

Precast Concrete Structures Paradigm

Modernisation, Mechanisation and Industrialisation of Concrete Structures John Wiley & Sons

The publication investigates the opportunities for upgrading the spatial structure of apartments created during the post-war building boom between 1960 and 1970. The authors analyze typical existing layouts in the context of social developments which, in recent decades, have led to significant changes in the form of living and in the structure of households. To what extent do the functionally optimized housing units meet the requirements of today's society, and how adaptable are they to new forms of living? Is it possible to achieve a workable result with small interventions? In the theoretical part the authors discuss theories on design strategies and political transformation processes, the importance of which is demonstrated in the project part using practical contemporary examples.

Corrosion of reinforcing steel is now recognized as the major cause of degradation of concrete structures in many parts of the world. Despite this, infrastructure expenditure is being unreasonably decreased by sequestration and the incredible shrinking discretionary budget. All components of our infrastructure including highways, airports, water supply, waste treatment, energy supply, and power generation require significant investment and are subjected to degradation by

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corrosion, which significantly reduces the service life, reliability, functionality of structures and equipment, and safety. Corrosion of Steel in Concrete Structures provides a comprehensive review of the subject, in addition to recent advances in research and technological developments, from reinforcing materials to measurement techniques and modelling. This book contains not only all the important aspects in the field of corrosion of steel reinforced concrete but also discusses new topics and future trends. Part One of the book tackles theoretical concepts of corrosion of steel in concrete structures. The second part moves on to analyse the variety of reinforcing materials and concrete, including stainless steel and galvanized steel. Part Three covers measurements and evaluations, such as electrochemical techniques and acoustic emission. Part Four reviews protection and maintenance methods, whilst the final section analyses modelling, latest developments and future trends in the field. The book is essential reading for researchers, practitioners and engineers who are involved in materials characterisation and corrosion of steel in concrete structures. Provides comprehensive coverage on a broad range of topics related to the corrosion of steel bars in concrete Discusses the latest measuring methods and advanced modeling techniques Reviews the range of reinforcing materials and types of concrete Building Lean, Building BIM is the essential guide for any construction company that wants to implement Lean Construction and Building Information Modelling (BIM) to

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gain a strategic edge over their competition. The first of its kind, the book outlines the principles of Lean, the functionality of BIM, and the interactions between the two, illustrating them through the story of how Tidhar Construction has implemented Lean Construction and BIM in a concerted effort over four years. Tidhar is a small-to-medium-sized construction company that pioneered a way of working that gave it a profit margin unheard of in its market. The company's story serves as a case study for explanation of the various facets of Lean Construction and BIM. Each chapter defines a principle of Lean and/or BIM, describes the achievements and failures in Tidhar's implementation based on the experiences of the key people involved, and reviews the relevant background and theory. The implementation at Tidhar has not been a pure success, but by examining their motives alongside their achievements and failures, readers will learn about what pitfalls and pinnacles to expect. A number of chapters also compare the experience of Tidhar with those of other companies who are leaders in their fields, such as Skanska and DPR. This book is highly relevant and useful to a wide range of readers from the construction industry, especially those who are frustrated with the inefficiencies in their companies and construction projects. It is also essential reading for Lean and BIM enthusiasts, researchers and students from a variety of industries and backgrounds.

A New Paradigm for Life-cycle Management of Kit-of-parts Building Systems
Industry 4.0 Solutions for Building Design and Construction

Advances in Building Technology

Design & Construction

BIM Handbook

Building Envelopes, Renewable Energies and Integrated Practice

Perspectives on European Earthquake Engineering and Seismology

This document has a broad scope and is not focussed on design issues. Precast construction under seismic conditions is treated as a whole. The main principles of seismic design of different structural systems, their behavior and their construction techniques are presented through rules, construction steps and sequences, procedures, and details that should lead to precast structures built in seismic areas complying with the fundamental performance requirements of collapse prevention and life safety in major earthquakes and limited damage in more frequent earthquakes. The content of this document is largely limited to conventional precast construction and, although some information is provided on the well-known "PRESSS technology" (jointed ductile dry connections), this latter

solution is not treated in detail in this document. The general overview, contained in this document, of alternative structural systems and connection solutions available to achieve desired performance levels, intends to provide engineers, architects, clients, and end-users (in general) with a better appreciation of the wide range of applications that modern precast concrete technology can have in various types of construction from industrial to commercial as well as residential. Lastly, the emphasis on practical aspects, from conceptual design to connection detailing, aims to help engineers to move away from the habit of blindly following prescriptive codes in their design, but instead go back to basic principles, in order to achieve a more robust understanding, and thus control, of the seismic behaviour of the structural system as a whole, as well as of its components and individual connections.

