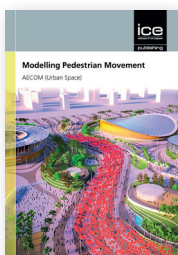


Books

REVIEWS

Modelling pedestrian movement

by Aecom (Urban Space), published by ICE Publishing, 2019, £80, reviewed by **Philippe Bouillard**, Université Libre de Bruxelles, Belgium



When travelling to an editorial panel meeting of this journal last December, I was not allowed to enter King's Cross St Pancras Underground station due to overcrowding. This new book on pedestrian modelling by Aecom's Urban Space team is therefore a timely arrival.

The authors make a significant contribution to the literature by presenting the techniques of collecting data and then explaining how to model pedestrian movement. Their presentations are clear and easily transferrable to real-life applications.

A series of case-studies are provided including transport, events, buildings and infrastructure. This book will help any civil engineer involved in urban design, infrastructure planning or temporary works to learn about this emerging and increasingly important topic.

CESMM4 Revised: handbook

by Martin Barnes and Mike Attridge, published by ICE Publishing, 2019, £70, reviewed by **Veronica Flint Williams**, Environment Agency, UK



While less popular than they once were, bills of quantities still have their place in construction procurement. The Institution of Civil Engineers' Civil Engineering Standard Method of Measurement (CESMM) is a recognised method for preparing bills for infrastructure contracts and this book describes it well.

The latest version, CESMM4 Revised, is suitable for any conditions of contact. While users need to have a thorough understanding of how work is constructed to build the bill of quantities and select all necessary items, this standard approach supports mutual understanding between contracting parties.

This clear and informative handbook book provides advice on the proper use and understanding of CESMM4 Revised. It will educate those who are familiar with preparing bills by explaining recent developments, and it will introduce those as yet inexperienced in the subject to the basics and benefits of the CESMM approach.

Smart concrete

edited by Ravindra Dhir and Kevin Paine, published by ICE Publishing, 2019, £125, reviewed by **Dian Saunders**, Water and Sewerage Corporation, Nassau, Bahamas



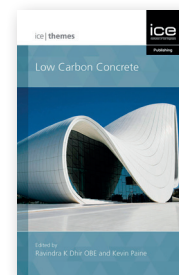
Part of the Institution of Civil Engineers 'ICE Themes' series, this informative collection of papers presents the work of evolutionary thinkers about how to meet the new demands on concrete by making it 'smarter'.

Research is presented on damaged concrete curing and healing itself using unhydrated cement grains aided by mix design, embedded sensors and composites – including bacteria spores in capsules and shells.

Also covered are phase-changing materials that alter concrete temperature, enabling 28-day strength and decreased permeability in hours, plus novel concrete temperature monitoring methods. Reinforcement inspection and whole-life monitoring systems are also included.

Low carbon concrete

edited by Ravindra Dhir and Kevin Paine, published by ICE Publishing, 2019, £125, reviewed by **Paula McMahon**, Sir Robert McAlpine, UK



Also part of ICE Themes, this is a selection of papers on reducing the carbon dioxide emissions of concrete. Topics covered include cementitious waste materials, blended cements, new cements, nano particles, geopolymers, durability and sustainability.

Practical implications of cement replacement are discussed in relation to corrosion risks, while sustainability is considered with discussions on life-cycle assessment, global impacts on carbon dioxide footprints and pricing.

This book provides a useful source of information for the development of a product which could contribute to global sustainability.

Self-compacting concrete

edited by Ravindra Dhir and Chao Qun Lye, published by ICE Publishing, 2019, £125, reviewed by **Pierfrancesco Valerio**, Highways England, UK



This ICE Themes book is a collection of 20 technical papers on self-compacting concrete (SCC). It covers the history and development of SCC, design methods, constituent materials, fresh and hardened properties, structural properties and practical use.

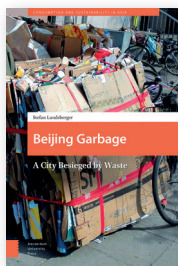
Advantages of SCC include increased workability, ease of placing around congested reinforcement and, by removing the need for vibrating equipment, health and safety benefits. However, higher production costs, sensitivity to mix consistency and lack of guidelines have limited uptake of SCC.

