Digital Vernacular
Architectural Principles, Tools, and Processes

James Stevens, Lawrence Technological University, Southfield, Michigan, USA and Ralph Nelson, both at Lawrence Technological University, Southfield, Michigan, USA

Digital Vernacular addresses the why and how of digital fabrication in hundreds of step-by-step color images, illuminating a set of working principles and techniques that join theory with practice. Authors James Stevens and Ralph Nelson reconcile local traditions and innovations with globally accessible methods and digital toolsets. By combining ethics with hardware, the book will root you in the origins of making, ensuring a lasting and relevant reference for your studio practice.

The book opens with the origins and principles of the digital vernacular, then outlines digital vernacular tools including computer numerically controlled (CNC) mills, laser cutters, and 3D printers. You’ll even learn to create your own digital fabrication tools out of inexpensive materials. The book concludes with the processes of the digital vernacular, including techniques for removing, joining, forming, and adding.


Contents: Forewords by Branislav Kolarevic and Michelangelo Sabatino. Preface. Acknowledgements. Introduction. 1. Origins of the Digital Vernacular. 1.1 On Origins. 1.2 The Digital. 1.3 The Vernacular. 1.4 The Maker. 2. Principles of the Digital Vernacular. 2.1 On Principles. 2.2 Place and Time. 2.3 Evolution and Sufficiency. 2.4 Logic and Limits. 2.5 Play and Innovation. 3. Tools of the Digital Vernacular. 3.1 On Tools. 3.2 Tool Evolution. 3.3 Walk-In Toolbox. 3.4 Discovery and Acceptance. 3.5 Tool-Making. 3.6 Open Source, Hacking, and Shopping Around. 3.7 3-D Printer. 3.8 Laser Cutter. 3.9 CNC Mill. 4. Processes of the Digital Vernacular. 4.1 On Process. 4.2 Guiding Precedent. 4.3 Defining Proposition. 4.4 Fabricating Preference. 4.5 Removing. 4.6 Joining. 4.7 Forming. 4.8 Adding. 5. Evolutions of the Digital Vernacular. Image Credits. End Notes. Index.
Endorsements

"This book is written for a new kind of design practice that values on-the-ground engagement and thinking about the systematic impact of design labor. Those new practitioners will find the critical essays and case studies found in this book to be invaluable tools."

- Quillian Riano, Founder and Principal, DSGN AGNC, USA
Modernity
Enlightenment and its unintended consequences
Christopher Tadgell, Independent art historian

The seventh book in the Architecture in Context series, this is a comprehensive survey of European architecture from the pre-dawn of the Enlightenment in early Georgian England; to the triumph of Brutalism in the seventh decade of the twentieth century; on to a sketch of major trends building up to the turn of the millennium.

Each of the three sections is preceded by a short introduction isolating the key philosophical or political theories which dominated the relevant period: in particular Enlightenment; industrialization and its social consequences; and Communism, Fascism and world catastrophe. The first section covers Anglo-Palladianism, French academic Rationalism, their Neoclassical developments and the aspiration to the Sublime. The first part of the book develops the major strand of eclecticism before progressing to Historicism in the second, the choice of style seen to be relevant to a given commission, and the impact of industrial building techniques. The third and final part begins with Design Reform in reaction to industrialism and then proceeds to Design Reform in response to the reactionaries, but they too continue to make their mark as the chronicle progresses.

The many great architects and designers whose work both defines and illustrates the themes of the book include visionaries like Soane, Boulée and Schinkel, entrepreneurial innovators such as the Adams brothers and Repton, engineers of the age of iron including Eiffel, Paxton and Bélanger, and 20th-century giants – Frank Lloyd Wright, Ludwig Mies van der Rohe and Le Corbusier among numerous others.

Contents: Introduction  Part 1: 18th-Century Rationalism and Romanticism  Context: History to Napoleon  1.1 Augustan Prelude  1.2 Pursuit of Perfection in France  1.3 Rome Reviewed, Athens Revealed and Eclectic Diversity in Britain  1.4 The Sublime, the Visionary and Radical Eclecticism  Part 2: 19th-Century Historicism and the Industrial Revolution  Context: History to 1914  2.1 Bonaparte and Restored Bourbons  2.2 The British at Home and in the East  2.3 Protégés of German Rulers and their Tsarist Relatives  2.4 United States  2.5 Architecture of Revival and Engineering  Part 3: Design Reformers and Reactionaries  Context: History of Cataclysm to the New Millennium  Design Reform: 3.1 From Arts and Crafts to Art Nouveau  3.2 Bauhaus to Brutalism  3.3 Augur Coda

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“Post disaster politicians always say, “We shall rebuild here now” What rubbish. The disaster struck accidentally but the damage is no accident. Damaged buildings and housing are the result of hastily and poorly [built] structures that could not sustain the forces of nature. So, rebuilding has to be carefully thought out and well executed so there is not a repeat of the catastrophe that occurred. Sustainable Housing Reconstruction is a timely antidote to the rush to rebuild by laying out with cases how human and physical repair has to occur for the reconstructed post disaster community to be fit for the future.”

