

Siteless 1001 Building Forms

SITELESS1001 Building Forms MIT Press

The first digital turn in architecture changed our ways of making; the second changes our ways of thinking. Almost a generation ago, the early software for computer aided design and manufacturing (CAD/CAM) spawned a style of smooth and curving lines and surfaces that gave visible form to the first digital age, and left an indelible mark on contemporary architecture. But today's digitally intelligent architecture no longer looks that way. In *The Second Digital Turn*, Mario Carpo explains that this is because the design professions are now coming to terms with a new kind of digital tools they have adopted—no longer tools for making but tools for thinking. In the early 1990s the design professions were the first to intuit and interpret the new technical logic of the digital age: digital mass-customization (the use of digital tools to mass-produce variations at no extra cost) has already changed the way we produce and consume almost everything, and the same technology applied to commerce at large is now heralding a new society without scale—a flat marginal cost society where bigger markets will not make anything cheaper. But today, the unprecedented power of computation also favors a new kind of science where prediction can be based on sheer information retrieval, and form finding by simulation and optimization can replace deduction from mathematical formulas. Designers have been toying with machine thinking and machine learning for some time, and the apparently unfathomable complexity of the physical shapes they are now creating already expresses a new form of artificial intelligence, outside the tradition of modern science and alien to the organic logic of our mind.

Robotics is the fastest-growing and most exciting area of development in architecture and architectural education for a generation, offering new paradigms for design and fabrication. Schools and practices around the world are engaging robotics and this publication offers new insights into the full design potential of their application. *Robot House* features projects produced by one of the most innovative robotics design studios in the world, often interacting with a wide range of technologies from motion capture to material science - a realm far beyond conventional 3D modeling and the capabilities of 3D printing. The book has three central sections: *Techniques*, which sets out the fields and the thinking that underlie the new uses for robotics; *Projects*, which offers detailed presentations that explore how these principles can be applied and augmented through interactive prototypes and working models; and *Platforms*, which presents the working tools for used for this new genre of improvisational robotics through specially drawn technical illustrations. The introduction frames the current developments in the history of architectural innovation, and the reference section includes a glossary and diagrams.

Now in its fifth edition, the *Textbook of Diabetes* has established itself as the modern, well-illustrated, international guide to diabetes. Sensibly organized and

easy to navigate, with exceptional illustrations, the Textbook hosts an unrivalled blend of clinical and scientific content. Highly-experienced editors from across the globe assemble an outstanding set of international contributors who provide insight on new developments in diabetes care and information on the latest treatment modalities used around the world. The fifth edition features an array of brand new chapters, on topics including: Ischaemic Heart Disease Glucagon in Islet Regulation Microbiome and Diabetes Diabetes and Non-Alcoholic Fatty Liver Disease Diabetes and Cancer End of Life Care in Diabetes as well as a new section on Psychosocial aspects of diabetes. In addition, all existing chapters are fully revised with the very latest developments, including the most recent guidelines from the ADA, EASD, DUK and NICE. Includes free access to the Wiley Digital Edition providing search across the book, the full reference list with web links, illustrations and photographs, and post-publication updates Via the companion website, readers can access a host of additional online materials such as: 200 interactive MCQ's to allow readers to self-assess their clinical knowledge every figure from the book, available to download into presentations fully searchable chapter pdfs Once again, Textbook of Diabetes provides endocrinologists and diabetologists with a fresh, comprehensive and multi-media clinical resource to consult time and time again.

In the kingdom of architecture the shape reigns supreme. Ever since the beginning of history, pure geometric form has been one of architecture's recurrent obsessions. A genealogy of buildings shaped as pyramids, spheres, and cubes can be traced back to ancient times, while contemporary projects, either as poured concrete or virtual bytes, often resemble stacked boxes and looping skyscrapers. Despite torrents of pure shapes flooding with evidence magazine pages and computer screens around the world, architecture lacks a written work to declare its intentions. Pure Hardcore Icons is the first manifesto on pure form in architecture. WAI Architecture Think Tank, directed by authors Nathalie Frankowski and Cruz Garcia, have created a vade mecum with provocative collages, essays and an interview that promise to bring form--a persistent taboo in the theoretical discourse--to the forefront of the architectural discussion. Through a mixture of perspicacity, conviction and humour, Pure Hardcore Icons aims to raise awareness about the dialectic of pure form and architecture, hoping that its potential and limitations could be fully grasped either in practice, academia, or as a cultural and intellectual exercise.

