



Emergence:

Morphogenetic Design Strategies

Emergence Morphogenetic Design Strategies

Michael Fox, Bradley Bell



Emergence Morphogenetic Design Strategies:

Emergence Michael Hensel, 2004 The Digital Turn in Architecture 1992 - 2012 Mario Carpo, 2013-06-27 Architektur im digitalen Zeitalter eine zwei Jahrzehnte alte und wechselvolle Geschichte Dieses Buch aus der Reihe Architectural Design AD beschreibt sämtliche Stufen und Phasen von Folding zu Cyberspace Nichtlinearität und Hypersurface Architektur von Versionierung zu Skripting Emergenz Informationsmodellen und Parametricism Es erfasst und interpretiert den Geist der jeweiligen Zeit mit dokumentarischer Präzision fördert und antizipiert oftmals bedeutende Entwicklungen in Architektur und Architekturtheorie Diese Anthologie der bedeutendsten Artikel aus Architectural Design ist chronologisch und thematisch geordnet bietet einen vollständigen historischen Zeitstrahl zu computergestütztem Design und digitalen Produktionsformen von den Anfängen bis zur heutigen Vorrangstellung dieser Technologien Mario Carpo gibt in seiner ausführlichen Einleitung und im Vorwort zu jedem Originaltext einen scharfsinnigen Überblick über die jüngste Geschichte des digitalen Designs Diese Synopse fehlte bislang sowohl als pädagogisches Instrument für Studenten als auch Forschungsinstrument für Wissenschaftler Sie spannt den Bogen zwischen dem Status quo digitaler Architektur und der Geschichte und Theorie jüngster Entwicklungen und Trends stellt wichtige Fragen zu den heutigen Methoden und Techniken im professionellen Design Eine umfassende Anthologie digitaler Architektur von Mario Carpo einem der herausragendsten Wissenschaftler in diesem Fachgebiet enthält bahnbrechende Essays von Bernard Cache Peter Eisenman John Frazer Charles Jencks Greg Lynn Achim Menges und Patrik Schumacher stellt die wichtigsten Werke von FOA Frank Gehry Zaha Hadid Ali Rahim Lars Spuybroek NOX Kas Oosterhuis und ShoP vor **Emergent Technologies and Design** Michael Hensel, Achim Menges, Michael Weinstock, 2013-09-13 Emergence the process by which new and coherent structures patterns and properties emerge from within complex systems Traditional architecture starts from the premise that architectural structures are singular and fixed and however well integrated are separate from their environment and context Emergence requires that the opposite is true that those structures are complex energy and material systems that have a lifespan exist as part of an environment of other active systems and develop in an evolutionary way This book based on the authors internationally renowned Emergent Technologies and Design course at the Architectural Association in London introduces a new approach to the practice of architecture The authors use essays and projects to demonstrate the interrelationship of concepts such as emergence and self organisation with the latest technologies in design manufacturing and construction With projects from their course and critiques and commentary from some of the world's leading design theorists and practitioners the authors of Emergent Technologies and Design have introduced a radical new way of understanding the way in which architecture is conceived designed and produced **Digitalia** Susannah Hagan, 2020-10-28 Susannah Hagan boldly discusses the fraught relationship between key dominating areas of architectural discourse digital design environmental design and avant garde design Digitalia firstly demonstrates that drawing such firm lines between architectural spheres is damaging and foolish particularly as both

environmental and avant garde practices are experimenting with the digital and secondly remonstrates with an avant garde that has repudiated the social ethical agenda of the modernist avant garde because it failed the first time round It is environmental architecture that has picked up the social ethical ball and is running with it using the digital to very different and more far reaching ends As the debates rage this book is a key read for all who are involved or intrigued

Computational Design Thinking Achim Menges, Sean Ahlquist, 2011-10-24 The current transition from Computer Aided Design CAD to Computational Design in architecture represents a profound shift in design thinking and methods Representation is being replaced by simulation and the crafting of objects is moving towards the generation of integrated systems through designer authored computational processes While there is a particular history of such an approach in architecture its relative newness requires the continued progression of novel modes of design thinking for the architect of the 21st century This AD Reader establishes a foundation for such thinking It includes multifaceted reflections and speculations on the profound influence of computational paradigms on architecture It presents relevant principles from the domains of mathematics and computer science developmental and evolutionary biology system science and philosophy establishing a discourse for computational design thinking in architecture Rather than a merely technical approach the book will discuss essential intellectual concepts that are fundamental not only for a discourse on computational design but also for its practice This anthology provides a unique collection of seminal texts by authors who have either provided a significant starting point through which a computational approach to design has been pursued or have played a considerable role in shaping the field An important aspect of this book is the manner in which adjacent fields and historical texts are connected Both the source of original inspiration and scientific thought are presented alongside contemporary writings on the continually evolving computational design discourse Emerging from the field of science principally the subjects of morphogenesis evolution and mathematics selected texts provide a historical basis for a reconfigured mindset of processes that generate arrange and describe form Juxtaposed against more contemporary statements regarding the influence of computation on design thinking the book offers advancements of fundamental texts to the particular purpose of establishing novel thought processes for architecture theoretically and practically The first reader to provide an effective framework for computational thinking in design Includes classic texts by Johan W von Goethe D Arcy Thompson Ernst Mayr Ludwig von Bertalanffy Gordan Pask Christopher Alexander John H Holland Nicholas Negroponte William Mitchell Peter J Bentley David W Corne Sanford Kwinter John Frazer Kostis Terzidis Michael Weinstock and Achim Menges Features new writing by Mark Burry Jane Burry Manuel DeLanda and Peter Trummer

