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Integrated Practice in Architecture - George Elvin 2007-03-09 Endorsed by The American Institute of Architects, this work is about integrated practice in architecture, which is the collaborative design, construction, and life-cycle management of buildings.

Handbook of Research on Building Information Modeling and Construction Informatics: Concepts and Technologies - Underwood, Jason 2009-12-31 In recent years, building information modeling has become a very active research area of construction informatics with investigation of ICT use within construction industry processes and organizations. The Handbook of Research on Building Information Modeling and Construction Informatics: Concepts and Technologies addresses the problems related to information integration and interoperability throughout the lifecycle of a building, from feasibility and conceptual design through to demolition and recycling stages. Containing research from leading international experts, this Handbook of Research provides comprehensive coverage and definitions of the most important issues, concepts, trends, and technologies within the field.

The Future of Making - Tom Wujec 2017-04-25 Prepare yourself: How things are made is changing. The digital and physical are uniting, from innovative methods to sense and understand our world to machines that learn and design in ways no human ever could; from 3D printing to materials with properties that literally stretch possibility; from objects that evolve to systems that police themselves. The results will radically change our world--and ourselves. The Future of Making illustrates these transformations, showcasing stories and images of people and ideas at the forefront of this radical wave of innovation. Designers, architects, builders, thought leaders--creators of all kinds-- have contributed to this look at the materials, connections, and inventions that will define tomorrow. But this book doesn't just catalog the future; it lays down guidelines to follow, new rules for how things are created, that make it the ultimate handbook for anyone who wants to embrace the true future of making.

Advanced Computing Strategies for Engineering - Ian F. C. Smith 2018-06-09 This double volume set (LNAI 10863-10864) constitutes the refereed proceedings of the 25th International Workshop, EG-ICE 2018, held in Lausanne, Switzerland, in June 2018. The 58 papers presented in this volume were carefully reviewed and selected from 108 submissions. The papers are organized in topical sections on Advanced Computing in Engineering, Computer Supported Construction Management, Life-Cycle Design Support, Monitoring and Control Algorithms in Engineering, and BIM and Engineering Ontologies.

Recent Advances in 3D Imaging, Modeling, and Reconstruction - Voulodimos, Athanasios 2020-02-28 3D image reconstruction is used in many fields, such as medicine, entertainment, and computer science. This highly demanded process comes with many challenges, such as images becoming blurry by atmospheric turbulence, getting snowed with noise, or becoming damaged within foreign regions. It is imperative to remain well-informed with the latest research in this field. Recent Advances in 3D Imaging, Modeling, and Reconstruction is a collection of innovative research on the methods and common techniques of image reconstruction as well as the accuracy of these methods. Featuring coverage on a wide range of topics such as ray casting, holographic techniques, and machine learning, this publication is ideally designed for graphic designers, computer engineers, medical professionals, robotics engineers, city planners, game developers, researchers, academicians, and students.

An Effective Strategy for Safe Design in Engineering and Construction - David England 2022-01-31 AN EFFECTIVE STRATEGY FOR SAFE DESIGN IN ENGINEERING AND CONSTRUCTION Practically and efficiently implement the Construction (Design and Management) Regulations in any project In An Effective

Strategy for Safe Design, safety and risk professionals David England and Dr Andy Painting provide a comprehensive exploration of the design process, from initial idea to the validation of the product in service, from a product and project safety perspective. In that context, the authors show how the appropriate implementation of the requirements of the Construction (Design and Management) Regulations 2015 can not only improve health and safety on a project but can also improve the project's output as well as offering savings in both capital and operational expenditure. Readers will discover how the seemingly complex matters of regulation and risk management can be practically applied to projects via examples, illustrations, and real-world references. They will find out how safety regulation, standards, and initiatives all converge on the same goal—the safest output from any given project. The book achieves three primary goals: To improve the understanding and implementation of the Construction (Design and Management) Regulations 2015 To reduce errors during the design process via the effective implementation of design management strategy To embed the concept of safety in design Perfect for designers, design managers and supervisors, project managers, surveyors, and insurers, An Effective Strategy for Safe Design is also an invaluable addition to the libraries of principal designers, specifiers, and building control officers.

