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Frontiers in Offshore Geotechnics III - Vaughan Meyer 2015-05-15
Frontiers in Offshore Geotechnics III comprises the contributions presented at the Third International Symposium on Frontiers in Offshore Geotechnics (ISFOG, Oslo, Norway, 10-12 June 2015), organised by the Norwegian Geotechnical Institute (NGI). The papers address current and emerging geotechnical engineering challenges facing those working in off

Jetties and Wharfs - Crow 2021-04-04
For centuries, jetties and wharfs have been designed and built around the world and play an important role in contemporary ports. The difference in the use of jetties, piers and wharfs is that jetties are frequently used for the transhipment and storage of light materials and ro-ro traffic, while piers are generally used for heavy loads like iron ore. That is why piers are mostly designed and constructed like quay walls (which are beyond the scope of this handbook). The designs were originally based on trial and error and the insights of those who dared to conquer local conditions, such as wind, waves, currents and soil composition. Design and construction techniques have since evolved into the designs we see on the coast or in river ports and seaports nowadays. The purpose of this handbook is to provide insight and guidelines regarding aspects that are important in the design of jetties and wharfs. Jetty-specific issues such as loads, interfaces between materials, installations on jetties and wharfs, as well as detailing aspects, are also covered. This handbook is part of a series of Dutch port infrastructure design recommendations that include the Quay Walls handbook and Jetties and Wharfs handbook.
Near Surface 2004 - 2004

Sinkholes and Subsidence - Tony Waltham 2007-03-15
"Sinkholes and Subsidence" provides a twenty-first century account of how the various subsidence features in carbonate and evaporite rocks cause problems in development and construction in our living environment. The authors explain the processes by which different types of sinkholes develop and mature in karst terrains. They consider the various methods used in site investigations, both direct and indirect, to locate the features associated with these hazards and risks, highlighting the value of hazard mapping. Various ground improvement techniques and the special types of foundation structures which deal with these problems are covered in the second half of the text. This book is supplemented with a wealth of actual case studies and solutions, written by invited experts.
Manual for the Geotechnical Design of Structures to Eurocode 7 - Institution of Structural Engineers (Great Britain) 2013

Foundations in Carbonate Soils - Pierre Le Tirant 1994

Geological Hazards in the UK - D.P. Giles 2020-06-09
The UK is perhaps unique globally in that it presents the full spectrum of geological time, stratigraphy and associated lithologies within its boundaries. With this wide range of geological assemblages comes a wide range of geological hazards, whether they be geophysical (earthquakes, effects of volcanic eruptions, tsunami, landslides), geotechnical (collapsible, compressible, liquefiable, shearing, swelling and shrinking soils), geochemical (dissolution, radon and methane gas hazards) or georesource related (coal, chalk and other mineral extraction). An awareness of these hazards and the risks that they pose is a key requirement of the engineering geologist. The Geological Society considered that a Working Party Report would help to put the study and assessment of geohazards into the wider social context, helping the engineering geologist to better communicate the issues concerning geohazards in the UK to the client and the public. This volume sets out to define and explain these geohazards, to detail their detection, monitoring and management and to provide a basis for further research and understanding.

