

Facade Construction Manual Birkhauser

The industry-standard guide to designing well-performing buildings Architectural Detailing systematically describes the principles by which good architectural details are designed. Principles are explained in brief, and backed by extensive illustrations that show you how to design details that will not leak water or air, will control the flow of heat and water vapor, will adjust to all kinds of movement, and will be easy to construct. This new third edition has been updated to conform to International Building Code 2012, and incorporates current knowledge about new material and construction technology. Sustainable design issues are integrated where relevant, and the discussion includes reviews of recent built works that extract underlying principles that can be the basis for new patterns or the alteration and addition to existing patterns. Regulatory topics are primarily focused on the US, but touch on other jurisdictions and geographic settings to give you a well-rounded perspective of the art and science of architectural detailing. In guiding a design from idea to reality, architects design a set of details that show how a structure will be put together. Good details are correct, complete, and provide accurate information to a wide variety of users. By demonstrating the use of detail patterns, this book teaches you how to design a building that will perform as well as you intend. Integrate appropriate detailing into your designs Learn the latest in materials, assemblies, and construction methods Incorporate sustainable design principles and current building codes Design buildings that perform well, age gracefully, and look great Architects understand that aesthetics are only a small fraction of good design, and that stability and functionality require a deep understanding of how things come together. Architectural Detailing helps you bring it all together with a well fleshed-out design that communicates accurately at all levels of the construction process.

Planning tasks involving existing structures are currently among the most common types of contract, and almost every structure makes different demands and raises individual problems. Reflecting this state of affairs, there are a dizzying number of publications on the market, most of which are quite specialized. The Refurbishment Manual cuts through this jungle of publications. It defines terms and concepts, combines the narrowly focused perspectives of the specialists, and offers concrete approaches to this wide-ranging topic. The Refurbishment Manual closes the gap between basic constructional literature and one-sided, highly specialized technical literature. It constitutes a practical planning aid on the subject of refurbishment, providing a basic introduction to the relevant aspects of building physics, fire protection, sustainability and energy, hazardous materials, construction materials for interior and façade, historic preservation, and technical building equipment. It offers concrete tips on planning steps, methods of building analysis, and cost benchmarks, as well as clear constructional solutions with built projects as examples. A unique feature of the volume is the specially developed timeline, which allows the planner to quickly grasp, categorize, and evaluate a concrete building task and thus obtain an efficient planning overview. Planungsaufgaben im Bestand gehören derzeit zu den häufigsten Auftragsarten und nahezu jedes Bauwerk stellt andere Anforderungen und weist individuelle Probleme auf. Analog dazu gibt es auf dem Markt eine fast unüberschaubare Anzahl Publikationen in meist sehr spezialisierter Form. Der Sanierungsatlas möchte Licht in diesen Publikationsdschungel bringen: Er definiert Begrifflichkeiten, vereint die fokussierenden Betrachtungsweisen der Fachleute und vermittelt konkrete Herangehensweisen an diese weit gefächerte Thematik. Der Sanierungsatlas schließt die Lücke zwischen grundlegender Baukonstruktions- und sehr einseitig spezialisierter Fachliteratur. Das Buch stellt eine praktische Planungshilfe zum Thema Sanierung dar – und zwar in Form von relevanter Grundlagenvermittlung zu Bauphysik, Brandschutz, Nachhaltigkeits- und energetischen Aspekten, Schadstoffen, Baustoffen im Innenraum und an der Fassade, zu Aspekten der Denkmalpflege ebenso wie zur technischen Gebäudeausstattung. Er liefert konkrete Hinweise zu Planungsschritten, Methoden der Bauanalyse und Kostenkennwerten sowie anschauliche Konstruktionslösungen am Beispiel gebauter Projekte. Einzigartig ist die speziell entwickelte Zeitschiene, mit deren Hilfe eine konkrete Bauaufgabe schnell erfasst, kategorisiert und bewertet werden kann – und die dem Planer somit einen effizienten Planungsüberblick verschafft.

