

What will no longer be OK? Ethics, engineering and the climate

Will Arnold shares the findings of recent work by the IStructE and ICE to investigate the ethical dilemmas that those working in the construction industry face today as they grapple with the shift to a low-carbon built environment.

As the realities of climate breakdown become ever more apparent, the ethical imperative for action grows stronger. Standard practice in the procurement, design, construction and operation of buildings is increasingly being questioned. Approaches once considered acceptable may soon be viewed as outdated or even irresponsible. Engineers and built environment professionals have a duty to act in the public interest, and that includes anticipating the long-term consequences of their decisions – not just complying with the status quo. Ethical leadership means recognising when ‘business as usual’ is no longer good enough.

The legal landscape is also shifting. Engineering decisions have often been shaped by legacy standards and regulations, but these are rapidly being overtaken by new legal expectations. Climate litigation has surged since the turn of the millennium¹, and the International Court of Justice (ICJ) recently issued an advisory opinion affirming that states have legal obligations to address climate change². It is becoming increasingly likely that laws will evolve to mandate climate action across all sectors. Those who wait for regulation to catch up risk reputational damage and legal exposure. It is far better to lead than to lag.

With all this in mind, the Institution of Structural Engineers (IStructE) has been working with the Institution of Civil Engineers (ICE) to understand the industry’s view on what many currently see as only an individual’s ‘dilemma’, but which could soon become a widely recognised ethical and legal obligation. This challenge was distilled into the following question:

What climate dilemma are you struggling with today that will be ethically or legally unacceptable by 2035?

The question was discussed during a series of private roundtables hosted by the IStructE and ICE with participants from across the construction sector. These ran between March and May 2025, across four different industry groups: supply chain, contractors, designers, and asset owners. Following the roundtables, the question was also discussed at the July meeting of the IStructE Council.

This article summarises some of what was shared. None of these views constitute formal policy of either institution, but they offer a valuable reflection of the real dilemmas being encountered by built environment professionals today, indicating how the boundaries of our professional ethics may need to shift, in anticipation of potential changes in public opinion.

Consistent dilemmas

The following practices were consistently raised by all roundtable participants – from client to supply chain – as becoming increasingly difficult to defend:

1) Overdesign

Many engineers still routinely design well beyond what’s required. This doesn’t just mean designing to a low utilisation ratio, but extends to structural arrangements that are inherently heavy. Sometimes this is driven by perceived risk, sometimes time pressure, but the result is the same: more carbon, more material, more waste. It seems inevitable that over time, leaner, lighter buildings will be called for.

2) Overdemolition

Whole buildings are still demolished even when significant reuse is possible. New-build is still the norm, and prioritising circularity remains rare, despite growing understanding of the need to utilise reuse to minimise environmental impacts while maximising social value. However,

we have seen a shift in this direction already, and expect it to continue.

3) Business-as-usual materials

Our ‘normal’ palette of high-carbon materials continues to dominate, often due to legacy specifications or insurer concerns. We aren’t yet required to justify these choices, or make the case for why we would build with these materials without considering lower-carbon alternatives, but perhaps one day we will be.

4) Short-term finance

Project decision-making almost always prioritises upfront cost and profit over whole-life environmental and social impact. This disconnect means that good ideas are often quick to be value-engineered out, or disappear once a supply chain is appointed. As climate breakdown worsens, it is expected that decision-making will more and more often extend beyond short-term finance.

5) Procurement failure

Contracts rarely prioritise low-carbon solutions, and are still mostly driven by short-term profit and minimisation of any risk (perceived as well as real). Tendering systems often exclude innovative suppliers (if these are perceived to add risk) or saddle designers with constraints that prevent climate-conscious innovation.

6) Carbon illiteracy

Carbon accounting remains inconsistent across the sector and around the world. The UK buildings sector has initiatives like the *UK Net Zero Carbon Buildings Standard* and the RICS Professional Standard on Whole life carbon assessment for the built environment, but even those are relatively new. As such methods become more embedded, there will be less excuse for misreporting or missing emissions.

