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*Structures or Why things don't fall down* - J. Gordon 2012-12-06

I am very much aware that it is an act of extreme rashness to attempt to write an elementary book about structures. Indeed it is only when the subject is stripped of its mathematics that one begins to realize how difficult it is to pin down and describe those structural concepts which are often called 'elementary'; by which I suppose we mean 'basic' or 'fundamental'. Some of the omis sions and oversimplifications are intentional but no doubt some of them are due to my own brute ignorance and lack of under standing of the subject. Although this volume is more or less a sequel to *The New Science of Strong Materials* it can be read as an entirely separate book in its own right. For this reason a certain amount of repetition has been unavoidable in the earlier chapters. I have to thank a great many people for factual information, suggestions and for stimulating and sometimes heated discussions. Among the living, my colleagues at Reading University have been generous with help, notably Professor W. D. Biggs (Professor of Building Technology), Dr Richard Chaplin, Dr Giorgio Jeronimidis, Dr Julian

Vincent and Dr Henry Blyth; Professor Anthony Flew, Professor of Philosophy, made useful suggestions about the last chapter. I am also grateful to Mr John Bartlett, Consultant Neurosurgeon at the Brook Hospital. Professor T. P. Hughes of the University of the West Indies has been helpful about rockets and many other things besides. My secretary, Mrs Jean Collins, was a great help in times of trouble. Mrs Nethercot of Vogue was kind to me about dressmaking. Mr Gerald Leach and also many of the editorial staff of Penguins have exercised their accustomed patience and helpfulness. Among the dead, I owe a great deal to Dr Mark Pryor - lately of Trinity College, Cambridge - especially for discussions about biomechanics which extended over a period of nearly thirty years. Lastly, for reasons which must surely be obvious, I owe a humble oblation to Herodotus, once a citizen of Halicamassus.

**Site Planning and Design Handbook, Second Edition** - Thomas Russ 2009-07-06

Essential site planning and design strategies, up-to-date with the latest sustainable development techniques Discover how to incorporate sound

environmental considerations into traditional site design processes. Written by a licensed landscape architect with more than 20 years of professional experience, this authoritative guide combines established approaches to site planning with sustainable practices and increased environmental sensitivity. Fully revised and updated, *Site Planning and Design Handbook, Second Edition* discusses the latest standards and protocols-including LEED. The book features expanded coverage of green site design topics such as water conservation, energy efficiency, green building materials, site infrastructure, and brownfield restoration. This comprehensive resource addresses the challenges associated with site planning and design and lays the groundwork for success. *Site Planning and Design Handbook, Second Edition* explains how to:

- Integrate sustainability into site design
- Gather site data and perform site analysis
- Meet community standards and expectations
- Plan for pedestrians, traffic, parking, and open space
- Use grading techniques to minimize erosion and maximize site stability
- Implement low-impact stormwater management and sewage disposal methods
- Manage brownfield redevelopment
- Apply landscape ecology principles to site design
- Preserve historic landscapes and effectively utilize vegetation

*Reinforced and Prestressed Concrete* - Yew-Chaye Loo 2018-07-26  
This text presents the theoretical and practical aspects of analysis and design, complemented by numerous design examples.

[Building Code Requirements for Structural Concrete \(ACI 318-08\) and Commentary](#) - ACI Committee 318 2008  
The quality and testing of materials used in construction are covered by reference to the appropriate ASTM standard specifications. Welding of reinforcement is covered by reference to the appropriate AWS standard. Uses of the Code include adoption by reference in general building codes, and earlier editions have been widely used in this manner. The Code is written in a format that allows such reference without change to its language. Therefore, background details or suggestions for carrying out the requirements or intent of the Code portion cannot be included. The Commentary is provided for this purpose. Some of the considerations of the committee in developing the Code portion are

discussed within the Commentary, with emphasis given to the explanation of new or revised provisions. Much of the research data referenced in preparing the Code is cited for the user desiring to study individual questions in greater detail. Other documents that provide suggestions for carrying out the requirements of the Code are also cited.

