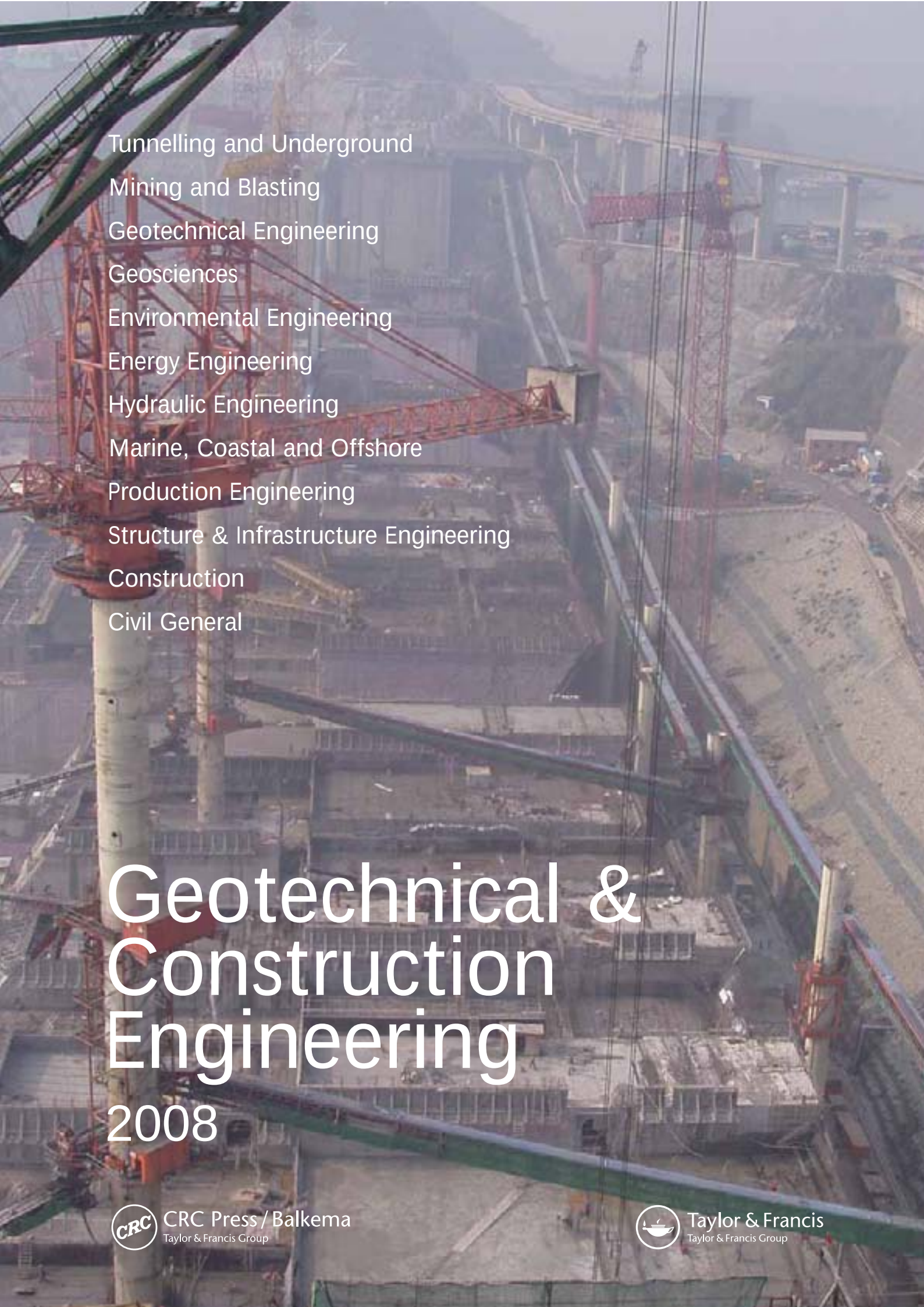

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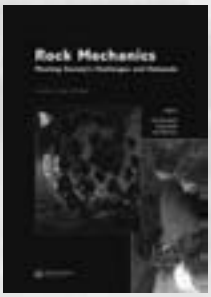

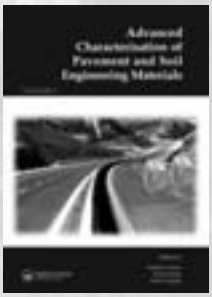

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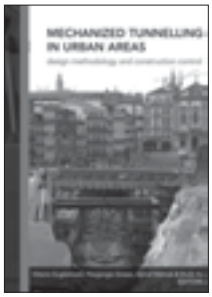
Edited by **Vittorio Guglielmetti**, **Piergiorgio Grasso**, **Ashraf Mahtab**, **Shulin Xu**, Geodata S.p.A., Turin, Italy



This experts' account of mechanized tunnelling in urban areas covers identification, evaluation and management of the risks involved in construction in urban areas.

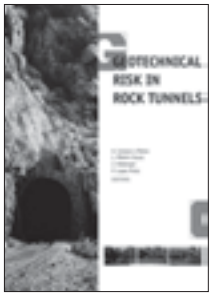
Selected Contents:1. The Modern Tunnel Boring Machine 2. Geological, Hydrological and Geotechnical Contexts 3. Tunnel Design 4. Tunnel Excavation Control 5. Health and Safety Aspects 6. Contract & Construction Aspects 7. Case Histories

2007: 246x174: 528pp, full color
Hb: 978-0-415-42010-5: **£89.00 US $174.95**

Geotechnical Risk in Rock Tunnels

Selected Papers from a Course on Geotechnical Risk in Rock Tunnels, Aveiro, Portugal, 16–17 April 2004

Edited by **António Campos e Matos**, Universidade do Porto, Portugal, **Luís Ribeiro e Sousa**, University of Porto, Portugal, **Johannes Kleberger**, iC Consulenten ZT GmbH, Salzburg, Austria and **Paulo Lopes Pinto**, Universidade de Coimbra, Portugal



This volume contains highly relevant contributions to the fundamental area of geotechnical risk assessment, management and control and is of interest to all those involved in the planning, construction and management of tunnels: entrepreneurs, designers, consultants and contractors.

2006: 246x174: 202pp, full color
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Sprayed Concrete Lined Tunnels

Alun Thomas, Mott MacDonald, UK

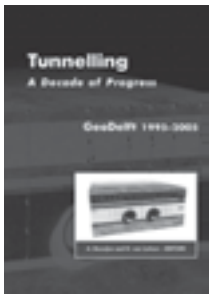
Practising engineers on site, in the design office or in client organizations will find this book an excellent introduction to the design and construction of sprayed concrete lined (SCL) tunnels. The complex behaviour of the early age sprayed concrete requires careful management. This book covers all aspects of SCL tunnelling – from the constituents of sprayed concrete to detailed design and management during construction. Although there is a close interdependence between all the facets of sprayed concrete, few engineers have the right breadth of experience and expertise, and this urgently needs to be transferred to the wider engineering community.

Disseminating essential information for tunnelling engineers, *Sprayed Concrete Lined Tunnels* is key reading for all involved in or studying the process.

August 2008: 234x156: 288pp
Hb: 978-0-415-36864-3: **£65.00 US $130.00**

Tunnelling. A Decade of Progress. GeoDelft 1995-2005

Edited by **Adam Bezuijen** and **Haike van Lottum**



Following years of research, the first bored tunnel in soft soil in the Netherlands, the Tweede Heinenoord tunnel, was completed in 1998. Since then, Dutch engineers have increased their knowledge of soft soil tunnelling, with a significant and important part of this research being carried out by GeoDelft, the Dutch National Institute of Geo-Engineering. This book contains the most important publications by GeoDelft on the subject of soft soil tunnelling, focusing on the period from 1992 to the present, it is divided into four main headings: field measurements; grout behaviour; model testing; and numerical analysis. This impressive overview of the progress made in the Netherlands in soft soil tunnelling research over more than a decade is a valuable resource to those working in soft soil tunnelling worldwide.

2005: 246x174: 304pp
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The Westerschelde Tunnel

Approaching Limits

Edited by **J. Heijboer**, **J. van den Hoonaard** and **W. van de Linde**

The completion of the Westerschelde Tunnel in the Netherlands was a triumph over the technical challenges of building a 6.6km long tunnel under complex and sometimes extreme, geological circumstances. This volume tells the story of the design and building of the tunnel and includes contributions from leading experts who were directly and practically involved in the project as designers, builders and financiers. It contains many practical lessons concerning the organization of large-scale construction projects in general, and tunnel building in particular.

2003: 280X200: 268pp
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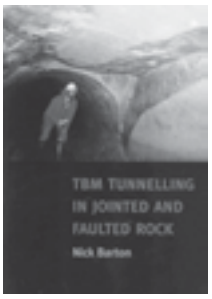
TBM Tunnelling in Jointed and Faulted Rock

Nick Barton



This practical book on TBM tunnelling presents a methodology for predicting the penetration rate (PR) and the advance rate (AR) for tunnel boring machines. Some 145 TBM tunnels, totalling 1000 km in length, were analyzed and simple formulae have been extrapolated from the results to estimate PR and AR from the Qtbm value, or to back-calculate Qtbm from performance data. Logging methods, empirical TBM tunnel support design, and numerical verification of support are also treated. This book is a useful source of reference for consultants, contractors and owners of TBM tunnels, and for those involved with feasibility studies, machine and support design and follow-up of tunnel progress. Among the geotechnical community, the book is valuable for geologists, engineering geologists and rock mechanics engineers, civil engineers and mining engineers with a professional interest in TBM tunnelling.

2000: 246x174: 184pp
Hb: 978-90-5809-341-7: **£28.95 US $57.95**

Underground Space – The 4th Dimension of Metropolises

Proceedings of the World Tunnel Congress 2007 and 33rd ITA/AITES Annual General Assembly, Prague, May 2007, 3 Volumes + CD-ROM

Edited by **Jirí Barták**, Czech Technical University, Prague, Czech Republic, **Ivan Hrdina**, METROSTAV, Prague, Czech Republic, **Georgij Romancov**, Czech Tunnelling Committee ITA/IATES, Prague, Czech Republic and **Jaromír Zlámal**, Pohl cz, a. s., Roztoky, Czech Republic

These volumes focus on underground city design and planning of subterranean constructions; geotechnical survey and improvement of ground mass; research, development and design of underground constructions in built-up areas; urban tunnelling, both conventional and mechanized, and its monitoring; underground constructions executed from the surface in built-up areas; concrete in underground construction; distribution and management of risks and accidents during tunnelling; tunnel equipment; fire and operational safety; and historical underground constructions.

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Underground Works under Special Conditions

Proceedings of the ISRM Workshop W1, Madrid, Spain, 6-7 July 2007

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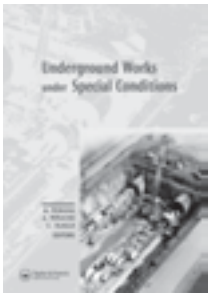

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North American Tunneling 2006

Proceedings of the North American Tunneling Conference 2006, Chicago, USA, 10-15 June 2006

Edited by **Levent Ozdemir**, Colorado School of Mines, Golden, Colorado, USA

These proceedings contains the papers presented at the North American Tunneling 2006 Conference, sponsored by the American Underground-Construction Association, and held in Chicago, USA, 10-15 June 2006.

2006: 246x174: 492pp
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Geotechnical Aspects of Underground Construction in Soft Ground

Proceedings of the 5th International Symposium TC28. Amsterdam, The Netherlands, 15-17 June 2005

Edited by **Klaas Jan Bakker**, **Adam Bezuijen**, **Wout Broere** and **E.A. Kwast**

This collection of reviewed papers is a valuable source of reference on the current practices of analysis, design and construction of tunnels and underground structures in soft ground. It covers a wide range of tunnelling practice, from deep excavations in Singapore to the construction of a new metro line in Barcelona. The international scope of the contributors makes this a truly comprehensive collection of work on the geotechnical aspects of soft ground excavation.

2005: 246x174: 954pp
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Methods, Techniques and Equipment

Ratan Raj Tatiya

A practical guide to the latest technologies and developments available for any type of surface or underground excavation. The opening chapters focus on unit operations, including drilling, explosives and blasting, mucking, haulage, hoisting, supports and reinforcement, while the following chapters describe excavation techniques for various operations such as tunnelling, raising, sinking, drifting, stoping, quarrying and surface mining, underground mining, pillar blasting and liquidation. The design, planning and development of excavations is also covered, and special attention is paid to the construction of surface and subsurface excavations, and to new ways of choosing stoping methods through incremental analysis. In addition, a final chapter features illustrative case studies on heavy underground blasting during pillar recoveries.

2005: 246x174: 576pp
Hb: 978-90-5809-627-2: **£104.50 US $199.95**

Ground Support in Mining and Underground Construction

Proceedings of the Fifth International Symposium on Ground Support, Perth, Australia, 28-30 September 2004 Edited by **Ernesto Villaescusa, Yves Potvin**

The purpose of ground support is to safely maintain excavations for their expected lifespan. The effectiveness of ground support can be seen both in terms of personnel and equipment safety, and in terms of allowing the most economic extraction. Scientists, practitioners and technology developers have contributed to this volume, which covers rock mass characterisation, open pit mining and tunnelling. The methods described include modelling and dynamic testing, while international case studies provide ample illustration of both failures and triumphs in ground support.

2004: 246x174mm: 659 pp
Hb: 978-90-5410-186-4: **£134.50 US $259.95**

Support of Underground Excavations in Hard Rock

E. Hoek, P.K. Kaiser, W.F. Bawden

The safe and economical construction of tunnels, mines, and other subterranean works depends on the correct choice of support systems to ensure that the excavations are stable. These support systems should be matched to the characterstics of the rock mass and the excavation techniques adopted. Establishing the support requirements, designing support systems and installing these correctly are essential elements in safe underground construction. This is a comprehensive and practical work which also gives access to user-friendly computer programmes which enable the investigation and design of support techniques. Details on how to obtain this software are also included in the book.

2000: 292x216mm: 300 pp
Hb: 978-90-5410-186-4: **£52.50 US $99.95**
Pb: 978-90-5410-187-1: **£20.95 US $39.95**

New

Textbook

Mining and the Environment

From Ore to Metal

Karlheinz Spitz, ERM - Environmental Resources Management, Australia and **John Trudinger**, Trudinger Consulting, Australia

2008

The history of mining is replete with controversy, much of it relating to environmental damage and consequent community outrage. Over recent decades there has been increasing pressure to improve the environmental and social performance of mining operations, particularly in developing countries. The industry has responded by embracing the ideals of corporate social responsibility.

This book identifies and discusses the wide range of social and environmental issues pertaining to mining, with particular reference to mining in developing countries from where many of the project examples and case studies have been selected. Following an introductory overview of the issues of concern, the book illustrates how environmental impact assessment as defined in 'The Equator Principles', integrates with the mining lifecycle, and how environmental assessment aims to eliminate the negative and to accentuate the positive mining impacts. The text illustrates the wide range of environmental and social concerns and opportunities. Practical approaches are provided to manage issues ranging from land acquisition and resettlement or indigenous peoples issues, through the technical aspects of acid rock drainage and mine waste management, to a thorough analysis of ways and means of sharing mining benefits with host communities so that these benefits are not transitory, allowing mining to become a sustainable economic activity.

The wide coverage of issues raised illustrated by many real-life case studies, makes this practice-oriented book a reference and key reading for operators in the field, as well as for environmental consultants, regulators, and students. This book will also be of interest to environmental personnel in the oil & gas industry as much of the subject matter applies to the extractive industries as a whole.

Selected Contents: 1. MINERALS, WEALTH AND PROGRESS; 2. ENVIRONMENTAL IMPACT ASSESSMENT - Protection before Exploration; 3. INVOLVING THE PUBLIC - Forging Partnerships and Trust; 4. THE ANATOMY OF A MINE; 5. MINING METHODS VARY WIDELY; 6. CONVERTING MINERALS TO METALS; 7. OUR ENVIRONMENT - A Set of Natural and Human Features; 8. THE BASELINE - Understanding the Host Environment; 9. IDENTIFYING AND EVALUATING IMPACTS; 10. EMPHASIZING ENVIRONMENTAL MANAGEMENT AND MONITORING; 11. METALS, THEIR BIOLOGICAL FUNCTIONS AND HARMFUL IMPACTS; 12. WAS THE ENVIRONMENTAL ASSESSMENT ADEQUATE?; 13. THE RANGE OF ENVIRONMENTAL CONCERNS; 14. LAND ACQUISITION AND RESETTLEMENT - When Property and Development Rights Collide; 15. COMMUNITY DEVELOPMENT - Ensuring Long term Benefits; 16. INDIGENOUS PEOPLES ISSUES; 17. ACID ROCK DRAINAGE - The Unseen Legacy; 18. TAILINGS DISPOSAL CONCEPTS AND PRACTICES; 19. APPROACHES TO WASTE ROCK DISPOSAL; 20. EROSION – The Perpetual Disruptive Force of Water and Wind; 21. MINE CLOSURE - It is not over when it is over; 22. EXISTING TRENDS

July 2008: 276x219: 900pp
Hb: 978-0-415-46509-0: **£125.00 US $264.95**
Pb: 978-0-415-46510-6: **£62.00 US $129.95**

• AVAILABLE AS AN INSPECTION COPY

Textbook

Open Pit Mine Planning and Design, 2nd Edition, Pack

Volume 1: Fundamentals
Volume 2: CSMine Software Package

William A. Hustrulid, University of Utah, USA and **Mark Kuchta**, Colorado School of Mines, USA

Praise for the first edition of this set:

'Students should find it of considerable practical use.' – *IMM*

'Invaluable Reference ... detailed planned chapter by chapter guide to open pit design and planning. An invaluable reference for any professional involved in open pit design, for both beginners and experienced experts. I highly recommend this book.' *– Digby Millikan, Geolite Mining Systems*

'Excellent for mining design ... Open Pit Mine Planning is both practical and academic; highly recommended for beginners and experienced experts.' *– Amazon.com*

Building on the success of its 1995 predecessor, this second edition of *Open Pit Mine Planning and Design* has been extensively updated and extended into a complete and authoritative account of modern open pit mining. New chapters on the reporting of mineral resources and ore reserves, and on responsible mining inform the reader about defining assets and provide a balanced consideration of the relation of mining to sustainable development.

Volume 1 deals with the fundamental concepts involved in the planning and design of open pit mines. Subjects covered are mine planning, mining revenues and costs, orebody description, geometrical considerations, pit limits, production planning, mineral resources and ore reserves, and responsible mining. Volume 2 deals with CSMine, a user-friendly mine planning and design software that was developed specifically to illustrate the principles involved when applied in practice. It includes CSMine software, a CSMine tutorial, a user's guide and various orebody case examples.

Open Pit Mine Planning and Design is an excellent textbook for courses in surface mine design, open pit design, geological and excavation engineering and in advanced open pit mine planning and design anywhere in the world. In addition, it can also be used as a practical reference guide by senior students and professionals. The step-by-step introduction to mine design and planning enables a fast-path approach to the matter by undergraduate and graduate students. The outstanding, user-friendly software guides the student through the planning and design steps, and the drillhole data sets allows the student to practice the described principles in diverse mining properties case examples. The large number of illustrative examples and case studies, together with the exercises and the reference lists at the end of each chapter, provide the student with all the material needed to study effectively the theory and application methods of open pit mine planning and design.

Selected Contents:Volume 1 1. Mine Planning 2. Mining Revenues and Costs 3. Orebody Description 4. Geometrical Considerations 5. Pit Limits 6. Production Planning 7. Reporting of Resources/Reserves 8. Responsible Mining **Volume 2** 9. The CSMine Software and Tutorial 10. The CSMine User's Manual 11. Some Example Mining Projects

2006: 246x174: 991pp
Hb: 978-0-415-40737-3: **£139.50 US $249.95**
Pb: 978-0-415-40741-0: **£62.50 US $124.95**

• AVAILABLE AS AN INSPECTION COPY

Mining and its Impact on the Environment

Fred G. Bell, formerly at the University of Natal, South Africa and **Laurance J. Donnelly**, Engineering and Exploration Geologist, Halcrow Group Limited, UK

A valuable field reference highlighting mining effects and demonstrating how problems can be dealt with before, after and as they occur.

2006: 234x156: 560pp
Hb: 978-0-415-28644-2: **£90.00 US $180.00**

Sustainable Mining Practices

A Global Perspective

Edited by **Raj Rajaram**, **Subijoy Dutta** and **Krishna Parameswaran**

A perfect introduction to sustainable mining for those new to the subject or those who require some revision, this book provides a basic overview of international sustainable mining practices since 1992, with particular emphasis upon practices in the Americas, Asia and Europe. The text begins by addressing issues such as the volume of waste generated by mining, mine closure planning and the environmental impacts, and then goes into specific detail in the following areas: cleaner production practices in Australia; blasting impacts and their control in the US; minimizing surface water impacts; minimizing groundwater impacts; use of environmental indicators in mining; and emerging mining technologies that minimize environmental impacts. The text contains relevant examples and case histories for ease of revision, and also includes a chapter on Best Mining Practices for Sustainable Mining and sub-chapters on small-scale mining, tailings pond management and hazardous waste management.

2005: 246x174: 376pp
Hb: 978-90-5809-689-0: **£78.50 US $154.95**

Technical, Technological and Economical Aspects of Thin-Seams Coal Mining

Proceedings of the Eighth International Mining Forum 2007 Cracow – Szczyrk – Wieliczka, Poland, February 2007

Edited by **Jerzy Kicki**, AGH-University of Science & Technology, Cracow, Poland and **Eugeniusz Sobczyk**, Polish Academy of Sciences, Cracow, Poland

A collection of papers on current research and practice concerning technical, technological and economic aspects of thin-seams coal mining, as presented at the International Mining Forum in February 2007 in Cracow, Poland.

2007: 246x174: 191pp
Hb: 978-0-415-43670-0: **£59.00 US $99.95**

Economic Evaluation and Risk Analysis of Mineral Projects

Proceedings of the International Mining Forum 2008 Cracow - Szczyrk - Wieliczka, Poland, February 2008

Edited by **Jerzy Kicki**, AGH-University of Science & Technology, Cracow, Poland and **Eugeniusz J. Sobczyk**, Polish Academy of Sciences, Cracow, Poland

2008 The International Mining Forum is a recurring event, hosted by the University of Science and Technology in Cracow, Poland, bringing together an international group of scientists, including those working in rock mechanics and computer engineering as well as mining engineers. The topics are wide-ranging, including papers on remote sensing to assess primary impact; treatment of sealed-off coal mine fires; sustainable development in mine closure; and monitoring of natural hazards and safety issues.

April 2008: 246x174: 191pp
Hb: 978-0-415-46126-9: **£59.00 US $109.00**

11th US/North American Mine Ventilation Symposium 2006

Proceedings of the 11th US/North American Mine Ventilation Symposium, 5-7 June 2006, Pennsylvania, USA

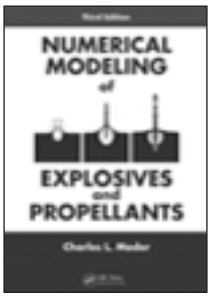
Edited by **Jan M. Mutmansky** and **Raja. V. Ramani**, Penn State University, USA.

2006: 246x174: 644pp
Hb: 978-0-415-40148-7: **£137.50 US $259.95**

3RD EDITION

Numerical Modeling of Explosives and Propellants, Third Edition

Charles L. Mader, Mader Consulting Company, Honolulu, Hawaii, USA

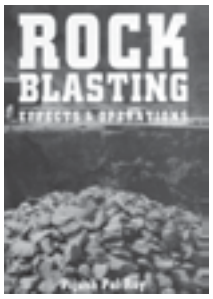


Numerical Modeling of Explosives and Propellants, Third Edition provides a complete overview of this rapidly emerging field, covering basic reactive fluid dynamics as well as the latest and most complex methods and findings. It also describes and evaluates Russian contributions to the experimental explosive physics database, which only recently have become available.

2007: 7 x 10: 544pp
Hb: 978-1-4200-5238-1: **£82.00 US $149.95**

Rock Blasting Effects and Operations

Pijush Pal Roy



This book is a unique supplement to contemporary scientific literature on rock blasting technology. It encapsulates theoretical and practical aspects of drilling and blasting techniques used in both surface and subterranean excavations connected with civil as well as mining activities. Case studies are presented to illustrate correlations between theoretical calculations and empirical findings. It also summarizes the results of research carried out by the Blasting Department of the Central Mining Research Institute since its inception in the year 1970. It contains fifteen extensive chapters covering statistical methods, design parameters, rock breakage mechanism, structural damage, fragmentation, emerging techniques, surface and sub-surface blasting methodologies, safety and environmental aspects, explosive characteristics and modern initiating devices.

2005: 246x189: 380pp
Hb: 978-0-415-37230-5: **£72.50 US $139.95**

Blasting Principles for Open Pit Mining, Set of 2 Volumes

Volume 1: General Design Concepts

Volume 2: Theoretical Foundations

William A. Hustrulid

This book deals with both the engineering and the scientific aspects of blasting, with special application to open pit mining. Volume 1 introduces the reader to the basic engineering concepts and building blocks which make up a blast design. Volume 2 provides additional depth and breadth for a better understanding of some of the fundamental concepts involved in rock blasting.

Selected Contents: Volume 1: Principles of Blast Design 1. An Historical Perspective 2. The Fragmentation System Concept 3. Explosives as a Source of Fragmentation Energy 4. Preliminary Blast Design Guidelines 5. Drilling Patterns and Hole Sequencing 6. Sinking Cut Design 7. Bulk Blasting Agents 8. Initiation Systems 9. Environmental Effects 10. Perimeter Blasting **Volume 2: Theoretical Foundations** 11. Fundamentals of Explosives 12. Blasting in the Absence of a Free Surface 13. The Effect of the Shock Wave 14. Attenuation 15. Spherical Charges 16. Cylindrical Charges 17. Decoupling 18. Heave 19. The Basics of Cratering 20. Hydrodynamic-Based Models 21. Selected Russian Contributions

2005: 246x174: 402pp
Pack: 978-90-5410-458-2: **£72.50 US $139.95**

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Drilling and Blasting of Rocks

E. Lopez Jimeno, **C. Lopez Jimeno** and **Ayala Carcedo**

Rock breakage with explosives has existed since the seventeenth century when black powder came into use in mining. Since then it has progressed from the invention of dynamite to the use of heavy ANFO. During the past two decades, there have been numerous technical contributions which have brought a better understanding of rock fragmentation with explosives, an improvement in drilling equipment and a noticeable evolution in the development of new explosives and blasting accessories. The Geomining Technological Institute of Spain (ITCE), aware of this progress and of the importance which the breakage process has acquired in mining and civil engineering projects, has ordered the publication of *Drilling and Blasting of Rocks.*

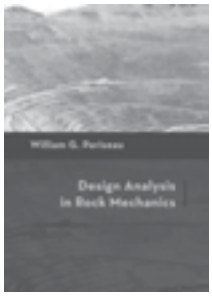
The purpose of this Handbook is to give basic knowledge of the drilling systems, the types of available explosives and the accessories and the parameters that intervene in blast designing, whether controllable or not; at the same time the objectives and contents contribute to improved safety in mining. The Handbook is meant for all professionals who are involved with explosives in mining operations and civil engineering projects, as well as for students of technical schools.

1995: 276x219: 400pp
Hb: 978-90-5410-199-4: **£94.50 US $179.95**

Textbook

Design Analysis in Rock Mechanics

William G. Pariseau, University of Utah, USA



This textbook for undergraduates/first-year graduate students in mining and civil engineering approaches important design problems in rock mechanics from a mechanics of materials foundation. The author addresses rock slope stability in surface excavations and shaft, tunnel, entry, pillar and cavern stability underground and also chimney and trough subsidence analysis. Many examples and exercises are included. Appendices contain information on rock, joint, composite properties, rock mass classification schemes and useful formulas.

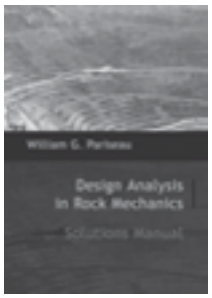
Selected Contents:1. Introduction 2. Slope Stability 3. Shafts 4. Tunnels 5. Entries in Stratified Ground 6. Pillars in Stratified Ground 7. Three-Dimensional Excavations 8. Subsidence Appendix A: Background Literature Appendix B: Mechanical Properties of Intact Rock and Joints Appendix C: Rock Mass Classification Schemes for Engineering Appendix D: Some Useful Formulas

2006: 246x174: 573pp
Hb: 978-0-415-40357-3: **£114.50 US $199.95**
Pb: 978-0-415-41381-7: **£44.95 US $79.95**

• AVAILABLE AS AN INSPECTION COPY

Solutions Manual to Design Analysis in Rock Mechanics

William G. Pariseau, University of Utah, USA

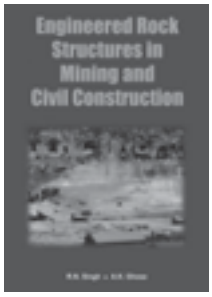


Solutions Manual to Design Analysis in Rock Mechanics (2006) by William G. Pariseau containing all, fully worked solutions to the exercises in the corresponding textbook, includes many drawings.

February 2008: 246x174: 368pp
Pb: 978-0-415-45725-5: **£24.95 US $39.95**

Engineered Rock Structures in Mining and Civil Construction

Raghu N. Singh, University of Nottingham, UK and **Ajoy K. Ghose**, Indian School of Mines, Dhanbad, India



The book collates and sifts a vast amount of literature on the design of structures in mining and construction industry to synthesise a comprehensive text on the subject area. The book will serve as a standard text for undergraduate courses in mining, civil engineering and engineering geology.

