

Glass Construction Manual Birkhauser

"In Contemporary Curtain Wall Architecture, building-technology historian and architect Scott Murray traces the evolution of the curtain wall, from early skeleton-frame structures of the past to today's complex and technologically advanced configurations. Presenting twenty-four detailed case studies of exemplary structures completed in the last decade, he reveals the curtain wall as one of the most enduring and malleable concepts of contemporary architecture, capable of adapting intelligently to site constraints, utilizing resources efficiently, and offering unprecedented opportunities for innovations in digital design and fabrication, material detailing, and aesthetic expression." –Book Jacket.

This Encyclopedia has an introduction summarizing its scope and content: Glassmaking; Structure of Glass, Glass Physics; Transport Properties, Chemistry of Glass, Glass and Light; Inorganic Glass Families, Organic Glasses, Glass and the Environment; Historical and Economic Aspect of Glassmaking; History of Glass, Glass and Art, and outline possible new developments and uses as presented by the best known people in the field (C. A. Angell, for example). Sections and chapters are arranged in a logical order to ensure overall consistency and avoid needless repetitions. All sections are introduced by a brief introduction and attractive illustration. Newly investigated topics will be addressed, with the goal of ensuring that this Encyclopedia remains a reference work for years to come.

Materials for Architects and Builders provides a clear and concise introduction to the broad range of materials used within the construction industry and covers the essential details of their manufacture, key physical properties, specification and uses. Understanding the basics of materials is a crucial part of undergraduate and diploma construction or architecture-related courses, and this established textbook helps the reader to do just that with the help of colour photographs and clear diagrams throughout. This new sixth edition has been completely revised and updated to include the latest developments in materials research, new images, appropriate technologies and relevant legislation. The ecological effects of building construction and lifetime use remain an important focus, and this new edition includes a wide range of energy-saving building components.

Bricks and brickwork; Blocks and blockwork; Lime, cement and concrete; Timber and timber products; Ferrous and non-ferrous metals; Bitumen and flat roofing materials; Glass; Ceramic materials; Stone and cast stone; Plastics; Glass-fibre reinforced plastics, cement and gypsum; Plaster and board materials; Insulation materials; Sealants, gaskets and adhesives; Paints, wood stains, varnishes and colour; Energy-saving materials; and environmental and ecological materials; Sustainability

Green Design, Materials and Manufacturing Processes

Architectural Detailing

Insights and Innovations in Structural Engineering, Mechanics and Computation

Contemporary Curtain Wall Architecture

Principles of Construction

Skns, Envelopes, and Enclosures

This book presents the findings of a detailed study to explore the behavior of architectural glazing systems during and after an earthquake and to develop design proposals that will mitigate or even eliminate the damage inflicted on these systems. The seismic behavior of common types of architectural glazing systems are investigated and causes of damage to each system, identified. Furthermore, depending on the geometrical and structural characteristics, the ultimate horizontal load capacity of glass curtain wall systems is defined based on the stability of the glass components. Detailed attention is devoted to the incorporation of advanced connection devices between the structure of the building and the building envelope system in order to minimize the damage to glazed components. An innovative new connection device is introduced that results in a delicate and functional system easily incorporated into different architectural glazing systems, including those demanding maximum transparency.

Understanding Steel Design is based on an overall approach to understand how to design and build with steel from the perspective of its architectural applications. Steel is a material whose qualities have enormous potential for the creation of dynamic architecture. In an innovative approach to the reality of working with steel, the book takes a new look both at the state of tried-and-tested techniques and at emerging projects. Hundreds of steel structures have been observed, analyzed and appraised for this book. In-depth construction photographs by the author are complemented by technical illustrations created to look more closely at systems and details. Drawings supplied by fabricators allow greater insight into a method of working with current digital drawing tools.

This key text addresses the topic of lightweight claddings in buildings and is a useful guide and reference resource. Written by well-known specialists in the field, this fourth edition of an established text has been revised throughout to incorporate the latest environmental issues, the use of wood and terracotta in cladding, and use of new materials, particularly the new moulded materials. Two new chapters cover wood and terracotta in cladding. The main types of cladding systems are described in detail and methods of production, performance characteristics, applications and methods of assembly are explained clearly. Illustrated throughout with photographs and numerous line drawings, this is an essential overview of the subject for both the student and the practising architect.

