WEBINAR

Lessons Learned From Geotechnical Failures

20 May 2025
4.00pm – 6.00pm

SPEAKER

Prof. Ir. Dr. Paulus Pramono Rahardjo

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Webinar on Lessons Learned From Geotechnical Failures

SYNOPSIS

It is quite embarrassing that knowledge and technology in geotechnical engineering have been so advanced, however geotechnical failures frequently still occur in many places, especially during construction or even during operation. This talk is based on the author experience (mainly from geotechnical forensic engineering) with over more than 45 years of professional practice. There are a number of quite interesting findings from common mistakes such as not considering excess pore pressures, inaccurate geotechnical investigation, wrong parameters in the geotechnical design, sudden drawdown, weak quality control to more complex reasons such as complex geology condition, unexpected landslides in the construction area, complexities or difficulties in construction sequence, difficult and problematic soil and rock materials and wrong identification of initial conditions etc.

These experiences have been well documented by the author including geotechnical instruments and soil investigation data.

The case histories provide excellent lessons due to specific and unusual soils conditions, unidentified complexities, and construction difficulties. Of special interest is because initial condition (such as stress histories and K_o values) influence the soil behaviour and many of the failures are also due to unidentified excess pore pressures in the ground. Samples retrieved for Laboratory Test do not represent real condition (because excess pore pressures diminished) and hence in many situations miss the stability calculation. The author has shown how CPTu is able to reveal the initial excess pore pressures and to generate more reliable soil parameters under their effective stresses (Rahardjo et al., 2008, 2016, 2017, 2022, 2024, 2025) .

Some difficulties presented for cases where the engineers not aware of construction on colluvial and others. Ten lessons with 15 selected case histories to be used for illustrations and concluded as lessons learned.

SPEAKER BIODATA

Prof Ir. Dr. Paulus Pramono Rahardjo completed undergraduate study at Universitas Katolik Parahyangan (UNPAR) and since then has been faculty member at the university. He pursued graduate study in highway engineering at Bandung Institute of Technology (ITB), then Master's degree and PhD degree from Virginia Tech (USA). His dedication in teaching, research and community services led him to the position of full professor in the year 2000. He has been actively engaged in teaching, research as well as thousands of geotechnical consultancies. He works for design and advising clients on many geotechnical problems including building foundations, highways, tunnels, bridges, jetty and wharfs, dams, landslides hazards, earthquakes, coal mining etc. Among his specialties with intense experience in research and practice are in the field of in-situ testing, landslides or slope protections and seismic hazard study. He has written more than 200 articles/ papers, research reports, books and manuals. He has served the university as Department Head, Vice Dean of Faculty of Engineering, Director of the Graduate Program and Vice Rector for Academic Affairs. Currently, he is the leader of Head of Geotechnical Research Centre. In professional practice he works as director of Consulting Companies including director of PT Geotechnical Engineering Consultant and PT Testana Indoteknika as well as an Independent Geotechnical Expert. His affiliation includes the Indonesian Geotechnical Society (HATTI), American Society of Civil Engineers in the Geo-Institute, the Indonesian Experts on Disasters (IABI) and Board Representative of International Consortium on Landslides (ICL). Currently he is member of KKBG (Indonesian Committee on the Safety of Buildings) and Expert for IKN (New Capital) and Panel for Buildings (TABG) of DKI Jakarta and Directorate of Housing in the Indonesian Ministry of Public Work

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