Advances in Construction ICT and e-Business - Srinath Perera 2017-05-08 This internationally conducted study of the latest construction industry practices addresses a broad range of Information and Communication Technology applications. Drawing on research conducted in the US and UK, this book presents the state of the art of various ebusiness processes, and examines BIM, virtual environments and mobile technologies. Innovation is a theme that runs throughout this book, so in addition to the direct impact of these new technical achievements, it also considers the management styles that helped them to emerge. Examples from industry are illustrated with case studies and presented alongside research from some of the best known academics in this field. This book is essential reading for all advanced students and researchers interested in how ICT is changing construction management and the construction industry.

Innovation in Construction - Seyed Hamidreza Ghaffar 2022-03-23 This book tackles the complex topic of implementing innovation and the successful application of advanced technology in the construction industry. It provides a practical guide for the transformation of the industry by detailing appropriate and effective implementation methods, required skill sets and structural changes necessary to facilitate the practical and innovative application of technology. The construction industry is behind other industries in its level of innovation and adoption of technology, and is of critical importance to many of today's global challenges, such as climate change, global warming and resource scarcity. There is therefore a need for smarter and more efficient ways of managing available resources. This book elaborates on how the innovative application of technology could offer hope for the construction industry in it's imperative to rise to current and future global challenges. It includes the real-world case studies of innovative projects that go beyond the current state-of-the-art academic research, and have improved productivity, quality and performance in the construction sector. This book provides readers from both industrial and academic backgrounds with a comprehensive guide on transforming the construction industry with the efficient and effective implementation of technologies and modern methods of construction.

Large-scale 3D Data Integration - Sisi Zlatanova 2005-10-14 Large-Scale 3D Data Integration: Challenges and Opportunities examines the fundamental aspects of 3D geo-information, focusing on the latest developments in 3D GIS (geographic information) and AEC (architecture, engineering, construction) systems. This book addresses policy makers, designers and engineers, and individuals that need to overco

BIM Teaching and Learning Handbook - M. Reza Hosseini 2021-08-10
This book is the essential guide to the pedagogical and industry-inspired considerations that must shape how BIM is taught and learned. It will help academics and professional educators to develop programmes that meet the competences required by professional bodies and prepare both graduates and existing practitioners to advance the industry towards higher efficiency and quality. To date, systematic efforts to integrate pedagogical considerations into the way BIM is learned and taught remain non-existent. This book lays the foundation for forming a benchmark around which such an effort is made. It offers principles, best practices, and expected outcomes necessary to BIM curriculum and teaching development for construction-related programs across universities and professional training programmes. The aim of the book is to: Highlight BIM skill requirements, threshold concepts, and dimensions for practice; Showcase and introduce tried-and-tested practices and lessons learned in developing BIM-related curricula from leading educators; Recognise and introduce the baseline requirements for BIM education from a pedagogical perspective; Explore the challenges, as well as remedial solutions, pertaining to BIM education at tertiary education; Form a comprehensive point of reference, covering the essential concepts of BIM, for students; Promote and integrate pedagogical consideration into BIM education. This book is essential reading for anyone involved in BIM education, digital construction, architecture, and engineering, and for professionals looking for guidance on what the industry expects when it comes to BIM competency.

Technology for Facility Managers - IFMA 2012-10-03
A comprehensive look at the impact of technology on facilitymanagers Facility managers are tasked with operating and maintaining thebuilt environment. Technology plays a big role in this function,and often facility managers are asked to install, implement, andwork with a variety of technologies without any prior experience ininformation technology. Technology for Facility Managers presents thecutting-edge technology that facility managers will come across intheir careers. Each chapter covers a different technology andincludes an overview and basic primer about the technology—thecurrent use of the technology, how it's evolving, and how it willimpact the practice of facility management in the future—andis complemented with case studies that address how the technologywas implemented and the effect it had on the organization.Technologies covered include: Building information modeling (BIM) Building automation systems (BAS) FM automation (CAFM/IWMS) Condition assessment/life cycle analysis Radio frequency identification (RFID) Geographic information systems (GIS) Social networking Sustainability and energy analysis Information and communications technology (ICT) Workflow technology that supports standards such as BusinessProcess Modeling Notation (BPMN) and those developed by theWorkflow Management Coalition (WfMC) Technology for Facility Managers is appropriate as atextbook for IFMA Accredited Degree Programs and as a resource forprofessionals studying for certification through IFMA.