The construction industry is amidst a digital transformation that is focused on addressing well-documented issues and calls for significant improvements and changes through

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increased productivity, whole-life value, client focus, reduction of waste, and being more sustainable. The key aspect to driving change and transformation is the education and upskilling of the required workforce towards developing the required capacities. Various approaches can be taken to embed digital construction within education and through collaborative efforts in order to drive change and facilitate improvements. The Handbook of Research on Driving Transformational Change in the Digital Built Environment focuses on current developments in practice and education towards facilitating transformation in the built environment. This book provides insight, from a practice perspective, in relation to the client's understanding, digitally enabled collaboration, interoperability and open standards, and maturity/capability. Covering topics that include digital transformation and construction, digitally enabled infrastructure, building information modelling, collaborative digital education, and the digital built environment, this book is an ideal reference source for

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engineers, professionals, and researchers in the field of digital transformation as well as doctoral scholars, doctoral researchers, professionals, and academicians.

Discover BIM: A better way to build better buildings
Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM

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standards and guides A discussion on how various professional roles have expanded through the widespread use and the new avenues of BIM practices and services A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.

The Architectural Detail is author Edward R. Ford's life's work, and this may be his most important book to date. Ford walks the reader through five widely accepted (and wildly different) definitions of detail, in an attempt to find, once and for all, the quintessential definition of detail in architecture.

Improving Construction the Tidhar Way

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Second RILEM International Conference on Concrete and Digital Fabrication

Corrosion of Steel in Concrete Structures

Advances in Seismic Performance and Risk Estimation of Precast Concrete Buildings

Self-Compacting Concrete

Proceedings of the 35th CIB W78 2018 Conference: IT in Design, Construction, and Management

Proceedings of the International Conference on Sustainable Smart Manufacturing (S2M 2016), October 20-22, 2016, Lisbon, Portugal

This book gathers the proceedings of the 1st Global Civil Engineering Conference, GCEC 2017, held in Kuala Lumpur, Malaysia, on July 25–28, 2017. It highlights how state-of-the-art techniques and tools in various disciplines of Civil Engineering are being applied to solve real-world problems. The book presents interdisciplinary research, experimental and/or theoretical studies yielding new insights that will advance civil engineering methods. The scope of the book spans the following areas: Structural, Water Resources, Geotechnical, Construction, Transportation Engineering and Geospatial Engineering applications.

The world is undergoing a profound transformation, driven by radical technological changes and an accelerated globalisation process. A new culture of greater resource efficiency and

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disruptive innovation will require new technologies, processes and materials, fostering new knowledge, innovation, education and a digital society, bringing forward new business opportunities and novel solutions to major societal challenges. Challenges for Technology Innovation: an Agenda for the Future is the result of the 1st International Conference on Sustainable Smart Manufacturing – S2M, held at the Faculty of Architecture in Lisbon, Portugal, on October 20-22, 2016. It contains innovative contributions in the field of Sustainable Smart Manufacturing and related topics, making a significant contribution to further development of these fields. This volume covers a wide range of topics including Design and Digital Manufacturing, Design Education, Eco Design and Innovation, Future Cities, Medicine 4.0, Smart Manufacturing, Sustainable Business Models, Sustainable Construction, Sustainable Design and Technology and Sustainable Recycling.