This unique appraisal of the famous Swiss architect's major works have now been expanded to include two more buildings. The Villa Shodhan and the Pavilion Suisse round out the coverage of Le Corbusier's significant works. The author critically examines Le Corbusier's achievements helping student and professional alike to appreciate the elements of successful design. The narrative and fine illustration cover the key buildings from each of the four developmental stages of his work, making it an excellent guide for practicing architects and students.

Citizens of No Place is a collection of short stories on architecture and urbanism, graphically represented using manga-style storyboards. Fiction is used as a strategy to unpack thoughts about architecture. Modeled as a proto-manifesto, it is a candid chronicle of a highly critical thought process in the tradition of paper architecture (especially that of architect John Hejduk and Bernard Tschumi's Manhattan Transcript). The short stories explore many architectural problems through the unique language of the graphic novel, helping usher the next generation of architectural theory and criticism.

The core idea for this book is the use of operative verbs as tools for designing space. These operative verbs abstract the idea of spatial formation to its most basic terms, allowing for an objective approach to create the foundation for subjective spatial design. Examples of these verbs are expand, inflate, nest, wist, lift, embed, merge and many more. Together they form a visual dictionary decoding the syntax of spatial verbs. The verbs are illustrated with three-dimensional diagrams and pictures of designs which show the verbs 'in action'. This approach was devised, tested, and applied to architectural studio instruction by Anthony Di Mari and Nora Yoo while teaching at Harvard University's Career Discovery Program in Architecture in 2010. As instructors and as recent graduates, they saw a need for this kind of catalogue from both sides - as a reference manual applicable to design students in all stages of their studies, as well as a teaching tool for instructors to help students understand the strong spatial potential of abstract operations.

A graphic guide to ornaments of 20th century building envelopes.

Providing both an introduction to basic concepts and an in-depth treatment of the most up-to-date methods for the design and analysis of concrete of structures, "Design of Prestressed Concrete" will service the needs of both students and professional engineers.

The move to liveable communities--ideal ``small towns" and neighborhoods where people work, live, play, and walk from place to place--is on. Profit from what a visionary group of architects leading this movement has learned about designing new ``small towns" in Peter Katz's The New Urbanism. You'll discover the amazing potential for this kind of work as well as case studies, site plans, project analyses, and 180 beautiful photographs. This unique reference also tackles--and answers--the critical issues of crime, health, traffic, environmental degradation, and economic vitality and opens a startling window on the look and feel of future communities. Every designer can profit from this guide to building the utopias of tomorrow--today!

It has been shown that spatial perception can be improved through practice. Opportunities to offer such practice are offered in this workbook, which was tested by nearly one thousand architecture students before publication, and emerged from an academic study funded by the Swiss National Science Foundation, conducted jointly by the Zurich University of Applied Sciences (ZHAW) and the ETH Zurich. The book contains 90 exercises that work with

architectural elements but can be mastered without prior knowledge, plus a section with solutions and explanatory texts by experts from theory and practice by M. Berkowitz, D. Dietz, B. Emo, A. Gerber, Chr. Hölscher, P. Holgate, St. Kurath, C. Leopold, D. Schulz, Th. & N. Shipley, E. Stern, D. Uttal.

This book presents some of the world's greatest modern buildings, from 1950 to the present, dissected and analyzed through specially commissioned freehand drawings.

Architecture is the art and science of accommodating the lives we want to live. Our cities and buildings aren't givens; they are the way they are because that is as far as we have come to date. They are the best efforts of our ancestors and fellow planetizens, and if they have shortcomings, it is up to us to continue that effort, pick up where they left off. Bjarke Ingels Group's (BIG) grand mission is to find a pragmatic utopia, shaping not only a particular structural entity, but the kind of world we wish to inhabit. This book examines BIG's odyssey of architectural adaptation

In this second edition an additional section outlines the relationship between some current perceptions of science, art, and philosophy, and how these impinge on architecture.

