Digital Fabrication

Ten years after the first FabLab (a so called fabrication laboratory) was opened at MIT, more than 120 FabLabs exist all over the world. Today, it is time to look back at a decade of FabLab activities. This book shows how small production devices, such as laser cutters and 3D printers, and dedicated educationists, researchers and FabLab practitioners transform the fields of learning, work, production, design, maker culture, law and science on a global scale. In this composition experts from various countries, such as Germany, India or the USA, and distinguished academic institutions, such as MIT or Stanford University, discuss theoretical questions and introduce practical approaches concerning FabLab activities.

Digital Fabrication in Architecture

3DP4E, a top resource website for 3D Printing enthusiasts from
desktop hobbyists to teachers and businesses is collecting their favorite resources available on the website into a stylish eBook. The eBook contains information and links to 3D Printing manufactures, artists, products, and services, presented cleanly and succinctly. This guide makes all the tools one would need available to begin their personal journey into the world of 3D Printing.

6th ASCAAD Conference 2012 CAAD | INNOVATION | PRACTICE

With the increasing sophistication of CAD and other design software, there is now a wide array of means for both designing and fabricating architecture and its components. The proliferation of advanced modelling software and hardware has enabled architects and students to conceive and create designs that would be very difficult to do using more traditional methods. The use of CAD technologies in the production of physical models, prototypes and individual elements is increasingly widespread through processes such as CAD/CAM, CNC milling and rapid prototyping. This translation of computer-generated data to physical artefact can also be reversed with devices such as a digitiser, which traces the contours of physical objects directly into the computer. This book focuses on the inspiring possibilities for architecture that can be explored with all the different technologies and techniques available for making complete designs or their components.

First RILEM International Conference on Concrete and Digital Fabrication – Digital Concrete 2018

Whilst inkjet technology is well-established on home and small office desktops and is now having increasing impact in commercial printing, it can also be used to deposit materials other than ink as individual droplets at a microscopic scale. This allows metals, ceramics, polymers and biological materials (including living cells) to be patterned on to substrates under precise digital control. This approach offers huge potential advantages for manufacturing, since inkjet methods can be used to generate structures and functions which cannot be attained in other ways. Beginning with an overview of the fundamentals, this book covers the key components, for example piezoelectric print-heads and fluids for inkjet printing, and the processes involved. It goes on to describe specific applications, e.g. MEMS, printed circuits, active and passive electronics, biopolymers and living cells, and additive manufacturing. Detailed case studies are included on flat-panel OLED displays, RFID (radio-frequency identification) manufacturing and tissue engineering, while a comprehensive examination of the current technologies and future directions of inkjet technology completes the coverage. With contributions from both academic researchers and leading names in the industry, Inkjet Technology for Digital Fabrication is a
comprehensive resource for technical development engineers, researchers and students in inkjet technology and system development, and will also appeal to researchers in chemistry, physics, engineering, materials science and electronics.

Second RILEM International Conference on Concrete and Digital Fabrication

In response to tremendous growth and new technologies in the semiconductor industry, this volume is organized into five, information-rich sections. Digital Design and Fabrication surveys the latest advances in computer architecture and design as well as the technologies used to manufacture and test them. Featuring contributions from leading experts, the book also includes a new section on memory and storage in addition to a new chapter on nonvolatile memory technologies. Developing advanced concepts, this sharply focused book—Describes new technologies that have become driving factors for the electronic industry Includes new information on semiconductor memory circuits, whose development best illustrates the phenomenal progress encountered by the fabrication and technology sector Contains a section dedicated to issues related to system power consumption Describes reliability and testability of computer systems Pinpoints trends and state-of-the-art advances in fabrication and CMOS technologies Describes performance evaluation measures, which are the bottom line from the user’s point of view Discusses design techniques used to create modern computer systems, including high-speed computer arithmetic and high-frequency design, timing and clocking, and PLL and DLL design

Getting Started with CNC

Top-down approach to practical, tool-independent, digital circuit design, reflecting how circuits are designed.