This book tracks the development of Marcel Breuer's aesthetic clash between uniformity and singularity through the detailed examination of his seminal buildings. Each chapter examines a specific building and puts into context Breuer's other work and the contemporary movements/architects of the post-war era such as Surrealism, Brutalism and structural expressionism. The buildings examined include the UNESCO Headquarters in Paris, France, of 1958; the IBM Research Center in Le Gaude, France, of 1962; the Annunciation Priory in Bismark, North Dakota, of 1963; and the Atlanta Central Library of 1980. Marcel Breuer's approach to design was inspired by the Spanish phrase, sol y sombra (sun and shadow). Sun and shadow meant for Breuer that a juxtaposition of contrasts was necessary; light glass walls and heavy concrete, masses lifted over voids, and serial precast construction resting on sculptural columns became hallmarks of Breuer's buildings. By creating an architecture of

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juxtaposition, Breuer's work can be interpreted as a surrealist reconte, as fueling a new architectural condition. A critical evaluation of Marcel Breuer's work, this book is written for graduate students, researchers, and academics interested in his work and how it shaped the architecture of the post-war era.

Tubular Structures XVI contains the latest scientific and engineering developments in the field of tubular steel structures, as presented at the 16th International Symposium on Tubular Structures (ISTS16, Melbourne, Australia, 4-6 December 2017). The International Symposium on Tubular Structures (ISTS) has a long-standing reputation for being the principal showcase for manufactured tubing and the prime international forum for presentation and discussion of research, developments and applications in this field. Various key and emerging subjects in the field of hollow structural sections are covered, such as: special applications and case studies, static and fatigue behaviour of connections/joints, concrete-filled and composite tubular members and offshore structures, earthquake and dynamic resistance, specification and standard developments, material properties and section forming, stainless and high-strength steel structures, fire, impact and blast response. Research and development issues presented in this topical book are applicable to buildings, bridges, offshore structures, cranes, trusses and towers. Tubular Structures XVI is thus a pertinent reference source for architects, civil and mechanical engineers, designers, steel fabricators and contractors, manufacturers of hollow sections or related construction products, trade associations involved with tubing, owners or developers of tubular structures, steel specification committees, academics and research students all around the world.

The New Encyclopaedia Britannica: Macropaedia : Knowledge in depth

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Modernisation, Mechanisation and Industrialisation of Concrete Structures

ZEMCH: Toward the Delivery of Zero Energy Mass Custom Homes

Intelligent Computational Paradigms in Earthquake Engineering

The New Paradigm in Architecture

Shaping Architecture in the Post-War Era

Concrete is the most used man-made material in the world since its invention. The widespread use of this material has led to continuous developments such as ultra-high strength concrete and self-compacting concrete. Recycled Aggregate in Concrete: Use of Industrial, Construction and Demolition Waste focuses on the recent development which the use of various types of recycled waste materials as aggregate in the production of various types of concrete. By drawing together information and data from various fields and sources, Recycled Aggregate in Concrete: Use of Industrial, Construction and Demolition Waste provides full coverage of this subject. Divided into two parts, a compilation of varied literature data related to the use of various types of industrial waste as aggregates in concrete is followed by a discussion of the use of construction and demolition waste as aggregate in concrete. The properties of the aggregates and their effect on various concrete properties are presented, and the quantitative procedure to estimate the properties of concrete containing construction and demolition waste as

aggregates is explained. Current codes and practices developed in various countries to use construction and demolition waste as aggregates in concrete and issues related to the sustainability of cement and concrete production are also discussed. The comprehensive information presented in *Recycled Aggregate in Concrete: Use of Industrial, Construction and Demolition Waste* will be helpful to graduate students, researchers and concrete technologists. The collected data will also be an essential reference for practicing engineers who face problems concerning the use of these materials in concrete production. This book gathers peer-reviewed contributions presented at the 2nd RILEM International Conference on Concrete and Digital Fabrication (Digital Concrete), held online and hosted by the Eindhoven University of Technology, the Netherlands from 6-9 July 2020. Focusing on additive and automated manufacturing technologies for the fabrication of cementitious construction materials, such as 3D concrete printing, powder bed printing, and shotcrete 3D printing, the papers highlight the latest findings in this fast-growing field, addressing topics like mixture design, admixtures, rheology and fresh-state behavior, alternative materials, microstructure, cold joints & interfaces, mechanical performance, reinforcement, structural engineering, durability and sustainability, automation and industrialization.