Selected Contents:1. Rock Characterisation for Rock Mechanics Design 2. Uniaxial Testing of Rock in Compression 3. Tensile, Triaxial and Shear Strength of Rock 4. Time-dependent Behaviour of Rocks 5. Index Properties of Rocks 6. Large-scale in situ Testing of Rock Mass 7. Evaluation of Rock Mass Parameters by Borehole Testing 8. Measurement of Stress in Rock 9. Design of Structures in Rock 10. Stability of Underground Openings by Mathematical Modelling 11. Design and Stability of Pillars and Associated Structures 12. Design and Stability of Rib Pillars and Chain Pillars in Longwall Mining 13. Structural Stability of Excavations in Jointed Rock 14. Supports in Mining and Tunnelling 15. Mining Subsidence 16. Stability Analysis of Surface Mining Slopes 17. Risk Analysis for Design in Geomechanics

2006: 246x174: 536pp
Hb: 978-0-415-40013-8: **£104.50 US $199.95**

Experimental Rock Mechanics

Kiyoo Mogi, University of Tokyo, Japan

Series: Geomechanics Research Series

For those working in Rock Mechanics, Tectonophysics and Seismology, this is an account of rock deformation and fracture under general triaxial compression, in which effects on strength, deformation and failure are discussed and new failure criteria are presented. The book also looks at acoustic emission phenomena under various stress states. The relation of friction in rocks with earthquake phenomena are discussed, as well.

Selected Contents:Part 1: Deformation and Fracture of Rocks 1. Precise Measurements of Fracture Strength of Rocks under Uniform Compressive Stress 2. Deformation and Failure or Rocks under Confining Pressure 3. Deformation and Fracture of Rocks under Triaxal Compression: The Effect of the Intermediate Principle **Part 2: Acoustic Emission** 4. Acoustic Emission Activity 5. Source Location of Acoustic Emission 6. Magnitude-Frequency Relation of Acoustic Emission Events 7. Acoustic Emission under Cyclic Loading **Part 3: Rock Friction** 8. Design of a New Apparatus for Friction Experiments 9. Laboratory Experimental Results 10. Stick-Slip Events in the Natural Field and Some Features in the Occurrence of Recent Great Earthquakes

2006: 246x174: 375pp
Hb: 978-0-415-39443-7: **£70.00 US $139.95**

Rock Slope Engineering

Fourth edition

Duncan C. Wyllie and **Chris Mah**

2004: 246x189: 456pp
Hb: 978-0-415-28000-6: **£120.00 US $240.00**
Pb: 978-0-415-28001-3: **£42.00 US $84.00**
• AVAILABLE AS AN INSPECTION COPY

Drilled Shafts in Rock

Analysis and Design

Lianyang Zhang

Drilled shafts in rock are widely used as foundations of heavy structures such as highway bridges and tall buildings. Although much has been learned about the analysis and design of drilled shafts in rock, all the major findings are published in the form of reports and articles in technical journals and conference proceedings. This book is the first to present and summarize the latest information in one volume, highlighting for the reader the principle differences between foundations in soil, and foundations in rock masses containing discontinuities.

This book presents methods for characterizing discontinuities in jointed rock masses, and considering their effects on the behaviour of drilled shafts. A valuable tool for practitioners in geological engineering, rock mechanics and foundation engineering.

2004: 246x174: 394pp
Hb: 978-90-5809-650-0: **£94.50 US $179.95**

The Second Half Century of Rock Mechanics

11th Congress of the International Society for Rock Mechanics, 3 VOLUMES + CD-ROM

Edited by **Luís Ribeiro e Sousa**, University of Porto, Portugal, **Claudio Olalla**, Cedex Laboratorio Central De Estructuras y Materiales, Madrid, Spain and **N. Grossmann**, LNEC, Lisbon, Portugal

This 3 volume book reviews how Rock Mechanics has evolved over the past half century. Includes rock engineering and environment; modelling; slopes, foundations and open pit mining; tunnels and underground mining; earthquake engineering and rock dynamics; petroleum engineering and hydrocarbon storage; safety and risk management

2007: 297x210: 1554pp
Pack: 978-0-415-45084-3: **£259.00 US $489.00**

Rock Mechanics: Meeting Society's Challenges and Demands

Proceedings of the 1st Canada-US Rock Mechanics Symposium, Vancouver, Canada, 27–31 May 2007

Edited by **Erik Eberhardt**, **Doug Stead** and **Tom Morrison**, Greater Vancouver Regional District, Canada

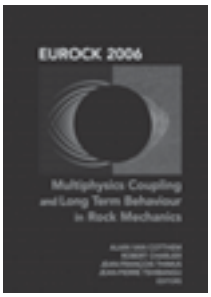
Volume 1 presents papers describing new technologies, ideas and insights concerning fundamental rock mechanics, while the second volume comprises a collection of rock engineering case histories relevant to the major themes of the symposium: rock slope hazards, geotechnical infrastructure, surface and underground mining, and petroleum exploitation.

2007: 246x174: 1772pp
Pack: 978-0-415-44401-9: **£249.00 US $469.00**

Eurock 2006: Multiphysics Coupling and Long Term Behaviour in Rock Mechanics

Proceedings of the International Symposium of the International Society for Rock Mechanics, Eurock 2006, Liège, Belgium, 9-12 May 2006

Edited by **Alain van Cotthem**, Tractebel, Brussels, Belgium, **Robert Charlier**, University of Liège, Belgium, **Jean-Francois Thimus**, Catholic University of Louvain, Belgium and **Jean-Pierre Tshibangu**, Faculté Polytechnique de Mons, Mons, Belgium



In this volume emphasis is put on constitutive behaviour, rock mechanics and partial saturation, chemo-mechanics, thermo-hydro-mechanics, weathering, creep, and on practical applications in oil engineering application; underground waste storage; post-mine behaviour and long term behaviour of infrastructure.

2006: 246x174: 724pp
Pack: 978-0-415-41001-4: **£145.50 US $289.95**

In-Situ Rock Stress

International Symposium on In-Situ Rock Stress, Trondheim, Norway,19-21 June 2006

Edited by **Ming Lu**, SINTEF Soil and Rock Mechanics, Trondheim, Norway, **Charlie C. Li**, Norwegian University of Science and Technology, **Halvor Kjorholt**, Statoil ASA, Norway and **Halgier Dahle**, SINTEF Rock & Soil Mechanics, Trondheim, Norway

Knowledge of in-situ rock stress has been applied widely in tunnelling, mining and in the petroleum industry. The papers in this volume reflect the latest developments in this challenging field, covering measuring techniques, interpretation methods and application of in-situ stress in the engineering practice.

2006: 246x174: 564pp
Pack: 978-0-415-40163-0: **£119.00 US $229.95**

EUROCK 2005 - Impact of Human Activity on the Geological Environment:

Proceedings of the International Symposium EUROCK 2005, 18-20 May 2005, Brno, Czech Republic

Edited by **Pavel Konecny**

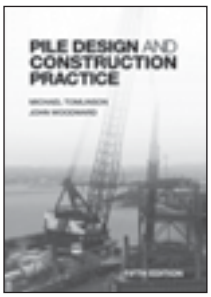
This volume focuses on the impact of human activity on the geological environment and contains over 100 papers dealing with laboratory and field research investigations in geomechanics, geoengineering and mathematical modelling. Topics covered are grouped into eight main themes: response of the rock mass to human impact; slope stability; field research; laboratory research; stability of underground openings; mathematical modelling; stress measurements, and mineral and rock disintegration.

2005: 246x174mm: 764 pp
Hb: 978-0-415-38042-3: **£119.50 US $229.95**

New

Pile Design and Construction Practice

Michael J. Tomlinson, Retired Consulting Engineer, UK and **John Woodward**, Consulting Engineer, UK



This international handbook is essential for geotechnical engineers and engineering geologists responsible for designing and constructing piled foundations. It explains general principles and practice and details current types of pile, piling equipment and methods.

It includes calculations of the resistance of piles to compressive loads, pile groups under compressive loading, piled foundations for resisting uplift and lateral loading and the structural design of piles and pile groups. Marine structures, miscellaneous problems (including machinery foundations, underpinning, mining subsidence areas, contracts and frozen ground), durability of piled foundations, ground investigations, and pile testing are also covered.

It introduces the 2005 version of Eurocode7, BS 8004 and other codes, and refers to BS 6349 on maritime structures, and new forms of civil engineering contracts suitable for piling projects. It includes numerous worked examples to the codes, many based on actual problems. It also gives very comprehensive information for students.

Selected Contents:

General Principles and Practices. Types of Pile. Piling Equipment and Methods. Calculating the Resistance of Piles to Compressive Loads. Pile Groups under Compressive Loading. The Design of Piled Foundations to Resist Uplift and Lateral Loading. The Structural Design of Piles and Pile Groups. Piling for Marine Structures. Miscellaneous Piling Problems. The Durability of Piled Foundations. Site Investigations, Piling Contracts, Pile Testing. Appendix - Properties of Materials

2007: 246x174: 568pp
Hb: 978-0-415-38582-4: **£95.00 US $190.00**

The Sand Compaction Pile Method

Masaki Kitazume

The Sand Compaction Pile or (SCP) method is to form compacted sand piles by vibration, dynamic impact or static excitation in soft ground. To improve stability or compressibility and to prevent liquefaction failure in loose sand, the SCP method is now often applied to soft clay ground to ensure stability and reduce ground settlement. This book presents detailed descriptions of design, execution, quality control, equipment and assurance aspects of the SCP method, illustrating the theory with case studies from around Japan. It includes a literature overview of research and development carried done since the 1950s. Two final chapters cover vital aspects of design procedures for clay and sandy ground to enable practitioners to frame an appropriate set of parameters for durable and cost-efficient design.

2005: 246x174mm: 246 pp
Hb: 978-0-415-37212-1: **£62.50 US $119.95**

Manual on Deformation Controlled Densified Stone (DDS) Columns

R.K. Katti, **A.R. Katti**, **D.R. Katti**, **Suprakash Choudhry**, **Prashant Navalakha** and **Zeeshan Shaikh**

This work is published in the form of a manual where analysis and design aspects for a range of DDS columns are illustrated, because many consultants and professionals are not familiar with modern geotechnical engineering and because modern DDS technology is based on new theories involving various fields of sciences, geosciences and technology.

Selected Contents:

2007: 246x174: 748pp
Hb: 978-0-415-42293-2: **£199.00 US $349.95**

Forthcoming

3RD EDITION

Piling Engineering

Ken Fleming, late, Consulting Engineer, **Austin Weltman**, Tony Gee & Partners, UK, **Mark Randolph**, University of Western Australia and **Keith Elson**, Consulting Engineer, UK

Piling is a fast moving field and recent years have seen major advances in theory, methods, testing procedures and equipment. Some of these changes have been driven by the need for economies and efficiency, reduced spoil production and new methods of pile bore support. Advances in theoretical analyses allow pile design to be refined so that piles and pile groups perform to better advantage.

The third edition of this well established book has been comprehensively updated. It provides an accessible and well-illustrated account of design techniques, methods of testing and analysis of piles, with a marked emphasis on practice but with design methods that incorporate the most recent advances in piling theory.

Piling Engineering is written for geotechnical engineers, consultants and foundation contractors. It is also a useful reference for academics and advanced students on courses in piling, practical site investigation and foundation design and construction.

August 2008: 246x174: 448pp
Hb: 978-0-415-26646-8: **£69.99 US $140.00**

Single Piles and Pile Groups Under Lateral Loading, Pack

Lymon C. Reese, University of Austin, TX, USA and **Willem van Impe,** Ghent University, Belgium

Guiding the professional through the complexities of lateral-load design, this book and CD-ROM combination introduces the procedures involved in piles and pile group design. This is a problem that can only be solved by accounting for the soil resistance as related to the lateral deflection of the pile.

Intricate equations are derived and fully explained, enabling the designer to find the critical loads, that will either cause a pile to be overloaded or cause too much lateral deflection. The CD-ROM contains simplified versions of two required programs that allow the reader to check the solutions of some of the examples given in the book and to find answers to related problems.

2000: 246x174, pp + software CD-ROM
Hb: 978-90-5809-340-0: **£72.50 US $139.95**
Pb: 978-90-5809-348-6: **£41.95 US $79.95**
• AVAILABLE AS AN INSPECTION COPY

Piling Engineering: a Handbook for the Tropics

Steven Buttling, Hyder Consulting, Australia

2009

This book treats all aspects of piling and gives a dedicated account of the practical work involved. It is unique in comparison to existing standard texts in that it is typically focused on the conditions in Asia. Some of these relate to soil conditions, such as rocks deeply affected by tropical weathering, others to working conditions, such as climate, safety standards, materials available, staff education, etc. The reader is guided from site investigation through to design to construction and testing, The text presents new ideas which have become more and more popular. The straight-forward style of writing, the many illustrations supporting theory and the numerous references to real case studies' reports make this book a source of invaluable information. Although the author's knowledge is based on his 30 years of experience in the Asian region, this book will also serve engineers in other parts of the world, who are working on residual soil engineering in Africa and South America.

Selected Contents: 1 Introduction; 2 Site Investigation; 3 Pile Design - Single Piles; 4 Pile Groups; 5 Lateral Loading; 6 Pile Construction; 7 Pile Construction Problems; 8 Pile Testing

May 2009: 246x174: 400pp
Hb: 978-0-415-45745-3: **£69.95 US $139.95**

Forthcoming

2ND EDITION

Single Piles and Pile Groups Under Lateral Loading, Pack

Lymon C. Reese, University of Austin, TX, USA and **Willem van Impe,** Ghent University, Belgium

2009

This is a revised, updated and extended second edition of this textbook will appear. New contents on analytical methods, analysis of experimental studies of piles under lateral loading and methods for performing subsurface investigations in the design of piles under lateral load will be added. Additional material will include exercises, homework, a supportive website and an instructor's manual.

May 2009: 246x174: 500pp
Hb: 978-0-415-46988-3: **£79.95 US $159.95**
Pb: 978-0-415-46989-0: **£39.95 US $79.95**
• AVAILABLE AS AN INSPECTION COPY

Underwater Embankments on Soft Soil

A Case History

William F. van Impe and **R. Daniel Verastegui Flores**, Ghent University, Belgium

This unique case history comprises the challenging design, construction and continuous monitoring of a partially submerged 27m high sand embankment on 8m of very soft soil in the harbour of Antwerp. Valuable inspiration for geotechnical, dam and construction engineers.

Selected Contents:1. Introduction 2. Construction on Soft Soil 3. Discussion on Undrained Shear Strength of Soft Soils 4. Discussion on Slope Stability Evaluation 5. Evaluation of Consolidation 6. Geotechnical Characterization of the Site 7. Design of Underwater Embankment of Soft Soil 8. Ground Improvement by Deep Mixing 9. Construction and Monitoring of Embankment

2007: 234x156: 151pp
Hb: 978-0-415-42603-9: **£39.95 US $69.95**

2ND EDITION

The Mechanics of Soils and Foundations 2nd Edition

John Atkinson, City University, London, UK

An update of the hugely useful first edition, this textbook explains the theoretical basis of geomechanics for civil engineers and its practical applications.

2007: 246x174: 480pp
Hb: 978-0-415-36255-9: **£63.00 US $126.00**

The Foundation Engineering Handbook

Edited by **Manjriker Gunaratne**, University of South Florida, Tampa, USA

Great strides have been made in the art of foundation design during the last two decades. In situ testing, site improvement techniques, the use of geogrids in the design of retaining walls, modified ACI codes, and ground deformation modeling using finite elements are but a few of the developments that have significantly advanced foundation engineering in recent years. What has been lacking, however, is a comprehensive reference for foundation engineers that incorporates these state-of-the-art concepts and techniques.

The Foundation Engineering Handbook fills that void. It presents both classical and state-of-the-art design and analysis techniques for earthen structures, and covers basic soil mechanics and soil and groundwater modeling concepts along with the latest research results. It addresses isolated and shallow footings, retaining structures, and modern methods of pile construction monitoring, as well as stability analysis and ground improvement methods. The handbook also covers reliability-based design and LRFD (Load Resistance Factor Design)-concepts not addressed in most foundation engineering texts.

Easy-to-follow numerical design examples illustrate each technique. Along with its unique, comprehensive coverage, the clear, concise discussions and logical organization of The Foundation Engineering Handbook make it the one quick reference every practitioner and student in the field needs.

2006: 7 x 10: 624pp
Hb: 978-0-8493-1159-8: **£79.99 US $149.95**

Analysis and Design of Substructures

Limit State Design

Swami Saran, Indian Institute of Technology Roorkee, India

A systematic treatment of the analysis and design of substructures, including soil exploration, laboratory testing, analysis and structural design. The book covers the major types of foundations and retaining structures, including footings and rafts, piles and wells. A useful work for undergraduate and postgraduate students of civil engineering, and practising engineers.

Selected Contents:1. Introduction 2. Engineering Properties of Soils 3. Soil Exploration 4. Lateral Earth Pressure 5. Limit State Design – Basic Principles 6. Foundation Design – General Principles 7. Shallow Foundation 8. Pile Foundation 9. Bridge Substructures 10. Marine Substructures 11. Rigid Retaining Walls 12. Sheet Pile Walls 13. Foundations in Expansive Soils 14. Foundations of Transmission Line Towers 15. Reinforced Earth

2006: 246x174: 870pp
Hb: 978-0-415-41844-7: **£124.50 US $219.95**

Advanced Soil Mechanics 3rd Edition

Braja M. Das, Emeritus California State University, USA

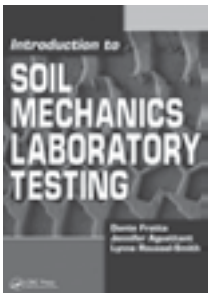
2008 This revised and updated edition presents a step-by-step guide to all aspects of the subject and addresses a wide range of topics in a logical and extensively illustrated approach, along with examples, problems and extensive equations.

Selected Contents:1. Soil aggregate, plasticity, and classification 2. Stresses and strains – elastic equilibrium 3. Stresses and displacements in a soil mass 4. Pore water pressure due to undrained loading 5. Permeability and seepage 6. Consolidation 7. Shear strength of soils 8. Settlement of shallow foundations Appendix A

January 2008: 234x156: 600pp
Hb: 978-0-415-42026-6: **£49.99 US $90.00**

Introduction to Soil Mechanics Laboratory Testing

Dante Fratta, University Of Wisconsin-Madison, USA; **Jennifer Aguettant**, University of Texas at Austin, USA and **Lynne Roussel-Smith**, Baton Rouge, Louisiana, USA



A step-by-step guide to the basic tests performed in soil mechanics, Introduction to Soil Mechanics Laboratory Testing features procedural aids and industry standards to guide students in the lab. This comprehensive textbook discusses the different methods of in situ soil description and identification. The authors present equations related to physical properties of soil and laboratory methods of soil classification. They cover common tests used in design and construction and that deal with the interaction of soil and water, including hydraulic conductivity and consolidation tests. The book also discusses the shear strength of soil and methods of determining it.

2007: 6-1/8 x 9-1/4: 248pp
Pb: 978-1-4200-4562-8: **£28.99 US $59.95**
• AVAILABLE AS AN INSPECTION COPY

Advanced Experimental Unsaturated Soil Mechanics

Proceedings of the International Symposium on Advanced Experimental Unsaturated Soil Mechanics, Trento, Italy, 27-29 June 2005

Edited by **Alessandro Tarantino, E. Romero & Y.J. Cui**

The field of experimental unsaturated soil mechanics has grown considerably over the last decade. In the laboratory and in the field, innovative techniques have been introduced into mechanical, hydraulic, and geo-environmental testing. In this volume, the latest research in laboratory and field testing techniques and the equipment employed are presented by peer-reviewed contributions that were devoted solely to experimental unsaturated soil mechanics. Topics include suction measurement, suction control, mechanical and hydraulic laboratory testing, geo-environmental testing, and field-testing.

2005: 246x174mm: 580 pp
Hb: 978-0-415-38337-0: **£124.50 US $219.95**

Forthcoming

Geotechnical Physical Modelling

CF Leung, Department of Civil Engineering, National University of Singapore, **Susumu Iai**, Disaster Prevention Research Institute, Kyoto University, Japan and **An-Bin Huang**, Department of Civil Engineering, National Chiao Tung University, Taiwan

2008 Geotechnical physical modelling has become a popular, powerful and versatile tool for studying geotechnical problems. The basic mechanism of a given geotechnical problem can be thoroughly examined and parametric studies can be conducted to identify the effects of various influencing factors without the need for costly field tests. Engineers are able to understand and appreciate geotechnical problems in considerable detail and make better and more sound decisions when designing and analysing complex geotechnical problems.

In this comprehensive book the authors set out best practice testing techniques and outlines appropriate precautions so engineers can appreciate the practical significance of the test findings. It includes rarely covered topics such as large shaking table tests and pressure chambers tests, as well as novel techniques.

March 2009: 234x156: 400pp
Hb: 978-0-415-42017-4: **£65.00 US $130.00**

Forthcoming

Linear and non linear numerical analysis of foundations

Edited by **John W. Bull**, University of Newcastle, UK

University of Newcastle, UK

2008 Foundations are fundamental to all civil engineering projects. This book provides a review of state of the art techniques for modelling foundations using both linear and non linear numerical analysis and considers foundations as they effect a range of civil engineering constructions. Coverage includes a series of detailed an specific chapters on dams; deep excavations; deformations; foundations; liquefaction; offshore; piles; site investigations; vibrations.

Up-to-date and expert knowledge is brought together which is otherwise only available in a variety of research sources. The material is set out in a clear logical way to allow designers, engineers, architects, researchers and clients to understand the advanced numerical techniques used in the analysis and design of foundations and to guide them to safer, less expensive and longer lasting structural foundations.

October 2008: 234x156: 600pp
Hb: 978-0-415-42050-1: **£100.00 US $200.00**

Soil Mechanics - Basic Concepts and Applications

A. Aysen, University of South Queensland, Australia

'Recommended as a reference for university libraries serving civil engineering, mining engineering, and geological engineering programs, as well as engineering consulting firms.' – *Applied Mechanics Reviews*

A revised and updated edition of the popular soil mechanics text and exercises book. Offers many extended features to both students and instructors. Must-have titles for students, junior and senior geotechnical engineers. Written with the university student in mind and packed full of pedagogical features, this book provides an integrated and comprehensive coverage of both introductory and advanced topics in soil mechanics.

It includes:

- worked examples to elucidate the technical content and facilitate self-learning
- a convenient structure (the book is divided into sections), enabling it to be used throughout two, three and four year undergraduate courses
- universally applicable contents through the use of SI units throughout, frequent references to current international codes of practice and refereed research papers
- new and advanced topics that extend beyond those in standard undergraduate courses.

The perfect textbook for a range of courses on soils mechanics it is also a valuable resource for practising professional engineers.

A new edition of this popular textbook is planned for 2009. Check our websites for more details.

Selected Contents: 1. Nature of Soils, Plasticity and Compaction 2. Effective Stress and Pore Pressure in Saturated Soils 3. The Movement of Water through Soil 4. Shear Strength of Soils and Failure Criteria 5. Stress Distribution and Settlement in Soils 6. One Dimensional Consolidation 7. Application of Limit Analysis to Stability Problems in Soil Mechanics 8. Lateral Earth Pressure and Retaining Walls 9. Stability of Earth Slopes 10. Bearing Capacity of Shallow Foundations and Piles

2005: 246x174: 468pp
Pb: 978-0-415-38393-6: **£36.50 US $69.95**
• AVAILABLE AS AN INSPECTION COPY

Forthcoming Textbook

Problem Solving in Soil Mechanics

A. Aysen, University of South Queensland, Australia

Problem Solving in Soil Mechanics covers the full undergraduate courses in soil mechanics. A self-teaching and problem-solving approach is adopted with an emphasis on engineering applications. There are 116 worked examples with clear and readable explanations related to the standard and modern soil mechanics topics. Although primarily designed as a supplement to Soil Mechanics: Basic Concepts and Engineering Applications, it can be used independently, as there is no specific reference to any equation or figure in the main book.

A new edition of this popular textbook is planned for 2009. Check our websites for more details.

2005: 246x174: 195pp
Pb: 978-0-415-38392-9: **£23.50 US $39.95**

• AVAILABLE AS AN INSPECTION COPY

Expansive Soils

Recent Advances in Characterization and Treatment

Edited by **Amer Ali Al-Rawas**, Sultan Quaboos University, Sultanate of Oman and **Mattheus F.A. Goosen**, University of Turabo, Puerto Rico

Expansive soils are a worldwide problem. The estimated damage to buildings, roads and other structures built on expansive soils exceeds fifteen billion US dollars annually. With their ability to swell and shrink in relation to the environment's water content, expansive soils are considered as geonatural hazards and form a challenge to geotechnical and construction engineers.

To address the problems associated with these soils, this edited book provides expert contributions on the recent advances in the characteristics and treatment of expansive soils as well as an evaluation of and remedial measures suggested for structures built on expansive soils. *Expansive Soils* provides the reader with easy and specific access to the information needed. Containing contributions by fifty-two experts from twenty-two countries, it gives a truly worldwide perspective of the problems and solutions associated with expansive soils. A valuable reference for engineers, researchers and graduate students working on expansive soils, soil improvement and foundation engineering.

Selected Contents: Nature, Identification and Classification of Expansive Soils. Volume Change Characteristics. Swelling Potential Measurement. Advanced Techniques for Swelling Potential Assessment. Site Characterization. Lime Stabilization. Cement Stabilization. Other Treatment Methods. Techniques and Remedial Measures. Subject Index

2006: 246x174: 544pp
Hb: 978-0-415-39681-3: **£104.50 US $199.95**

Foundation Engineering

Design and Construction in Tropical Soils

Edited by **B.B.K. Huat**, University of Putra Malaysia, Selangor, Malaysia, **Faisal Haji Ali**, University of Malaya, Kuala Lumpur, Malaysia, **Husaini Omar**, University of Putra Malaysia, Selangor, Malaysia and **Harwant Singh**, University Malayasia Sarawak, Semarahan, Malaysia

Residual soils are found in many parts of the world. Like other soils, they are used extensively in construction, being built upon and used as construction materials. Residual soils are formed when the processes of rock weathering proceed at a faster rate than the transport processes by water, gravity and wind, whereby much of the resulting soils will remain in place. The soil typically retains many of the characteristics of the parent rock. In a tropical region, residual soil layers can be very thick, sometimes extending for hundred of meters before reaching unweathered rock.

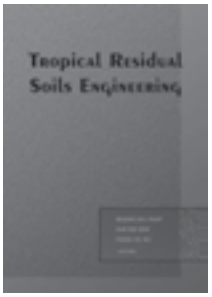
This book gathers state-of-the-art knowledge from a number of experienced experts working in foundation engineering in tropical residual soils. Subjects covered are: geology and formation of residual soils, site investigations, characterization and selection of parameters for foundation design, design of shallow and deep foundations which include driven piles, drilled shafts and caissons, and special topics which include design of piles in marginally-stable river banks, micro piles, Augeo pile, pile load and NDT, foundation failures and remedial works, and pile supported embankment. The book also includes a country case study on engineering geology in relation to foundation engineering in Malaysia.

Selected Contents: 1. Foundation Engineering in Tropical Soils 2. Engineering Geology and Foundation 3. Site Investigation, Characterization and Selection of Design Parameters for Foundation Design 4. Shallow Foundation 5. Driven Pile Foundation, Pile Driving Technique and Systems 6. Drilled Shafts 7. Caisson and Well Foundation 8. Bridge and Jetty Foundation, and Design of Piles in Marginally Stable River Bank 9. Micro Piles 10. Machine Foundation 11. Foundation in Limestone Areas 12. Innovative Pile Foundations 13. Pile Load and Non Destructive Tests 14. Foundation Failures 15. Pile Supported Embankment 16. Driven and Bored Piles for Landslide Stabilization 17. Scouring at Jetty and Bridge Piers 18. Country Case Study: Engineering Geology in Relation to Foundation and Rock Slope Engineering in Malaysia

2006: 246x174: 256pp
Hb: 978-0-415-39898-5: **£72.50 US $139.95**

Tropical Residual Soils Engineering

Edited by **B.B.K. Huat**, **See Sew Gue** and **Faisal Haji Ali**



Focused on tropical areas and their unique problems and issues, this work examines all aspects of residual soils engineering, including both theoretical and practical aspects. This book gives the practitioner a thorough understanding of the characteristics of these soil types, their formation and their material properties, while guidelines on application, stabilization and assessment, reveal how this knowledge can be used in the field. The authors have extensive expertise with this type of ground engineering, and include a case study to illustrate the technical aspects. Graduate students, researchers and professionals in soil and rock mechanics, and geotechnical engineers working in tropical regions will find this an invaluable resource.

2004: 246x174: 258pp
Hb: 978-90-5809-660-9: **£79.50 US $149.95**

Geotechnical Engineering

Principles and Practices of Soil Mechanics and Foundation Engineering

V.N.S. Murthy

Series: Civil and Environmental Engineering

Current and complete coverage of soil characteristics from a construction point of view**.** A *must have* reference for any engineer involved with foundations, piers, and retaining walls, this remarkably comprehensive volume illustrates soil characteristic concepts with examples that detail a wealth of practical considerations. It covers the latest developments in the design of drilled pier foundations and mechanically stabilized earth retaining walls and explores a pioneering approach for predicting the nonlinear behavior of laterally loaded long vertical and batter piles. As complete and authoritative as any volume on the subject, it discusses soil formation, index properties, and classification; soil permeability, seepage, and the effect of water on stress conditions; stresses due to surface loads; soil compressibility and consolidation; and shear strength characteristics of soils. While this book is a valuable teaching text for advanced students, it is one that the practicing engineer will continually be taking off the shelf long after school lets out. The quick reference it affords to a huge range of tests and the appendices filled with essential data, makes it an essential addition to an civil engineering library.