Digital Fabrication in Interior Design

Digital Fabrication in Interior Design: Body, Object, Enclosure draws together emerging topics of making that span primary forms of craftsmanship to digital fabrication in order to theoretically and practically analyze the innovative and interdisciplinary relationship between digital fabrication technology and interior design. The history of making in interior design is aligned with traditional crafts, but a parallel discourse with digital fabrication has yet to be made evident. This book repositions the praxis of experimental prototyping and integrated technology to show how the use of digital fabrication is inherent to the interior scales of body, objects and enclosure. These three scales act as a central theme to frame contributions that reinforce the interdisciplinary nature of interior design and reinterpret traditional crafts by integrating new methods of making into
conventional workflows. Featuring significant international practitioners and researchers, the selected contributions represent the ever-increasing interdisciplinary nature of design, demonstrating a breadth of disciplines. A foundational text for interior students and practitioners, Digital Fabrication in Interior Design expands the necessary dialogue about digital fabrication at the scale of interiors to inform design theory and practice.

Handbook of Research on Tools for Teaching Computational Thinking in P-12 Education

People currently live in a digital age in which technology is now a ubiquitous part of society. It has become imperative to develop and maintain a comprehensive understanding of emerging innovations and technologies. Information and Technology Literacy: Concepts, Methodologies, Tools, and Applications is an authoritative reference source for the latest scholarly research on techniques, trends, and opportunities within the areas of digital literacy. Highlighting a wide range of topics and concepts such as social media, professional development, and educational applications, this multi-volume book is ideally designed for academics, technology developers, researchers, students, practitioners, and professionals interested in the importance of understanding technological innovations.

Life Cycle Analysis and Assessment in Civil Engineering: Towards an Integrated Vision

Now that information technologies are fully embedded into the design studio, Instabilities and Potentialities explores our post-digital culture to better understand its impact on theoretical discourse and design processes in architecture. The role of digital technologies and its ever-increasing infusion of information into the design process entails three main shifts in the way we approach architecture: its movement from an abstracted mode of codification to the formation of its image, the emergence of the informed object as a statistical model rather than a fixed entity and the increasing porosity of the architectural discipline to other fields of knowledge. Instabilities and Potentialities aims to bridge theoretical and practical approaches in digital architecture.

Information and Technology Literacy: Concepts, Methodologies, Tools, and Applications

Digital fabrication has been termed the "third industrial revolution", and is promising to revolutionize many disciplines, including most recently the construction sector. Both academia and industry see immense promise in cementitious materials, which lend themselves well to additive manufacturing techniques for digital
fabrication in construction. With this recent trend and high interest in this new research field, the 1st RILEM International Conference on Concrete and Digital Fabrication (Digital Concrete 2018) was organized. Since 2014, ETH Zurich has been host for the Swiss National Centre for Competence in Research (NCCR) for Digital Fabrication in Architecture, which is highly interdisciplinary and unique worldwide. In 2018, this NCCR opened the “DFAB House”, which incorporates many digital fabrication principles for architecture. It is also responsible for the 600 m2 Robotic Fabrication Lab and the first robotically built roof in the world. Held in tandem with Rob|Arch 2018, the leading conference for robotics in architecture, RILEM deemed it the right time to combine forces at this new conference, which will be the first large conference to feature the work of the recently created RILEM Technical Committee on Digital Fabrication with Cement-based Materials, among other leaders in this new field worldwide. This conference proceedings brings together papers that take into account the findings in this new area. Papers reflect the varying themes of the conference, including Materials, Processing, Structure, and Applications.