- Edward J Blakely, Honorary Professor of Urban Policy, United States Studies Centre at the University of Sydney and Director of Recovery post Katrina for the City of New Orleans 2007-2009
Post-Petroleum Design

George Elvin, Owner, Gone Studio

Despite the growing demand for design strategies to reduce our petroleum use, no one has yet brought together the lessons of the world's leading post-petroleum design experts into a single resource. Post-Petroleum Design brings them together for the first time.

Readers will be introduced to the most current, innovative, plastic-and petroleum-free products and projects in industrial design, architecture, transportation, electronics, apparel and more. Post-Petroleum Design explores firsthand the client and consumer motivations behind the demand, and shares the case studies, principles, best practices, risks and opportunities of the world's leading post-petroleum design experts who are already meeting that demand. It introduces 40 inspiring individuals from across the globe: people like Eben Bayer, the American innovator whose company, Ecovative, is growing houses from mushrooms; Mohammed Bah Abba, whose Zeer Pot is helping families keep produce fresh in the sweltering Nigerian summer without electricity; and the engineers at Mercedes-Benz Advanced Design Studios whose Biome car evolves from genetically engineered DNA.

Post-Petroleum Design gives design professionals the information they need to research, evaluate, and select materials, technologies and design strategies that meet the growing demand for sustainable design, plastic-free materials and process energy conservation. Designer profiles, studies, statistics and many colour illustrations all highlight the work—some of the best design work to be found anywhere, and showcased here for the first time.

Sustainable Building Design
Learning from nineteenth century innovations

Vidar Lerum, University of Illinois at Urbana-Champaign, USA

A twenty-first century renaissance is emerging in architecture. After a century of building designs characterized by high energy demand, low quality lighting and poor thermal comfort, the fundamental questions must be asked again: is there a better path to designing the most energy efficient, comfortable, functional and beautiful buildings for a sustainable future? While seeking solutions for the future, are there lessons to be learned from the best buildings of the past? Sustainable Building Design explores outstanding buildings and building designs of the twenty-first century, with an emphasis on the artistry of masters of architecture who came before. By dissecting and analyzing great public buildings of the nineteenth and twenty-first centuries, materials, techniques, and methods are discovered. This book presents the reader with clues and suggestions that will reveal the secrets of these buildings and by doing so provides the reader with a thorough understanding of how these architectural masterpieces work.

Using photographs, drawings, sections, plans and diagrams which are painstakingly redrawn for consistency and clarity based on a wide range of documentation, Vidar Lerum compares works of architecture from the nineteenth and twenty-first centuries. The reader is presented with a careful analysis of each building, providing a compelling sourcebook of ideas for students and professional architects alike.


www.routledge.com/books/details/9780415840743

www.routledge.com/architecture
Plastics Now
On Architecture’s Relationship to a Continuously Emerging Material

Billie Faircloth, Research Director, Kieran Timberlake and Lecturer at the University of Pennsylvania, USA

Plastics Now addresses one primary question: why do we build with plastics the way that we do?

For decades, plastics have been described over and over again as “the future” – yet we still do not know precisely what to do with them. Billie Faircloth argues that this inertia is due to plastics’ indecipherability, which has prevented them from becoming fully known.

The author tracks the process by which plastics became defined as a class of building materials. Drawing on new, original data from the industry press, beautifully drawn original timelines, hundreds of historical and contemporary images, advertisements dating to the 1950s, and technical data, this unconventional book explores the emergence of plastics as a building material and presents new findings.

Written by the research director of the internationally renowned, award-winning firm KieranTimberlake, Plastics Now takes a provocative approach that calls on architects to participate in the redefinition of plastics for our time. Essential reading for professional architects and architecture students to engage with our shared history with the plastics industry.

Contents:

Endorsements

“Plastics Now is a veritable candy store for the mind of the materials enthusiast.”
- Blaine Brownell, author of the Transmaterial series and associate professor, University of Minnesota, USA

“Providing a depth of information on how plastics are made and processed, Faircloth weaves a story of how both technologists and architects, each in their own culture, learn what plastics are, what they can do and what “plastic” means – practically.”
- William F. Carroll, Jr., PhD, Adjunct Professor of Chemistry, Indiana University, USA
Sustainable Architectural Design
An Overview

Kuppaswamy Iyengar, University of New Mexico, Albuquerque, USA

This book is a guide to a sustainable design process that moves from theory, to site and energy use, to building systems, and finally to evaluation and case studies, so you can integrate design and technology for effective sustainable building. Each chapter has a sustainable design overview, technical details and strategies marked by clear sections, a summary, and further resources. Heavily illustrated with charts, tables, drawings, photographs, and case studies, the book shows technologies and concepts integrated into cohesive project types, to demonstrate implementing your designs to meet clients’ needs now and for the future.

