# Royal Academy of Engineering

# Review of ethical culture and practices in UK engineering

## Response from the engineering profession

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## Introduction

This paper is the response from the engineering profession to the **audit of ethics in UK engineering**, undertaken by the independent ethics consultancy, GoodCorporation, on behalf of the Royal Academy of Engineering. The profession welcomes GoodCorporation's report setting out the findings of its *Review of ethical culture and practices in UK engineering*.

In February 2022, the Royal Academy of Engineering and Engineering Council joint committee on ethics published its first report **Engineering Ethics: Maintaining society's trust in the engineering profession**. The report recognised that the public must have confidence that engineering is practised ethically in the UK. One of the recommendations was for a national audit on the state of ethical behaviour in UK engineering to be undertaken. The Royal Academy of Engineering commissioned GoodCorporation to undertake the audit.

The final report provides helpful insight into UK engineering's ethical culture. It acknowledges that engineers in the UK are well regarded by the public, with the 2021 Ipsos MORI Veracity Index showing that 84% of British adults say they trust engineers to tell the truth. However, the report also acknowledges key ethics challenges. It finds, for example, that one-third of engineers and technicians report that the work they undertake makes them feel ethically compromised, 44% say profitability is sometimes prioritised over fitness for purpose, and 35% say they are asked to take shortcuts they feel are unacceptable.

In short, while there are some positive aspects in relation to ethical behaviours in the profession, there is still much work to do, as many high-profile cases such as the Grenfell Tower tragedy have demonstrated. As a self-regulated profession responsible for much of the technology, infrastructure, products, and services that support 21st century society, we cannot be complacent and we must strive to be the most ethical profession we can be.

# Report highlights

There is substantial detail in the independent report and those with a particular interest are encouraged to engage with the data. The following section provides a short overview of the key findings and recommendations. We particularly welcome the results of the survey of individual engineers and technicians and their responses to ethics questions in comparison to the wider general UK workforce across other industries, some of which are shown in **figure 1**.

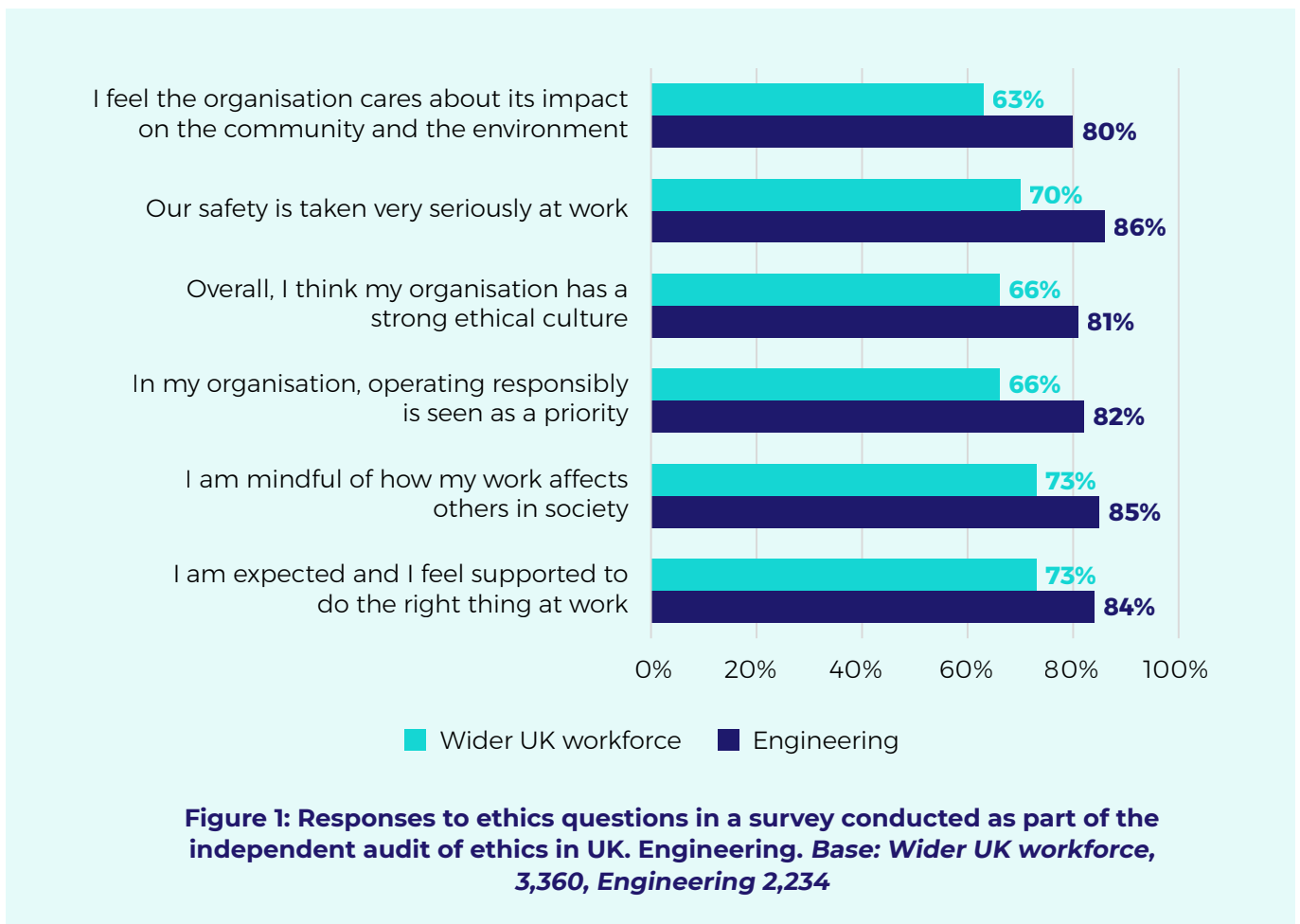The report provides six key findings, as follows:

- Engineers and technicians report good ethical practice and ethical culture in engineering compared to the general UK workforce, but there are worrying signs of poor ethical standards in some parts of the profession.
- There is evidence some engineers and technicians feel dissuaded from raising concerns in the workplace.
- Engineers and technicians in larger companies have more support when it comes to ethics than those working in smaller firms.
- Engineering businesses rank the safety, health and wellbeing of workers, business integrity, and

cybersecurity as the most relevant ethical risks for their organisations.
- Professional engineering institutions are beginning to explore ethical issues, but often in a piecemeal and unsystematic way.
- Better coordination and integration are required among the broader UK engineering community to effectively implement a programme of ethics in engineering.

We accept these key findings and, in addition, recognise further insights from the study. In particular:

- An initial purpose of the review was to provide a clear benchmark of the ethical culture in UK engineering; that this was possible only in part (because of the low response rate) illustrates some of the challenges the profession faces. However, the findings provide an indication of the state of the UK engineering ethical culture and pointers to how a more nuanced and insightful benchmark might be developed in future iterations.
- The survey questions focused largely on company ethical culture, asking, for example, what ethics expectations or demands companies make of their staff, or how company



**Figure 1: Responses to ethics questions in a survey conducted as part of the independent audit of ethics in UK. Engineering.** *Base: Wider UK workforce, 3,360, Engineering 2,234*

ethics attitudes and practices affect staff ethical practices. A minority of questions specifically identify the personal attitudes of engineers and technicians as individuals, with responses indicating that they may be more conscious of their professional ethical responsibilities than the general UK working population (for example, 84% reported being mindful of how their work affects others in society compared to 73% of the wider UK workforce). The balance between questions distinguishing between the ethical stance of individuals and of companies is one that should be explored in future reviews, particularly in relation to mapping questions to the Engineering Council/Royal Academy of Engineering **Statement of Ethical Principles**.



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- The review identified a gap in the provision of company guidance on ethics issues for engineers and technicians who are employed by companies that have less developed ethical practices. In the case of small- to medium-sized enterprises (SMEs), this may be because of a lack of resources. We believe that the organised engineering profession has a role to play in identifying and providing support to these companies and their staff.

- While we recognise that there are different ethical considerations across different sectors, we disagree with the report's finding that digital, IT and computing sectors stand out as distinct. New technologies such as artificial intelligence, autonomous systems and robotics will bring new ethical challenges, but the general principle of the expected ethical behaviours of engineers and technicians working in these sectors should be consistent with those of the wider engineering community. However, we do note that any ethics programmes developed by the profession need to acknowledge the specific challenges in different sectors.

- Company culture clearly plays a significant role in how engineers and technicians view their own ability to speak up, to raise questions, and to do more to "hold the line" on ethical practice. Ethical cultures require wholesale review of company values, and top-to-bottom adoption. The company section of the audit shows that many companies are well advanced in their thinking and preparedness for the risks that they feel are most relevant, but more can be done to ensure this thinking has the desired effect on culture.

