

New generations of sensor technology for Smart Infrastructure and Construction

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Abstract: Efficient construction and maintenance of civil engineering structures should be a perpetual, ongoing commitment. The application of emerging technologies to advanced health monitoring of critical infrastructure assets and crucial elements of these technologies will be the application of the latest sensor technologies and data management tools to the construction industry, both during construction and throughout its design life. Advances in the development of innovative technologies such as distributed fiber optics sensing, computer vision, micro-electro-mechanical sensors, energy harvesting and ultra-low power wireless sensor network offer intriguing possibilities that can alter the paradigms underlying existing methods of condition assessment and monitoring. This talk will introduce several case studies of applying these technologies for monitoring the conditions of geotechnical structures in London and discuss how engineering decisions were made from the data.



Kenichi Soga is Chancellor's Professor of the University of California-Berkeley and formerly Professor of Civil Engineering at the University of Cambridge. He is a founding member of the Cambridge Centre for Smart Infrastructure and Construction and leads the sensor and data analysis group. He is Fellow of the Royal Academy of Engineering and Fellow of the Institution of Civil Engineers.

He obtained his BEng and MEng from Kyoto University in Japan and PhD from the University of California- Berkeley. His current research activities are innovative monitoring and long-term performance of civil engineering infrastructure, energy geomechanics, and modeling of underground construction processes. He has published more than 300 journal and conference papers. He is recipient of awards including George Stephenson Medal and Telford Gold Medal from the Institution of Civil Engineers and Walter L. Huber Civil Engineering Research Prize from the American Society of Civil Engineers.