**Mechanics of Structures and Materials XXIV** - Hong Hao 2019-08-08  
*Mechanics of Structures and Materials: Advancements and Challenges* is a collection of peer-reviewed papers presented at the 24th Australasian Conference on the Mechanics of Structures and Materials (ACMSM24, Curtin University, Perth, Western Australia, 6-9 December 2016). The contributions from academics, researchers and practising engineers from Australasian, Asia-pacific region and around the world, cover a wide range of topics, including:

- Structural mechanics
- Computational mechanics
- Reinforced and prestressed concrete structures
- Steel structures
- Composite structures
- Civil engineering materials
- Fire engineering
- Coastal and offshore structures
- Dynamic analysis of structures
- Structural health monitoring and damage identification
- Structural reliability analysis and design
- Structural optimization
- Fracture and damage mechanics
- Soil mechanics and foundation engineering
- Pavement materials and technology
- Shock and impact loading
- Earthquake loading
- Traffic and other man-made loadings
- Wave and wind loading
- Thermal effects
- Design codes

*Mechanics of Structures and Materials: Advancements and Challenges* will be of interest to academics and professionals involved in Structural Engineering and Materials Science.

**Reinforced Concrete Basics** - Stephen Foster 2010  
Intended for courses on the Analysis and Design of Reinforced Concrete Structures found in undergraduate Civil and Structural Engineering Departments. This text will also be of use to practising designers. *Reinforced Concrete Basics* is a book on analysis and design of reinforced concrete structures, starting with the fundamentals followed by the developing of advanced approaches. It contains the material needed for both undergraduate and postgraduate courses in reinforced concrete and for practising engineers. In preparing the text, the authors

provide an understanding of structural behaviour before undertaking any quantitative analysis. Examples are introduced at an early stage in the development of each topic. Readers can use the examples as exercises to test their understanding as they proceed with their study of the material.

**Standard & Poor's Stock Reports** - 2011-03

Standards of English - Raymond Hickey 2012-12-06

The first book-length exploration of 'standard Englishes' with contributions by the leading experts on each major variety of English discussed.

**Concrete Structures Standard** - Standards New Zealand 1995

*Guide to Concrete Repair and Protection* - Commonwealth Scientific and Industrial Research Organization (Australia). Division of Building, Construction and Engineering 2006

*Chemical Engineering Design* - Gavin Towler 2012-01-25

Chemical Engineering Design, Second Edition, deals with the application of chemical engineering principles to the design of chemical processes and equipment. Revised throughout, this edition has been specifically developed for the U.S. market. It provides the latest US codes and standards, including API, ASME and ISA design codes and ANSI standards. It contains new discussions of conceptual plant design, flowsheet development, and revamp design; extended coverage of capital cost estimation, process costing, and economics; and new chapters on equipment selection, reactor design, and solids handling processes. A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data, and Excel spreadsheet calculations, plus over 150 Patent References for downloading from the companion website. Extensive instructor resources, including 1170 lecture slides and a fully worked solutions manual are available to adopting instructors. This text is designed for chemical and biochemical engineering students (senior undergraduate year, plus appropriate for capstone design courses where taken, plus graduates) and

lecturers/tutors, and professionals in industry (chemical process, biochemical, pharmaceutical, petrochemical sectors). New to this edition: Revised organization into Part I: Process Design, and Part II: Plant Design. The broad themes of Part I are flowsheet development, economic analysis, safety and environmental impact and optimization. Part II contains chapters on equipment design and selection that can be used as supplements to a lecture course or as essential references for students or practicing engineers working on design projects. New discussion of conceptual plant design, flowsheet development and revamp design Significantly increased coverage of capital cost estimation, process costing and economics New chapters on equipment selection, reactor design and solids handling processes New sections on fermentation, adsorption, membrane separations, ion exchange and chromatography Increased coverage of batch processing, food, pharmaceutical and biological processes All equipment chapters in Part II revised and updated with current information Updated throughout for latest US codes and standards, including API, ASME and ISA design codes and ANSI standards Additional worked examples and homework problems The most complete and up to date coverage of equipment selection 108 realistic commercial design projects from diverse industries A rigorous pedagogy assists learning, with detailed worked examples, end of chapter exercises, plus supporting data and Excel spreadsheet calculations plus over 150 Patent References, for downloading from the companion website Extensive instructor resources: 1170 lecture slides plus fully worked solutions manual available to adopting instructors