Logging the Chalk - Rory N. Mortimore 2014
Chalk has proved to be one of the more difficult rocks to corelog as it breaks up readily during the drilling process leading to core-loss and destructuring, particularly where flints, nodular chalks, and/or fractures are present. One of the greatest difficulties is the identification of chalk engineering grade which relies heavily on fracture aperture. Obtaining the correct grade to define the depth of weathering and the depth at which fractures become closed is essential whether for tunnels in London or wind turbine piled foundations in the offshore chalks. Very few geologists and engineers have had the opportunity to study field sections in the chalk so there is little visual appreciation of the grades or the variation to expect or even what flint bands look like. To partly overcome this difficulty, both field and core sections are illustrated in this book. Equally important to recognizing chalk grade is the building of conceptual ground models for construction projects. This can only be achieved if the various chalk formations, beds, and marker beds can be identified from cores and then boreholes correlated using the marker beds. The chalk stratigraphy is accordingly covered with key formations and marker beds illustrated, and the best field sections for viewing them identified. This book is based on the standard lithostratigraphy and method of engineering description of chalk developed over many years. Also important are over 3,000 onshore and offshore chalk-cored boreholes undertaken by the author over more than 30 years. In addition, typical lithologies and weathering profiles representing the chalk formations likely to be encountered in the various onshore and offshore construction projects are illustrated using both field exposures, rotary core samples, and geophysical borehole wire-line logs. There are geological settings where information on the chalk is poor and unexpected lithologies and stratigraphies may be found. This book will enable geologists to work from first principles to construct a lithostratigraphy and define weathering boundaries.
The SUDS Manual - Bridget Woods Ballard 2007
This guidance document is aimed at providing comprehensive advice on the implementation of SUDS in the UK. It provides information for all aspects of the life cycle of SUDS, from initial planning, design through to construction and their management in the context of the current regulatory framework.
Future Development of Rock Mechanics - 2015

Engineering in Chalk - J. A. Lord 2002
This book provides guidance on engineering in chalk. It describes the chalk's geological setting, its origins, occurrence, its stratigraphy, weathering and geomorphological situations, the material and mechanical properties. The descriptions are supported by a comprehensive set of photographs. It explains recommended schemes for the engineering description and classification of chalk, building on the work presented in CIRIA PR11, 'Foundations in Chalk'. The publication looks at the mechanical and material properties of intact, in-situ and compacted chalk and considers their implications for the design and construction of earthworks, cuttings, retaining walls and anchorages. Major sections deal with the selection and design of shallow and piled foundations. Based on analysis of the results of pile testing, the book makes recommendations for the design and choice of bored, CFA, driven cast-in-place and pre-formed piles in chalk and for estimating shaft and base resistances. Contents:1 Introduction, 2 The engineering geology of chalk, 3 Description and classification of chalk, 4 Mechanical properties of the chalk, 5 Chalk in embankments and fills, 6 Cuttings, retaining structures and anchorages in chalk, 7 Shallow foundations, 8 Piled foundations, 9 Site investigations in chalk, 10 Concluding remarks, References.
Earthworks - N. A. Trenter 2001
Nothing can be built without some excavation and transfer of soil (or rock) from one part of a site to another and this makes earthworks the most common product of civil engineering operations. Although normally

seen as major structures, such as earth fill dams or large highways or railway embankments, the majority of earthworks are connected with minor civil works and building construction. Whatever the type of work, the principles are the same. Earthworks: a guide accumulates information on topics that are essential to earthworks engineering.

Manual of Soil Laboratory Testing - K. H. Head 2006

This working manual covers the basic tests for the classification and compaction characteristics of engineering soils. The book includes the use of flow diagrams, and sets out test data and calculations. It is useful to those engaged in the testing of soils in a laboratory for building and civil engineering purposes.

Geomorphology for Engineers - P. G. Fookes 2005

Geomorphological landforms and processes exert a strong influence on surface engineering works, yet comparatively little information on geomorphology is available to engineers. Thoroughly revised and with an improved format, this book presents a broad view of geomorphology, examining near-surface engineering problems associated with various landscapes. Self-contained chapters contributed by leading authorities first address the major factors that control the materials, form, and processes on the Earth's surface. The second section deals with the geomorphological processes that help shape land surfaces and influence their engineering characteristics, and the final section explore environments and landscapes.

Landslides and Climate Change: Challenges and Solutions - Robin McInnes 2007-05-10

Understanding the relationship between landslides and climate change is crucially important in planning a proactive approach to hazard and risk management. Advances in geohazard modelling and prediction enable us to be better prepared for the impacts of climate change, but there is still a need for effective risk management and informed plann

Advances in Laboratory Testing and Modelling of Soils and Shales (ATMSS) - Alessio Ferrari 2017-01-16