Includes an overview of alternate assessment and evaluation systems such as BREEAM, CASBEE, GRTool, Green Globes alongside LEED, ECOTECT, energy 10, HEED and eQuest simulation programs.

Contents:

Endorsements

“Kuppaswamy Iyengar’s book is a tour de force. Finally, we now have a comprehensive, applications-oriented textbook on sustainable design that should be required reading for all architecture students.”
- Andrew Pressman, FAIA, Architect and Lecturer, University of Maryland, USA

“This book is the most up-to-date and complete volume on sustainable design available. Clearly and succinctly written and accompanied by an extensive bibliography, this book is highly recommended.”
- Craig B. Smith, PhD. President, DMJM H&N (Ret.), USA

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eBook: 978-1-315-75847-3

www.routledge.com/books/details/9780415702355
Designing Spaces for Natural Ventilation
An Architect’s Guide

Ulrike Passe, Associate Professor of Architecture, Iowa State University, USA and Francine Battaglia, Professor of Mechanical Engineering, Virginia Polytechnic Institute and State University, USA

Buildings can breathe naturally, without the use of mechanical systems, if you design the spaces properly. This accessible and thorough guide shows you how in more than 260 color diagrams and photographs illustrating case studies and CFD simulations. You can achieve truly natural ventilation, by considering the building’s structure, envelope, energy use, and form, as well as giving the occupants thermal comfort and healthy indoor air. By using scientific and architectural visualization tools included here, you can develop ventilation strategies without an engineering background. Handy sections that summarize the science, explain rules of thumb, and detail the latest research in thermal and fluid dynamics will keep your designs sustainable, energy efficient, and up-to-date.

Contents:
Foreword by Sue Roaf. Acknowledgements. Introduction.

Endorsements
“A virtual handbook of theories, principles, and concepts, Designing Spaces for Natural Ventilation is an essential resource for designers, researchers, and students.”
- Alison G. Kwok, Department of Architecture, University of Oregon, USA

“With the publication of Designing Spaces for Natural Ventilation designers will find a valuable guide to this low-energy approach to space cooling and air quality. The journey to net-zero energy and carbon mitigation demands such a resource.”
- Walter Grondzik, PE, Professor, Department of Architecture, Ball State University, USA
Over the past 10-15 years a renaissance in wood architecture has occurred with the development of new wood building systems and design strategies, elevating wood from a predominantly single-family residential idiom to a rival of concrete and steel construction for a variety of building types, including high rises. This new solid wood architecture offers unparalleled environmental as well as construction and aesthetic benefits, and is of growing importance for professionals and academics involved in green design.

Solid Wood provides the first detailed book which allows readers to understand new mass timber/massive wood architecture. It provides:

• historical context in wood architecture from around the world
• a strong environmental rationale for the use of wood in buildings
• recent developments in contemporary fire safety and structural issues
• insights into building code challenges
• detailed case studies of new large-scale wood building systems on a country-by-country basis.

Case studies from the UK, Norway, Sweden, Germany, Austria, Italy, Canada, the United States, New Zealand and Australia highlight design strategies, construction details and unique cultural attitudes in wood design. The case studies include the most ambitious academic, hospitality, industrial, multi-family, and wood office buildings in the world.

With discussions from leading architectural, engineering, and material manufacturing firms in Europe, North America and the South Pacific, Solid Wood disrupts preconceived notions and serves as an indispensable guide to twenty-first century wood architecture and its environmental and cultural benefits.

Endorsements

“As we come to terms with the consequences to the planet of our fossil fuelled civilization an urgent rethink is needed in how we design and build our buildings. Joseph Mayo’s inspiring book proposes a seed change in construction - a bright and sustainable future made from wood.”

- Andrew Waugh, Waugh Thistleton Architects

“At a time when the use of wood is increasing so fast right across the world, this book will be of tremendous value in sharing knowledge of the huge variety of timber construction methods and details which are being developed, and thus in helping to establish wood as a standard construction material. The wealth of details, construction photographs and well researched background information will be of great interest to architects and engineers alike.”

- Andrew Lawrence, Arup Timber Specialist
Drawing from Practice
Architects and the Meaning of Freehand

J. Michael Welton, Freelance writer

Drawing from Practice explores and illuminates the ways that 26 diverse and reputable architects use freehand drawing to shape our built environment. Author J. Michael Welton traces the tactile sketch, from initial parti to finished product, through words, images, and photographs that reveal the creative process in action.


Included is a foreword by Robert McCarter, architect, author and professor of architecture.


Endorsements

“Welton’s book reinforces the fact that nothing is as powerful and engaging as the art of the hand, especially in architecture. It is a book that every architecture student and enthusiast should have.”