What constitutes a high-rise building? A high-rise is, in fact, any building with more than 9 storeys and not just those striking skyscrapers which shape modern city skylines. In the past architects who designed such structures used to be the exception but in the last 10 years more and more architectural offices have begun to focus on this type of building. However, the sheer complexity of designing and planning the construction of a high-rise as opposed to other building types requires a wealth of specialized experience and expertise. The High-Rise Manual is the first comprehensive reference work on this subject. All relevant aspects of such an undertaking are examined in detail by some 24 specialist authors. Each step is extensively documented including the initial project planning, the building organisation, the laying of the foundations, the supporting structure, the building technology, the office design, and the Facility Management. Theoretical contributions present the basic principles of select

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

Contemporary Curtain Wall Architecture

Modern Concrete Construction Manual

Floor Plan Manual Housing

Integrated Planning, Finishings and Fitting-Out, Technical Services

The Green Studio Handbook

Glass in Building

Constructing Architecture

A construction material that once was innovative and modern and then fell somewhat into disrepute through some of the quite radical post-war architecture, concrete is today very popular with planners and builders due to its multifaceted nature. The material offers enormous potential through its extensive load-bearing capacities but also due to the diversity of its properties and surface characteristics. In addition to the technical possibilities customarily attributed to concrete construction, the construction material is on the ascendant not least due to the current debate regarding energy efficiency and sustainability, since it seems tailor-made for the realization of the relevant requirements. It is not just the design and construction of concrete load-bearing structures that are the focus of this publication, but also the materiality and thus the haptic and sensuous side of the material in particular. That's because visible concrete in "smooth gray flawless" quality is not everything that concrete has to offer. Even designers and interior decorators develop furniture and space innovations of unimagined sensuality. The Modern Concrete Construction Manual provides the planner with well-founded expert information regarding the construction material of concrete, ranging from manufacturing to materiality to the design of concrete load-bearing structures, including current options for digital design and production processes. As a standard reference volume, the publication offers comprehensive and detailed insights regarding topics including cost-

effectiveness, energy and sustainability, renovation, design and interior decoration. An extensive index of works with successful real-life examples provides inspiration and invites the reader to make modern use of a classical construction material.

Building with straw bales is a technique pioneered a century ago in the state of Nebraska. In recent years there has been a renaissance in the use of straw as a building material largely in the American Southwest, but also in Canada, Australia, France, Holland, Germany, Austria and China. Straw is a renewable resource with excellent insulating properties. It is a cheap and easy-to-use option for self-builders, and even large-scale structures can be erected using timber framework filled with straw. This book is a practical, hands-on guide to building with straw. Fire safety, protection against moisture, damp, pests and parasites are treated in detail. Numerous on-site photos document the process of assembly and construction step by step. 30 exemplary international projects illustrate the wide spectrum of design possibilities with straw.

This book argues that we are living in an era of deep mutation, and the anthropocentric model no longer fits our way of living and behaving on Earth. Climate change is upsetting our relationship with nature and the environment, while artificial intelligence scenarios undermine the foundations of human life. As the pressure to re-align based on new modes of living and consuming increases, the first priority should be to address the way we imagine, design, produce and construct our built environment. The highly original book explores how the relation between design technology and material cultures can underpin and drive this change. It discusses the need for a new “material balance” to develop our design practice, not only from an energy and environmental perspective, but also from a physiological, cultural and semantic one, in order to re-balance the impact of material design on society. This publication is an excellent guide to understanding in detail the theoretical framing of several crucial topics in material balance design, from computational knitting to material agency, and from new acoustic ecology to future façade technologies, bio-based design and ultimately non-anthropocentric habitats, offering insights into preferable future scenarios.

