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Barry's Advanced Construction of Buildings - Stephen Emmitt 2014-06-23

The third edition of Barry's Advanced Construction of Buildings expands and deepens your understanding of construction technology. It covers the construction of larger-scale buildings (primarily residential, commercial and industrial) constructed with loadbearing frames, supported by chapters on fit out and second fix, lifts and escalators, prefabrication and off-site construction and a new chapter on building obsolescence and revitalisation. Functional and performance requirements of the main building elements are emphasised throughout, as is building efficiency and meeting the challenges of limiting the environmental impact of buildings. You will find the text fully up to date with the latest building regulations and construction technologies.

Analysis and Design of Geotechnical Structures - Manuel Matos Fernandes 2020-08-27

Analysis and design of geotechnical structures combines, in a single endeavor, a textbook to assist students in understanding the behavior of the main geotechnical works and a guide for practising geotechnical engineers, designers, and consultants. The subjects are treated in line with limit state design, which underpins the Eurocodes and most North America design codes. Instructors and students will value innovative approaches to numerous issues refined by the experience of the author in teaching generations of enthusiastic students. Professionals will gain from its comprehensive treatment of the topics covered in each chapter, supplemented by a plethora of informative material used by consultants and designers. For the benefit of both academics and professionals, conceptual exercises and practical geotechnical design problems are proposed at the end of most chapters. A final annex includes detailed resolutions of the exercises and problems.

Design of Axially Loaded Piles - European Practice - F. De Cock 2020-12-17

This book is unique on the subject because it is not so much a collection of individual work, but basically comprising national reports from most European countries on the present-day design methods, as prescribed in more or less strict national codes or recommendations and so daily used in practice by consulting engineers and contractors. As far as already implemented, the application of these methods within the framework of Eurocode 7 is described as well. In order to improve the understanding of the design methods, the national papers also consider aspects such as the local piling practice, limitations of the design methods, some practical examples and particular national experiences. The proceedings also include the contributions of two invited speakers as well as those of the three session discussion leaders, focusing on some particular aspects with regards to pile design. The book is of particular interest for those who are involved with pile design in practice, consulting engineers, piling contractors, control organisms as well as those dealing with geotechnical normalisation and research work.

Baltic Piling - M. Mets 2013-07-29

'Baltic Piling' contains the proceedings of the 'Baltic Piling Days 2012' (Tallinn, Estonia, 3-5 September 2012). The book includes contributions on current issues in pile foundation engineering: - Interaction of pile and grillage; - Formation of pile bearing capacity - Settlements of piles - Pile foundation under historical buildings - Thermopiles, and - Interaction of geogrid and pile. 'Baltic Piling' will be of interest to engineers, academics and students interested in pile foundation engineering and related disciplines.

Full-scale Testing and Foundation Design - Mohamad H. Hussein 2012

Pile Design and Construction Rules of Thumb - Ruwan Abey Rajapakse 2016-02-20

Pile Design and Construction Rules of Thumb presents Geotechnical and Civil Engineers a comprehensive coverage of Pile Foundation related theory and practice. Based on the author's experience as a PE, the book brings concise theory and extensive calculations, examples and case studies that can be easily applied by professional in their day-to-day challenges. In its first part, the book covers the fundamentals of Pile Selection: Soil investigation, condition, pile types and how to choose them. In the second part it addresses the Design of Pile Foundations, including different types of soils, pile groups, pile settlement and pile design in rock. Next, the most extensive part covers Design Strategies and contains chapters on loading analysis, load distribution, negative skin friction, design for expansive soils, wave equation analysis, batter piles, seismic analysis and the use of softwares for design aid. The fourth part covers Construction Methods including hammers, Inspection, cost estimation, load tests, offshore piling, beams and caps. In this new and updated edition the author has incorporated new pile designs such as helical, composite, wind turbine monopiles, and spiral coil energy piles. All calculations have been updated to most current materials characteristics and designs available in the market. Also, new chapters on negative skin friction, pile driving, and pile load testing have been added. Practising Geotechnical, and Civil Engineers will find in this book an excellent handbook for frequent consult, benefiting from the clear and direct calculations, examples, and cases. Civil Engineering preparing for PE exams may benefit from the extensive coverage of the subject. Convenient for day-to-day consults; Numerous design examples for sandy soils, clay soils, and seismic loadings; Now including helical, composite, wind turbine monopiles, and spiral coil energy piles; Methodologies and case studies for different pile types; Serves as PE exam preparation material.

Basics of Foundation Design - Bengt Fellenius 2017-03-17

The "Red Book" presents a background to conventional foundation analysis and design. The text is not intended to replace the much more comprehensive 'standard' textbooks, but rather to support and augment these in a few important areas, supplying methods applicable to practical cases handled daily by practising engineers and providing the basic soil mechanics background to those methods. It concentrates on the static design for stationary foundation conditions. Although the topic is far from exhaustively treated, it does intend to present most of the basic material needed for a practising engineer involved in routine geotechnical design, as well as provide the tools for an engineering student to approach and solve common geotechnical design problems.

