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Books

REVIEWS

Not knowing: the art of turning uncertainty into possibility

by Steven D'Souza and Diana Renner, published by LID, 2014, £12·99. reviewed by **Jane Noakes**, London, UK

Winner of the Chartered Management Institute 'management book of the year 2015' award and 'the commuter's read' category, this book challenges the assumption that people should always 'ask the experts' when faced with management or business issues.

It highlights the importance to solution-finding of having the confidence to admit to not knowing all the answers beforehand, and of being able to welcome those feelings of uncertainty as a sign of entering the 'innovation zone' – a place where solutions are possible.

The book uses a number of case studies to illustrate how trusting in the process – though it may feel counterintuitive at first – has been embraced as a force of change by individuals, enabling them to take a metaphoric 'quantum leap' and move their lives forward.

The book will help readers identify and understand the feelings involved and encourage them to step into the darkness for an answer, rather than remain in the light of knowing.

Core principles in soil mechanics

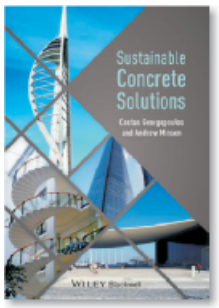
by Sanjay Kumar Shukla, published by ICE Publishing, 2014, £21, reviewed by **Phil Renforth**, Cardiff University, UK

Core Principles of Soil Mechanics is an Institution of Civil Engineers textbook designed as an accompaniment to a short introductory course on soil mechanics. In this the book excels, as it is substantially more accessible than some other classic textbooks.

Reading through the book is very much like attending a seasoned lecture series, the fundamentals (basic properties, stress, shear strength, consolidation and groundwater flow) are concisely described and summarised, examples are sufficient, the mathematics are described with an appropriate quantity of text and the book is slender – only 200 pages, perfect for a disinterested undergraduate.

As a new lecturer teaching soil mechanics, I found the text invaluable for designing introduction lectures to the topic.

Sustainable concrete solutions



by Costas Georgopoulos and Andrew Minson, published by Wiley Blackwell, 2014, £49·95, reviewed by **Trevor Jessop**, Woodbridge, UK

The demand for sustainable buildings and civil infrastructure will always exist. Concrete is the 'go to' material for a host of designers, architects and civil engineers because of its many useful properties and the fact that its constituent materials are plentiful and available globally. So, how can concrete be employed in a socially and environmentally sensitive way? The answer is in this 224-page book.

The introduction usefully reminds the reader of the definitions of sustainability and sustainable development together with the reasons why concrete is a sustainable material. The challenges facing engineers in regard to producing sustainable solutions to the demands of the world's population in the face of climate change and its causes are then discussed.

The book covers the uses of concrete from cradle to cradle, starting with a discussion on the conceptual design of buildings and infrastructure to meet the challenge of delivering built environment projects that, 'maximise the economic, societal and environmental benefits whilst minimising the environmental impacts'. Several case studies are used to illustrate the points made and environmental assessment schemes, such as Breeam and Ceequal in the UK, are also discussed.

This book provides useful guidance to students, researchers, academics and practitioners of all construction disciplines. I would especially recommend it to trainees preparing for their Institution of Civil Engineers professional review as it offers excellent background for that often-considered-problematic attribute of 'sustainable development'.

Effective site investigation (2nd edition)

by Chris Clayton and Derek Smith, published by ICE Publishing, 2013, £37·50, reviewed by **Colin Rawlings**, CH2MHill/HS2, UK

This 86-page guide on effective site investigation is part of a series by the Institution of Civil Engineers and UK Site Investigation Steering Group on site investigation in construction. It provides a succinct reference to the key aspects of carrying out a site investigation for a construction project.

The objectives of a site investigation are clearly stated as, 'to determine the ground conditions on a site and from these deduce (and as far as possible to quantify) all the risks posed to subsequent construction or development'.

Roles and responsibilities are outlined, the requirement for a multidisciplinary team and the importance of developing ground models to identify hazards are noted, together with the shortcomings of some procedures and techniques.

MONITOR:BOOKS

NEW BOOKS

The ICE library maintains one of the most comprehensive collections of civil engineering books in the world, including all titles from ICE Publishing (shown in bold below). New books received in the past 3 months include the following.