Facade Construction ManualDetail

Understanding Steel Design

Glass Construction Manual

Environmental Strategies for Schematic Design

Function, Constructibility, Aesthetics

A Design Manual

Refurbishment Manual

Typology and Design, Construction and Technology

«Facade Construction Manual» 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.

Every building is composed of parts, or components, that may be organized in various ways. For example, there are different ways to configure walls so that they perform their primary functions – bearing, dividing, and sheltering – in an optimal manner. This book presents the most common load-bearing systems, such as plate, massive, and skeleton construction, and describes their impact on the structure as a whole. It explains how spaces can be vertically or horizontally connected and assembled into larger wholes. The individual elements, such as floor slabs, roofs, openings, and foundations, are described together with their functions and the various possibilities for connecting them. The book goes beyond the wealth of possible detail to demonstrate the basic principles of detailing. Numerous specially prepared drawings set forth the principles of components and then illustrate them with reference to realized projects. The Construction Manuals from Edition Detail are among the most important reference works in the specialist literature. The latest volume shows the potential of the material concrete and documents comprehensively the technical principles of using concrete in construction. Chapters cover the history of the material, the properties of concrete, reinforced concrete, and prestressed concrete, the treatment of its surface. Also covered are the basic principles of statics for large and small structures, and the building requirements with respect to heat, damp, sound-proofing and fire protection according to the most recent norms and standards. Finally a large number of built examples are presented from illustrations of the complete structure down to detailed plans, showing the broad spectrum of applications for concrete in contemporary building. All plans have been specially produced by the editorial department Detail for this book and for ease of comparison, they have been drawn to the same scale.

In recent years, facades have become more important in architectural practice and in public perception. As well as functioning as a protective shell and visible 'face' and supplying heat and electricity, a building's exterior interacts directly with the surrounding public space. This revised and expanded new edition of the Facade Construction Manual offers readers technical and design planning fundamentals in a compact reference work. A section describing a comprehensive selection of built structures shows general and unique, tried and tested, and innovative approaches to facade planning - down to the last detail.

Straw Bale Construction Manual

Facade Construction Manual

Sustainable Architecture

Components and Connections

The Potential of Additive Manufacturing for Facade Constructions

Masonry Construction Manual

Manual of Multi-storey Timber Construction

While the efficiency and sustainability offensive is in full swing in most sectors of the economy, in the construction sector it is still in its very beginnings – economically as well as

However, politicians and policymakers at the global, European, and national levels have begun to address this deficit and are seeking to correct it with legal requirements and laws building certifications, and competitions. Following the proven model of earlier manuals in the series, the Energy Manual presents a comprehensive look at the constructional parameters of energy efficiency and sustainability. It offers an advance look at the legal regulations being planned by the EU, and – as a tool ready for immediate use by architects, engineers, and design work – it points the way toward the efficient and sustainable construction and operation of buildings. With its focus on the entire lifecycle of a building, it provides an integrated and necessary prerequisite for sustainable economic management.

"Wood is suitable for use in multi-storey building construction with barely any restrictions. This is new and requires creative rethinking of tried and tested practices in wood construction. New categories can be replaced by mixed construction methods as necessary within a project, which yields completely new possibilities in designing wood structures. The Manual provides architects, engineers and wood specialists with the essential expertise on the new systematic and construction methodology, from the design to prefabrication to the implementation on site for mutual understanding among everyone involved in the project, to facilitate the necessary cooperation in the integral planning and construction process." --Publisher.

Now in its second edition: the trailblazing introduction and textbook on construction includes a new section on translucent materials and an article on the use of glass. People involved in architecture need to be familiar with construction methods in order to be in control of their designs. New technical requirements impact on our buildings and call for specialist knowledge, which leads to new forms of architecture. This handbook uses clearly comprehensible 3D isometric diagrams to introduce the world of contemporary construction through to the detail; photographs are used to illustrate the content. The three main chapters deal with the structure, the building envelope, and the fit-out, starting with a clear explanation of construction principles of modern building methods. Using drawings of selected built examples at scales of 1:10 and 1:20, a deeper examination of details is possible.

