

## Forensic Structural Engineering Handbook 2nd Edition

*“Though ours is an age of high technology, the essence of what engineering is and what engineers do is not common knowledge. Even the most elementary of principles upon which great bridges, jumbo jets, or super computers are built are alien concepts to many. This is so in part because engineering as a human endeavor is not yet integrated into our culture and intellectual tradition. And while educators are currently wrestling with the problem of introducing technology into conventional academic curricula, thus better preparing today’s students for life in a world increasingly technological, there is as yet no consensus as to how technological literacy can best be achieved. “ I believe, and I argue in this essay, that the ideas of engineering are in fact in our bones and part of our human nature and experience. Furthermore, I believe that an understanding and an appreciation of engineers and engineering can be gotten without an engineering or technical education. Thus I hope that the technologically uninitiated will come to read what I have written as an introduction to technology. Indeed, this book is my answer to the questions ‘What is engineering?’ and ‘What do engineers do?’” - Henry Petroski, To Engineer is Human*

*A fully up-to-date, practical guide to foundation engineering Revised to cover the 2009 International Building Code. Foundation Engineering Handbook, Second Edition presents basic geotechnical field and laboratory studies, such as subsurface exploration and laboratory testing of soil, rock, and groundwater samples. The book then discusses the geotechnical aspects of foundation engineering, including conditions commonly encountered by design engineers—settlement, expansive soil, and slope stability. Details on the performance or engineering evaluation of foundation construction and the application of the 2009 International Building Code are included in this valuable resource. FOUNDATION ENGINEERING HANDBOOK, SECOND EDITION COVERS: Subsurface exploration Laboratory testing Soil mechanics Shallow and deep foundations Bearing capacity and settlement of foundations Foundations on expansive soil Slope stability Retaining walls Foundation deterioration and cracking Geotechnical earthquake engineering for soils, foundations, and retaining walls Grading and other soil improvement methods Foundation excavation, underpinning, and field load tests Geosynthetics and instrumentation 2009 International Building Code regulations for soils and foundations*

*Forensic science includes all aspects of investigating a crime, including: chemistry, biology and physics, and also incorporates countless other specialties. Today, the service offered under the guise of “forensic science” includes specialties from virtually all aspects of modern science, medicine, engineering, mathematics and technology. The Encyclopedia of Forensic Sciences, Second Edition is a reference source that will inform both the crime scene worker and the laboratory worker of each other’s protocols, procedures and limitations. Written by leading scientists in each area, every article is peer reviewed to establish clarity, accuracy, and comprehensiveness. As reflected in the specialties of Its Editorial Board, the contents covers the core theories, methods and techniques employed by forensic scientists – and applications of these that are used in forensic analysis. This 4-volume set represents a 30% growth in articles from the first edition, with a particular increase in coverage of DNA and digital forensics Includes an international collection of contributors The second edition features a new 21-member editorial board, half of which are internationally based Includes over 300 articles, approximately 10pp on average Each article features a) suggested readings which point readers to additional sources for more information, b) a list of related Web sites, c) a 5-10 word glossary and definition paragraph, and d) cross-references to related articles in the encyclopedia Available online via SciVerse ScienceDirect. Please visit www.info.sciencedirect.com for more information This new edition continues the reputation of the first edition, which was awarded an Honorable Mention in the prestigious Dartmouth Medal competition for 2001. This award honors the creation of reference works of outstanding quality and significance, and is sponsored by the RUSA Committee of the American Library Association.*

*This indispensable handbook provides state-of-the-art information and common sense guidelines, covering the design, construction, modernization of port and harbor related marine structures. The design procedures and guidelines address the complex problems and illustrate factors that should be considered and included in appropriate design scenarios.*

*Wind Effects on Structures*

*Handbook of Port and Harbor Engineering*

*Engineering Investigations of Hurricane Damage*

*To Forgive Design*

*Understanding the Basics*

*Forensic Engineering 2012*

*Forensic Structural Engineering Handbook*McGraw Hill Professional

Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneratoin. Strengthening Forensic Science in the United States gives a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

Richard Weingardt provides a unique view into the history and progress of 32 great American civil engineers, from the 1700s to the present.