- Wendy Goodman, Design Editor, New York Magazine, USA

“A must-read. Drawing From Practice offers an unprecedented look at the creative processes of some the most influential figures that shape our world - and the sketches that guide their work.”

- Amanda Koellner, Managing Editor, Design Bureau Magazine, USA
BIG little house
Small Houses Designed by Architects

Donna Kacmar, University of Houston, USA

What are the challenges architects face when designing dwelling spaces of a limited size? And what can these projects tell us about architecture – and architectural principles – in general? In BIG little house, award-winning architect Donna Kacmar introduces twenty real-life examples of small houses. Each project is under 1,000 square feet (100 square meters) in size and, brought together, the designs reveal an attitude towards materiality, light, enclosure and accommodation which is unique to minimal dwellings. While part of a trend to address growing concerns about minimising consumption and lack of affordable housing, the book demonstrates that small dwellings are not always simply the result of budget constraints but constitute a deliberate design strategy in their own right.

Highly illustrated and in full-colour throughout, each example is based on interviews with the original architect and accompanied by detailed floor plans. This ground-breaking, beautifully designed text offers practical guidance to any professional architect or homeowner interested in small scale projects.

Contents:
List of Work  Index

Endorsements

“When it comes to houses, quality, not quantity, is what truly matters. The book’s comprehensive introduction coupled with twenty, carefully curated, examples answer not just “What” but also “How” and “Why”. BIG little house is a valuable resource for architects and clients alike.”
- Naomi Pollock, AIA, author Modern Japanese House, Japan

“A rigorous examination of the history of the small house is presented in both sumptuous photography and in floor plans at comparative scales…”
- Mark McInturff, FAIA, architect, McInturff Architects, USA

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Hybrid Drawing Techniques
Design Process and Presentation

Gilbert Gorski, University of Notre Dame, Indiana, USA

Hybrid Drawing Techniques: Design Process and Presentation reaffirms the value of traditional hand drawing in the design process by demonstrating how to integrate it with digital techniques; enhancing and streamlining the investigative process while at the same time yielding superior presentation images. This book is a foundations guide to both approaches: sketching, hardline drawing, perspective drawing, digital applications, and Adobe Photoshop; providing step–by–step demonstrations and examples from a variety of professional and student work for using and combining traditional and digital tools. Also included are sections addressing strategies for using color, composition and light to further enhance one’s drawings. An e-resource offers copyright free images for download that includes: tonal patterns, watercolor fields, people, trees, and skies.


Endorsements

“Gorski conducts a masterclass in situating digital and analog methods of drawing in this richly illustrated paean to the art of representation in contemporary times. This is a must-have manual for hand drawing in a digital age.”
- Gil Snyder, Department of Architecture, University of Wisconsin-Milwaukee, USA

“Gilbert Gorski’s pioneering work in combining traditional and digital media, elucidated in this timely and important book, places him at the forefront of contemporary visualization.”
- Paul Stevenson Oles, FAIA, Principal, Interface Architects, New Mexico, USA
Twenty-Five Buildings Every Architect Should Understand

A revised and expanded edition of Twenty Buildings Every Architect Should Understand, 2nd Edition

Simon Unwin, Freelance writer and lecturer, UK

This is an essential companion to Simon Unwin's Analysing Architecture, and part of the trilogy which also includes his Exercises in Architecture: Learning to Think as an Architect. Together the three books offer an introduction to the workings of architecture providing for the three aspects of learning: theory, examples and practice. Twenty-Five Buildings focusses on analysing examples using the methodology offered by Analysing Architecture, which operates primarily through the medium of drawing.

In this second edition five further buildings have been added to the original twenty from an even wider geographical area, which now includes the USA, France, Italy, Mexico, Switzerland, Spain, Finland, Germany, Australia, Norway, Sweden, India and Japan.

The book's underlying theme is the relationship of architecture to the human being, how it frames our lives and orchestrates our experiences; how it can help us make sense of the world and contribute to our senses of identity and place. Exploring these dimensions through a wide range of case studies that illustrate the rich diversity of twentieth and twenty-first century architecture, this book is essential reading for every architect.

Endorsements

“This book is an exemplary contribution from Simon Unwin to the academic and practical interest of architecture.”
- T.L. Shaji, Professor, Department of Architecture, College of Engineering, Trivandrum, Kerala, India

“Eschewing flashy photographs, Unwin uses the classic architectural tools of exquisitely drawn two-dimensional plans, sections, and elevations to analyze systematically each of the twenty-five buildings.”
- Marie-Alice L’Heureux, Architect, Associate Professor, University of Kansas, USA
Humanitarian Architecture
15 stories of architects working after disaster

Esther Charlesworth, RMIT University, Melbourne, Australia

This book documents and analyses the expanding role for architects in designing projects for communities after the event of a natural disaster. These fifteen case studies illustrate how architects can use spatial sensibility and integrated problem-solving skills to help alleviate both human and natural disasters:

- Lizzie Babister - Department of International Development, UK
- Eric Cesal – Disaster Reconstruction and Resiliency Studio and Architecture for Humanity, Japan.
- Hsien Ying Chun – Atelier 3, Taiwan.
- Nathaniel Corum - Education Outreach and Architecture for Humanity, USA.
- Sandra D’Uzzo - Shelter and Settlements and International Federation of the Red Cross and Red Crescent Societies, Switzerland.
- Michael Murphy - MASS Design Group, USA.
- David Perkes - Gulf Coast Community Design Studio, USA.
- Paul Pholeros - Healthabitat, Australia.
- Patama Roomrakwit - Community Architects for Shelter and Environment, Thailand.
- Graham Saunders - International Federation of Red Cross and Red Crescent Societies, Switzerland.
- Kirtee Shah - Ahmedabad Study Action Group, India.
- Maggie Stephenson - UN-HABITAT, Haiti.
- Anna Wachtmeister - Catholic Organisation for Relief and Redevelopment Aid, the Netherlands.

Endorsements

“A must-have reference in the libraries of professionals engaged in supporting the recovery and reconstruction of towns and cities struck by war, disaster, or decay.”
- Dan Lewis, Chief, Urban Risk Reduction, UN-Habitat

“A ground-breaking book that is essential reading for students, designers and recovery officials. Containing rich experiences by leaders in the field and highly creative designers, this will inspire, inform and guide readers to become involved in a noble humanitarian cause.”
- Ian Davis, author of Shelter after Disaster (1978)
Graphic Design for Architects

A Manual for Visual Communication

Karen Lewis, Ohio State University, USA

Graphic Design for Architects is a handbook of techniques, explanations and examples of graphic design most relevant to architects. The book covers a variety of scales of graphic design, everything from portfolio design and competition boards, to signage and building supergraphics – to address every phase of architectural production.

This book combines and expands on information typically found in graphic design, information design, and architectural graphics books. As architectural communication increases to include more territory and components of a project, it is important for designers to be knowledgeable about the various ways in which to communicate visually. For instance, signage should be designed as part of the process – not something added at the end of a project; and the portfolio is a manifestation of how the designer works, not just an application to sell a design sensibility. In thinking about architecture as a systematic and visual project, the graphic design techniques outlined in this book will help architects process, organize and structure their work through the lens of visual communication.

Each chapter is titled and organized by common architectural modes of communication and production. The chapters speak to architects by directly addressing projects and topics relevant to their work, while the information inside each chapter presents graphic design methods to achieve the architects’ work. In this way, readers don’t have to search through graphic design books to figure out what’s relevant to them – this book provides a complete reference of graphic techniques and methods most useful to architects in getting their work done.

Contents:
Introduction: Architects for Graphic Design
Part 1: Presenting Yourself
1. Portfolios
2. Resumes
Part 2: Presenting to an Audience
3. Competitions
4. Presentations
5. Books
Part 3: Architectural Communication
6. Diagrams
7. Information Graphics
8. Maps
Part 4: Communication as Architecture
9. Signage and Wayfinding
10. Super Graphics

Endorsements

“Graphic Design for Architects is not only a useful subject, but also a required skill, and now a necessary volume for any architect’s studio bookshelf.”

- John McMorrough, Associate Professor, Taubman College of Architecture and Urban Planning, University of Michigan, USA
Grounds and Envelopes
Reshaping Architecture and the Built Environment

Michael U. Hensel, Oslo School of Architecture and Design, Norway and Jeffrey P. Turko, University of Brighton, UK

Providing a source of vision for the revitalisation of ground and envelope as spatial elements that can inform the search for embedded locally specific architectures, this book collects essays and projects that each contributes a particular element to what might constitute an integrated and richly nuanced approach to spatial organisation.

Some of the projects include:

- Paulo Mendes da Rocha; Brazilian Pavilion, Osaka World Expo 1970, Osaka, Japan
- RCR Arquitectes; Marquee at Les Cols Restaurant, Olot, Girona, Spain
- Weiss / Manfredi; Seattle Art Museum: Olympic Sculpture Park, Seattle, Washington, USA
- Peter Eisenman; City of Culture of Galicia, Santiago de Compostela, Spain
- Plasma Studio and Groundlab; Xi’an Horticultural Expo, Longgang, China
- Foreign Office Architects; Yokohama International Ferry Terminal, Yokohama, Japan
- Nekton Studio; Turf City, Reykjavik, Iceland
- Álvaro Siza; Swimming Pool, Leça da Palmeira, Portugal
- Eduardo Souto de Moura; Braga Municipal Stadium, Braga Portugal
- MVRDV; Villa VPRO, Hilversum, Netherlands
- Bernard Tschumi; Le Fresnoy Art Centre, Tourcoing, France
- OCEAN; World Centre for Human Concerns, New York City, USA

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The Art of City Sketching
A Field Manual

Michael Abrams, Catholic University of America, Washington DC

The Art of City Sketching: A Field Manual guides you through the laborious and sometimes complex process of sketching what you see in the built environment so that you can learn to draw what you imagine. Illustrated with hundreds of drawings by students and professionals of cityscapes around Europe and the United States, the book helps you develop your conceptual drawing skills so that you can communicate graphically to represent the built environment.

