

GSS interdisciplinary seminar
GCOE-ARS seminar

Reliability Theory in the Practice of Architects and Building Engineers

Professor Gregory Chiu, Ph.D., P.E.

23 March 2015

Time: 14:00-16:00

Place: E517D, Kyoto University Uji Campus

Structural Reliability has been a topic of research for several years, and had been the basis for establishing the original load and resistance factor design methods and, more recently, performance based design. As the theory of structural reliability has improved, so has the knowledge of building performance due to seismic and other catastrophic events. This interaction of reliability theory and the practice of building design requires a balance of what calculations are possible as compared with the knowledge and expectation of structural system performance, where structural system performance varies with design procedures and whose knowledge is limited due to uncertainty of performance under random excitation.

This presentation discusses the theory, design and implementation of reliability theory into the built environment as researchers, practitioners, building owners and government departments work to develop the built environment using the best available knowledge and tools to plan, design and construct it. Specifically, the concepts and issues regarding education, research, and design of buildings as regards structural reliability will be addressed:

1. Education. The presentation of reliability theory.
2. Research. Research to understand the quantification of loads and resistances into reliability theory.
3. Design. The integration of research into design procedures.

About the lecturer

Gregory Chiu is Professor of Practice at the Asian Institute of Technology (AIT) outside of Bangkok, Thailand, where he lectures on the design and management of offshore structures and infrastructure systems. Prior to joining AIT, Prof. Chiu worked for over 20 years as an engineering designer, engineer in the property insurance industry, and structural risk management consultant running his own company. Prof. Chiu's particular academic expertise is the risk management of systems in which he seeks to establish practical quantitative risk management procedures from which financial decisions can be made. Prof. Chiu received his Ph.D. in civil engineering from Stanford University and is a Registered Professional Engineer in California.



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