The Foundation Engineering Handbook - Manjriker Gunaratne 2006-01-13

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.

Piling Engineering, Third Edition - Ken Fleming 2008-09-23

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. This third edition of the 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.

ICE Specification for Piling and Embedded Retaining Walls - 2017

This edition retains the three-part approach of the second edition. Part A is an introduction to the essential concepts necessary to procure a piling or retaining wall contract. Part B is the specification and is still the only part of this document intended for incorporation in contracts. Part C provides guidance for use of the specification and essential background information for specifiers and contractors alike. Unlike the second edition, Part 3 guidance notes immediately follow the relevant Part 2 specification requirements. The three sections provide the reader with a full compendium without being overly prescriptive.

Deep Foundations on Bored and Auger Piles - BAP V - William F. Van Impe 2008-08-20

Although progressing very well over the last years, the design criteria for bored and auger piles are still not fully under control and in acceptable synergism with the real pile foundation behaviour. Although there has been a lot of research in the past years worldwide on deep foundation engineering, the strong and competitive market has

Drilled Shafts - Michael W. O'Neill 1999

Pile Design and Construction Practice, Sixth Edition - Michael Tomlinson 2014-10-08

Written to Eurocode 7 and the UK National Annex Updated to reflect the current usage of Eurocode 7, along with relevant parts of the British Standards, *Pile Design and Construction Practice, Sixth Edition* maintains the empirical correlations of the original—combining practical know how with scientific knowledge—and emphasizing relevant principles and applications of soil mechanics and design. Contractors, geotechnical engineers and engineering geologists responsible for designing and constructing piled foundations can find the most current types of pile, piling equipment, and relevant methods in this latest work. The book summarizes recent changes, including new codified design procedures addressing design parameters and partial safety factors. It also presents several examples, many based on actual problems. Broad and Comprehensive In Its Coverage Contains material applicable to modern computational practice Provides new sections on the construction of micropiles and CFA piles, pile-soil interaction, verification of pile materials, piling for integral bridge abutments, use of polymer stabilising fluids, and more 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 Covers marine structures, durability of piled foundations, ground investigations, and pile testing Addresses miscellaneous problems such as machinery foundations, underpinning, mining subsidence areas, geothermal piles, and unexploded ordnance *Pile Design and Construction Practice, Sixth Edition* serves as a comprehensive guide for practicing geotechnical engineers and engineering geologists. This text also works as a resource for piling contractors and graduate students studying geotechnical engineering.

THEORY AND PRACTICE OF FOUNDATION DESIGN - M. N. SOM 2003-01-01

This comprehensive text on foundation design is intended to introduce students of civil engineering, architecture, and environmental disciplines to the fundamentals of designing sound foundations and their

implementation. It offers an in-depth coverage of pre- and post-design methodologies that include soil identification, site investigation, interpretation of soil data and design parameters, foundations on different soil types through to settlements, seismic responses, and construction concerns. Though the book is woven around principles of foundation design, it also incorporates application aspects that bridge theory and practice. As an issue of contemporary importance it discusses geotechnical details of developing earthquake resistant designs for different soil types. In addition, the authors provide an extensive account of ground improvement techniques. Supported by the abundance of real-world events/situations and examples that help students master the text concepts, this volume becomes an incisive text and reference guide.

Deep Foundations on Bored and Auger Piles - BAP III - W. Haegeman 2020-09-29

This text presents findings from the 3rd International Geotechnical Seminar, held in Ghent, Belgium. Topics include: American experiences with large diameter bored piles; case histories; static, dynamic and pile integrity testing; and installation parameters and capacity of screwed piles.

Pile Foundations in Engineering Practice - Shamsheer Prakash 1991-01-16

This is a concise, systematic and complete treatment of the design and construction of pile foundations. Discusses pile behavior under various loadings and types of piles and their installation, including consideration of soil parameters. It provides step-by-step design procedures for piles subject to vertical loading and pullout, lateral, inclined and eccentric loads, or dynamic loads, and for piles in permafrost. Also describes load test procedures and their interpretation and buckling of long, slender piles with and without supported length. The closing chapter presents case histories of prediction and performance of piles and pile groups. Includes numerous solved problems.