The latest methods for designing seismically sound structures Fully updated for the 2012 International Building Code, Geotechnical Earthquake Engineering Handbook, Second Edition discusses basic earthquake principles, common earthquake effects, and typical structural damage caused by seismic shaking. Earthquake computations for conditions commonly encountered by design engineers, such as liquefaction, settlement, bearing capacity, and slope stability, are included. Site improvement methods that can be used to mitigate the effects of earthquakes on structures are also described in this practical, comprehensive guide. Coverage includes: Basic earthquake principles Common earthquake effects Earthquake structural damage Site investigation for geotechnical earthquake engineering Liquefaction Earthquake-induced settlement Bearing capacity analyses for earthquakes Slope stability analyses for earthquakes Retaining wall analyses for earthquakes Other geotechnical earthquake engineering analyses Grading and other soil improvement methods Foundation alternatives to mitigate earthquake effects Earthquake provisions in building codes

Guidelines for Failure Investigation

Proceedings of the Second Congress, May 21-23, 2000, San Juan, Puerto Rico

Why Buildings Fall Down

Guidelines for Forensic Engineering Practice

Forensic Engineering

A Casebook

First published in 1968, Jacob Feld’s Construction Failure has longbeen considered the classic text on the subject. Retaining all ofthe key components of Feld’s comprehensive exploration of the rootcauses of failure, this Second Edition addresses a multitude ofimportant industry developments to bring this landmark work up todate for a new generation of engineers, architects, andstudents. In addition to detailed coverage of current design tools,techniques, materials, and construction methods, ConstructionFailure, Second Edition features an entire chapter on theburgeoning area of construction litigation, including a thoroughexamination of alternative dispute resolution techniques. Like theoriginal, this edition discusses technical and procedural failuresof many different types of structures, but is now supplemented withnew case studies to illustrate the dynamics of failure in actiontoday. Jacob Feld knew thirty years ago that in order to learn from ourmistakes, we must first acknowledge and understand them. With thisrevised volume, Kenneth Carper has ensured that Feld’snow-posthumous message will continue to be heard for years to come. Jacob Feld’s comprehensive work on failure analysis has now beenskillfully amended to address current design and constructiontools, materials, and practices. Building on the first edition’speerless examination of the causes and lessons of failure,Construction Failure, Second Edition provides you with expandedcoverage of:
\* Technical, procedural, structural, and nonstructural failures
\* Natural hazards, earthworks, soil and foundation problems, andmore
\* Reinforced, precast and prestressed concrete, steel, timber,masonry, and other materials
\* Responsibility and litigation concerns, dispute avoidance, andalternative dispute resolution techniques
\* Construction safety issues
\* Many different types of structures, including dams andbridges
Construction Failure has as much to teach us today as it did thirtyyears ago. This revised volume is an essential resource for designengineers, architects, construction managers, lawyers, and studentsin all of these fields.

Argues that failures in structural engineering are not necessarily due to the physical design of the structures, but instead a misunderstanding of how cultural and socioeconomic constraints would affect the structures.

This collection contains papers presented at the second Forensic Congress, held in San Juan, Puerto Rico, May 21-23, 2000

Learn how to conduct a professional forensic geotechnical and foundation investigation Clearly written and easy to use, this authoritative book shows you step-by-step how to: INVESTIGATE damage, deterioration, or collapse in a structure EVALUATE problems caused by settlement, expansive soil, slope movement, moisture intrusion, and more INVESTIGATE damage from earthquakes and other natural causes DETERMINE what caused the damage DEVELOP repair recommendations PREPARE files and reports AVOID civil liability No matter what caused the structural damage, this book will help you pinpoint it and, if necessary, suggest a remedy. With advice on all aspects of the process, from accepting the assignment to testifying compellingly, this book is your all-in-one guide to geotechnical and foundation investigations in forensic engineering.