Incentivizing Collaborative BIM-Enabled Projects - Chen-Yu Chang 2018-11-05
The use of digital representations to aid in projects—Building Information Modeling (BIM)—is gaining traction worldwide as an effective and beneficial approach to executing projects that can reduce errors and improve project results. Author Chen-Yu Chang, PhD, explains the current state of BIM use in three distinct countries: China, the United Kingdom, and the United States. Following multiple case studies in each country, Professor Chang explores the explicit and implicit motivators that may drive BIM participation and the factors that can influence its effectiveness. The case studies offer multiple perspectives on why and how BIM-enabled projects are adopted and provide a lens for understanding BIM at varying levels. This theoretical approach gives researchers and organizations new tools and ideas to help build their own strategies to encourage BIM use and better understand its place in managing projects.

3D Television (3DTV) Technology, Systems, and Deployment - Daniel Minoli 2010-11-17
Going beyond the technological building blocks of 3DTV, 3D Television (3DTV) Technology, Systems, and Deployment: Rolling Out the Infrastructure for Next-Generation Entertainment offers an early view of the deployment and rollout strategies of this emerging technology. It covers cutting-edge advances, theories, and techniques in end-to-end 3DTV sys

Computational Design Methods and Technologies: Applications in CAD, CAM and CAE Education - Gu, Ning 2012-01-31

The emergence and adoption of computational technologies has significantly changed design and design education beyond the replacement of drawing boards with computers or pens and paper with computer-aided design (CAD), computer-aided manufacturing (CAM), and computer-aided engineering (CAE) applications. Computational Design Methods and Technologies: Applications in CAD, CAM and CAE Education explores state-of-the-art developments in computational design methods and their impact on contemporary design education. Readers will find case studies, empirical research findings, pedagogical theories, and reflections. Researchers, educators, designers, and developers will better understand how applying pedagogical research and reflection has influenced and will continue to transform the field in the future.

Sustainable Design and Build - Md. Faruque Hossain 2018-09-12
Sustainable Design and Build provides a complete reference for engineers and scientists who want to conduct sustainability research. The book begins with a rudimentary discussion of environmental pollution and energy that is followed by their applications for solving problems in construction processes and practices governing advanced building design, infrastructure and transportation, and water and sewage. Other topics include engineering invisible roads and bridges, smart building technology, building information modeling, energy modeling, resilience in urban and rural development, engineering invisible roads and bridges, zero emission vehicles and flying transportation technology. This book presents a valuable guide to sustainable design and construction processes and methods. Covers the latest research in the utilization of renewable energy and the implementation in construction and building system design Includes a detailed discussion on combined technology applications of energy, gas and water Covers advanced methods and technologies for constructing sustainable transportation systems, including roads, bridges, tunnels and hardscapes

Workflows - Richard Garber 2017-05-30
Workflows are being rethought and remodelled across the architecture, engineering and construction (AEC) spectrum. The synthesis of building information modelling (BIM) platforms with digital simulation techniques and increasing access to data, charting building performance, is allowing architects to engage in the generation of new workflows across multidisciplinary teams. By merging digital design operations with construction activities, project delivery and post-occupation scenarios, architects are becoming instrumental in the shaping of buildings as well as the design process. Workflows expand the territory of architectural practice by extending designers' remit beyond the confines of the design stage. The implications for the AEC industry and architecture as a profession could not be greater. These new collaborative models are becoming as important as the novel buildings they allow us to produce. Contributors include: Shajay Bhooshan, John Cays, Randy Deutsch, Sean Gallagher, Ian Keough, Peter Kis, Jonathan Mallie, Adam Modesitt, Rhett Russo, Dale Sinclair, and Stacie Wong. Featured architects: Arup, Diller Scofidio + Renfro, GLUCK+, GRO Architects, PLANT, Populous, Young & Ayata, and Zaha Hadid Architects.