Architecture in Digital Culture Socrates Yiannoudes, 2022-12-14 This book examines the manifestations of architecture cities and design processes within digital culture Adopting a comparative and critical method the author looks at past and present encounters of the digital with architectural discourse and practice Along three central themes machines networks and computation the book begins by

discussing transformations of the analogy between architecture and the machine since the early twentieth century foregrounding questions about the relations between architecture humans machines and the environment It moves on to the city to observe how big data and smart city sustainable management systems have transformed historical visions of global networked cities Lastly it explores computational design thinking historically and in the context of complex systems as well as the latest technical social and economic developments Exposing possible drawbacks while still focusing on what is radically innovative this book proposes a way toward more liberating digital and sustainable futures for architecture An important read for architecture students academics and professionals this book connects instances of digital architecture practice and discourse throughout the history of the digital culture paradigm and their ties with sociopolitical developments It shares the possibility that these connecting lines may be the canvas for a novel architectural history of the recent past

Deleuze & Guattari for Architects Andrew Ballantyne, 2007-09-28 The work of Gilles Deleuze and Felix Guattari has been inspirational for architects and architectural theorists in recent years It has influenced the design work of architects as diverse as Greg Lynn and David Chipperfield and is regularly cited by avant gardist architects and by students but usually without being well understood The first collaboration between Deleuze and Guattari was *Anti Oedipus Capitalism and Schizophrenia* which was taken up as a manifesto for the post structuralist life and was associated with the spirit of the student revolts of 1968 Their ideas promote creativity and innovation and their work is wide ranging complex and endlessly stimulating They range across politics psychoanalysis physics art and literature changing preconceptions along the way *Deleuze Guattari for Architects* is a perfect introduction for students of architecture in design studio at all levels students of architecture pursuing undergraduate and postgraduate courses in architectural theory academics and interested architectural practitioners *Manufacturing Material Effects* Branko Kolarevic, Kevin Klinger, 2013-09-13 Designers are becoming more directly involved in the fabrication process from the earliest stages of design This book showcases the design and research work by some of the leading designers makers and thinkers today This highly illustrated text brings together a wealth of information and numerous examples from practice which will appeal to both students and practitioners

Rob|Arch 2012 Sigrid Brell-Cokcan, Johannes Braumann, 2013-12-16 This volume collects about 20 contributions on the topic of robotic construction methods It is a proceedings volume of the robarch2012 symposium and workshop which will take place in December 2012 in Vienna Contributions will explore the current status quo in industry science and practitioners The symposium will be held as a biennial event This book is to be the first of the series comprising the current status of robotics in architecture art and design **Designing Complexity: The Methodology and Practice of Systems Oriented Design** Birger Sevaldson, 2022-11-20 This book addresses one of the most pressing issues of our time How can we design for with and in service of the complex world we live in How can we be useful as designers in a rapidly changing world due to technological political and social processes as well as climate change and nature destruction Designers have some

beneficial skills for planning with complex systems in mind yet some old habits need to be overcome Design's traditional purpose and role has been to solve problems find order organize and simplify Yet the concept of designing complexity goes against these established beliefs because complexity cannot be designed away So instead we present ways to live with influence and benefit from complex systems There is no one right way presented in this book Instead many experiences approaches and perspectives are collected and presented The process this book offers is a methodology called Systems Oriented Design SOD SOD is a design methodology and practice primarily geared toward understanding and working with complex systems Several systems theories influence it yet it remains true to its origin the core of designing SOD is a living and adaptable methodology Though it is based on design thinking and design methodology it is easily adapted and applied by anybody working with complex change processes