In this spirit, the ATMSS International Workshop “Advances in Laboratory Testing & Modelling of Soils and Shales” (Villars-sur-Ollon, Switzerland; 18-20 January 2017) has been organized to promote the exchange of ideas, experience and state of the art among major experts active in the field of experimental testing and modelling of soils and shales. The Workshop has been organized under the auspices of the Technical Committees TC-101 “Laboratory Testing”, TC-106 “Unsaturated Soils” and TC-308 “Energy Geotechnics” of the International Society of Soil Mechanics and Geotechnical Engineering. This volume contains the invited keynote and feature lectures, as well as the papers that have been presented at the Workshop. The topics of the lectures and papers cover a wide range of theoretical and experimental research, including unsaturated behaviour of soils and shales, multiphysical testing of geomaterials, hydro–mechanical behaviour of shales and stiff clays, the geomechanical behaviour of the Opalinus Clay shale, advanced laboratory testing for site characterization and in–situ applications, and soil – structure interactions.

Engineering in Mercia Mudstone - R. J. Chandler 2001

The Mercia Mudstone Group, part of the Triassic Series formerly known as the Keuper Marl, is a sequence dominated by mudstones that underlies much of central and southern England and parts of Northern Ireland, on which many urban areas and their attendant infrastructure are built. These strata affect the construction industry mainly in operations such as foundations, excavations and earthworks. When designing earthworks or structural foundations in, on or using Mercia mudstone, the designer needs to understand how the engineering properties are linked to the geological history.

Engineering Geology of the Channel Tunnel - C. S. Harris 1996

The Channel Tunnel has been called the greatest engineering project of the century, overcoming a unique set of financial, political and engineering challenges. This book provides a comprehensive insight into the events which culminated in the first dry link between Britain and France. It describes the relationship between the site investigation, data interpretation and construction of the works. It examines areas such as the difficulties inherent in predicting geology from a relatively small number of boreholes and revealing how the use of modern geophysical techniques.

Offshore Energy Structures - Madjid Karimirad 2014-12-05

This book provides all the key information needed to design offshore structures for renewable energy applications successfully. Suitable for practicing engineers and students, the author conveys design principles and best practices in a clear, concise manner, focusing on underlying physics while eschewing complicated mathematical detail. The text connects underlying scientific theory with industry standards and practical implementation issues for offshore wind turbines, wave energy converters and current turbines. Combined concepts such as wave-wind energy platforms are discussed, as well. Coverage of design codes and numerical tools ensures the usefulness of this resource for all those studying and working in the rapidly expanding field of offshore renewable energy.

ICP Design Methods for Driven Piles in Sands and Clays - Richard Jardine 2005

While axial capacity is often the governing design criterion with driven piles, the reliability of predictions made by conventional procedures is generally poor. A long-term research program run at Imperial College London in conjunction with Industry, the UKs Health and Safety Executive and Engineering and Physical Sciences Research Council led to the new design recommendations published by Jardine and Chow in 1996. Their procedures offered considerable improvements and have been applied worldwide in many offshore, marine and onshore projects.

British Upper Cretaceous Stratigraphy - Rory N. Mortimore 2001

Covers circa 37 sites - including famous Chalk sites such as the white cliffs of Dover and the banded cliffs at Hunstanton. This work explains the stratigraphical systems to give context to the detailed site reports.

The Periglaciation of Great Britain - Colin K. Ballantyne 1994

Knowledge of periglacial structures and deposits is important for engineering operations and for the reconstruction of the climatic environment of the past. The effects of periglaciation on the British landscape are synthesised in this undergraduate text. The landforms, deposits and sedimentary structures that developed under conditions of arctic severity during the Quaternary Era are described, as well as more recent features that have formed due to processes currently active on British mountains. The book draws together a wide range of theoretical and laboratory research, and recent work from arctic and alpine environments to explain the origins and significance of the relic periglacial features we see in Britain. The book is divided into four parts, beginning with an introduction to the concept of periglaciation, and the necessary chronological and environmental background. Periglacial phenomena in lowland and upland Britain are then considered, along with the relevant theory and current knowledge of these phenomena. Three contrasting periglacial environments are reconstructed in the final chapters. The book forms a valuable synthesis for undergraduates and a useful reference for introductory courses. '... excellent new volume ... in one volume the authors have attempted to bring together virtually all the evidence available for periglacial activity in Britain. This is no small task, yet they have achieved their aims impressively' Geological Magazine 'well illustrated with many diagrams and photographs of good quality ... will become a basic reference work for UK based geomorphologists and Quaternary scientists' Journal of Quaternary Science