Eco-architecture IV - C. A. Brebbia 2012-09-01
Containing the proceedings of the latest in a series of conferences on the emerging topic of eco-architecture, this book presents the newest research in the field. Eco-architecture requires that buildings be in harmony with nature, including their immediate environs. Locations, siting and orientation, as well as the materials used, should be chosen based on ecological appropriateness. Practitioners make every effort to minimize the use of energy at each stage of a building's life cycle, including that embodied in the extraction and/or fabrication as well as the transportation of the materials used and their assembly into the building. There is even consideration given to the ease and value of changing use of a building and component recycling when the building's life is over. Designers may also carefully control the energy required for building maintenance, not to mention lighting, heating and cooling, especially when the energy consumed is related to greenhouse gas emissions. Passive energy systems such as natural ventilation, summer shading and winter solar heat gain also play a role, as do alternative sources of energy for heat and electricity, e.g. solar and wind power.Papers presented cover topics such as: Ecological and cultural sensitivity; Design by passive systems ; Life cycle assessment; Quantifying sustainability in architecture; Resource and rehabilitation; Building technologies; Ecological impact of materials; Durability of materials; Adapted reuse ; Carbon neutral design ; Education and training; Case studies; New architecture frontiers; Art and kraft; Quality

in architecture; Temporary architecture; Selection.

Proceedings of the 17th International Symposium on Advancement of Construction Management and Real Estate - Jiayuan Wang 2013-08-16
The Chinese Research Institute of Construction Management (CRIOCM) in collaboration with Shenzhen University (SZU) proudly invites all academics, researchers and professionals to participate in the CRIOCM 2012, the 17th International Symposium on "Advancement of Construction Management and Real Estate." We will uphold and preserve the idea and tradition of pragmatism and innovation, to offer an excellent academic and communication platform for academics and professionals to exchange information on the latest developments in real estate and construction management.

Green Technologies: Concepts, Methodologies, Tools and Applications - Management Association, Information Resources 2011-03-31
Green Technologies: Concepts, Methodologies, Tools and Applications assembles the most up-to-date collection of research results and recent discoveries in environmental and green technology. This comprehensive anthology covers a wide range of topics, i

Data-Driven Modeling for Sustainable Engineering - Kondo H. Adjallah 2019-06-21
This book gathers the proceedings of the 1st International Conference on Engineering, Applied Sciences and System Modeling (ICEASSM), a four-day event (18th–21st April 2017) held in Accra, Ghana. It focuses on research work promoting a better understanding of engineering problems through applied sciences and modeling, and on solutions generated in an African setting but with relevance to the world as a whole. The book provides a holistic overview of challenges facing Africa, and addresses various areas from research and development perspectives. Presenting contributions by scientists, engineers and experts hailing from a host of international institutions, the book offers original approaches and technological solutions to help solve real-world problems through research and knowledge sharing. Further, it explores promising opportunities for collaborative research on issues of scientific, economic and social development, making it of interest to researchers, scientists and practitioners looking to conduct research in disciplines such as water supply, control, civil engineering, statistical modeling, renewable energy and sustainable urban development.

Autodesk Revit 2017 Architectural Command Reference - Daniel John Stine 2017-02
This book provides you with an easy to use reference for all of Autodesk Revit's Architectural Commands. This command reference can be used as you are working in the software to help you understand what each command does and how it may be used in your overall workflow. Also included with this book are nearly 100 videos tutorials which will further help you master Autodesk Revit. The book is organized in the same way the Revit user interface is presented. Each tab of the Ribbon is represented as a chapter in the book. Within the chapter each button is represented in the book as it appears on the Ribbon from left to right. Organizing the book in this way makes it easy to locate each command in the book and understand its use. For each command entry you will see a brief description of what the tool will do, how it is used, and the options you will be given as you use the tool. In some cases the author's suggestions or tips about the use of the tool will also be presented. As you learn the tools in Revit you may not need to read the full entry on the tool. To help facilitate this, many of the tools include a "Quick Steps" section to explain the tools and options in outline form. This book will help facilitate your learning of the Revit interface and all of the commands. For more experienced users, the command reference may introduce you to commands you have not used before or help you with commands you use less frequently. Whatever level of user you are, this command reference becomes a valuable resource to you as you work with Revit.