Bio-based Building Skin

Construction Manual for Polymers + Membranes

Manual

Materials, Semi-finished Products, Form Finding, Design

Design Manual for Revitalizing Existing Buildings

A Design Equation

An Architectural Design Manual

As a building material, precast concrete allows a wide range of sculptural forms and design options. By treating the surface in various ways, fascinating textures and fine finishes can be produced. This book provides a systematic overview of the variety of applications for such concrete elements throughout Europe. Author David Bennett provides in-depth information on newly developed, especially lightweight forms of concrete such as GRC (Glass-Fibre Reinforced Concrete), Ductal and CRC (Compact Reinforced Concrete). A selection of some 24 projects which are of particular significance, are documented in detail and provide a wealth of inspiring design ideas. The appendix comprises an overview of the building practices in the individual European countries and the availability of concrete elements. Amongst the buildings documented are the Scottish Parliament Building in Edinburgh by Enric Miralles Benedetta Tagliabue, the Synagogue in Dresden by Wandel, Hofer, Lorch + Hirsch, and the Mexican Embassy in Berlin by González de León.

"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.

The Floor Plan Manual Housing has for decades been a seminal work in the field of architecture. In its 5th, revised and expanded edition, approximately 160 international housing projects built after 1945 are documented and analyzed. The focus is on exemplary and transferrable projects, and on innovative and trendsetting concepts. The systematic representation of all projects allows the reader to compare and evaluate various floor plans – and to be inspired by the wealth of ideas and strategies for one's own design work. The introductory theoretical and historical essays have been newly written or updated, and offer a structured overview of the residential housing typology and its development.

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.

Architectural Detailing

Principles of Construction

AM Envelope

High-rise Manual

Flat Roof Construction Manual

Timber Construction Manual

Steel Construction Manual

Soccer stadiums, airports, theaters, museums - it falls to very few architects to tackle spectacular building tasks like these. The everyday work of most architects is more often focused on "manageable" projects like the renovation, remodeling, or rebuilding of single- and multi-family houses, schools, and offices. Whatever the nature of the building task, interior construction is always a significant design and qualitative challenge that calls for highly detailed technical expertise. After all, it affects the realm that will be brought to life and utilized by the user when the task is finished, and whose aesthetic and functional serviceability will be put to the test each and every day. The Interior Construction Manual supports planners in their daily work as a practical planning aid and reference work with the relevant standards, guidelines, reference details, and constructional solutions, all illustrated by built example projects. It brings together the crucial facts on all aspects of interior construction and presents the key fundamentals of building physics, fire protection, interior construction systems, and openings. In addition, it offers concrete tips on integrated planning approaches, energy and sustainability issues, materials used in interior construction, hazardous substances, and dealing with building services and light planning.

Modern Construction Case Studies focuses on the interface between the design of facades, structures and environments of 12 building projects, all developed by Newtecnic. The Author compares facade technologies, particularly in the way they interface with structure and MEP (mechanical, electrical, plumbing services) in complex projects, to provide insights into the design process for building envelopes. Each envelope technology is described with an emphasis on one of three aspects: geometry, construction and performance. The analysis links the 12 case studies by comparing their structural and environmental performance. The aim is achieved by analyzing typical bays which are representative of each project and which illustrate the implications of using different building envelope technologies.

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.

The Green Studio Handbook remains an essential resource for design studios and professional practice. This extensive and user-friendly tool presents practical guidelines for the application of green strategies during the schematic design of buildings. Students and professionals can quickly get up to speed on system viability and sizing. Each of forty-three environmental strategies includes a brief description of principles and concepts, step-by-step guidance for integrating the strategy during the early stages of design, annotated tables and charts to assist with preliminary sizing, key issues to consider when implementing the strategy, and pointers to further resources. Ten new in-depth case studies illustrate diverse and successful green buildings integrated design projects and how the whole process comes together. This third edition features updated tables and charts that will help to save energy, water, and material resources during the early stages of design. More than 500 sketches and full-color images illustrate how to successfully apply strategies. A glossary, a project index listing 105 buildings in 20 countries, updated tables and drawings, and I-P and SI units increase the usefulness of The Green Studio Handbook.