**Bayesian Data Analysis, Third Edition** - Andrew Gelman 2013-11-01  
Now in its third edition, this classic book is widely considered the leading text on Bayesian methods, lauded for its accessible, practical approach to analyzing data and solving research problems. Bayesian Data Analysis, Third Edition continues to take an applied approach to analysis using up-to-date Bayesian methods. The authors—all leaders in the statistics community—introduce basic concepts from a data-analytic perspective before presenting advanced methods. Throughout the text, numerous

worked examples drawn from real applications and research emphasize the use of Bayesian inference in practice. New to the Third Edition Four new chapters on nonparametric modeling Coverage of weakly informative priors and boundary-avoiding priors Updated discussion of cross-validation and predictive information criteria Improved convergence monitoring and effective sample size calculations for iterative simulation Presentations of Hamiltonian Monte Carlo, variational Bayes, and expectation propagation New and revised software code The book can be used in three different ways. For undergraduate students, it introduces Bayesian inference starting from first principles. For graduate students, the text presents effective current approaches to Bayesian modeling and computation in statistics and related fields. For researchers, it provides an assortment of Bayesian methods in applied statistics. Additional materials, including data sets used in the examples, solutions to selected exercises, and software instructions, are available on the book's web page.

[Fodor's 2009 Las Vegas](#) - Alexis Kelly 2008-11-18

Detailed and timely information on accommodations, restaurants, and local attractions highlight these updated travel guides, which feature all-new covers, a dramatic visual design, symbols to indicate budget options, must-see ratings, multi-day itineraries, Smart Travel Tips, helpful bulleted maps, tips on transportation, guidelines for shopping excursions, and other valuable features. Original.

*Safe Management of Wastes from Health-care Activities* - A. Prüss 1999

**The Future of Nursing** - Institute of Medicine 2011-02-08

The Future of Nursing explores how nurses' roles, responsibilities, and education should change significantly to meet the increased demand for care that will be created by health care reform and to advance improvements in America's increasingly complex health system. At more than 3 million in number, nurses make up the single largest segment of the health care work force. They also spend the greatest amount of time in delivering patient care as a profession. Nurses therefore have valuable insights and unique abilities to contribute as partners with other health

care professionals in improving the quality and safety of care as envisioned in the Affordable Care Act (ACA) enacted this year. Nurses should be fully engaged with other health professionals and assume leadership roles in redesigning care in the United States. To ensure its members are well-prepared, the profession should institute residency training for nurses, increase the percentage of nurses who attain a bachelor's degree to 80 percent by 2020, and double the number who pursue doctorates. Furthermore, regulatory and institutional obstacles -- including limits on nurses' scope of practice -- should be removed so that the health system can reap the full benefit of nurses' training, skills, and knowledge in patient care. In this book, the Institute of Medicine makes recommendations for an action-oriented blueprint for the future of nursing.

**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.

Time-Dependent Behaviour of Concrete Structures - Raymond Ian Gilbert  
2010-09-15

Serviceability failures of concrete structures involving excessive cracking or deflection are relatively common, even in structures that comply with code requirements. This is often as a result of a failure to adequately account for the time-dependent deformations of concrete in the design of the structure. The serviceability provisions embodied in codes of practice are relatively crude and, in some situations, unreliable and do not adequately model the in-service behaviour of structures. In particular, they fail to adequately account for the effects of creep and shrinkage of the concrete. Design for serviceability is complicated by the non-linear and inelastic behaviour of concrete at service loads. Providing detailed information, this book helps engineers to rationally predict the time-varying deformation of concrete structures under typical in-service conditions. It gives analytical methods to help anticipate time-dependent cracking, the gradual change in tension stiffening with time, creep induced deformations and the load independent strains caused by shrinkage and temperature changes. The calculation procedures are illustrated with many worked examples. A vital guide for practising engineers and advanced students of structural engineering on the design of concrete structures for serviceability and provides a penetrating insight into the time-dependent behaviour of reinforced and prestressed

concrete structures.

*Globalization of Management Education* - AACSB International  
2011-02-09

In this comprehensive report, the AACSB Task Force explores broad globalization trends in management education that command the attention of any individual or institution striving to navigate in today's environment.

*The Cambridge Companion to the Roman Republic* - Harriet I. Flower  
2014-06-23

This second edition examines all aspects of Roman history, and contains a new introduction, three new chapters and updated bibliographies.

Maritime Economics - Alan Branch 2013-04-15

Now in its second edition *Maritime Economics* provides a valuable introduction to the organisation and workings of the global shipping industry. The author outlines the economic theory as well as many of the operational practicalities involved. Extensively revised for the new edition, the book has many clear illustrations and tables. Topics covered include: \* an overview of international trade \* Maritime Law \* economic organisation and principles \* financing ships and shipping companies \* market research and forecasting.