Contains topics that range from glass joints, fixings and adhesives to architectural designs to the strength, stability and safety of glass. This book also covers issues such as laminates and composite designs, glass lighting, the curving and bending of glass and the many facades of glass.

Using the Engineering Literature, Second Edition

Systems for architectural design and prototyping

Challenging Glass

Conference on Architectural and Structural Applications of Glass, Faculty of Architecture, Delft University of Technology, May 2008

Material Architecture

Proceedings of the Sixth International Conference on Structural Engineering, Mechanics and Computation, Cape Town, South Africa, 5–7 September 2016

This edition of the industry standard on architectural detailing includes new sections covering analysis and modification of existing details and design of new details, both basic and advanced. Revised to address sustainability and to reflect the International Building Code®, Architectural Detailing continues to deliver reliable, insightful information on how to design details that will be water- and airtight, control the flows of heat and water vapor, adjust to all kinds of movement, age gracefully, be easy to construct, and still look good.

Conveniently organized by the three major concerns of the detailer—function, constructibility, and aesthetics—this edition features: Richly illustrated examples of detail design, case studies, and practical exercises. New and revised patterns showing form, constructibility, and aesthetics. Everything you need, whether a student or professional, to design details that work. Order your copy today.

"This completely revised Glass Construction Manual presents the current state of the art on planning and building with glass." —Book Jacket.

The field of engineering is becoming increasingly interdisciplinary, and there is an ever-growing need for engineers to investigate engineering and scientific resources outside their own area of expertise. However, studies have shown that quality information-finding skills often tend to be lacking in the engineering profession. Using the Engineerin

Integrate the best building envelope construction methods, materials science, and structural principles in your work using this book as a resource to help you... With more than seventy significant case studies located in North America, South America, Europe, and Asia from prehistory to the present, this book illuminates the theory and techniques of assembling exteriors. Six chapters organized by wall types, from hand-sew monolithic walls to digitally fabricated curtain walls, each have a material focus section to help you understand their intrinsic properties so that you can decide which will best keep the weather out of your building. Examples from the ancient world, including the Pyramids and the Great Wall, through a range of renowned modern architects, such as Studio Gang, Sauerbruch Hutton, Herzog and deMeuron, and Rafael Moneo, illustrate how significant works in the history of architecture explored innovative use of materials – stone, brick, concrete, glass, and aluminium. Along the way, principles of construction from masonry and basic framing through ever more sophisticated envelope systems address classic problems presented by gravity, wind, rain, and sun with studies of lateral forces, building movements and materials that bridge the gaps in between them.

Structures and Architecture

Materiality and Interior Construction

Playing Offstage

Glass in Building

Green Challenges in Research, Practice, and Design Education, 16–18 April, 2007, Eugene, Oregon, USA, University of Oregon

Principles, Applications, Examples

Introduction to building fa çades as revised edition Fa çades determine the appearance of a building. Hence, they constitute a major element in architecture. At the same time, the building's envelope has important functions to fulfil, such as lighting, weatherproofing, thermal insulation, load transfer and sound insulation. Over the past 15 years, fa çades have become increasingly complex – 'intelligent' facades, for instance, adapt to changing climate and lighting conditions. Newly developed materials and technologies have broadened the scope of fa çade functions. This book demonstrates the principles of fa çade construction. It systematically describes the most common types, such as post-and-beam fa çade, curtain wall, corridor fa çade or double fa çade, and provides guidelines for appropriate detailing. Numerous drawings made especially for the book

explain the principles of different types of facades, which are then illustrated with built examples. For this second edition, all chapters were revised and all four examples in the case studies chapter were replaced by new material. The new chapter 'Future Fa çades' offers insights into what's next.