The Evolution of Computation in Architecture Michael Fox,Bradley Bell,2024-10-31 This book is the first comprehensive overview of the pioneering works events and people that contributed to the paradigm shift defined by computation in architecture Only recently has computation fostered profound new ways of designing fabricating constructing and thinking about architecture While the profession sits at the end of the beginning of this historically transformative shift it is now possible to look back upon the rapidly maturing landscape of projects influencers and tools that have finally begun to catch up with the visionary thinking of the past Readers are guided through the fascinating and fast paced historical timeline of the development of computation in architecture Beginning with an account of the pioneering futuristic thinkers the authors then guide the reader through the birth of computation the appropriation of tools and the impact of experimentation on the profession leading into the legitimacy of research and how paradigms have been expanded The examples and influences are presented in a way that they can be understood and built upon This book is a must read for students of computation in architecture as well as researchers and practicing architects thinking about how the tools we use and the ways we design our buildings and environments with them can truly impact our lives

Design Innovation for the Built Environment Michael Hensel,2013-03-01 Today architecture and other fields in the built environment face the steep task of answering complex questions pertaining to sustainability performance and adaptability How are these disciplines to accomplish these difficult tasks at such an immense pace How might architectural practice renovate itself accordingly Worldwide it is becoming increasingly clear that different modes of research are emerging which are triggered directly by the need to renovate practice One significant prevailing mode is what has come to be known as research by design This book delivers an overview of this pluralistic domain Bringing together a range of leading architects architectural theorists and designers it outlines the developments in current practice from leading individuals based in the USA UK Australia Japan and Europe Edited by a recognized expert this book exposes the undercurrent of research which is taking place and how this will contribute to the renovation of architectural practice

Textiles, Identity and Innovation: In Touch Gianni Montagna,Manuela Cristina Paulo Carvalho

Figueiredo,2020-05-19 D_Tex is proposed as a hub around which it is possible to look at textiles in their different forms in order to better understand study adapt and project them for the future It is intended to build a flow of ideas and concepts so that participants can arrive at new ideas and concepts and work them in their own way adapting them to their objectives and research D_Tex is intended as a space for sharing and building knowledge around textile material in order to propose new understandings and explorations Present in all areas of knowledge the textile material bets on renewed social readings and its evolutions to constantly reinvent itself and enable innovative cultural and aesthetic dimensions and unexpected applications to solve questions and promote new knowledge D_Tex proposes to promote discussion and knowledge in the different areas where textiles with all their characteristics can ensure an important contribution combining material and immaterial knowledge innovative and traditional techniques technological and innovative materials and methods but also new organization and service models different concepts and views on teaching With the renewed idea of the intrinsic interdisciplinarity of design and sharing with different areas that support each other the research and practice of textiles was proposed by the D_TEX Textile Design Conference 2019 held June 19 21 2019 at the Lisbon School of Architecture of the University of Lisbon Portugal under the theme In Touch where as broadly understood as possible different areas of textiles were regarded as needing to keep in touch with each other and end users in order to promote and share the best they can offer for the welfare of their users and consumers

Beyond Digital Mario Carpo,2023-04-18 Recasting computational design a new modern agenda for a post industrial post pandemic world Mass production was the core technical logic of industrial modernity for the last hundred years architects and designers have tried to industrialize construction and standardize building materials and processes in the pursuit of economies of scale But this epochal march of modernity is now over In Beyond Digital Mario Carpo reviews the long history of the computational mode of production showing how the merger of robotic automation and artificial intelligence will stop and reverse the modernist quest for scale Today s technologies already allow us to use nonstandard building materials as found or as made and assemble them in as many nonstandard intelligent adaptive ways as needed the microfactories of our imminent future will be automated artisan shops The post industrial logic of computational manufacturing has been known and theorized for some time By tracing its theoretical and technical sources and reviewing the design theories that accompanied its rise Carpo shows how the computational project long under the sway of powerful antimodern ideologies is now being recast by the urgency of the climate crisis which has vindicated its premises and by the global pandemic which has tragically proven its viability Looking at the work of a new generation of designers technologists and producers Beyond Digital offers a new modern agenda for our post industrial future

The Architecture of Neoliberalism Douglas Spencer,2016-10-20 *The Architecture of Neoliberalism* pursues an uncompromising critique of the neoliberal turn in contemporary architecture This book reveals how a self styled parametric and post critical architecture serves mechanisms of control and compliance while promoting itself at the same

time as progressive Spencer's incisive analysis of the architecture and writings of figures such as Zaha Hadid Patrik Schumacher Rem Koolhaas and Greg Lynn shows them to be in thrall to the same notions of liberty as are propounded in neoliberal thought Analysing architectural projects in the fields of education consumption and labour *The Architecture of Neoliberalism* examines the part played by contemporary architecture in refashioning human subjects into the compliant figures student entrepreneurs citizen consumers and team workers requisite to the universal implementation of a form of existence devoted to market imperatives