2002: 7 x 10: 1056pp
Hb: 978-0-8247-0873-3: **£44.99 US $119.95**

Advances in Deep Foundations

International Workshop on Recent Advances of Deep Foundations (IWDPF07)

1–2 February 2007, Port and Airport Research Institute, Yokosuka, Japan

Edited by **Yoshiaki Kikuchi**, Port and Airport Research Institute, Yokosuka, Japan, **Jun Otani**, Kumamoto University, Kumamoto, Japan, **Makoto Kimura**, Kyoto University, International Innovation Center, Kyoto, Japan and **Yoshiyuki Morikawa**, Port and Airport Research Institute, Yokosuka, Japan

Civil Engineering has recently seen enormous progress in the core field of the construction of deep foundations. This book is the result of the International Workshop on Recent Advances in Deep Foundations (IWDPF07), which was held in Yokosuka, Japan on the 1st and the 2nd of February, 2007. Topics under discussion in this book include recent research achievements and case histories; and current advances in the applied aspects of deep foundations, such as reliability-based design, field tests and experimental field work. The book also features the latest numerical simulation methods and theoretical findings. There are nine keynote lectures, focusing on foundation engineering in different parts of the world, and thirty-three state-of-the-art papers from eminent international experts. The techniques covered include sheet piles, piles, pile-ground improvement and ground improvement, while dynamic aspects and design are also discussed.. This book is intended for an international audience of researchers and professionals in soil and foundation engineering.

2007: 246x174: 437pp
Hb: 978-0-415-43629-8: **£89.00 US $174.95**

Deformation Characteristics of Geomaterials: Recent Investigations and Prospects

Edited by **H. Di Benedetto, T. Doanh, H. Geoffroy & C. Sauzéat**

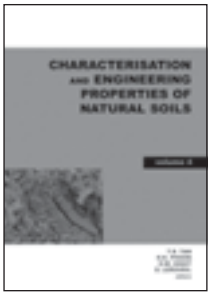
Solutions for soil engineering and soil-structure interaction problems require realistic and pertinent experimental and modelling tools. In this text, experimental investigations into deformation properties; laboratory, in-situ and field observation interpretations; behaviour characterisation and modelling; and case histories are presented. Contributions include recent investigations into anisotropy and non-linearity, the effects of stress-strain-time history, ageing and time effects, yielding, failure and flow, cyclic and dynamic behaviour. In addition, advanced geotechnical testing is applied to real engineering problems, and to ways of synthesising information from a range of sources while engaging in practical site characterisation studies.

2005: 292x216mm: Book of Abstracts +1425 pp CD-ROM
Hb: 978-0-415-36701-1: **£59.00 US $103.00**

Characterisation and Engineering Properties of Natural Soils

Proceedings of the Second International Workshop on Characterisation and Engineering Properties of Natural Soils, Singapore, 29 November-1 December 2006

Edited by **T.S. Tan**, National University of Singapore, **K.K. Phoon**, University of Singapore, **D.W. Hight**, Geotechnical Consulting Group, London and **S. Leroueil**, Universite Laval, Quebec



Following the first two volumes, published in 2002, volumes 3 and 4 of *Characterisation and Engineering Properties of Natural Soils* review laboratory testing, in-situ testing, and methods of characterising natural soil variability, illustrated by actual site data. Less well-documented soil types are highlighted and the various papers take into account location and distribution, engineering geology, composition, state and index properties, structure and engineering properties. Also treated is the quality and reliability of data with reference to methods of sampling and testing, and its relevance to engineering problems. These volumes will be useful to consulting engineers, geotechnical engineering academics and researchers, and civil engineers and soil scientists.

2006: 246x174: 1252pp
Pack: 978-0-415-42691-6: **£249.00 US $449.00**

Soft Soil Engineering

Proceedings of the Fourth International Conference on Soft Soil Engineering, Vancouver, Canada, 4-6 October 2006

Edited by **Dave H. Chan**, University of Alberta, Canada and **K. Tim Law**, Carleton University, Canada

Soft Soil Engineering presents the latest research, practices and case history experience of soft soil engineering around the world. Soft soil foundation, embankments and dams, large-scale testing, case histories and analysis of soft soil material behaviour are brought together in this volume.

2006: 246x174: 799pp
Hb: 978-0-415-42280-2: **£157.00 US $289.95**

Forthcoming

A Handbook of Tropical Residual Soil Engineering

Edited by **B.B.K. Huat**, University of Putra Malaysia, Selangor, Malaysia and **David Toll**, University of Durham, UK

2009 Residual soils are found in many parts of the world. In tropical areas, residual soil layers are often extensive and may continue downwards for hundreds of meters before unweathered rock is reached. Since most foundations, excavations and embankments will therefore be built on or in such soil, and as residual soils are often used as construction materials, it is vital that the properties and peculiarities of tropical residual soils are well understood.

The Handbook of Tropical Residual Soil Engineering is intended as a complete reference source and manual for every engineer working on or interested in soil and foundation engineering in tropical areas. Almost all aspects of tropical residual soils are treated, including a range of engineering applications. A dedicated part of the book is focused on region and country specific sections, including typical characteristics, soil conditions and practical cases. Ultimately, the final pages present tables and charts with typical data.

This unique handbook will constitute an invaluable reference and should be a standard work in the library of any engineer involved in geological, foundation, and construction engineering work in tropical residual soil.

Selected Contents: Part A. GENERAL PRINCIPLES, THEORY & APPLICATIONS: 1. Introduction; 2. Tropical Residual Soils; 3. Sampling and Testing Tropical Residual Soils; 4. Behaviour of Weakly Bonded Soil; 5. Behaviour of Unsaturated Soil; 6. Volume Change of Tropical Residual Soils; 7. Shear Strength of Tropical Residual soils; 8. Application: Slope Stability and Retaining Walls in Tropical Residual Soils; 9. Application: Tropical Soils as Road Construction Materials; 10. Application: Foundations; **Part B. REGIONAL & COUNTRY CASE STUDIES:** 11. Central Africa (Ghana, Nigeria etc); 12. South America (Brazil); 13. Hong Kong; 14. Southern India and Sri Lanka; 15. Southeast Asia (Malaysia, Singapore, Thailand, Philippines).

September 2009: 246x174: 750pp
Hb: 978-0-415-45731-6: **£99.00 US $199.95**

Unsaturated Soils - Advances in Testing, Modelling and Engineering Applications

Proceedings of the Second International Workshop on Unsaturated Soils, 23-25 June 2004, Anacapri, Italy

Edited by **Claudio Mancuso & Alessandro Tarantino**

Peer-reviewed papers on unsaturated soils, new developments in laboratory testing, experimental data on compacted and natural soils and constitutive and numerical modelling of unsaturated soil behaviour.

2004: 246x174mm: 143 pp
Hb: 978-0-415-36742-4: **£46.50 US $89.95**

Handbook of Geotechnical Investigation and Design Tables

Burt G. Look, Senior Associate, Connell Wagner Pty Ltd, Australia

This practical handbook of properties for soils and rock contains, in a concise tabular format, the key issues relevant to geotechnical investigations, assessments and designs in common practice. In addition, there are brief notes on the application of the tables. These data tables are compiled for experienced geotechnical professionals who require a reference document to access key information. There is an extensive database of correlations for different applications. The book should provide a useful bridge between soil and rock mechanics theory and its application to practical engineering solutions.

The initial chapters deal with the planning of the geotechnical investigation, the classification of the soil and rock properties. Further on some of the more used testing is covered. Later chapters show the reliability and correlations that are used to convert that data in the interpretative and assessment phase of the project. The final chapters apply some of these concepts to geotechnical design.

This book is intended primarily for practicing geotechnical engineers working in investigation, assessment and design, but should provide a useful supplement for postgraduate courses.

Selected Contents:1. Site Investigation 2. Soil Classification 3. Rock Classification 4. Field Sampling and Testing 5. Soil Strength Parameters from Testing 6. Rock Strength Parameters from Testing 7. Soil Properties and the state of the Soil 8. Permeability and its influence 9. Rock Properties 10. Material and Testing Variability 11. Deformation Parameters 12. Earthworks 13. Subgrades and Pavements 14. Slopes 15. Terrain Assessment, Drainage and Erosion 16. Geosynthetics 17. File Specifications 18. Rock Mass Classification Systems 19. Earth Pressures 20. Retaining Walls 21. Soil Foundations 22. Rock Foundations 23. Movements 24. Appendix – Loading 25. References

2007: 246x174: 346pp
Hb: 978-0-415-43038-8: **£59.00 US $109.95**

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Forthcoming

Reliability-Based Design in Geotechnical Engineering

Computations and Applications

Edited by **Kok-Kwang Phoon**, National University of Singapore

2008

Reliability-based design is the only engineering methodology currently available which can ensure self-consistency in both physical and probabilistic terms, and which is compatible with the theoretical basis underlying other disciplines such as structural design. It is especially relevant as geotechnical design becomes subject to increasing codification and to code harmonization across national boundaries and material types. Already some codes of practice describe the principles and requirements for safety, serviceability, and durability of structures. Geotechnical engineers need encouragement to apply reliability-based design in a realistic context that recognises the complex variabilities in geomaterials and model uncertainties arising from a profession steeped in empiricism.This book presents practical computational methods in concrete steps for engineers and students. It also provides geotechnical examples illustrating reliability analyses and design. By focusing on learning through computations and examples, it serves as a valuable reference for engineers and a resource for students.

April 2008: 234x156: 528pp
Hb: 978-0-415-39630-1: **£80.00 US $160.00**

Textbook

Geotechnical Engineering

Renato Lancellotta, Politecnico di Torino, Italy

2009

This new edition of Renato Lancellotta's textbook provides a solid grounding in the mechanics of soils and structures interacting with soil.

It begins with a detailed description of the nature and composition of soils, emphasising soil mineralogy and the features of natural deposits. It thoroughly covers several neglected topics: principles of continuum mechanics, Critical State Theory, site investigation, and innovative techniques such as seismic methods. It outlines boundary value problems with appropriate mathematical rigour, stationary and transient flow in porous media, and the collapse of soil structures described using the concept of plasticity; and then the performance and serviceability of structures. It presents applied mechanics, testing and experimentation, and methods for observing real structures.

This book suits an undergraduate course; and is also geared to graduate students, with coverage of several advanced aspects of soil behaviour. Also it serves as a professional reference work, tying principles to practice.

Selected Contents: 1. Nature and composition of soils 2. Principles of continuum mechanics 3. Constitutive models 4. The porous medium 5. Mechanical behaviour of soils 6. Flow in porous media 7. In situ investigations 8. The collapse of soil structures 9. Performance and serviceability of structures

July 2008: 246x174: 416pp
Hb: 978-0-415-42003-7: **£85.00 US $150.00**
Pb: 978-0-415-42004-4: **£29.99 US $53.95**

• AVAILABLE AS AN INSPECTION COPY

Geotechnical Investigation Methods

A Field Guide for Geotechnical Engineers

Roy E. Hunt, Practicing Geotechnical Engineer, Bricktown, New Jersey, USA

The investigation phase is the most important segment of any geotechnical study. Geotechnical Investigation Methods offers clear, concise, and hands-on guidance for choosing and executing a variety of field investigations. Comprising chapters from the second edition of the revered Geotechnical Engineering Investigation Handbook, this practical guide provides an affordable alternative to larger handbooks and condenses information into an easily digestible and readily accessible format. The book describes numerous methods and procedures for exploring the geologic environment, measuring material properties, and selecting field instrumentation while also providing a basis for selection of each.

October 2006: 7 x 10: 342pp
Hb: 978-1-4200-4274-0: **£49.99 US $94.95**

Characteristics of Geologic Materials and Formations

A Field Guide for Geotechnical Engineers

Roy E. Hunt, Practicing Geotechnical Engineer, Bricktown, New Jersey, USA

Properly understanding and characterizing geologic materials and formations is vital for making critical engineering decisions. Identifying and classifying rock masses and soil formations allows reasonable estimation of their characteristic properties. Comprising chapters from the second edition of the revered Geotechnical Engineering Investigation Handbook, Characteristics of Geologic Materials and Formations provides a basis for recognizing, identifying, and classifying the various rock and soil types.

With clear, concise, and hands-on guidance, this book describes these rock and soil types in terms of their origin, mode of occurrence, and structural features in situ and presents the typical characteristics that are of engineering significance. It also explains the elements that affect surface and subsurface water engineering in terms of controlling floods, erosion, subsurface flow, and seepage, as well as for water conservation. Supplying important correlations used to estimate engineering and geologic properties, the book presents correlations for intact rock, rock masses, and soil formations throughout the chapters and condenses this information into a convenient summary table in an appendix.

Eliminate the need to search through narrow volumes or large handbooks with Characteristics of Geologic Materials and Formations: A Field Guide for Geotechnical Engineers, a convenient and complete guide to the techniques you need.

October 2006: 7 x 10: 387pp
Hb: 978-1-4200-4276-4: **£49.99 US $94.95**

Geotechnical and Geophysical Site Characterization

Proceedings of the 3rd International Conference on Site Characterization (ISC'3, Taipei, Taiwan, 1-4 April 2008)

Edited by **An-Bin Huang**, Department of Civil Engineering, National Chiao Tung University, Taiwan and **Paul W. Mayne**, Georgia Institute of Technology, Atlanta, USA

Geotechnical and Geophysical Site Characterization collects the papers presented at the Third International Conference on Site Characterization (ISC'3) that was held in Taipei from April 1-4, 2008. The subjects covered include new developments in mechanical in-situ testing and interpretation techniques, statistical analysis of test data, geo-environmental site characterization, soil sampling methods, multi-dimensional geophysical imaging techniques, residual/unsaturated soil characterization, and case histories that involve major construction projects or disaster investigations. Over 200 papers, twelve keynote lectures and the third Mitchell lecture were presented at the conference. Geotechnical and Geophysical Site Characterization provides a wealth of valuable information for practicing engineers as well as researchers worldwide.

2008

March 2008: 246x174: Keynote paper volume 268 pp + CD-ROM full paper 1550 pp.
Hb: 978-0-415-46936-4: £149 US $299.95

New

Design and Construction of Pavements and Rail Tracks

Geotechnical Aspects and Processed Materials

Edited by **Antonio Gomes Correia**, University of Minho, Guimarães, Portugal, **Yoshitsugu Momoya**, Railway Technical Research Institute, Tokyo, Japan. and **Fumio Tatsuoka**, Tokyo University of Science, Japan

This book covers geotechnical aspects related to foundation layers of pavements and rail tracks from a mechanistic viewpoint; earth structures in pavement and railway construction, including the advocated use of processed materials and continuous compaction control; and strengthening and reinforcement.

2007: 246x174: 218pp
Hb: 978-0-415-43362-4: **£59.00 US $109.00**

Textbook

Fundamentals of Geosynthetic Engineering

Sanjay Kumar Shukla, Banaras Hindu University Varanasi, India and **Jian-Hua Yin**, The Hong Kong Polytechnic University, Hong Kong

Geosynthetics has emerged as an exciting and innovative area for civil engineers, with an enormous growth in civil engineering applications, making geosynthetics a favoured construction material throughout the world.

Fundamentals of Geosynthetic Engineering provides an overview of the basic concepts of this fascinating subject, informing not only students in civil engineering, but also practising civil engineers whose university education was completed before geosynthetics reached the curriculum. All major aspects related to the field applications, including application guidelines and description of case studies, have been included. This knowledge will allow engineers to work confidently with geosynthetics.

The book is both attractive and comprehensive, containing a large number of line drawings, sketches, graphs, photographs and tables illustrating the basic concepts of all the topics covered in the work. Readers will find this book extremely lively and interactive, and by reading it will be able to grasp the fundamentals of geosynthetics.

Selected Contents: 1. General Description 2. Functions and Selection 3. Properties and Their Evaluation 4. Application Areas 5. Analysis and Design Concepts 6. Application Guidelines 7. Quality and Field Performance Monitoring 8. Economic Evaluation 9. Case Studies

2006: 246x174: 432pp
Hb: 978-0-415-39444-4: **£62.50 US $124.95**
• AVAILABLE AS AN INSPECTION COPY

New Horizons in Earth Reinforcement

Book + CD-ROM

Edited by **Jun Otani**, Kumamoto University, Kumamoto, Japan, **Yoshihisa Miyata**, Kumamoto University, Japan and **Toshifumi Mukunoki**, Kumamoto University, Japan

This book contains contributions from the 5th International Symposium on Earth Reinforcement, Kyushu, Japan, 14-16 November 2007, and presents the very latest earth reinforcement techniques and design procedures. The volume showcases advances in materials and emerging applications, with special emphasis on disaster mitigation and geoenvironmental issues.

2007: 246x174: 916pp
Hb: 978-0-415-45775-0: **£139.00 US $259.00**

Scrap Tire Derived Geomaterials - Opportunities and Challenges

Proceedings of the International Workshop IW-TDGM 2007 (Yokosuka, Japan, 23-24 March 2007)

Edited by **Hemanta Hazarika** and **Kazuya Yasuhara**

SCRAP TIRE DERIVED GEOMATERIALS is a compilation of peer-reviewed papers presented at the International Workshop on Scrap Tire Derived Geomaterials (IW-TDGM 2007) in Yokosuka, Japan in March 2007. This book presents current research and describes advances. It reflects the international significance of such recycle materials and discusses the use of whole tires, tire shreds and tire chips, as well as tire chips mixed with soils and/or treated materials. SCRAP TIRE DERIVED GEOMATERIALS also includes discussion about the geoenvironmental impact and assessment, with case studies, novel concepts and field applications. It also contains information pertaining to mechanical properties and modeling.

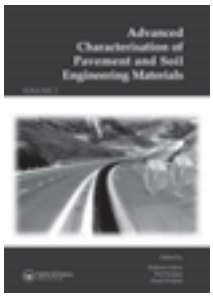
SCRAP TIRE DERIVED GEOMATERIALS provides a wealth of knowledge and information. It promotes the geotechnical approach for material recycling of tire derived geomaterials, contributing to a sustainable global environment. This book is aimed at people working in industry, academia and public sector, related to geotechnical engineering,waste reuse and management, sustainable construction and cost-performance.

2007: 246x174: 414pp
Hb: 978-0-415-46070-5: **£99.00 US $189.00**

Advanced Characterisation of Pavement and Soil Engineering Materials

Proceedings of the International Conference on Advanced Characterisation of Pavement and Soil Engineering, 20-22 June 2007, Athens, Greece

Edited by **Andreas Loizos**, National Technical University of Athens, Greece, **Tom Scarpas**, Technical University, Delft, NL and **Imad L. Al-Qadi**, University of Illinois at Urbana-Champaign, USA



Recent developments and research on mechanistic pavement analysis, design and rehabilitation, their geotechnical aspects and the experimental determination of material model parameters. Of interest to those involved in computational simulation, experimental characterization and field testing for prediction of performance of various types of pavement.

2007: 246x174: 1858pp
Pack: 978-0-415-44882-6: **£239.00 US $449.00**

Forthcoming

In Situ Testing in Geomechanics

The Main Tests

Fernando Schnaid, Federal University of Rio Grande do Sul, Brazil

2008

Site characterisation and in situ test interpretation have developed from basic empirical recommendations to a sophisticated discipline requiring a thorough knowledge of material behaviour and numerical modelling. This book presents a critical appraisal of the understanding and assessment of the stress-strain-time and strength characteristics of geomaterials and explores new interpretation methods capable of measuring soil properties in clay, sand, silt and cohesive-frictional materials among other soil formations.

It covers the five most common in situ test techniques; Standard Penetration Tests, Cone Penetration Tests, Vane Test, Pressuremeter Tests and Dilatometer Tests. Case studies are presented and typical geotechnical properties are summarised.

Classical and new solutions to a variety of problems in site characterisation are given. The book is particularly useful to those in industry and geomechanics consultancy. It also suits upper-level students in engineering science.

July 2008: 234x156: 336pp
Hb: 978-0-415-43385-3: **£80.00 US $160.00**
Pb: 978-0-415-43386-0: **£29.99 US $59.99**
• AVAILABLE AS AN INSPECTION COPY

Applications of Computational Mechanics in Geotechnical Engineering V

Proceedings of the 5th International Workshop, Guimaraes, Portugal 1–4 April 2007

Edited by **Luís Ribeiro e Sousa**, University of Porto, Portugal, **M.M. Fernandes**, University of Porto, Portugal, **Eurípedes Vargas Jr.**, Catholic University of Rio de Janeiro, Brazil and **Robero Azevedo**, Federal University of Viçosa, Brazil

The latest research, practice and developments in computational mechanics in geotechnical engineering. Includes geomechanics of excavation and ground reinforcement in excavations, oil exploration and mining, plus environmental aspects. Methodologies are discussed: such as artificial intelligence and computational systems applied to geotechnical problems.

2007: 246x174: 524pp
Pb: 978-0-415-43789-9: **£109.00 US $189.95**

Numerical Models in Geomechanics

Proceedings of the Tenth International Symposium on

Numerical Models in Geomechanics (NUMOG X), Rhodes, Greece, 25-27 April 2007

Edited by **G.N. Pande**, University College Swansea, Wales and **S. Pietruszczak**, McMaster University, Hamilton, Canada

This book presents the latest state-of-the-art of numerical analysis as applied to geotechnical problems and modelling of geomaterials such as soil, rock and masonry. It includes various applications to the analysis of tunnels, dams, slopes and embankments, as well as applications relevant to nuclear engineering.

2007: 246x174: 766pp
Hb: 978-0-415-44027-1: **£159.00 US $299.95**

Numerical Methods in Geotechnical Engineering

Sixth European Conference on Numerical Methods in Geotechnical Engineering (Graz, Austria, 6-8 September 2006)

Edited by **Helmut F. Schweiger**, Graz University of Technology, Graz, Austria

An overview of recent developments in constitutive modelling, numerical implementation issues, and coupled and dynamic analysis. A special section dedicated to the numerical modelling of ground improvement techniques, with applications of numerical methods for solving practical boundary value problems, such as deep excavations, tunnels, shallow and deep foundations, embankments and slopes. These proceedings not only contain the latest scientific research, but also give valuable insight into the applications of numerical methods in solving practical engineering problems, thus narrowing the gap between advanced academic research and practical application.

2006: 246x174: 892pp
Pack: 978-0-415-40822-6: **£157.00 US $289.95**

Physical Modelling in Geotechnics

Proceedings of the Sixth International Conference on Physical Modelling in Geotechnics, 6th ICPMG '06, Hong Kong, 4 - 6 August 2006

Edited by **C.W.W. Ng**, Hong Kong University of Science and Technology, People's Republic of China, **Y.H. Wang**, Hong Kong University of Science and Technology, People's Republic of China and **L.M. Zhang**, Hong Kong University of Science and Technology, People's Republic of China

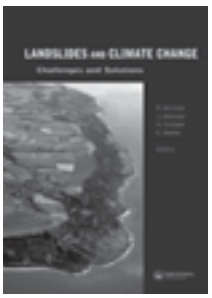
The 6th ICPMG provided an excellent opportunity for the presentation and exchange of the latest developments in physical modelling in geotechnical and geoenvironmental engineering.

2006: 246x174: 1608pp
Pack: 978-0-415-41586-6: **£239.00 US $449.95**

Landslides and Climate Change: Challenges and Solutions

Proceedings of the International Conference on Landslides and Climate Change, Ventnor, Isle of Wight, UK, 21–24 May 2007

Edited by **Robin McInnes**, **Jenny Jakeways**, **Helen Fairbank**, **Emma Mathie**, Centre for the Coastal Environment, Isle of Wight Council, UK



Investigates the relationship between landslides and climate change. Considers proactive approaches to hazard and risk management, combining geohazard modelling and prediction with effective risk management and informed planning policy, as a means of safeguarding the sustainability of communities at risk.

2007: 246x174: 528pp
Hb: 978-0-415-44318-0: **£99.00 US $189.00**

Forthcoming

Landslides

Proceedings of the 10th Internatinoal Symposium on Landslides and Engineered Slopes, 30 June - 4 July 2008, Xi'an, China

Edited by **Zu-yu Chen**, China Institutre of Water and Hydropower Research, Beijing, People's Republic of China, **Jian-Min Zhang**, Tsinghua University, Hydraulic Engineering Department, Beijing, China, **Ken Ho**, Geotechnical Engineering Office, Civil Engineering and Development Department, Kowloon, Hong Kong, **Fa-Quan Wu**, Institute of Geology and Geophysics, Chinese Academy of Science, Beijing, China and **Zhogn-Kui Li**, Tsinghua University, Hydraulic Engineering Department, Beijing, China

Proceedings of the Tenth International Symposium on Landslides, held in Xi'an, China, from June 30 to July 4, 2008, jointly organized by CISMGE-CCES, CNCEG, CSRME and the Geotechnical Division of the Hong Kong Institution of Engineers. Comprises over 270 papers from international experts who deal with the latest developments in the field.

2008

The two Volumes plus a searchable full paper CD-ROM contain a wealth of the current information on all aspects of landslide hazards, encompassing geological modeling and soil and rock mechanics, landslide processes, causes and effects, and damage avoidance and limitation strategies. This set is intended for academics and professionals in geo-mechanical and geotechnical engineering, especially those involved in research, design, construction and education for high natural landslides and artificial engineering slopes.

May 2008: 246x174: 1850pp
Hb: 978-0-415-41196-7: **£249.00 US $598.00**

Forthcoming

Geotechnical Slope Analysis

Robin Chowdhury, **Phil Flentje**, **Saran Sarma** and **Gautam Bhattarcharya**

2009

This is an updated and extended version of the original title, *Slope Analysis* (1978), written by Robin Chowdhury. The book contains an additional complete account of what has been achieved in the field over the last 30 years. With a multi-disciplinary approach and dedicated chapters devoted to seismic effects and probabilistic approaches and reliability analyses, a critical approach, the distinctive style of the original book is reflected. Subjects treated are the understanding slope preformance, mechanisms of instability and the requirements for modeling and analysis and new techniques for observation and modeling. Special attention is paid to the occurrence, increasing frequency and enormous consequences of natural and man-made hazards. The relationships of slope analysis to the management of natural and man-made slopes and to strategies and methods for assessing landslide susceptibility, hazard and risk are also explored. Moreover, the increased relevance and importance of geotechnical analysis of slopes in the context of climate change scenarios is discussed. All theory is supported by numerous examples and a CD-ROM with software and bonus material is included in the back of the book.

Selected Contents: Preface; 1. Introduction, aims and scope - slopes, geology and materials; 2. Basic concepts of geomechanics; 3. Performance indicators and the limit equilibrium concept; 4. Limit equilibrium methods for slip surfaces of arbitrary shape; 5. Stress-deformation approach and its role in slope analysis; 6. Natural slope analysis considering initial stresses; 7. Plasticity and shear band analysis; 8. Earthquake effects and seismic slope analysis; 9. Probabilistic approaches and reliability analyses; 10. Role of analysis in geotechnical practice and research; 11. Looking to the future, concluding remarks; Appendices, tables of geotechnical parameters and slope stability charts, references

June 2009: 246x174: 500pp
Hb: 978-0-415-46974-6: **£74.95 US $139.95**

Landslide Risk Management

Proceedings of the International Conference on Landslide Risk Management, Vancouver, Canada, 31 May - 3 June, 2005

This volume consists of two parts. The first part of the book contains state-of-the-art and invited lectures, prepared by teams of authors selected for their experience in specific topics assigned to them by the JTC-1 Committee of the ISSMGE. The second part is a selection of papers submitted to the conference, most of which serve as case-history illustrations of projects on landslide risk management. All contributions represent the status of landslide risk management as viewed by experts from around the world.

2005: 246x174mm: 776 pp
Hb: 978-0-415-38043-0: **£149.50 US $299.95**

Understanding Landslides through Case Histories

Serge Leroueil, Laval University, Quebec, Canada & **Luciano Picarelli,** Seconda Università di Napoli, Aversa, Italy

2009

A richly-illustrated reference work that extensively treats the mechanisms leading to slope movements and landslides. Composed of two parts, both the theoretical and the practical part are discussed; the first part describes soil behaviour and properties in the context of slopes, the processes involved in slope formation and how some factors influence slope movements and stability. The second part consists of about 30 well-documented case histories from many parts of the world that were carefully selected and written by experts to demonstrate the most common processes of deformation and failure. This book is unique in that it typically treats the mechanical processes involved. This work is intended for researchers, practitioners and graduate students working on soil engineering and geohazards. In addition, it is attractive reading for civil engineers or geologists.

