

Prestressed Concrete Analysis And Design Naaman

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Reinforced and Prestressed Concrete Yew-Chaye Loo 2018-08-31 This text presents the theoretical and practical aspects of analysis and design, complemented by numerous design examples.

Reinforced and Prestressed Concrete Design to EC2 Eugene O'Brien 2017-09-01 Concrete is an integral part of twenty-first century structural engineering, and an understanding of how to analyze and design concrete structures is a vital part of training as a structural engineer. With Eurocode legislation increasingly replacing British Standards, it's also important to know how this affects the way you can work with concrete. Newly revised to Eurocode 2, this second edition retains the original's emphasis on qualitative understanding of the overall behaviour of concrete structures. Now expanded, with a new chapter dedicated to case studies, worked examples, and exercise examples, it is an even more comprehensive guide to conceptual design, analysis, and detailed design of concrete structures. The book provides civil and structural engineering students with complete coverage of the analysis and design of reinforced and prestressed concrete structures. Great emphasis is placed on developing a qualitative understanding of the overall behaviour of structures.

Prestressed Concrete Design to Eurocodes Prab Bhatt 2012-05-23 Ordinary concrete is strong in compression but weak in tension. Even reinforced concrete, where steel bars are used to take up the tension that the concrete cannot resist, is prone to cracking and corrosion under low loads. Prestressed concrete is highly resistant to stress, and is used as a building material for bridges, tanks, shell roofs, floors, buildings, containment vessels for nuclear power plants and offshore oil platforms. With a wide range of benefits such as crack control, low rates of corrosion, thinner slabs, fewer joints and increased span length; prestressed concrete is a stronger, safer, more economical and more sustainable building material. The introduction of the Eurocodes has necessitated a new approach to the design of prestressed concrete structures and this book provides a comprehensive practical guide for professionals through each stage of the design process. Each chapter focuses on a specific aspect of design Fully consistent with Eurocode 2, and the associated parts of Eurocodes 1 and 8 Examples of challenges often encountered in professional practice worked through in full Detailed coverage of post-tensioned structures Extensive coverage of design of flat slabs using the finite element method Examples of pre-tensioned and post-tensioned bridge design An introduction to earthquake resistant design using EC 8 Examining the design of whole structures as well as the design of sections through many fully worked numerical examples which allow the reader to follow each step of the design calculations, this book will be of great interest to practising engineers who need to become more familiar with the use of the Eurocodes for the design of prestressed concrete structures. It will also be of value to university students with an interest in the practical design of whole structures.

Prestressed Concrete Antoine E. Naaman 1983-01-01

Reinforced and Prestressed Concrete F. K. Kong 1998-04 This highly successful textbook has been comprehensively revised for two main reasons: to bring the book up-to-date and make it compatible with BS8110 1985; and to take into account the increasing use made of microcomputers in civil engineering. An important chapter on microcomputer applications has been added.

Prestressed Concrete Analysis and Design Antoine E. Naaman 2004-01-01

Failures in Concrete Structures Robin Whittle 2012-11-01 Some lessons are only learned from mistakes but, it's much cheaper to learn from someone else's mistakes than to have to do so from your own. Drawing on over fifty years of working with concrete structures, Robin Whittle examines the problems which he has seen occur and shows how they could have been avoided. The first and largest part of the

Prestressed Concrete Bridges Nigel R. Hewson 2003 Prestressed concrete decks are commonly used for bridges with spans between 25m and 450m and provide economic, durable and aesthetic solutions in most situations where bridges are needed. Concrete remains the most common material for bridge construction around the world, and prestressed concrete is frequently the material of choice. Extensively illustrated throughout, this invaluable book brings together all aspects of designing prestressed concrete bridge decks into one comprehensive volume. The book clearly explains the principles behind both the design and construction of prestressed concrete bridges, illustrating the interaction between the two. It covers all the different types of deck arrangement and the construction techniques used, ranging from in-situ slabs and precast beams; segmental construction and launched bridges; and cable-stayed structures. Included throughout the book are many examples of the different types of prestressed concrete decks used, with the design aspects of each discussed along with the general

analysis and design process. Detailed descriptions of the prestressing components and systems used are also included. Prestressed Concrete Bridges is an essential reference book for both the experienced engineer and graduate who want to learn more about the subject.