Self-Compacting Concrete (SCC) is a relatively new building material. Nowadays, its use is progressively changing the method of concrete placement on building sites. However,

the successful use of SCC requires a good understanding of the behavior of this material, which is vastly different from traditional concrete. For this purpose, a lot of research has been conducted on this area all over the world since 10 years. Intended for both practitioners and scientists, this book provides research results from the rheological behavior of fresh concrete to durability.

In this book, leading international experts explore the emerging concept of the zero energy mass custom home (ZEMCH) – designed to meet the need for social, economic, and environmental sustainability – and provide all of the knowledge required for the delivery of zero energy mass customized housing and community developments in developed and developing countries. The coverage is wide ranging, progressing from explanation of the meaning of sustainable development to discussion of challenges and trends in mass housing, the advantages and disadvantages of prefabricated methods of construction, and the concepts of mass customization, mass personalization, and inclusive design. A chapter on energy use will aid the reader in designing and retrofitting housing to reduce energy demand and/or improve energy end-use efficiency. Passive design strategies and active technologies (especially solar) are thoroughly reviewed. Application of the ZEMCH construction criteria to new buildings and refurbishment of old houses is explained and the methods and value of building performance simulation, analyzed. The concluding chapter presents examples of ZEMCH projects from around the world, with discussion of

marketing strategy, design, quality assurance, and delivery challenges. The book will be invaluable as a training/teaching tool for both students and industry partners.

Tubular Structures XVI

The Architectural Detail

Proceedings of the 16th International Symposium for Tubular Structures (ISTS 2017, 4-6 December 2017, Melbourne, Australia)

Design Paradigms

The New Architectural Pragmatism

Encyclopedia of Twentieth Century Architecture

Use of Industrial, Construction and Demolition Waste

This set of proceedings is based on the International Conference on Advances in Building Technology in Hong Kong on 4-6 December 2002. The two volumes of proceedings contain 9 invited keynote papers, 72 papers delivered by 11 teams , and 133 contributed papers from over 20 countries around the world. The papers cover a wide spectrum of topics across the three technology sub-themes of structures and construction, environment, and information technology. The variety within these categories spans a width of topics, and these proceedings provide readers with a good general

overview of recent advances in building research. Exercises and Solutions in Statistical Theory helps students and scientists obtain an in-depth understanding of statistical theory by working on and reviewing solutions to interesting and challenging exercises of practical importance. Unlike similar books, this text incorporates many exercises that apply to real-world settings and provides much more thorough solutions. The exercises and selected detailed solutions cover from basic probability theory through to the theory of statistical inference. Many of the exercises deal with important, real-life scenarios in areas such as medicine, epidemiology, actuarial science, social science, engineering, physics, chemistry, biology, environmental health, and sports. Several exercises illustrate the utility of study design strategies, sampling from finite populations, maximum likelihood, asymptotic theory, latent class analysis, conditional inference, regression analysis, generalized linear models, Bayesian analysis, and other statistical topics. The book also contains references to published books and articles that offer more information about the statistical concepts. Designed as a supplement for advanced undergraduate and graduate courses, this text is a valuable source of classroom

examples, homework problems, and examination questions. It is also useful for scientists interested in enhancing or refreshing their theoretical statistical skills. The book improves readers' comprehension of the principles of statistical theory and helps them see how the principles can be used in practice. By mastering the theoretical statistical strategies necessary to solve the exercises, readers will be prepared to successfully study even higher-level statistical theory.

This book explores the broad issue of Postmodernism and tells the story of the movement that has changed the face of architecture over the last forty years. In this completely rewritten edition of his seminal work, Charles Jencks brings the history of architecture up to date and shows how demands for a new and complex architecture, aided by computer design, have led to more convivial, sensuous, and articulate buildings around the world.

This encyclopedia includes a two-volume index, a 12-volume Micropaedia (Ready reference), a 17-volume Micropaedia (Knowledge in depth), and the Propaedia.