Designing Reality

Digital Integrated Circuit Design

The Winter 2012 (vol. 14 no. 3) issue of the Nexus Network Journal features seven original papers dedicated to the theme “Digital Fabrication”. Digital fabrication is changing architecture in fundamental ways in every phase, from concept to artifact. Projects growing out of research in digital fabrication are dependent on software that is entirely surface-oriented in its underlying mathematics. Decisions made during design, prototyping, fabrication and assembly rely on codes, scripts, parameters, operating systems and software, creating the need for teams with multidisciplinary expertise and different skills, from IT to architecture, design, material engineering, and mathematics, among others. The papers grew out of a Lisbon symposium hosted by the ISCTE-Instituto Universitario de Lisboa entitled “Digital Fabrication – A State of the Art”. The issue is completed with four other research papers which address different mathematical instruments applied to architecture, including geometric tracing systems, proportional systems, descriptive geometry and correspondence analysis. The issue concludes with a book review.

Digital Fabrication

Deployable structures are mobile constructions with a great variety of spacial peculiarity, extent and layout. The documented workshop “Digital Fabrication & Deployable Structures” investigates in their history and tests how those flexible structures can be digitally
fabricated and parametrically designed using lasercutting technology. The resulting prototypes were developed in a collaborative process and furthermore functionalized by the embedment into a narrative. Abbaubare Strukturen oder “Deployable Structures” sind mobile Konstruktionen mit einer großen Varianz in ihrer räumlichen Ausprägung, Ausdehnung und Anordnung. Während des dokumentierten Workshops “Digital Fabrication & Deployable Structures” wurde erst deren Geschichte untersucht und dann erprobt, wie eben solche flexiblen Strukturen mittels Lasercutting Technologie digital hergestellt und parametrisch entworfen werden können. Die Ergebnisse wurden in Gruppen prototypisch hergestellt und durch die Einbettung in einen Narrativ mit einer Funktion belegt.

**Digital Fabrication in Architecture, Engineering and Construction**

This book introduces the term of TechnoScienceSociety to focus on the ongoing technological reconfigurations of science and society. It aspires to use the breadth of Science and Technology Studies to perform a critical diagnosis of our contemporary culture. Instead of constructing technology as society’s “other”, the book sets out to highlight the both complex and ambivalent entanglements of technologies, sciences and socialities. It provides some tentative steps towards a diagnosis of a society in which individuals and organizations address themselves, their pasts, presents, futures, hopes and problems in technoscientific modes. Technosciences redesign matter, life, self and society. However, they do not operate independently: Technoscientific practices are deeply socially and culturally constituted. The diverse contributions highlight the ongoing technological reconfigurations of rationalities, infrastructures, modes of governance, and publics. The book aims to inspire scholars and students to think and analyze contemporary conditions in new ways drawing on, and expanding, the toolkits of Science and Technology Studies.

**In the making: Digital fabrication and disability**

Author Christopher Beorkrem shows how material performance drives the digital fabrication process and determines technique. He has recreated and dissected thirty-six of the most progressive works of architecture of the last few years, with perspectives from the designers so that you can learn from the successes and failures of each project. Including step-by-step diagrams and using consistent language and the simplest construction techniques, he identifies the important characteristics of each material, including connection types, relative costs, deformation, color, texture, finish, dimensional properties, durability, and weathering and waterproofing to link the design outcomes to form. The book is divided into five parts by material – wood, metal, concrete, hybrids, and recycled –
to help you reference construction techniques for the fabrication machines you have on-hand.

Instabilities and Potentialities

Getting Started with CNC is the definitive introduction to working with affordable desktop and benchtop CNCs, written by the creator of the popular open hardware CNC, the Shapeoko. Accessible 3D printing introduced the masses to computer-controlled additive fabrication. But the flip side of that is subtractive fabrication: instead of adding material to create a shape like a 3D printer does, a CNC starts with a solid piece of material and takes away from it. Although inexpensive 3D printers can make great things with plastic, a CNC can carve highly durable pieces out of a block of aluminum, wood, and other materials. This book covers the fundamentals of designing for—and working with—affordable ($500–$3000) CNCs.

Digital Fabrications

Sponsored by the Alexander von Humbold Stiftung the "Bragfost-Conference" brings together about 60 outstanding German and Brazilian Scientists to discuss most topical issues in the field of electrical engineering, energy-supply as well as sociological impact of technology. This book presents the most relevant contributions in extended and revised form.

