ENGINEERING ETHICS CONFERENCE

Bringing the principles to life: making the standards stick

much has been said over the years... but the conversation is becoming more **complex**... the focus is moving to...

Sir Alan Langlands

ACCOUNTABILITY · TRUST · HONESTY · PUBLIC INTEREST QUESTIONS
INTEGRITY · REGULATION
STANDARDS

New tech advances means **HUMAN & ETHICAL** complications...

Relationships have never been more important

BOUNDARIES are BLURRING
What is an engineer?
We need to focus on the **real life context**
this is a bit long
We made a series of worked examples
What sort of case study documents should be produced?

Richard Maudslay

Make sure principles have teeth
the priorities should be...
Ensure the principles apply to all engineers

Dr Rob Lawlor

SIMPLIFICATION & INTEGRATION

Wendy Harrison

To achieve this we must **DEVELOP** the profession into a **STRONGER, FULLY MATURE PROFESSION**

Standards for Ethical Conduct in UK Engineering

IS IT ETHICAL THAT QANTAS ARE PLANNING TO BURN AN EXTRA 60,000kWh TO FLY DIRECT FROM LDN→SYD? (when they're "trying to be more green")

Prof. Chris Atkin

"Who then is my neighbour?"

We need to seek to create **HABIT, CUSTOM & CULTURE**

A more measured response is needed

often seen as a "last resort"

WHISTLEBLOWING
we need a "light touch" version
A "CRITICAL FRIEND..."

TIME & EXPERIENCE
allows professionals to gain a more ETHICAL INSIGHT

CROSS REVIEW · PEER REVIEW — both are needed

I now see my role as helping to create **WORLD CHANGERS** not WEALTH MAKERS

(as a young professional, it's easy to assume that ethics is 'someone else's problem')

But it's a **CHALLENGE** to TEACH ethics...there's no training... (in how to teach!)

THE "TEACHING of ETHICS"

What's in it for me? vs. What's in it for society?

Issues around "value for money"

IMPORTANCE OF REGISTRATION

We need to **NURTURE A CULTURE** where the individual puts themselves second to what's important for society

SUPPORT FROM EMPLOYERS IS KEY

If the regulator is to have **TEETH** how sharp should they be...!?

A new focus on...
Impact on environment · AI · BIG DATA · Advanced IT

CONCERNS
"walking by" problems
Procurement processes during "value engineering" to meet tight cost margins and lowest bid approach

FEAR of blame / future reprisals

I'm not going to report this

Dame Judith Hackitt
Guidance is good but it is merely a start
TRAINING & AWARENESS raising is KEY
FEEDBACK & POSITIVE ASSURANCE is essential
mechanisms must reflect the current employment and contract models

ethics in engineering degrees...
who? how?
TEACHING · ASSESSING · ACCREDITING
learning outcomes
Should a "Hippocratic Oath" for engineers be introduced?
Internalisation of UK degrees... "challenge" of diverse cultures

Prof. Raffaella Ocone
Morality vs. Ethics
Individualism vs. profession

We need to create a **SPEAK OUT!** culture

Equipping engineers to tackle ethical issues: HE & CPD

How do we approach teaching ethics in other disciplines?

Dr Carl Fox
It's about **FRAMING**
DISRUPT the... engineering mindset
how can I be a better engineer?
think more critically
what is the bigger picture here?

VALUE OF CASE STUDIES
Practice for breaking down a problem...
how do we assess student's ability to adopt a critical attitude?
and avoid the assessment trap
You should be a robot doctor on trial...
yeah!

VIDEO ASSESSMENT

ETHICS TEACHING SHOULD BE INGRAINED IN ALL AREAS... NOT A SEPARATE MODULE...

Martin Davies
WHEN THINKING ABOUT CPD... HOW DO WE ENCOURAGE ENGINEERS MORE TOWARDS THE EXPLORATION OF ETHICS...?

FACE TO FACE Learning still dominates CPD...

BUT ONLINE LEARNING HAS REALLY MOVED ON...

FLIPPED LEARNING ENVIRONMENT

QUALITY CONTENT · TRUSTED · SOCIAL (BUILT IN) (OFFLINE) · SELF-PACED · REFLECTIVE · PERSONALISED · FLEXIBLE

THERE ISN'T ONE WAY OF DOING THIS...

Engineers without borders movement
Engineering for people design challenge → understand the principles of globally responsible engineering

As an engineer, you will have an impact...
make a positive difference

Katie Cresswell-Maynard

I observed engineers were doing their ethical work with us but didn't live these values in their usual work
this is a problem

Global challenges · collective responsibility · engineering is key

IT HAS TO BE **S-I-M-P-L-E** AND joined up

What would Jean-Luc Picard do..? make it so...

Addressing current ethical issues

First Engineer: 2630 BC
Origins of Software: 1960s

Prof. Kevin Jones
WE JUST DON'T HAVE THE SAME UNDERSTANDING, IN A CULTURAL SENSE, OF THE DIGITAL WORLD...

SOFTWARE IS NOW EVERYWHERE

but people don't take the same precautions with their **CYBER SECURITY** as they do with their physical security

LESS UNDERSTANDING OF THE RULES IN THE VIRTUAL WORLD...

Ethically... is there a difference between the software on a **PHONE / APP** vs. on an **AEROPLANE**
but there are mental health implications
WE JUST DON'T UNDERSTAND THE PROBLEMS YET...
Obviously life is at risk

If it was serious THEY would be doing something about it...

Is ethics for engineers really any different to ethics for everyone else?
They're important, but not special!

DEMOCRACY IS BECOMING AN ENDANGERED SPECIES

NOT **ONE** critical trend has slowed in the last 50 years... yet we have become exponentially wealthy - from a global economy perspective

Sara Parkin OBE

PERSONAL MORALITY IN PRACTICE
"A PERSON IS A PERSON BECAUSE OF PEOPLE"

AI & Human Collaboration: "COBOTICS"
We'll need to work out a new structure of employment & jobs...
Using AI to **BENEFIT** humans, not to **REPLACE** them
Humanist vs. Transhumanist

THE FREEDOM OF BEING... OF CHOICE... OF ACTION...

ETHICAL ISSUES AROUND AI ARE VERY DIFFICULT

Renaud Champion
THE 8 PRINCIPLES
1. HUMAN RIGHTS
2. PRIORITISING HUMAN WELLBEING
3. DATA CAPTURE, SHARING & USE
4. ACCOUNTABILITY
5. TRANSPARENCY
6. MEASURABILITY
7. COMPETENCE
8. MISUSE & AWARENESS OF RISKS

Solving vs. threatening
MORE RESEARCH IS NEEDED...

IF YOU'RE NOT WORKING FOR A **SUSTAINABLE** FUTURE FOR ALL LIFE ON EARTH... WHAT ARE YOU WORKING FOR ??

Fewer people consuming less stuff...
Never a more challenging engineering & technical goal!

"STOP FOR ECOLOGY"
BUT "SHOP FOR ECONOMY"

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