Selected Contents: 1. Introduction; I. From soil mechanics to the processes leading to slope movement and failure soil behaviour and properties in the context of slopes: 2. Processes of formation of natural slopes; 3. Factors influencing slope stability 4. Mechanisms and causes of slope instability; II. Case histories: 5. Case histories of falls; 6. Case histories of topples; 7. Case histories of first time slides; 8. Case histories of active and reactivated slides; 9. Case histories of flow-like landslides; 10. Case histories of spreads; 11. Case histories of slope deformation; 12. References

May 2008: 246x174: 1850pp
Hb: 978-0-415-41196-7: **£249.00 US $598.00**

Landslides: Evaluation and Stabilization - 2 Vol. Set

Proceedings of the Ninth International Symposium on Landslides, June 28 -July 2, 2004 Rio de Janeiro, Brazil

Edited by Editor(s) - **W. Lacerda, M. Erlich, S.A.B. Fontoura** & **A.S.F. Sayao**

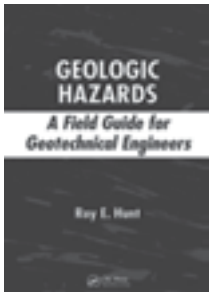
A wealth of information on all aspects of landslide hazards, encompassing geological modelling and soil and rock mechanics, landslide processes, causes and effects, and damage avoidance and limitation strategies. Invited lecture reports, specialized panel contributions and over 240 technical papers on the following themes: Mapping and geological models in landslide hazard assessment; Advances in rock and mine slopes design; Field instrumentation and laboratory investigations; Pre-failure mechanics of landslides in soil and rock; Mechanisms of slow active landslides; Post-failure mechanics of landslides; Stabilization methods and risk reduction measures.

2004: 246x174mm: 2 Vol. Set: 1794 pp
Hb: 978-0-415-35665-7: **£287.50 US $539.95**

Geologic Hazards

A Field Guide for Geotechnical Engineers

Roy E. Hunt, Practicing Geotechnical Engineer, Bricktown, New Jersey, USA



Geologic hazards pose the greatest threat to human safety for any geotechnical undertaking, but it is ultimately the engineer's ability to recognize and cope with these hazards that will determine the safety of life and property. Armed with Geologic Hazards: A Field Guide for Geotechnical Engineers, readers will be able to properly recognize, understand, and design for the various geologic hazards to provide safe and economical construction. Eminent expert Roy E. Hunt thoroughly examines the potential for slope failures, earthquakes, ground subsidence, collapse, and expansion, and explains, using a clear and conceptual approach, what measures are available to minimize or eliminate the risks associated with each.

March 2007: 7 x 10: 323pp
Hb: 978-1-4200-5250-3: **US $89.95**

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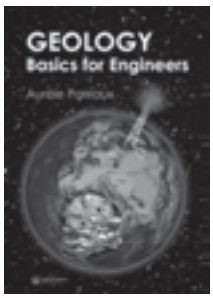
Forthcoming Textbook

Geology

Basics for Engineers

Aurèle Parriaux



Geology – Basics for Engineers presents the physical and chemical properties of the earth, the nature and properties of rocks and their interaction with water, and the processes that have created the Earth as we know it. The book shows the engineer how to take geological conditions into account, provides a wide range of resources, and explains how to manage them intelligently.

Through a problem-based-learning approach, this instructional text imparts practical knowledge to engineering students, as well as to experts in the fields of civil engineering, environmental engineering, earth sciences, and architecture.

A CD-Rom supplements the work containing solutions to the problems, along with a number of animations that show some interesting facets of the living Earth.

Contents: Geology - Engineering Partnership; Earth in Space; Earth in Time; Physics of the Earth; Rock-Forming Minerals; Magmatism and Magmatic Rocks; Water Cycle; Continental Sedimentary Processes; Oceanic Sedimentary Processes; Diagenesis and Properties of Sedimentary Rocks; Metamorphism; Tectonics; Weathering; Geology's Role in Society's Big Issues

September 2008: 246x174: 600pp
Pb: 978-0-415-46165-8: **£59.95 US $109.95**

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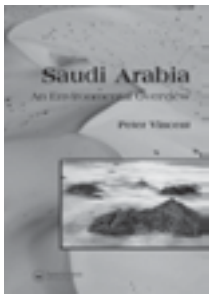
New

Saudi Arabia: An Environmental Overview

Peter Vincent, formerly Lancaster University, UK



This volume contains the very first comprehensive overview of Saudi Arabia's environment. It is a unique and authoritative text on the geological and environmental aspects of Saudi Arabia, a country about which little is known by the outside world. Saudi Arabia is a fascinating country with a long tradition of environmental awareness and sensitivity, pitted against some of the harshest environments on earth. The book brings together a wide range of published and unpublished material which will be of interest to environmental scientists, geologists, geographers and biologists. A comprehensive bibliography is included. This book will be indispensable for university courses dealing with the Middle East and arid zone environments as well as various regional/environmental courses.

Selected Contents: 1. An Environment Discovered 2. The Kingdom 3. Geological Framework 4. Climate and Environmental Change 5. Hydrogeology and Hydrology 6. Geomorphology 7. Biogeography 8. Soils and Soil Erosion 9. Environmental Impacts and Hazards 10. Environmental Protection, Regulation and Policy

January 2008: 246x174: 332pp
Hb: 978-0-415-41387-9: **£89.00 US $159.00**

Forthcoming Textbook

Geological Engineering

Luis Gonzalez de Vallejo, Universidad Complutense de Madrid, Madrid, Spain & **Mercedes Ferrer,** Instituto Geológico y Minero de España, Madrid, Spain

Interpreting a geological setting for the purposes of engineering design and construction requires knowledge of geological engineering and engineering geology, leading to integrated engineering solutions which take into account both ground conditions and environment. This textbook, extensively illustrated, covers the subject area of geological engineering in four sections:

1. fundamentals; 2. methods; 3. applications:; 4. geohazards

The book will serve as a basic reference work for practising engineering geologists, geological and geotechnical engineers, geologists, civil and mining engineers and those professionals involved in design and construction of foundations, tunneling, earth works and excavations for infrastructures, buildings, mining operations, etc.

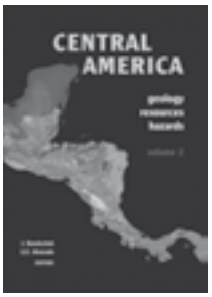
As a textbook it develops an extensive teaching programme of geological engineering and is designed for undergraduate and postgraduate students and academics.

December 2008: 280x215: 700pp
Hb: 978-0-415-41352-7: **£59.00 US $109.95**

Central America

Geology, Resources and Hazards

Edited by **Jochen Bundschuh**, International Technical Cooperation Program, CIM (GTZ/BA), Frankfurt, Germany; Instituto Costarricense de Electricidad (ICE), San José, Costa Rica; Royal Institute of Technology (KTH), Stockholm, Sweden and **Guillermo E. Alvarado**, Instituto Costarricense de Electricidad ICE, San José, Costa Rica; Escuela Centroamericana de Geologia, Universidad de Costa Rica (UCR)



An integrated treatment of the principal fields of classical and applied geosciences of Central America, this authoritative two-volume monograph treats the region as a whole, exploring geology, earth resources and geo-hazards across political boundaries. It reviews the published literature, and supplements it with an abundance of information from ongoing investigations and internal reports.The compendium is a result of four years' collaborative work by the editors and more than ninety experts from eighteen countries. It is aimed at professionals, academics and students in the fields of geology, geography, biology, and engineering at the local, regional and international level. In a region which is rich in geological resources and where natural disasters are frequent, the monograph is a solid base for local and international institutions concerned with land-use, infrastructure, water and energy resources, and mining, as well as with hazard reduction and disaster prevention.

Selected Contents: Volume 1: Editor's foreword; Regional Overview: General Introduction; General Geology; Geomorphology; Tectonics and Geodynamics; Stratigraphy and Paleontology; Igneous and Metamorphic Petrology.

Volume 2: Geological Resources; Hydrogeology and Groundwater Resources; Geothermics and Geothermal resources; Fossil Fuel and Mineral Resources; Geological Heritage Resources; Geological Hazards; Seismic Hazards and Monitoring;Volcanic Hazards and Monitoring; Landslides and Tsunamis.

2007: 260X190, 2 volumes: 1436pp
Pack: 978-0-415-41647-4: **£199.00 US $349.95**

Geology of Egypt and Libya

Edward E. Tawadros

Treating the geology of Egypt and Libya as one entity, this thorough reference work is divided into parts covering six key reas.

Selected Contents: Preface; Acknowledgements; Part I: Tectonic framework of Egypt and Libya: 1. Introduction; Part 2: Nubian-African Shield; 2. Nubian-African Shield; Part 3: Phanerozoic geology of Egypt: 3. Introduction; 4. Paleozoic; 5. Mesozoic; 6. Succession across the Maastrichtian-tertiary boundary; 7. Tertiary; 8. Tertiary-Quaternary; Part 4: Phanerozoic geology of Libya; 9. Introduction; 10. Paleozoic; 11. Mesozoic; 12. Tertiary; 13. Quaternary; Part 5: Phanerozoic geological history; 14. Introduction; 15. Phanerozoic; 16. Lower megasequence; 17. Middle megasequence; 18. Upper megasequence; References (>2000 refs.); Subject index.

2000: 246x174mm: 500 pp
Hb: 978-90-5809-331-8: **£87.50 US $169.95**

The Geology of the Everglades and Adjacent Areas

Edward J. Petuch and **Charles Roberts**, Florida Atlantic University, Boca Raton, Florida, USA

Over the past few decades, an explosion of housing, commercial, agricultural, and municipal development has rapidly encroached on the edges of the Everglades. An overwhelming amount of geological data has been gathered from these previously unexplored inaccessible peripheral areas. The Geology of the Everglades and Adjacent Areas presents a comprehensive overview of this new research, painting a complete picture of the history of the Everglades through the perspective of various geoscientists in a single resource. This book also includes an accompanying CD-ROM that features animated maps along with a Power Point presentation of simulated space shuttle imagery of Eocene-to-Holocene.

April 2007: 7 x 10: 240pp
Hb: 978-1-4200-4558-1: **£65.99 US $119.95**

Forthcoming

Geoinformation Technologies for Geo-Cultural Landscapes: European Perspectives

Edited by **Andreas Vassilopoulos**, Geocultural Park of Eastern Aegean, Athens, Greece, **Niki Evelpidou**, University of Athens, Faculty of Geology and Geoenvironment, Department of Geography and Climatology, Athens, Greece, **Oliver Bender**, Austrian Academy of Sciences, Mountain Research: Man and Environment, Innsbruck, Austria and **Alenka Krek**, HafenCity University Hamburg, Germany

2008

The main objective of this book is to constitute a meaningful linkage among research problems, geoinformation methods and corresponding applications. The research goals, related both to theoretical and practical issues, derive from multidisciplinary fields such as archaeology, history, geography, landscape planning, environment, geoinformation science, geology and geomorphology. All the aforementioned scientific areas have the spatial dimension in common, i.e. the vast amount of spatially referenced data. Their research issues can be addressed and analysed with geoinformation technology; though, the researchers should get familiar with the range of available geoinformation methods. The book provides descriptions of a variety of research problem issues and technological 'solutions'approaches that can be used to support processes of data capturing, mapping and analysis. These techniques and concepts are illustrated by numerous practical examples. along with specific examples, where these have been applied.

Selected Contents: 1. Introduction: Research components linking papers; Data quality, scales, errors and accuracy; What is geo-cultural landscape; Are we interested in what modern man caused to the landscape? - **2. Data capturing and mapping:** Introduction; Vertical photogrammetry; Oblique aerial photography; Lidar; High resolution satellite image interpretation; Global Positioning Systems; Field data collection; Vectorisation and rectification of historical maps; Technical concept of WebGIS - **3. Analysis and modeling:** Introduction; Surface modelling; Linear landscape features; Landscape characterisation; Land use analysis; Landscape metrics; Geo-cultural modeling; Visualisation - **4. Case Studies:** *a. Roscommon, Ireland; b. Lincolnshire, Great Britain; c. Thira, Akrotiri, Greece; d. Vindobona, Austria; e. Eastern Andalusia, Spain; f. Potenza valley, Italy; g. Eastern Andalusia, Spain; h. Potenza valley, Italy; i. Lac de Montady, France.*

October 2008: 246x174: 300pp
Hb: 978-0-415-46859-6: **£68.00 US $134.95**

Urban and Regional Data Management

UDMS 2007 Annual

Edited by **Massimo Rumor**, University of Venice IUAV, Italy, **Volker Coors**, Stuttgart University of Applied Sciences, Stuttgart, Germany, **Elfriede M. Fendel**, Delft University of Technology, The Netherlands and **Sisi Zlatanova**, Delft University of Technology, The Netherlands

Geo-collaboration in Urban and Regional Environments, urban and regional computing, and GIS in Urban and Regional Data Management for Sustainable Development are the three main themes addressed in this volume, containing selected and peer-reviewed papers from the 26th symposium of the Urban Data Management Society.

2007: 246x174: 536pp
Hb: 978-0-415-44059-2: **£99.00 US $189.95**

Advances in Mobile Mapping Technology

ISPRS Book Series, volume 4

Edited by **C. Vincent Tao**, Director of Microsoft Virtual Earth Business Unit, Redmond, USA and **Jonathan Li**, University of Waterloo, Canada

The growing market penetration of Internet mapping, satellite imaging and personal navigation has opened up great research and business opportunities to geospatial communities. Multi-platform and multi-sensor integrated mapping technology has clearly established a trend towards fast geospatial data acquisition. Sensors can be mounted on various platforms, such as satellites, aircrafts or helicopters, terrestrial vehicles, water-based vessels, and may even be hand-carried by individuals. Mobile mapping refers to a means of collecting geospatial data using mapping sensors mounted on a mobile platform. Its development was primarily driven by the advances in digital imaging and direct-georeferencing technologies. With the escalating use of telecommunication networks and the increasing availability of low-cost and portable sensors, mobile mapping has become more dynamic, and even pervasive. This book addresses a wide variety of research issues in the mobile mapping community, ranging from system development to sensor integration, imaging algorithms and mobile GIS applications. It will provide researchers and practitioners with a good overall view of what is being developed in this topical area.

2007: 246x174: 192pp
Hb: 978-0-415-42723-4: **£54.00 US $99.95**

Advances in Spatio-Temporal Analysis

ISPRS Book Series, volume 5

Edited by **Xinming Tang**, State Bureau of Surveys and Mapping, Beijing, People's Republic of China, **Yaolin Liu**, Wuhan University, People's Republic of China, **Jixian Zhang**, Chinese Academy of Surveying and Mapping, Beijing, People's Republic of China and **Wolfgang Kainz**, University of Vienna, Austria

Developments in Geographic Information Technology have raised the expectations of users. A static map is no longer enough; there is now demand for a dynamic representation. Time is of great importance when operating on real world geographical phenomena, especially when these are dynamic. Researchers in the field of Temporal Geographical Information Systems (TGIS) have been developing methods of incorporating time into geographical information systems. Spatio-temporal analysis embodies spatial modelling, spatio-temporal modelling and spatial reasoning and data mining. Advances in Spatio-Temporal Analysis contributes to the field of spatio-temporal analysis, presenting innovative ideas and examples that reflect current progress and achievements.

2007: 246x174: 250pp
Hb: 978-0-415-40630-7: **£69.00 US $129.00**

Next Generation Geospatial Information

From Digital Image Analysis to Spatiotemporal Databases

ISPRS Book Series Volume 3

Edited by **Peggy Agouris** & **Arie Croituru**

With the introduction of distributed geospatial data infrastructure and the implementation of web-based services, the impact of such issues is becoming even more evident. Inspired by these challenges, this book on Next Generation Geospatial Information offers a collection of original contributions from leading experts in spatial information modeling, image processing and analysis, database management, ontologies and data mining. It provides a unique insight into the current state-of-the-art and future challenges in geospatial information through four thematic chapters, each of which represents a primary research theme, namely distributed spatial infrastructure, image-based geospatial information management, indexing and querying geospatial databases, and ontology and semantics for geospatial data.

Selected Contents: Preface; Keynote paper: Invasive Species: An Emerging Science Application for Geospatial Information; Ch. 1: Distributed Geospatial Data Infrastructure; Ch. 2: Image-Based Geospatial Information Management and Modeling; Ch. 3: Indexing and Querying Geospatial Databases; Ch. 4: Ontology and Semantics for Geospatial Data

2005: 246x174mm: 198 pp
Hb: 978-0-415-38049-2: **£54.50 US $104.95**

Geospatial Information Technology for Emergency Response

ISPRS Book Series, volume 6

Edited by **Sisi Zlatanova**, Technical University of Delft, GIST, Netherlands and **Jonathan Li**, University of Waterloo, Canada

Disaster management is generally understood to consist of four phases: mitigation, preparedness, response and recovery. While these phases are all important and interrelated, response and recovery are often considered to be the most critical in terms of saving lives. Response is the acute phase occurring after the event, and includes all arrangements to remove detriments and a long-term inventory of supplies to deal with irreversible damage. The timely provision of geospatial information is crucial in the decision-making process, and can save lives and rescue citizens.

The aim of this volume is to share technological advances that allow wider, faster and more effective utilization of geospatial information in emergency response situations. The volume describes current accomplishments and challenges in providing geospatial information with these attributes, and is organized in six parts:

- Practice and legislation, with a focus on the utilization of geospatial information in recent disaster events, as well as resulting legislative attempts to share and access data.

- Data collection and data products.

- Data management and routing in 3D.

- Emerging technologies, including positioning, virtual reality and simulation models.

- Integration of heterogeneous data.

- Applications and solutions.

This volume is aimed at researchers, practitioners and students who work in the variety of disciplines related to geospatial information technology for emergency response, and represents the very best of current thinking from a number of pioneering studies over the past four years.

January 2008: 246x174: 394pp
Hb: 978-0-415-42247-5: **£99.00 US $189.95**

Forthcoming

3RD EDITION

GPS for Land Surveyors, Third Edition

Jan Van Sickle

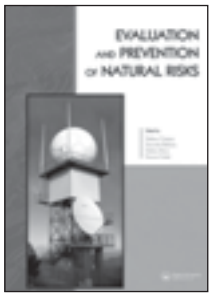
2008

Since the last edition of this international bestseller, GPS has grown to become part of a larger international context, the Global Navigation Satellite System (GNSS). Both GPS and GNSS technologies are becoming ever more important in the everyday practice of survey and mappers. With **GPS for Land surveyors, Third Edition**, a book written by a land surveyor, for land surveyors, you can stay in the know on the latest GPS techniques, technologies, codes, and signals. **What's New to the Third Edition?** Sections on Real-Time Network Services, Block IIF, and control segment modernization. GPS code, such as the M-code, L1C, and L2C. An entire chapter dedicated to GNSS. Discussion of the Russian GLONASS system, the Chinese Beidou system, and the Japanese QZSS From fundamental theory to practical application and advanced technologies, the book covers GPS without pages of complicated math. It demonstrates the basics of GPS technology, common hardware, surveying methods, survey design, planning and observation. Additionally, each chapter includes helpful review questions and answers. GPS and GNSS are revolutionizing the practice of surveying and mapping. This user-friendly manual gives you all the tools needed to understand and use these important technologies in everyday practice.

April 2008: 6-1/8 x 9-1/4: 440pp
Hb: 978-0-8493-9195-8: **£46.99 US $89.95**

Evaluation and Prevention of Natural Risks

Edited by **Stefano Campus**, **Secondo Barbero**, **Stefano Bovo** and **Ferruccio Forlati**, ARPE Piemont Regional Territorial and Geological Research Centre,Turin, Italy



The assessment and prevention of risks inherent to natural phenomena is of topical interest to the scientific community and other authorities dealing with territorial management. Historical analysis carried out in the Piemonte-territory in north-western Italy, focusing on the consequences of hydrogeological risks, reveals that damage is continually increasing. This can partly be explained by the consistent expansion of urbanized areas at the expense of areas that are essential to the natural modelling processes of the region; the damage resulting from hydrogeological instability often being associated with incompatible territorial decisions. This text gives a detailed account of a series of experiences related to activities that ARPA Piemonte has carried out focusing on the cognitive and forecasting aspects related to risk assessment and alerting procedures.

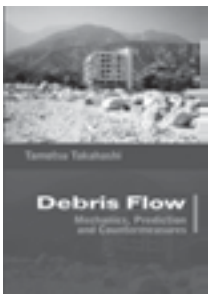
Contents: Presentation; Foreword; 1. Introduction to the concept of hazard and risk; 2. The assessment of hazard and risk; 3. Forecasting and warning ; 4. The uncertainty of forecasting and assessment methods; 5 General conclusions

2007: 246x174: 470pp
Hb: 978-0-415-41386-2: **£89.00 US $169.00**

Debris Flow

Mechanics, Prediction and Countermeasures

Tamotsu Takahashi, Kyoto University, Japan



'a welcome compilation of recently published data. both the publisher and the author are to be congratulated on this very fine volume. I strongly recommend it to advanced students, professional geologists and to those dealing with practical aspects of debris flows, such as civil engineers and researchers engaged in land management.' – *J. of Sedimentary Research, 29 Sept.07*

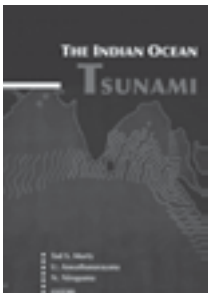
This is a comprehensive account of debris flow, describing both theoretical and applied aspects. In the first part, the fundamental mechanical characteristics are discussed, including flow characteristics, type classification, mechanics, occurrence and development, fully developed flow, and deposition processes. The second part sheds light on the application of the theories presented in computer-simulated reproductions of real disasters. Special attention is paid to debris flow controlling structures, design effectiveness and performance, soft countermeasure problems, such as the identification of debris flow prone ravines and the prediction of occurrence by means of precipitation threshold. The qualitative and fundamental character of this text makes it an excellent textbook for graduate-level courses and it is recommended reading for professionals in engineering, geosciences and water resources who are working on the mechanics and countermeasures of debris flow. The original, Japanese version of this book was awarded the 'Publishing Culture Prize' by the Japanese Society of Civil Engineers (2004).

Selected Contents:1. What is Debris Flow? 2. Models for Mechanics of Flow 3. Initiation and Development of Debris Flow 4. Characteristics of Fully Developed Flow 5. Processes and Geomorphology of Deposition 6. Debris Flow Disasters and their Reproduction by Computer Simulations 7. Countermeasures for Debris Flow Disasters

2007: 246x174: 448pp
Hb: 978-0-415-43552-9: **£68.00 US $119.95**

The Indian Ocean Tsunami

Edited by **Tad S. Murty**, University of Ottawa, Ontario, Canada, **U. Aswathanarayana**, Mahadevan International Center for Water Resources Management, Hyderabad, India and **Niru Nirupama**, Atkinson School of Administrative Studies, York University, Toronto, Canada



Based on knowledge obtained from studying the Indian Ocean Tsunami of December 2004, this book, edited by three world experts, presents methodologies for predicting tsunamis and provides an up-to-date review on tsunami science and an indication of thrust areas.

Selected Contents:1. Geostructural Environment of Tsunami Genesis 2. Modeling of Tsunami Generation and Propagation 3. Tsunami Detection and Monitoring Systems 4. Biophysical and Socio-Economic Dimensions of Tsunami Damage 5. Quo Vadis?

2006: 246x174: 528pp
Hb: 978-0-415-40380-1: **£99.95 US $199.95**

Advances in Urban Flood Management

Edited by **Richard Ashley**, Pennine Water Group, Sheffield, UK, **Stephen Garvin**, BRE Scotland, Glasgow, UK, **Erik Pasche**, Hamburg University of Technology, Germany, **Andreas Vassilopoulos**, Geocultural Park of Eastern Aegean, Athens, Greece and **Chris Zevenbergen**, Dura Vermeer Group, Hoofddorp, The Netherlands

A collection of papers devoted to the latest developments and challenges in Urban Flood Management. The book disseminates the first results of an extensive project on strategies to avoid and manage flood disasters, including such topics as flood modelling and probability assessment; flood risk assessment and mapping; flood resilience; and integrative concepts of urban flood management.

2007: 246x174: 499pp
Hb: 978-0-415-43662-5: **£79.00 US $139.95**

More Urban Water

Design and Management of Dutch water cities

Edited by **Fransje Hooimeijer** & **Wout van der Toorn Vrijthoff**

Series: Urban Water Series

An integral approach to the relation of urbanism and water management in Dutch water cities. It also treats the financial aspects of the adjustment of existing water systems to meet the changes in the urban hydrological cycle. It presents the typology of typical current and future Dutch water cities, their urban function and the ecological and technical aspects. Separate chapters deal with the transformation of the historical city, the consolidation of the inter-war city and the restructuring of the post-war city to meet future conditions. The final chapter presents a comparison of the Dutch situation with South Korean (Seoul), Japanese (Tokyo) and German (Ruhr area) urban areas

Sept. 2007: 246x174mm: 240 pp
Hb: 978-0-415-45358-5: **£49.95 US $99.95**

Urban Flood Management

Edited by **Andras Szollosi-Nagy & Chris Zevenbergen**

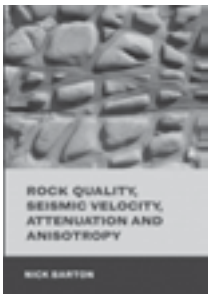
Urban Flood Management comprises a multidisciplinary survey of recent developments in this field. Subjects like spatial and urban planning, flood insurance, flood resilience, flood proofing techniques, risk perception and preparedness and flood forecasting are treated by authorities from Brazil, India, the USA and Europe.

Selected Contents 1. Introduction ; 2. Land use & urban floods in developing countries; 3. Cities, lakes and floods: the case of the Green Hyderabad Project, India; 4. Co-operation within Europe on flood management and spatial planning; 5. Spatial measures and instruments for flood risk reduction in selected EU countries - a quick scan; 6. Risk perceptance and preparedness and flood insurance; 7. The role of private insurance companies in managing flood risks in the UK and Europe; 8. New strategies of damage reduction in urban areas proned to flood;9. Flood resilience in the built environment: damage and repair; 10. California climate change: hydrologic response, and flood forecasting; Conclusions

2004: 246x174mm: 160 pp
Hb: 978-0-415-35998-6: **£45.00 US $89.95**

Rock Quality, Seismic Velocity, Attenuation and Anisotropy

Nick Barton, Nick Barton and Associates, Oslo, Norway



'**... a most important contribution from which both rock mechanics engineers and geophysicists will benefit immensely**.' *Michael King, Imperial College London, UK*

Seismic measurements take many forms, and have a universal role in the earth sciences. There are huge rewards to be gained from 'seeing' below the earth's surface. This book describes seismic behaviour at many scales, and provides the appropriate interpretation in terms of rock mechanics. Reviewing examples of seismic measurements from numerous fields in civil, mining, petroleum, geophysics, and tectonophysics, and stretching over ten orders of magnitude, the book considers seismic measurements from microcrack compliance in laboratory tests samples to crustal and mid-ocean ridge measurements, where the emphasis is on velocity-depth-age models. Between these extremes, Dr Barton covers in situ block tests, borehole stability, dam and bridge foundations, quarry blasting, transportation tunnels, rock caverns, nuclear waste repository studies and mine openings. The approach is cross-disciplinary and deliberately non-mathematical and phenomenological in nature, with a wealth of figures and a wide review of the literature from many earth science fields.

The book is intended for students, consultants and university teachers studying and working in the fields of civil, mining and petroleum engineering, and is particularly relevant to geophysicists, engineering geologists and geologists who are engaged in the interpretation of seismic measurements on rock engineering and petroleum engineering projects.

Selected Contents: The Multidisciplinary Scope of Seismic and Rock Quality. Revealing Hidden Rock Conditions. Some Basic Principles of P, S and Q. Q and Q XVII Limitations of Refraction Seismic Bring Tomographic Solutions. **Part 1:** 1. Shallow Seismic Refraction, some Basic Theory, and the Importance of Rock Type 2. Environmental Effects on Velocity 3. Effects of Anisotropy on Vp 4. Cross-Hole Velocity and Cross-Hole Velocity Tomography 5. Relationships between Rock Quality, Depth and Seismic Velocity 6. Deformation Moduli and Seismic Velocities 7. Excavation Disturbed Zones and their Seismic Properties 8. Seismic Measurements for Tunnelling 9. Relationships between Vp, Lugeon Value, Permeability and Grouting in Jointed Rock **Part 2:** 10. Seismic Quality Q and Attenuation at Many Scales 11. Velocity Structure of the Earth's Crust 12. Rock Stress, Pore Pressure, Borehole Stability and Sonic Logging 13. Rock Physics at Laboratory Scale 14. P-Waves for Characterising Fractured Reservoirs 15. Shear Wave Splitting in Fractured Reservoirs and Resulting from Earthquakes 16. Joint Stiffness and Compliance and the Joint Shearing Mechanism 17. Conclusions Appendix A: The Qrock Parameter Ratings

2006: 276x219: 729pp
Hb: 978-0-415-39441-3: **£109.00 US $199.95**

Forthcoming

Acoustic Emission/Microseismic Activity

Volume 2: Geotechnical Field & Laboratory Applications

H. Reginald Hardy, Jr., H.R. Hardy, Jr.

2008

Most solids emit low-level seismic signals known as acoustic emission/microseismic (AE/MS) activity. In recent years AE/MS techniques have been utilized for stability monitoring of underground structures such as mines, tunnels, natural gas and petroleum storage caverns, radioactive waste repositories, and geothermal reservoirs, as well as surface structures such as foundations, rock and soil slopes, bridge piers and abutments, and dams.

This is the second volume on Acoustic Emission and Microseismic Activity, dealing with field studies on slope stability, underground mines and underground storage facilities. Additionally, the work treats a number of miscellaneous field studies and concludes with a large chapter on laboratory work.

