"Engineering structures: art, geometry, mathematics and materials"

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12:30 - 2:00pm
Room 3-133

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Abstract:
The design, analysis and construction of engineering structures is an art which draws on geometry, mathematics and experience of the use of materials accumulated over millennia.
This talk will examine the role of mathematics in structural engineering and the present and future possibilities afforded by computers – and the danger of the loss of the existential relationship between engineer and structure.

Bio:
Chris Williams studied engineering at Cambridge and joined Ted Happold's group at Ove Arup in 1972. At Arup he worked on the Frei Otto gridshells in Mannheim with Ian Liddell and was responsible for the structural analysis and physical model testing.
In 1976 he joined Ted Happold at what is now the Department of Architecture and Civil Engineering at the University of Bath. His research interests include the form generation of tension and shell structures, the buckling of grid shell structures and the aero-elastic behaviour of lightweight roof and bridge structures.
His work in the generation of structural form through biological and other analogies has lead to collaboration on a number of projects including the British Museum Great Court Roof (Buro Happold and Foster and Partners), the Millennium Dome Central Show Nets (atelier one and Mark Fisher, STUFISH) the Japanese Pavilion Expo 2000 (Buro Happold and Shigeru Ban Architects), the Weald and Downland Gridshell (Buro Happold and Edward Cullinan Architects), the Savill Garden Gridshell (Buro Happold and Glenn Howells Architects) and the Gardens by the Bay Gridshells (atelier one, Grant Associates, Wilkinson Eyre Architects).