Tall Building Foundation Design - Harry G. Poulos 2017-07-20

This book provides a comprehensive guide to the design of foundations for tall buildings. After a general review of the characteristics of tall buildings, various foundation options are discussed followed by the general principles of foundation design as applied to tall buildings. Considerable attention is paid to the methods of assessment of the geotechnical design parameters, as this is a critical component of the design process. A detailed treatment is then given to foundation design for various conditions, including ultimate stability, serviceability, ground movements, dynamic loadings and seismic loadings. Basement wall design is also addressed. The last part of the book deals with pile load testing and foundation performance measurement, and finally, the description of a number of case histories. A feature of the book is the emphasis it places on the various stages of foundation design: preliminary, detailed and final, and the presentation of a number of relevant methods of design associated with each stage.

Advanced Materials, Structures and Mechanical Engineering - Mosbeh Kaloop 2016-04-14

The International Conference on Advanced Materials, Structures and Mechanical Engineering 2015 (ICAMSME 2015) was held on May 29-31, Incheon, South-Korea. The conference was attended by scientists, scholars, engineers and students from universities, research institutes and industries all around the world to present ongoing research activities. This

Piling and Deep Foundations - J. B. Burland 1989

Current and Future Trends in Bridge Design, Construction and Maintenance - Parag C. Das 1999

The major expansion of transport networks in the twentieth century has been accompanied by extensive bridge construction. At the end of the century, the field of bridge engineering continues to grow and develop. Recent years have seen the construction of revolutionary new bridges, advances in materials and construction techniques and the development of international codes and standards aimed at producing more durable and reliable structures.

Deep Foundations on Bored and Auger Piles - W.F. Van Impe 1988-01-01

Papers of the 1st International Geotechnical Seminar on [title], Ghent, June 1988. Virtually all are in English (the odd papers are French) and cover general questions of soil mechanics, permafrost, design and specific topics: settlement behavior; case studies in new developments; soil testing; bear

Pile Design and Construction Practice, Fifth Edition - Michael Tomlinson 2007-12-06

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.

The Design of Piled Foundations - Thomas Whitaker 2013-10-22

The Design of Piled Foundations, Second Edition focuses on the theories which have been advanced to predict the loads which piles will carry, both singly and when used in groups to form a piled foundation. Organized into 12 chapters, this book begins with an explanation of the utilization of piles. Subsequent chapters discuss the types of piles and their construction; pile driving by vibration; the calculation of the ultimate bearing capacity of a pile from soil properties; the settlement of single piles and the choice of a factor of safety; and piles in soft soils. Other chapters describe pile testing; piles in groups with vertical loading; horizontal forces on piles and pile group; and the durability of piles.

Foundation Design and Construction - Michael John Tomlinson 2001

Design and Construction of Driven Pile Foundations .: - Aaron S. Bradshaw 2006

Foundations on Expansive Soils - Fu Hua Chen 2012-12-02

Foundations on Expansive Soils provides the practicing engineer with a summary of the state-of-the-art of expansive soils and practical solutions based on the author's experience. The book is organized into two parts. Part I deals with theory and practice, and summarizes some of the theoretical physical properties of expansive soils. It also discusses various techniques employed to found structures on expansive soils such as drilled pier foundation, mat foundation, moisture control, soil replacement, and chemical stabilization. Topics covered include the origin, mineralogical composition, and the basic structure of expansive soils; the migration of water, swelling potential, and swelling pressure; site investigations and laboratory testing; moisture control; and soil stabilization. Part II presents case studies on the following: distress caused by pier uplift; distress caused by the improper design and construction of a drilled pier foundation system; distress caused by heaving of footing pad and floor slab; distress caused by heaving of continuous footings; and distress caused by a rise of ground water.

Design of Pile Foundations - US Army Corps of Engineers 2005-01-01

This manual provides information, foundation exploration and testing procedures, load test methods, analysis techniques, allowable criteria, design procedures, and construction consideration for the selection, design, and installation of pile foundations. The guidance is based on the present state of the technology for pile-soil-structure-foundation interaction behavior. This manual provides design guidance intended specifically for the geotechnical and structural engineer but also provides essential information for others interested in pile foundations such as the construction engineer in understanding construction techniques related to pile behavior during installation. Since the understanding of the physical causes of pile foundation behavior is actively expanding by better definition through ongoing research, prototype, model pile, and pile group testing and development of more refined analytical models, this manual is intended to provide examples and procedures of what has been proven successful. This is not the last nor final word on the state of the art for this technology. We expect, as further practical design and installation procedures are developed from the expansion of this technology, that these updates will be issued as changes to this manual.

Design of Pile Foundations - Aleksandar Sedmak Vesić 1977-01-01

Foundation Design - Allan Hodgkinson 2013-08-30

Foundation Design discusses fundamental concepts in the design of foundations. As with the author's

previous work, the AJ Handbook of Building Structure, the emphasis is on practical matters and, while every architect may not aspire to more complicated designs, with the aid of this book he will be able to talk with more authority to his engineer. The book begins with an introduction to the properties rocks and soils, including sands and gravels, clays, and silts and peat. This is followed by discussions of the site investigation process, soil mechanics, and the principles of foundation design. Separate chapters cover foundation types (spread foundations and piles); foundation hazards and construction problems; and underpinning. Examples of foundation design are presented, such as simple bases, a column on the edge of a building, and examples of piling. The final two chapters discuss specifications for mass bases, reinforced pads, and trench foundations and pile caps; information to be given when inviting piling tenders; and the supervision of site works.