General Ecology Erich Hörl, James Edward Burton, 2017-05-04 Ecology has become one of the most urgent and lively fields in both the humanities and sciences In a dramatic widening of scope beyond its original concern with the coexistence of living organisms within a natural environment it is now recognized that there are ecologies of mind information sensation perception power participation media behavior belonging values the social the political a thousand ecologies This proliferation is not simply a metaphorical extension of the figurative potential of natural ecology rather it reflects the thoroughgoing imbrication of natural and technological elements in the constitution of the contemporary environments we inhabit the rise of a cybernetic natural state with its corresponding mode of power Hence this ecology of ecologies initiates and demands that we go beyond the specificity of any particular ecology a general thinking of ecology which may also constitute an ecological transformation of thought itself is required In this ambitious and radical new volume of writings some of the most exciting contemporary thinkers in the field take on the task of revealing and theorizing the extent of the ecologization of existence as the effect of our contemporary sociotechnological condition together they bring out the complexity and urgency of the challenge of ecological thought one we cannot avoid if we want to ask and indeed have a chance of affecting what forms of life agency modes of existence human or otherwise will participate and how in this planet's future

Performatism Yasha Grobman, Eran Neuman, 2013-01-11 Today with the advent of digital media technologies and the ability to conceptualize express and produce complex forms using digital means the question of the status of the architectural form is once again under consideration Indeed the computer liberated architecture from the tyranny of the right angle and enabled the design and production of non standard buildings based on irregular geometry Yet the questions concerning the method of form expression in contemporary architecture and its meaning remain very much open Performatism takes up this discussion defines it and presents changes in form conception in architecture followed by their repercussions The book is supported by a wealth of case studies from some of the top firms across the globe and contributed to by some of the top names in this field With a unique and insightful emphasis on professional practice this is essential reading for all architects aspiring and practicing

Digital Poetics Marjan Colletti, 2017-03-02 *Digital Poetics* celebrates the architectural design exuberance made possible by new digital modelling techniques and fabrication technologies By presenting an unconventional and original humanistic theory of CAD computer aided design the author suggests that beyond the generation of innovative engineering forms digital design has the potential to affect the wider

complex cultural landscape of today in profound ways The book is organised around a synthetic and hybrid research methodology a contemporary propositional and theoretical discursive investigation and a design led empirical research Both methods inform a critical construct that deals with the nature forms and laws of digitality within a contemporary architectural discourse that affects practice and academia The chapters spiral at from towards around outside inwards and back inside out digitality its cognitive phenomena spatial properties and intrinsic capabilities to achieve or at least approach Digital Poetics The book presents speculative and small scale constructed projects that pioneer techniques and experiments with common 3D and 4D software packages whereby the focus lies not on the drawing processes and mechanics but on the agency and impact the image its reading experience interpretation achieves on the reader and observer The book also features a preface by Fr d ric Migayrou a philosopher and curator and one of the most influential cultural engineers of the contemporary international architectural scene The book is linked to a website which contains a larger selection of images of some featured projects

De-signing Design Elizabeth Grierson, Harriet Edquist, H l ène Frichot, 2016-01-07 De Signing Design Cartographies of Theory and Practice throws new light on the terrain between theory and practice in transdisciplinary discourses of design and art The editors Elizabeth Grierson Harriet Edquist and H l ène Frichot bring together diverse approaches to design theory practice and philosophy from leading scholars in Australia New Zealand Japan and the United Kingdom Themes include spatiality difference cultural aesthetics and identity in the expanded field of place making and being The concept that design can be de signed is presented as a way of exploring different approaches to an experimental and experiential thinking doing that promises to further open up research possibilities in the fields of design and art thinking and practice The book enacts a series of cartographic devices to articulate the spaces between theory and practice

Experimental Architecture Rachel Armstrong, 2019-06-11 In this ground breaking book the first to provide an overview of the theory and practice of experimental architecture Rachel Armstrong explores how interdisciplinary design led research practices are beginning to redefine the possibilities of architecture as a profession Drawing on experts from disciplines as varied as information technology mathematics poetry graphic design scenography bacteriology marine applied science and robotics Professor Armstrong delineates original cutting edge architectural experiments through essays quotes poetry equations and stories Written by an acknowledged pioneer of architectural experiment this visionary book is ideal for students and researchers wishing to engage in experimental practice based architectural and artistic research It introduces radical new ideas about architecture and provides ideas and inspiration which students and researchers can apply in their own work and proposals while practitioners can draw on it to transform their creative assumptions and develop thereby a distinctive edge to stand out in a highly competitive profession

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