香港岩土及岩土環境工程專業協會
ASSOCIATION OF GEOTECHNICAL &
GEOENVIRONMENTAL SPECIALISTS (HONG KONG)

Contact: David SEIN, E-mail: David.Sein@leightonasia.com
Website: www.ags-hk.org

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ANNOUNCEMENT

AGS (HK) Technical Seminar

Durability Modelling of Concrete Element in Tunnel and Underground Environment

by

Dr Shengjun Zhou (Bell Asset Engineering Pty Ltd)

Date : Thursday, 22 August 2024

Time : 18:30 – 19:30 (Hong Kong Time)

Venue : The webinar will be conducted through Zoom.

Successful applicants will be informed by emails with a Zoom's link to the webinar. Participants should arrange for their own device with a stable network environment to join the webinar.

Enquiry : agshk.org@gmail.com

Fee : Free of charge

Registration : https://www.ags-hk.org/event-details/durability-modelling-of-concrete-element-in-tunnel-and-underground-environment

Please register by 18:30 on 22 August 2024. Successful applicants will receive webinar details after registration. CPD certificate will be sent to the attendees, who attended more than 80% of the webinar time, within 2 weeks after the webinar.

Book Prize : Professionals under 35 years of age are encouraged to submit a Book Prize Report (max. 500 words) on webinars and site visits arranged by AGS (HK).

Contributors to successful Book Prize Reports will be awarded a Book Prize that comprises of a book "Geology of Site Investigation Boreholes in Hong Kong" written by Chris Fletcher, and a coupon of HK$500 for Eslite Spectrum (誠品生活) or equivalent. The successful Book Prize Report will also be published on the AGS (HK) website to showcase your accomplishment.

Prior to report submission, please refer to the "The AGS Book Prize Reports – Assessment Framework"* on the AGS (HK) website. You may submit your Book Prize Report to our assessors by uploading the report file through the AGS (HK) website at https://www.ags-hk.org/book-prize. Should you have any questions, please contact us at agshk@meinhardt.com.hk.

***Link to the AGS Book Prize Reports – Assessment Framework:**
https://www.ags-hk.org/_files/ugd/521a4c_b9449603473248468744 1cf4ed4d0bf9.pdf

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Synopsis:

The presentation encompasses four parts – (1). General model for reinforcement corrosion: Including Tutti's general model for reinforcement corrosion comprising initiation period, propagation period, and severe damage period. (2). Chloride models and application: Including history of chloride model development and recent progress; application of chloride models in tunnel and underground environment. (3). Carbonation models and application: Including history of carbonation models and recent progress; application of carbonation models in tunnel and underground environment. (4). Corrosion modelling: Including prediction of reinforcement corrosion in tunnel and underground environment.

About the Speaker:

Dr Shengjun Zhou is a Director and National Engineering Manager in Bell Asset Engineering Pty Ltd in Australia. He received PhD degree in University of Dundee (UK) and Master of Engineering in Tsinghua University (China). He previously held principal positions in AECOM, Ancon Beton, and BCRC in Australia. Prior to that, he had been R&D Manager in Boral and Research Fellows in Dundee and Singapore. Altogether, he has 39-year postgraduate experience in concrete research and engineering, with special focus on concrete durability design/assessment and early age thermal analysis for cracking control.

He has made ground-breaking progress in establishing ('third-generation') analytical models suitable to predict chloride diffusion process in concrete with an increasing chloride surface concentration, which commonly occurs in concrete exposed in a chloride laden environment during initial exposure period. In addition, he has also developed relevant methods to combine the chloride profiles in the consequent periods having totally different diffusion conditions (or input parameters). He has established relationship between key input parameters in ('second-generation') empirical chloride model and analytical chloride model to resolve the long-standing confusion and dispute in this topic. He has also established ('third-generation') numerical model to predict carbonation in concrete commonly exposed to gradually changing climate conditions (e.g. increasing CO_2 due to carbon emission, increasing temperature due to global warming, and decreasing humidity). These models & methods enable accurate and reliable service life prediction of reinforced concrete, never achieved before. They have wide application and been used successfully in various major projects.