Proceedings of the Institution of Civil Engineers - 2005

Recommendations on Piling (EA Pfähle) - Geotechnik 2013-12-09

This handbook provides a complete and detailed overview of piling systems and their application. The design and construction of piled foundations is based on Eurocode 7 and DIN 1054 edition 2010 as well as the European construction codes DIN EN 1536 (Bored piles), DIN EN 12699 (Displacement piles) and DIN EN 14199 (Micropiles). These recommendations also deal with - categorisation of piling systems, - actions on piles from structural loading, negative skin friction and side pressure, - pile resistances from static and dynamic pile test loading as well as extensive tables with the pile load-bearing capacity of nearly all piling systems based on values from practical experience, - pile groups, - performance of static and dynamic test loading and integrity tests, - load-bearing behaviour and verifications for piles under cyclical, dynamic and impact actions - quality assurance for construction. An appendix with numerous calculation examples completes the work. As part of the approval procedure for offshore wind energy structures, the Federal Office for Shipping and Hydrography (BSH) demands verifications according to the new Chapter 13 ("Load-bearing behaviour and verifications for piles under cyclical, dynamical and impact actions") of the EA Pfähle (the recommendations of the Piling working group - 2nd edition), which deals with external pile resistance for the foundations of offshore wind energy structures and the types of verifications to be provided under cyclical actions. The publication of the EA-Pfähle recommendations by the Piling working group of the German Society for Geotechnics (DGGT), which works with the same members as the piling standards committee NA 00-05-07, is intended to provide assistance for engineers active in the design, calculation and construction of piled

foundations. The recommendations can thus be considered as rules of the technology and as a supplement to the available codes and standards.

Intermediate Offshore Foundations - Steve Kay 2021-06-21

Intermediate foundations are used as anchors for floating platforms and ancillary structures, foundations for steel jackets, and to support seafloor equipment and offshore wind turbines. When installed by suction, they are an economical alternative to piling, and also may be completely removed. They are usually circular in plan and are essentially rigid when laterally loaded. Length to diameter embedment ratios, L/D, generally vary between 0.5 and 10, spanning the gap between shallow and deep foundations, although these are indicative boundaries and the response, rather than the embedment ratio, defines an intermediate foundation. The first chapters introduce foundation types; compare shallow, intermediate and deep foundation models and design; define unique design issues that make intermediate foundations distinct from shallow and deep foundations, as well as list their hazards that mainly occur during installation. Later chapters cover installation, in-place resistance and in-place response, and miscellaneous design considerations. There is no general agreement as to which design methods/models are appropriate, so models should only be as accurate as the data. Therefore, several reasonably accurate models are provided together with comprehensive discussion and advice. Example calculations and over 200 references are also included. This is the first book dedicated to the geotechnical design of intermediate foundations, and it will appeal to professional engineers specialising in the offshore industry.

Practical Guide to Geo-Engineering - Milutin Srbulov 2014-04-07

This handy reference manual puts a wealth of ready-to-use information, data, and practical procedures within immediate reach of geo-engineers and technicians, whether they be in the field or office. It assembles and organizes the most-needed set of equations, tables, graphs and check-lists on six major subfields of geo-engineering: investigations, testing, properties, hazards, structures and works. This practical reference for the professional and others interested in the subject of ground engineering skips lengthy definitions to highlight best practice and methods proven most effective. While reflecting codes and standards, it also fills the gaps with non-standard approaches when existing ones are skimpy on practical details or agreement. Enhanced by 146 illustrations and 83 tables, the Practical Guide to Geo-Engineering points users to supporting information and data through its extensive reference list. Audience: This book is of interest to everyone involved in practical geo-engineering.