Damage Assessments for Residential and Commercial Structures

Forensic Geotechnical and Foundation Engineering

Forensic Engineering Investigation

The Evidence for Stigma Change

Oxford Handbook of Transcranial Stimulation

Design and Construction Failures

Proceedings of the Sixth Congress on Forensic Engineering, held in San Francisco, California, October 31-November 3, 2012. Sponsored by the Technical Council on Forensic Engineering of ASCE. This collection contains 144 peer-reviewed papers presenting findings intended to help forensic engineers develop practices and procedures to reduce the number of failures, disseminate information on failures, and provide guidelines for conducting failure investigations and for ethical conduct. Topics include: bridges; building envelopes; critical infrastructure; design practices; disaster risk management; education; emerging technologies; fires; floods; flooring; geotechnical failures; hurricanes, tornadoes, and extreme winds; investigative methodologies; practices to reduce failures; professional practice; research and testing; residential construction; and structural failures. This will be valuable to engineers, researchers, educators, and students involved in forensic engineering.

Most books on forensic engineering focus on civil engineering failures rather than consumer or general mechanical products. Unique both in scope and style, this treatment is built upon case studies of real accidents, broadly focused on consumer products, and dedicated to problem solving through scientific principles. Each well-illustrated case study includes legal background, reports the case results, and highlights the lessons learned from the case. New materials and applications appear constantly, and with them, new failure modes. This book provides an outstanding opportunity to gain virtual experience through up-to-date facts and feedback from forensic engineering practitioners.

Includes bibliographical references and index.

This book serves as an introductory text to the forensic civil engineering discipline and provides guidelines for carrying out the practice in an effective (and ethical) manner.

Foundation Engineering Handbook 2/E

Temporary Structures in Construction, Third Edition

Lessons from Forensic Investigations

An Introduction to Scientific and Investigative Techniques, Fourth Edition

Geotechnical and Foundation Engineering

Strengthening Forensic Science in the United States

The Most Complete and Up-to-Date Resource on Forensic Structural Engineering Thoroughly revised and featuring contributions from leading experts, this definitive handbook offers comprehensive treatment of forensic structural engineering and expert witness delivery. From exploring the possible origins of errors, through investigating and analyzing failures, to working with the legal profession for assigning responsibilities, Forensic Structural Engineering Handbook, Second Edition covers every important topic in the field. The design and construction process Design and construction safety codes, standards, and regulations Standard of care and duty to perform First steps and legal concerns after a failure Engineering investigation of failures Origins and causes of failures Loads and hazards Design errors, construction defects, and project miscommunication Defects, deterioration, and structural mechanics Analysis of failures in steel, concrete, masonry, timber, and temporary structures; building envelope; and structural foundations Litigation and dispute resolution The expert consultant and witness Provides structural engineers with the knowledge and practical tools needed to perform structural designs for wind that incorporate major technological advances achieved in the last two decades. With clear explanations and documentation of the concepts, methods, algorithms, and software available for accounting for wind loads in structural design. It also describes the wind engineer’s contributions in sufficient detail that he can be effectively scrutinized by the structural engineer in charge of the design. Wind Effects on Structures: Modern Structural Design for Wind, 4th Edition is organized in four sections. The first covers atmospheric flows, extreme wind speeds, and bluff body aerodynamics. The second examines the design of buildings, and includes chapters on aerodynamic loads; dynamic and effective wind-induced loads; wind effects with specified MRIs; low-rise buildings; tall buildings; and more. The third part is devoted to aeroelastic effects, and covers both fundamentals and applications. The last part considers other structures and special topics such as trussed frameworks; offshore structures; and tornado effects. Offering readers the knowledge and practical tools needed to develop structural designs for wind loadings, this book: Points out significant limitations in the design of buildings based on such techniques as the high-frequency force balance Discusses powerful algorithms, tools, and software needed for the effective design for wind, and provides numerous examples of application Discusses techniques applicable to structures other than buildings, including stacks and suspended-span bridges Features several appendices on Elements of Probability and Statistics; Peaks-over-Threshold Poisson-Process Procedure for Estimating Peaks; estimates of the WTC Towers’ Response to Wind and their shortcomings; and more Wind Effects on Structures: Modern Structural Design for Wind, 4th Edition is an excellent text for structural engineers, wind engineers, and structural engineering students and faculty.

