

Public Image of Engineering Professions

... In the Post-Truth Era

Talk at ...

UK Design Forum

University of Manchester, UK.

16may19

Prof. Ian Phillips CEng, BSc(hon), FIET, FIMA, SMIEEE.

Engineering Forefather (Retired Dec16)

Formerly: Principal Staff Eng'r. @ ARM Ltd, UK

Visiting Professor at ...



Electronic Systems: The Science That Delivers *Magic* ...

- Microelectronics is the **pinnacle** of mankind's ingenuity in the manipulation of matter. It ...
 - *Has enabled us to deliver such wonderful things!*
 - *Is Dependent on Mathematics, Physics and Chemistry*
 - *Is what humans can achieve by reusing the ingenuity of our predecessors ...*

“Standing on the shoulders of giants” (Isaac Newton)

- But though it is very clever ...
 - *We know it is not actually Magic!*
 - *It is achieved by Ingenuity and Labour*
 - *And as its technologies continue to evolve, so must its Methods and Tools ...*

“Any sufficiently advanced technology is indistinguishable from Magic!” (Arthur.C.Clarke)

... Surely Engineering must be The Most Fascinating subject in the Public Eye !



So Do Our Achievements Speak For Us ?

Engineering UK 2011 - report

P18

Executive Summary

Perceptions of engineering

- Public perceptions of engineering and engineering's role in tackling climate change are cause for concern. When surveyed, 92% of men and 84% of women said they think engineering plays an important role in tackling climate change. However, when asked what engineering developments of the last 50 years had had a significant impact on their lives, 52% of men and 71% of women couldn't name one.

... Science and Engineering made the world we live in:

... Yet Most People don't see it, and have no idea what "We" do in it!



Alarmingly Low Opinion of Science and Engineering

- 2016: Michael Gove (running for PM): "People in this country have had enough of experts."
- 2017: BBC Climate Change debate pitched Lord Lawson ex Chancellor, with no scientific qualifications; against Sir Brian Hoskins, chairman of the Grantham Institute for Climate Change from Imperial College. Confusing Science with Opinion.
- 2018: Unfounded claims of the near-term availability of Autonomous Vehicles
- 2018: TSB Banking Crisis (Public & Business belief that Software is Easy)
- 2019: Boeing 737 MAX System Failures

... There are 'daily' examples where scientists are casually blamed for failure of systems

YET: Politicians and the Man/Woman in the street have little confidence in the word of "Experts"; preferring simple clear messages from authoritative-sounding people, expressing their frequently uninformed opinions !



A Sorry Situation ...

- Despite the huge and obvious contribution that engineering has made and continues to make for society; the roles of the Engineer, Scientist and Technician in delivering this has become invisible to society.
- There are indications that this level of public ignorance is already adversely affecting the economic opportunity and even security of the nation.
- This situation has effectively taken the Engineering Profession into public disrepute ... so, the IET's mandate compels it to act to remedy this.
- However, this is an opportunity for the IET to take the lead in coordinating appropriate Engineering Institutions in a Public Education program with the objective of producing a short- and long-term remedy to this situation

From: Document "CO(18)19" at www.theiet.org/about/governance/council/council-papers-and-minutes/thursday-14-june-2018/



We are The People...

- Government sets Strategy, Budgets and Priorities; but are Greatly Influenced by the Opinion-Makers ...

- The Media, Legal and Financial communities*

... The Adult-Public is the source of all of these!

- Only 27% of UK Population has a degree and only 17% of Degrees awarded are STEM
- Around 3% of the UK Population has an Engineering degree; but only half are working in Engineering
- Of 650 MP's only 26 had STEM degrees (2007) ... None were in the Cabinet (Government).

... They assign value to us and what we do ... without understanding anything about it!

The most popular 2018/19 undergraduate courses



THE KNOWLEDGE ACADEMY ANALYSED RECENT FIGURES FROM UCAS

DESIGNED BY REBOOTONLINE.COM

The Post-Truth Era

- “A political culture in which debate is framed largely by appeals to emotion and by the repeated assertion of talking points whose factual rebuttals are ignored” (*Wikipedia*)

- *What hope: Government plans for Data-Based Decisions and Knowledge-Based Economy*
- *What hope: The Great Brexit Debate (Sorry, it had to be mentioned)*

... As our technical achievements have ceased to speak for us, then the roles of Engineer, Scientist and Technician have been deprecated in the Public Eye.

- As Member of IET Council, I tabled a Discussion Document (Jun18) ...

- *Highlighting the issue of Engineering’s Public Image ...*
- *Suggested that the IET was negligent in letting the Professional Engineering and Scientific roles it represents drift into Disrepute!*
- *Suggested that as one of the worlds largest Professional Engineering Institutions (PEI) that it is its Responsibility to take up the lead in remedying the situation!*

See: Document “CO(18)19” at www.theiet.org/about/governance/council/council-papers-and-minutes/thursday-14-june-2018/

*... This got **Fantastic Support** from the Council Members (Jun18)*



Updates from governance

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Council Update

By Council Chair Colin Davis CEng FIEI

Council worked on two topics of particular interest earlier this year. We looked at the 'post-truth politics' environment that engineers are working in, and how the IET can respond to this trend. Also, a joint strategy session with Trustees and Council brought together much of the work of Council over the last 12 months.