Façades

Design, Construction, Examples

Materials, Processes, Structures

Gebäude Als Materialressource / Buildings As Sources of Materials

Emerging Innovation in Building Techniques

Modern Construction Case Studies

The construction manuals from Edition Detail have set new standards in the field of specialist literature, becoming an indispensable part of any architect's library. The latest volume covers brickwork and the wide range of possibilities it offers. A completely new and revised edition, it documents in detail the technical principles involved in using brickwork for building materials used, their properties, the sizes and forms of bricks, the bonds, and the behaviour of brickwork under stress. The methods of building with brick are also dealt with in detail. Information is provided on the requirements with respect to heat, damp, sound-proofing and fire protection, and the most recent standards and norms are listed. Finally, a large number of examples are presented, complete with plans and details, all of which illustrate the many applications of brickwork in contemporary construction. All plans have been specially produced by

Detail for this book and for ease of comparison, they have been drawn to the same scale.

"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 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 combination with various different finishing methods, materials, and coatings, it also satisfies exacting structural-physical standards. "Glass in Building" offers a clear, compact, and practical 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 on 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 and a theoretical section. Das Bauen mit Glas eröffnet dem planenden Architekten faszinierende gestalterische Möglichkeiten. Schon lange dient es als lichtdurchlässiger Raumabschluss. Glas ist vielfältiger einsetzbar: Glas bietet nicht nur Schutz vor der Aussenwelt, etwa gegen Lärm oder Feuer, sondern kann trotz seiner vermeintlichen Zerbrechlichkeit sogar Lastabtragung eines Tragwerks übernehmen. In Kombination mit verschiedenen Veredelungsmethoden, Materialien und Beschichtungen erfüllt es auch hohe bauphysikalische Anforderungen. „Der konstruktive Glasbau“ liefert einen kompakten, anschaulichen Überblick über den materialgerechten Einsatz dieses facettenreichen Baustoffs in der Baukonstruktion und vermittelt Grundlagen hinausreichende Informationen zum Entwerfen mit Glas, zur Herstellung und Anwendung spezieller Glasprodukte sowie zu den baurechtlichen Regelungen, die im Glasbau zu beachten sind. Eine Auswahl beispielhafter realisierter Projekte rundet den theoretischen Teil ab.

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

Hospitals as a building type have undergone a substantial evolution in the past years. Changes in healthcare, the impact of evidence-based medicine and aspects of healthcare (e.g. clustering of diagnostic procedures in specialized clinics) pose new and different challenges for the designer. Private healthcare facilities herald the paradigm change from the large, complex to a design-conscious health institution with luxury hotel features. Health centers more devoted to prevention rather than cure have been another important trend. This book provides principles and requirements for the planning of hospitals and other health facilities. An international case study section documents 40 best-practice projects in six categories: general hospitals, specialized clinics, outpatient clinics and health centers as well as rehabilitation clinics.

Material Balance

Concrete Construction Manual

Manual of Recycling

Towards a new product architecture for curtain walls

Concrete

Integral Facade Construction

Construction

Das Nachschlagewerk zur Konstruktion mit Holz und Holzwerkstoffen mit einem ausführlichen Kapitel zum Thema Ökologie, bauphysikalischen Grundlagen mit den Schwerpunkten Wärme-, Schall- und Brandschutz. Im Bereich der Tragwerksplanung spielen die neuen Verbindungsmittel eine wichtige Rolle.