Although the disciplines of architecture and structural engineering have both experienced their own historical development, their interaction has resulted in many fascinating and delightful structures. To take this interaction to a higher level, there is a need to stimulate the inventive and creative design of architectural structures and to persue

This book focuses on spearheading the integration of maintainability, starting right from the design stage. To enable such integration, improving the knowledge of maintainability and setting maintainability benchmarks are two key issues. These objectives are fulfilled with the development of a comprehensive defect library, a material manual and a maintainability scoring system. These tools serve to define acceptable standards in design and construction practices, thus enhancing long-term maintainability of facilities. Maintainability of Facilities: For Building Professionals aims to improve the standard and quality of design, construction and maintenance practices to produce efficient facilities that require minimum maintenance. The text covers technical issues related to maintainability of major components of a facility, and discusses the implications and selection of materials for high maintainability. The target readers are practitioners and students in architecture, engineering, building, real estate, construction, project management, facilities management, quantity and building surveying.

The rise of manufacturing intelligence is fuelling innovation in processes and products concerning a low environmental impact over the product's lifecycle. Sustainable intelligent manufacturing is regarded as a manufacturing paradigm for the 21st century, in the move towards the next generation of manufacturing and processing technologies. The manu

Materials and Methods

The Architecture Reference & Specification Book

For Building Professionals

Cladding of Buildings

Concepts for Designing Building Exteriors

The Theater as a Presence or Factor in the Real World

THE #1 REFERENCE ON BUILDING CONSTRUCTION—UPDATED FROM THE GROUND UP Edward Allen and Joseph Iano's Fundamentals of Building Construction has been the go-to reference for thousands of professionals and students of architecture, engineering, and construction technology for over thirty years. The materials and methods described in this new Seventh Edition have been thoroughly updated to reflect the latest advancements in the industry. Carefully selected and logically arranged topics—ranging from basic building methods to the principles of structure and enclosure—help readers gain a working knowledge of the field in an enjoyable, easy-to-understand manner. All major construction systems, including light wood frame, mass timber, masonry, steel frame, light gauge steel, and reinforced concrete construction, are addressed. Now in its Seventh Edition, Fundamentals of

Building Construction contains substantial revisions and updates. New illustrations and photographs reflect the latest practices and developments in the industry. Revised chapters address exterior wall systems and high-performance buildings, an updated and comprehensive discussion of building enclosure science, evolving tools for assessing environmental and health impacts of building materials, and more. New and exciting developments in mass timber construction are also included. This Seventh Edition includes: 125 new or updated illustrations and photographs, as well as 40 new photorealistic renderings The latest in construction project delivery methods, construction scheduling, and trends in information technology affecting building design and construction Updated discussion of the latest LEED and Living Building Challenge sustainability standards along with expanded coverage of new methods for assessing the environmental impacts of materials and buildings Expanded coverage of mass timber materials, fire resistance of mass timber, and the design and construction of tall wood buildings Revised end-of-chapter sections, including references, websites, key terminology, review questions, and exercises Fully-updated collection of best-in-class ancillary materials: PowerPoint lecture slides, Instructor's Manual, Test Bank, Interactive Exercises, and more Companion book, Exercises in Building Construction, available in print and eBook format

Form for the nuts and bolts on building construction practices and materials, Fundamentals of Building Construction: Materials and Methods, 7th Edition lays the foundation that every architect and construction professional needs to build a successful career. FacadeApertures represent the realm of the exterior wall or facade, which establishes the connection between inside and out and makes it possible to illuminate and ventilate the spaces behind it. This volume deals with the various forms of openings, such as doors, windows, ventilation elements, and fixed glass panes, and their materialization, which also varies according to function; special attention is given to the subject of edges. Themes: Types and positions of openings Technical requirements Construction types Connections/edges

Modern Construction Envelopes deals with the facade and roof as an integral part of the building, allowing a holistic approach to the design of the building envelope and providing greater design freedom. The book is aimed at readers who want to extend their knowledge of wall and roof construction beyond the information given in the Modern Construction Handbook, using state-of-the-art construction principles of modern facade and roof systems. The third edition of this classic has been fully brought up to date; it contains new examples in all chapters and presents the projects in revised, new 3D drawings and in 27 AR applications that can be accessed free of charge via smartphone and tablet.