**Design Expertise** - Bryan Lawson 2013-10-11

*Design Expertise* explores what it takes to become an expert designer. It examines the perception of expertise in design and asks what knowledge, skills, attributes and experiences are necessary in order to design well. Bryan Lawson and Kees Dorst develop a new model of design expertise and show how design expertise can be developed. This book is designed for all students, teachers, practitioners and researchers in architecture and design. To enable all readers to explore the book in a flexible way, the authors' words are always found on the left hand page. On the right are diagrams, illustrations and the voices of designers, teachers and students and occasionally others too. 'Design Expertise' provides a provocative new reading on the nature of design and creative thought.

**Precast Concrete Handbook** - 2009

*Reinforced and Prestressed Concrete* - Yew-Chaye Loo 2013-06-25

The most comprehensive text on reinforced and prestressed concrete for engineering students, fully updated in line with recent amendments.

[Australian Guidebook for Structural Engineers](#) - Lonnie Pack 2017-07-28

This guidebook is a practical and essential tool providing everything necessary for structural design engineers to create detailed and accurate calculations. Basic information is provided for steel, concrete and geotechnical design in accordance with Australian and international standards. Detailed design items are also provided, especially relevant to the mining and oil and gas industries. Examples include pipe supports, lifting analysis and dynamic machine foundation design. Steel theory is presented with information on fabrication, transportation and costing, along with member, connection, and anchor design. Concrete design includes information on construction costs, as well as detailed calculations ranging from a simple beam design to the manual production of circular column interaction diagrams. For geotechnics, simple guidance is given on the manual production and code compliance of calculations for items such as pad footings, piles, retaining walls, and slabs. Each chapter also includes recommended drafting details to aid in the creation of design drawings. More generally, highly useful aids for design engineers include section calculations and force diagrams.

Capacity tables cover real-world items such as various slab thicknesses with a range of reinforcing options, commonly used steel sections, and lifting lug capacities. Calculations are given for wind, seismic, vehicular, piping, and other loads. User guides are included for Space Gass and Strand7, including a non-linear analysis example for lifting lug design. Users are also directed to popular vendor catalogues to acquire commonly used items, such as steel sections, handrails, grating, grouts and lifting devices. This guidebook supports practicing engineers in the development of detailed designs and refinement of their engineering skill and knowledge.

*Orbital Mechanics for Engineering Students* - Howard D Curtis  
2009-10-26

Orbital Mechanics for Engineering Students, Second Edition, provides an

introduction to the basic concepts of space mechanics. These include vector kinematics in three dimensions; Newton's laws of motion and gravitation; relative motion; the vector-based solution of the classical two-body problem; derivation of Kepler's equations; orbits in three dimensions; preliminary orbit determination; and orbital maneuvers. The book also covers relative motion and the two-impulse rendezvous problem; interplanetary mission design using patched conics; rigid-body dynamics used to characterize the attitude of a space vehicle; satellite attitude dynamics; and the characteristics and design of multi-stage launch vehicles. Each chapter begins with an outline of key concepts and concludes with problems that are based on the material covered. This text is written for undergraduates who are studying orbital mechanics for the first time and have completed courses in physics, dynamics, and mathematics, including differential equations and applied linear algebra. Graduate students, researchers, and experienced practitioners will also find useful review materials in the book. NEW: Reorganized and improved discussions of coordinate systems, new discussion on perturbations and quaternions NEW: Increased coverage of attitude dynamics, including new Matlab algorithms and examples in chapter 10 New examples and homework problems

*Safety, Risk and Uncertainties in Transportation and Transit Systems* - Akira Matsumoto 2019-08-16

This eBook is a collection of articles from a Frontiers Research Topic. Frontiers Research Topics are very popular trademarks of the Frontiers Journals Series: they are collections of at least ten articles, all centered on a particular subject. With their unique mix of varied contributions from Original Research to Review Articles, Frontiers Research Topics unify the most influential researchers, the latest key findings and historical advances in a hot research area! Find out more on how to host your own Frontiers Research Topic or contribute to one as an author by contacting the Frontiers Editorial Office: [frontiersin.org/about/contact](http://frontiersin.org/about/contact).

