

Book review

Geotechnical engineering in residual soils. *L. D. Wesley.* Chichester: Wiley, 2010. 272 pp. ISBN 978-0-470-37627-0. £95.00

This book draws on Dr Wesley's vast experience as both a practising engineer and a teacher in those parts of the world dominated by the presence of residual soils. The book is a companion to Dr Wesley's earlier book *Fundamentals of soil mechanics for sedimentary and residual soils*, and there are inevitably some overlaps with it. The book deals with the principles of residual soil behaviour, and highlights the dangers of applying traditional concepts developed for sedimentary soils to residual soils.

Dr Wesley describes residual soils as "raw material" – an unkempt, unprocessed and unsorted group'. He discusses the basic differences between residual and sedimentary soils, in terms of their formation, mineralogy, structure and classification, and consolidation behaviour. As a result of these differences, empirical correlations developed for sedimentary soils are not valid. He takes the opportunity once more to get his point across about the misleading information that

follows from the use of semi-log plots in examining one-dimensional compression of soils, illustrating how this form of plot can indicate an apparent effect of stress history in residual soils when none exists.

The book is essential for geotechnical engineers dealing with residual soils. It is a valuable source for design parameters and design methods when dealing with bearing capacity, earth pressures and slope stability. There are also chapters on site investigation and compaction. Dr Wesley provides worked examples of settlement estimates, and presents practical examples and field records. One of his main emphases is on the importance and role of observation in the field.

Dr Wesley concentrates on those residual soils with which he has most experience, namely residual soils derived from volcanic rocks, but he highlights those aspects of residual soil behaviour that are common to the whole group, dealing briefly with residual soils derived from weathering of granite and hard and soft sedimentary rocks, and with laterites and black cotton clays. There is a particularly interesting section on the behaviour of pumiceous material.

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