MONITOR Books

This book should help to remove the barriers to wider use of SCC. It will be of interest to all civil engineers involved in research, design and specification of concrete.

Beijing garbage – a city besieged by waste

by Stefan Landsberger, 2019, published by Amsterdam University Press, 2019, €99, reviewed by **Liz King**, Mott MacDonald, UK



This book provides a useful and well-researched case study for those involved in solid waste management. It explains how China is dealing with ever-growing amounts of solid waste and studies the actions being taken in Beijing.

The book takes the reader on the Chinese government's journey to improve recycling, reduce the use of natural resources, introduce more formal waste management and ultimately reduce waste volumes going to landfill.

The book then looks in detail at the various means by which the government has encouraged waste separation by the population to increase the amounts recycled.

Visionaries and unsung heroes – engineers, design, tomorrow

edited by Werner Lang and Cornelia Hellstern, published by Detail Business Information, 2019, £20, reviewed by **Phillip Thurlow**, UK



In 2018, a Bavarian construction industry forum with links to the Technical University of Munich hosted an exhibition and produced this accompanying book. It notes on numerous occasions that the root for 'engineer' is defined as that which is imaginative or creative. It describes and explains a broad selection of fascinating and innovative projects for which civil engineers were responsible.

Appropriately, in an age of climate change and Extinction Rebellion, it emphasises the importance of sustainable development, and concludes engineers 'face the special challenge of developing environmentally compatible solutions to ensure humanity's continued existence'.

This handsome and timely publication will be appreciated at many different levels. It may inspire school leavers to consider civil engineering as a worthwhile career, while many busy civil engineers may find its holistic and optimistic viewpoint suitably refreshing. It will also help civil engineering employers identify future trends, issues and workstreams.

NEC4: the role of the service manager

by Bronwen Mitchell and Barry Trebes, published by ICE Publishing, 2019, £50, reviewed by **Veronica Flint Williams**, Environment Agency, UK



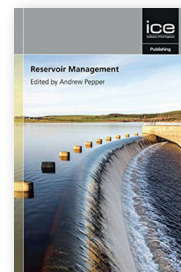
With the release of the NEC4 suite of contracts in June 2017, there is a need to bring those in the industry familiar with NEC3 forms up to speed on the changes to this widely used contract family. This new book provides a practical insight into the operation of the NEC4 Term Service Contract (TSC) and the pivotal role and responsibilities of the service manager.

The book is broken down into easily digestible sections. I particularly liked the division of service manager behaviours into 'good habits' and 'bad habits', and found that the section considering what a contractor will require of the service manager provides a beneficial perspective. The book also contains excellent technical analysis and sample forms to support those managing a TSC.

Aimed at engineers, quantity surveyors and contractors, this book is refreshing, sensible, grounded and supportive of excellent contract management practice.

Reservoir management

edited by Andrew Pepper, published by ICE Publishing, 2019, £100, reviewed by **Veronica Flint Williams**, Environment Agency, UK



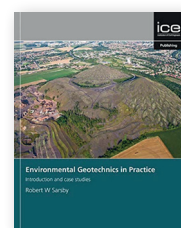
This excellent book is very clear and explains in great detail the process of reservoir management and the law related to reservoirs. It describes the components of reservoirs and their purpose, the principles of design and the limiting factors, and the processes to preserve the structure and ensure that safety is maintained.

I was encouraged by the clear and common-sense approach to explaining the subject, using simple language. The glossary at the front is particularly helpful to achieving a common understanding, given there used to be different terminology in each water company. For example, what I used to call a 'reclodge' is now much more sensibly called a 'sedimentation structure'.

While the most likely risk is drowning in hot weather, we should always be aware that reservoirs when they fail present a serious risk to life. Careful scrutiny of this book is therefore essential for all those directly involved in the design, management and funding of reservoirs.

Environmental geotechnics in practice: introduction and case studies

by Robert Sarsby, published by ICE Publishing, 2019, £70, reviewed by **Nick Gorst**, independent consultant, UK



This well-illustrated book is useful and informative and should appeal to a wide variety of readers interested in ground engineering at any stage in their career.

