

Engineering Ethics

Sustainability & Professional Responsibility

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Why This Matters Today?

Engineering decisions shape public safety, communities, and the environment.

When engineering decisions fail ethically or professionally, the consequences can be far-reaching, impacting lives, ecosystems, and economies for decades. Maintaining public trust depends not only on technical competence, but on ethical judgement and accountability.



Public safety and human wellbeing



Communities and critical infrastructure



Environmental systems and long-term resilience



What Is Engineering Ethics?

Engineering ethics refers to the moral principles and professional standards that guide how engineers make decisions and conduct their work.

At its core, engineering ethics:

- Places public safety, health, and welfare above all else
- Applies across all engineering disciplines and sectors
- Provides guidance when rules are unclear or pressures are high

Ethical practice ensures engineering serves society responsibly, not just efficiently.



When Engineering Goes Wrong

Major engineering failures are uncommon but when they occur, the consequences are severe.

The hidden social, environmental, and economic costs of poor engineering decisions are often felt long after projects are completed.

Ethical lapses
occur
alongside
technical
issues

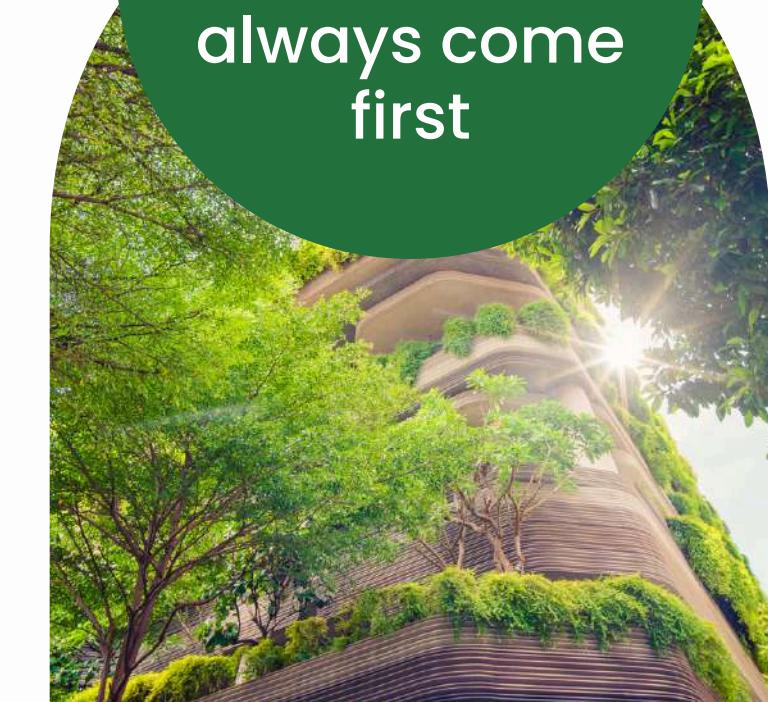
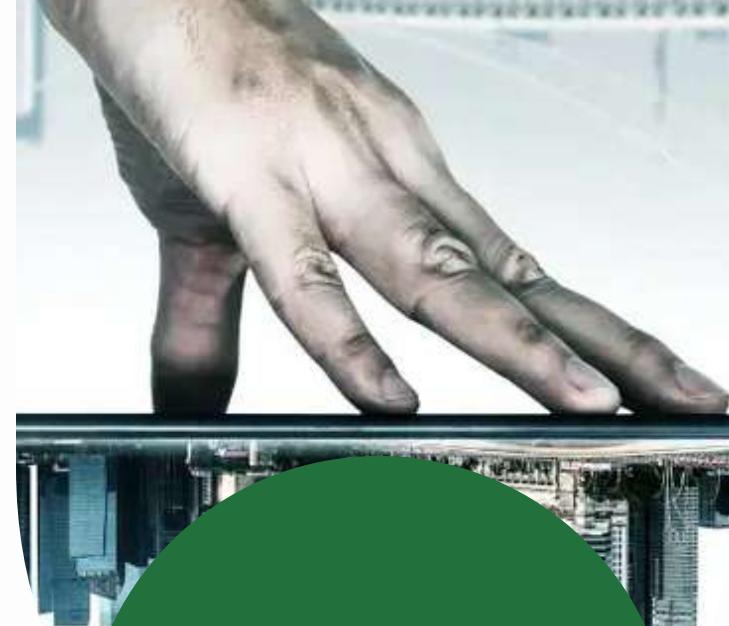


Risks are
downplayed,
ignored, or
deferred



The Engineer's Social Contract

Engineers are entrusted with specialised knowledge and authority that directly affects public safety and wellbeing.



Sustainability in Engineering

Sustainability in engineering means meeting today's needs without compromising the ability of future generations to meet theirs.



Whole-of-Life Thinking



01

Planning and design decisions

02

Construction and operation

03

Maintenance, adaptation, and upgrades

04

Responsible decommissioning and disposal

Professional Responsibility in Practice

Professional responsibility is not theoretical — it is applied daily in engineering practice.

Maintain competence, integrity, and independence

Speak up when safety, standards, or ethics are compromised

Commit to lifelong learning and professional development

Common Ethical Dilemmas

Engineers frequently face ethical challenges such as:



Pressure to meet deadlines, budgets, or commercial targets

Conflicts of interest between stakeholders

Working with incomplete, uncertain, or non-compliant information

Key Takeaways

Ethics and sustainability are not optional, they are central to professional engineering.



Discussion Questions

What ethical challenges do you see in your field?

How can organisations support ethical decision-making?

What does sustainability mean in your daily work?



Thank You
See You Next Time