Stability Analysis and Design of Structures M.L. Gambhir 2013-03-09 This advanced and graduate-level text and self-tutorial teaches readers to understand and to apply analytical design principles across the breadth of the engineering sciences. Emphasizing fundamentals, the book addresses the stability of key engineering elements such as rigid-body assemblage, beam-column, beam, rigid frame, thin plate, arch, ring, and shell. Each chapter contains numerous worked-out problems that clarify practical application and aid comprehension of the basics of stability theory, plus end-of-chapter review exercises. Other key features are the citing and comparison of different national building standards, use of non-dimensional parameters, and many tables with much practical data and simplified formula, that enable readers to use them in the design of structural components. First six chapters most suitable for undergraduate-level study and remaining chapters for graduate-level courses.

FRP Composites for Reinforced and Prestressed Concrete Structures Perumalsamy Balaguru 2014-04-21 High strength fibre composites (FRPs) have been used with civil structures since the 1980s, mostly in the repair, strengthening and retrofitting of concrete structures. This has attracted considerable research, and the industry has expanded exponentially in the last decade. Design guidelines have been developed by professional organizations in a number of countries including USA, Japan, Europe and China, but until now designers have had no publication which provides practical guidance or accessible coverage of the fundamentals. This book fills this void. It deals with the fundamentals of composites, and basic design principles, and provides step-by-step guidelines for design. Its main theme is the repair and retrofit of un-reinforced, reinforced and prestressed concrete structures using carbon, glass and other high strength fibre composites. In the case of beams, the focus is on their strengthening for flexure and shear or their stiffening. The main interest with columns is the improvement of their ductility; and both strengthening and ductility improvement of un-reinforced structures are covered. Methods for evaluating the strengthened structures are presented. Step by step procedures are set out, including flow charts, for the various structural components, and design examples and practice problems are used to illustrate. As infrastructure ages worldwide, and its demolition and replacement becomes less of an option, the need for repair and retrofit of existing facilities will increase. Besides its audience of design professionals, this book suits graduate and advanced undergraduate students.

The Design of Prestressed Concrete Bridges Robert Benaim 2007-12-06 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 provided. This book enables concrete bridge designers to broaden their scope in design and provides an analysis of the necessary calculations and methods.

Concrete Segmental Bridges Dongzhou Huang 2020-01-11 Segmental concrete bridges have become one of the main options for major transportation projects world-wide. They offer expedited construction with minimal traffic disruption, lower life cycle costs, appealing aesthetics and adaptability to a curved roadway alignment. The literature is focused on construction, so this fills the need for a design-oriented book for less experienced bridge engineers and for senior university students. It presents comprehensive theory, design and key construction methods, with a simple design example based on the AASHTO LRFD Design Specifications for each of the main bridge types. It outlines design techniques and relationships between analytical methods, specifications, theory, design, construction and practice. It combines mathematics and engineering mechanics with the authors' design and teaching experience.

Prestressed Concrete Charles W. Dolan 2018-11-14 This textbook imparts a firm understanding of the behavior of prestressed concrete and how it relates to design based on the 2014 ACI Building Code. It presents the fundamental behavior of prestressed concrete and then adapts this to the design of structures. The book focuses on prestressed concrete members including slabs, beams, and axially loaded members and provides computational examples to support current design practice along with practical information related to details and construction with prestressed concrete. It illustrates concepts and calculations with Mathcad and EXCEL worksheets. Written with both lucid instructional presentation as well as comprehensive, rigorous detail, the book is ideal for both students in graduate-level courses as well as practicing engineers.

Concrete Design for the Civil and Structural PE Exams C. Dale Buckner 2008 Concrete Design for the Civil and Structural PE Exams provides you with a thorough overview of the basic theories required to solve concrete design problems on the civil PE exam and the Structural I and II exams. Easy-to-use lists of tables, figures, and concrete design nomenclature will help you to quickly locate important concrete design information. Comprehensive concrete design review for the civil PE and structural PE exams Complete overview of required codes and standards over 130 figures that illustrate the acceptable structural design criteria Increase your problem-solving speed and confidence with 37 practice problems (25 practice problems for the civil PE and Structural I exams) (10 practice problems for the Structural I exam) (2 scenario-based practice problems for the Structural II exam) Topics Covered Materials Design Specifications Flexural Design of Reinforced Concrete Beams Serviceability of Reinforced Concrete Beams Shear Design of Reinforced Concrete Columns and Compression Members Continuous One-Way Systems Two-Way Slab Systems Development of Reinforcement Prestressed Concrete Seismic Design of Reinforced Concrete Members

