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Pozvánka na přednášku

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Part 1: How To Do Research
Part 2: Correlations In Ground Engineering

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How To Do Research

John Atkinson (CV overleaf)

Abstract

Students at university do research for a higher degree; engineers in companies do ground investigations and geotechnical designs; scientists in government research institutions do research that advises politicians and directs national practices. All follow a common methodology: they collect information, they assess the information and arrive at conclusions; they report and implement their findings.

There are some principles for good research that are absolutely basic and apply universally to all research. There are also specific methodologies that are appropriate for particular topics and these often develop with time as technology improves. The talk will focus on research and investigation in geotechnical engineering but the principles are universal.

Correlations In Geotechnical Engineering

John Atkinson

Abstract

Ground engineers routinely use simple correlations to obtain soil parameters and to design ground works. Some of these have a sound theoretical basis and can be applied generally while some are purely empirical and so should be applied only within the limits of the observations used to derive them in the first place.

A classification for correlations was suggested by Wroth (1984) and this has been used to examine the theoretical basis – or lack of it – for some of the more common empirical correlations in geotechnical engineering.

Professor John Atkinson - CV

John Atkinson was educated at Norwich School and graduated in Civil Engineering from Imperial College in 1964. After graduation he worked with contractors and consultants in UK and Australia on a variety of projects including design of earth-fill dams, design and construction of sewerage works, construction of pre-cast concrete bridges, ground investigations and design of foundations, slopes and walls in soils and rocks. His work took him throughout much of Australia, New Guinea and the Solomon Islands.

In 1969 he returned to Imperial College and was awarded an MSc in 1970. He stayed at Imperial College as a research student working with Professor Alan Bishop on anisotropy and stiffness of London Clay and was awarded a PhD in 1973. While at Imperial College he designed and used the original hydraulic stress-path cell, which is still in use today, and he developed an interest in Critical State Soil Mechanics.

From 1973 to 1976 he was a research assistant at Cambridge University where he worked with Professor Peter Wroth and Professor Andrew Schofield on soft ground tunnelling. From 1976 to 1980 he was first lecturer and then senior lecturer in Civil and Structural Engineering at University College, Cardiff.

In 1980 he was appointed Reader in Soil Mechanics at City University, London and he was promoted to a Chair of Soil Mechanics in 1985. He set up the City University stress path soil mechanics laboratory, helped to establish the London Geotechnical Centrifuge and he was the founding Director of the City University Geotechnical Engineering Research Centre.

John Atkinson is expert in investigation of soil behaviour in laboratory tests and in centrifuge model testing. He has worked on the behaviour of many different soils including soft and stiff clays, carbonate and quartz sands, saprolites and tills. He has used centrifuge modelling to investigate a number of different problems including ground movements around tunnels in soft ground and drainage and stability of granular cargoes in bulk carrier ships. He is author of three text-books on soil mechanics and foundation engineering.

From 1995 to 1997 he was a Royal Society Research Fellow with Ove Arup and Partners and for several years worked as a Consultant with them. He has advised industry and acted as expert on diverse problems including tunnelling and shaft sinking, loadings on large buried pipes, movement of granular cargo in bulk carrier ships and determination of soil and rock parameters for design. After his retirement he has been appointed Emeritus Professor at City University, and continues his involvement with practice as Senior Principal of Coffey Geotechnics.

He has lectured widely in UK and overseas on a variety of topics. He was the Rankine Lecturer in 2000, and also the Prague Geotechnical Lecturer in 2005.