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# Adaptable Architecture Theory And Practice

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Perspectives for Application and Scholarship  
Handbook of Enterprise Systems Architecture in Practice  
Discrete  
Sustainability in Energy and Buildings 2020  
Truth and Lies in Architecture  
The Architecture of the City  
Extending the Lives of Buildings  
Responsive Architecture  
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## JAX CARDENAS

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*Perspectives for Application and Scholarship* Routledge  
The constant in architecture's evolution is change. Adaptive Architecture explores structures, or environments that accommodate multiple functions at the same time, sequentially, or at periodically recurring events. It demonstrates how changing technological, economic, ecological and social conditions have altered the playing field for architecture from the design of single purpose structures to the design of interacting systems of synergistically interdependent, distributed buildings. Including

contributors from the US, UK, Japan, Australia, Germany and South Africa, the essays are woven into a five-part framework which provides a broad and unique treatment of this important and timely issue.

**Handbook of Enterprise Systems Architecture in Practice**  
CRC Press

Adaptable Architecture provides thought-provoking and inquisitive insights into how we can prolong the useful life of buildings by designing them to be more adaptable, and hence create a more sustainable built environment. The book provides a theoretical foundation counterpointed by the experiences and ideas of those involved in the design and use of buildings. It explains many approaches to designing for change, with lessons

from history, and case studies including The Cedar Rapids Public Library, Kentish Town Health Centre and Folkestone Performing Arts Centre, which stretch our thinking beyond the conventional notions of adaptability. The authors reveal the many conditions that make it a complex design phenomenon, by considering the purpose, design and business case of buildings as well as the physical product. Full of summaries, diagrams, reference charts, tables, and photos of exemplar solutions for use as conversational tools or working aids, this book is for any professional or student who wants to research, question, imagine, illustrate - and ultimately design for - adaptation. In addition, further information and resources are available through the Adaptable Futures website [www.adaptablefutures.com](http://www.adaptablefutures.com) which includes additional case studies, videos, information about industry events and up-to-the-minute developments.

**Discrete** Birkhäuser

This book contains selected papers from SEB-18, the Tenth International Conference on Sustainability in Energy and Buildings, which was organised by KES International and Griffith University and held in Gold Coast, Australia in June 2018. SEB-18 invited contributions on a range of topics related to sustainable buildings and renewable energy, and explored innovative topics regarding intelligent buildings and cities. Applicable areas included the sustainable design and of buildings, neighbourhoods and cities (built and natural environment); optimisation and modelling techniques; smart energy systems for smart cities; green information communications technology; and a broad range of solar, wind, wave and other renewable energy topics. The aim of the conference was to bring together researchers and

government and industry professionals to discuss the future of energy in buildings, neighbourhoods and cities from a theoretical, practical, implementation and simulation perspective. In addition, SEB-18 offered an exciting opportunity to present, interact, and learn about the latest research in Sustainability in Energy and Buildings.

Sustainability in Energy and Buildings 2020 Adaptable Architecture Theory and practice

Managing Trade-Offs in Adaptable Software Architectures explores the latest research on adapting large complex systems to changing requirements. To be able to adapt a system, engineers must evaluate different quality attributes, including trade-offs to balance functional and quality requirements to maintain a well-functioning system throughout the lifetime of the system. This comprehensive resource brings together research focusing on how to manage trade-offs and architect adaptive systems in different business contexts. It presents state-of-the-art techniques, methodologies, tools, best practices, and guidelines for developing adaptive systems, and offers guidance for future software engineering research and practice. Each contributed chapter considers the practical application of the topic through case studies, experiments, empirical validation, or systematic comparisons with other approaches already in practice. Topics of interest include, but are not limited to, how to architect a system for adaptability, software architecture for self-adaptive systems, understanding and balancing the trade-offs involved, architectural patterns for self-adaptive systems, how quality attributes are exhibited by the architecture of the system, how to connect the quality of a software architecture to system

architecture or other system considerations, and more. Explains software architectural processes and metrics supporting highly adaptive and complex engineering Covers validation, verification, security, and quality assurance in system design Discusses domain-specific software engineering issues for cloud-based, mobile, context-sensitive, cyber-physical, ultra-large-scale/internet-scale systems, mash-up, and autonomic systems Includes practical case studies of complex, adaptive, and context-critical systems

**Truth and Lies in Architecture** Taylor & Francis

Eco-Resorts is a design guide for low impact, environmentally friendly tourist resorts in the tropics. The book is the first to offer architects practical, detailed guidance in developing resort buildings that work with a tropical climate and meet the needs and expectations of the client and building inhabitants. The book includes both architectural design and material solutions, supported by theoretical principles, to present a sustainable approach to resort design. It demonstrates that tropical resort buildings do not necessarily require large energy input, in compliance with green building standards. Case studies show how principles of sustainable design have been successfully applied in tropical environments. written by an industry insider with practical design experience, knowledge and expertise demonstrates design practices related to site planning and layout, and re-assesses best practices for a tropical environment, allowing architects to apply design principles to their own projects includes international case studies from several countries to illustrate best practice from a variety of tropical climate destinations around the world.

