Toby Maclean



Election Statement

The Institution of Structural Engineers
Board of Trustees

Current Employment

Founder and director of Allt Environmental, structural engineers established to address the need to decarbonise the built environment.

Career History

I began my career at Arup working in international projects, spent 5 very formative years based in an architecture and art studio, and then established TALL Engineers in 2005 and after merging TALL with Canadian firm Entuitive in 2016, I remained as UK Director until leaving to concentrate on Allt.

Election statement

My career to date, which I hope is still young, has been one of solving challenges – technical or otherwise – from first principles. From complex infrastructure and buildings, to handbags, to esoteric art structures. Structural engineering happens when one applies that approach to structures; when the approach is applied to other matters it's called something else but the process is identical.

We are now at or beyond a point in history where all structural engineers must apply their skills to matters beyond those they previously concentrated on.

We are now aware of our personal and collective responsibility to minimise the harm the built environment causes the natural environment and, with luck, to regenerate the environment.

Structural engineers are well placed to be at the vanguard of that change and I hope that structural engineers' role in mitigating the effects of climate change will be at the level it should be.

How I will contribute to achieving the Institution's objects and strategy

The Institution considers the climate emergency to be the 'greatest threat to our planet', and it certainly is the greatest threat to many species including our own. As a result and commendably, in 2019 the Institution raised sustainable design to be held at the same standard as safe design.

Structural engineers hold the key to designing out embodied carbon in the built environment, which is currently around 10% of global emissions. Or perhaps more accurately, individually we hold a piece of the key and collectively we hold the key.

The Institution has done some wonderful work in the last few years in unifying the pieces of this key and if elected I'd help to expand that work, and critically also our agency with other authorities that have within their gift the top-down change we also need to address the whole climate emergency spectrum.

Skills and experience I bring to the role

I have a technical and commercial mindset and a breadth of knowledge that covers spheres as diverse as legal process, commercial transactions, buildings physics as well as technical engineering matters. Much of this gained from two decades of running successful companies, including for a time a popular bar involving extensive relationship management.

In 2020 I established Allt with the explicit aim of addressing the need to decarbonise the built environment. This comprises research and project-led studies, published articles and papers, as well as advice to technical and campaigning organisations which builds on many years of advising external parties on all kinds of matters.

We must remember that as the built environment does not operate in isolation – whether technical, financial, or social – it is necessary to think beyond the narrower boundaries of specialist disciplines and I hope this holistic approach would provide a valuable resource to the Institution.

My Institution activities

- IStructE Awards Panel: Since 2017, I have served on the judging panel for the Institution of Structural Engineers annual international awards.
- IStructE Council: I was a co-opted member of the IStructE council for the 2020-22 sessions.
- IStructE Reviews: From 2016, for several years I served as a professional review interviewer for prospective chartered structural engineers

Personal Message

"I did not become a structural engineer to contribute massively to climate change and increased global temperatures. I even recall my university lectures and not one so much as mentioned the effect greenhouse gases were having on our climate, even though this was well known back then and for many decades before.

But my university course was not the only latecomer to the realisation that, as structural engineers, we have a great responsibility to do least harm to the environment because our capacity to do harm is so great. With few exceptions, I suspect all structural engineers have been slow to act and to change our behaviour, perhaps because there is no British Standard, Eurocode or other code of practice that covers structural design against climate change, or perhaps because we assumed that other agencies were taking the necessary steps.

We now know that was not happening and in 2019 the Institution took the radical step of explicitly declaring sustainability and the climate emergency to be of equal importance to life safety. Of course, they always were; climate change will cause far more global suffering that our buildings ever could directly.

And so now, with that explicit scope stated and our heads well out of the sand we need to think about what a sustainable built environment will really look like. I'm not sure myself but I do know that now we are making up for those lost decades of inaction, it will need to be radical response."