***Recycled Aggregate in Concrete
Net Zero Energy Building***

Exercises and Solutions in Statistical Theory

Space Structures 5

Innovation in Construction

Building Lean, Building BIM

Solid States

This book provides in-depth results and case studies in innovation from actual work undertaken in collaboration with industry partners in Architecture, Engineering, and Construction (AEC). Scientific advances and innovative technologies in the sector are key to shaping the changes emerging as a result of Industry 4.0. Mainstream Building Information Management (BIM) is seen as a vehicle for addressing issues such as industry fragmentation, value-driven solutions, decision-making, client engagement, and design/process flow; however, advanced simulation, computer vision, Internet of Things (IoT), blockchain, machine learning, deep learning, and linked data all provide immense opportunities for dealing with these challenges and can provide evidenced-based innovative solutions not seen before. These technologies are perceived as the "true" enablers of future practice, but only recently has the AEC sector recognised terms such as "golden key" and "golden thread" as part of BIM processes and workflows. This book builds on the success of a number of initiatives and projects by the authors, which include seminal findings from the literature, research and development, and practice-based solutions produced for industry. It presents these findings through real projects and case studies developed by the authors and reports on how these technologies made a real-world impact. The chapters and cases in the book are developed around these overarching themes: " BIM and AEC Design and Optimisation: Application of Artificial Intelligence in Design " BIM and XR as Advanced Visualisation and

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Simulation Tools □ Design Informatics and Advancements in BIM Authoring □ Green Building Assessment: Emerging Design Support Tools □ Computer Vision and Image Processing for Expediting Project Management and Operations □ Blockchain, Big Data, and IoT for Facilitated Project Management □ BIM Strategies and Leveraged Solutions This book is a timely and relevant synthesis of a number of cogent subjects underpinning the paradigm shift needed for the AEC industry and is essential reading for all involved in the sector. It is particularly suited for use in Masters-level programs in Architecture, Engineering, and Construction.

"This book contains contributions that cover a wide spectrum of very important real-world engineering problems, and explores the implementation of neural networks for the representation of structural responses in earthquake engineering. It assesses the efficiency of seismic design procedures and describes the latest findings in intelligent optimal control systems and their applications in structural engineering"--Provided by publisher.

This proceedings volume chronicles the papers presented at the 35th CIB W78 2018 Conference: IT in Design, Construction, and Management, held in Chicago, IL, USA, in October 2018. The theme of the conference focused on fostering, encouraging, and promoting research and development in the application of integrated information technology (IT) throughout the life-cycle of the design, construction, and occupancy of buildings and related facilities. The CIB □ International Council for Research and Innovation in Building Construction □ was established in 1953 as an association whose objectives were to stimulate and facilitate international cooperation and information exchange between governmental research institutes in the building and construction sector, with an emphasis on those institutes engaged in technical fields of research. The conference brought together more than 200 scholars from 40 countries, who presented the innovative concepts and methods featured in this

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collection of papers.

Modernisation, Mechanisation and Industrialisation of Concrete Structures discusses the manufacture of high quality prefabricated concrete construction components, and how that can be achieved through the application of developments in concrete technology, information modelling and best practice in design and manufacturing techniques.

Case Histories of Error and Judgment in Engineering

State-of-art report

A Paradigm of New Opportunities

Digital Concrete 2020

Predicted and Unintended Consequences

Concrete International

GCEC 2017

What do we mean by net zero energy? Zero operating energy? Zero energy costs? Zero emissions? There is no one answer: approaches to net zero building vary widely across the globe and are influenced by different environmental and cultural contexts. Net Zero Energy Building: Predicted and Unintended Consequences presents a comprehensive overview of variations in 'net zero' building practices. Drawing on examples from countries such as the United States, United Kingdom, Germany, Japan, Hong Kong, and China, Ming Hu examines diverse approaches to net zero and reveals their intended and unintended consequences. Existing approaches often focus on operating energy: how to make buildings more efficient by reducing the energy consumed by climate control, lighting, and appliances. Hu goes beyond this by analyzing overall energy consumption and environmental impact across the entire life cycle of a building—ranging from the manufacture of building materials to transportation,

renovation, and demolition. Is net zero building still achievable once we look at these factors? With clear implications for future practice, this is key reading for professionals in building design, architecture, and construction, as well as students on sustainable and green architecture courses. DVD features highlights from the conference held at Columbia University.

