Book review

Hot Deserts: Engineering, Geology and Geomorphology

M. J. Walker (ed.). The Geological Society, London, UK, 2012, ISBN 978-1-86239-342-4, £100-00, 440 pp.

This volume was first published in 2012, forming part of the Geological Society of London's special publication series. The book is the culmination of work over several years of the Desert Working Party of the Engineering Group, chaired by John Charman, supported by a number of leading experts in their field. Authors are drawn from industry and academe spanning the geomorphological, geoscience and geotechnical engineering worlds. Thus this volume covers a broad range of topics pertinent to working in, and dealing with, the many challenges faced when engineering in hot desert regions around the world. It is testament to the effective working of the team that such a comprehensive volume has been produced. It is especially pleasing because books of this nature often suffer from a loss of continuity, coherence and flow between what can be a series of standalone chapters. The editor and working group are to be congratulated as this book has clear inter-linkages between chapters, but also allows for chapters on discrete topic areas. This makes for an informative read, with good use of figures, illustrations and photographs, to support each chapter's text. In addition, a useful expanded glossary of engineering and geological terms combined with a detailed index is provided, so helping non-specialists through the key terminology.

This book takes a worldwide view and aims to provide an authoritative and comprehensive state-of-the art review of hot desert terrains, dealing with the full range of geomorphological concepts, site investigation implications for working in hot desert environments, as well as the engineering issues

and challenges that such environments present. It is clear that this book has fulfilled its aim, with ten chapters covering key geological and geomorphological background, investigation and testing techniques, and engineering behaviour. Thus, this book takes the reader on a journey from the impacts of humans, climate and geological aspects, developing conceptual models of hot desert environments, through to the specifics of key challenges in undertaking site investigations (including laboratory and field testing approaches to be used); engineering challenges are also addressed, including engineering behaviour (e.g. collapse and impact of salt contents), availability of key construction materials and, importantly, key considerations for design and construction issues when dealing with hot desert environments. Key engineering aspects highlighted include earthworks and compaction control, the impact of the use of soil reinforcement, foundations (e.g. piling), road subgrade, coastal development, flood and erosion control, and approaches that can be used to deal with wind blow sands/dusts.

Although the latter part of the book will be of particular interest to the journal readership, the earlier coverage provides an excellent source of supporting information to ensure that any improvement techniques applied in a desert environment are conducted safely, economically and in an environmentally sound way. In short, this book is a key addition to any library where the users are actively engaged in dealing with desert environments.

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