September 2008: 246x174: 350pp
Hb: 978-0-415-46858-9: **£79.00 US $149.95**

Forthcoming

Spatial Variation of Seismic Ground Motions

Modeling and Engineering Applications

Aspasia Zerva, Drexel University, Philadelphia, Pennsylvania, USA

Series: Advances in Engineering Series

2008

Taking a multidisciplinary approach, this book provides coverage from seismological and engineering, deterministic and stochastic, as well as physical and mathematical points of view. The author describes the estimation of spatial variability from recorded data, its physical interpretation, and the development of spatial variability/coherency models. She uses random variation analysis to illustrate the effect of differential ground motions on the quasi-static and dynamic response of extended structures. Worked-out applications demonstrate the significance of seismic ground strains and differential motions on the seismic response of foundations, bridges, and dams.

August 2008: 6-1/8 x 9-1/4: 416pp
Hb: 978-0-8493-9929-9: **£73.99 US $139.95**

Earthquakes and Acoustic Emission

Selected Papers from the 11th International Conference on Fracture, Turin, Italy, March 20-25, 2005

Edited by **Alberto Carpinteri**, Politecnico di Torino, Italy and **Giuseppe Lacidogna**, Politecnico di Torino, Italy

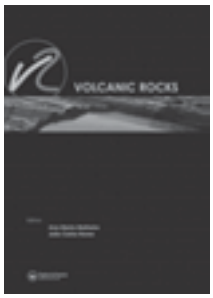
This book outlines the theory of topics related to earthquakes and acoustic emission, discusses the latest developments in this area and includes the latest international achievements in the field of mechanics of materials and geophysics, presenting the applied and theoretical implications of earthquakes and acoustic emission monitoring.

2007: 246x174: 209pp
Hb: 978-0-415-44402-6: **£59.99 US $109.95**

Volcanic Rocks

Proceedings of ISRM Workshop W2, Ponta Delgada, Azores, Portugal, 14-15 July, 2007

Edited by **Ana Maria Malheiro**, LREC Regional Laboratory of Civil Engineering, Ponta Delgada, Portugal and **João Carlos Nunes**, University of Azores, Ponta Delgada. Azores, Portugal



Volcanic Rocks highlights novel approaches and solutions to engineering problems in volcanic areas, covering a variety of topical themes, which include: characterization of volcanic formations; case studies; construction materials; earthquake engineering and rock dynamics; foundations; slope stability, and tunnelling.

2007: 246x174: 218pp
Pb: 978-0-415-45140-6: **£64.99 US $119.00**

The Mechanical Behavior of Salt – Understanding of THMC Processes in Salt

Proceedings of the 6th Conference (SaltMech6), Hannover, Germany, 22–25 May 2007

Edited by **Manfred Wallner**, **Karl-Heinz Lux**, **Wolfgang Minkley** and **H. Reginald Hardy, Jr.**

A unique opportunity to review the latest progress in an expanding area of interest: The Mechanical Behavior of Salt. These Proceedings include over fifty papers and summaries describing the latest findings in ongoing studies from a number of research groups. For the 2007 conference, there was a particular focus on the understanding of thermal, mechanical, hydraulic and chemical coupled processes (THMC). Such processes are of specific interest when considering advanced problems in waste disposal, storage and mining. The book includes a number of themes:

- laboratory and in-situ investigations modelling, e.g. derivation of constitutive equations
- numerical computations and prediction of long-term behaviour
- THMC processes in mining projects, storage and permanent disposal
- case studies
- geology
- mining and storage applications and abandonment

The International Conferences on the Mechanical Behaviour of Salt have a long tradition, being initiated in 1981 at The Pennsylvania State University, USA. The present conference, the sixth of the series, took place in Hannover, Germany, in May 2007. The conference brought together mining engineers, researchers, and university professors interested in the mechanical behaviour of salt, mostly from Europe and beyond.

2007: 246x174: 468pp
Hb: 978-0-415-44398-2: **£99.00 US $179.95**

Textbook

2ND EDITION

Geochemistry, Groundwater and Pollution

C. A. J. Appelo and **Dieke Postma**

Building on the success of its 1993 predecessor, this second edition of *Geochemistry, Groundwater and Pollution* has been thoroughly re-written, updated and extended to provide a complete and authoritative account of modern hydrogeochemistry.

Offering a quantitative approach to the study of groundwater quality and the interaction of water, minerals, gases, pollutants and microbes, this book shows how physical and chemical theory can be applied to explain observed water qualities and variations over space and time. Integral to the presentation, geochemical modelling using PHREEQC code is demonstrated, with step-by-step instructions for calculating and simulating field and laboratory data. Numerous figures and tables illustrate the theory, while worked examples including calculations and theoretical explanations assist the reader in gaining a deeper understanding of the concepts involved.

A crucial read for students of hydrogeology, geochemistry and civil engineering, professionals in the water sciences will also find inspiration in the practical examples and modeling templates.

Selected Contents: 1. Introduction to Groundwater Geochemistry 2. From Rainwater to Groundwater 3. Flow and Transport 4. Minerals and Water 5. Carbonates and Carbon Dioxide 6. Ion Exchange 7. Sorption of Trace Metals 8. Silicate Weathering 9. Redox Processes 10. Pollution by Organic Chemicals

2005: 246x174: 683pp
Hb: 978-0-415-36421-8: **£66.50 US $129.95**
Pb: 978-0-415-36428-7: **£26.95 US $52.95**
• AVAILABLE AS AN INSPECTION COPY

Petroleum Geochemistry and Exploration in the Afro-Asian Region: Proceedings of the 6th AAAPG International Conference, Beijing, China, 12-14 October 2004

Digang Liang, Darui Wang, Zhenxi Li

Petroleum Geochemistry and Exploration in the Afro-Asian Region includes 29 papers presented at the 6th International Conference on Petroleum Geochemistry and Exploration in the Afro-Asian Region. Petroleum Geochemistry and Exploration in the Afro-Asian Region is an invaluable source of information for oil and gas explorers, petroleum geochemists and students of petroleum geochemistry. Researchers in petroleum companies and institutes will also find this publication useful.

2007: 246x174mm: 262 pp
Hb: 978-0415-44083-7: **£59.00 US $109.95**

Textbook

Soil and Water Contamination

From Molecular to Catchment Scale

Marcel van der Perk, Utrecht University, The Netherlands

'… it must be a pleasure to be taught with this material. I would also recommend it as a reference work for all those occasions where you need a little guidance. For the first time in years, I am considering qualifying this book as a 'masterpiece'.' – *Stromingen 13 (2007), No.2*

This textbook provides a general overview of transport and fate processes of environmental contamination, in such a way that the reader can both understand and predict contaminant patterns in soil, groundwater, and surface water. In contrast to most existing texts, soil and water pollution are in this book treated as integrated environmental matter from a geographical/spatial perspective at point, local, regional, and catchment scales. The spatial approach links up with recent developments and trends in environmental legislation and other integrated catchment management initiatives.

It consists of four coherent parts: **1.** Introduction to soil and water contamination; **2.** Source, role, and behavior of substances in soil and water; **3.** Transport and fate processes of substances in soil and water; and **4.** Patterns of substances in soil and water.

This book is intended for undergraduate and graduate students in the Earth and Environmental Sciences, who understand the fundamentals of chemistry, hydrology and soil science; it may also serve as a useful reference guide for professionals in these subject areas.

Selected Contents: Part 1: An Introduction to Soil and Water Pollution 1. General Introduction 2. Basic Environmental Chemistry 3. Environmental Compartments **Part 2: Sources, Role, and Behaviour of Substances in Soil and Water** 4. Solid Phase Constituents 5. Major Dissolved Phase Constituents 6. Nutrients 7. Heavy Metals 8. Radionuclides 9. Organic Pollutants **Part 3: Transport and Fate Processes of Substances in Soil and Water** 10. Systems and Models 11. Substance Transport 12. Sediment Transport and Deposition 13. Chemical Transformation 14. Gas Exchange 15. Model Calibration and Validation **Part 4: Patterns of Substances in Soil and Water** 16. Patterns in the Soil and in the Vadose Zone 17. Patterns in Groundwater 18. Patterns in Surface Water

2006: 246x174: 404pp
Hb: 978-0-415-40943-8: **£47.50 US $89.95**
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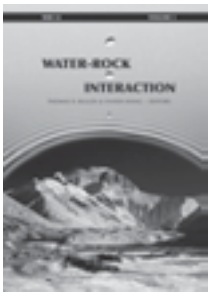
Water-Rock Interaction

Proceedings of the 12th International Symposium on Water-Rock Interaction, Kunming, China, 31 July - 5 August 2007

Edited by **Thomas D. Bullen**, U.S. Geological Survey, Menlo Park, California, USA and **Yanxin Wang**, China University of Geosciences, Wuhan, P.R. China



The hydrosphere and lithosphere intersect in a zone a few kilometres wide at the earth's surface, resulting in the formation of magmas, metamorphic rocks and mineral deposits, and placing important controls on the evolution of landscapes. This interaction imparts chemistry to waters and provides the essential environment for ecosystems to flourish. It affects the transport and fate of pollutants in groundwater and surface water systems, influences the stability of landscapes and sub-surface structures and provides an important feedback mechanism for controlling carbon dioxide levels in the atmosphere.

New analytical instrumentation and methods have allowed unprecedented characterization of the sources of, and processes affecting, the chemical constituents of water. Novel field and laboratory-based approaches have revealed the atomic level of the mineral-water interface and the critical role that microbes play in many water-rock interactions, including the toxification and detoxification of the environment. Our window into the higher temperature and pressure world of geothermal waters increasingly widens as new theoretical and experimental approaches are perfected. The need to confront society's impact on the environment has led to innovative field-based and theoretical studies of our ability to sequester waste products effectively and safely within the earth, to develop new methods to treat wastes before they are returned to the environment, and to greater understanding of the limits of sustainability of our water and mineral resources.

In 2007, WRI-12 attracted more than 400 geoscientists from over 25 countries to Kunming, China. For this WRI symposium, approximately half of the 350 papers were from Chinese scientists, attesting to the increasing impact their science is having on the world stage.

2007: 246x174: 1734pp
Hb: 978-0-415-45136-9: **£199.00 US $389.00**

Chemistry for Environmental and Earth Sciences

Catherine V.A. Duke and C.D. Williams, University of Wolverhampton, Wolverhampton, England, UK

This book deals with the mineral-water interface and the critical role that microbes play in many water-rock interactions, including the toxification and detoxification of the environment. Our window into the higher temperature and pressure world of geothermal waters increasingly widens as new theoretical and experimental approaches are perfected. The need to confront society's impact on the environment has led to innovative field-based and theoretical studies.

2007: 6-1/8 x 9-1/4: 248pp
Pb: 978-0-8493-3934-9: **£24.99 US $59.95**
• AVAILABLE AS AN INSPECTION COPY

Forthcoming

Radioactive Air Sampling Methods

Mark L. Maiello, Wyeth Research, Pearl River, New York, USA and **Mark D. Hoover**, Morgantown, West Virginia, USA

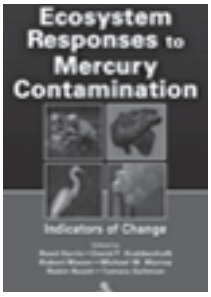
2008 Describing specific methods for sampling radioactivity in air, Radioactive Air Sampling Methods discusses radionuclides that are found in nature, develop as the result of a hazard during industrial operations, or appear in the aftermath of a catastrophe, such as iodine and noble gases from a nuclear reactor release. It contains step-by-step methods for measuring airborne radioactive substances, including information on sensitivity, possible interferences, and safety precautions for each method. It also provides tools needed to perform complete safety analysis. This text makes important material accessible for industrial hygienists, air quality experts, and health physicists.

December 2008: 6-1/8 x 9-1/4
Hb: 978-0-8493-9717-2: **£67.99 US $129.95**

Ecosystem Responses to Mercury Contamination

Indicators of Change

Edited by **Reed Harris**, Tetra Tech Inc., Oakville, Ontario, Canada; **David P. Krabbenhoft**, U.S. Geological Survey; **Robert Mason**, University of Connecticut; **Michael W. Murray**, National Wildlife Federation; **Robin Reash** and **Tamara Saltman**, USEPA



This book outlines the infrastructure and methods needed to measure, monitor, and regulate the concentration of mercury present in the environment. It proposes a set of indicators to use as a measure of changing mercury concentrations in air, water, soil, and aquatic biota. Next, it offers a monitoring strategy and guidance for determining if concentration levels are changing systematically over time. The book explains how additional monitoring strategies can relate observed changes in mercury concentrations to regulatory controls on mercury emissions. The final chapter provides an integrated framework for establishing a national-scale program to monitor mercury concentrations in the environment.

2007: 6-1/8 x 9-1/4: 219pp
Hb: 978-0-8493-8892-7: **£76.99 US $139.95**

Assessing the Hazard of Metals and Inorganic Metal Substances in Aquatic and Terrestrial Systems

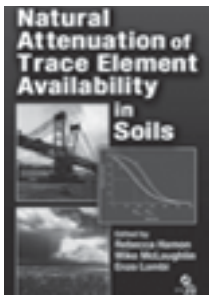
Edited by **William J. Adams**, Rio Tinto, Salt Lake City, Utah, USA and **Peter M. Chapman**, EVS Environment Consultants, North Vancouver BC, Canada

Current procedures used for hazard identification and classification are based on persistence, bioaccumulation, and toxicity measurements. Assessing the Hazard of Metals and Inorganic Metal Substances in Aquatic and Terrestrial Systems provides the basis for improvements to the current model for hazard assessment. This book reviews the scientific underpinnings of the use of persistence as applied to metals, including bioavailability, and the use of bioaccumulation to evaluate aquatic species and aquatic-linked food chains. It also examines toxicity procedures as used within PBT approaches and examines measures for metals in terrestrial ecosystems, seeking improvements or alternatives.

2007: 6-1/8 x 9-1/4: 184pp
Hb: 978-1-4200-4440-9: **£76.99 US $139.95**

Natural Attenuation of Trace Element Availability in Soils

Edited by **Rebecca Hamon**, CSIRO Land & Water, South Australia, Encounter Bay, Australia, **Mike McLaughlin** and **Enzo Lombi**



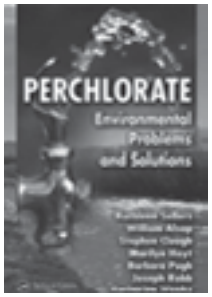
Offering a concise, well-rounded perspective from pioneers in the field, Natural Attenuation of Trace Element Availability in Soils demonstrates how attenuation processes can significantly impact strategies for soil remediation and serve as a basis for environmental regulations. The first chapters focus on analytical techniques for measuring the attenuation of trace elements. The following chapters analyze the processes that occur in the natural attenuation of contaminants and nutrients, including diffusion, fixation, and biological and redox processes. The remaining chapters consider the impact and implications of these processes in terms of risk assessment, remediation of inorganic contaminants, and bioavailability of essential nutrients.

October 2006: 6-1/8 x 9-1/4: 256pp
Hb: 978-1-4200-4282-5: **£74.99 US $129.95**

Perchlorate

Environmental Problems and Solutions

Kathleen Sellers, **Katherine Weeks**, **William R. Alsop**, **Stephen R. Clough** and **Marilyn Hoyt**, AMEC Earth & Environmental Inc., Westford, Massachusetts, US, Westford MA, USA

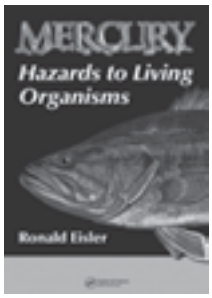


Unlike reference works that narrowly focus on only a few aspects of this contaminant, this book offers a comprehensive, single source of information on perchlorate contamination in the environment. Organized to follow the logical sequence of identifying and solving contamination problems, the book provides the foundation necessary to understand perchlorate's occurrence, environmental behavior, regulatory status, and remediation. The authors use case studies of perchlorate contamination in soil, groundwater, and surface water to illustrate these points. These case studies provide perspective on issues commonly faced by scientists, engineers, and managers of perchlorate-impacted sites.

2006: 6-1/8 x 9-1/4: 226pp
Hb: 978-0-8493-8081-5: **£56.99 US $99.95**

Mercury Hazards to Living Organisms

Ronald Eisler, Potomac, Maryland, USA



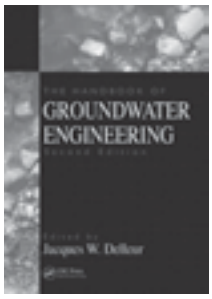
Building extensively on scientific reviews, Mercury Hazards to Living Organisms focuses on recent information on mercury uses and sources to the environment. The author discusses the biological, physical, and chemical properties of mercury and its compounds and documents the significance of mercury concentrations in abiotic materials, plants, invertebrates, amphibians, reptiles, elasmobranches, fishes, birds, as well as humans and other mammals. The book also examines variables that modify toxicity and explores lethal and sublethal effects of inorganic and organic mercury compounds. This presentation includes case studies and lists proposed mercury criteria for the protection of resources and health.

2006: 7 x 10: 336pp
Hb: 978-0-8493-9212-2: **£97.00 US $169.95**

2ND EDITION

The Handbook of Groundwater Engineering, Second Edition

Edited by **Jacques W. Delleur**, Purdue University, Lafayette, IN, USA



A complete treatment of the theory and practice of groundwater engineering, this second edition includes new chapters on such topics as historical developments, infiltration and run-on under spatially variable hydrologic properties, sea water intrusion into coastal aquifers, groundwater and heat flow, groundwater model validation, scale issues, groundwater sustainability, the impact of climate change, and ecohydrology. It also contains updated chapters on elementary groundwater flow, transport processes, two- and three-dimensional flow, modeling the movement of water and solute through preferential flow paths, geostatistics, and more.

2006: 7 x 10: 1320pp
Hb: 978-0-8493-4316-2: **£85.00 US $159.95**

Water Management Challenges in Global Change

Proceedings of the 9th Computing and Control for the Water Industry (CCWI2007) and the Sustainable Urban Water Management (SUWM) conferences, Leicester, UK, 3-5 September 2007

Edited by **B. Ulanicki**, De Montfort University, Leicester, UK, **Kalanithy Vairavamoorthy**, UNESCO-IHE Institute for Water Education, Delft, The Netherlands, **David Butler**, University of Exeter, **Peter L. M. Bounds**, De Montfort University, Leicester, UK and **Fayyaz Ali Memon**, University of Exeter, Exeter, UK

Issues such as economic globalisation, climate changes and water shortages call for a new approach to water systems management, which addresses the relevant technical, social and economic aspects. This collection represents the views of academic and industrial experts from a number of countries, who provide technical solutions to current water management problems and present a vision for addressing the global questions.

2007: 246x174: 704pp
Hb: 978-0-415-45415-5: **£129.00 US $249.95**

Wetlands: Monitoring, Modelling and Management

Edited by **Tomasz Okruszko**, Agricultural University of Warsaw, Poland, **Edward Maltby**, University of Liverpool, UK, **Jan Szatylowicz**, Institute for Land Reclamation and Grassland Farming, Falenty, Poland, **Dorota Miroslaw-Swiatek**, Warsaw Agricultural University, Poland and **Wiktor Kotowski**, Warsaw Agricultural University, Poland

The book covers subjects related to monitoring of vegetation, wildlife communities, water movement and soil processes, modelling of different wetland processes and presents management options in the case studies located in different landscapes.

2007: 246x174: 355pp
Hb: 978-0-415-40820-2: **£79.00 US $139.95**

Water in Central Asia

Past, Present and Future

Joop de Schutter, UNESCO-IHE Institute for Water Education, Department of Water Engineering, Delft, The Netherlands and

Victor Dukhovny, Interstate Commission for Water Coordination in the Aral Sea Basin, Scientific Information Center, Tashkent, Uzbekistan

2009 Structured in 4 chronological periods, this complete reference work on water in Central Asia deals with: 1. History and natural conditions that define the role and specific character of water availability and water use in the region; 2. Russian and USSR political and economic expansion: intense irrigated land and hydropower development with priority to consumptive water use at the cost of a complex, traditional, socio-economic system and leading to severe environmental degradation; 3. The new situation of independence of the Central Asian States leading to a growing awareness of the need for new approaches to river basin management on the basis of a wide array of issues including international laws & policies, public participation processes, increased irrigation efficiency, combating desertification, wetlands restoration and other environmental measures; 4. Future water scenarios for the Aral Sea Basin on the basis of recent research work; including international legal and institutional issues as well as the Aral Sea Basin regional political challenges for cooperation. Includes new insights in the socio-political, demographic, socio-economic and climate dimensions of future developments in the Aral Sea Basin. Intended for anyone interested in the whole picture about the central water plays in human life.

Selected Contents: 1. Introduction; 2. Historical Perspective; 3. Russian expansion and Soviet era in Central Asia – a way to growth and failure; 4. Water for Independent States – apple of discord or axe of collaboration; 5. Future Perspectives for Water Availability and Use in the Region

July 2009: 276x219: 600pp
Hb: 978-0-415-45962-4: Pre-publication price: **£99.00 US $199.95**

Arid Land Hydrogeology: In Search of a Solution to a Threatened Resource

A.M.O. Mohamed

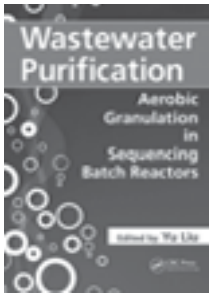
There are many urgent problems in arid land hydrogeology and it is these issues which are tackled in this volume on desert environments. The UAE-Japan symposia provide a venue for the exchange of expertise, confronting such problems as purification, usage and management of groundwater, the assessment and protection of sustainable water resources, and soil enhancement techniques for moisture control in arid lands. The hope is that a better understanding of dryland environment, combined with innovative solutions and technologies, will contribute to the greening of desert lands.

2006: 246x174mm: 213 pp
Hb: 978-0-415-41127-1: **£72.50 US $139.95**

Wastewater Purification

Aerobic Granulation in Sequencing Batch Reactors

Edited by **Yu Liu**, Nanyang Technological University, Singapore, Nanyang, Singapore



Blending information from mainstream articles, highly technical publications, and research journals, this second edition of a bestseller features new sections on air toxics, new information on chronic and acute health effects, and new approaches to the assessment of those impacts on sensitive populations. It emphasizes toxic air pollutants and alternative approaches to management of air quality in local environments. The book explains how primary pollutants form in industrial and mobile combustion processes and how they are controlled. It also presents in-depth information on the meteorology of atmospheric transport and explains how secondary photochemical pollutants form in ambient air.

2007: 6-1/8 x 9-1/4: 336pp
Hb: 978-1-4200-5367-8: **£71.99 US $129.95**

Forthcoming

Geotechnical Engineering for Mine Waste Disposal and Management

Geoffrey Blight, University of the Witwatersrand, Johannesburg, South Africa

2009 This book is a technical guide to the geotechnical engineering of the disposal of mine waste. It is aimed at the practicing civil engineer engaged in the design, operation, closure and aftercare of mine waste, as well as for use as an advanced undergraduate and postgraduate university text. The book deals with theoretical fundamentals, design theory, materials testing and practical, legal and moral aspects of mine waste disposal and management.

July 2009: : 246x174, approx. 300 pp
Hb: 978-0-415-46828-2:

Principles and Applications of Time Domain Electrometry in Geoenvironmental Engineering

A.M.O. Mohamed

Time domain electrometry (TDE) is a general term which includes time domain reflectrometry and time domain transmissiometry. It is a commercially-viable technique for leak detection, contaminant monitoring, and moisture content determination in contaminant transport modelling. Under demographic pressure, contaminated sites are increasingly being re-developed for domestic and industrial use; and this presents an urgent need for reliable, non-intrusive and integrated methods of subsurface characterization, detection and monitoring of organic and inorganic pollutants, soil moisture content and salinity. This book provides an overview of the potential application of TDE in geoenvironmental engineering and describes the geophysical methods used.

2006: 246x174mm: 603 pp
Hb: 978-0-415-41129-5: **£124.50 US $239.95**

Geotechnical and Environmental Aspects of Waste Disposal Sites

Proceedings of the 4th International Symposium on Geotechnics Related to the Environment - GREEN 4, Wolverhampton, UK, 28 June-1 July 2004

Edited by **R.W. Sarsby**, University of Wolverhampton, UK and **A.J. Felton**, University of Wolverhampton, UK

Despite the importance of preserving the environment in our developing world, activity involving the extraction of natural resources and the disposal of waste continues to increase. Such operations need to be conducted in a carefully-controlled manner, protecting both the natural environment and the communities who live in the vicinity. Every four years the GREEN (Geotechnics Related to the Environment) symposia are held, recognizing the major contribution that geotechnical engineering makes towards achieving the afore-mentioned goals. The meeting provides an international forum for the exchange of ideas, experiences and innovations. The GREEN 4 meeting discussed engineered disposal of waste in landfills; land contaminated by waste disposal and fluid flows; industrial waste dumps from mineral mining and extraction; and environmental management.

The book contains expertise from nineteen countries around the world, and provides an integrated view of the latest research and practice in waste disposal. New and evolving ideas, ongoing concerns and developments throughout the world are discussed.

2006: 246x174: 391pp
Hb: 978-0-415-42595-7: **£105.00 US $199.95**

Management of Pollutant Emission from Landfills and Sludge

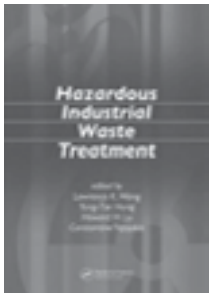
Edited by **Malgorzata Pawlowska** and **Lucjan Pawlowski**, Lublin University of Technology, Poland

This book gives an overview of recent findings on the mitigation of gas emission from landfills and sludge processing.

2007: 246x174: 294pp
Hb: 978-0-415-43337-2: **£79.00 US $149.95**

Hazardous Industrial Waste Treatment

Lawrence K. Wang, **Yung-Tse Hung**, **Howard H. Lo** and **Constantine Yapijakis**



Featuring chapters from the bestselling Handbook of Industrial and Hazardous Wastes Treatment, Second Edition, this resource presents valuable strategies culled from the latest technologies and keen insights of experts in the field. Hazardous Industrial Waste Treatment explains industry and waste-specific analyses and treatment methods for industrial and hazardous waste materials - from explosive wastes to landfill leachate to wastes produced by metal finishing, photographic, and timber processing. Additional information covers the means of monitoring waste on site, pollution, and site remediation, and includes a timely evaluation of the role of biotechnology in contemporary industrial waste management.

2006: 7 x 10: 526pp
Hb: 978-0-8493-7574-3: **£74.99 US $129.95**

3RD EDITION

Environmental Site Assessment Phase I

Fundamentals, Guidelines, and Regulations, Third Edition

Kathleen Hess-Kosa, OMEGA Southwest Environmental Consulting, Canyon Lake, Texas, USA

An environmental site assessment performed now will reduce the possibilities for liability claims and mandatory cleanup later. This second edition approaches environmental site assessment as an ever-evolving process, providing updated information on regulatory definitions, environmental regulations, and federal sources of information. Like the previous edition, this book allows the reader to better understand the rationale and processes involved in protecting those associated with buying, or selling property; become familiar with methods used by leaders in the industry; and develop an easy-to-follow investigative strategy for performing in-house assessments.

2007: 6-1/8 x 9-1/4: 312pp
Hb: 978-0-8493-7966-6: **£65.99 US $119.95**

Handbook of Regenerative Landscape Design

Robert L. France, Harvard University, Cambridge, Massachusetts, USA

Series: Integrative Studies in Water Management

The Handbook of Regenerative Landscape Design incorporates ecology, engineering, sociology, and design elements into a new paradigm for environmental restoration and the renewal of urban and cultural sites. Leaders in the field present case studies that illustrate how ecological landscape restoration processes facilitate urban renewal initiatives. In addition, this book is one in only a handful to address the system conditions necessary for the repair of severely degraded landscapes such as industrial landfills, Superfund sites, and abandoned factories, and more. Focusing on integrated solutions that incorporate community needs, this book balances remediation strategies with design needs for creating a sustainable community on repaired lands.

2007: 7 x 10: 488pp
Hb: 978-0-8493-9188-0: **£76.99 US $139.95**

Electrical Power Engineering

Reference & Applications Handbook

K.C. Agrawal, B.Sc. (Engg.) Electrical, Sr. member IEEE, USA & Consultant

Electrical Power Engineering - Reference & Applications Handbook is a single source of all information needs in the subject area of power engineering. It aims at bridging the gap between concept and application. The book acts as a handy reference to all those in the field of design and application, protection and testing, production, project implementation or maintenance, in addition to the sales and purchase of these projects.

The book is divided in 5 parts:

Electric Motors, Drives and Energy Saving

Switchgear Assemblies and Captive (Emergency) Power Generation

Voltage Surges, Over-voltages, Circuit Interrupters and Grounding Practices

Power Capacitors and Reactive Power Controls

Busbar Systems

2007: 276x219: 1125pp
Hb: 978-81-901642-5-2: **£129.00 US $220.00**

Forthcoming

Energy Portfolios

Customization and Management

Edited by **U Aswathanarayana**, Mahadevan International Centre for Water Resources Management, Hyderabad, India

2009

This is a textbook on how countries deal with the composition of their energy portfolio, resources, technologies as well as social, economic and environmental impacts, like CO2 emissions. It discusses the diversification of energy sources, the role of non-carbon emitting sources (e.g. nuclear power) and renewable energy sources (e.g.hydroelectricity, geothermal, wind, biomass, solar electricity), and the R&D needed to realize their full potential. Moreover, means to improve efficiency and conservation in the existing and emerging new technologies are treated as well as ways of minimizing adverse environmental impact of energy industries on climate change, and pollution of air, water, soil and biota.