Basic Principles of Concrete Structures Xianglin Gu 2015-12-09 Based on the latest version of designing codes both for buildings and bridges (GB50010-2010 and JTG D62-2004), this book starts from steel and concrete materials, whose properties are very important to the mechanical behavior of concrete structural members. Step by step, analysis of reinforced and prestressed concrete members under basic loading types (tension, compression, flexure, shearing and torsion) and environmental actions are introduced. The characteristic of the book that distinguishes it from other textbooks on concrete structures is that more emphasis has been laid on the basic theories of reinforced concrete and the application of the basic theories in

design of new structures and analysis of existing structures. Examples and problems in each chapter are carefully designed to cover every important knowledge point. As a basic course for undergraduates majoring in civil engineering, this course is different from either the previously learnt mechanics courses or the design courses to be learnt. Compared with mechanics courses, the basic theories of reinforced concrete structures cannot be solely derived by theoretical analysis. And compared with design courses, this course emphasizes the introduction of basic theories rather than simply being a translation of design specifications. The book will focus on both the theoretical derivations and the engineering practices.

Design of Prestressed Concrete Structures T.Y. Lin 2013

Principles of Reinforced Concrete Zhenhai Guo 2014-07-17 Principle of Reinforced Concrete introduces the main properties of structural concrete and its mechanical behavior under various conditions as well as all aspects of the combined function of reinforcement and concrete. Based on the experimental investigation, the variation regularity of mechanical behavior, working mechanism, and calculation method are presented for the structural member under various internal forces. After examining the basic principle and analysis method of reinforced concrete, the book covers some extreme circumstances, including fatigue load, earthquake, explosion, high temperature (fire accident), and durability damage, and the special responses and analysis methods of its member under these conditions. This work is valuable as a textbook for post-graduates, and can be used as a reference for university teachers and undergraduates in the structural engineering field. It is also useful for structural engineers engaged in scientific research, design, or construction. Focuses on the principles of reinforced concrete, providing professional and academic readers with a single volume reference Experimental data enables readers to make full use of the theory presented The mechanical behavior of both concrete and reinforcement materials, plus the combined function of both are covered, enabling readers to understand the behaviors of reinforced concrete structures and their members Covers behavior of the materials and members under normal and extreme conditions

Design of Prestressed Concrete R. I. Gilbert 1990-09-13 Providing both an introduction to basic concepts and an in-depth treatment of the most up-to-date methods for the design and analysis of concrete of structures, "Design of Prestressed Concrete" will service the needs of both students and professional engineers.

Prestressed Concrete Bridges Christian Menn 2012-12-06 This book was written to make the material presented in my book, Stahlbetonbrücken, accessible to a larger number of engineers throughout the world. A work in English, the logical choice for this task, had been contemplated as Stahlbetonbrücken was still in its earliest stages of preparation. The early success of Stahlbetonbrücken provided significant impetus for the writing of Prestressed Concrete Bridges, which began soon after the publication of its predecessor. The present work is more than a mere translation of Stahlbetonbrücken. Errors in Stahlbetonbrücken that were detected after publication have been corrected. New material on the relation between cracking in concrete and corrosion of reinforcement, prestressing with unbonded tendons, skew-girder bridges, and cable-stayed bridges has been added. Most importantly, however, the presentation of the material has been extensively reworked to improve clarity and consistency. Prestressed Concrete Bridges can thus be regarded as a thoroughly new and improved edition of its predecessor.