The most primary text to temporary structures in design and construction with significant revisions, updates, and new chapters. Temporary Structures in Construction, Third Edition presents authoritative information on professional practice, codes, standards, design, erection, maintenance, and failures of temporary support and access structures used in construction. New developments and advancing technologies are discussed throughout the book, and new chapters on construction and environmental loads, cranes, and lessons learned from temporary structure failures have been added. Improve the quality, safety, speed, and financial success of construction projects with help from this practical resource. Inside, 26 expert contributors cover: Professional and business practices Standards, codes, and regulations Construction and environmental loads Construction site safety Legal aspects Cofferdams Earth-retaining structures Diaphragm/slurry walls Construction dewatering Underground/tunneling supports Underpinning Roadway decking Construction ramps, runways, and platforms Scaffolding Shoring/falsework Concrete formwork Bracing and guying for stability Bridge falsework Temporary structures in repair and restoration Cranes Protection of site, adjacent areas, and utilities Failure of temporary structures in construction

In this edited volume on advances in forensic geotechnical engineering, a number of technical contributions by experts and professionals in this area are included. The work is the outcome of deliberations at various conferences in the area conducted by Prof. G.L. Sivakumar Babu and Dr. V.V.S. Rao as secretary and Chairman of Technical Committee on Forensic Geotechnical Engineering of International Society for Soil Mechanics and Foundation Engineering (ISSMGE). This volume contains papers on topics such as guidelines, evidence/data collection, distress characterization, use of diagnostic tests (laboratory and field tests), back analysis, failure hypothesis formulation, role of instrumentation and sensor-based technologies, risk analysis, technical shortcomings. This volume will prove useful to researchers and practitioners alike.

Building Structures

Site Reliability Engineering

Gateway to a Safer Tomorrow

Handbook of Structural Engineering

Forensic Science

Forensic Mental Health Assessment

A comprehensive resource that builds a bridge between engineering disciplines and the building sciences and trades, Forensic Engineering: Damage Assessments for Residential and Commercial Structures provides an extensive look into the world of forensic engineering. With a focus on investigations associated with insurance industry claims, the book describes methodologies for performing insurance-related investigations including the causation and origin of damage to residential and commercial structures and/or unhealthy interior environments and adverse effects on the occupants of these structures. Edited by an industry expert with more than 30 years of experience, and authors with more than 100 years of experience in the field, the book takes the technical aspects of engineering and scientific principles and applies them to real-world issues in a non-technical manner. It provides readers with the experiences, investigation methodologies, and investigation protocols used in, and derived from completing thousands of forensic engineering investigations. It begins with providing a baseline methodology for conducting forensic investigations and closes with advice on testifying as an expert witness. Much of what must be known in this field is not learned in school, but is based upon experience since recognizing the cause of a building system failure requires a blending of skills from the white collar and blue collar worlds. Such knowledge can be vital since failures (e.g., water entry) often result from construction activities completed out of sequence. This book details proven methodologies based on over 7,000 field investigations, methodologies which can be followed by both professionals and laymen alike.

A timely, provocative expose of American political and business leadership’s deep ties to China: a network of people who believe they are doing the right thing—at a profound and often hidden cost to U.S. interests. The past few years have seen relations between China and the United States shift, from enthusiastic economic partners, to wary frenemies, to open rivals. Americans have been slow to wake up to the challenges posed by the Chinese Communist Party. Why did this happen? And what can we do about it? In America Second, Isaac Stone Fish traces the evolution of the Party’s influence in America. He shows how America’s leaders initially welcomed China’s entry into the U.S. economy, believing that trade and engagement would lead to a more democratic China. And he explains how—although this belief has proved misguided—many of our businesspeople and politicians have become too dependent on China to challenge it. America Second exposes a deep network of Beijing’s influence in America, built quietly over the years through prominent figures like former secretaries of state Henry Kissinger and Madeleine

Albright, Disney chairman Bob Iger, and members of the Bush family. And it shows how to fight that influence—without being paranoid, xenophobic, or racist. This is an authoritative and important story of corruption and good intentions gone wrong, with serious implications not only for the future of the United States, but for the world at large.