Selected Contents:

1. Energy from coal, including case studies of USA, China and South Africa; 2. Energy from oil and natural gas, including case studies of Russia, Saudi Arabia and Venezuela; 3. Nuclear energy, including case studies of Japan, France and India; 4. Renewable energy resources: hydroelectricity, geothermal energy, wind energy, biomass, solar energy; 5. Energy security, including case study on Canada

June 2009: 246x174: 400pp
Hb: 978-0-415-46985-2: **£69.95 US $139.95**

New

Fluid Mechanics of Environmental Interfaces

Edited by **Carlo Gualtieri**, University of Napoli Federico II, Napoli, Italy and **Dragutin T. Mihailovic**, University of Novi Sad, Serbia

An environmental interface is defined as a surface between two abiotic or biotic systems, in relative motion and exchanging mass, heat and momentum through biophysical and/or chemical processes. These processes fluctuate temporally and spatially. The book first treats exchange processes occurring at the interfaces between the atmosphere and the surface of the sea, and atmosphere and land surface. These exchanges include the effect of vegetation, transport of dust and dispersion of passive substances within the atmosphere. Processes at the environmental interfaces of freshwater, such as gas-transfer at free-surfaces of rivers, advective diffusion of air bubbles in turbulent water flows and boundary-layers phenomena in vegetated open channels are also described. Finally, the book deals with the phenomena that affect transport of material to and from the surface of an organism, including molecular and turbulent diffusion. The relevant issues related to mass transfer to and from benthic plants and animals are further considered in detail. The book will be of interest to graduate students and researchers in environmental sciences, civil engineering and environmental engineering, (geo)physics and applied mathematics.

Selected Contents: Preface

1. Environmental fluid mechanics: Current issues and future outlook

Part one—Processes at atmospheric interfaces

2. Point source atmospheric diffusion

3. Air–sea interaction

4. Modelling of flux exchanges between heterogeneous surfaces and atmosphere

5. Desert dust uptake—transport and deposition mechanisms—impacts of dust on radiation, clouds and precipitation

Part two—Processes at water interfaces

6. Gas-transfer at unsheared free surfaces

7. Advective diffusion of air bubbles in turbulent water flows

Part three—Processes at interfaces of biotic systems

8. Transport processes in the soil-vegetation-lower atmosphere system

9. Turbulence within the forest canopy

10. Vegetated flow in open channels

11. Mass transport in aquatic environments

January 2008: 246x174: 348pp
Hb: 978-0-415-44669-3: **£89.00 US $169.00**
• AVAILABLE AS AN INSPECTION COPY

Forthcoming

Low-Enthalpy Geothermal Resources for Power Generation

Edited by: **D. Chandrasekharam,** Indian Institute of Technology, Bombay, India & **Jochen Bundschuh,** International Technical Cooperation Program, CIM (GTZ/BA), Frankfurt, Germany; Instituto Costarricense de Electricidad (ICE), San José, Costa Rica; Royal Institute of Technology (KTH), Stockholm, Sweden

In many developing countries the exponentially growing electricity demand can be covered by using locally available, sustainable low-enthalpy geothermal resources (80-150 °C). Such low-enthalpy sources can make electricity generation more independent from oil imports or from the over-dependence on hydropower.

This book focuses on all aspects of low-enthalpy geothermal thermal fluids. It will be an important source book for all scientists working on geothermal energy development. Specifically those involved in research in developing countries rich in such thermal resources, and for agencies involved in bilateral and international cooperation.

Selected Contents:1. World electricity demand and source mix forecasts; Low-enthalpy geothermal resources; Solution for power generation and global warming mitigation; Geological, geochemical and geophysical characteristics; Geothermal exploration; Geophysical methods; Power generation techniques; Economics; Small low-enthalpy geothermal projects for rural electrification.

May 2008: 246x174: 142pp
Hb: 978-0-415-40168-5: **£39.00 US $74.95**

Forthcoming

Remediation Hydraulics

Fred C. Payne, Joseph A. Quinnan, ARCADIS, Southfield, Michigan, USA and **Scott T. Potter,** ARCADIS, Newtown, Pennsylvania, USA

Unlike other texts that fail to explain the hydraulic processes that underlie in situ reactive zone treatments, Remediation Hydraulics provides a comprehensive discussion to help engineers to better understand these processes. This book addresses the complexities and heterogeneities of natural aquifers that are encountered in all treatment settings and introduces the concepts of pore-scale, fine-scale, and stratigraphic-scale heterogeneities. Based on the authors' experience in the design and analysis of hundreds of in situ groundwater treatment projects, this text presents fundamental and emerging theories that describe the behaviours of contaminants and injected fluids in aquifers.

March 2008: 7 x 10: 448pp
Hb: 978-0-8493-7249-0: **£67.99 US $129.95**

Numerical Modelling of Hydrodynamics for Water Resources

Proceedings of the Conference on Numerical Modelling of Hydrodynamic Systems (Zaragoza, Spain, 18-21 June 2007)

Edited by **Pilar Garcia Navarro**, University of Zaragoza, Spain and **Enrique Playán**, E.E. AULA DEI, CSIC, ZARAGOZA, SPAIN

The presentations collected in this volume have a problem-oriented perspective, and focus on canal and river flow, riparian areas and aquifers. 'Numerical Modelling of Hydrodynamics for Water Resources' is highly relevant to those working in hydrology, civil engineering, and environmental and agricultural sectors.

2007: 246x174: 402pp
Hb: 978-0-415-44056-1: **£89.00 US $169.95**

Modern Land Drainage

Lambert K. Smedema, Willem F. Vlotman and David Rycroft

Focusing on traditional drainage methods for rainfed agriculture in humid temperature zones, this fully extensive and leading title on land drainage provides new theories, technologies, knowledge and experiences in drainage engineering and management.

Selected Contents: I- Introduction: 1. Land Drainage for Agriculture; 2. Planning and Design; 3. Water in the Soil; II- Systems And Technology: 4. Subsurface Drainage Systems; 5. Surface/Shallow Drainage Systems; 6. Main Drainage Systems; III- Planning and Design: 7. Design of Pipe Drainage Systems; 8. Design Discharges; 9. Hydraulic Design of Drainage Canals and Structures; IV- Salinity Control: 10. Soil Salinity; 11. Irrigation Induced Salinisation; 12. Drainage of Irrigated Land; V- Special Topics: 13. Seepage and Interception; 14. Reclamation and Drainage of Unripened Soils; 15. Drainage of Rice Lands; 16. Controlled Drainage; 17. Computer Applications; VI-Field Investigations and Cost Evaluation: 18.Field Surveys and Investigations; 19. Hydraulic Conductivity; 20. Cost Evaluation; VII- Management: 21. Institutional, Organisational and Financial Arrangements; 22. Maintenance; 23. Performance Assessment and Benchmarking.

Sept. 2004: 246x174mm: 450pp
Hb: 978-90-5809-554-1: **£79.50 US $149.95**
• AVAILABLE AS AN INSPECTION COPY

Design of Hydraulic Gates

Paulo C.F. Erbisti

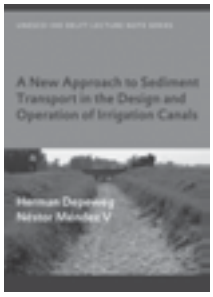
A treat of the principal aspects of the design, manufacture, installation and operation of hydraulic gates. Specific topics are analysed in depth, such as the selection of the gate type, the limits of their use, estimating their weight, operative forces, hoisting systems, design of structure and support elements, seals and hydrostatic and hydrodynamic forces. The use of recent technological advances, such as inflatable gates and fusegates is also discussed. For use as a textbook and manual for the design of gates. Features worked examples, about 300 illustrations and covers several different types of gate and their support elements from a variety of applications.

2003: 246x174mm: 362 pp
Hb: 978-90-5809-621-0: **£103.95 US $199.95**

A New Approach to Sediment Transport in the Design and Operation of Irrigation Canals

UNESCO-IHE Lecture Note Series

Herman Depeweg, UNESCO-IHE, Delft, The Netherlands and **Néstor Méndez V**, Universidad Centro Occidental 'Lisandro Alvarado', Barquisimeto, Venezuela



The transport of sediment greatly influences the sustainability of an irrigation system. Erosion and deposition not only increase maintenance costs, but may result in an inequitable and inadequate distribution of irrigation water. Understanding the behaviour and transport of sediment allows efficient planning and reliable water delivery schedules, and ensures the controlled deposition of sediments, making maintenance activities more manageable. These lecture notes present a detailed analysis of sediment transport in irrigation canals, together with physical and mathematical descriptions of the behaviour. A mathematical model predicts the sediment transport, deposition and entrainment rate for various flow conditions and sediment inputs. The model is particularly suitable for the simulation of sediment transport in irrigation canals where flow and sediment transport are largely determined by the operation of flow control structures.

Selected Contents: 1. Introduction 2. Open Channel Flow 3. Sediment Properties 4. Design Criteria for Irrigation Canals 5. Sediment Transport Concepts 6. SETRIC, A Mathematical Model for Sediment Transport in Irrigation Canals 7. The Sediment Transport Model and its Applications References List of Symbols Appendix A: Methods for Estimating the Total Sediment Transport Capacity in Irrigation Canals Appendix B: Methods to Predict the Friction Fraction Appendix C: Hydraulic Design of Irrigation Canals Appendix D: Description of the Main Aspects of the Regime Theory Appendix E: Glossary Index

2007: 246x174: 240pp
Hb: 978-0-415-42693-0: **£59.00 US $99.95**
Pb: 978-0-415-43065-4: **£29.95 US $49.95**

• AVAILABLE AS AN INSPECTION COPY

Textbook

Computational River Dynamics

Weiming Wu, National Center for Computational Hydroscience and Engineering, Univeristy of Mississipi, MS, USA

A text on the fundamentals of modeling flow and sediment transport in rivers treats both the physical principles and numerical methods for various degrees of complexity. Included are 1-D, 2-D (both depth- and widthaveraged) and 3-D models, as well as the integration and coupling of these models. The volume includes a broad selection of numerical methods for open channel flows, such as the SIMPLE(C) algorithms on staggered and non-staggered grids, the projection method, and the stream function and vorticity method. The state-of-the-art in sediment transport modeling approaches is described, such as nonequilibrium transport models, non-uniform totalload transport models, and semi-coupled and coupled procedures for flow and sediment calculations. Sediment transport theory is discussed and many newly-developed, non-uniform sediment transport formulae are presented. The many worked examples illustrate various conditions, such as reservoir sedimentation; channel erosion due to dam construction; channel widening and meandering; local scour around in-stream hydraulic structures; vegetation effects on channel morphodynamic processes; cohesive sediment transport; dam-break fluvial processes and contaminant transport. This book is recommended as a reference guide for river and hydraulic scientists and engineers and as a course text for teaching sediment transport modeling, computational free-surface flow, and computational river dynamics to senior undergraduate and graduate students in civil engineering. It will also serve professionals in environmental, agricultural, and geological engineering.

Selected Contents: 1. Introduction; 2. Mathematical Description of Flow and Sediment Transport; 3. Fundamentals of Sediment Transport; 4. Numerical Methods; 5. 1-D Numerical Models; 6. 2-D Numerical Models; 7. 3-D Numerical Models; 8. Domain Decomposition and Model; 9. Simulation of Dam-Break Fluvial; 10. Simulation of Flow and Sediment; 11. Cohesive Sediment Transport; 12. Contaminant Transport Modeling; References

2007: 246x174: 508pp
Hb: 978-0-415-44961-8: £99.00 US $189.95
Pb: 978-0-415-44960-1: £39.00 US $69.95

• AVAILABLE AS AN INSPECTION COPY

River, Coastal and Estuarine Morphodynamics: RCEM 2007

Proceedings of the 5th IAHR Symposium onRiver, Coastal and Estuarine Morphodynamics, Enschede, NL, 17-21 September 2007

Edited by **C. Marjolein Dohmen-Janssen**, University of Twente, Faculty of Engineering Technology, Department of Water Engineering and Management (WEM), Enschede, The Netherlands and **Suzanne J.M.H. Hulscher**, University of Twente, Enschede, The Netherlands

This book presents an excellent overview of all up-to-date knowledge on River, Coastal and Estuarine Morphodynamics. It includes about 150 contributions on: Longterm morphodynamics; Biogeomorphology; Small-scale processes and grain sorting; Morphodynamic free behaviour, and Human interferences in morphodynamics.

2007: 246x174: 1271pp
Hb: 978-0-415-45363-9: **£189.00 US $395.95**

River Basin Modelling for Flood Risk Mitigation

Edited lectures

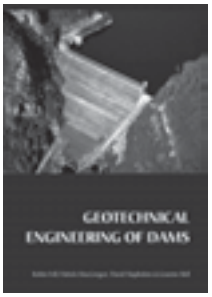
Edited by **Donald Knight** and **Asaad Shamseldin**

Flooding accounts for one-third of natural disasters worldwide and for over half the deaths which occur as a result of natural disasters. As the frequency and volume of flooding increases, as a result of climate change, there is a new urgency amongst researchers and professionals working in flood risk management. River Basin Modelling for Flood Risk Mitigation brings together thirty edited papers by leading experts who gathered for the European Union's Advanced Study Course at the University of Birmingham, UK. The scope of the course ranged from issues concerning the protection of life, to river restoration and wetland management. A variety of topics is covered in the book including climate change, hydro-informatics, hydro-meterology, river flow forecasting systems and dam-break modelling. The approach is broad, but integrated, providing an attractive and informative package that will satisfy researchers and professionals, while offering a sound introduction to students in Engineering and Geography.

2005: 246x174: 616pp
Hb: 978-0-415-38344-8: **£109.50 US $209.95**

Geotechnical Engineering of Dams

Robin Fell, **Patrick MacGregor**, **David Stapledon** and **Graeme Bell**



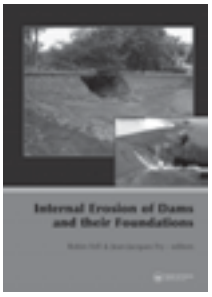
A comprehensive text on the geotechnical and geological aspects of the design and construction of new dams as well as the review and assessment of existing dams. For use as a course instructrion and as a professional guide.

2005: 246x174: 912pp
Hb: 978-0-415-36440-9: **£139.50 US $269.95**

Internal Erosion of Dams and their Foundations

Selected and Reviewed Papers from the Workshop on Internal Erosion and Piping of Dams and their Foundations, Aussois, France, 25–27 April 2005

Edited by **Robin Fell**, University of New South Wales, Sydney, Australia and **Jean-Jacques Fry**, EDF-CIH Centre d'Ingénierie Hydraulique Savoie Technolac, Le Bourget du Lac, France



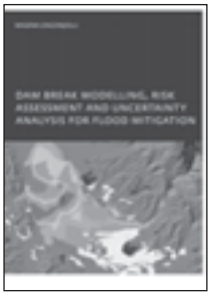
This volume covers the whole internal erosion process of embankment dams and their foundations, from initiation of erosion, continuation, progression to form a pipe, and formation of a breach, and will be most valuable to dam engineers, researchers and students who are involved in assessing the safety of embankment dams from internal erosion and piping.

Selected Contents: The state of the art of assessing the likelihood of internal erosion of embankment dams, water retaining structures and their foundations; Assessing the vulnerability of dams to internal erosion; Internal erosion in Porjus dam – risk assessment and proposal for upgrading; Issues in the management of internal erosion in UK embankment dams; Bureau of Reclamation experience with evaluating internal erosion of embankment dams; A framework for assessing the likelihood of internal erosion and piping of embankment dams and their foundations; Assessment of the likelihood of initiation of erosion in embankment dams; Application of no, excessive and continuing erosion criteria to existing dams; Re-evaluation of internal erosion incidents at Matahina Dam, New Zealand; Detection of internal erosion in embankment dams using temperature, resistivity and SP measurements; Internal stability of particles in dam cores made of cohesionless broadly graded moraines; A specific triaxial device for the study of internal erosion in cohesive soils; The susceptibility of internal erosion in the Suorva Dam; Filters and internal erosion in Swedish dams; Hydraulic criteria for internal erosion in cohesionless soil; Evaluation of erosion of soil used in dykes and earth embankments which are subjected to flood; Evaluating internal instability and internal erosion in a selection of existing Swedish embankment dams; A review of Corps of Engineers levee seepage practices in the United States; Investigation of internal erosion by the process of suffusion in embankment dams and their foundations; FIREBIRD Breach: A numerical model for breach formation in earthfill dams by overtopping of the crest.

2007: 246x174: 245pp
Hb: 978-0-415-43724-0: **£69.00 US $119.95**

Uncertainty Analysis and Risk Assessment in Dam Break Modelling

Migena Zagonjolli



In this book a description is given of a framework and techniques for modelling structure failure events (in particular dams and dikes). Furthermore, several novel approaches for risk analysis and assessment by numerical, statistical and constrained based methods in particular to the problems of breach modelling and flood water mitigation are proposed.

2007: 142pp
Pb: 978-0-415-45594-7: **£29.00 US $54.00**

Dams and Appurtenant Hydraulic Structures

Ljubomir Tancev

This work provides a comprehensive and complete overview of all kinds of dams and appurtenant hydraulic structures. The reader is guided through different aspects of dams and appurtenant hydraulic structures: general questions, design, construction, surveillance, maintenance and reconstructions of different kinds of embankment and concrete dams, hydromechanical equipment, spillway structures, bottom outlets, some special hydraulic structures, composition of structures in river hydraulic schemes, reservoirs, environmental effects of river hydraulic schemes and reservoirs and environmental protection. Special attention has been given to the advanced methods of static and dynamic analysis of embankment dams. 'Dams and appurtenant hydraulic structures' represents the most important achievements that were obtained by Ljubomir Tancev during 25 years of research and practical work in the field of dams and hydraulic structures. Together with numerous examples of dams built in different countries, virtually all important dams in the Republic of Macedonia are described and illustrated. This well illustrated work is intended for (graduate) students and researchers in civil, hydraulic and environmental engineering and for professionals specialising in design, construction and exploitation of dams.

Selected Contents:1. Dams and Appurtenant Hydraulic Structures: General 2. Embankment Dams 3. Concrete Dams 4. Hydromechanical Equipment and Appurtenant Hydraulic Structures 5. Hydraulic Schemes

2005: 246x174: 853pp
Hb: 978-90-5809-586-2: **£187.50 US $369.95**

Dams: Incidents and Accidents

K.R. Saxena and **V.M. Sharma**

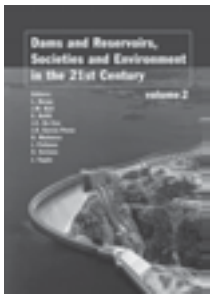
The increasing number of dams built in the last century has underlined the necessity of these constructions to the all-round development of a country. The advent of rock mechanics, engineering geology and a better understanding of materials have made it possible to construct higher and larger dams and to tackle more difficult sites. The assumptions and risks used in the theory of dam design include such unpredictable events as earthquakes, floods, and geological faults or soft seams, which may be either underestimated or completely missed during initial exploration. Incidents relating to dams are manageable at an early stage, whereas accidents, which are largely unforeseen, result in unexpected behaviour of dams and in catastrophic failures. Investigations conducted to determine the cause of a failure may not reveal the true sequence of events, while expert analyses are often controversial. From the dams that do not fail, of course, we learn nothing. Systematically monitoring the dam's behaviour from the potential risk stage to the accident event, would allow a hazard-management programme to be implemented, minimising loss of life and property, and provide useful data.

2004: 246x174: 240pp
Hb: 978-90-5809-701-9: **£69.00 US $134.95**

Dams and Reservoirs, Societies and Environment in the 21st Century

Proceedings of the International Symposium on Dams in the Societies of the 21st Century, 22nd International Congress on Large Dams (ICOLD), Barcelona, Spain, 18 June 2006

Edited by **Luis Berga**, Chairman, SPANCOLD, Barcelona, Spain, **J.M. Buil**, Spanish National Committee on Large Dams, SPANCOLD, **E. Bofill**, Spanish National Committee on Large Dams, SPANCOLD, **J.C. De Cea**, Spanish National Committee on Large Dams, SPANCOLD, **J.A. Garcia Perez**, Spanish National Committee on Large Dams, SPANCOLD, **G. Mañueco**, Spanish National Committee on Large Dams, SPANCOLD, **J. Polimon**, Spanish National Committee on Large Dams, SPANCOLD, **A. Soriano**, Spanish National Committee on Large Dams, SPANCOLD and **J. Yagüe**



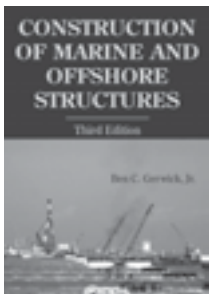
Dams and Reservoirs, Societies and Environment in the 21st Century covers subjects ranging from dam engineering and the benefits of dams, to concerns about them and their social and environmental impact.

2006: 246x174: 1412pp
Pack: 978-0-415-40423-5: **£149.00 US $259.95**

3RD EDITION

Construction of Marine and Offshore Structures, Third Edition

Ben C Gerwick, Jr., Ben C. Gerwick Incorporated, San Francisco, CA, USA



The leading authority in the field offers a unique and comprehensive treatment of the construction aspects of offshore structures rather than the more commonly addressed design considerations. Extensively updated, this second edition provides a new chapter on extending offshore technologies to inland waterways and emphasizes recent advances, including floating structures, deep-water structures, ice-resistant structures, and bridge foundations. Construction of Marine and Offshore Structures serves as an important reference for engineers in the oil and service industries and for marine construction planners, designers, and contractors.

March 2007: 7 x 10: 813pp
Hb: 978-0-8493-3052-0: **£71.99 US $129.95**

Forthcoming

Durability Design of Concrete Structures in Severe Environments

Odd E. Gjørv, Norwegian University of Science and Technology, Norway

2008

This book takes an engineering design approach to controlling durability and service life of concrete structures in severe environments. Premature chloride-induced corrosion of concrete reinforcement remains a challenge, often resulting from poor quality control or from special problems during construction. So construction quality and variability must be understood before increased durability can be achieved.

The author draws on his extensive experience taking a probabilistic approach to durability design, in combination with performance based quality control during concrete construction. He reviews field performance, deteriorating processes and current codes and practice, before comprehensively introducing durability design. He continues by covering methods for calculating corrosion probability, performance based concrete quality control, corrosion prevention, and preventive maintenance, ending with a chapter on recommended job specifications.

Internationally relevant, this is the essential guide for consulting and construction engineers involved in the design and execution of safe and high performance new concrete structures.

Selected Contents: 1. Historical Review 2. Field Performance 2.1 General 2.2 Harbour Structures 2.3 Bridges 2.4 Offshore Structures 3. Deteriorating Mechanisms 3.1 General 3.2 Freezing and Thawing 3.3 Alkali-Aggregate Reaction 3.4 Steel Corrosion 4. Codes and Practice 5. Probability-Based Durability Design 5.1 General 5.2 Calculation of Chloride Penetration 5.3 Calculation of Probability 5.4 Calculation of Corrosion Risk 5.5 Durability Requirements 5.6 Practical Applications 5.7 Evaluation of Obtained Results 6. Additional Strategies and Protective Measures 6.1 General 6.2 Cathodic Prevention 6.3 Stainless Steel Reinforcement 6.4 Non-Metallic Reinforcement 6.5 Surface Treatments 6.6 Precast Concrete Elements 7. Quality Assurance and Quality Control 7.1 General 7.2 Chloride Diffusivity 7.3 Concrete Cover 7.4 Electrical Continuity 8. Documentation of Obtained Durability 9. Service Manual and Protective Maintenance 9.1 General 9.2 Control of Chloride Penetration 9.3 Evaluation of Corrosion Risk 9.4 Protective Measures 10. Life Cycle Costs 11. Life Cycle Ecology 12. Recommended Job Specifications Appendix A: Determination of Chloride Diffusivity Appendix B: Determination of Electrical Resistivity Appendix C: Control of Electrical Continuity

November 2008: 234x156: 288pp
Hb: 978-0-415-41408-1: **£70.00 US $140.00**

Handbook of Quay Walls

CUR Centre for Civil Engineering

This handbook contains essential knowledge for the planning, design, execution and maintenance of quay walls, plus general information about historic developments and lessons gained from observation of ports in various countries. Technical chapters are followed by a detailed calculation of a quay wall, based on semi-probabilistic design procedure, which applies the theory presented earlier. *Quay Walls* will interest anyone involved in the design, construction and use of quay walls, including designers, contractors, engineers, operators and managers. It also provides a rich source of basic information for university and professional students.

2005: 234x156: 738pp
Hb: 978-0-415-36439-3: **£144.50 US $279.95**

Maritime Industry, Ocean Engineering and Coastal Resources

Proceedings of the 12th International Congress of the International Maritime Association of the Mediterranean (IMAM 2007), Varna, Bulgaria, 2-6 September 2007

Edited by **Carlos Guedes Soares**, Technical University of Lisbon, Portugal and **Petar Kolev**, Technical University of Varna, Bulgaria

Maritime Industry, Ocean Engineering and Coastal Resources brings together a selection of papers reflecting a number of fundamental areas of Ocean Engineering and Coastal Resources, such as Marine Environment, Ship and Offshore Design, Building and Maintenance Technology, Maritime Transportation, Port Operation and Exploitation, Offshore Oil and Gas Exploitation, Nautical Activities and Marinas, Fisheries and Aquaculture, Maritime Safety and Protection of the Environment.

2007: 246x174: 1197pp
Pack: 978-0-415-45523-7: **£199.00 US $379.95**

Advancements in Marine Structures

Proceedings of the 1st MARSTRUCT International Conference, Glasgow, UK, 12-14 March 2007

Edited by **Carlos Guedes Soares**, Technical University of Lisbon, Portugal and **P.K. Das**, Universities of Glasgow and Strathclyde, UK

Advancements in Marine Structures, containing papers from the 2007 MARSTRUCT conference, draws on recent experience and advances in the analysis and design of marine structures, exploring a full range of methods and modelling procedures and relates the practical application of these methodologies to real structures.

2007: 246x174: 578pp
Hb: 978-0-415-43725-7: **£119.00 US $209.95**

New

Environmental Aspects of Dredging

Edited by **R. N. Bray**, On behalf of CEDA and IADC, Dredging Research Ltd, Godalming, Surrey, UK

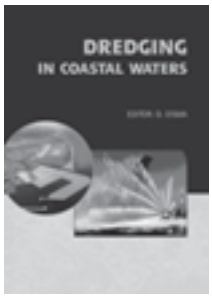
Expanding a port, deepening a navigation channel or creating new land for development, introduces changes to our physical, social, economic and political environment. Changes may result from events during the construction process, or relate to the nature of the completed structure. Changes can be positive or negative, short-term or long-term, and may affect the immediate vicinity of the project or a larger geographical area. Predicting and assessing all possible effects of a planned dredging activity in a scientifically-sound and reliable manner is essential, so that appropriate control measures can be taken to avoid or mitigate unwelcome impacts. This book provides guidance for a complete holistic environmental evaluation procedure and for the design and implementation of environmental control measures. The book is of particular interest to engineers, government agencies and port authorities, as well as civil engineering consultants and contractors involved in planning and designing dredging, maritime infrastructure and fluvial projects.

Selected Contents: Introduction: Conscienceness, Concern and Collaboration Players, Processes and Perspectives Control, Coherence and Co-ordination Effects, Ecology and Economy Investigation, Interpretation and Impact Machines, Methods and MitigationRe-use, Recycle or Relocate Monitoring, Measuring and Modelling Frameworks, Philosophies and the Future Conventions, Codes and Conditions, Marine and Land Disposal

Febrruary 2008: 246x174: 396pp
Hb: 978-0-415-45080-5: **£79.00 US $149.95**

Dredging in Coastal Waters

D. Eisma



The varied use of dredgers has led to the development of a variety of dredger types, from small ones appropriate to modest inshore projects, to very large sea-going dredgers for large-scale projects calling for the storage of dredged material within the ship. This book, which is the first book dedicated to dredging and its environmental impact in the widest sense, contains chapters on dredging operations in the Netherlands, Belgium, the UK, Spain, the US, China and Singapore. Additional chapters discuss more general aspects such as dredging techniques, monitoring of dredging operations, and the prospects of dredging in a changing environment. As well as providing information on dredging activities in different areas, it gives an insight into the activities and problems (environmental or other) involved in modern dredging. It will be of interest to professionals and students alike.

2005: 246x174: 258pp
Hb: 978-0-415-39111-5: **£77.50 US $149.95**
• AVAILABLE AS AN INSPECTION COPY

Frontiers in Offshore Geotechnics

Proceedings of the International Symposium. on Frontiers in Offshore Geotechnics (IS-FOG 2005), 19-21 Sept 2005, Perth, WA, Australia

Edited by **Susan Gourvenec** & **Mark Cassidy**

Addresses current and emerging challenges facing those working in offshore construction, design and research. Keynote papers from leading industry practitioners and academics provide a comprehensive overview of central topics covering deepwater anchoring, pipelines, foundation solutions for offshore wind turbines, site investigation, geohazards and emerging Australian frontiers. A further 125 peer reviewed papers introduce and analyse the critical challenges of offshore geotechnical engineering in the areas of the keynote subjects as well as piling, caissons and shallow foundation systems. The papers collected in these proceedings report a variety of numerical and theoretical investigations, experimental programs and field experience, with established design methods discussed alongside state-of-the-art practices.

