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

2

ANNOUNCEMENT

AGS (HK) Technical Seminar

Performance of High Capacity Socketed H-Piles with Long Rock Socket

by
Ir Dr Arthur K O So
(Consultant of Meinhardt Infrastructure and Environmental Limited
Director and Founder of AKOS Geotechnical Consultant Limited)

Date : Thursday, 22 May 2025

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/performance-of-high-capacity-socketed-h-piles-with-long-rock-socket

Please register by 18:30 on 22 May 2025. 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 pile capacity is commonly calculated by the engineers as the lesser of its structural capacity and the ultimate resistance of ground supporting it using a generalized equation irrespective of the shaft type, socket diameter, socket length, rock type and grout strength. This equation may be over-simplified and risky if the pile/grout/rock interaction is not considered. Based on the loading tests of 6 instrumented socketed piles with 4m – 6m rock socket by others and 35 non-instrumented socketed H-piles with 5m – 34m rock socket by the author, the load-transfer mechanism in long rock socket is found dependent not only on the mobilization of shear resistance in soil and rock layers, but also largely on the steel/grout bond behavior. A side resistance distribution factor α_s is introduced as a simple and practical index to represent the load-transfer mechanism along the pile shaft and to the socket. It would increase with an increase in loading and pile length in soils, but decrease with an increase in socket length indicating that critical socket length does exist which is likely depending on the grout bond strength. Average bond stress reduces with increased socket length when the critical socket length is exceeded. Residual settlement is largely due to the slip and bond failure at the interface. Creep settlement is largely affected by the properties of grout mix and tends to increase with increased socket length.

About the Speaker:

Ir Dr So has over 44 years working experience, of which about 26 years are with the contractors, reaching senior management levels involving site supervision, costing, planning and contract administration of many civil, site formation, basement, deep excavation and various kinds of foundations commonly used in Hong Kong. He joined MTR in 2010 as Senior Geotechnical Engineer, initially at the West Kowloon Terminus and Approach Tunnel of the Express Rail Line, then at the North South Link of the Shatin Central Line. During this period, his experience is further broadened to other kinds of geotechnical works such as instrumentation and monitoring, soil stabilization, rock excavation, blasting and marine works. He retired from MTR on 2017and set up his own company AKOS Geotechnical Consulting Limited and is working as a Concultant for Meinhardt Infrastructure and Environmental Limited. He has published a number of papers related to his work experience in journals and conferences. He is also one of the committee members in drafting the Explanatory Handbook for the Code of Practice for Foundations (BD 2004).