

Webinar Talk on Civil & Construction Engineering by Prof. Dr. Samuel T. Ariaratnam & Dr. David Grau from Arizona State University



Organised by :

Civil & Structural Technical Division, CSETD, IEM



9th May 2025, Friday
9.30am - 11.30am



Zoom - Virtual Platform

Speakers



Dr David Grau Prof. Dr Samuel T. Ariaratnam

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Dr. Grau's Synopsis and Biodata

Talk Title “Advanced Project and Production Controls: Driving Real-Time Decision-Making in Construction”

Abstract: Dr. Grau's line of inquiry proactively explores mechanisms supporting decisions with accurate and timely information on behalf of the project, portfolio of projects, and organizations. His initial work focused on monitoring onsite entities with sensing devices and epistemic models. Third-party vendors commercialized the technology, which is currently adopted by 60% of Engineering-Procurement-Construction (EPC) projects worldwide. In recent years, his research has encompassed systems engineering, decision-making, and life-cycle performance to provide a sound rationale for designing information flows among project functions and stakeholders so that data is trustworthy and available when needed. A novel line of research is exploring mechanisms of controls from a production systems perspective, coining the term advanced project controls, which combines strong control processes and procedures with advanced sensing and information technologies—for example, devising the role of AI in project controls or the concept of predictability as “the team’s ability to forecast accurate project outcomes early in the project delivery process.” Thousands of engineers and practitioners have been trained with the generated resources and products.

Biodata: Dr. David Grau (“au” pronounced like “ow” in allow) is the Sundt Construction on Professor in the School of Sustainable Engineering and the Built Environment at Arizona State University. He graduated with both master’s and doctorate degrees in civil, architectural, and environmental engineering from the University of Texas at Austin and with an industrial engineering degree from the Universitat Politècnica de Catalunya in Barcelona. Prior to his affiliation with ASU, he taught at the University of Alabama. During his academic career, he has received numerous national teaching and research awards, including the Distinguished Professor Award and Outstanding Researcher Award by the Construction Industry Institute and the Celebration of Engineering & Technology Innovation (CETI) award by FIATECH. Complementing his academic career, he has worked in the private industry for nearly 10 years, including positions such as program manager for heavy industrial projects and director of a large engineering design department. He has led large interdisciplinary and multicultural teams to deliver numerous capital projects in South America, Africa, and Europe. He is a member of ASCE and ASEE professional societies and holds a professional license as an Industrial Engineer in Barcelona.

Prof. Dr Samuel T. Ariaratnam's Synopsis and Biodata

Talk Title “Solutions to Addressing Underground Utility Infrastructure Construction and Rehabilitation with Minimal Disturbance to Surface Activities”

Abstract: The underground utility infrastructure system worldwide is vast and includes a wide range of critical systems including water, sewer, telecommunications, electrical, natural gas and petroleum lines. Each of these are necessary in sustaining society for both business and pleasure. Today, urban cities are growing at an alarming rate and people continue to move to these city centers seeking employment opportunities. There are currently 34 megacities of greater than 10 million residents in the world with 50% of those located in China and India. Subsequently, there is a need for utilizing engineering practices and construction methods that minimize disturbance to surface activities during utility installation and rehabilitation. The use of trenchless technologies has increased globally as cities continue to deal with aging utility pipeline infrastructure. This presentation discusses innovative trenchless construction methods with examples of applications in crowded urban centers.

Biodata: Dr. Ariaratnam is a Professor and Sunstate Chair of Construction Management & Engineering at Arizona State University with over 25 years of experience in trenchless pipeline engineering research and education. He graduated from the University of Waterloo with a B.A.Sc. in Civil Engineering in 1989 and received a Master’s degree in 1991 and Ph.D. in 1994 from the University of Illinois at Urbana-Champaign. He has published over 350 technical papers and reports and is a co-holder of five patents. Dr. Ariaratnam was elected to the Canadian Academy of Engineering in 2018, the U.S. National Academy of Construction in 2019, and the European Academy of Sciences & Arts in 2023. Dr. Ariaratnam has received numerous awards including the 2012 North American Trenchless Technology Person of the Year. Additionally, he has received recognition from the American Society of Civil Engineers (ASCE), where he received the John O. Bickel Award, Arthur M. Wellington Prize, Pipeline Division Award of Excellence, and the Stephen D. Bechtel Pipeline Engineering Award. In 2022, Dr. Ariaratnam was elected Distinguished Member, the highest honor that ASCE can bestow with only 264 ever holding this honor. In 2022, Dr. Ariaratnam was appointed by U.S. Transportation Secretary Pete Buttigieg to serve on the Gas Pipeline Advisory Committee of the U.S. Department of Transportation’s Pipeline and Hazardous Materials Safety Administration.