Most of the buildings that will be needed in Europe in the coming decades have long since been built. The building tasks of the future lie in the skillful reuse and transformation of existing building stock, whether it be the redevelopment of historic city centers, the building of extensions onto residential structures, the expansion of public buildings, or the redevelopment of entire factory areas. Building in the existing fabric calls for highly specific approaches in planning, construction, and implementation. It spans a broad range of building tasks, from working within the guidelines of historic preservation and renovating carefully and cautiously all the way to the complete transformation of what exists. In addition to aesthetic transformation, technical aspects such as improving energy efficiency and working with contaminated building materials also play an important role. This book provides a comprehensive overview of architectonic strategies of "continuing to build." It presents intelligent ideas and approaches for working with existing building stock and divides them into three categories according to the method selected: addition, transformation, and reuse. Presented in this volume are everyday projects such as the revitalizing of structures from the 1950s to the 1970s - for example, the renovation of Siedlung Heuried in Zurich by Adrian Streich Architekten - but also more specialized examples such as the open-air library made of elements recycled from the façade of a department store in Magdeburg-Salbke by Karo* Architekten. Interviews with experts provide helpful background information on selected topics. How is it possible to keep the immense deposits of raw materials in buildings "active" and realise environmentally sustainable buildings in the long term? 0 Besides "sufficiency, consistency and efficiency", this goal implies the intelligent use of resources, the recyclability of structures, circular construction methods that reuse decommissioned materials, in short "urban mining". This requires a rethink in planning and execution, thus posing a great challenge for architects and engineers. 0 The Recycling Manual provides the necessary expertise for the associated paradigm shift in construction. In addition to successful project examples, this comprehensive and detailed

guide provides in-depth explanations on calculation methods and tendering aspects.

This book provides a compendium of material properties, demonstrates several successful examples of bio-based materials' application in building facades, and offers ideas for new designs and novel solutions. It features a state-of-the-art review, addresses the latest trends in material selection, assembling systems, and innovative functions of facades in detail. Selected case studies on buildings from diverse locations are subsequently presented to demonstrate the successful implementation of various biomaterial solutions, which defines unique architectural styles and building functions. The structures, morphologies and aesthetic impressions related to bio-based building facades are discussed from the perspective of art and innovation; essential factors influencing the performance of materials with respect to functionality and safety are also presented. Special emphasis is placed on assessing the performance of a given facade throughout the service life of a building, and after its end. The book not only provides an excellent source of technical and scientific information, but also contributes to public awareness by demonstrating the benefits to be gained from the proper use of bio-based materials in facades. As such, it will appeal to a broad audience including architects, engineers, designers and building contractors.

The Art of Precast Concrete

Hospitals

Old & New

Maintenance, Conversions, Extensions

Principles, Applications, Examples

Design and Technology of a Sustainable Architecture

Energy Manual

The external facades of a building are more than a protective mantle, or an intelligent skin regulating temperature and light, they also determine its very appearance. By unusual choices of materials and the use of complex technology, facades have become increasingly significant in recent years. External surfaces are being perceived as an integral part of the building and are therefore being designed as such. This volume focuses on the wide-ranging aspects of facade design, from the selection and use of materials to the advanced technical possibilities now open to the architect. A wide array of carefully selected international examples show the theory in the practice. All plans, details, and large scale sections of the facades have been researched with the high degree of competence typical of the editorial staff from the review Detail. Expert authors provide the essential information needed to plan and design facades and elucidate on the latest developments in technology and materials.