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.

Design of Axially Loaded Piles - European Practice - F. De Cock 2020-12-18

This book is unique on the subject because it is not so much a collection of individual work, but basically comprising national reports from most European countries on the present-day design methods, as prescribed in more or less strict national codes or recommendations and so daily used in practice by consulting engineers and contractors. As far as already implemented, the application of these methods within the framework of Eurocode 7 is described as well. In order to improve the understanding of the design methods, the national papers also consider aspects such as the local piling practice, limitations of the design methods, some practical examples and particular national experiences. The proceedings also include the contributions of two invited speakers as well as those of the three session discussion leaders, focusing on some particular aspects with regards to pile design. The book is of particular interest for those who are involved with pile design in practice, consulting engineers, piling contractors, control organisms as well as those dealing with geotechnical normalisation and research work.

Foundation Design and Construction - Michael John Tomlinson 2001

A text that introduces basic theory and uses case studies, worked examples, and design charts to cover types of foundations such as shallow strip and basement structures, and foundation design for various conditions. Includes discussion of computer-aided design, and bandw photos and diagrams. This sixth edition contains new material on bridge foundations and the draft Eurocode. For civil engineering undergraduates, and postgraduate students in geotechnical engineering, soil mechanics, and engineering geology. Annotation copyright by Book News, Inc., Portland, OR

Soil-Structure Interaction - 1972

Foundation Engineering - B.B.K. Huat 2006-01-19

This book has gathered state-of-the-art knowledge of various experts who had worked and gained extensive experience in foundation engineering in tropical residual soils.

Foundation Design and Construction - M. J. Tomlinson 1980

Pile Design and Construction Practice - Willis H. Thomas 2007-12-06

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 group

Planning and Analysis of Construction Operations - Daniel W. Halpin 1992-04-16

Focuses on the use of simulation techniques to model and evaluate repetitive construction operations. Based on the CYCLONE and MICROCYCLONE software developed by the authors and used at 38 universities nationwide, it uses a variety of examples from all areas of construction to demonstrate the application of simulation to analyze construction operations.

Geotechnics Fundamentals and Applications in Construction - Rashid Mangushev 2019-04-29

Geotechnical Fundamentals and Applications in Construction. New Materials, Structures, Technologies and Calculations contains the papers presented at the International Conference on Geotechnical Fundamentals and Applications in Construction. New Materials, Structures, Technologies and Calculations (GFAC 2019, Saint Petersburg, Russia, 6-8 February 2019). The contributions present the latest research findings, developments, and applications in the areas of geotechnics, soil mechanics, foundations, geological engineering and share experiences in the design of complex geotechnical objects, and are grouped in 8

sections: • Analytical decisions and numerical modeling for foundations; • Design and construction in geologically hazardous conditions; • Methods for surveying the features of dispersed, rocky soils and structurally unstable soils; • Exploration, territory improvement and reconstruction in conditions of compact urban planning and enterprises, etc.; • Construction, reconstruction and exploitation of infrastructure facilities in different soil conditions; • R&D support and quality control of new materials, design and technology solutions in constructing bases, foundations, underground and surface constructions; • Condition survey and accident evolution analysis in construction; • Up-to-date monitoring techniques in building construction and exploitation. Geotechnical Fundamentals and Applications in Construction. New Materials, Structures, Technologies and Calculations collects the state-of-the-art in geotechnology and construction, and will be of interest to academia and professionals in geotechnics, soil mechanics, foundation engineering and geological engineering.

Pile Design and Construction Practice - Michael Tomlinson 2014-10-08

Written to Eurocode 7 and the UK National Annex Updated to reflect the current usage of Eurocode 7, along with relevant parts of the British Standards, Pile Design and Construction Practice, Sixth Edition maintains the empirical correlations of the original-combining practical know how with scientific knowledge-and emphasizing relevant principles an

Precast concrete piles - FIB - International Federation for Structural Concrete 1986-01-01

This technical report covers all aspects of the uses of precast concrete piles - design, manufacture, transport, handling, pitching and driving. Both reinforced and prestressed concrete piles are dealt with and attention is paid to the use of both plan piles and those with enlarged toes. Although the report is a translation of parts of a set of three volumes produced in the Netherlands, those parts reproduced are internationally applicable. Special sections deal with the effects of pile driving on adjacent buildings and their occupants - both as regards vibration and noise.