Most architectural standards references contain thousands of pages of details—overwhelmingly more than architects need to know to know on any given day. The Architecture Reference & Specification Book contains vital information that's essential to planning and executing architectural projects of all shapes and sizes, in a format that is small enough to carry anywhere. It distills the data provided in standard architectural volumes and is an easy-to-use reference for the most indispensable—and most requested—types of architectural information.

Part-Architecture

Glass Construction Manual

The Maison de Verre, Duchamp, Domesticity and Desire in 1930s Paris

Modern Construction Envelopes

Materials, Structures, and Standards

Construction Materials, Methods and Techniques

What happens when a theatrical production moves both literally and aesthetically off the stage and into the world surround the playhouse? Fourteen scholars and theater professionals address an issue that has aesthetic, philosophical, historical, psychological, social, and political implications for all those interested in the theater.

This is a reference work on working with glass. This volume aims to show the wide range of possibilities for using glass in construction, beginning with a historical overview of glass in architecture and explores the principles of construction, with such practical aspects as fixing systems.

Composed of a series of essays, this book deals with the broad issues affecting the nature of architectural materials and provides a focused review of the state of the art materials. It also provides designers with the tools they need to evaluate and select from the thousands of different materials that are available to them. The book is organized into three sections: 'Time' looks at how the materials used in architectural design have changed over the years showing how we have come to use the materials we do in contemporary design.

'Materials' covers all five material families; metals, polymers, ceramics, composites and natural materials giving in depth information on their properties, behavior, origins and uses in design. It also introduces a review of the cutting edge research for each family.

'Systems' outlines the technical design-orientated research that uncovers how new architectural assemblies can be designed and engineered. All of this practical advice is given along with many real case examples illustrating how this knowledge and information has been, and can be, used in architectural design.

Most architectural standards references contain thousands of pages of details—overwhelmingly more than architects need to know to know on any given day. Now there is a place where architects can find vital information essential to planning and executing architectural projects of all shapes and sizes—in a format that is small enough to carry anywhere. Materials, Structures, and Standards distills the data provided in standard architectural volumes and offers a easy-to-use reference for the most indispensable-and most requested-types of architectural information. Part 1, "Building an Architectural Project," addresses basic geometry, architectural drawing types, AutoCAD guidelines, building codes, accessibility issues, structural and mechanical systems, conventional building components, and sustainable design. Part 2, "Materials," provides a detailed catalog of wood, masonry and brick, metals, concrete, and interior finishes. Also included are an illustrated glossary of architectural terms and a cross-referenced guide to the most helpful books, organizations, and websites.

Understanding Steel Design

2007 ARCC Spring Research Conference

Aesthetics, Function, Constructibility

Everything Architects Need to Know Every Day

Bioclimatic Double-Skin Façades

The Structural Basis of Architecture

The new industry standard on landscape architectural detailing Detailing for Landscape Architects takes the reader on an educational journey across three major areas of landscape architectural detailing—aesthetics, function, and constructibility—to demonstrate how powerful design patterns can transform ideas into awe-inspiring built realities. Richly illustrated examples accompany concise discussions of a varied blend of landscape design/detailing issues such as water movement, soil environment, articulating structures and construction assemblies, life cycle costing, sustainability, health and safety, and more. This book approaches the subject of detailing in a systematic manner, and provides a balanced framework for design and workmanship that conveys the essence of the built landscape. Detailing for Landscape Architects shows how details can: Reinforce design ideas through the continuity and discontinuity of patterns Actively contribute to the overall form or geometry of the design Be designed to be durable and flexible while enhancing the entire design Gracefully accommodate the natural growth and change of plant materials Anticipate maintenance needs to minimize future disruptions Maximize their cost effectiveness through understanding their function while designing to meet those functions Including chapters that apply detail patterns to the design of an urban plaza, a roof deck, and a residence, Detailing for Landscape Architects offers guidance on solving specific technical requirements, while preserving and enhancing the visual qualities that celebrate innovation, and carry forth a timeless quality of building.