Purpose of the study: To evaluate customer service quality among clients purchasing precast concrete products from a manufacturing company. Problem Statement: Any buoyant market facing shortages of material and skills, like the precast concrete within the construction industry, is prone to being infiltrated by companies from other countries. Competition builds on the assumption that no buyer or seller has had the power to influence the market conditions to their own benefit. Moreover, all buyers and sellers have been in the fortunate position of having perfect information about the costs and demand situation and all have been free to enter and leave the marketplace. Methodology: The research design encompassed both a review of the literature and an empirical study. A quantitative methodological paradigm was used. A sample of 260 customers which comprised general contractors, government institutions, civil consultants and end-users operating in Gauteng province was used in the study. The coefficient alpha reliability ranged from 0.70 to 0.815 which was considered satisfactory. Findings: A factor analysis procedure revealed five service quality dimensions.

Both professionals and students are increasingly committed to achieving high-performance metrics in the design, construction and operation of residential buildings. This book responds to this demand by offering a comprehensive guide which features: architectural innovations in building skin technologies which make lighter more transparent buildings high performing; energy-free architectural design principles and advances in building-integrated photovoltaics; essential engineering principles, controls and approaches to simulation for achieving net zero; the advantages of integrated

design in residential construction and the challenges and opportunities it engenders; detailed case studies of innovative homes which have incorporated low-energy design solutions, new materials, alternative building assemblies, digital fabrication, integrated engineering systems and operational controls. Divided into four parts, the book discusses the requisite AEC (Architecture, Engineering and Construction) knowledge needed when building a high-performance home. It also communicates this information across four case studies, which provide the reader with a thorough overview of all aspects to be considered in the design and construction of sustainable homes. With contributions from experts in the field, the book provides a well-rounded and multi-faceted approach. This book is essential reading for students and professionals in design, architecture, engineering (civil, mechanical and electrical), construction and energy management.

Proceedings of the First Conference of the Construction History Society

Marcel Breuer

Mobile and Rapidly Assembled Structures IV

Handbook of Research on Driving Transformational Change in the Digital Built Environment

Proceedings of the 1st Global Civil Engineering Conference

New ways of living in post-war modernism

Concrete in Transition

This book tackles the complex topic of implementing innovation and the successful application of advanced technology in the construction industry. It provides a practical for the transformation of the industry by detailing appropriate and effective implementation methods, required skill sets and structural changes necessary to facilitate the practical

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innovative application of technology. The construction industry is behind other industries in its level of innovation and adoption of technology, and is of critical importance to many of today's global challenges, such as climate change, global warming and resource scarcity. There is therefore a need for smarter and more efficient ways of managing available resources. This book elaborates on how the innovative application of technology could offer hope for the construction industry in its imperative to rise to current and future global challenges. It includes the real-world case studies of innovative projects that go beyond current state-of-the-art academic research, and have improved productivity, quality and performance in the construction sector. This book provides readers from both industrial and academic backgrounds with a comprehensive guide on transforming the construction industry with the efficient and effective implementation of technologies and modern methods of construction.

In response to the contentious process surrounding the selection of a design for the World Trade Center site, the use of spectacular buildings to brand cities and institutions, and the dizzying transformations of the skylines of Shanghai and Dubai, public awareness of architecture and design has perhaps never been higher. At the same time, architecture is undergoing an identity crisis as it confronts fundamental issues: the effect of digital technology on design, the pervasive impact of global capitalism, and whether to embrace or resist popular media and taste. *The New Architectural Pragmatism* collects the most provocative, penetrating, and influential attempts by leading theorists and practitioners