Short exercises, projects, drawing tips, step-by-step demonstrations, and composition do’s and don’ts make it easy for you to get out into the city and experiment in your own work. Author Michael Abrams uses his experience as a field sketching instructor, to show you that by drawing, you can discover, analyze, and comprehend the built environment.

Contents:

- Foreword
- Introduction
- Sketching Supplies
- Part One – Beginner: Orthographic Projection
  - Lesson 1: Elevations
- Part Two – Intermediate: 3D Projection
  - Lesson 4: Axiometric
  - Lesson 5: Perspectives
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- Part Three – Advanced: Perceptual Projection
  - Lesson 7: Analytique Method
  - Lesson 8: Spatial Sequence
- Conclusion
- Appendix
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Endorsements

“Trusting the power of passion, Michael Abrams offers each of his readers an indispensable urban companion.”

- J. Chaffers, Professor Emeritus of Architecture, University of Michigan

“Michael Abrams encourages us to slow down, use our eyes, hands, as well as our mind to step outside of ourselves so we can better understand the many diverse strategies that have historically defined and constructed our surroundings.”

- Stanley Ira Hallet, Former Dean, The Catholic University of America

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London’s Contemporary Architecture

and Victoria Thornton

London is a living architectural exhibition. This tried and trusted portable guide will help you to find your way around one of the world’s most exciting cities, offering architectural experiences and insights into London’s finest contemporary architecture.

• features more than 400 buildings including key venues from the 2012 Olympic Park
• provides a superb full colour photographic record of the capital
• aids navigation of the city’s greatest architectural sights with a clear map-based format
• considers each district in turn, identifying the buildings most worthwhile visiting, and providing essential information and insights into each
• includes a large scale, portable, lightweight map, for use when walking the tours

Jam packed with the author’s intimate architectural experience and knowledge of London’s buildings, the accompanying commentary is both lively and entertaining, providing all the information that any architectural explorer will need to appreciate and experience London’s contemporary architecture.

Praise for the previous edition

“The guide celebrates the only way to understand architecture: in the flesh.”
- Thom Dyckhoff, Architecture Critic, The Times

“Everything that a Londoner, a visitor or any city lover will need.”
- Jane Priestman OBE, Chair of the Board of Trustees, Open House London
Conversations With Form
A Workbook for Students of Architecture

N. John Habraken, Professor Emeritus, Massachusetts Institute of Technology, USA, Andrés Mignucci, Principal, Andrés Mignucci Architectos, Puerto Rico and Jonathan Teicher, Architect and freelance editor, USA

Through a progressive series of exercises - accompanied by observational studies, examples and applied theory - Conversations with Form: A Workbook for Students of Architecture improves designers’ understanding, dexterity and resilience in making form. It specifically focuses on the skills needed to succeed in the everyday context in which the vast majority of architects will ultimately design and build, wherein no one designs in isolation and existing conditions never represent a tabula rasa.

The text begins by familiarizing readers with utilizing step-by-step sequences of moves to steer the development of built form and rapidly moves to designs of increasing complexity. These design plays treat a wide-ranging series of topics including structures, patterns, types, systems and other kinds of shared form principles. Conversations with Form is a workbook for honing hands-on skills and tools of the architect’s trade. Beautifully illustrated and focused on practical, usable information, the book provides architectural students with an accessible and useable handbook for their design practice.

Sustainable Timber Design

Michael Dickson, Buro Happold, Bath, UK and Dave Parker, Journalist, UK

This new resource covers the material selection, structural design and connections detailing of truly sustainable timber buildings through:

• consideration of the nature of wood and the heritage of timber construction, including the importance of forestry and conservation
• a review of modern techniques to improve the durability, fire resistance and predictability of structural timber elements and their vital connections
• analysis of the many architectural and structural options, from roundwood shells through glulam arches and gridshells to long span hybrid structures
• case studies from around the world illustrating the principles discussed and the true potential of timber construction

Historically there has been an imbalance between the availability of information on structural timber design and the much more widespread familiarity with traditional structural materials such as steel and concrete. This book aims to help redress the balance by presenting the essential design principles involved in the creation of elegant, user-friendly timber buildings that are practical, economic, and thoroughly sustainable.

Designed to support specialist study into the benefits of 21st Century timber engineering, this book also offers architects, engineers and other construction professionals practical advice on all aspects of modern timber architecture.