Parametricism is an avant-garde architecture and design movement that has been growing and maturing over the last 15 years, emerging as a remarkable global force. The tendency started in architecture but now encompasses all design disciplines, from urban design to fashion. In architecture, the style has an international following and is currently progressing beyond its experimental roots to make an impact on a broader scale, with practices like Zaha Hadid Architects (ZHA) winning and completing large-scale architectural projects worldwide.

Parametricism implies that all elements and aspects of an architectural composition or product are parametrically malleable; and the style owes its original, unmistakable physiognomy to its unprecedented use of computational design tools and fabrication methods. All design parameters are conceived as variables that allow the design to vary and adapt to the diverse, complex and dynamic requirements of contemporary society. Although Parametricism has been talked about and hotly debated for a number of years, so far there has been no publication dedicated to Parametricism. The issue is guest-edited by Patrik Schumacher, partner at ZHA, and one of the world's most highly renowned advocates of Parametricism. Contributors: Philippe Block, Shajay Bhooshan, Mark Burry, Mario Carpo, Manuel DeLanda, John Frazer, Mark Foster Gage, Enriqueta Llabres and Eduardo Rico, Achim Menges, Theo Spyropoulos, Robert Stuart-Smith, Philip F Yuan. Featured architects and designers: Arup, MARC FORNES/THEVERYMANY, Zaha Hadid Architects (ZHA) and Ross Lovegrove. Drawings, doodles, and ideograms argue with ferocity and wit for traditional urbanism and architecture. Architect Léon Krier's doodles, drawings, and ideograms make arguments in images, without the circumlocutions of prose. Drawn with wit and grace, these clever sketches do not try to please or flatter the

architectural establishment. Rather, they make an impassioned argument against what Krier sees as the unquestioned doctrines and unacknowledged absurdities of contemporary architecture. Thus he shows us a building bearing a suspicious resemblance to Norman Foster's famous London "gherkin" as an example of "priapus hubris" (threatened by detumescence and "priapus nemesis"); he charts "Random Uniformity" ("fake simplicity") and "Uniform Randomness" ("fake complexity"); he draws bloated "bulimic" and disproportionately scrawny "anorexic" columns flanking a graceful "classical" one; and he compares "private virtue" (modernist architects' homes and offices) to "public vice" (modernist architects' "creations"). Krier wants these witty images to be tools for re-founding traditional urbanism and architecture. He argues for mixed-use cities, of "architectural speech" rather than "architectural stutter," and pointedly plots the man-vehicle-landneed ratio of "sub-urban man" versus that of a city dweller. In an age of energy crisis, he writes (and his drawings show), we "build in the wrong places, in the wrong patterns, materials, densities, and heights, and for the wrong number of dwellers"; a return to traditional architectures and building and settlement techniques can be the means of ecological reconstruction. Each of Krier's provocative and entertaining images is worth more than a thousand words of theoretical abstraction.

Along with plan and elevation, section is one of the essential representational techniques of architectural design; among architects and educators, debates about a project's section are common and often intense. Until now, however, there has been no framework to describe or evaluate it. *Manual of Section* fills this void. Paul Lewis, Marc Tsurumaki, and David J. Lewis have developed seven categories of section, revealed in structures ranging from simple one-story buildings to complex structures featuring stacked forms, fantastical shapes, internal holes, inclines, sheared planes, nested forms, or combinations thereof. To illustrate these categories, the authors construct sixty-three intricately detailed cross-section perspective drawings of built projects—many of the most significant structures in international architecture from the last one hundred years—based on extensive archival research. *Manual of Section* also includes smart and accessible essays on the history and uses of section.

After two decades of experimentation with the digital, the prevalent paradigm of formal continuity is being revised and questioned by an emerging generation of architects and theorists. While the world struggles with a global housing crisis and the impact of accelerated automation on labour, digital designers' narrow focus on mere style and continuous differentiation seems increasingly out of touch. This issue charts an emerging body of work that is based on a computational understanding of the discrete part or building block – elements that are as scalable, accessible and versatile as digital data. The discrete proposes that a new, digital understanding of assembly, based on parts, contains the greatest promise for a complex, open-ended, adaptable architecture. This approach capitalises on the digital economy and automation, with the potential of

the digital to democratise production and increase access. The digital not only has deep implications for how we design and produce architecture; it is first and foremost a new system of production with economic, social and political consequences that need to be taken into account. This issue presents a diverse body of work focused on the notion of the discrete: from design experiments and aesthetics, to urban models, tectonics, distributed robots, new material organisations and post-capitalist scenarios engaging with automation.

