THE HONG KONG POLYTECHNIC UNIVERSITY
香港理工大學
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DEPARTMENT OF
BUILDING & REAL ESTATE
建築及房地產學系
INTERNATIONAL • COLLABORATIVE • CONSTRUCTION

BRE DISTINGUISHED LECTURE
Smart Bridge Superstructure

Speaker:

Prof. Tarek Zayed

BSc, MSc, PhD, P.E., PEng, FASCE, FCSCE
Professor, Award Co-ordinator of MSc/PgD in Construction and
Real Estate Programme, Academic Advisor,
Department of Building & Real Estate,
The Hong Kong Polytechnic University

Date
17 May 2018 (Thursday)

Time
6:30pm – 8:00pm
(Registration from 6:00pm)

Venue
TU107, 1/F, Yip Kit Chuen Building (Close to Core T), The Hong Kong Polytechnic University, Hung Hom, Kowloon
(Successful applicants will be informed of details by email)

Medium
English

Fee
Free of Charge

All interested are welcome.

For details and reservation, please visit

About the Speaker :

Prof. Tarek Zayed, has a Ph.D., M.Sc., and B.Sc. in Construction Engineering and Management. He has 30 years of professional experience working in the construction industry training and in academic posts in USA, Canada, Hong Kong, and abroad. Prof. Zayed conducted research on infrastructure management, simulation and artificial intelligent applications in construction, asset performance, scheduling, life cycle cost (LCC) analysis, budget allocation, and risk assessment for construction and rehabilitation of highways, oil and gas pipelines, water and sewer systems, subway system, and bridges. Recent developments include condition rating, deterioration, LCC and technology-based models for bridge superstructure; water, sewer, oil & gas pipelines / systems; and tunnels and metro stations.

About the Lecture:

Based on 2017 statistics, the U.S. has 614,387 bridges in which 40% are 50 years or older and 56,000 (9.1%) of bridges were structurally deficient. One-third of Canada's 75,000 highway bridges have structural or functional deficiencies and short remaining service lives. Hong Kong has 1,340 bridges, of which 7% and 40% are above 50 and 30 years old, respectively, now showing several signs of ageing. Québec bridges have reached 72% of their service lives. Therefore, due to limited funds and public accountability, transportation agencies need to have a firm foundation in making justifiable intervention decisions. This cannot be done without reliable model(s) for bridge superstructure condition assessment using non-destructive technologies (NDT), such as Ground Penetrating Radar (GPR), Infrared Thermography (IR), and image analysis. Interpretation algorithms for NDT results as well as bridge deck corrosiveness model and rating system will be presented. The developed approach is believed to help transportation agencies identify critical deficiencies, take informed decisions and focus limited funding on most deserving bridge superstructure.