

**ARUP**

# The Gold Medal Address

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The Institution of Structural Engineer's most prestigious award, the Gold Medal is awarded to an individual for exceptional and outstanding contributions to the advancement of structural engineering.

The award was first initiated and presented in 1922 to Professor Henry Adams (who had been President of the Institution from 1914 to 1916). Many eminent structural engineers from around the world have been presented with the Gold Medal.

The 2014 Gold Medal was awarded to Tristram Carfrae.

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**Date:** Thursday, 25th of February

**Time:** 6:30 pm

**Venue:** Engineers Ireland, Clyde Road

**Speaker:** **Tristram Carfrae** RDI MA FREng FTSE FIEAust MISTructE



Tristram is an Arup Fellow and Arup's Deputy Chairman. He is responsible for the design of an impressive array of award winning buildings, including the Water Cube for Beijing 2008, and is regarded internationally as a leading designer of lightweight long-span structures, particularly where the architecture is defined by the structure.

In collaborating with some of the world's best architects, he has a reputation for challenging the established way of doing things; for exploring better solutions; and moulding both materials and people to his vision. Tristram believes that good buildings should consume less materials, energy, time and money; while at the same time being beautiful and providing greater amenity for society.

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### Designing with computers

It is relatively common to hear the senior members of our profession exhort our more junior members to "stop using computer models", particularly early in the design process. However, a computer analysis programme is really just a superior calculator (slide rule or log table). Why shouldn't they be used by engineers to get a fast appreciation of the structural behaviour of their idea? What is it about making a quick sketch and a hand calculation that makes it so more informative than a computer model, which is replete with stresses, deflected shapes, loads, reactions and many other informative results?

Surely what we really want is the wise use of computer models, even early in the design process. A virtual exploration of the design space; many models of different complexity, cross checking for fundamental structural behaviour; sensitivity studies against various input parameters; to name a few of the different strategies available.