Contributors: Viola Ago, Mario Carpo, Emmanuelle Chiappone-Piriou, Mollie Claypool, Manuel Jimenez García, Daniel Koehler and Rasa Navasaityte, Immanuel Koh, Neil Leach, Ryan Manning, Philippe Morel, M Casey Rehm, Jose Sanchez, Marrikka Trotter, Manja van de Worp, Maria Yablonina and Lei Zheng. Featured Architects: Kengo Kuma, Lab-eds, Plethora Project, MadM, EZCT, Eragatory and Studio Kinch.

Seeking to identify a new architectural will and a new social and cultural panorama, this volume aims to contribute to forming a vision that is global - but not necessarily absolute - of what is already showing itself to be a new architectural action, related to that coined as "advanced culture".

Reflecting the historic first European seismic code, this professional book focuses on seismic design, assessment and retrofitting of concrete buildings, with thorough reference to, and application of, EN-Eurocode 8. Following the publication of EN-Eurocode 8 in 2004-05, 30 countries are now introducing this European standard for seismic design, for application in parallel with existing national standards (till March 2010) and exclusively after that. Eurocode 8 is also expected to influence standards in countries outside Europe, or at the least, to be applied there for important facilities. Owing to the increasing awareness of the threat posed by existing buildings substandard and deficient buildings and the lack of national or international standards for assessment and retrofitting, its impact in that field is expected to be major. Written by the lead person in the development of the EN-Eurocode 8, the present handbook explains the principles and rationale of seismic design according to modern codes and provides thorough guidance for the conceptual seismic design of concrete buildings and their foundations. It examines the experimental behaviour of concrete members under cyclic loading and modelling for design and analysis purposes; it develops the essentials of linear or nonlinear seismic analysis for the purposes of design, assessment and retrofitting (especially using Eurocode 8); and gives detailed guidance for modelling concrete buildings at the member and at the system level. Moreover, readers gain access to overviews of provisions of Eurocode 8, plus an understanding for them on the basis of the simple models of the element behaviour presented in the book. Also examined are the modern trends in performance- and displacement-based seismic assessment of existing buildings, comparing the relevant provisions of Eurocode 8 with those of new US prestandards, and details of the most common and popular seismic retrofitting techniques for concrete buildings and guidance for retrofitting strategies at the

system level. Comprehensive walk-through examples of detailed design elucidate the application of Eurocode 8 to common situations in practical design. Examples and case studies of seismic assessment and retrofitting of a few real buildings are also presented. From the reviews: "This is a massive book that has no equal in the published literature, as far as the reviewer knows. It is dense and comprehensive and leaves nothing to chance. It is certainly taxing on the reader and the potential user, but without it, use of Eurocode 8 will be that much more difficult. In short, this is a must-read book for researchers and practitioners in Europe, and of use to readers outside of Europe too. This book will remain an indispensable backup to Eurocode 8 and its existing Designers' Guide to EN 1998-1 and EN 1998-5 (published in 2005), for many years to come.

Congratulations to the author for a very well planned scope and contents, and for a flawless execution of the plan". AMR S. ELNASHAI "The book is an impressive source of information to understand the response of reinforced concrete buildings under seismic loads with the ultimate goal of presenting and explaining the state of the art of seismic design. Underlying the contents of the book is the in-depth knowledge of the author in this field and in particular his extremely important contribution to the development of the European Design Standard EN 1998 - Eurocode 8: Design of structures for earthquake resistance. However, although Eurocode 8 is at the core of the book, many comparisons are made to other design practices, namely from the US and from Japan, thus enriching the contents and interest of the book". EDUARDO C. CARVALHO

From leaves to liquids, caves to crystal formations, nature has always been a major source of inspiration for architects. This book examines how nature can act as a precedent for design solutions through twelve case studies. Packed with computer drawings, sketches, models, and photographs, this will be an ideal resource of ideas for students in their studio work, as well as for practicing architects.