Coastal Chalk Cliff Instability - Rory N. Mortimore 2004

Collected from the International Conference on Coastal Rock Slope Instability: Geohazard and Risk Analysis in May 2001, these papers describe research relating to the growing hazard to communities from chalk cliff retreat on the southeast coast of England and the northwest coast of France. General topics of the papers include primary geological c

Landslide Dynamics: ISDR-ICL Landslide Interactive Teaching Tools - Kyoji Sassa 2018-01-31

This interactive book presents comprehensive information on the fundamentals of landslide types and dynamics, while also providing a set of PPT, PDF, and text tools for education and capacity development. It is the second part of a two-volume work created as the core activity of the Sendai Partnerships, the International Consortium of Landslides. The book will be regularly updated and improved over the coming years, based on responses from users and lessons learned during its application.

Micro to MACRO Mathematical Modelling in Soil Mechanics - Pasquale Giovine 2019-03-25

This special issue collects selected contributions (excluding general lectures) of a Symposium on "Micro to MACRO Mathematical Modelling in Soil Mechanics", which took place at the University of Reggio Calabria, Italy, from May 29th to June 1st, 2018. The Symposium provided an opportunity to enhance the scientific debate on the construction of mathematical models for the description of the physical behaviour of soils, as well as on the suggestions provided by the micro-mechanical observation of the matter. The focus was on the comparison between the appropriateness of models and the need of mathematics to obtain rigorous results, which involves know-how from applied mathematical physics, geotechnical engineering and mechanics of solids. The contributions were selected by the Editors and the other Members of the Scientific Committee of the Symposium: Gianfranco Capriz (Pisa, Roma), Claudio di Prisco (Milan), Wolfgang Ehlers (Stuttgart), James T. Jenkins (Cornell), Stefan Luding (Twente), David Muir Wood (Dundee), Kenichi Soga (Berkeley).

Engineering Geology and Geomorphology of Glaciated and Periglaciated Terrains - J.S. Griffiths 2017-10-18

The Engineering Group of the Geological Society Working Party brought together experts in glacial and periglacial geomorphology, Quaternary history, engineering geology and geotechnical engineering to establish best practice when working in former glaciated and periglaciated environments. The Working Party addressed outdated terminology and reviewed the latest academic research to provide an up-to-date understanding of glaciated and periglaciated terrains. This transformative, state-of-the-art volume is the outcome of five years of deliberation and synthesis by the Working Party. This is an essential reference text for practitioners, students and academics working in these challenging ground conditions. The narrative style, and a comprehensive glossary and photo-catalogue of active and relict sediments, structures and landforms make this material relevant and accessible to a wide readership.

British National Bibliography for Report Literature - 2003

Penetration Testing in the UK - Institution of Civil Engineers (Great Britain) 1989

The geotechnical engineer needs to be aware of the advantages and problems of different tests for sites with different geological conditions. Interpreting the results of penetration tests is an essentially empirical activity and as such the engineer is required to understand standard equipment and procedures. This book provides crucial information about all these considerations and is a valuable textbook of current theory and practice.

Decoding Eurocode 7 - Andrew Bond 2006-01-25

Decoding Eurocode 7 provides a detailed examination of Eurocode 7 Parts 1 and 2 and an overview of the associated European and International standards. The detail of the code is set out in summary tables and diagrams, with extensive. Fully annotated worked examples demonstrate how to apply it to real designs. Flow diagrams explain how reliability is introduced into design and mind maps gather related information into a coherent framework. Written by authors who specialise in lecturing on the subject, Decoding Eurocode 7 explains the key principles and application rules of Eurocode 7 in a logical and simple manner. Invaluable for practitioners, as well as for high-level students and researchers working in geotechnical fields.

Sustainable Urban Drainage Systems - Peter Martin 2000

This manual describes current best practice in Scotland and Northern Ireland, and sets out the technical and planning considerations for designing sustainable urban drainage systems for surface water (SUDS).

