

ENGINEERS WITHOUT BORDERS UK

AHEP 4



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AGENDA

- Why this is so critical now
- Globally responsible engineering principles
- Our in-curriculum programmes



Millions of people still don't have their
basic human rights met, such
as access to reliable energy or water, or
somewhere safe to live.



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Typically, engineering still relies largely on
unsustainable practices and
materials, with limited consideration of the
broader **impact**.



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We are now in the **Decade of Action**
towards the deadline to meet the UN's
Sustainable Development Goals **in 2030.**



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Only 7% of UK engineering companies
with a sustainability strategy feel they
have the skills to fulfil it.



Our focus will be on reaching the
tipping point where **global**
responsibility becomes integral to
the way engineering is **taught and**
practiced.



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Vision

Society balances the needs of all people with the needs of our planet.

Mission

To put global responsibility at the heart of engineering.

We are a movement that **equips** and
mobilises the engineering community
to meet **current and future**
challenges.



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PRINCIPLES

Key principles of globally responsible engineering

- Responsible
- Purposeful
- Inclusive
- Regenerative

	Type of problem	Knowledge and competencies	Curriculum structure	Teaching and learning methods
Obvious	Known problem Known solution e.g. statics	Disciplines	Subjects/courses	Lectures, active learning and flipped classroom
Complicated	Known problem Unknown solution e.g. zero carbon house	↕ Multi-disciplinary	↕ Collaboration among several disciplines	↕ Academic problem-based projects across disciplines
Complex	Unknown problems Unknown solution e.g. energy zero buildings in energy zero cities New IoT, AI, Bio technologies and sustainability challenges	↕ Inter-disciplinary	↕ Re-organization of the curriculum and development of new student-centred and blended learning models	↕ Complex problem analyses and problem-based projects across disciplines and together with stakeholders Mega-projects
Chaotic	Disasters beyond complexity	Training in immediate action by bringing experiences/problems from chaotic situations into education		

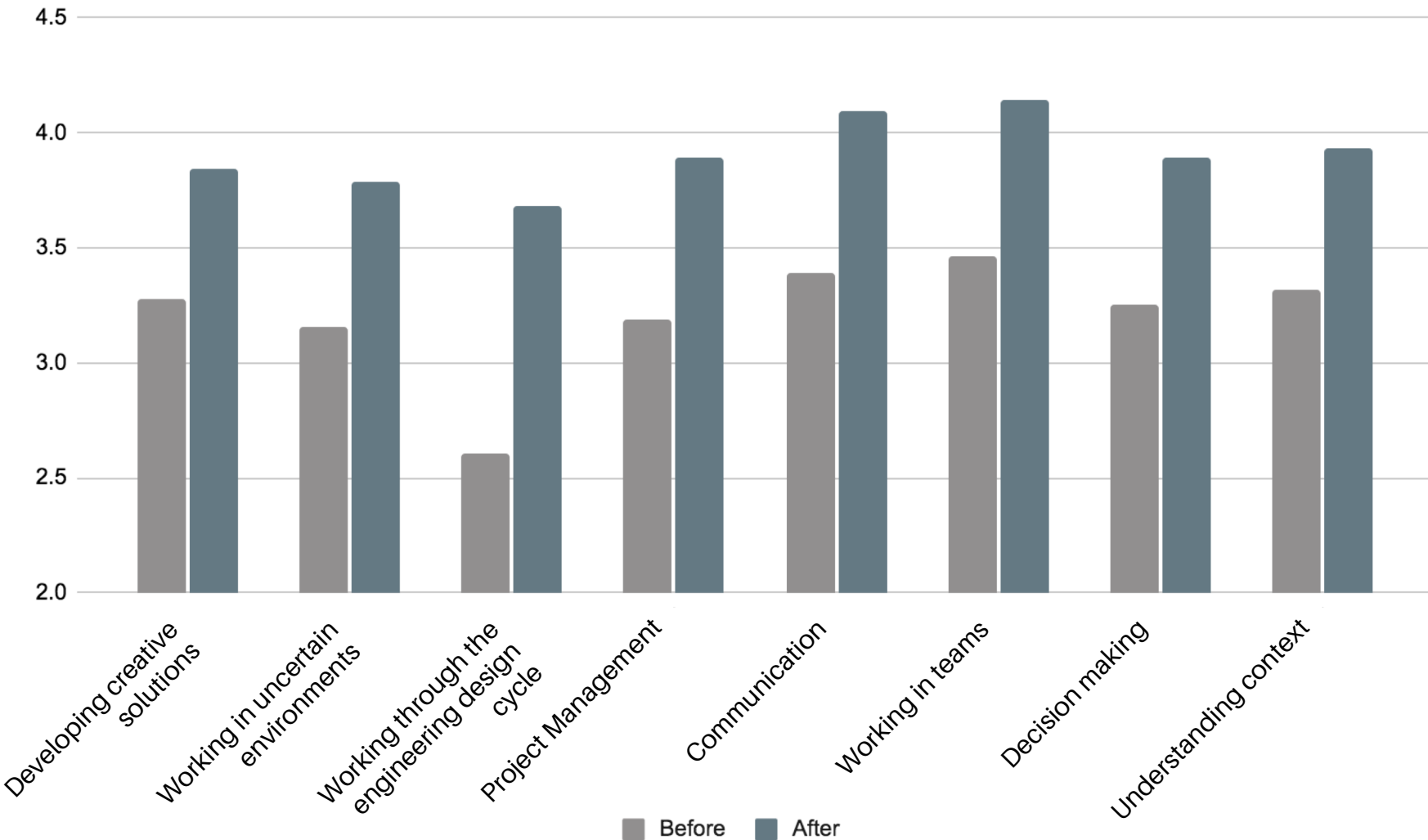
UPSKILL: ENGINEERING FOR PEOPLE DESIGN CHALLENGE