Glass construction is one of the most varied and innovative areas of structural design. Glass connects exterior and interior spaces; at the same time, it protects the interior space from the outside world. Its constructional possibilities go far beyond classical window constructions. Special glasses possess astonishing physical characteristics and can thus be used in varied and creative ways. Topics: Glass as building material Processing and finishing Applications Construction types Connections / Mountings

Visually enriched with over 250 photographs and drawings, Bioclimatic Double-Skin Façades is an essential reference guide for understanding the types and functions of double-skin façades. Author Mary Ben Bonham examines the history and continuing potential of double-skin architecture, informing on the variety of approaches possible and advising a rigorous integrated design process leading to application. Featuring a wide selection of architectural examples, the book will be of interest to professionals and students within the fields of architecture, engineering, and construction. Characterized by a buffer-like air space between two glazed building skins, double-skin windows and façades aim to improve building comfort and energy performance. Double skins introduce complexity and initial costs, yet significant buildings in locations around the globe continue to select this approach. In addition to exploring motivations, benefits, and cautions for designing with double skins, the book provides a primer on fundamental façade design concepts and strategies for control of thermal, luminous, and acoustic environments. Chapters also address alternative types of high-performance façades and implications for each phase of façade design and construction. Bioclimatic Double-Skin Façades promotes bioclimatic design that is inspired by nature, measured in performance, and uniquely adapted to climate and place. In-depth case studies illustrate how double-skin façades have been adapted to a range of climates and cultural settings: Marseille Library and Grenoble Courthouse in France, Cambridge Public Library in Massachusetts, Manitoba Hydro Place in Canada, and the Pearl River Tower in China.

With the encroachment of the Internet into nearly all aspects of work and life, it seems as though information is everywhere. However, there is information and then there is correct, appropriate, and timely information. While we might love being able to turn to Wikipedia® for encyclopedia-like information or search Google® for the thousands of links on a topic, engineers need the best information, information that is evaluated, up-to-date, and complete. Accurate, vetted information is necessary when building new skyscrapers or developing new prosthetics for returning military veterans While the award-winning first edition of Using the Engineering Literature used a roadmap analogy, we now need a three-dimensional analysis reflecting the complex and dynamic nature of research in the information age. Using the Engineering Literature, Second Edition provides a guide to the wide range of resources available in all fields of engineering. This second edition has been thoroughly revised and features new sections on nanotechnology as well as green engineering. The information age has greatly impacted the way engineers find information. Engineers have an effect, directly and indirectly, on almost all aspects of our lives, and it is vital that they find the right information at the right time to create better products and processes. Comprehensive and up to date, with expert chapter authors, this book fills a gap in the literature, providing critical information in a user-friendly format.

Facades

Advanced Connection Systems for Architectural Glazing

Basics Facade Apertures

Transitions in Architecture. Analysis and Design Tools

Fundamentals of Building Construction

Using the Engineering Literature

Explore the most up-to-date green and sustainable methods for residential and commercial building construction as well as the latest materials, standards, and practices with CONSTRUCTION MATERIALS, METHODS AND TECHNIQUES: BUILDING FOR A SUSTAINABLE FUTURE, 4E. This comprehensive book's logical, well-structured format follows the natural sequence of a construction project. The book is the only one with an organization based on the Construction Specifications Institute (CSI) Masterformat standards. Readers will find the most current industry developments and standards as well as latest relevant building codes within a dynamic new design. This edition emphasizes coverage of today's construction materials, methods and techniques that is critical to success in the industry. Important Notice: Media content referenced within the product description or the product text may not be available in the eBook version.