Digital Design and Fabrication

Introduces a radically new way of thinking about and materializing architecture. It is the first anthology on architectural design with robots and provides a selection of projects that have originated over almost a decade of research at ETH Zurich.

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While the growth of computational thinking has brought new awareness to the importance of computing education, it has also created new challenges. Many educational initiatives focus solely on the programming aspects, such as variables, loops, conditionals, parallelism, operators, and data handling, divorcing computing from real-world contexts and applications. This decontextualization threatens to make learners believe that they do not need to learn computing, as they cannot envision a future in which they will need to use it, just as many see math and physics education as unnecessary. The Handbook of Research on Tools for Teaching Computational Thinking in P–12 Education is a cutting-edge research publication that examines the implementation of computational thinking into school curriculum in order to develop creative problem-solving skills and to build a computational identity which will allow for future STEM growth. Moreover, the book advocates for a new
Educational Robotics in the Context of the Maker Movement

Digital technologies are changing the relationship between design and construction: with computer models, CAD/CAM, and prototyping, designers can gain direct control of building and construction processes. The ability to digitally model designs, and thus to use those models directly in the context of production, creates a synthesis between design and construction in keeping with the tradition of the close relationship between design and craftsmanship, between the quality of the design and the rules of the craft. The evolution of the culture of design and construction is the underlying theme of this book. The aim is to discuss the direction that innovation is now taking, with a particular focus on today’s cutting-edge architectures. The method addresses the ways in which different societies have dealt with the issues of their age regarding design and construction, the different contributions provided by various techniques, and with them the meanings expressed by the architecture. As building design using digital tools requires specific skills in the fabrication processes and in the languages used by information technology, the book also offers a practical guide to new methods and techniques of managing and controlling fabrication for AEC. A systematic analysis of new skills used in the design process presents an overview of opportunities for architects and engineers. By collecting information on significant projects and analyzing them, the book explores the technical and artistic potential of digital technology. The cases studied are the outcomes of groundbreaking projects which were able to give form and significance to technological research. They show that digital tools are not the exclusive prerogative of large firms but can also be adopted by teams working across small and medium-sized firms – firms which have been able to use informed research to link innovative design with the possibilities offered by digital fabrication in architecture.

Fold, refold. Deployable narratives and digital fabrication

Covering key areas of evaluation and methodology, client-side applications, specialist and novel technologies, along with initial appraisals of disabilities, this important book provides comprehensive coverage of web accessibility. Written by leading
experts in the field, it provides an overview of existing research and also looks at future developments, providing a much deeper insight than can be obtained through existing research libraries, aggregations, or search engines.

Digital Materials for Digital Fabrication

This volume contains the papers presented at IALCCE2018, the Sixth International Symposium on Life-Cycle Civil Engineering (IALCCE2018), held in Ghent, Belgium, October 28–31, 2018. It consists of a book of extended abstracts and a USB device with full papers including the Fazlur R. Khan lecture, 8 keynote lectures, and 390 technical papers from all over the world. Contributions relate to design, inspection, assessment, maintenance or optimization in the framework of life-cycle analysis of civil engineering structures and infrastructure systems. Life-cycle aspects that are developed and discussed range from structural safety and durability to sustainability, serviceability, robustness and resilience. Applications relate to buildings, bridges and viaducts, highways and runways, tunnels and underground structures, off-shore and marine structures, dams and hydraulic structures, prefabricated design, infrastructure systems, etc. During the IALCCE2018 conference a particular focus is put on the cross-fertilization between different sub-areas of expertise and the development of an overall vision for life-cycle analysis in civil engineering. The aim of the editors is to provide a valuable source of cutting edge information for anyone interested in life-cycle analysis and assessment in civil engineering, including researchers, practising engineers, consultants, contractors, decision makers and representatives from local authorities.