From left to right Council Chair Colin Davis CEng FIEI and Council Chair 2017-18 Michelle Forrester CEng FIEI

Confronting post-truth politics

A paper presented at the June Council meeting, together with a World Cafe discussion session, gave us the opportunity to review the standing that the engineering profession has in society today.

The discussions were triggered by recent media debates which have highlighted that experts are being dismissed in favour of the opinions of public figures – and through social media, pretty much anyone can be a public figure. This has led to a political and media culture that can default to emotional opinions instead of scientific evidence. The behaviour even has a name now, 'post-truth politics'.

Our concern is that activities with greater emotional appeal to the public are likely to be increasingly flagged, funded, and funded, over intellectually challenging activities in research, engineering and manufacturing. The professional roles of engineer, scientist and technician that the IET represents are in danger of being devalued.

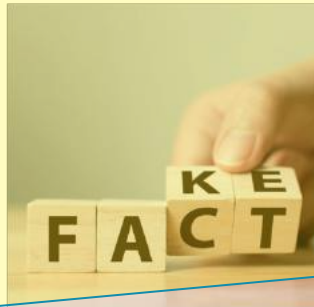
Discussion included:

- exploring campaigns to better educate the public on engineering
- improving the understanding of what an engineer is responsible for and does
- increasing the use of case studies and examples of prominent engineers
- addressing the branding of the professional engineer
- collaborating with all Professional Engineering Institutions
- encouraging industry to engage with the issue

Thinking for the IET's future

Council also contributed to the joint strategy session in June with Trustees. The IET President led an agenda for the session which included a review of progress, together with input summaries of ideas from the three Main Boards. Trustees also discussed the work on strategic thinking that Council has carried out throughout the last year, through a Strategy Working Party.

An interactive session addressed the key questions that surround what the IET aspires to be and what it sets out to achieve within its overall vision to engineer a better world. We focused on issues that have been identified throughout the year on the IET's current and future environment. We also considered how they could be addressed, bearing in mind the IET's financial resources, and how they may lead to the development of a new strategic framework.



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Recommended to the Board of Trustees (Mar19)



CO(19)M2

28 March 2019

PAPER CLASSIFICATION: OPEN

Minutes of the Meeting of the
COUNCIL
held on Thursday, 21 March 2019 at 3.00 pm
at Savoy Place, London WC2

Present: Mr Colin Davis (Chair)
Mr Andrew Bell
Professor Ian Bitterlin (by telephone)
Mr Mike Carr
Dr Raphael Cepeda Lopez
Dr David Evans
Mr James Garnham
Miss Justina Ho
Mr David Hogan
Eur Ing Patrick Mason
Mr Allan McCabe
Dr C Muthamizchelvan
Dr Paul Needham
Ms Dawn Ohlson
Professor Ian Phillips
Mr Jon Ratcliff
Mr Alkie Savou

These IET Council Minutes are Public at ...

<https://www.theiet.org/media/3718/co19m2-minutes.pdf>

Though the referenced report (CO(19)12 is Confidential ...

- The Discussion Document was developed into a formal Council Recommendation and passed to Board of Trustees
- Its full content is Confidential, but its three principle Recommendations are included in the Open Minutes

(Staff note: An amended paper CO(19)11(revised) is circulated with these minutes.)

- 6.7. Professor Phillips introduced and Council noted a report on Rebuilding the Public Image of the Engineering Professions (CO(19)12). Council agreed to recommend to the Board of Trustees that:
- 6.7.1. the IET formally recognise the importance and urgency of re-establishing the Public-Image of the Engineering Professions and Professionals;
 - 6.7.2. the IET create an internal project to implement and coordinate the IET's role in this, in particular to take leadership in internal and cooperative actions with other PEIs and institutions, and to make sure that the IET is best placed to capitalise on the increased membership and commercial opportunities emerging;
 - 6.7.3. the proposed project should formally report to an IET Main Board, but take guidance from and report progress to a new Board created for this purpose.

(Staff note: An amended paper CO(19)12(revised) is circulated with these Minutes.)

... The Board of Trustees now decides



What Can I tell You ...

- I can't tell you what the IET **will do** ... That is in the hands of the Board of Trustees ...
- But if we want our Professions to be as Visible and Valued as Doctors, Lawyers, Accountants, **Estate-Agents, IFA's and Beauticians** ...
 - *Then we must understand our individual Roles and Responsibilities*
 - *Commit to working with Honesty and Integrity*
 - *And Commit to maintain our Professional Competance through our Practicing-Life*
- Of course we know we are capable of this! But ...
 - *We've got to start telling some Good Public Stories about our Actual Roles*
 - *We need to get our Formal Professional-Act together*
 - *We need some Good Coordinated PR*
- And its fundamentally about the Professions; not about the PEIs.
 - *The Professional Roles ... **Engineers, Scientists and Technicians***
 - *The **Scientific Disciplines** ... Understanding, Modelling, Manipulation and Application of Physics*



Stay Tuned...

This presentation and others available at

...

<http://ianp24.blogspot.com>