Post-Tensioned Concrete Principles and Practice: Fourth Edition K. Dirk Bondy 2018-12-17 The book combines history with academic notes for use at the university level, presenting design examples from actual jobs with applications and detailing for the practicing engineer. Chapter 1 tells the history of post-tensioned concrete as only Ken Bondy can tell it. Chapters 2-8 are the notes Dirk Bondy uses to teach Design of Prestressed Concrete Structures at UCLA and Cal Poly-San Luis Obispo. Chapters 9-13 are design examples that address many of the decisions faced by practicing engineers on typical projects. Chapters 13-14 cover the art of detailing and observing the construction of post-tensioned concrete. This knowledge was obtained over many years of working on our own projects and listening and learning from the the pioneers of post-tensioned concrete. Chapter 15 covers the slab on grade industry, which represents more sales of post-tensioning tendons than all other post-tensioning applications combined. Chapter 16 discusses the challenging application of post-tensioning—external post-tensioning.

Reinforced Concrete Edward G. Nawy 2009 Now reflecting the new 2008 ACI 318-08 Code and the new International Building Code (IBC-2006), this cutting-edge text has been extensively revised to present state-of-the-art developments in reinforced concrete. The text analyzes the design of reinforced concrete members through a unique and practical step-by-step trial and adjustment procedure. It is supplemented with flowcharts that guide readers logically through key features and underlying theory. Hundreds of photos of tests to failure of concrete elements help readers visualize this behavior. Ideal for practicing engineers who need to contend with the new revisions of the ACI, IBC, and AASHTO Codes.

Prestressed Concrete N. Rajagopalan 2005 The revised edition of this hallmark text is updated with the recent developments in design, construction and maintenance of Prestressed Concrete Structures. It incorporates the integrated limit state concepts in design with emphasis on the practical aspe.

Fiber Reinforced Cement and Concrete Composites Antoine E. Naaman 2017

PCI Design Handbook 2017

Design of Prestressed Concrete to AS3600-2009 Raymond Ian Gilbert 2016-02-17 The design of structures in general, and prestressed concrete structures in particular, requires considerably more information than is contained in building codes. A sound understanding of structural behaviour at all stages of loading is essential. This textbook presents a detailed description and explanation of the behaviour of prestressed concret

Reinforced Concrete Design to Eurocodes Prab Bhatt 2014-02-28 This established and popular textbook has now been extensively rewritten and expanded in line with the current Eurocodes. It presents the principles of the design of concrete elements and also the design of complete structures, and provides practical illustrations of the theory. It explains the background to the Eurocode rules and goes beyond the c

Reinforced Concrete Fundamentals Phil M. Ferguson 1988-01-18 This Fifth Edition maintains the basic Ferguson approach in which design procedures stem from and provide the basis for a clear understanding of the behavior of reinforced concrete. Behavior of reinforced concrete members and assemblages at every load stage is illustrated with illustrations and photos, and

calculation models that relate to the physical behaviors are provided to help students and practitioners recognize and assess various design situations. To avoid confusion, many of the examples now use customary or English units, rather than SI units as in the Fourth Edition. This edition conforms to the technical changes in the '83 and '86 revisions to the ACI Building Code. In this edition, service load analysis of stresses, computations of deflection and distribution of reinforcement to control crack widths have been incorporated with the sections that treat analysis and design of flexural members. Material relating to seismic design has been revised and expanded, and more emphasis has been placed on developing conceptual models for design.

Design of Prestressed Concrete to Eurocode 2, Second Edition Raymond Ian Gilbert 2017-01-27 The design of structures in general, and prestressed concrete structures in particular, requires considerably more information than is contained in building codes. A sound understanding of structural behaviour at all stages of loading is essential. This textbook presents a detailed description and explanation of the behaviour of prestressed concrete members and structures both at service loads and at ultimate loads and, in doing so, provide a comprehensive and up-to-date guide to structural design. Much of the text is based on first principles and relies only on the principles of mechanics and the properties of concrete and steel, with numerous worked examples. However, where the design requirements are code specific, this book refers to the provisions of Eurocode 2: Design of Concrete Structures and, where possible, the notation is the same as in Eurocode 2. A parallel volume is written to the Australian Standard for Concrete Structures AS3600-2009. The text runs from an introduction to the fundamentals to in-depth treatments of more advanced topics in modern prestressed concrete structures. It suits senior undergraduate and graduate students and also practising engineers who want comprehensive introduction to the design of prestressed concrete structures. It retains the clear and concise explanations and the easy-to-read style of the first edition, but the content has been extensively re-organised and considerably expanded and updated. New chapters cover design procedures, actions and loads; prestressing systems and construction requirements; connections and detailing; and design concepts for prestressed concrete bridges. The topic of serviceability is developed extensively throughout. All the authors have been researching and teaching the behaviour and design of prestressed concrete structures for over thirty-five years and the proposed new edition of the book reflects this wealth of experience. The work has also gained much from Professor Gilbert active and long-time involvement in the development of standards for concrete buildings and concrete bridges.

