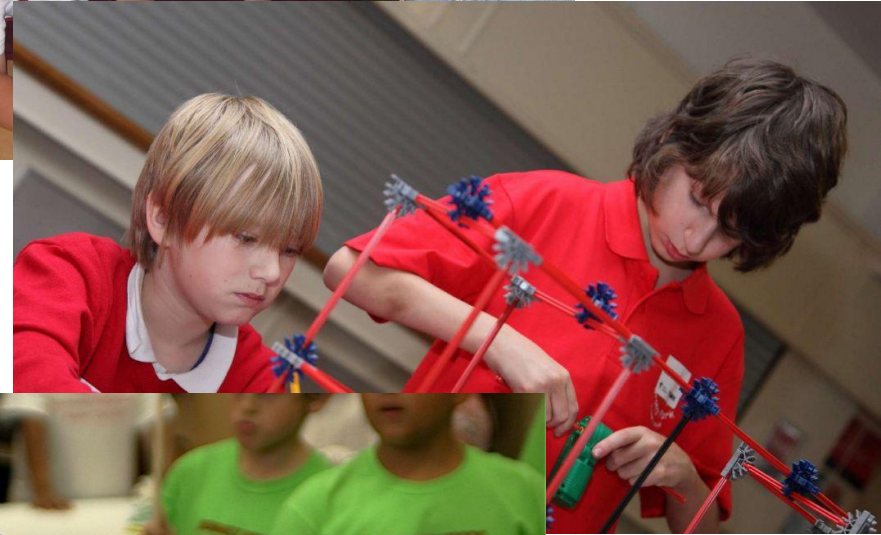


Base: Children (1007)

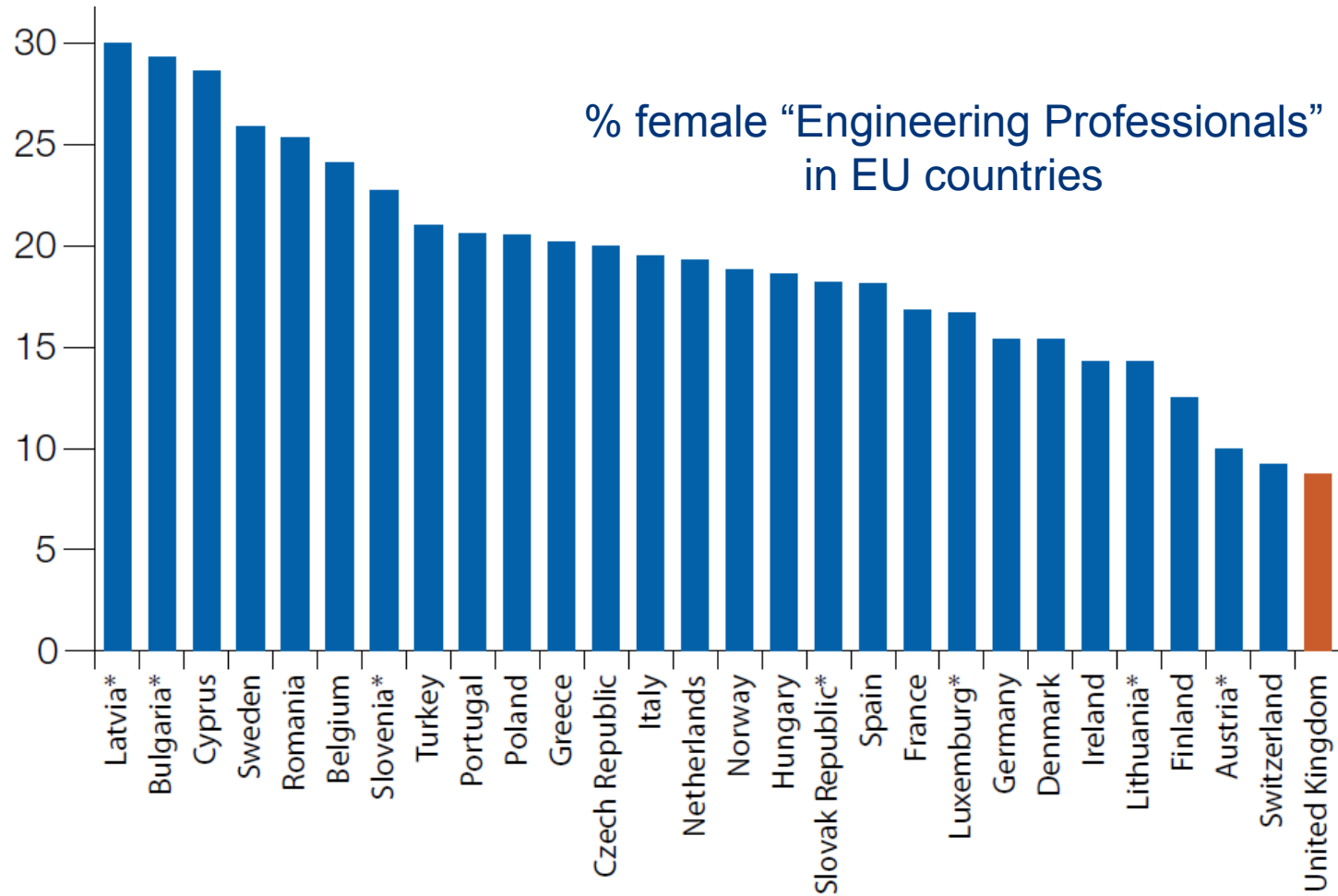
Primary Engineer

is a not-for-profit organisation with the aim of encouraging more young people to consider careers in STEM related professions.