Analysis of hardened concrete: a guide to tests, procedures and interpretation of results (2nd ed.)	Concrete Society	£75·00
Building information modelling	K M Kensek	£22·99
Building regulations in brief (8th ed.)	R Tricker	£30·39
Code of practice for project management for construction and development (5th ed.)	Chartered Institute of Building	£54·95
Composite structures according to Eurocode 4: worked examples	D Dujmovic	£75·00
Design of composite beams using precast concrete slabs in accordance with Eurocode 4	G H Couchman	£50·00
Earthworks: a guide (2nd ed.)	**P Nowak**	**£70·00**
Engineers' fees 2015: a survey of the fees charged by consulting civil and structural engineers	Fees Bureau	£195·00
Environmental good practice on site guide (4th ed.)	P Charles	£70·00
Lessons learned from the Fukushima nuclear accident for improving safety of US nuclear plants	National Research Council	£41·59
Metal building systems (3rd ed.)	A Newman	£78·99
Offshore wind: a comprehensive guide to successful offshore wind farm installation (2nd ed.)	K E Thomsen	£60·99
Pile design and construction practice (6th ed.)	M Tomlinson	£107·72
Principles of structural design: wood, steel, and concrete (2nd ed.)	R S Gupta	£82·00
Programme management in construction	**P T Barnes**	**£50·00**
Reinforced concrete with FRP bars: mechanics and design	A Nanni	£80·00
Rock engineering (2nd ed.)	**A Palmstrom**	**£75·00**
Strengthening of concrete structures with adhesively bonded reinforcement: design and dimensioning of CFRP laminates and steel plates	K Zilch	£45·00
Structural analysis (5th ed.)	A Kassimali	£58·99
Structural engineer's pocket book: Eurocodes (3rd ed.)	F Cobb	£19·99
Sustainable infrastructure: sustainable buildings	E Green	£30·00
The fabric of space: water, modernity, and the urban imagination	M Gandy	£19·31
The guide to the circular economy: capturing value and managing material risk	D Benton	£35·00
The science of water: concepts and applications (3rd ed.)	F R Spellman	£64·07
The Shell bitumen handbook (6th ed.)	**R N Hunter**	**£110·00**
Wilmot-Smith on construction contracts (3rd ed.)	R Wilmot-Smith	£199·99

All books can be borrowed from the ICE library on the first floor of 1 Great George Street, London, SW1P 3AA from 8·30 am to 6·30 pm, Monday to Friday. ICE Publishing titles can also be purchased from the ICE library or ordered by calling +44 1892 832299, emailing orders@icepublishing.com or by visiting www.icevirtuallibrary.com/content/books.

For anyone considering the use of site investigation for a project, this book provides a concise overview of the multifaceted requirements of the site investigation, the personnel involved, general contractual framework, tactics to promote effectiveness and data management. The appendices also provide checklists and outlines for each of the various appendix headings.

Hydraulics for civil engineers

by Peter Wynn, published by ICE Publishing, 2014, £30, reviewed by **Mark Hagger**, Environment Agency, UK

This concise, 196-page Institution of Civil Engineers textbook provides an excellent introduction to practical hydraulics and hydrology for undergraduate students, especially with text boxes of revision points and chapter summaries. It will also be valuable as a handbook for practising engineers.

All of the basic concepts are covered, from hydrostatics, pipe and open-channel flow through to hydrology, coastal hydraulics and two-dimensional ideal fluid flow. There are numerous worked examples throughout the book to help the reader understand the basic principles involved, which is essential if the many advanced hydraulic and hydrological computer programs are to be used properly. The author effectively reminds us how easy it is to perform many calculations by hand, at least to obtain a first-order appreciation of possible design options.

In the past, solutions to hydraulic challenges were often developed from physical principles alone, leading to the implementation of some environmentally damaging schemes. *Hydraulics for Civil Engineers* starts to remedy that problem by referencing environmental issues, such as the regular geometric design of channels, and how they can be better addressed. Some of the pictures very clearly demonstrate the problems generated by an over-simplified physical approach.