These findings indicate that as many as 1 in 4 Americans will experience a mental health problem or will misuse alcohol or drugs in their lifetimes. These disorders are among the most highly stigmatized health conditions in the United States, and they remain barriers to full participation in society in areas as basic as education, housing, and employment. Improving the lives of people with mental health and substance abuse disorders has been a priority in the United States for more than 50 years. The Community Mental Health Act of 1963 is considered a major turning point in America’s efforts to improve behavioral healthcare. It ushered in an era of optimism and hope and laid the groundwork for the consumer movement and new models of recovery. The consumer movement gave voice to people with mental and substance use disorders and brought their perspectives and experience into national discussions about mental health. However over the same 50-year period, positive change in American public attitudes and beliefs about mental and substance use disorders has lagged behind these advances. Stigma is a complex social phenomenon based on a relationship between an attribute and a stereotype that assigns undesirable labels, qualities, and behaviors to a person with that attribute. Labeled individuals are then socially devalued, which leads to inequality and discrimination. This report contributes to national efforts to understand and change attitudes, beliefs and behaviors that can lead to stigma and discrimination. Changing stigma in a lasting way will require coordinated efforts, which are based on the best possible evidence, supported at the national level with multifaceted fun planned and implemented by an effective coalition of representative stakeholders. Ending Discrimination Against People with Mental and Substance Use Disorders: The Evidence for Stigma Change explores stigma and discrimination faced by individuals with mental or substance use disorders and recommends effective strategies for reducing stigma and encouraging people to seek treatment and other supportive services. It offers a set of conclusions and recommendations about successful stigma change strategies and the research needed to inform and evaluate these efforts in the United States.

Geotechnical Engineering of Dams, 2nd edition provides a comprehensive text on the geotechnical and geological aspects of the investigations for and the design and construction of new dams and the review and assessment of existing dams. The main emphasis of this work is on embankment dams, but much of the text, particularly those parts related to g

Beyond Failure

Ending Discrimination Against People with Mental and Substance Use Disorders

Forensic Materials Engineering

The Oxford Handbook of Traumatic Stress Disorders

Encyclopedia of Geology

**This is a one-stop book for knowing everything important about building structures. Self-contained and with no prerequisites needed, it is suitable for both general readers and building professionals. follow the history of structural understanding; grasp the concepts of structural behaviour via step-by-step explanations; apply these concepts to a simple building; see how these concepts apply to real buildings, from Durham Cathedral to the Bank of China; use these concepts to define the design process; see how these concepts inform design choices; understand how engineering and architecture have diverged, and what effect this had; learn to do simple but relevant numerical calculations for actual structures; understand when dynamics are important; follow the development of progressive collapse prevention; enter the world of modern structural theory; see how computers can be used for structural analysis; learn how to organise and design a successful project. With more than 500 pages and over 100 user-friendly diagrams, this book is a must for anyone who would like to understand the fascinating world of structures.**

**Northwest Delta presents the circumstances of important failures that have had far-reaching impacts on civil engineering practice, organized around topics in the engineering curriculum.**

Forensic Engineering, first published in 1989, comprehensively summarizes forensic activity and failure investigation in engineering, providing illustrative case studies and investigative techniques. Contributors are the foremost authorities in such fields as fire investigation, industrial accidents, product liability, traffic accidents, civil engineering, transportation disasters, and environmental systems failures - demonstrating the diverse spectrum of forensic experience. The book outlines the nuts-and-bolts aspects of forensic engineering as well as examines specific details for improving investigative procedures and analytical techniques. Forensic Engineering also describes methods in litigation and alternative dispute resolution, such as arbitration, mediation, mini-trials, and more. Richly illustrated with case studies from various fields, each chapter includes guidelines, techniques, methods, and tools for accident investigation and analysis. The text includes vital information on using forensic photogrammetry, planning and writing reports, serving as an expert witness in traditional litigation, and resolving disputes. Providing proven formulas and thought-provoking concepts, Forensic Engineering enables forensic experts in all engineering fields, design and construction professionals, attorneys, product manufacturers, insurance professionals, and engineering and law students to maximize their investigative skills and litigation abilities.