7) Silence

Many participants reported feeling unable to challenge clients or question briefs, even when they believed a



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better path was available. This was echoed at all levels of the value chain (no matter how high up an individual sits, it seems that someone higher up always has more control and responsibility). It was felt that, in time, staying silent would no longer be a valid defence for environmentally costly decisions being made.

An overarching point was that these are not technical issues. They are social and systemic ones: what turns them into dilemmas is that the system is still stacked against doing the right thing – for now. Throughout our discussions, participants welcomed support mechanisms to help tackle this.

IStructE Council debate

In July, Council members were invited to review the seven dilemmas outlined above, and to contribute further issues. Discussion took place in small groups, and again, the comments shared were only individual reflections. The groups generally agreed with the seven points, and additional dilemmas that were discussed included the following:

Climate adaptation is usually ignored

One group noted that rising temperatures and future weather loads are not reflected in loading codes. Following these codes without considering future adaption is already a technical and moral risk and, with time, could even be deemed negligence. *(I would also personally note that designing to allow for future adaption and strengthening is a smarter approach than simply overdesigning everything today.)*

Resilience versus sustainability is a false choice

Some reported a common perceived tension between long-life, low-maintenance, adaptable and resilient design, and the push for minimal embodied carbon. It was recognised that these goals need not be in conflict, and win-win solutions must be found.

Project choice matters

Engineers discussed the ethical dimensions of choosing whether to work on certain types of project, arguing that participation alone makes one complicit. Individuals named mega-developments, fossil fuel infrastructure, and tall buildings as specific examples of the types of work they personally felt uncomfortable with.

What we do now?

One group highlighted that it is always easier to persuade others of a more

sustainable solution when framed around planning or regulatory requirements, rather than on individuals' morals. The eventual implementation of Part Z³ would support this by calling on embodied carbon to be limited through regulation in the UK, and the use of PAS 2080⁴ on projects today can enable parties to work collaboratively on reducing carbon on their projects. As initiatives like this become more commonplace, and eventually embedded in law, it should become easier to tackle the issues laid out in this paper.

However, all this strengthens the need for engineers to confront and discuss these issues today regardless of whether they yet exist in law. If we stay silent on these topics, then norms and laws will not change, and we will not see the introduction of legislative or societal support we need to make our cases more easily. The situation is chicken-and-egg, but as we have a duty to the public, it is us who should start this change.

The IStructE has a Royal Charter, setting out its core purpose as 'to promote for the public benefit the general advancement of the science and art of structural engineering in any or all of its branches, and to facilitate the exchange of information and ideas relating to structural engineering amongst members of the Institution and otherwise'. Note the words 'for the public benefit': this is why structural safety and sustainability are the core tenets of our work, and is this why we must always be working towards a safer and more sustainable future.

The challenge we therefore face is to find ways to engage with these topics, within our own companies, the wider engineering community, and with our clients and collaborators. Acknowledging these dilemmas head-on may initially make us the outlier in a discussion. But all the more reason to speak up. Not just because it's the right thing to do, but because it's professionally prudent: our reputations, and those of our clients,

Host your own discussion

Readers are encouraged to host their own conversations around the ethical dilemma posed at the start of this article. A one-page briefing note on holding such sessions can be downloaded from the ICE at www.ice.org.uk/about-us/our-organisation/governance/boards-committees-and-panels/ethics-committee.



depend on us staying ahead of the curve, so that we don't find ourselves in situations where public opinion has changed and we're stuck on the wrong side of history.

The ICJ advisory opinion referenced at the start of this article makes clear that inaction is as legally consequential as negative action when it comes to climate obligations – referring to 'actions' and 'omissions' as equal. This means that, in due course, it won't be enough to say, 'that's what the client asked for', or 'we didn't have time', or 'we've always done it this way'. If we continue on a course of carbon-intensive, demolition-heavy, silence-driven practice, we will be complicit in the outcomes.

So, ask yourself: *What am I doing today that won't be OK in 10 years' time?*

Talk to your colleagues. Share your concerns. Challenge bad briefs. If you don't feel you can speak up, ask why not – and ask who else might stand with you. Ethics isn't just about what we do. It's also about what we tolerate. Let's work together to ensure that the structural engineering of tomorrow makes us proud.

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