The introduction carefully sets the scene, but the strength of the book is in the well-researched case studies. These studies from Europe, America and Asia

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cover the environmental geotechnics relating to performance of landfill sites, treatment of brownfield sites and stability of waste in lagoons, tailings and tips. The book successfully explains the

mechanisms of failure, or success, of the various case studies without going into excessive detail.

The author states the book is 'intended to be of benefit to persons

working in industries where there is significant interaction with the ground who wish to refresh or augment their knowledge'. He has achieved his aim.

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 6 months include the following.

Automatic for the city: designing for people in the age of the driverless car	R Bobisse and A Pavia	£45-00
Bioclimatic double-skin facades	B Benedict	£39-99
Blast effects on buildings (3rd ed.)	D Cormie et al.	£90-00
Building bridges: between theory and practice	D Blockley	£50-00
CESMM4 Revised: handbook	M Barnes and M Attridge	£70-00
Coastal management 2019: joining forces to shape our future coasts	N Hardiman and Institution of Civil Engineers (eds)	£250-00
Durability of reinforced concrete structures	P Chess and W Green	£50-00
Energy and mobility in smart cities	W Nuttall et al. (eds)	£78-00
Environmental geotechnics in practice: introduction and case studies	R Sarsby	£70-00
Flood risk and community resilience: an interdisciplinary approach	L McEwen	£85-00
Ground improvement techniques	B Huat et al.	£124-99
Infrastructure computer vision	C Haas and I Brilakis	£115-00
Introduction to structural fire engineering	Institution of Structural Engineers	£39-00
Laser scanning: an emerging technology in structural engineering	B Riveiro and R Lindenbergh	£125-00
Low carbon concrete	R Dhir and K Paine (eds)	£125-00
Managing project risks	P Edwards et al.	£75-00
Materials properties of steel in fire conditions	W Wang and V Kodur	£155-00
Microplastics in water and wastewater	H Karapanagioti and I K Kalavrouziotis	£75-00
Modelling pedestrian movement	Aecom (Urban Space)	£80-00
Offsite production and manufacturing for innovative construction: people, process and technology	J Goulding and F Rahimian	£45-99
Pavement drainage: theory and practice	G Babu et al.	£100-00
Physical modelling for architecture and building design: a design practice tool	O Larsen	£45-00
Recycled aggregates: use in concrete	R Dhir and C Q Lye (eds)	£125-00
Reservoir management	A Pepper (ed.)	£100-00
Retrofitting for flood resilience: a guide to building and community design	E Barsley	£40-00
Risk management in engineering and construction: tools and techniques	S Ogunlana and P Dey	£135-00
Rock mechanics through project-based learning	I Gratchev	£51-99
Saving the planet by design	K Yeang	£29-99
Self-compacting concrete	R Dhir and C Q Lye (eds)	£125-00
Smart buildings: technology and the design of the built environment	R Bakker	£45-00
Smart concrete	R Dhir and K Paine (eds)	£125-00
Soil and groundwater remediation: fundamentals, practices, and sustainability	C Zhang	£94-95
Tall: the design and construction of high-rise architecture	G Marriage	£29-99
The application of contracts in engineering and construction projects	D Charrett	£140-00
The consulting engineers: the British consulting engineers who created the world's infrastructure	H Ferguson and M Chrimes	£45-00
Thermal insulation materials for building applications	L Eshrar et al.	£45-00
Transition engineering: building a sustainable future	S Krumdieck	£41-79
Underground urbanism	E Reynolds	£25-70
Vehicle scanning method for bridges	Y Yang et al.	£105-00
Whole life costing for sustainable building	M Trusson	£30-99

All books can be borrowed from the ICE Members' Resource Hub on the second floor of 1 Great George Street, London, SW1P 3AA from 9.15 a.m. to 5.30 p.m., Monday to Friday. ICE Publishing titles can also be purchased from the ICE Members' Resource Hub or ordered by calling +44 1235 465 577, emailing orders@icepublishing.com or by visiting www.icevirtuallibrary.com/content/books.