The overwhelming majority of a software system’s lifespan is spent in use, not in design or implementation. So, why does conventional wisdom insist that software engineers focus primarily on the design and development of large-scale computing systems? In this collection of essays and articles, key members of Google’s Site Reliability Team explain how and why their commitment to the entire lifecycle has enabled the company to successfully build, deploy, monitor, and maintain some of the largest software systems in the world. You’ll learn the principles and practices that enable Google engineers to make systems more scalable, reliable, and efficient—lessons directly applicable to your organization. This book is divided into four sections: Introduction—Learn what site reliability engineering is and why it differs from conventional IT industry practices Principles—Examine the patterns, behaviors, and areas of concern that influence the work of a site reliability engineer (SRE) Practices—Understand the theory and practice of an SRE’s day-to-day work: building and operating large distributed computing systems Management—Explore Google’s best practices for training, communication, and meetings that your organization can use

Forensic Case Studies for Civil Engineers

Geotechnical Engineering of Dams

How Google Runs Production Systems

America Second

The Role of Failure in Successful Design

Great American Civil Engineers : 32 Profiles of Inspiration and Achievement

Forensic engineers often specialize in a particular area such as structures, fires, or accident reconstruction. However, the nature of the work often requires broad knowledge in the interrelated areas of physics, chemistry, biomechanics, and engineering. Covering cases as varied as assessment of workplace accidents to the investigation of Halliburton

Since becoming commercially available in 1985, transcranial magnetic stimulation (TMS) has emerged as an important tool in several areas of neuroscience. Originally envisioned as a way to measure the responsiveness and conduction speed of neurons and synapses in the brain and spinal cord, TMS has also become an important tool for changing the activity of brain neurons and the functions they subserve and an important adjunct to brain imaging and mapping techniques. Along with transcranial electrical stimulation techniques, TMS has diffused far beyond the borders of clinical neurophysiology and into cognitive, perceptual, behavioural, and therapeutic investigation and attracted a highly diverse group of users and would-be users. This book provides an authoritative review of the scientific and technical background required to understand transcranial stimulation techniques and a wide-ranging survey of their burgeoning application in neurophysiology, perception, cognition, emotion, and clinical practice. Each of its six sections deals with a major area and is edited by an international authority therein. It will serve researchers, clinicians, students, and others as the definitive text in this area for years to come.

Designed to give engineers a crash course in all aspects of modern geotechnical and foundation engineering Takes readers step-by-step through the typical process of a design project—from proposal-writing to the final preparation of the “as built” report Includes numerous visual aids: photographs, charts, tables, and more than 350 illustrations

Covering a range of fundamental topics essential to modern forensic investigation, the fourth edition of the landmark text Forensic Science: An Introduction to Scientific and Investigative Techniques presents contributions from experts in the field who discuss case studies from their own personal files. This edition has been thoroughly updated to r

To Engineer is Human

Forensic Geotechnical Engineering

Modern Structural Design for Wind

How Structures Fail

Understanding Failure

Occupational Outlook Handbook

This publication provides civil engineers with the background and guidance necessary to conduct engineering damage investigations of structures following hurricanes, focusing particularly on distinguishing between wind damage and water damage.

Continuing the tradition of the best-selling Handbook of Structural Engineering, this second edition is a comprehensive reference to the broad spectrum of structural engineering, encapsulating the theoretical, practical, and computational aspects of the field. The authors address a myriad of topics, covering both traditional and innovative approaches to analysis, design, and rehabilitation. The second edition has been expanded and reorganized to be more informative and cohesive. It also follows the developments that have emerged in the field since the previous edition, such as advanced analysis for structural design, performance-based design of earthquake-resistant structures, lifecycle evaluation and condition assessment of existing structures, the use of high-performance materials for construction, and design for safety. Additionally, the book includes numerous tables, charts, and equations, as well as extensive references, reading lists, and websites, for further study or more in-depth information. Emphasizing practical applications and easy implementation, this text reflects the increasingly global nature of engineering, compiling the efforts of an international panel of experts from industry and academia. This is a necessity for anyone studying or practicing in the field of structural engineering. New to this edition Fundamental theories of structural dynamics Advanced analysis Wind and earthquake-resistant design Design of prestressed concrete, masonry, timber, and glass structures Properties, behavior, and use of high-performance steel, concrete, and fiber-reinforced polymers Semirigid frame structures Structural bracing Structural design for fire safety