Many designers use folding techniques in their work to make three-dimensional forms from two-dimensional sheets of fabric, cardboard, plastic, metal, and many other materials. This unique book explains the key techniques of folding, such as pleated surfaces, curved folding, and crumpling. It has applications for architects, product designers, and jewelry and fashion designers An elegant, practical handbook, *Folding for Designers* explains over 70 techniques explained with clear step-by-step drawings, crease pattern drawings, and specially commissioned photography. All crease pattern drawings are available to view and download from the Laurence King website.

Over 75% of network attacks are targeted at the web application layer. This book provides explicit hacks, tutorials, penetration tests, and step-by-step demonstrations for security professionals and Web application developers to defend their most vulnerable applications. This book defines Web application security, why it should be addressed earlier in the lifecycle in development and quality assurance, and how it differs from other types of Internet security.

Additionally, the book examines the procedures and technologies that are essential to developing, penetration testing and releasing a secure Web application. Through a review of recent Web application breaches, the book will expose the prolific methods hackers use to execute Web attacks using common vulnerabilities such as SQL Injection, Cross-Site Scripting and Buffer Overflows in the application layer. By taking an in-depth look at the techniques hackers use to exploit Web applications, readers will be better equipped to protect confidential. The Yankee Group estimates the market for Web application-security products and services will grow to \$1.74 billion by 2007 from \$140 million in 2002 Author Michael Cross is a highly sought after speaker who regularly delivers Web Application presentations at leading conferences including: Black Hat, TechnoSecurity, CanSec West, Shmoo Con, Information Security, RSA Conferences, and more

Co-winner of the RIBA Trust Book Award given by The Royal Institute of British Architects (RIBA) and Winner of the 2005 CICA Bruno Zevi Book Award presented by the International Committee of Architectural Critics In this long-awaited work, Dalibor Vesely proposes an alternative to the narrow vision of contemporary architecture as a discipline that can be treated as an instrument or commodity. In doing so, he offers nothing less than an account of the ontological and cultural foundations of modern architecture and, consequently, of the nature and cultural role of architecture through history. Vesely's argument, structured as a critical dialogue, discovers the first plausible anticipation of modernity in the formation of Renaissance perspective. Understanding this notion of perspective against the background of the medieval philosophy of light, he argues, leads to an understanding of architectural space as formed by typical human situations and by light before it is structured geometrically. The central part of the book addresses the question of divided representation—the tension between the instrumental and the communicative roles of architecture—in the period of the baroque, when architectural thinking was seriously challenged by the emergence of modern science. Vesely argues that to resolve the dilemma of modernity— reconciling the inventions and achievements of modern technology with the human condition and the natural world—we can turn to architecture and its latent capacity to reconcile different levels of reality, its ability to relate abstract ideas and conceptual structures to the concrete situations of everyday life. Vesely sees the restoration of this communicative role of architecture as the key to the restoration of architecture as the topological and corporeal foundation of culture; what the book is to our literacy, he argues, architecture is to culture as a whole. He concludes by proposing a new poetics of architecture that will serve as a framework for the restoration of the humanistic role of architecture in the age of technology. Conditional design is the sequel to Operative Design. This book will further explore the operative in a more detailed, intentional, and perhaps functional manner. Spatially, the conditional is the result of the operative. It is not a blind result however. Both terms work together to satisfy a formal manipulation through a set of opportunities for elements such as connections and apertures.

Comprehensively compiles a set of material systems, analyzing ways in which they can be tessellated to produce novel forms.

A very practical guide to the basic forms and shapes in architectural planning and

design.

Architects Jesse Reiser and Nanako Umemoto have been generating some of the most provocative thinking in the field for nearly twenty years. With *Atlas of Novel Tectonics*, Reiser+Umemoto hone in on the many facets of architecture and illuminate their theories with great thought and simplicity. The *Atlas* is organized as an accumulation of short chapters that address the workings of matter and force, material science, the lessons of art and architectural history, and the influence of architecture on culture (and vice versa). Reiser+Umemoto see architectural design as a series of problem situations, and each chapter is an argument devoted to a specific condition or case. Influenced by a wide range of fields and phenomena Brillat-Savarin's classic *The Physiology of Taste* is one of their primary models the authors provide a cross-section of thinking and inspiration. The result is both an elucidation of the concepts that guide Reiser+Umemoto through their own design process and a series of meditations on topics that have formed their own sense as architects. *Atlas of Novel Tectonics* offers an entirely fresh perspective on subjects that are generally taken for granted, and does so with a welcome punch and energy.