Selected Contents: Keynote Papers; Deepwater Developments: drag and plate anchors; Deepwater Developments: suction caissons; Developments in the Australian Frontiers; Foundation solutions for offshore wind turbines; Shallow foundations: vertical bearing capacity; Shallow foundations: combined loading; Shallow foundations: mobile jack-up units; Breakwater caissons and liquification; Pipelines; Capacity of piles in sand; Piles; Assessing geohazards; Site investigation techniques; Soil characterization;

2005: 246x174mm: 1132 pp + CD-ROM
Hb: 978-0-415-39063-7: **£189.00 US $359.95**

Product Design for the Environment

A Life Cycle Approach

Fabio Giudice, **Guido La Rosa** and **Antonino Risitano**, University of Catania, Italy

Product Design for the Environment: A Life Cycle Approach analyzes relevant topics of design for the environment and provides methods and structured tools to assist the product design process. Based on a multi-level design approach to optimize product architecture and components, this book provides basic concepts, methodological frameworks, mathematical modeling, and design tools, illustrating their practical applications. The text integrates the life cycle approach in the conventional engineering design process, and covers the best strategies to achieve environmental quality, including analysis of resource distribution over the life cycle, extension of life, and recovery at the end-of-life.

2006: 6-1/8 x 9-1/4: 520pp
Hb: 978-0-8493-2722-3: **£56.99 US $99.95**

The Impact of Technology on Sport II

Edited by **Franz Konstantin Fuss**, Division of Bioengineering, Nanyang Technological University, Singapore, **Aleksandar Subic**, RMIT University, Melbourne, Australia and **Sadayuki Ujihashi**, Tokyo Institute of Technology, Japan

This book brings together work from researchers around the world and, in particular from the Asia-Pacific region. Most sport technologies are covered, including equipment and materials in various ball sports (golf, cricket, baseball, soccer, tennis, etc.), water sports, athletics, winter sports, mountaineering, motor sports and martial arts. The different technological areas extend to design; dynamics, vibrations and control; aerodynamics; instrumentation and measurements; modelling, simulation and optimisation; biomechanics and human performance; sports medicine; coaching and sports education.

2007: 246x174: 940pp
Hb: 978-0-415-45695-1: **£139.00 US $259.00**

Virtual and Rapid Manufacturing

Advanced Research in Virtual and Rapid Prototyping

Edited by **Paulo Jorge da Silva Bartolo**, Polytechnic Institute of Leiria, Portugal

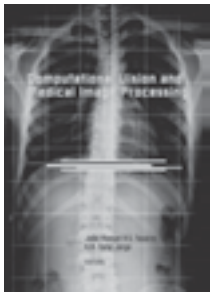
Proceedings of the 3rd International Conference on Advanced Research in Virtual and Rapid Prototyping, Leiria, Portugal, September 24-29, 2007.*Virtual and Rapid Manufacturing* is intended for engineers, designers and manufacturers who are active in the areas of mechanical, industrial and (bio)medial engineering.

2007: 246x174: 860pp
Hb: 978-0-415-41602-3: **£149.95 US $299.95**

Computational Vision and Medical Image Processing

VipIMAGE 2007

Edited by **João Manuel R.S. Tavares**, University of Porto, Portugal and **R.M. Natal Jorge**, University of Porto, Portugal



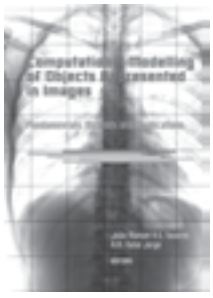
International contributions provide a comprehensive coverage of the current state-of-the-art in the area of Image Processing and Analysis, including: Image Segmentation; Data Interpolation; Registration, Acquisition and Compression; 3D Reconstruction; Objects Tracking; Motion and Deformation Analysis; Objects Simulation; Medical Imaging; Computational Bioimaging and Visualization; Computer Aided Diagnosis, Surgery, Therapy, and Treatment; Signal Processing Software Development; Telemedicine Systems and their Applications.

2007: 246x174: 414pp
Hb: 978-0-415-45777-4: **£89.00 US $169.00**

Computational Modelling of Objects Represented in Images. Fundamentals, Methods and Applications

Proceedings of the International Symposium CompIMAGE 2006 (Coimbra, Portugal, 20-21 October 2006)

Edited by **João Manuel R.S. Tavares**, University of Porto, Portugal and **Jorge R.M. Natal**, University of Porto, Portugal



International contributions provide a comprehensive coverage of the current state-of-the-art in the fields of Image Processing and Analysis, including: Image Segmentation; Data Interpolation; Registration, Acquisition and Compression; 3D Reconstruction; Objects Tracking; Motion and Deformation Analysis; Objects Simulation; Medical Imaging; Computational Bioimaging and Visualization.

2007: 246x174: 480pp
Hb: 978-0-415-43349-5: **£99.00 US $179.95**

Advanced Manufacturing. An ICT and Systems Perspective

Edited by **Marco Taisch**, Technical University of Milan, Italy, **Klaus-Dieter Thoben**, University of Bremen, Germany and **Marco Montorio**, Technical University of Milan, Italy

A broad vision of the future of manufacturing, which is here analysed from a system-management viewpoint, with a special focus on ICT-related matters. The book is intended to provoke debate, build consensus and stimulate creative discussion, leading to further novel research initiatives in the future.

2007: 246x174: 330pp
Hb: 978-0-415-42912-2: **£59.00 US $99.95**

Frontiers in Enterprise Integration

Edited by **Li D. Xu**, Old Dominion University, Norfolk (VA), USA

Selected papers from the 'International Forum of Information Systems Frontiers — Xian International Symposium (IFISF, 29-30 June, 2006, Xian, China) and the 'IFIP TC 8.9 International Conference on Research and Practical Issues of Enterprise Information Systems' (Confenis 2007, 14-16 October 2007, Beijing, China).

2007: 246x174: 478pp
Hb: 978-0-415-45779-8: **£109.00 US $209.00**

Design and Construction of Steel Bridges

Ghosh Utpal K.

This book provides the reader with an overall perspective for design and construction of steel bridges, particularly from considerations of economy, durability and ease of maintenance during service life. It highlights both theoretical as well as practical aspects which govern the process. Realistic illustrations of practical applications have been used throughout.

Starting with a study of the evolution in the design of steel bridges and lessons learnt from some landmark bridge failures, the book discusses basic topics, such as design philosophies, characteristics of steel and loads, before dealing with the various structural arrangements commonly used in modern steel bridges and their selection strategies. Modern systems of connections are discussed at length. The book contains several chapters explaining important aspects of fabrication and erection, including methodologies for erection of common steel bridges. Durability, protection against corrosion and post-construction maintenance are discussed in detail.

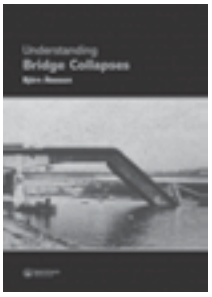
This book will provide practical guidelines to students as well as engineers and designers in industry to achieve economy, durability and ease in maintenance.

2006: 246x174mm: 458 pp
Hb: 978-0415-41836--2: **£94.50 US $189.95**

Forthcoming

Understanding Bridge Collapses

Bjorn Akesson, Consulting Engineer, Fagersta, Sweden



As is widely known, much of the knowledge of today is often based on the failures of the past. Just like in the last century, structural engineers still learn immensely from studying historical failures of structures, such as bridges. In addition, when studying real bridge failures, both the theory and the related phenomenon are supported by what has happened in practice, which positively affects the acceptation and visualization of the mathematical theories by the engineer.

Richly illustrated and in a straightforward style, the author has provided a detailed overview of 20 cases of famous and other highly interesting bridge collapses over the last two centuries. Every case is illustrated and described in detail and the failure analyses made are supported by well-known explanations and, in some cases, by new theories. The chronological order makes it easy to follow the gradual development in the use of different bridge types and the choice of construction material. The increase of knowledge and experience in the structural engineering discipline over the years is clearly observable, although every modern engineer will admit that both fatigue and buckling are very complex phenomena and that knowledge about them can increasingly profit from studying past bridge construction projects failures.

This book is intended for consulting engineers (bridges, steel and metal structures) and for advanced-level and postgraduate students in structural and bridge engineering. Because of its systematic and visual character it may also form a good introduction to bridge failures and the understanding of complex structures to undergraduate students in civil and mechanical engineering.

Selected Contents: 1.Dee Bridge (1847) 2.Ashtabula Bridge (1876) 3.Tay Bridge (1879) 4.Quebec Bridge (1907) 5.Hasselt Bridge (1938) 6.Sandö Bridge (1939) 7.Tacoma Narrows Bridge (1940) 8.Peace River Bridge (1957) 9.Second Narrows Bridge (1958) 10.Kings Bridge (1962) 11.Point Pleasant Bridge (1967) 12.Fourth Danube Bridge (1969) 13.Britannia Bridge (1970) 14.Cleddau Bridge (1970) 15.West Gate Bridge (1970) 16.Rhine Bridge (1971) 17.Zeulenroda Bridge (1973) 18.Reichsbrücke (1976) 19.Almö Bridge (1980) 20.Sgt. Aubrey Cosens V.C. Memorial Bridge (2003)

July 2008: 246x174: 276pp
Hb: 978-0-415-43623-6: **£44.00 US $89.95**

Plate Buckling in Bridges and Other Structures

Bjorn Åkesson, Consulting Engineer, Fagersta, Sweden

A well-illustrated and comprehensive account of various aspects of local buckling in bridges. The book covers the theory and background of buckling, presenting simple design calculations which address this intriguing phenomenon. Attempts to master the process of buckling are described, citing both successes and failures. A number of failure case studies are presented, including five bridge collapses which occurred in a four-year-period between 1969 and 1973. Examining such failures provides valuable information about the phenomenon of buckling. The final section of the book presents easy-to-follow design examples which conform to the latest Eurocode.

This text introduces advanced-level undergraduate and graduate students in Bridge and Structural Engineering to the phenomenon of buckling, with special focus on thin-walled plated bridge girders. The book is especially suitable as a course instruction guide, having a highly visual and descriptive style. For practising and consulting engineers, it will also prove to be a valuable reference work on buckling.

Selected Contents: 1. Introduction 2. Plate Buckling Theory 3. Box Girder Bridges 3.1 Introduction 3.2 The Britannia Bridge 3.3 Collapses 3.3.1 The Fourth Danube Bridge 3.3.2 The Cleddau Bridge 3.3.3 The West Gate Bridge 3.3.4 The Rhine Bridge 3.3.5 The Zeulenroda Bridge 3.4 Summary **4. I-girders** 4.1 Introduction 4.2 Normal stress buckling 4.3 Concentrated Loads 4.4 Shear buckling **5. Shell buckling** 5.1 Introduction 5.2 Theory Examples Literature Picture and Photo References

2007: 246x174: 164pp
Hb: 978-0-415-43195-8: **£39.00 US $69.95**

• AVAILABLE AS AN INSPECTION COPY

Forthcoming

The Design of Prestressed Concrete Bridges

Concepts and Principles

Robert Benaim, Consultant, UK

Examining the fundamental differences between design and analysis, Robert Benaim explores the close relationship between aesthetic and technical creativity and the importance of the intuitive, more imaginative qualities of design that every designer should employ when designing a structure.

Aiding designers of concrete bridges in developing an intuitive understanding of structural action, this book encourages innovation and the development of engineering architecture. Simple, relevant calculation techniques that should precede any detailed analysis are summarized. Construction methods used to build concrete bridge decks and substructures are detailed and direct guidance on the choice and the sizing of different types of concrete bridge deck is given. In addition, guidance is provided on solving recurring difficult problems of detailed design and realistic examples of the design process are given.

This book enables concrete bridge designers to broaden their scope in design and provides an analysis of the necessary calculations and methods.

Selected Contents: Introduction 1. The Nature of Design 2. Basic Concepts 3. Reinforced Concrete 4. Prestressed Concrete 5.Prestressing for Statically Determinate Beams 6.Prestressing for Continuous Beams 7. Articulation of Bridges and the Design of Substructures 8. The General Principles of Concrete Deck Design 9. The Design of Bridge Deck Components 10. Precast Beams 11. Solid Slabs, Voided Slabs and Multi-Cell Box Girders 12. Ribbed Slabs 13. Box Girders 14. Counter-Cast Technology for Box Section Decks 15. The Construction of Girder Bridges 16. The Effect of Scale on the Method of Construction 17. The Design and Construction of Arches 18. Cable Supported Decks Appendix Index

2007: 246x174: 608pp
Hb: 978-0-415-23599-0: **£90.00 US $180.00**

Innovations in Bridge Engineering Technology

Selected Papers, 3rd NYC Bridge Conf., 27-28 August 2007, New York, USA

Edited by **Khaled Mahmoud**, Bridge Technology Consulting, New York City, NY, USA

In the last few years, remarkable technological advances have been achieved in bridge engineering technology. These cover a wide spectrum of issues, ranging from design, maintenance, and rehabilitation methodologies to material and monitoring innovations.

Within an international framework of exchanging the state-of-the-art in the field of bridge engineering, the Fourth New York City Bridge Conference was held on August 27-28, 2007. This book contains a selected number of papers that were presented at the conference. These papers are valuable contributions to the body of knowledge in bridge engineering technology.

The Fourth New York City Bridge Conference was distinguished for its global impact. Bridge engineering experts from Belgium, Canada, Croatia, England, France, Germany, Italy, Japan, Lebanon, Northern Ireland, Scotland, Switzerland, Taiwan and Turkey presented papers on the latest innovations in the field. Along with the contributions by prominent bridge engineering professionals from the United States, this excellent collection of papers will assure the archival quality of this book.

2007: 246x174: 301pp
Hb: 978-0-415-45337-0: **£74.00 US $144.95**

Advances in Cable-Supported Bridges

Selected Papers, 5th International Cable-Supported Bridge Operator's Conference, New York City, 28-29 August, 2006

Edited by **Khaled Mahmoud**, Bridge Technology Consulting, New York City, NY, USA

Selected papers on cable-supported bridges authored by leading bridge engineering professionals, presenting state-of-the-art material and assuring an authoritative account on the developments in the field, this volume forms essential reading to anyone working on cable-supported bridges.

2006: 246x174: 261pp
Hb: 978-0-415-41982-6: **£79.00 US $149.95**

Advances in Bridge Maintenance, Safety Management, and Life-Cycle Performance, Set of Book & CD-ROM

Proceedings of the Third International Conference on Bridge Maintenance, Safety and Management, 16-19 July 2006, Porto, Portugal - IABMAS '06

Edited by **Paulo J. da Sousa Cruz**, **Dan M. Frangopol**, University of Colorado, Boulder, USA and **Luis C. Canhoto Neves**, University of Minho, Portugal

Advances in bridge maintenance, safety, management and life-cycle performance contains the papers presented at IABMAS'06 in Porto, Portugal, from 16 to 19 July, 2006. This is a major contribution to the state-of-the-art in all aspects of bridge maintenance, safety, management and life-cycle performance including contributions from leading experts in this area.

2006: 246x174: 1126pp
Hb: 978-0-415-40315-3: **£147.00 US $289.95**

Forthcoming

Advances in Bridge Maintenance, Safety Management and Life-Cycle Performance, oack

Proceedings of the Fourth International Conference on Bridge Maintenance, Safety and Management, July 13-17 2008, Seoul, Korea - IABMAS '08

Edited by **Hyun-Moo Koh** and **Dan M. Frangopol**, University of Colorado, Boulder, USA

2008 These proceedings provide an extensive collection of 550 revised papers on most recent advances in bridge maintenance, safety, management and life-cycle performance. A major contribution to the state-of-the-art in all aspects of the field, the book contains papers from leading experts. Set of Book with keynote papers and extended abstracts plus a 4500 pages, searchable, full-paper CD-ROM.

July 2008: 246x174: 700pp, Book of Abstracts + Full Paper CD-ROM (>3000 pp)
Hb: 978-0-415-46844-2: **£139.00 US $279.00**

Bridge Maintenance, Safety, Management and Cost - Pack

Proceedings of the 2nd International Conference of the International Association for Bridge Maintenance and Safety, Kyoto, Japan, 18-22 October, 2004 - IABMAS '04

Edited by **E. Watanabe, D.M. Frangopol** & **T. Utsunomiya**

Book of Abstracts and full paper CD-ROM containing papers on all major aspects of bridge maintenance systems are addressed, including new techniques and methodological approaches, emerging technology in equipment and materials, and advances in technical and material concepts.

2004: 246x174mm: Book of Abstracts (1014pp) + full paper CD-ROM (> 3000 pp)
Hb: 978-0-415-36355-6: **£198.50 US $369.95**

Forthcoming

Messina Strait Bridge

Fabio Brancaleoni, **Giorgio Diana**, **Michele Jamiolkowski**, **Enzio Vullo** and **Guiseppe Fiammenghi,** Stretto di Messina S.p.A., Roma, Italy **Pietro Ciucci**

2008 This book describes the large amount of work carried out since the early seventies on the Messina Strait Bridge, up to the award of the detailed design and construction contract in 2006. This work has included extensive studies, concepts and design developments to confirm the feasibility of such an enormous undertaking and to optimise costs and expected performance levels.

Attention is not merely focused on design itself, but also on the context in which the project is located, and on the great challenges involved. Thus, considering the innovations and specific solutions adopted in order to overcome the difficulties due to the environment and the challenges presented by the record lenght of 3,300 m for the main suspended span, it becomes clear how the Messina Strait Crossing takes its place as a masterpiece in bridge engineering history.

Selected Contents: Preface Introduction 1. History and context 2. Project delivery model 3. Project finance 4. Environment 5. The crossing site 6. Challenges of a super long suspension bridge 7. Design of the bridge 8. The way ahead 9. Fact Files 10. References

October 2008: 246x174: 300pp
Hb: 978-0-415-46814-5:

Forthcoming

Dynamics of Structure and Foundation

Indrajit Chowdary, Petrofac International Limited, Sharjah, United Arab Emirates and **Sambhu P. Dasgupta**, Indian Institute of Technology, Kharagpur, West Bengal, India

2008 Unique reference book focused on extracting and using a unified approach towards the dynamics between structure and foundation. It covers the full range of detailed topics involved in structural dynamics. It also addresses two new topics: (1) dynamic soil-structure interaction and (2) the geotechnical considerations for dynamic soil-structures interaction (including practical examples, e.g. on the non-linear behavior of soil). Apart from the many real case examples included, the text is supported by over 700 illustrations. The structure of the book and its extensive subject index allow for easy searching. A reference and design guide for civil and structural engineers involved with earthquake and dynamic analysis and the design of machine foundations in the oil, gas and energy sector.

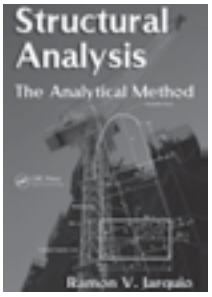
Selected Contents: 1. Basic Concepts of Elasticity; 2. Numerical Methods in Engineering (Finite Difference and Finite Element); 3. Theory of Vibration and Structural Dynamics; 4. Basic and advanced concepts of Soil and Elasto-dynamics; 5. Static and Dynamic soil-structure interaction; 6. Analysis and Design of Machine Foundations; 7. Geo-technical and Structural Earthquake Engineering.

Dec. 2008: 246x174mm: approx. 800pp
Hb: 978-0-415-47145-9: **£99.00 US $199.95 US $**

Structural Analysis

The Analytical Method

Ramon V. Jarquio, P.E., Ramon V. Jarquio, P.E., Engineering Consultant, Bayside, New York, USA



Introducing the capacity axis, a geometric property that is not considered in the existing literature, this book illustrates analytical procedures for predicting the capacities of circular and rectangular sections in concrete and steel materials. This new analytical method uses the capacity axis not only to determine the minimum capacity for biaxial bending but also to satisfy the equilibrium of external and internal forces. Under the current standard interaction formula, satisfaction of equilibrium conditions is not possible. The author demonstrates how the currently accepted method is crude and ineffective and proves this condition using the results of the analytical method.

2007: 6-1/8 x 9-1/4: 240pp
Hb: 978-1-4200-6023-2: **£71.99 US $129.95**

Innovations in Structural Engineering and Construction

Proceedings of the 4th International Conference on Structural and Construction Engineering, Melbourne, Australia, 26-28 September 2007

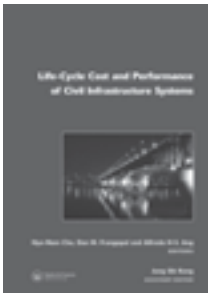
Edited by **Mike Xie**, RMIT University, Melbourne, Australia and **Indubhushan Patnaikuni**, RMIT University, Melbourne, Australia

Innovations in Structural Engineering and Construction covers a wide range of topics including: innovative structural designs and materials; advances in construction techniques and management, and system integration and sustainable development.

2007: 246x174: 1644pp
Pack: 978-0-415-45755-2: **£219.00 US $419.95**

Life-Cycle Cost and Performance of Civil Infrastructure Systems

Edited by **Hyo-Nam Cho**, Hanyang University, South Korea, **Dan M. Frangopol**, University of Colorado, Boulder, USA, **Alfredo H.S. Ang**, University of California, Irvine, USA and **Jung Sik Kong**, Korea University, Seoul, Korea

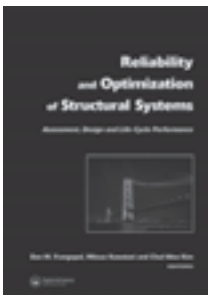


This book serves as a valuable source of information for researchers, design and maintenance engineers, project managers, and all concerned with condition, reliability, life-cycle performance and cost of new and existing civil infrastructure systems.

2007: 246x174: 330pp
Hb: 978-0-415-41356-5: **£89.00 US $169.00**

Reliability and Optimization of Structural Systems: Assessment, Design, and Life-Cycle Performance

Edited by **Dan M. Frangopol**, University of Colorado, Boulder, USA, **Mitsuo Kawatani**, Kobe University, Japan and **Chul W. Kim**, Kobe University, Japan



This title focuses on structural reliability methods, reliability-based optimization, structural system reliability and risk analysis, lifetime performance and various applications in civil engineering. It is invaluable to all concerned with structural system reliability and optimization, especially students, engineers, and workers in research and development.

2007: 246x174: 290pp
Hb: 978-0-415-40655-0: **£69.00 US $129.00**
• AVAILABLE AS AN INSPECTION COPY

New

Smart Materials and Smart Structures Technology

Proceedings of SMSST'07, World Forum on Smart Materials and Smart Structures Technology (SMSST'07), China, 22-27 May, 2007

Edited by **B.F. Spencer Jr.**, University of Colorado, Boulder, USA, **M. Tomizuka**, **C.B. Yun**, **W. Chen** and **R. Chen**

This book provides the critical knowledge and technological bases required for meeting one of the ultimate engineering challenges: the design and construction of smart structures and systems. Research in smart materials and structures seeks to apply multifunctional capabilities of new and existing materials to develop structures and systems that are capable of self-sensing and monitoring, self-diagnosis and prognosis with intelligence, self-healing and repair, and adaptive response to prevent loss of human life and catastrophe, to minimize maintenance and life-cycle costs, and to prolong service life. The papers contained herein, representing the state-of-the-art in the field, were presented at the World Forum on Smart Materials and Smart Structures Technology (SMSS) held in Chongqing and Nanjing, China on May 22-27, 2007 Researchers and practitioners from a broad range of disciplines should be interested in this book.

May 2008: 246x174: 390pp
Hb: 978-0-415-46845-9: **£119.00 US $239.95**

Advances in Life-Cycle Civil Engineering

Proceedings of the International Symposium on Life-Cycle Civil Engineering, IALCCE '08, held in Varenna, Lake Como, Italy on June 11 - 14, 2008

Edited by **Fabio Biondini**, **Dan Frangopol**, Department of Civil and Environmental Engineering, Center for Advanced Technology for Large Structural Systems, Behtlehem, PA, USA and **Vincenzo Petrini**

2008 A fine selection of reviewed papers encompassing all aspects of life-cycle assessment, design, maintenance, rehabilitation and monitoring of civil engineering systems.

Set of Book and Searchable CD-ROM, both containing the full papers.

June 2008: 246x174: 1100pp
Hb: 978-0-415-46857-2:

Forthcoming

Structural Analysis of Historical Constructions

Proceedings of the VI International Conference on Structural Analysis of Historical Constructions, SAHC08, 2-4 July 2008, Bath, United Kingdom

Edited by **Dina D'Ayala**, University of Bath, Department of Architecture and Civil Engineering, Bath, UK and **Enrico Fodde**, University of Bath, Department of Architecture and Civil Engineering, Bath, UK

2008 The successful preservation of an historic building, complex or city depends on its continued use and the daily care that come with it. The possibility of continued use depends on the adaptation of the building to modern standards and practice of living, requiring changes in constructional or structural features.

Conservation engineering is the process of understanding, interpreting and managing the architectural heritage to safely deliver it to posterity, enhancing private or public utility vis a vis minimum loss of fabric and significance. These two objectives can sometimes conflict. With increasing global interest in conservation engineering it is essential to open the debate on more inclusive definitions of significance and on more articulated concepts of safety by use of acceptable and reliable technologies, integrating further the activity of all the professions involved in conservation. This proceedings set of the 6th Conference on Structural Analysis of Historical Constructions (Bath, UK, June 3-6, 2008) presents the latest findings on the subject.

June 2008: 246x174: 2100pp
Hb: 978-0-415-46872-5: **£179.00 US $349.95**

Structural Analysis of Historical Constructions - 2 Vol. Set

Proceedings of the IVth Int. Seminar on Structural Analysis of Historical Constructions, 10-13 November 2004, Padova, Italy

Edited by **C. Modena, P.B. Lourenço** & **P. Roca**

2004: 246x174mm: Set of 2 Vols, 1466 pp
Hb: 978-0-415-36379-2: **£199.00 US $379.95**

Forthcoming

Tubular Structures XII

Proceedings of the conference held in Shanghai, China, 8-10 October 2008

Edited by **Z.Y. Shen**, Tongji University, Department of Structural Engineering, Shanghai, China, **Y.Y. Chen**, Tongji University, Department of Structural Engineering, Shanghai, China and **Xian-zhong Zhao**, Tongji University, Department of Structural Engineering, Shanghai, China

2008 This book contains the latest scientific and engineering developments in the field of tubular steel structures, as presented at the 12th International Symposium on Tubular Structures. Various key and emerging subjects in the area of hollow structural sections are covered, such as: static and fatigue behaviour of connections/joints, concrete filled hollow sections and composite tubular members, offshore structures, earthquake resistance, specification and standard developments, manufacture and construction of tubular structures, material properties and structural reliability, sustainability of tubular structures, fire resistance, casting, novel applications and case studies. Containing 90 reviewed papers, it forms a pertinent reference source for architects, civil and mechanical engineers, designers, steel fabricators and contractors, manufacturers of hollow sections or related construction products.

October 2008: 246x174: 775pp
Hb: 978-0-415-46853-4: **£109.00 US $219.95**

Tubular Structures XI

11th International Symposium and IIW International Conference on Tubular Structures

Edited by **Jeffrey A Packer** & **Silke Willibald**

Collection of peer-reviewed papers covering key and emerging subjects in the field of hollow structural sections, such as: novel applications and case studies, static and fatigue behaviour of connections/joints, concrete-filled and composite tubular members, earthquake resistance, specification and code developments, material properties and structural reliability, impact resistance and brittle fracture, fire resistance, casting and fabrication innovations. Research and development issues presented in this book are applicable to buildings, bridges, offshore structures, entertainment rides, cranes, towers and various mechanical and agricultural equipment. A pertinent reference source for architects, civil and mechanical engineers, designers, steel fabricators and contractors.

2006: 246x174mm: 704 pp
Hb: 978-0-415-40280-4: **£134.50 US $259.95**

NEW BOOK SERIES
STRUCTURES & INFRASTRUCTURES

Series editor:
Dan M. Frangopol
Fazlur R. Khan Endowed Chair of Structural Engineering and Architecture
Department of Civil and Environmental Engineering
Center for Advanced Technology for Large Structural Systems (ATLSS)
Lehigh University, Bethlehem, PA, USA

ISSN 1747-7735

Structural Design Optimization Considering Uncertainties

Vol.1., Structures & Infrastructures Series

Edited by: **Yiannis Tsompanakis,** Technical University of Crete, Greece, **Nikos D Lagaros**, National Technical University of Athens, Greece, **Manolis Papadrakakis**, National Technical University of Athens, Greece

Series: Structures and Infrastructures

With the increasing necessity to solve complex problems in structural optimization, structural reliability and probabilistic mechanics, equires the development of new ideas, innovative methods and numerical tools for providing accurate numerical solutions in affordable computing times. This book presents the latest findings on structural optimization considering uncertainties. It contains selected contributions dealing with the use of probabilistic methods for the optimal design of different types of structures and various considerations of uncertainties. The first part is focused on reliability-based design optimization and the second part on robust design optimization. Comprising twenty-one, self-contained chapters by prominent authors in the field, it forms a complete collection of state-of-the-art theoretical advances and applications in the fields of structural optimization, structural reliability, and probabilistic computational mechanics. It comprises 21 self-contained chapters by prominent authors in the field. Recommended to researchers, engineers, and students in civil, mechanical, naval and aerospace engineering and to professionals working on complex cost-effective design problems.