Forensic Engineering Investigation is a compendium of the investigative methodologies used by engineers and scientific investigators to evaluate some of the more common types of failures and catastrophic events. In essence, the book provides analyses and methods for determining how an entity was damaged and when that damage may have legal consequences. The material covers 21 common types of failures, catastrophic events, and losses that forensic engineers routinely assess. The range of topics include wind and blasting damage to structures, vehicular accidents, fires, explosions, hail damage to roofs and exteriors, lighting damage, and industrial guarding accidents. Additionally, the book offers an extensive discussion of the scientific method as it applies to forensic science and provides tips on organizing and writing an investigative report. The book also supplies the applicable codes and standards that regulate the profession, discusses the role of the forensic engineer in court proceedings, and addresses the role management plays in industrial safety. Each chapter is self-contained, highly specific, and succinct. Even more important, the analysis in each chapter is tailored to the answering of questions usually posed in the particular circumstances under discussion. The author does not skimp on the mathematical and scientific underpinnings of the subject matter. In that sense, Forensic Engineering Investigation contains the “good stuff” that is typically omitted in less challenging texts.

Encyclopedia of Geology, Second Edition presents in six volumes state-of-the-art reviews on the various aspects of geologic research, all of which have moved on considerably since the writing of the first edition. New areas of discussion include extinctions, origins of life, plate tectonics and its influence on faunal provinces, new types of mineral and hydrocarbon deposits, new methods of dating rocks, and geological processes. Users will find this to be a fundamental resource for teachers and students of geology, as well as researchers and non-geology professionals seeking up-to-date reviews of geologic research. Provides a comprehensive and accessible one-stop shop for information on the subject of geology, explaining methodologies and technical jargon used in the field Highlights connections between geology and other physical and biological sciences, tackling research problems that span multiple fields Fills a critical gap of information in a field that has seen significant progress in past years Presents an ideal reference for a wide range of scientists in earth and environmental areas of study

Wind Versus Water

Design and Construction

A Path Forward

Encyclopedia of Forensic Sciences

Case Studies

Geotechnical Earthquake Engineering, Second Edition

*Takes readers on a journey through the history of architectural and structural disasters, from the Parthenon to the Tower of Pisa to the Tacoma Narrows Bridge*

*This book outlines the fundamental steps that will assist forensic engineers in tailoring their forensic investigations of failures and performance problems associated with structures and building systems.*

*Forensic mental health assessment (FMHA) continues to develop and expand as a specialization. Since the publication of the First Edition of Forensic Mental Health Assessment: A Casebook over a decade ago, there have been a number of significant changes in the applicable law, ethics, science, and practice that have shaped the conceptual and empirical underpinnings of FMHA. The Second Edition of Forensic Mental Health Assessment is thoroughly updated in light of the developments and changes in the field, while still keeping the unique structure of presenting cases, detailed reports, and specific teaching points on a wide range of topics. Unlike anything else in the literature, it provides genuine (although disguised) case material, so trainees as well as legal and mental health professionals can review how high-quality forensic evaluation reports are written; it features contributions from leading experts in forensic psychology and psychiatry, providing samples of work in their particular areas of specialization; and it discusses case material in the larger context of broad foundational principles and specific teaching points, making it a valuable resource for teaching, training, and continuing education. Now featuring 50 real-world cases, this new edition covers topics including criminal responsibility, sexual offending risk evaluation, federal sentencing, capital sentencing, capacity to consent to treatment, personal injury, harassment and discrimination, guardianship, juvenile commitment, transfer and decertification, response style, expert testimony, evaluations in a military context, and many more. It will be invaluable for anyone involved in assessments for the courts, including psychologists, psychiatrists, social workers, and attorneys, as well as for FMHA courses.*

*How America's Elites Are Making China Stronger*

*Construction Failure*

*Engineering Legends*

*Forensic Engineering Fundamentals*

*Geotechnical and Structural Aspects*

*Forensic Structural Engineering Handbook*