Their vision is that girls and boys from a very early age will aspire to becoming designers and makers - the engineers of the future

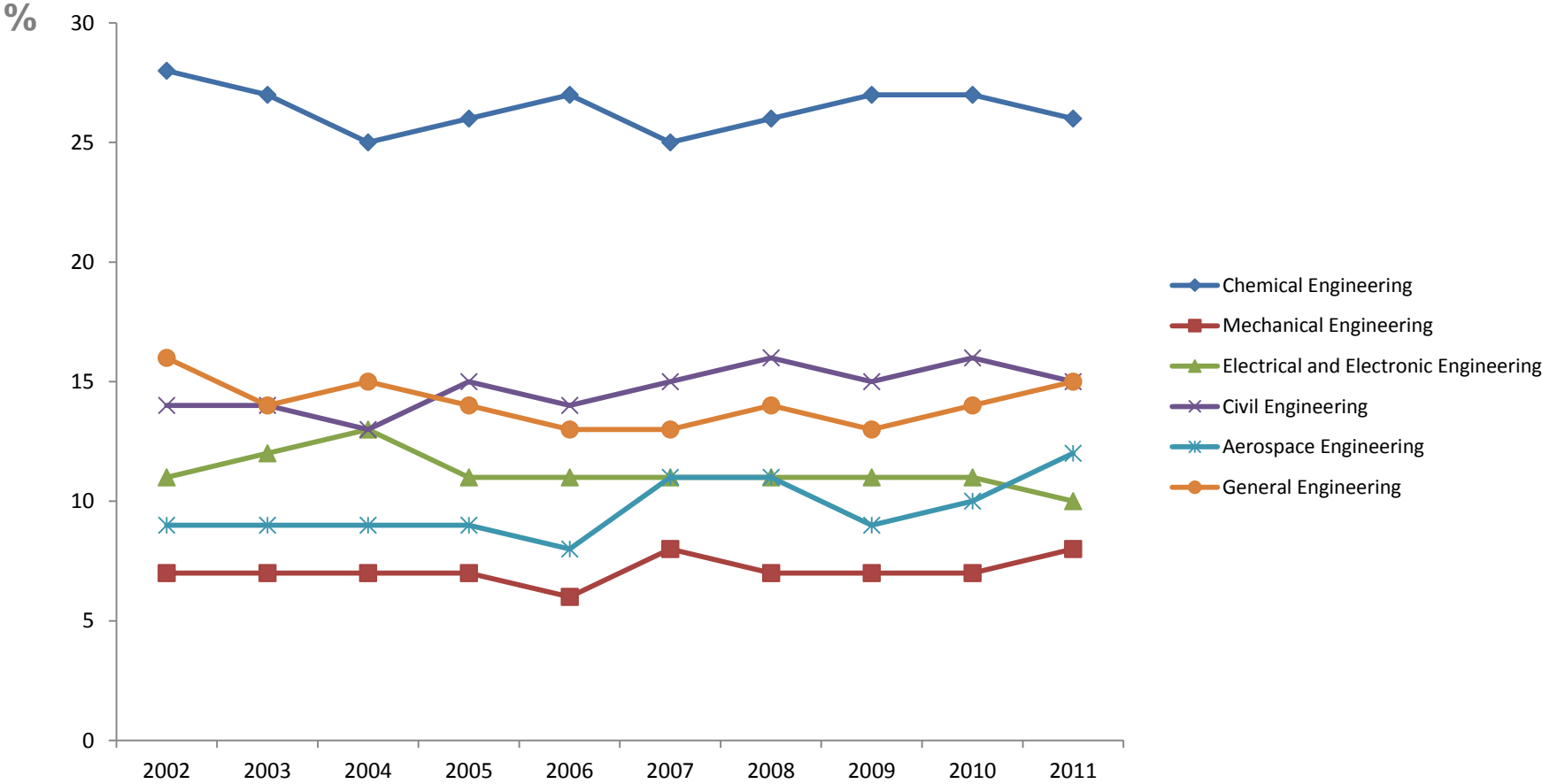


Women and engineering... the challenge



Female undergraduates

UK Trends 2002 - 2011





**your
life**

Your Life

A new government campaign to boost the numbers of young people, especially women, studying mathematics and physics was launched on 7 May by the Chancellor, George Osborne at the Science Museum.