Of Irises and Laser Cutters

That's the promise, and peril, of the third digital revolution, where anyone will be able to make (almost) anything Two digital revolutions -- computing and communication -- have radically transformed our economy and lives. A third digital revolution is here: fabrication. Today's 3D printers are only the start of a trend, accelerating exponentially, to turn data into objects: Neil Gershenfeld and his collaborators ultimately aim to create a universal replicator straight out of Star Trek. While digital fabrication promises us self-sufficient cities and the ability to make (almost) anything, it could also lead to massive inequality. The first two digital revolutions caught most of the world flat-footed, thanks to Designing Reality that won't be true this time.

ICAR 2015 – ABSTRACTS

Miniaturization and high precision are rapidly becoming a requirement for many industrial processes and products. As a result,
there is greater interest in the use of laser microfabrication technology to achieve these goals. This book comprised of 16 chapters covers all the topics of laser precision processing from fundamental aspects to industrial applications to both inorganic and biological materials. It reviews the state of the art of research and technological development in the area of laser processing.

3D Printing and Digital Fabrication Resource eBook

Fusion 360 for Makers

With the increasing sophistication of CAD and other design software, there is now a wide array of means for both designing and fabricating architecture and its components. The proliferation of advanced modeling software and hardware has enabled architects and students to conceive and create designs that would be very difficult to do using more traditional methods. This book focuses on the inspiring possibilities for architecture that can be achieved with all the different technologies and techniques available for making complete designs or their components.

Material Strategies in Digital Fabrication

This book gathers papers presented at the International Conference “Educational Robotics in the Maker Era – EDUROBOTICS 2018”, held in Rome, Italy, on October 11, 2018. The respective chapters explore the connection between the Maker Movement on the one hand, and Educational Robotics, which mainly revolves around the constructivist and constructionist pedagogy, on the other. They cover a broad range of topics relevant for teacher education and for designing activities for children and youth, with an emphasis on using modern low-cost technologies (including block-based programming environments, Do-It-Yourself electronics, 3D printed artifacts, intelligent distributed systems, IoT technology and gamification) in formal and informal education settings. The twenty contributions collected here will introduce researchers and practitioners to the latest advances in educational robotics, with a focus on science, technology, engineering, arts and mathematics (STEAM) education. Teachers and educators at all levels will find valuable insights and inspirations into how educational robotics can promote technological interest and 21st century skills – e.g. creativity, critical thinking, teamwork, and problem-solving – with a special emphasis on new making technologies.

Web Accessibility

This thesis introduces digital materials by analogy with digital computation and digital communications. Traditional fabrication techniques include pick-and-place, roll-to-roll, molding, patterning
and more. Current research in fabrication includes algorithmic assembly [3], programmed assembly[9], self-assembly[1,2], assembly by folding [4] as well as guided self-assembly [2]. While these research areas are studying means of fabrication, here we introduce the study of the digital materials they assemble. Moreover we present a new type of three-dimensional digital printer for use with functional digital materials. Most importantly, the digital materials are shown to be tuneable; the code describing a digital material allows one to predict and adjust the properties of the material itself. In the same 'way digital communications and computation are discrete in the code space, digital fabrication is discrete in the physical space. Just as digital communications enabled cheap long-distance communications and digital computation enabled cheap, universal and efficient computers, digital fabrication enables cheap, efficient and universal fabrication. Building digitally will reduce the complexity of the assembler and can produce a wider variety of objects for a smaller cost.

The Oxford Conference

Learn how to use Autodesk Fusion 360 to digitally model your own original projects for a 3D printer or a CNC device. Fusion 360 software lets you design, analyze, and print your ideas. Free to students and small businesses alike, it offers solid, surface, organic, direct, and parametric modeling capabilities. Fusion 360 for Makers is written for beginners to 3D modeling software by an experienced teacher. It will get you up and running quickly with the goal of creating models for 3D printing and CNC fabrication. Inside Fusion 360 for Makers, you'll find: Eight easy-to-understand tutorials that provide a solid foundation in Fusion 360 fundamentals DIY projects that are explained with step-by-step instructions and color photos Projects that have been real-world tested, covering the most common problems and solutions Stand-alone projects, allowing you to skip to ones of interest without having to work through all the preceding projects first Design from scratch or edit downloaded designs. Fusion 360 is an appropriate tool for beginners and experienced makers.