**The Architecture of the City** Springer

This book deals with human factors research directed towards realizing and assessing sustainability in the built environment. It reports on advanced engineering methods for sustainable infrastructure design, as well as on assessments of the efficient methods and the social, environmental, and economic impact of various designs and projects. The book covers a range of topics, including the use of recycled materials in architecture, ergonomics in buildings and public design, sustainable design for smart cities, design for the aging population, industrial design, human scale in architecture, and many more. Based on the AHFE 2017 International Conference on Human Factors, Sustainable Urban Planning and Infrastructure, held on July 17–21, 2017, in Los Angeles, California, USA, this book, by showing different perspectives on sustainability and ergonomics, represents a useful source of information for designers in general, urban engineers, architects, infrastructure professionals, practitioners, public infrastructure owners, policy makers, government engineers and planners, as well as operations managers, and academics active in applied research.

**Extending the Lives of Buildings** Routledge

The Sustainable Tall Building: A Design Primer is an accessible and highly illustrated guide, which primes those involved in the design and research of tall buildings to dramatically improve their performance. Using a mixture of original research and analysis, best-practice design thinking and a detailed look at exemplar case studies, author Philip Oldfield takes the reader through the architectural ideas, engineering strategies and cutting-edge technologies that are available to the tall building design team.

The book takes a global perspective, examining high-rise design in different climates, cultures and contexts. It considers common functions such as high-rise housing and offices, to more radical designs such as vertical farming and vertical cemeteries. Innovation is provided by examining not only the environmental performance of tall buildings but also their social sustainability, guiding the reader through strategies to create successful communities at height. The book starts by critically appraising the sustainability of tall building architecture past and present, before demonstrating innovative ways for future tall buildings to be designed. These include themes such as climatically responsive architecture, siting a tall building in the city, zero-carbon towers, skygardens and community spaces at height, sustainable structural systems and novel façades. In doing so, the book provides essential reading for architects, engineers, consultants, developers, researchers and students engaged with sustainable design and high-rise architecture.

#### Responsive Architecture Routledge

Microservices can have a positive impact on your enterprise—just ask Amazon and Netflix—but you can fall into many traps if you don't approach them in the right way. This practical guide covers the entire microservices landscape, including the principles, technologies, and methodologies of this unique, modular style of system building. You'll learn about the experiences of organizations around the globe that have successfully adopted microservices. In three parts, this book explains how these services work and what it means to build an application the Microservices Way. You'll explore a design-based approach to microservice architecture with guidance for implementing various

elements. And you'll get a set of recipes and practices for meeting practical, organizational, and cultural challenges to microservice adoption. Learn how microservices can help you drive business objectives Examine the principles, practices, and culture that define microservice architectures Explore a model for creating complex systems and a design process for building a microservice architecture Learn the fundamental design concepts for individual microservices Delve into the operational elements of a microservices architecture, including containers and service discovery Discover how to handle the challenges of introducing microservice architecture in your organization

#### **Managing Trade-offs in Adaptable Software Architectures** Routledge

This book contains the proceedings of the 12th KES International Conference on Sustainability and Energy in Buildings 2020 (SEB20) held in Split, Croatia, during 24–26 June 2020 organized by KES International. SEB20 invited contributions on a range of topics related to sustainable buildings and explored innovative themes regarding sustainable energy systems. The aim of the conference is to bring together researchers, and government and industry professionals to discuss the future of energy in buildings, neighbourhoods and cities from a theoretical, practical, implementation and simulation perspective. The conference formed an exciting chance to present, interact and learn about the latest research and practical developments on the subject. The conference attracted submissions from around the world. Submissions for the Full-Paper Track were subjected to a blind peer-review process. Only the best of these were selected for presentation at the conference and publication in these

proceedings. It is intended that this book provides a useful and informative snapshot of recent research developments in the important and vibrant area of sustainability in energy and buildings.

**Research for Architectural Practice** Springer Nature  
Global warming and the resulting climate change affecting our cities the most. For this reason, planners and designers have started to introduce different approaches to make cities more sustainable and livable. This book contains new theories, approaches and practices that scientists dealing with physical planning and design.

Open Building in Practice "O'Reilly Media, Inc."

This book is unique in its attempt to explore the many ways we have of thinking about buildings. In particular it raises questions about the kinds of knowledge we have and will need in designing, making and enjoying our buildings. At the very least this book provides an overview of the fragmented construction industry, making it a vital purchase for all construction related students. However, the author has written for a wider audience making the book an essential guide for those interested in the form of buildings or the deliberate ways in which people build them.

**Kinetic Architecture** Routledge

This guide helps faculty and student affairs practitioners better serve graduate and professional school students as they navigate what can be an isolating, taxing, and unfamiliar context. Providing actionable strategies, as well as a common language for practitioners to advocate for themselves and for their students, this book is a quick start manual that defines current issues around graduate and professional student development.