Design of Concrete Structures Arthur H. Nilson 2011-06-01 The 14th edition of the classic text, *Design of Concrete Structures*, is completely revised using the newly released 2008 ACI (American Concrete Institute) Code. This new edition has the same dual objectives as the previous editions; first to establish a firm understanding of the behavior of structural concrete, then to develop proficiency in the methods used in current design practice. *Design of Concrete Structures* covers the behavior and design aspects of concrete and provides updated examples and homework problems. New material on slender columns, seismic design, anchorage using headed deformed bars, and reinforcing slabs for shear using headed studs has been added. The notation has been thoroughly updated to match changes in the ACI Code. The text also presents the basic mechanics of structural concrete and methods for the design of individual members for bending, shear, torsion, and axial force, and provides detail in the various types of structural systems applications, including an extensive presentation of slabs, footings, foundations, and retaining walls.

Prestressed Concrete Edward G. Nawy 2010 Completely revised to reflect the new ACI 318-08 Building Code and International Building Code, IBC 2009, this popular book offers a unique approach to examining the design of prestressed concrete members in a logical, step-by-step trial and adjustment procedure. Integrates handy flow charts to help readers better understand the steps needed for design and analysis. Includes a revised chapter containing the latest ACI and AASHTO Provisions on the design of post-tensioned beam end anchorage blocks using the strut-and-tie approach in conformity with ACI 318-08 Code. Offers a new complete section with two extensive design examples using the strut-and-tie approach for the design of corbels and deep beams. Features an addition to the elastic method of design, with comprehensive design examples on LRFD and Standard AASHTO designs of bridge deck members for flexure, shear and torsion, conforming to the latest AASHTO specifications. Includes a revised chapter on slender columns, including a simplified load-contour biaxial bending method which is easier to apply in design, using moments rather than loads in the reciprocal approach. A useful construction reference for engineers.

Prestressed Concrete Analysis and Design Antoine E. Naaman 2012-01-01

Bridge Design António J. Reis 2019-06-10 A comprehensive guide to bridge design *Bridge Design - Concepts and Analysis* provides a unique approach, combining the fundamentals of concept design and structural analysis of bridges in a single volume. The book discusses design solutions from the authors' practical experience and provides insights into conceptual design with concrete, steel or composite bridge solutions as alternatives. Key features: Principal design concepts and analysis are dealt with in a unified approach. Execution methods and evolution of the static scheme during construction are dealt with for steel, concrete and composite bridges. Aesthetics and environmental integration of bridges are considered as an issue for concept design. Bridge analysis, including modelling and detail design aspects, is discussed for different bridge typologies and structural materials. Specific design verification aspects are discussed on the basis of present design rules in Eurocodes. The book is an invaluable guide for postgraduate students studying bridge design, bridge designers and structural engineers.

Design of Reinforced Concrete Jack C. McCormac 2005 Publisher Description

Design of Reinforced Concrete Jack C. McCormac 2005-08-05 With this bestselling book, readers will quickly gain a better understanding of the fundamentals of reinforced concrete design. The author presents a thorough introduction to the field, covering such areas as theories, ACI Code requirements, and the design of reinforced concrete beams, slabs, columns, footings, retaining walls, bearing walls, prestressed concrete sections, and framework. Numerous examples are also integrated throughout the chapters to help reinforce the principles that are discussed.

Prestressed Concrete Design, Second Edition M.K. Hurst 2002-12-24 Prestressed concrete is widely used in the construction industry in buildings, bridges, and other structures. The new edition of this book provides up-to-date guidance on the detailed design of prestressed concrete structures according to the provisions of the latest preliminary version of Eurocode 2:

Design of Concrete Structures, DD ENV 1992-1-1: 1992. The emphasis throughout is on design - the problem of providing a structure to fulfil a given purpose - but fundamental concepts are also described in detail. All major topics are dealt with, including prestressed flat slabs, an important and growing application in the design of buildings. The text is illustrated throughout with worked examples and problems for further study. Examples are given of computer spreadsheets for typical design calculations. Prestressed Concrete Design will be a valuable guide to practising engineers, students and research workers.