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- Digital Fabrication offers an informed overview of the impact of digital technologies on architectural fabrication today, providing a snapshot of the latest developments in the field, drawing upon the leading experts in architectural practice and education from across the world - Publication accompanies that of a companion volume - Computational Design ISBN 9787560873336 How are new digital fabrication technologies changing the ways in which architects are constructing buildings today? Digital Fabrication offers a range of informed opinions on the subject written by some of the leading authorities in the world. It addresses new digital fabrication
technologies, such as 3D printing, computer numerically controlled milling, along with other robotically controlled manufacturing operations, such as laser cutting, bandsaw cutting, stitching, weaving, forming, bending, folding and stacking. The volume is divided into different sections comprising Manifestos, Methodologies, Interviews and Projects, and also includes a helpful Introduction that offers a brief history of digital fabrication.

Frontiers of Science and Technology

The Winter 2012 (vol. 14 no. 3) issue of the Nexus Network Journal features seven original papers dedicated to the theme “Digital Fabrication”. Digital fabrication is changing architecture in fundamental ways in every phase, from concept to artifact. Projects growing out of research in digital fabrication are dependent on software that is entirely surface-oriented in its underlying mathematics. Decisions made during design, prototyping, fabrication and assembly rely on codes, scripts, parameters, operating systems and software, creating the need for teams with multidisciplinary expertise and different skills, from IT to architecture, design, material engineering, and mathematics, among others. The papers grew out of a Lisbon symposium hosted by the ISCTE-Instituto Universitario de Lisboa entitled “Digital Fabrication – A State of the Art”. The issue is completed with four other research papers which address different mathematical instruments applied to architecture, including geometric tracing systems, proportional systems, descriptive geometry and correspondence analysis. The issue concludes with a book review.

Opening digital fabrication: transforming
TechKnowledgies

»Of Irises and Laser Cutters« shows how fertile the cooperation of people from different worlds can be. Artists and designers meet technicians and engineers, different cultures and ways of thinking meet each other. The focus is on the fascinating possibilities of digital fabrication technology. With their help, people who are globally networked, can use bits and bytes to create tangible objects, as well as being co-productive and creative across boarders. The author advocates recognizing the creative potential of these global encounters and using their inherent diversity as an opportunity. Above all, young people need accessibility to these possibilities because they want to play an active role in shaping their future.

Material Strategies in Digital Fabrication

Digital Fabrications, the second volume in our new Architecture Briefs series, celebrates the design ingenuity made possible by digital fabrication techniques. Author Lisa Iwamoto explores the
methods architects use to calibrate digital designs with physical forms. The book is organized according to five types of digital fabrication techniques: tessellating, sectioning, folding, contouring, and forming. Projects are shown both in their finished forms and in working drawings, templates, and prototypes, allowing the reader to watch the process of each fantastic construction unfold. Digital Fabrications presents projects designed and built by emerging practices that pioneer techniques and experiment with fabrication processes on a small scale with a do-it-yourself attitude. Featured architects include AEDS/Ammar Eloueini, Atelier Manferdini, Brennan Buck, MOS, Office dA, Florencia Pita/MOD, Mafoomby, URBAN A+O, SYSTEMarchitects, Andrew Kudless/Matsys, IwamotoScott, Atelier Hitoshi Abe, Chris Bosse, Tom Wiscombe/EMERGENT, Thom Faulders Architecture, Jeremy Ficca, SPAN, GNUFORM, Heather Roberge, PATTERNS, Ruy Klein, and servo.