Shell Structures for Architecture
Form Finding and Optimization

Edited by Sigrid Adriaenssens, Princeton University, USA, Philippe Block, ETH Zurich, Switzerland, Diederik Veenendaal, ETH Zurich, Switzerland and Chris Williams, University of Bath, UK

*** Featuring a foreword by Pritzker Prize Winner Shigeru Ban ***

Bringing together experts from research and practice, Shell Structures for Architecture: Form Finding and Optimization presents contemporary design methods for shell and gridshell structures, covering form-finding and structural optimization techniques. It introduces architecture and engineering practitioners and students to structural shells and provides computational techniques to develop complex curved structural surfaces, in the form of mathematics, computer algorithms, and design case studies.

- Part I introduces the topic of shells, tracing the ancient relationship between structural form and forces, the basics of shell behaviour, and the evolution of form-finding and structural optimization techniques.
- Part II familiarizes the reader with form-finding techniques to explore expressive structural geometries, covering the force density method, thrust network analysis, dynamic relaxation and particle-spring systems.
- Part III focuses on shell shape and topology optimization, and provides a deeper understanding of gradient-based methods and meta-heuristic techniques.
- Part IV contains precedent studies of realised shells and gridshells describing their innovative design and construction methods.


Endorsements

“This book should be in the library of designers of shells and grid shells.”
- Bill Baker, Partner at Skidmore, Owings & Merrill LLP

“In their integration of technical and creative disciplines, shell structures are a fascinating typology – this is a valuable source book for architects and engineers alike.”
- Xavier De Kestelier, Partner, Foster + Partners

www.routledge.com/architecture
As a building type, art museums are unparalleled for the opportunities they provide for architectural investigation and experimentation. They are frequently key components of urban revitalization and often push the limits of building technology. Art museums are places of pleasure, education and contemplation. They are remarkable by their prominence and sheer quantity, and their lessons are useful for all architects and for all building types.

This book provides explicit and comprehensive coverage of the most important museums built in the first ten years of the 21st Century in the United States and Europe. By dissecting and analyzing each case, Ronnie Self allows the reader to get under the skin of each design and fully understand the process behind these remarkable buildings. Richly designed with full technical illustrations and sections the book includes the work of Tadao Ando, Zaha Hadid, Peter Cook & Colin Fournier, Renzo Piano, Yoshir Taniguchi, Herzog & de Meuron, Jean Nouvel, SANAA, Daniel Libeskind, Diller Scofidio & Renfro, Steven Holl, Coop Himmelb(l)au, Bernard Tschumi, Sauerbruch Hutton, and Shigeru Ban & Jean de Gastines.

Together these diverse projects provide a catalogue of design solutions for the contemporary museum and a snapshot of current architectural thought and culture. One of few books on this subject written by an architect, Self’s analysis thoroughly and critically appraises each project from multiple aspects and crucially takes the reader from concept to building. This is an essential book for any professional engaged in designing a museum.
Process

Material and Representation in Architecture

Gail Peter Borden, University of Southern California and Borden Partnership LLP, USA

This book examines the interrelationship of representational methods and material systems as fundamental drivers of the design process. Identifying four primary categories of representational logics - point, line, surface, mass - each category is illustrated through four precedent projects that deploy iterative material sensibilities. As a collection, this text provides a comprehensive categorization of the architectural design process.

Broad in scope, it identifies and uniformly analyses some of the most significant projects from the last century, including:

- UK Pavilion Shanghai - Heatherwick Studio, Shanghai, China
- Gatehouse - Office dA, Beijing, China
- Maison Colonial - Jean Prouve, France/Africa
- de Young Museum - Herzog and de Meuron, California USA
- Montreal Expo 67 - Buckminster Fuller, Montreal, Canada
- Jean Marie Tjibou Cultural Center – RPBW, Noumea, Indonesia
- House III - Peter Eisenman, New York, USA
- Barcelona Pavilion - Mies van der Rohe, Barcelona, Spain
- Tel Aviv - Scott Cohen, Tel Aviv, Israel
- Los Manantiales - Felix Candella, Mexico City, Mexico
- Yokahama Terminal – FOA, Yokahama, Japan
- Pantheon, Rome, Italy
- Tres Grand Bibliotheque - Rem Koolhaas, OMA, Paris, France
- Brother Claus Field Chapel - Peter Zumthor, Switzerland

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Postscript  Index
In today's dynamic practice environment, collaboration and teamwork skills are increasingly critical to the successful completion of building projects. Indeed, it is the careful nurturing of comradeship among complementary but distinctive egos that drives creativity underlying the hi-tech algorithms that help shape complex projects.

**Designing Relationships: The Art of Collaboration in Architecture** focuses on the skill set necessary to facilitate effective teamwork and collaboration among all stakeholders no matter what project delivery mode or technology is deployed. This book provides valuable guidance on how to design and construct buildings in a team context from inception to completion. It is the less tangible elements of collaboration and teamwork that provide the magic that transforms the most challenging projects into great works of architecture, and it is these more nuanced and subtle skills which the book brings to the fore. Showing examples of best and worst practice to illustrate the principles with real-life situations, this book presents the reader with an approach that is flexible and applicable to their everyday working life.