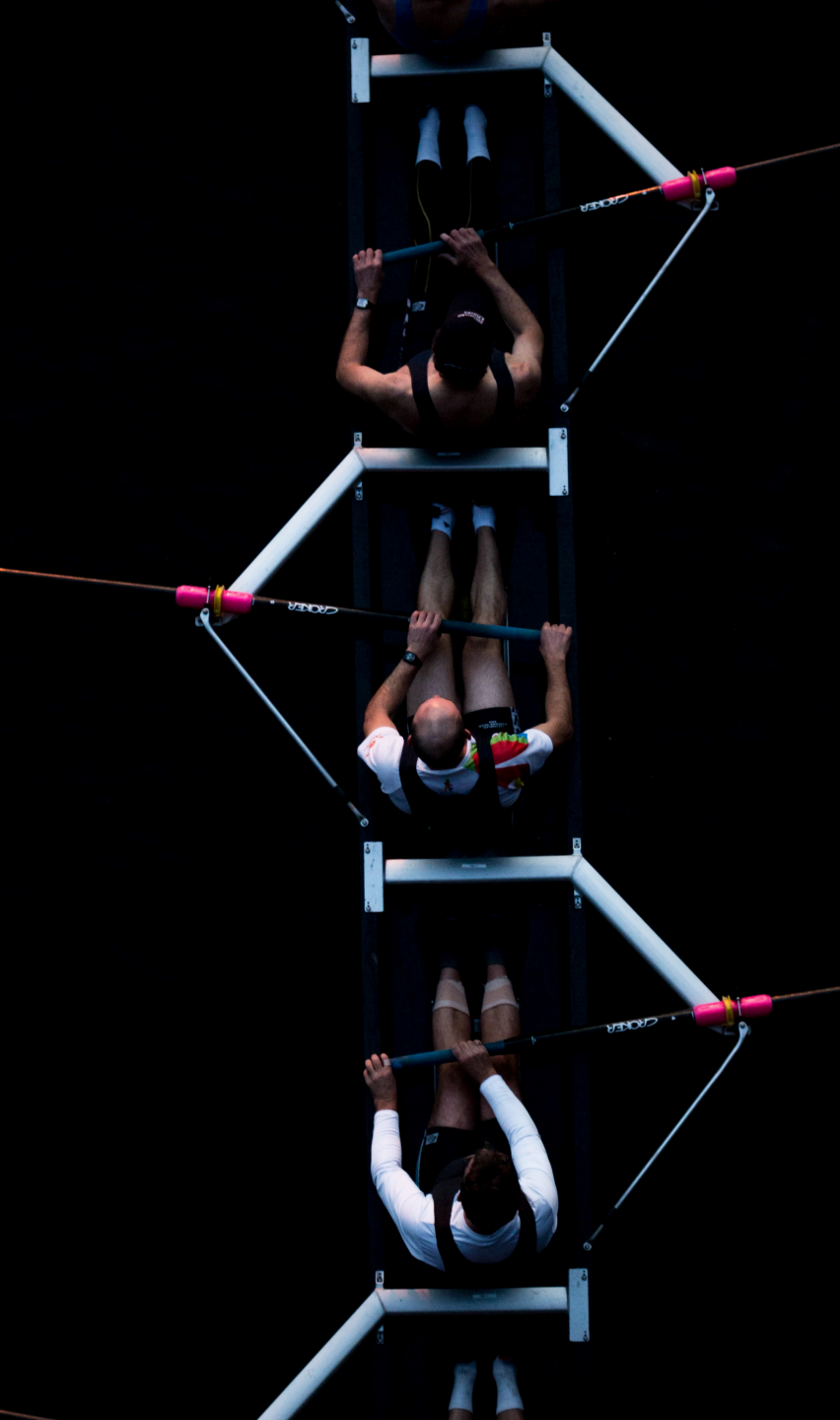


ENGINEERING FOR PEOPLE

DESIGN CHALLENGE

WHAT'S THE IMPACT?





“For those new to project-based teaching approaches, [by working with Engineers Without Borders UK] you are scaffolded by a range of incredible resources, from the Design Brief and online information resources, to the academic community that you join. This is invaluable – particularly for early career academics learning to navigate their new roles.

Engineers Without Borders not only provide the climbing frame and encouragement, they also offer tips and tricks and encourage reflection through their training programme, and through linking with the Academic network. This all provides safe and supported space to enable the academic to develop their own skills, as well as to support student learning.

The academic still needs to take leadership in how the programme is framed, structured, and delivered – and so there is still plenty of scope for individual ‘ownership’ of the course that you deliver, that is, you can add your own flavours to the class of course, but since the bulk of the heavy lifting is done by Engineers Without Borders UK, you have a bit more headspace to think about those aspects, and develop them year on year.”

Dr Jennifer Roberts, University of Strathclyde



JOIN THE MOVEMENT



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