Practical Rock Mechanics - Steve Hencher 2015-08-28

An Ideal Source for Geologists and Others with Little Background in Engineering or Mechanics Practical Rock Mechanics provides an introduction for graduate students as well as a reference guide for practicing engineering geologists and geotechnical engineers. The book considers fundamental geological processes that give rise to the nature of rock masses and control their mechanical behavior. Stresses in the earth’s crust are discussed and methods of measurement and prediction explained. Ways to investigate, describe, test, and characterize rocks in the laboratory and at project scale are reviewed. The application of rock mechanics principles to the design of engineering structures including tunnels, foundations, and slopes is addressed. The book is illustrated throughout with simple figures and photographs, and important concepts are illustrated by modern case examples. Mathematical equations are kept to the minimum necessary and are explained fully—the book leans towards practice rather than theory. This text: Addresses the principles of rock mechanics as it applies to both structural geology and engineering practice Demonstrates the importance of and methods of geological characterisation to rock engineering Examines the standard methods of rock mechanics testing and measurement as well as interpretation of data in practice Explains connections between main parameters both empirically as well as on the basis of scientific theory Provides examples of the practice of rock mechanics to major engineering projects Practical Rock Mechanics teaches from first principles and aids readers’ understanding of the concepts of stress and stress transformation and the practical application of rock mechanics theory. This text can help ensure that ground models and designs are correct, realistic, and produced cost-effectively.

An Introduction to Geotechnical Processes - John Woodward 2005-03-10

The study of the solid part of the earth on which structures are built is an

essential part of the training of a civil engineer. Geotechnical processes such as drilling, pumping and injection techniques enhance the viability of many construction processes by improving ground conditions. Highlighting the ground investigation necessary for the process, the likely improvement in strength of treated ground and testing methods An Introduction to Geotechnical Processes covers the elements of ground treatment and improvement, from the control of groundwater, drilling and grouting to ground anchors and electro-chemical hardening.

Proceedings of the 2nd Vietnam Symposium on Advances in Offshore Engineering - Dat Vu Khoa Huynh 2021-12-24

This book gathers a selection of refereed papers presented at the 2nd Vietnam Symposium on Advances in Offshore Engineering (VSOE 2021), held in 2022 in Ho Chi Minh City, Vietnam. The book consists of articles written by researchers, practitioners, policymakers, and entrepreneurs addressing the important topic of technological and policy changes intended to promote renewable energies and to generate business opportunities in oil and gas and offshore renewable energy. With a special focus on sustainable energy and marine planning, the book brings together the latest lessons learned in offshore engineering, technological innovations, cost-effective and safer foundations and structural solutions, environmental protection, hazards, vulnerability, and risk management. Its content caters to graduate students, researchers, and industrial practitioners working in the fields of offshore engineering and renewable energies.

Quarterly Journal of Engineering Geology and Hydrogeology - 2004

Bearing Capacity of Roads, Railways and Airfields, Two Volume Set - Erol Tutumluer 2009-06-15

Bearing Capacity of Roads, Railways and Airfields focuses on issues pertaining to the bearing capacity of highway and airfield pavements and railroad track structures and provided a forum to promote efficient design, construction and maintenance of the transportation infrastructure. The collection of papers from the Eighth International Conference

Proceedings of the 5th International Young Geotechnical Engineers' Conference - IOS Press 2013-08-20

Geotechnical engineers are at work worldwide, contributing to sustainable living and to the creation of safe, economic and pleasant spaces to live, work and relax. With increased pressure on space and resources, particularly in cities, their expertise becomes ever more important. This book presents the proceedings of the 5th iYGEC, International Young Geotechnical Engineers' Conference, held at Marne-la-Vallée, France, from 31 August to 1 September 2013. It is also the second volume in the series Advances in Soil Mechanics and Geotechnical Engineering. The papers included here cover topics such as laboratory and field testing, geology and groundwater, earthworks, soil behavior, constitutive modeling, ground improvement, earthquake, retaining structures, foundations, slope stability, tunnels and observational methods. The iYGEC conference series brings together students and young people at the start of their career in the geotechnical professions to share their experience, and this book will be of interest to all those whose work involves soil mechanics and geotechnical engineering. The cover shows Dieppe harbour breakwater project, Louis-Alexandre de Cessart, 1776-1777. © École Nationale des Ponts et Chaussées.