PRESTRESSED CONCRETE MUTHU K. U. 2016-01-18 The book begins with a brief introduction, helping the reader to understand the fundamentals of stress concept and prestressed concrete systems. The discussion then follows to explain the computation of different losses and estimation of ultimate flexural and shear strength. Important codal provisions viz. IS1343-2012, Eurocode EN2 and BSEN-1:2004 are also highlighted in this text. For clear understanding of the materials, the text is supported by a good number of figures and tables. Besides covering the important topics on design and analysis of anchorage zone stresses and analysis of continuous beam, the book also discusses composite construction and circular prestressing. The book is designed as a textbook for the senior level undergraduate and postgraduate students of civil engineering and construction technology. KEY FEATURES Analysis and Design of Prestressed Concrete Di Hu 2022-08-15 Prestressing concrete technology is critical to understanding problems in existing civic structures including railway and highway bridges; to the rehabilitation of older structures; and to the design of new high-speed railway and long-span highway bridges. Analysis and Design of Prestressed Concrete delivers foundational concepts, and the latest research and design methods for the engineering of prestressed concrete, paying particular attention to crack resistance in the design of high-speed railway and long-span highway prestressed concrete bridges. The volume offers readers a comprehensive resource on prestressing technology and applications, as well as the advanced treatment of prestress losses and performance. Key aspects of this volume include analysis and design of prestressed concrete structures using a prestressing knowledge system, from initial stages to service; detailed loss calculation; time-dependent analysis on cross-sectional stresses; straightforward, simplified methods specified in codes; and in-depth calculation methods. Sixteen chapters combine standards and current research, theoretical analysis, and design methods into a practical resource on the analysis and design of prestressed concrete, as well as presenting novel calculation methods and theoretical models of practical use to engineers. Presents a new approach to calculating prestress losses due to anchorage seating Provides a unified method for calculating long-term prestress loss Details cross-sectional stress analysis of prestressed concrete beams from jacking to service Explains a new calculation method for long-term deflection of beams caused by creep and shrinkage Gives a new theoretical model for calculating long-term crack width

Construction Failure Jacob Feld 1996-12-26 First published in 1968, Jacob Feld's Construction Failure has long been considered the classic text on the subject. Retaining all of the key components of Feld's comprehensive exploration of the root causes of failure, this Second Edition addresses a multitude of important industry developments to bring this landmark work up to date for a new generation of engineers, architects, and students. In addition to detailed coverage of current design tools, techniques, materials, and construction methods, Construction Failure, Second Edition features an entire chapter on the burgeoning area of construction litigation, including a thorough examination of alternative dispute resolution techniques. Like the original, this edition discusses technical and procedural failures of many different types of structures, but is now supplemented with new case studies to illustrate the dynamics of failure in action today. Jacob Feld knew thirty years ago that in order to learn from our mistakes, we must first acknowledge and understand them. With this revised volume, Kenneth Carper has ensured that Feld's now-posthumous message will continue to be heard for years to come. Jacob Feld's comprehensive work on failure analysis has now been skillfully amended to address current design and construction tools, materials, and practices. Building on the first edition's peerless examination of the causes and lessons of failure, Construction Failure, Second Edition provides you with expanded coverage of: * Technical, procedural, structural, and nonstructural failures * Natural hazards, earthworks, soil and foundation problems, and more * Reinforced, precast and prestressed concrete, steel, timber, masonry, and other materials * Responsibility and litigation concerns, dispute avoidance, and alternative dispute resolution techniques * Construction safety issues * Many different types of structures, including dams and bridges Construction Failure has as much to teach us today as it did thirty years ago. This revised volume is an essential resource for design engineers, architects, construction managers, lawyers, and students in all of these fields.

Handbook of Concrete Engineering Mark Fintel 1985-03-31

Reinforced and Prestressed Concrete Design Eugene J. O'Brien 1995 Emphasises a 'total' approach to the design and qualitative understanding of structures. It encourages the student to develop an intuitive comprehension of the behaviour of the complete structure and incorporates the new Eurocode (EC2) where appropriate.