This book shows the potential of Additive Manufacturing (AM) for the development of building envelopes: AM will change the way of designing facades, how we engineer and produce them. To achieve today's demands from those future envelopes, we have to find new solutions. The term 'AM Envelope' (Additive Manufacturing Envelope) describes the transfer of this technology to the building envelope. Additive Fabrication is a building block that aids in developing the building envelope from a mere space enclosure to a dynamic building envelope. AM offers the opportunity to manufacture facades 'just in time'. It is no longer necessary to store or produce large numbers of parts in advance. Initial investment for tooling can be avoided, as design improvements can be realized within the dataset of the AM part. AM is based on 'tool-less' production, all parts can be further developed with every new generation. The basic principle of AM opens a fascinating new world of engineering, no matter what applications can be found: to 'design for function' rather to 'design for production' turns our way of engineering of the last century upside down. A collection of AM applications therefore offers the outlook to our (built) future in combination with the acquired knowledge.

often described as the "fifth façade", the flat roof is extremely popular with architects. Its essential task is to shelter the space beneath it from the elements. Beyond this, the use of flat roofs may be optimized by integrating them as green roofs, roof terraces, circulation areas, and even productive solar roofs. In practice, however, their correct and professional realization is a highly exacting task: in addition to providing the planner with basic rules of construction and design, the Flat Roof Manual also supplies an overview of the use and construction types as well as the standard assemblies for flat roofs. Together with the most important standards and bodies of regulations, construction drawings of the principal connection points round out the volume.

For ease of comparison all the plans have been drawn to the same scale." "The volume concludes with an extensive bibliography and a listing of the relevant norms and standards, making this work an essential reference for all architects and engineers."--BOOK JACKET.

Building Skins

Interiors Construction Manual

Colour, Texture, Expression

Materials, Design, Applications

Basics Facade Apertures

Structural Design, Material Properties, Sustainability

Whether it be as translucent sheets, broadly stretched membranes, and inflated foil cushions or in graceful, organic curves, architecture today is utilizing plastics in the most disparate forms and for a wide variety of purposes. Innovative technical developments are constantly improving its material properties; at the same time, there is a growing new awareness of its potential as a construction material. While plastics used to be employed primarily as an inexpensive variant on traditional building materials, they are increasingly regarded in the construction world today as a serious and viable alternative, be it as supporting structures, roofs, facades, or elements of interior design and decoration. Thanks in large part to this inherent self-sufficiency, plastics are currently enjoying an unprecedented surge in popularity, even among the international architectural avant-garde - as multiwall sheets or corrugated, fiber-reinforced panels, or as filling between glass panes. And the new generation of ecological bioplastics also pays tribute to the debate on sustainability, ridding plastics of their lingering reputation as environmental offenders. From the history of plastics and membranes in architecture to their material properties and requirements in construction and design, the *Plastics and Membranes Construction Manual* cuts to the chase, providing the kind of solid and comprehensive overview of the subject that readers have come to expect from the *Im DETAIL* series. Selected project examples round off the reference work and make it indispensable for the day-to-day life of the professional planner and for every architecture library.

Integral Facade Construction focuses on the future development of the curtain wall. While the requirements on facades have slowly increased over the last decades, the curtain wall has evolved from craftsmanship oriented constructions to highly developed facade systems. But its constructional principle is still the same. Simplified, it can be described as a two-dimensional stick system with infill. With the latest requirements of almost energy neutral buildings, faster building processes and increasing technicalisation of the building envelope this constructional principle is reaching its limits. The curtain wall system has reached a state of maturity; and it needs a new approach to guaranty that this successful product will meet the challenges of the future.

Introduction to building façades as revised edition *Façades* 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, façades 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 façade functions. This book demonstrates the principles of façade construction. It systematically describes the most common types, such as post-and-beam façade, curtain wall, corridor façade or double façade, 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 Façades" offers insights into what's next.

Concrete-design and build with the construction material of the future With its virtually infinite plasticity, its constructional versatility, and its simple and straightforward building technology, concrete is the building material of the present. In addition to careful design and constructional planning, the invitation of bids and the building contract are the keys to a successful implementation. *Building with Concrete* provides the basic information needed to work with the material, with special attention to the architect's role in planning and construction management. It describes current trends in concrete technology and the development of innovative new types of concrete, with firsthand reports by architects in the field. It also describes the new version of the DBV/BDZ data sheet "Exposed Concrete."