Inkjet Technology for Digital Fabrication

In this second edition of Material Strategies in Digital Fabrication are new case studies, improved wayfinding, the inclusion of composites and plastics, and references to similar strategies between different projects. In 400 step-by-step diagrams dissecting 39 case studies in 10 countries on 3 continents, the book shows you how material performance drives the digital fabrication process and determines technique. The book identifies the important characteristics of each material, including connection types, relative costs, deformation, color, texture, finish, dimensional properties, durability, and weathering and waterproofing to link design outcomes to form. The book is divided into five main chapters by material; wood, metal, concrete/masonry, composites/plastics, and recycled/pre-cycled, to help you reference construction techniques for the fabrication machines you have on-hand. Includes projects by SHoP Architects, Gramazio & Kohler, Schindlersalmeron, The Institute for Computational Design (Achim Menges, Patkau Architects, Sebastien Wierinck, Blue Dot Furniture, Marble Fairbanks, Studio Gang Architects, Macdowell.Tomova, Thomas Heatherwick Studio, Heather Roberge, MX3D, Matsys, Ashjorn Sondergaard, Block Research Group (Phillipe Block), Ball Nogues Studio, Matter Design, WORK Architecture Company, and SoftLab.

TechnoScienceSociety

International Conference on Architectural Research - ICAR 2015
RESEARCH THROUGH ARCHITECTURE ISSN 2393 – 4433 ISSN-L 2393 – 4433
Read Free Digital Fabrication


Introduction Under the title theme Re[Search] through Architecture, ICAR 2015 proposes a debate of the subject defining some new principles of nowadays architectural design. In the XXI-st century, in searching of a “style”, after Postmodernism, it is considered that new architecture based on algorithms and parameters may offer new senses of space continuity and legibility. In opposite, the contextualist and phenomenologist movements consider this approach as a formal and fragile tendency, culturally un-sustained and which won’t prove its consistence in time as utopist and futurist did. Topics like new avant-garde movement, stylistic searching, anachronistically architecture, space continuities and correspondences, lived architecture or experimental manifesto projects, the evolving of geometries, urban continuities or classical defragmentation, functional zoning, social impact scenarios, space formalization, aesthetic and symbolic design values, authentically or new built archaeology, sustainable design etc. will be presented and debated under three main sections: Traditional versus Computational, Innovation and Experiment, Archive – Utopia – Events. Built / Unbuilt. Assoc.Prof. Beatrice-Gabriela JÖGER, Arch, PhD, UAUIIM, Bucharest, Romania COMMITTEES General Chair Assoc.Prof. Beatrice-Gabriela JÖGER, Arch, PhD, UAUIIM, Bucharest, Romania Local arrange chair Assoc.Prof. Daniel COMȘA, Arch, PhD, UAUIIM, Bucharest, Romania Visual Identity, Publications Coordinator Assoc.Prof. Andra PANAIT, Arch, PhD, UAUIIM, Bucharest, Romania SECTIONS 1. Traditional versus Computational Chair: Assoc.Prof. Elena Codina DUȘOIU, Arch, PhD, UAUIIM, Bucharest Assistant chair: Assist.Prof. Oana DIACONESCU, Arch, PhD, UAUIIM, Bucharest 2. Innovation and Experiment Chair: Assoc.Prof. Françoise PAMFIL, Arch, PhD, UAUIIM, Bucharest Assistant chair: Lecturer Marina MIHĂILĂ, Arch, PhD, UAUIIM, Bucharest 3. Archive – Utopia – Events. Built / Unbuilt Chair: Assoc.Prof. Daniel COMȘA, Arch, PhD, UAUIIM, Bucharest Assistant chair: Assist.Prof. Mihaela ZAMFIR, Arch, PhD, UAUIIM, Bucharest CONFERENCE SECRETARIAT Assist.Prof. Daniel ARMENCIU, Arch, PhD, UAUIIM, Bucharest Assist.Prof. Raluca BOROȘ, Arch, PhD student, UAUIIM, Bucharest SCIENTIFIC COMMITTEE Prof. Byeong-Joon KANG, Arch, PhD, INJE University –Ghimbae, South Corea Assoc.Prof. João MENEZES DE SEQUEIRA, Arch, Head of Architectural Department, Ulusofona, Lisbon, Portugal Prof. Antonino SAGGIO, Arch, PhD, Sapienza University, Rome, Italy Assoc.Prof. Maria VOYATZAKI, Arch, PhD, School of Architecture of Aristotle University of Thessaloniki, Greece Assoc.Prof. Cosmin CACIUC, Arch, PhD, UAUIIM, Bucharest, Romania Assoc.Prof. Daniel COMȘA, Arch, PhD, UAUIIM, Bucharest, Romania Assoc.Prof. Codina DUȘOIU, Arch, PhD, UAUIIM, Bucharest, Romania Assoc.Prof. Cristina ENACHE, Arch, PhD, UAUIIM, Bucharest, Romania Assoc.Prof. Ștefan GHENCIULESCU, Arch, PhD, UAUIIM,
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The Robotic Touch