Your Life includes:

- **Call to Action:** over 180 organisations have pledged concrete action to increase female participation in technology, engineering and physical science
- **Student- facing campaign:** from September a business-led campaign to increase the number of girls choosing maths and physics A levels and to change young people's perceptions of maths and science
- **Maths and Physics Chairs:** business sponsored post-doctoral graduates to teach in schools and spread subject expertise. Thirteen companies so far have signed up including Barclays, Tata Consulting, Nationwide, BAE and GlaxoSmithKline



Engineering Skills: Perkins Review Progress Report



November 2014

One year on....

Over the last year, Government has worked in partnership with the engineering community

Task and finish groups have facilitated concerted action between employers and educators to boost engineering skills supply across schools, colleges and universities

Progress report written in partnership with the engineering community demonstrates the impact of collaborative action

Going forward: we need to sustain partnerships & momentum. The engineering community has set out its commitment to collaborate with industry and Government to undertake the long term work needed



Task and Finish Groups

Increasing employer engagement and impact with the education system

1. Experiencing Industry in Schools

- Teacher Industrial Partners Scheme: enabling teachers to gain industry experience
- Projects and documentation to support employers offering placements

2. Cutting Edge Skills in Further Education

- Enabling practising engineers to teach in further education on a part-time basis
- Virtual learning environments to deliver contextualised engineering content

3. Employer Engagement in Higher Education

- Academic credit for placement activity to stimulate student demand
- Large employers engaging their supply chains in placement programmes
- Active, central hub to enable information sharing between universities and businesses

4. Specialist Skills at Postgraduate level

- New and sustainable shared funding models
- Postgraduate information portal for engineering

For more information contact Claire Donovan: claire.donovan@raeng.org.uk

The components of the solution: how it all fits together

Supply-side solutions
designed to
open up access to the career

Building demand by
making the
career more appealing

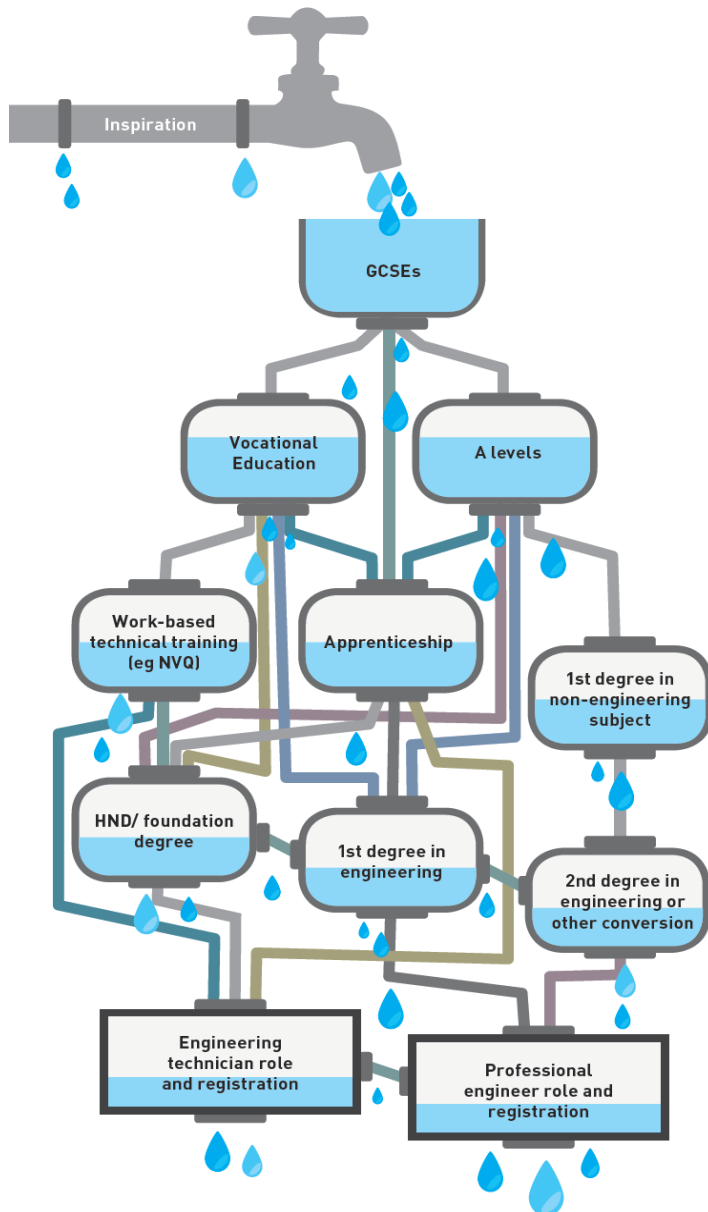
Public affairs:
to lobby for
structural
change e.g.
funding for
career switchers;
incentives to
delay retirement

Industry:
Target talent not
qualification;
create more
pathways
including
apprenticeships

Advertising
& Branding:
Build
awareness
and appeal

PR & Social
Create
fame and
improve
the image
of
engineers

Tomorrow's
Engineers
Give young
people a
positive
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