Drawing together current resources and research around post-baccalaureate student outcomes, this book explores the diverse student needs of graduate and professional students and provides a clear understanding of their social, personal, and psychological development and how to support their success. Case studies showcase specific examples of practice including a holistic development model for graduate training; integrating academic, personal, professional, and career development needs; promising practices for engagement; a diversity, equity, and inclusion approach to access and outcomes; how graduate schools can be important partners to student affairs professionals; and examples of assessment in action. This book provides tools, resources, communication strategies, and actionable theory-to-practice connections for practitioners, professionals, and faculty at all levels who work to support post-baccalaureate student thriving. Appendix available for download online at [www.routledge.com/9780367639884](http://www.routledge.com/9780367639884) on the tab that is entitled "Support Material."

**Solar House** Routledge

This book provides a clear guide for practitioners looking to establish or already conducting research projects in a practice context and graduate students looking to support their studies and role within practice. The book is divided into three key sections. The first section, across Chapters Two and Three, discusses why research is relevant to practice, how it benefits both practice and their clients, the breadth of topics, and tackles the key challenges facing research in practice and discusses how to overcome them, including how to fund research in practice. Section two, across Chapters Four to Seven, focuses on the

mechanics of a research project, providing a step-by-step guide to reviewing literature and publications, data collection and research methods, ethics, writing up and publishing. In the final section, Chapter Eight presents profiles of twelve architecture practices ranging in size, structure, location, research interest and approach, followed by illustrated profiles of their design influenced research work. The practices featured here are Counterspace Studio, ZCD Architects, Baca Architects, Tonkin Liu, Pomeroy Studio, Architecture Research Office, Architype, Gehl Architects, Hayball, PLP Architects, White Arkitekter and Perkins&Will. With practice based examples throughout, beautifully illustrated and written in a clear and accessible style, this is an essential guide to conducting research that is relevant for architectural practices of all size, location and expertise.

*The Architecture of Persistence* Routledge

The Interior Architecture Theory Reader presents a global compilation that collectively and specifically defines interior architecture. Diverse views and comparative resources for interior architecture students, educators, scholars, and practitioners are needed to develop a proper canon for this young discipline. As a theoretical survey of interior architecture, the book examines theory, history, and production to embrace a full range of interior identities in architecture, interior design, digital fabrication, and spatial installation. Authored by leading educators, theorists, and practitioners, fifty chapters refine and expand the discourse surrounding interior architecture.

**Architecture and Adaptation** Routledge

In the search for sustainable architecture, there is growing interest in the relationship between nature and design. In this

vital new book, the term bioclimatic, relating to the dynamic between climate and living organisms, is applied by the authors in focusing on countries where housing requires cooling for a significant part of the year. In this context, Bioclimatic Housing covers creative, vernacular architecture to present both the theory and practice of innovative, low-energy architecture. The book interweaves the themes of social progress, technological fixes and industry transformation within a discussion of global and country trends, climate types, solutions and technologies. Prepared under the auspices of a 5-year International Energy Agency (IEA) project, and with case studies from Iran, Malaysia, Australia, Japan, Sri Lanka and Italy, this is a truly international and authoritative work, providing an essential primer for building designers, builders, developers and advanced students in architecture and engineering.

*A Practitioner's Guide to Supporting Graduate and Professional Students* Routledge

Covering the full life span of the project, from siting issues through specific design features to maintenance of the property and equipment, this is a comprehensive guide to designing, planning and building a solar house. The author uses his experience of living in a solar house to inform the reader of the technology and practices needed for the design, operation and maintenance of the solar home. Each of the technologies of the house, such as space heating and cooling, domestic hot water and electric power technologies, are critiqued from the point of view of the owner/resident, with the author using his thirty years experience of living in a solar home. This provides home owners who are thinking of going solar with first hand evidence of best

practice, and provides the architect and designer with the knowledge of how to best satisfy their clients needs.

**Theory and practice** Routledge

Adaptable Architecture Theory and practice Routledge

*From Cybernetics to Tangible Computing* Taylor & Francis

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. [The Sustainable Tall Building](#) Peter Lang Gmbh, Internationaler Verlag Der Wissenschaften

"This book is a valuable addition to the reading list of executives, managers, and staff in business, government, and other sectors who seek to keep their enterprises agile and efficient as they manage change, implement new business processes and supporting technologies, and pursue important strategic goals"-- Provided by publisher.

**The Typomorphological Approach** Routledge

Modern biotechnologies give us unprecedented control of the fundamental building blocks of life. For designers, across a range of disciplines, emerging fields such as synthetic biology offer the promise of new sustainable materials and structures which may be grown, are self-assembling, self-healing and adaptable to change. While there is a thriving speculative discourse on the future of design in the age of biotechnology, there are few realized design applications. This book, the first in the Bio Design series, acts as a bridge between design speculation and scientific reality and between contemporary design thinking, in areas such as architecture, product design and fashion design, and the traditional engineering approaches which currently dominate biotechnologies. Filled with real examples, *Living Construction* reveals how living cells construct and transform materials through methods of fabrication and assembly at multiple scales

and how designers can utilize these processes.

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