50 years after the first Oxford Conference on Architectural Education, the 2008 conference brought together over 500 people from 42 countries to share best practice, discuss how, when, where and why we teach architecture now and in the future.

The Art of Digital Fabrication

The publication "Fold, Unfold : Deployable Structures and Digital Fabrication" is the documentation of the workshop of the same name hosted at TU-Berlin from february till march 2017 in collaboration with ETSAE Cartagena. The main objective of this seminar was to design and build different prototypes of deployable structures that can colonize a space to be inhabited temporarily. Die Publikation „Fold, Unfold : Deployable Structures und Digital Fabrication“ dokumentiert den gleichnamigen Workshop, der von Februar bis März 2017 an der TU Berlin in Zusammenarbeit mit der ETSAE Cartagena stattgefunden hat. Besonderes Ziel des Seminars war es, entfaltbare Strukturen zu entwerfen und zu bauen, die Räume einnehmen können und diese vielfältig und temporär nutzbar machen.

Digital Fabrication in Architecture
The Art of Digital Fabrication makes the case for designing and making art with digital fabrication technology and provides the resources for bringing that work to life. Contains over twenty-five beautiful makerspace tested STEAM projects, a material and process inventory for digital fabrication, and hardware and software guides.

Laser Precision Microfabrication

This book gathers peer-reviewed contributions presented at the 2nd RILEM International Conference on Concrete and Digital Fabrication (Digital Concrete), held online and hosted by the Eindhoven University of Technology, the Netherlands from 6-9 July 2020. Focusing on additive and automated manufacturing technologies for the fabrication of cementitious construction materials, such as 3D concrete printing, powder bed printing, and shotcrete 3D printing, the papers highlight the latest findings in this fast-growing field, addressing topics like mixture design, admixtures, rheology and fresh-state behavior, alternative materials, microstructure, cold joints & interfaces, mechanical performance, reinforcement, structural engineering, durability and sustainability, automation and industrialization.

Fold Unfold: deployable structures and digital fabrication

Digital fabrication combines virtual and material worlds; transforming thoughts into things, and things into data. It fosters complex and varied communities while enabling the pursuit of unique individual outputs. Current literature on digital fabrication concentrates on its technical and economic potential, with little attention yet being paid to the fundamental questions of how the technology might affect our understanding of identity, embodiment, or creative processes. Using case studies and experiences gained from ground-breaking fieldwork, "In the Making" explores these processes and their products from both cultural and aesthetic perspectives; with emphasis on its human interactions, not on technology. Embracing the absence of established methodologies in their emerging area of investigation, this volume offers a series of wide-ranging and original interdisciplinary framings which arise from the materials themselves. That very act of imagining, of selecting and committing to an envisaged but not yet physically present product, offers insights into needs and desires. What is the story of that design? How did it come to be? The basic principles of digital fabrication - the transformation from concept to physical entity - offer intriguing possibilities for aesthetic and cultural readings, particularly from the perspectives of disability. Online, open access maker communities mean that anyone with an internet connection and a desktop 3D printer is able to download and print a wide variety of replicable and customisable objects. What might this mean for disabled people? As digital fabrication technologies enter
mainstream society, In the making poses urgently applicable questions about presence, existence, and authenticity and begins to suggest how we might explore them.

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