[Performance-Based Specifications and Control of Concrete Durability](#) - Hans Beushausen 2015-09-24

This work gives an overview of significant research from recent years

concerning performance-based design and quality control for concrete durability and its implementation. In engineering practice, performance approaches are often still used in combination with prescriptive requirements. This is largely because, for most durability test methods, sufficient practical experience still has to be gained before engineers and owners are prepared to fully rely on them. This book, compiled by RILEM TC 230-PSC, is intended to assist efforts to successfully build the foundation for the full implementation of performance-based approaches through the exchange of relevant knowledge and experience between researchers and practitioners worldwide.

**National Safety and Quality Health Service Standards - 2021**

**Industrial & Mining Standard - 1914**

WHO Guidelines for Indoor Air Quality - World Health Organization 2010

This book presents WHO guidelines for the protection of public health from risks due to a number of chemicals commonly present in indoor air. The substances considered in this review, i.e. benzene, carbon monoxide, formaldehyde, naphthalene, nitrogen dioxide, polycyclic aromatic hydrocarbons (especially benzo[a]pyrene), radon, trichloroethylene and tetrachloroethylene, have indoor sources, are known in respect of their hazardousness to health and are often found indoors in concentrations of health concern. The guidelines are targeted at public health professionals involved in preventing health risks of environmental exposures, as well as specialists and authorities involved in the design and use of buildings, indoor materials and products. They provide a scientific basis for legally enforceable standards.

*Principles of Management* - Openstax 2022-03-25

Principles of Management is designed to meet the scope and sequence requirements of the introductory course on management. This is a traditional approach to management using the leading, planning, organizing, and controlling approach. Management is a broad business discipline, and the Principles of Management course covers many management areas such as human resource management and strategic

management, as well as behavioral areas such as motivation. No one individual can be an expert in all areas of management, so an additional benefit of this text is that specialists in a variety of areas have authored individual chapters. Contributing Authors David S. Bright, Wright State University Anastasia H. Cortes, Virginia Tech University Eva Hartmann, University of Richmond K. Praveen Parboteeah, University of Wisconsin-Whitewater Jon L. Pierce, University of Minnesota-Duluth Monique Reece Amit Shah, Frostburg State University Siri Terjesen, American University Joseph Weiss, Bentley University Margaret A. White, Oklahoma State University Donald G. Gardner, University of Colorado-Colorado Springs Jason Lambert, Texas Woman's University Laura M. Leduc, James Madison University Joy Leopold, Webster University Jeffrey Muldoon, Emporia State University James S. O'Rourke, University of Notre Dame **Let's Go 2009 Western Europe** - Let's Go Inc. 2008-11-25

Offering a comprehensive guide to economical travel in diverse regions of the world, these innovative new versions of the popular handbooks feature an all-new look, sidebars highlighting essential tips and facts, information on a wide range of itineraries, transportation options, off-the-beaten-path adventures, expanded lodging and dining options in every price range, additional nightlife options, enhanced cultural coverage, shopping tips, maps, 3-D topographical maps, regional culinary specialties, cost-cutting tips, and other essentials.

The Economist - 1919

**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.

**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 concrete

*Introduction to Information Retrieval* - Christopher D. Manning  
2008-07-07

Class-tested and coherent, this textbook teaches classical and web information retrieval, including web search and the related areas of text classification and text clustering from basic concepts. It gives an up-to-date treatment of all aspects of the design and implementation of systems for gathering, indexing, and searching documents; methods for evaluating systems; and an introduction to the use of machine learning methods on text collections. All the important ideas are explained using examples and figures, making it perfect for introductory courses in information retrieval for advanced undergraduates and graduate students in computer science. Based on feedback from extensive classroom experience, the book has been carefully structured in order to make teaching more natural and effective. Slides and additional exercises (with solutions for lecturers) are also available through the book's supporting website to help course instructors prepare their lectures.