"Glass in Building" opens up a whole range of fascinating design possibilities for the planning architect. Glass has long served as a translucent room closing element, but its range of possible uses is actually much wider. It not only offers protection against the external world, for example, noise or fire; despite its apparent fragility, it can even take on load-bearing functions in supporting structures. In combination with various different finishing methods, materials, and coatings, it also satisfies exacting structural-physical standards. "Glass in Building" offers a clear, compact, and illustrated overview of the material-appropriate use of this varied and versatile material in building construction and provides information that goes far beyond the basics on designing with glass and producing and using specialized glass products, as well as on the building and planning regulations that must be taken into account when constructing with glass. A selection of exemplary realized projects rounds out the theoretical section. Das Bauen mit Glas eröffnet dem planenden Architekten faszinierende gestalterische Möglichkeiten. Schon lange dient es als lichtdurchlässiger Raumabschluss, ist aber weitaus vielfältiger einsetzbar: Glas bietet nicht nur Schutz vor der Aussenwelt, etwa gegen Lärm oder Feuer, sondern kann trotz seiner vermeintlichen Zerbrechlichkeit sogar lastabtragende Funktionen innerhalb eines Tragwerks übernehmen. In Kombination mit verschiedenen Veredelungsmethoden, Materialien und Beschichtungen erfüllt es auch hohe bauphysikalische Anforderungen. „Detail Practice: Konstruktiver Glasbau“ liefert einen kompakten, anschaulichen Überblick über den materialgerechten Einsatz dieses facettenreichen Baustoffs in der Baukonstruktion und vermittelt weit über die Grundlagen hinausreichende Informationen zum Entwerfen mit Glas, zur Herstellung und Anwendung spezieller Glasprodukte sowie zu den baurechtlichen Regelungen, die im Glasbau zu berücksichtigen sind. Eine Auswahl beispielhafter realisierter Projekte rundet den theoretischen Teil ab.

A comprehensive reference of materials for interior designers and architects Choosing the right material for the right purpose is a critical—and often overlooked—aspect in the larger context of designing buildings and interior spaces. When specified and executed properly, materials support and enhance a project's overall theme, and infuse interior space with a solid foundation that balances visual poetry and functionality. Materiality and Interior Construction imparts essential knowledge on how materials contribute to the construction and fabrication of floors, partitions, ceilings, and millwork, with thorough coverage of the important characteristics and properties of building materials and finishes. Individual coverage of the key characteristics of each material explores the advantages and disadvantages of using specific materials and construction assemblies, while helping readers discover how to make every building element count. In addition,

Materiality and Interior Construction is highly illustrated throughout to show material properties and building assemblies Suppliers rankings and information on the "green" attributes of each material so that designers can make informed decisions for specifications is organized by application for easy and quick access to information. Includes a companion website, featuring an extensive online image bank of materials and assemblies Rather than a typical catalog of materials, Materiality and Interior Construction is efficiently organized so that the reader is guided directly to the options for the location or assembly they are considering. Reliable and easy to use, Materiality and Interior Construction is a one-stop, comprehensive reference for hundreds of commonly used materials and their integration as building components—and an invaluable resource that every interior designer or architect should add to their set of tools.

What is a threshold space? A prelude, an intermediate space, a barrier? Inside or outside? The threshold space is all of these, usually even at the same time. He lives on the spatial ambivalence between opening and closing and at the same time creates the expectation of what is to come. Till Böttger has dealt in teaching and research projects closely with the architectural staging of arrival and reception. His book is a collection of exemplary phenomenological analyzes of spatial transitions in historical and modern cultural buildings by renowned architects. It also develops a methodology to optimize threshold rooms in all construction projects. In addition to a balance that can generate an exciting space, there is also primarily the temporal sequence of experiencing determining. Threshold spaces are shown here in their role as a spatial agent: they receive and bid farewell.

New concepts, applications and challenges

Facade Construction Manual

Maintainability Of Facilities: For Building Professionals

Threshold Spaces

Function - Constructibility - Aesthetics

All the Details Architects Need to Know But Can Never Find

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.

This is a book about structures that shows students how to "see" structures as integral to architecture, and how knowledge of structures is the basis for understanding both the mechanical and conceptual aspects inherent to the art of building. Analyzing the structural principles behind many of the best known works of architecture from past and present alike, this book places the subject within a contemporary context. The subject matter is approached in a qualitative and discursive manner, and is illustrated by many photographs of architectural projects and structural behavior diagrams. This new edition is revised and updated throughout, includes worked-out examples, and is perfect as either an introductory structures course text or as a designer's sourcebook for inspiration.