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field to define what architectural practice should be at the beginning of the twenty-first century. Written in the aftermath of modernism's utopian impulse and postmodernism's detached playfulness, the essays gathered here express and critique a new spirit of cultural and political engagement with contemporary society. Interrogating the architect's social responsibility, the contributors deliberate about how much we should ask of architecture and suggest that in the coming century, architecture must be at once flexible and robust, responsive and self-directed. Contributors: Stan Allen; George Baird; Lucy Bullivant; James Corner; Hal Foster; Kenneth Frampton; K. Michael Hays; Dave Hickey; Robert Levit; Evonne Levy; Reinhold Martin; Jorge Silvetti; Robert Somol; Philippe Starck; Roemer van Toorn; Sarah Whiting; Alejandro Zaera-Polo. William S. Saunders is editor of Harvard Design Magazine and assistant dean for external relations at Harvard University's Graduate School of Design. He is the editor of four previous Harvard Design Magazine Readers, published by Minnesota.

From ancient Greek temples to twentieth-century towers, engineers have learned more design from failure than success. The concept of error, according to the author, is central to the design process. As a way of explaining the enduring aspects of engineering design, the book relates stories of some of the greatest engineering successes and failures of all time. The case studies, drawn from a wide range of times and places, serve as paradigms of error and judgment in engineering design. By showing how errors were introduced in the design process and how they might be avoided, the book suggests how better quality and reliability

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might be achieved in designed devices, structures, and systems of all kinds. Clearly written with striking illustrations, the book will appeal to engineering students, practising engineers, historians of science and technology, and all those interested in learning about the process of design.

Structures that move in the course of normal use, or which have to be assembled or disassembled rapidly on a relatively unprepared site, offer a particular challenge to the designer. The interaction between the structure and the mechanism by which it moves is essential in many cases. The speed of assembly, what this means in terms of logistics, materials and cost, is a major factor in many such structures. Mobile and rapidly assembled structures play a major role in disaster mitigation and temporary accommodation. They are of primary importance in many military as well as civilian applications and are widely used for rescue and maintenance services. Their importance continues to grow in contemporary society where speed of deployment is of primary importance. Also, in many cases, their reversible deployment and potential for reuse can lead to a lower economical and/or ecological impact, providing a more sustainable solution. There are common problems such as the efficient design of assembly joints, the resistance to damage of the membrane and metal cladding, crashworthiness and the limited serviceability. Some areas of the subject are already well documented, but knowledge is fragmented and there is little design guidance available in the form of textbooks, data sheets or codes of practice. The interaction between morphology, kinematic behaviour and structural performance – typical for these structures – poses real challenges in terms of design and

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successful realisation. This multi-disciplinary proceedings volume contains papers presented at the fourth International Conference on Mobile, Adaptable and Rapidly Assembled Structures. Topics covered include: Rapidly erected bridges and transportable bridges; Disaster mitigation structures; Temporary structures and dwellings; Deployable system structural mechanisms; Tensegrity and reciprocal frames; Origami-based structures; Inflatable and air-supported structures and membrane shelters; Rapidly assembled kit-of-parts systems; Leisure structures, demountable grandstands and scaffolding systems; Mobile inspection platforms; Folding and telescopic masts and gangways; Tower cranes and mobile lifting apparatus; Trackways and prefabricated paving for roads and airfields; Protective structures; Rapid repairs of structures; Structures in adverse conditions; Spacecraft structures; Construction and repair.

Proceedings of the 25th International Symposium on Advancement of Construction Management and Real Estate

The Story of the Koror Bridge

Small Interventions

Advances in Informatics and Computing in Civil and Construction Engineering

Precast-concrete buildings in seismic areas

A Practical Guide to Transforming the Construction Industry

Challenges for Technology Innovation: An Agenda for the Future

This proceedings book focuses on innovation, cooperation, and sustainable development

in the fields of construction management and real estate. The book provides a detailed analysis and description of the disciplinary frontiers in the field of building management and real estate and how they can be promoted in the context of the epidemic. A wide variety of papers provide a reference value for both scholars and practitioners. The proceedings book is the documentation of “the 25th International Symposium on Advancement of Construction Management and Real Estate” (CRIOCM 2020), which was held at the School of Public Administration, Central China Normal University, Wuhan, China, in 2020.