Examines the author's idea of object-oriented philosophy, wherein things, and how they interact with one another, are the center of philosophical interest.

An attempt to free architecture from site and program constraints and to counter the profusion of ever bigger architecture books with ever smaller content. Some may call it the first manifesto of the twenty-first century, for it lays down a new way to think about architecture. Others may think of it as the last architectural treatise, for it provides a discursive container for ideas that would otherwise be lost. Whatever genre it belongs to, *SITELESS* is a new kind of architecture book that seems to have come out of nowhere. Its author, a young French architect practicing in Tokyo, admits he "didn't do this out of reverence toward architecture, but rather out of a profound boredom with the discipline, as a sort of compulsive reaction." What would happen if architects liberated their minds from the constraints of site, program, and budget? he asks. The result is a book that is saturated with forms, and as free of words as any architecture book the MIT Press has ever published. The 1001 building forms in *SITELESS* include structural parasites, chain link towers, ball bearing floors, corrugated corners, exponential balconies, radial facades, crawling frames, forensic housing—and other architectural ideas that may require construction techniques not yet developed and a relation to gravity not yet achieved. *SITELESS* presents an open-ended compendium of visual ideas for the architectural imagination to draw from. The forms, drawn freehand (to avoid software-specific shapes) but from a constant viewing angle, are presented twelve to a page, with no scale, order, or end to the series. After setting down 1001 forms in siteless conditions and embryonic stages, Blanciak takes one of the forms and performs a "scale test," showing what happens when one of these fantastic ideas is subjected to the actual constraints of a site in central Tokyo. The book ends by illustrating the potential of these shapes to morph into actual building proportions. Knapp (geography, SUNY) continues the work of his previous books by examining the distinctive characteristics of the common house in Zhejiang province. Over 300 original photographs illustrate his discussion of construction techniques, the organization of space, settlement patterns, the expression of

Every building starts with an idea. But how do you get from a concept to a piece of

architecture? Why do some ideas work better than others? What is a "good" design? Questions like these can make design seem mystifying, especially because the answer is that there is no one right way to design. But understanding how the design process works is an essential part of an architecture student's development – and one of the most powerful tools a designer can wield. This friendly guidebook will help students with all aspects of the design process, with examples drawn from all types of architecture. It also gives students the tools to develop their own unique ways of working. With accessible text and hundreds of images, this is an indispensable and illuminating guide for beginning architecture students as well as anyone who is curious about how design works.

In *The Age of Wire and String* Ben Marcus welds together a new reality from the scrapheap of the past. Dogs, birds, horses, automobiles and the weather are some of the recycled elements in Marcus's first collection - part fiction, part handbook - as familiar objects take on markedly unfamiliar meanings. Gradually, this makeshift world, in its defiance of the laws of physics and language, finds a foundation in its own implausibility, as Marcus produces new feelings and sensations - both comic and disturbing - in the definitive guide to an unpredictable yet exhilarating plane of existence.

Inspired by the complexity and heterogeneity of the world around us, and by the rise of new technologies and their associated behaviors, *The Architecture Concept Book* seeks to stimulate young architects and students to think outside of what is often a rather conservative and self-perpetuating professional domain and to be influenced by everything around them. Organized thematically, the book explores thirty-five architectural concepts, which cover wide-ranging topics not always typically included in the study of architecture. James Tait traces the connections between concepts such as familiarity, control, and memory and basic architectural components such as the entrance, arch, columns, and services, to social phenomena such as gathering and reveling, before concluding with texts on shelter, relaxing, and working. Even in this digital age, Tait insists that "we must always think before we design. We must always have a reason to build." Each theme is accompanied by photographs, plans, and illustrations specially drawn by the author to explain spatial ideas, from the small scale to the urban.

CD-ROM contains animations which provide further illustration of the projects in the book.

A rich and varied glimpse into the creative processes of a broad array of contemporary architects.

Following up on the best-selling *Hot to Cold*, Bjarke Ingels Group breaks down their work across time in this ambitious multidisciplinary undertaking. This book is the companion to BIG's far-reaching exhibition and features conversations with the likes of Elon Musk and Ray Kurzweil. We explore the evolution of intelligence, communication, migration, and how architecture and design can literally give form to the future.

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