*Handbook of Recycled Concrete and Demolition Waste* - Fernando Pacheco-Torgal 2013-09-30

The civil engineering sector accounts for a significant percentage of global material and energy consumption and is a major contributor of waste material. The ability to recycle and reuse concrete and demolition waste is critical to reducing environmental impacts in meeting national, regional and global environmental targets. Handbook of recycled concrete and demolition waste summarises key recent research in achieving these goals. Part one considers techniques for managing construction and demolition waste, including waste management plans, ways of estimating levels of waste, the types and optimal location of waste recycling plants and the economics of managing construction and demolition waste. Part two reviews key steps in handling construction and demolition waste. It begins with a comparison between conventional demolition and construction techniques before going on to discuss the

preparation, refinement and quality control of concrete aggregates produced from waste. It concludes by assessing the mechanical properties, strength and durability of concrete made using recycled aggregates. Part three includes examples of the use of recycled aggregates in applications such as roads, pavements, high-performance concrete and alkali-activated or geopolymer cements. Finally, the book discusses environmental and safety issues such as the removal of gypsum, asbestos and alkali-silica reaction (ASR) concrete, as well as life-cycle analysis of concrete with recycled aggregates. Handbook of recycled concrete and demolition waste is a standard reference for all those involved in the civil engineering sector, as well as academic researchers in the field. Summarises key recent research in recycling and reusing concrete and demolition waste to reduce environmental impacts and meet national, regional and global environmental targets. Considers techniques for managing construction and demolition waste, including waste management plans, ways of estimating levels of waste, the types and optimal location of waste recycling plants. Reviews key steps in handling construction and demolition waste.

**Rail Infrastructure Resilience** - Rui Calçada 2022-06-30

Economic growth, security and sustainability across Europe are at risk due to ageing railway infrastructure systems. At present, the majority of such systems are aging and some have even reached their initial design lives. These issues align with a major challenge in civil engineering: how to restore and improve urban infrastructure and built environments. Policy, environmental and physical barriers must be addressed and overcome. The complex and interconnected nature of the problem means that there is a need for academia, industry, communities and governments to work collaboratively. The challenges posed by extreme events from natural and man-made disasters are urgent. Rail Infrastructure Resilience: A Best-Practices Handbook presents developed improvement methods for rail infrastructure systems, toward resilience to extreme conditions. It shows how best to use new information in the engineering design, maintenance, construction and renewal of rail infrastructure resilience, through knowledge exchange and capability

development. The book presents the outcome of a major European research project, known as the RISEN project. RISEN aimed to enhance knowledge creation and transfer using both international and intersectoral secondment mechanisms among European Advanced Rail Research Universities and SMEs, and Non-EU, leading rail universities, providing methodological approaches and practical tools for restoring and improving railway infrastructure systems for extreme events. Edited and written by members of this project, this book will be essential reading for researchers and practitioners hoping to find practical solutions to the challenges of rail infrastructure resilience. Offers a best-practices handbook for rail infrastructure resilience from the leaders in the field Paints a holistic picture of the rail transport system, showing that infrastructure maintenance intervention can be enhanced through advanced monitoring systems and resilience design Presents rail infrastructure resilience and advanced condition monitoring, allowing a better understanding of the critical maintenance, renewal and retrofit needs of railways Considers how academia, industry, communities and governments can work collaboratively in order to tackle aggregated problems in rail infrastructure resilience Presents the findings from the RISEN project, the leading European project on enhancing knowledge creation and transfer of expertise on rail infrastructure resilience

**High-Performance Eco-Efficient Concrete** - Carlos Thomas

2021-05-26

This book is dedicated to “High-Performance Eco-Efficient Concrete” and

concrete fatigue behavior, more sustainable construction materials, capable of complying with quality standards and current innovation policies, aimed at saving natural resources and reducing global pollution. The development of self-compacting concretes with electric arc furnace slags is a further achievement. In addition, the technical and economic viability of using coarse recycled aggregates from crushed concrete in shotcrete, enhanced quality and reduced on-site construction time are the basic features of prefabricated bridge elements and systems, biomass bottom ash as aluminosilicate precursor and phosphogypsum were discussed. On the other hand, basalt fiber improving the mechanical properties and durability of reactive powder concrete, alkali-activated slag and high-volume fly ash and the potential of phosphogypsum as secondary raw material in construction industry, the effects of fly ash on the diffusion, bonding, and microproperties of chloride penetration in concrete were studied. Increasing amounts of sustainable concretes are being used as society becomes more aware of the environment. Finally, the circular economy as an economic model of production and consumption that involves reusing, repairing, refurbishing, and recycling materials after their service life are presented in this book.

Sustainable Energy--without the Hot Air - David J. C. MacKay 2009

Provides an overview of the sustainable energy crisis that is threatening the world's natural resources, explaining how energy consumption is estimated and how those numbers have been skewed by various factors and discussing alternate forms of energy that can and should be used.