Session papers cover a bevy of topics of interest to building and construction historians, including: The British cut clasp nail ; Concrete platforms in the North Sea ; Timber supply in colonial China 1840-1940 ; Pier Luigi Nervi vs Fazlur Khan: the developing of the outrigger system for skyscrapers ; Construction and structure of medieval gates. This book collects 4 keynote and 15 theme lectures presented at the 2nd European Conference on Earthquake Engineering and Seismology (2ECEES), held in Istanbul, Turkey, from August 24 to 29, 2014. The conference was organized by the Turkish Earthquake Foundation - Earthquake Engineering Committee and Prime Ministry, Disaster and Emergency Management Presidency under the auspices of the European Association for Earthquake Engineering (EAEE) and European Seismological Commission (ESC). The book’s nineteen state-of-the-art chapters were written by the

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most prominent researchers in Europe and address a comprehensive collection of topics on earthquake engineering, as well as interdisciplinary subjects such as engineering seismology and seismic risk assessment and management. Further topics include engineering seismology, geotechnical earthquake engineering, seismic performance of buildings, earthquake-resistant engineering structures, new techniques and technologies, and managing risk in seismic regions. The book also presents the First Professor Inge Lehmann Distinguished Award Lecture given by Prof. Shamita Das in honor of Prof. Dr. Inge Lehmann. The aim of this work is to present the state-of-the art and latest practices in the fields of earthquake engineering and seismology, with Europe's most respected researchers addressing recent and ongoing developments while also proposing innovative avenues for future research and development. Given its cutting-edge content and broad spectrum of topics, the book offers a unique reference guide for researchers in these fields. Audience: This book is of interest to civil engineers in the fields of geotechnical and structural earthquake engineering; scientists and researchers in the fields of seismology, geology and geophysics. Not only scientists, engineers and students, but also those interested in earthquake hazard assessment and mitigation will find in this book the most recent advances.

For more information including the introduction, a full list of entries and contributors, a generous selection of sample pages and more, visit the Encyclopedia of 20th Century

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Architecture website. Focusing on architecture from all regions of the world, this three-volume set profiles the twentieth century's vast chronicle of architectural achievements, both within and well beyond the theoretical confines of modernism. Unlike existing works, this encyclopedia examines the complexities of rapidly changing global conditions that have dispersed modern architectural types, movements, styles, and building practices across traditional geographic and cultural boundaries.

Precast Concrete and Construction Industry

The Language of Post-modernism

Design and Construction of High-Performance Homes

A Guide to Building Information Modeling for Owners, Designers, Engineers, Contractors, and Facility Managers

A Harvard Design Magazine Reader

Buyer-Seller Relationships

Koror Babeldaob Bridge, also called Koror Babelthuap Bridge or simply Koror Bridge, connects the islands of Koror and Babeldaob in the Republic of Palau. The design of the bridge began in 1974 and was based on the prevailing AASHTO Standard Specifications at that time and was supplemented by ACI and CEB-FIP design recommendations on an as-needed basis. When the Koror Bridge was opened to traffic in April 1977, it was the world's longest concrete girder span. A few years later, the bridge began to deflect more than had been anticipated. The owner commissioned a Japanese engineering firm in 1985 and then a US engineering firm in 1993 to conduct in-depth investigations of the structure. Both

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firms came to the same conclusion that the bridge was structurally safe and that the excessive deflection was an unexplainable phenomenon. Nevertheless, in order to improve the driving quality of the bridge deck, the owner decided to repair the bridge. The repair scheme made changes to the structural system and added a large amount of post-tensioning force to the bridge. Unfortunately, less than three months after the repair, late in the afternoon on 26 September 1996, nineteen and a half years after it was opened to traffic, the bridge collapsed. Thereafter, most of the documents were sealed as a result of litigation between the various parties, and the debris was cleared. For a long time, it was impossible to study the facts surrounding the bridge's collapse. Only recently, through continuous probing by a group of engineers, were these documents made accessible to researchers.

These Proceedings are based on the Fifth International Conference on Space Structures, organised by the University of Surrey. Produced as a 2-volume set, they contain original and innovative information on space structures from leading engineers and architects from around the world.