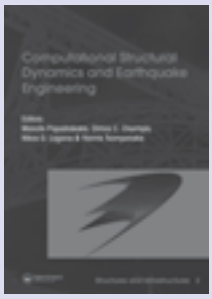
Selected Contents: Reliability-based design optimization (RBDO): 1: Principles of reliability-based design optimization; 2: Reliability-based optimization of engineering structures; 3: Efficient approaches for system reliability-based design optimization; 4: Nondeterministic formulations of analytical target cascading for decomposition-based design optimization under uncertainty; 5: Design optimization of stochastic dynamic systems by algebraic reduced order models; 6: Stochastic system design optimization using stochastic simulation; 7: Numerical and semi-numerical methods for reliability-based design optimization; 8: Advances in solution methods for reliability-based design optimization; 9: Non-probabilistic design optimization with insufficient data using possibility and evidence theories; 10: Reliability analysis and reliability based design optimization using moment methods; 11: A decoupled approach to reliability based topology optimization for structural synthesis; 12: Sample average approximations in reliability-based structural optimization: Theory and applications; 13: Cost-benefit optimization for maintained structures; 14: A Reliability-Based Maintenance Optimization Methodoloy; 15: Overview of reliability analysis and design capabilities in DAKOTA with Application to Shape Optimization of MEMS. Part B. Robust design optimization (RDO): 16: Structural robustness and its relationship to reliability; 17: Maximum Robustness Design of Trusses via Semidefinite Programming; 18: A Taylor expansion approach to the design optimization of structures with randomness; 19: Info-gap robust design of passively controlled structures with load and model uncertainties; 20: Genetic algorithms and structural design using convex models of uncertainty; 21: Metamodel-based computing techniques for solving structural optimization problems considering uncertainties.

February 2008: 246x174: 656pp
Hb: 978-0-415-45260-1: **£109.00 US $214.95**

Computational Structural Dynamics and Earthquake Engineering

Vol.2., Structures & Infrastructures Series
Edited by: **Manolis Papadrakakis**, National Technical University of Athens, Greece, **Dimos C. Charmpis**, University of Cyprus, **Yiannis Tsompanakis**, Technical University of Crete, Greece and **Nikos D. Lagaros**, National Technical University of Athens, Greece

Series: Structures and Infrastructures



The increasing necessity to solve complex problems in Structural Dynamics and Earthquake Engineering requires the development of new ideas, innovative methods and numerical tools for providing accurate numerical solutions in affordable computing times. This book presents the latest findings in Computational Dynamics, Stochastic Dynamics, Structural Dynamics and Earthquake Engineering. It contains selected and revised contributions from pronounced authors in the aforementioned fields. It will benefit readers involved with Structural Dynamics and Earthquake Engineering, and will get them acquainted with advanced computational methods and software tools for tackling complex problems in dynamic/seismic analysis and design. The contents were carefully selected based on the presentations held at the Conference of Computational Dynamics & Earthquake Engineering (COMPDYN), in Retymno, Greece, from 13 to 16 June, 2007.

June 2008: 246x174: 600pp
Hb: 978-0-415-45261-8: **£99.00 US $189.95**

Stochastic Computational Structural Mechanics A Guide to the Numerical Analysis of Random Phenomena

Christian Bucher, Vienna University of Technology, Vienna, Austria, **Michael Macke,** Bauhaus-University Weimar, Germany

Series: Structures and Infrastructures

2009, 246 x 174 cm
Hb: 978-0-415-40354-2

Book proposals for the Structures and Infrastructures book series are invited. For more information please contact us via pub.nl@tandf.co.uk.

Forthcoming

Assessment of Structures under Operating Conditions

Damage Models and Algorithms

Vol.3., Structures & Infrastructures Series
Siu-Seong Law, Hong Kong Polytechnic University, Kowloon, Hong Kong and **Xin-qun Zhu**, University of Western Australia, Crawley, WA, Australia

Series: Structures and Infrastructures

This monograph meets the search for suitable algorithms to convert collected data into knowledge of the condition of the infrastructure for maintenance scheduling in modern structural health monitoring. It addresses developments in time response series and its derivatives (wavelet (packet) transform and its energy and the wavelet-based impulse response function) and also includes the loads on the structure (vehicular load, the ground micro tremor and ambient random excitation from the supports) in the conditions assessment. The treatment of uncertainties and the study of their propagation in the inverse problem of structural condition assessment are also discussed.

August 2008: 246x174: ~240pp
Hb: 978-0-415-45264-9: **£49.95 US $99.95**

Forthcoming

Structural Identification and Damage Detection using Genetic Algorithms

Vol.4., Structures & Infrastructures Series

C.G. Koh, National University of Singapore, Singapore and **Michael J. Perry**, National University of Singapore, Singapore

Series: Structures and Infrastructures

The first text on recent developments in genetic algorithms (GA) based on robust and efficient methods for parameter identification and damage detection of structural dynamic systems. It includes a novel identification strategy that contains several advantageous features compared to many previous methods.

January 2009: 246x174: ~120pp
Hb: 978-0-415-46102-3: **£39.95 US $79.95**

Sustainable Construction Materials and Technologies

Proceedings of the Conference on Sustainable Construction Materials and Technologies, 11-13 June 2007, Coventry, United Kingdom

Edited by **Yoon-Moon Chun**, University of Milwaukee, USA, **Peter Claisse**, Coventry University, UK, **Tarun R. Naik**, University of Wisconsin, Milwaukee, USA and **Eshmaiel Ganjian**, Coventry University, UK

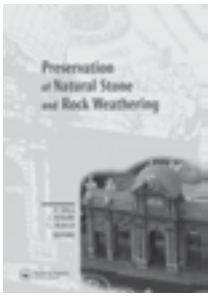
The construction materials industry is a major user of the world's resources. While enormous progress has been made towards sustainability, the scope and opportunities for improvements are significant. Topics covered in this book include: sustainable alternatives to natural sand, stone, and Portland cement in concrete; sustainable use of recyclable resources such as fly ash, ground municipal waste slag, pozzolan, rice-husk ash, silica fume, gypsum plasterboard (drywall), and lime in construction; sustainable mortar, concrete, bricks, blocks, and backfill; the economics and environmental impact of sustainable materials and structures; use of construction and demolition wastes, and organic materials (straw bale, hemp, etc.) in construction; sustainable use of soil, timber, and wood products; and related sustainable construction and rehabilitation technologies.

2007: 246x174: 816pp
Hb: 978-0-415-44689-1: **£119.00 US $219.00**

Preservation of Natural Stone and Rock Weathering

Proceedings of the ISRM Workshop W3, Madrid, Spain, 14 July 2007

Edited by **Pedro Sola**, Geocisa, Madrid, Spain, **José Estaire**, Laboratorio de Geotecnia (CEDEX), Madrid, Spain and **Claudio Olalla**, Cedex Laboratorio Central De Estructuras y Materiales, Madrid, Spain



Papers on monument preservation, reflecting a broad spectrum of issues in three different fields: Architecture, Civil Engineering and Geology. The topics discussed cover the entire process of preservation.

2007: 246x174: 228pp
Pb: 978-0-415-45018-8: **£64.99 US $119.00**

11ST EDITION

Reynolds's Reinforced Concrete Designer's Handbook

Anthony J. Threlfall, Consulting engineer, **Charles E. Reynolds**, **James C. Steedman**, Consulting engineer and **Charles E Reynolds**, Late Consulting Engineer

This classic and essential work has been thoroughly revised and updated in line with the requirements of new codes and standards which have been introduced in recent years, including the new Eurocode as well as up-to-date British Standards.

It provides: a general introduction; details of analysis and design of a wide range of structures an examination of design according to British and then European Codes.

Highly illustrated with numerous line diagrams, tables and worked examples, *Reynolds's Reinforced Concrete Designer's Handbook* is a unique resource providing comprehensive guidance that enables the engineer to analyze and design reinforced concrete buildings, bridges, retaining walls and containment structures.

Written for structural engineers, contractors, consulting engineers, local and health authorities, and utilities, this is also excellent for civil and architecture departments in universities and FE colleges.

Selected Contents: Part 1: General Information 1. Introduction 2. Design Criteria, Safety Factors and Loads 3. Material Properties 4. Structural Analysis 5. Design of Structural Members 6. Buildings, Bridges and Containment Structures 7. Foundations, Ground Slabs and Earth-Retaining Structures **Part 2: Loads, Materials and Structures** 8. Loads 9. Pressures due to Retained Materials 10. Concrete and Reinforcement 11. Cantilevers and Single Span Beams 12. Continuous Beams 13. Slabs 14. Framed Structures 15. Shear Wall Structures 16. Arches 17. Containment Structures 18. Foundations and Retaining Walls 19. Miscellaneous Structures and Details 20. Elastic Analysis of Concrete Sections **Part 3: Design to British Codes** 21. Design Requirements and Safety Factors 22. Properties of Materials 23. Durability and Fire Resistance 24. Bending and Axial Force 25. Shear and Torsion 26. Deflection and Cracking 27. Considerations Affecting Design Details 28. Miscellaneous Members and Details **Part 4: Design to European Codes** 29. Design Requirements and Safety Factors 30. Properties of Materials 31. Durability and Fire Resistance 32. Bending and Axial Force 33. Shear and Torsion 34. Deflection and Cracking 35. Considerations Affecting Design Details Appendix: Mathematical Formulae and Data. References and Further Reading

2007: 297x210: 416pp
Hb: 978-0-419-25820-9: **£84.00 US $168.00**
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Forthcoming

2ND EDITION

Concrete Construction Engineering Handbook, Second Edition

Edited by **Edward G. Nawy**, Edited by Edward G. Nawy, Rutgers University, Piscataway, New Jersey, USA, EAST BRUNSWICK NJ, U.S.A and **Hani Nassif**, Rutgers University, Piscataway, New Jersey, USA

2008

The Concrete Construction Engineering Handbook, Second Edition provides in depth coverage of concrete construction engineering and technology. It features state-of-the-art discussions on what design engineers and constructors need to know about concrete, focusing on -o The latest advances in engineered concrete materialso Reinforced concrete constructiono Specialized construction techniqueso Design recommendations for high performanceWith the newly revised edition of this essential handbook, designers, constructors, educators, and field personnel will learn how to produce the best and most durably engineered constructed facilities.

June 2008: 7 x 10: 1664pp
Hb: 978-0-8493-7492-0: **£90.00 US $169.95**

Fracture Mechanics of Concrete and Concrete Structures

Proceedings of the 6th International Conference on Fracture Mechanics of Concrete and Concrete Structures, Catania, Italy, 17-22 June 2007, 3-Volumes

Edited by **Alberto Carpinteri**, Politecnico di Torino, Italy, **Pietro G. Gambarova**, Politecnico di Milano, Department of Structural Engineering, Italy, **Giuseppe Ferro**, Politecnico di Torino, Department of Structural Engineering and Geotechnics - Italian Group of Fracture, Italy and **Giovanni Plizzari**, University of Brescia, Italy

These three volumes present a wealth of information on Fracture Mechanics of Concrete and Concrete Structures, and will be useful to professional civil engineers, postgraduate students and researchers.

Selected contents:

Volume 1, New Trends in Fracture Mechanics of Concrete, is divided into four parts: (1) Theoretical and Numerical Methods in Fracture Mechanics of Concrete; (2) Experimental Methods in Fracture Mechanics of Concrete; (3) Constitutive Damage Modelling of Concrete; (4) Time Effects in the Damage and Fracture of Concrete.

Volume 2, Design, Assessment and Retrofitting of RC Structures, also has four parts: (1) Theoretical and Experimental Investigation on the Mechanical Behaviour of RC Structures; (2) Practical Problems in RC Structural Applications; (3) Monitoring and Assessment of RC Structures ; (4) Maintenance and Retrofitting of RC Structures.

Volume 3, High-Performance Concrete, Brick-Masonry and Environmental Aspects, is divided into four parts: (1) High-Performance Concrete; (2) Fiber Reinforced Concrete; (3) Brick-Masonry and other Quasi-Brittle Materials; and (4) Environmental Issues.

2007: 246x174: 1958pp
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New Trends in Fracture Mechanics of Concrete

Fracture Mechanics of Concrete and Concrete Structures, Volume 1 of the Proceedings of the 6th International Conference on Fracture Mechanics of Concrete and Concrete Structures, Catania, Italy, 17-22 June 2007, 3-Volumes

Edited by **Alberto Carpinteri**, Politecnico di Torino, Italy, **Pietro G. Gambarova**, Politecnico di Milano, Department of Structural Engineering, Italy, **Giuseppe Ferro**, Politecnico di Torino, Department of Structural Engineering and Geotechnics - Italian Group of Fracture, Italy and **Giovanni Plizzari**, University of Brescia, Italy

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Fracture Mechanics of Concrete and Concrete Structures, Vol. 2 of the Proceedings of the 6th International Conference on Fracture Mechanics of Concrete and Concrete Structures, Catania, Italy, 17-22 June 2007, 3-Volumes

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2nd International Conference on Concrete Repair, Rehabilitation and Retrofitting, ICCRRR-2, 24-26 November 2008, Cape Town, South Africa

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Steel and Composite Structures

Proceedings of the Third International Conference on Steel and Composite Structures (ICSCS07), Manchester, UK, 30 July-1 August 2007

Edited by **Y. C. Wang**, University of Manchester, UK and **C.K. Choi**, Korean Advanced Institute of Science and Technology, Daejon, South Korea

2007: 246x174: 1097pp
Hb: 978-0-415-45141-3: **£169.00 US $319.00**

Forthcoming

Hybrid Simulation

Theory, Implementation and Applications

Edited by **Victor Saouma** and **M.V. Sivaselvan**, University of Colorado at Boulder, CO, USA

2008 *Hybrid Simulation: Theory, Implementation and Applications* deals with a rapidly evolving technology combining computer simulation (typically finite element) and physical laboratory testing of two complementary substructures. It is a cost effective alternative to shaking table test, and allows for the improved understanding of complex coupled systems. Traditionally, numerical simulation and physical tests have been uncoupled and performed separately. In this simulation paradigm the coupled nature of the simulation allows for improved understanding, and more efficient design since the factor of safety does not have to be arbitrarily inflated to account for uncertainties of uncoupling. It is a multidisciplinary technology which relies heavily on control theory, computer science, numerical techniques and finds applications in aerospace, civil, and mechanical engineering.

May 2008: 7 x 9: 232pp
Hb: 978-0-415-46568-7: **£59.00 US $109.95**
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Emerging Technologies in NDT

Edited by **Gerhard Busse**, University of Stuttgart, Stuttgart, Germany, **Danny Van Hemelrijck**, Vrije Universiteit Brussel, Brussels, Belgium, **Igor Solodov**, University of Stuttgart, Stuttgart, Germany and **Athanasios Anastasopoulos**, Envirocoustics S.A., Athens, Greece

Non-destructive testing (NDT) is a general task pertinent to nearly every field of human activity from the assuring of aircraft integrity to the evaluation of infrastructural decay caused by deterioration or damage. The development of non-destructive methods for quality management results in economic and environmental benefits, in an increase in product reliability, and in improved public safety and security.

This book is the fourth proceedings volume and includes over fifty edited papers that were presented during the 4th International Conference 'Emerging Technologies in NDT', which was held in Stuttgart from in 2007. This event brought together a truly international group of scientists and practitioners to discuss the progress that was made in this important field during the preceeding four years. As a result this volume covers the whole spectrum of cutting-edge NDT methods, including optical, acoustic, ultrasonic, and electromagnetic techniques, tomography, radiography, and thermography. It is a unique collection of papers dealing with innovative developments of NDT methodologies and new applications of mature inspection technologies.

This publication is of particular interest to a wide NDT community, including scientists, engineers, practitioners, and quality assurance managers involved in the study, testing and maintenance of machinery, products and components in laboratory and industrial environments. It will also form helpful background reading for academics and lecturers and will inspire PhD-students specialising in mechanical engineering, material science, aerospace and adjacent scientific and engineering fields for further research in NDT.

July 2008: 246x174: 375pp
Hb: 978-0-415-46476-5: **£85.00 US $149.95**

Applications of Statistics and Probability in Civil Engineering

Proceedings of the 10th International Conference, held in Tokyo, Japan, 31 July - 3 August 2007

Edited by **Jun Kanda**, University of Tokyo, Japan, **Tsuyoshi Takada**, University of Tokyo, Japan and **Hitoshi Furuta**, Kansai University, Osaka, Japan

The papers in *Application of Statistics and Probability in Civil Engineering* address current and developing theories, applied research, and innovative applications in broad areas including reliability theory, uncertainty modeling and analysis, stochastic method, life cycle assessment, performance-based engineering, and risk assessment and management.

2007: 246x174: 632pp
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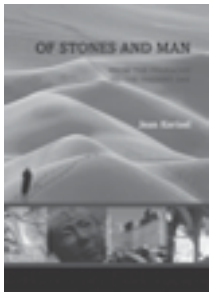
Of Stones and Man

From the Pharaohs to the Present Day

Jean Kerisel



Of Stones and Man explores the many errors of judgement made by civilizations both ancient and modern across the world. Arrogance and a penchant for excess drove mankind to build ever greater and more ambitious edifices. The author analyzes these works from a scientific and historically-sensitive perspective, highlighting the hydro-geological background to repeated infamous disasters, from the faults inherent in the Sphinx to the leaning Tower of Pisa. Beautifully illustrated throughout, *Of Stones and Man* is a testament to the impermanence of our surroundings. It questions how the earth and its resources have borne the cumulative burden placed upon it over the ages by one civilization after another, and how, in turn, the earth has exacted its inevitable revenge on the great constructions of our ancestors. *Of Stones and Man* is the final work of Jean Kerisel (1908-2005) who served as President of the International Society for Soil Mechanics and Foundation Engineering from 1973 to 1977, and who worked worldwide as a consultant on many ambitious engineering projects. Driven by his great passion for Ancient Builders and Egyptology, Kerisel here extends his professional knowledge into the realms of historical architecture.

2005: 285x214: 152pp
Pb: 978-0-415-38345-5: **£22.50 US $39.95**
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Food and Water Security

U. Aswathanarayana, Mahadevan International Centre for Water Resources Management Hyderabad, India

The UN Millennium Summit of 2000 pledged to halve by 2015 the 850 million undernourished people in the world. Food Security has two principal dimensions: Food Production, and Food Consumption, both of which have to be economically viable in order to be sustainable. Food security is critically dependent upon optimizing the use of soil and water. Food availability is a necessary, but not a sufficient, condition for food security. Food security at the aggregate level may not necessarily translate into food security at the family level. The key challenge of growing more food with less water has both science-based and people-based dimensions.This volume deals with ways and means of managing food and water security in various agroclimatic environments through the integration of R. & D., training, people participation, agronomic practices, economic instruments, and administrative policies. It includes reviewed contributions by global experts in the field, who elaborate on the governance of food security, the biophysical dimensions of more food per drop, as well as on the socioeconomic dimensions of food security. This volume is recommended reading for professionals, water and agricultural scientists, engineers, planners and policy makers in the field of food and water security.

Selected Contents: I - Biophysical Dimensions of food security: 1. Remote Sensing of irrigated agriculture; 2. Remote sensing of soil parameters in relation to the productivity of food crops; 3. Crop production forecasting through remote sensing; 4. Agrobiotechnology in relation to food security Development of drought – and salinity-tolerant crop varieties; 5. Preparation of hydroclimatic calendar; 6. Soil microorganisms in relation to soil productivity; 7. Soil geochemistry in relation to soil productivity; 8. Conservation of soil moisture in relation to soil productivity9. Soil Health cards; 10. How to do with less water; 11. Irrigated agriculture for food security; 12. Use of wastewater and brackish water in irrigation; 13. The SRI method of producing more rice with less water; 14. Aerobic rice; 15. Quality of food in relation to the quality of irrigation water; 16. Rainfed Agriculture; 17. Overview and Integration; II - Socioeconomic Dimensions of food security: 18. Fermented foods; 19. Food preferences; 20. Food consumption in relation to irrigation water demand; 21. Availability, Acceptability and Accessibility of food; 22. Micro-enterprises and food security; 23. Water harvesting and administration; 24. Techno-socio-economic policy on Food Security; 25. Technology Transfer modalities; 26. Implementation level – Role of Village Knowledge Centres; 27. Overview and Integration Editor; III - Governance of food security in different agro climatic and socioeconomic settings: 28. Knowledge-based strategies to achieve food security; 29. China : Governance of food security, with reference to farming in loess areas30. India: Governance of food security, with reference to farming in the alluvial areas; 31. Brazil : Governance of food security in the tropical rainforest area of Amazonia; 32. Mozambique: Governance of food security in an IDC in Sub-Saharan Africa; 33. Trinidad and Tobago : Governance of food security, with reference to seafood; 34. Overview and Integration

Oct. 2007: 246x174mm: 360pp
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Civil Engineering & Environmental Systems

Editor: **Paul W. Jowitt** - School of the Built Environment, Heriot-Watt University, Strathclyde, UK

Civil Engineering and Environmental Systems is the only Journal devoted to the discussion, dissemination and development of systems techniques and their underlying assumptions through the spectrum of civil engineering activity and environmental decision-making and management. The Journal provides a comprehensive approach to the practical application and development of "hard" and "soft" systems methodologies.

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Geomechanics and Geoengineering: An International Journal

New in 2006!

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Geomechanics and Geoengineering will be a major publication channel for research in the areas of soil and rock mechanics, geotechnical and geological engineering, engineering geology, geoenvironmental engineering and all geo-material related engineering and science disciplines. TheJournal provides an international forum for the exchange of innovative ideas, especially between researchers in Asia and the rest of the world. The Journal welcomes papers concerned with any aspect of geomechanics and geoengineering, including material behaviour, analysis procedures, design and construction

Volume 3, 2008; 4 issues per year; ISSN Print 1748-6025; ISSN Online 1748-6033
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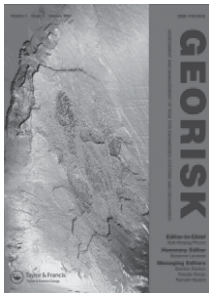

Georisk covers many diversified but interlinked areas of active research and practice, such as geohazards (earthquakes, landslides, avalanches, rockfalls, tsunamis, etc.), safety of engineered systems (dams, buildings, offshore structures, lifelines, etc.), environmental risk, seismic risk, reliability-based design and code calibration, geostatistics, decision analyses, structural reliability, maintenance and life cycle performance, risk and vulnerability, hazard mapping, loss assessment (economic, social, environmental, etc.), GIS databases, remote sensing, and many other related disciplines. The basic goal of this international peer-reviewed journal is to provide a multi-disciplinary scientific forum for cross fertilization of ideas between interested parties working on various aspects of georisk to advance the state-of-the-art and the state-of-the-practice.

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The International Journal of Pavement Engineering is dedicated to the publication of cutting edge research and development in such important types of structures and facilities, including advanced analytical and computational techniques, pavement mechanics, laboratory techniques, non-destructive testing, innovative design approaches and their implementation, construction, performance, maintenance and rehabilitation techniques.

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International Journal of Mining, Reclamation and Environment

Editor-in Chief: **Raj K. Singhal** - P.O. Box 68002, Crowfoot Postal Outlet, 28 Crowfoot Terrace NW, Calgary, Alberta, T3G 1YO, Canada

The journal covers all aspects of mining and environmental technology relating to coal, oilsands, industrial minerals and metalliferous deposits. Environmental issues specially identified for coverage include: Environmental impact assessment and permitting; mining and processing technologies; waste management and waste minimization practices; mine site closure, decommissioning and reclamation; acid mine drainage. Mining issues to be covered include: Design of surface and underground mines (economics, geotechnical, production scheduling, ventilation); mine optimization and planning; mining geostatics, drilling and blasting technologies; material handling systems; mine equipment. The role of computers and micro-processor based technology are also covered.

Volume 22, 2008; 4 issues per year; ISSN Print 1748-0930; ISSN Online 1748-0949
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Structure & Infrastructure Engineering- Maintenance, Management and Life-Cycle Design & Performance

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Structure & Infrastructure Engineering is an international journal dedicated to recent advances in maintenance, management and lifecycle performance of a wide range of infrastructures such as: buildings, bridges, dams, underground constructions, offshore platforms, pipelines, naval vessels, ocean structures, nuclear power plants, airplanes and other types of structures including aerospace and automotive structures. The aim of this journal is to present research and developments on the most advanced technologies for analyzing, predicting and optimizing infrastructure performance. To this end, the journal will provide a forum for a broad blend of scientific, technical and practical papers.

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Journal of Earthquake Engineering
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The Journal of Earthquake Engineering is a bimonthly publication of peer-reviewed papers on research and development in analytical, experimental and field studies of earthquakes from an engineering seismology as well as a structural engineering viewpoint. The Journal combines the three most important ingredients for a successful technical publication; the highest possible technical quality, speed of publication and competitive subscription rates. The journal draws on research and development work from engineering communities worldwide in the fields of earthquake engineering and engineering seismology. Work on experimental, analytical, design, and field studies will be considered for publication.

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Volume 3, 2008; 4 issues per year; ISSN Print1744-5302;
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International Journal of Remote Sensing

An official journal of the Remote Sensing and Photogrammetry Society Taylor & Francis

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The International Journal of Remote Sensing is concerned with the science and technology of remote sensing and the applications of remotely sensed data in all major disciplines. Principal topics are: data collection, analysis, interpretation and display; surveying from space, air and water platforms; sensors; image processing; use of remotely sensed data; economic surveys and cost-benefit analyses. The journal contains primary papers on basic science, techniques and applications, and a section of Remote Sensing Letters containing material that merits fast publication. Most papers feature illustrations in colour.

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Marine Geodesy

An International Journal of Ocean Surveys, Mapping, and Sensing

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The aim of Marine Geodesy is to stimulate progress in ocean surveys, mapping, and remote sensing by promoting problem-oriented research in the marine environment. Topics cover topography and mapping, satellite altimetry, bathymetry, positioning, precise navigation, boundary demarcation and determination, tsunamis, plate/tectonics, geoid determination, acoustics and space instrumentation, ground truth, and system calibration.

Volume 31, 2008; 4 issues per year
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Marine Georesources & Geotechnology

Editors-in-Chief: **Michael J. Cruickshank**, Consulting Marine Mining Engineer MMTC Associates, Honolulu **Ronald C. Chaney**, Department of Environmental Resources Engineering, Humboldt State University, Arcata, CA

Marine Georesources & Geotechnology publishes research applied to the scientific and engineering aspects, and the management and utilization, of seafloor sediments and rocks. The journal is intended for researchers and engineers, in both academia and industry, who seek solutions to problems in marine mineral resources and civil engineering. Areas covered range from marine minerals exploration and recovery to anchoring and mooring systems, bottom installations, and coastal engineering structures. The journal includes the study of acoustical, biological, chemical, mechanical, and physical properties affecting the geological system of the seafloor and response of this system to applied static and dynamic loads. Special emphasis is placed on the environmental aspects of seafloor exploration and development. The journal accepts contributions on topics such as shipboard mining systems, seafloor lodes, nodules, phosphates, crusts and placers, pipelines, platforms, and processing and transportation, as well as analytic techniques related to marine mining.

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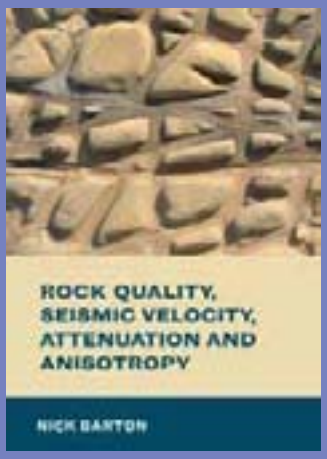

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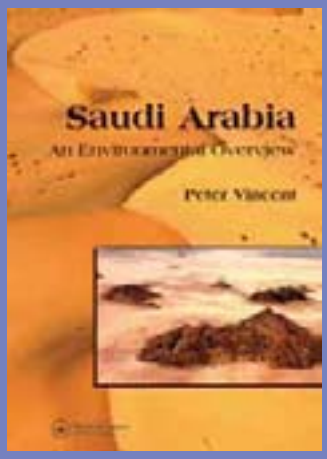

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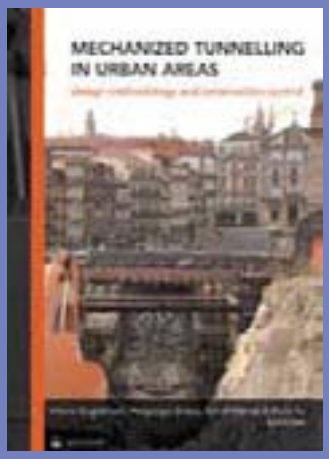

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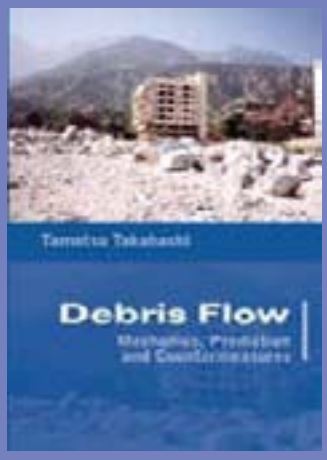

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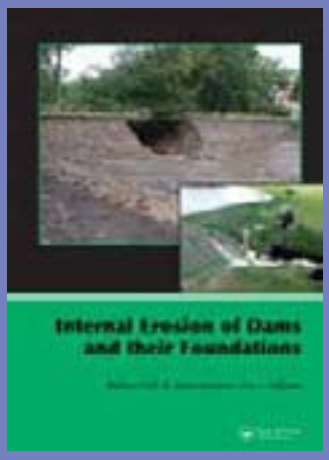

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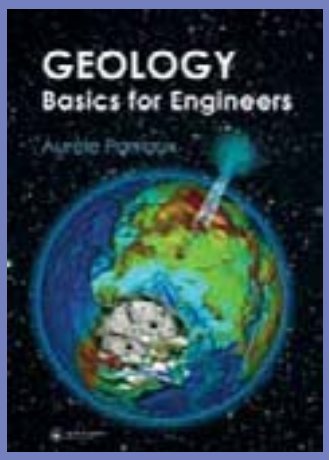

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