**Endorsements**

“Designing Relationships can help all architects meet the challenges of a more complex design and construction environment in the twenty-first century.”
- Robert Ivy, FAIA, Chief Executive Officer of the American Institute of Architects

“Designing Relationships does a great service to the AEC industry by demystifying the techniques, mindsets, and strategies that together form the art of collaboration.”
- Renée Cheng, AIA, Professor, Head of the School of Architecture, University of Minnesota
Due to its comprehensive tool-set and great potential for 3D modeling, more and more architectural design and interior design firms are adapting Autodesk Maya and integrating it into their practice. There has been no book aimed at architects and designers who wish to harness the opportunities presented by this software, until now.

- How to use Maya polygon and NURBS modeling tools to create non-linear procedural model.
- How to use Maya driver keys and relationship tools to generate parametrically negotiable solutions across various design professions.
- The design logic and generative processes, as well as the potential of parametric thinking as a resourceful tool for achieving diversity and complexity in form generation and fabrication.
- How to use Maya to prepare files for rapid prototyping and the integration of Maya into various fabrication techniques such as laser cutting, CNC milling, and 3D printing.
- How to use Maya skeleton system and animation tools to control complex architectural forms.
- How to combine Maya with various CAD/BIM tools to create an efficient design pipeline.
- How to use Maya MEL script to create customized tools and interface.

The book includes case studies from Zaha Hadid Architects, Greg Lynn Form, Gage Clemenceau Architects, Tang & Yang Architects, as well as step by step exercises, demonstration projects and an online resource which includes video tutorials, scripts, and Maya source files.
The Architect’s Guide to Effective Self-Presentation

Andreas Luescher, Bowling Green State University, Ohio, USA

In today’s increasingly competitive marketplace, the creation of a successful resume is a vital skill needed by architectural students and professionals alike. This book demystifies the architecture resume, its working strategy and its purposes.

The book guides readers through the process of thinking through, prioritizing, characterizing and expressing career profiles in written and visual form. Readers will learn about presentation and the evolving vehicles for showcasing that presentation. In addition, the timely and important issue of how to transform one type of presentation from a hard copy, to an on-screen review, to an interactive web-page is covered in detail.

The book re-evaluates traditional concepts of resume making, seeking to define the resume as a detailed process of marketing oneself. By doing so, the text provides a new and revised set of tools for thinking about the creation of an architecture resume. In tandem with the author’s other book The Architect’s Portfolio or on its own, this book is essential reading for anyone looking to further their architectural career.


Endorsements

“This book provides a series of essays based around methods and mechanisms by which the individual can develop essential skills from persona to marketplace.”
- Gordon Murray, Professor, University of Strathclyde and Ryder Architecture

“Professor Luescher has assembled a handy go-to guide to help architect’s navigate the ever changing landscape of self-presentation.”
- Christian Unverzagt, Assistant Professor, University of Michigan Taubman College
Convergence is based on the thermodynamic premise that architecture should maximize its ecological and architectural power. No matter how paradoxical it might initially seem, architects should maximize energy intake, maximize energy use, and maximize energy feedback and reinforcement. This presumes that the necessary excess of architecture is in fact an architect’s greatest asset when it comes to an agenda for energy, not a liability.

But how do we start to understand the full range of eco-thermodynamic principles which need to be engaged with in order to achieve this? Kiel Moe explicates three factors: materials, energy systems and amortization. When these three factors converge through design, the resulting buildings begin to perform in complex, if not subtle, ways. By drawing on a range of architectural, thermodynamic, and ecological sources as well as illustrated and well-designed case studies, the author shows what architecture stands to gain by simultaneously maximizing the architectural and ecological power of buildings.

Contemporary Library Architecture
A Planning and Design Guide

Ken Worpole, London Metropolitan University, UK

Focusing on the practical issues which need to be addressed by anyone involved in library design, here Ken Worpole offers his renowned expertise to architects, planners, library professionals, students, local government officers and members interested in creating and sustaining successful library buildings and services. Contemporary Library Architecture: A Planning and Design Guide features:

• a brief history of library architecture
• an account of some of the most distinctive new library designs of the 20th & 21st centuries
• an outline of the process for developing a successful brief and establishing a project management team
• a delineation of the commissioning process
• practical advice on how to deal with vital elements such as public accessibility, stock-holding, ICT, back office functions, children’s services, co-location with other services such as learning centres and tourist & information services an sustainability
• in depth case studies from around the world, including public and academic libraries from the UK, Europe and the US
• full colour illustrations throughout, showing technical details and photographs.

This book is the ultimate guide for anyone approaching library design.