- We agree with GoodCorporation's assessment that the review has illuminated as much, in the process of it being undertaken, as it has in its findings. We particularly recognise the problem of reaching the intended audience, as distinct from engaging them. Reaching practising engineers and technicians who are not currently engaged with the profession was always likely to be difficult; more revealing however, was the difficulty of engaging members of the professional engineering institutions and companies through the trade associations and similar bodies. We will need to do more to engage our partners in the profession and beyond to better reach our intended audience in the future. Everyone working as an engineer or technician, whether a member of a professional engineering institution or not, is a member of the engineering community. Ethical practice needs to be embedded across practising engineers and technicians, not just in members of institutions or professional registrants.

- The scope of the survey questions was ambitious and may well have contributed to the low level of engagement among the engineers and technicians who were reached. In future it would be worth considering using 'general' attitude surveys with fewer questions. The questions should be aligned to the **Statement of Ethical Principles** alongside targeted research that explores subject-specific attitudes and practices in greater depth.

## The profession's response to the findings

The profession commits to working with its constituent bodies and other partners in engineering to do the following:

a. Develop a programme of communications, training and engagement to build better awareness of, and alignment with, the Engineering Council/Royal Academy of Engineering **Statement of Ethical Principles** – both within the profession and throughout

the engineering profession as a whole. Creating better links between professional engineering institutions and employers across UK engineering will help them better understand and respond to the evolving ethical risks engineers and technicians face.

b. Map the roles and responsibilities for the various stakeholders in UK engineering regarding ethics. This will help ensure constructive collaboration and coordination across all parties, encourage the sharing of good practise, optimising resources, and improving ethical and professional practices.

c. Explore how greater support can be provided to SME engineering companies so that they can support their staff in taking an ethical approach to their work. The aim is to help meet the needs of engineering SMEs that are less able to put in place ethics programmes because of resource constraints. Key partners in this are likely to be the larger companies whose supply chains comprise many SMEs, as well as the professional engineering institutions in their discipline.

d. Create and arrange the hosting of a signposted and coordinated set of ethics resources developed for professional engineers and technicians to use as part of their Continuing Professional Development (CPD). This will give individuals more confidence to challenge cultural constraints, giving them both the skills and the evidence to make the strongest case for ethical practice.

e. Examine, with the Engineering Council and professional engineering institutions, the mandating of minimum requirements for ethics-related CPD among professionally registered engineers and technicians.

f. Assess the availability of channels for UK engineers and technicians to call out bad practice and consider the need for a prescribed body to support those who either do not have direct access to an existing system, or who don't feel comfortable using the channel provided by their company.

g. Create better links between professional engineering institutions and employers/companies across UK engineering to help them better understand and respond to the evolving ethical risks engineers and technicians face, and to embed ethical cultures in all areas of the profession.

## Conclusion

GoodCorporation's report will help the professional engineering community, along with others across engineering involved in promoting and maintaining ethical engineering practice, to better understand the UK engineering ethical landscape. It will provide a foundation for continuing our work to raise ethical standards. It makes clear that there is a foundation of good ethical practice in engineering and that engineers take ethics seriously. However, it also identifies a variation in the support provided for ethical practice among companies, by sector and by company size for example, and among the professional engineering community.

The Royal Academy of Engineering and Engineering Council joint committee on ethics' work is ongoing, with many of the recommendations in its first report progressing at speed. These actions will address several of the issues raised in the audit, but further consideration will be given to the audit's findings in specific areas. It may be that some actions will be brought forward, or amended slightly, to meet the challenges highlighted. The work of GoodCorporation will also provide valuable insight when considering future ethics-related activity. We recognise that this report also provides a basis for follow-on audits of engineering ethics, allowing us to produce a robust measure of the changes in engineering-wide ethical practice over time, as well as to deep-dive into specific ethics-related issues of interest or concern.

The professional engineering community is working together to address the global challenges of sustainability, ethics, and equity, diversity and inclusion. We are committed to innovating and improving across these societal challenges, within our organisations, and ensuring our members recognise the importance of these responsibilities alongside core professional competencies. As a self-regulated profession, we recognise the importance of public confidence that engineering is safe, sustainable and inclusive to all in society.

**This response has been created by the Professional Engineering Committee, which comprises the chief executives of all the licenced professional engineering institutions, the Royal Academy of Engineering, EngineeringUK, and the Engineering Council.**

https://raeng.org.uk/policy-and-resources/education-policy/the-engineering-profession/the-professional-engineering-landscape