Insights and Innovations in Structural Engineering, Mechanics and Computation comprises 360 papers that were presented at the Sixth International Conference on Structural Engineering, Mechanics and Computation (SEMC 2016, Cape Town, South Africa, 5-7 September 2016). The papers reflect the broad scope of the SEMC conferences, and cover a wide range of engineering structures (buildings, bridges, towers, roofs, foundations, offshore structures, tunnels, dams, vessels, vehicles and machinery) and engineering materials (steel, aluminium, concrete, masonry, timber, glass, polymers, composites, laminates, smart materials). Some contributions present on (i) the latest insights and new understanding on (ii) the mechanics of structures and systems (dynamics, vibration, seismic response, instability, buckling, soil-structure interaction), and (iii) the mechanics of materials and fluids (elasticity, plasticity, fluid-structure interaction, flow through porous media, biomechanics, fracture, fatigue, bond, creep, shrinkage). Other contributions report on (iii) recent advances in computational modeling and testing (numerical simulations, finite-element modeling, experimental testing), and (iv) developments and innovations in structural engineering (planning, analysis, design, construction, assembly, maintenance, repair and retrofitting of structures). Insights and Innovations in Structural Engineering, Mechanics and Computation is particularly of interest to civil, structural, mechanical, marine and aerospace engineers. Researchers, developers, practitioners and academics in these disciplines will find the content useful. Short versions of the papers, intended to be concise but self-contained summaries of the full papers, are collected in the book, while the full versions of the papers are on the accompanying CD.

Glass offers a wide variety of possible applications for the realization of even the most ambitious designs in architecture, and in the past two decades it has experienced an unparalleled burst of innovation. For planners, this means working constantly with this high-performance material. In compact and appealing form, the completely revised Glass Construction Manual presents the current state of the art on planning and building with glass, from the history through the technical foundations all the way to the most innovative applications. Astonishing perspectives on thermal insulation and solar protection and the addition of thoughtfully selected new practical examples round off this comprehensive reference work.

Encyclopedia of Glass Science, Technology, History, and Culture Two Volume Set

Design and Construction of High-Performance Homes

An Architectural Design Manual

Detailing for Landscape Architects

Building Envelopes, Renewable Energies and Integrated Practice

Materials for Architects and Builders

Part-Architecture presents a detailed and original study of Pierre Chareau's Maison de Verre through another seminal modernist artwork, Marcel Duchamp's Large Glass. Aligning the two works materially, historically and conceptually, the book challenges the accepted architectural descriptions of the Maison de Verre, makes original spatial and social accounts of its inhabitation in 1930s Paris, and presents new architectural readings of the Large Glass. Through a rich analysis, which incorporates creative projects into history and theory research, the book establishes new ways of writing about architecture. Designed for politically progressive gynaecologist Dr Jean Dalsace and his avant-garde wife, Annie Dalsace, the Maison de Verre combines a family home with a gynaecology clinic into a 'free-plan' layout. Screened only by glass walls, the presence of the clinic in the home suggests an untold dialogue on 1930s sexuality. The text explores the Maison de Verre through another radical glass construction, the Large Glass, where Duchamp's complex depiction of unconscious sexual relations across the glass panes reveals his resistance to the marital conventions of 1920s Paris.

This and other analyses of the Large Glass are used as a framework to examine the Maison de Verre as a register of the changing history of women's domestic and material choices, reclaiming the building as a piece of female social architectural history. The process used to uncover and write the accounts in the book is termed 'part-architecture': Derived from psychoanalytic theory, part-architecture uses analytical, descriptive and creative processes, to produce a unique social and architectural critique. Identifying three essential materials to the Large Glass, the book has three main chapters: 'Glass,' 'Dust' and 'Air.' Combining theory text, creative writing and drawing, each traces the history and meaning of the material and its contribution to the spaces and sexuality of the Large Glass and the Maison de Verre. As a whole, the book contributes important and unique spatial readings to existing scholarship and expands dimensions of architectural design and history.

«Facade Construction Manuals provides a systematic survey of contemporary expertise in the application of new materials and energy-efficient technologies in facade design. It surveys the facade design requirements made by various types of buildings, as well as the most important materials, from natural stone through to synthetics, and documents a diversity of construction forms for a wide range of building types.

Basics Glass Construction