Rise of the Machines: A Cybernetic History - Thomas Rid 2016-06-28
"Dazzling." —Financial Times As lives offline and online merge even more, it is easy to forget how we got here. Rise of the Machines reclaims the spectacular story of cybernetics, one of the twentieth century's pivotal ideas. Springing from the mind of mathematician Norbert Wiener amid the devastation of World War II, the cybernetic vision underpinned a host of seductive myths about the future of machines. Cybernetics triggered blissful cults and military gizmos, the Whole Earth Catalog and the air force's foray into virtual space, as well as crypto-anarchists fighting for internet freedom. In Rise of the Machines, Thomas Rid draws on unpublished sources—including interviews with hippies, anarchists, sleuths, and spies—to offer an unparalleled perspective into our anxious embrace of technology.

Web Information Systems and Technologies - Joaquim Filipe 2011-08-03
This book contains the thoroughly refereed and revised best papers from the 6th International Conference on Web Information Systems and Technologies, WEBIST 2010, held in Valencia, Spain, in April 2010, organized by the Institute for Systems and Technologies of Information, Control and Communication (INSTICC), in collaboration with ACM SIGMIS and co-sponsored by the Workflow Management Coalition (WFMC). The 21 papers presented in this book were carefully reviewed and selected from 205 submissions. The papers are grouped into four parts on Internet Technology; Web Interfaces and Applications; Society, e-Business, and e-Government; and Web Intelligence.

Building (in) the Future - Peggy Deamer 2010-03-03
Thirty-four contributors including designers, engineers, fabricators, contractors, construction managers, planners, and scholars examine how contemporary practices of production are reshaping the design/construction process. Through observations, arguments, and detailed project explorations contributors describe new models of practice and reorganizations of labor for the twenty-first century. Chapters include a reconsideration of craft in light of digital fabrication; an exploration of new methods of collaboration; an analysis of changes in contracts and standards; and an assessment of the new market realities of mass production and customization. Building (in) the Future includes contributions by architects James Carpenter, Mark Goulthorpe, Sheila Kennedy, Charlie Lazor, Joshua Price-Ramus, Robert A.M. Stern, and James Timberlake; BIM manager Rodd Merchant; curator Barry Bergdoll; engineer Klaus Bollinger; lawyers Howard W. Ashcraft, Jr. and Chris Noble; marketing manager Ewa Magnusson; and professors Branko Kolarevic, Reinhold Martin, and Moshen Mostafavi.

Getting to Grips with BIM - James Harty 2015-12-14
With the UK government's 2016 BIM threshold approaching, support for small organisations on interpreting, filtering and applying BIM protocols and standards is urgently required. Many small UK construction industry supply chain firms are uncertain about what Level 2 BIM involves and are unsure about taking first steps towards having BIM capability. As digitisation, increasingly impacts on work practices, Getting to Grips with BIM offers an insight into an industry in change supplemented by practical guidance on managing the transition towards more widespread and integrated use of digital tools to manage the design, construction and whole life use of buildings.

AGILE 2003 - Michael Gould 2003
The mission of the Association of Geographic Information Laboratories for Europe (AGILE) is to promote academic teaching and research at the European level, and to facilitate networking activities bet ween geographic information laboratories, including focused meetings based on state-of-the-art presentations on key research issues and European geographic information research conferences. The AGILE Conferences on Geographic Information Science (GIS) have become an essential meeting place for European researchers and practitioners, where they meet and exchange ideas and experiences at the European level. These proceedings regroup the papers given in the Lyon conference held in April 2003 and presenting the more advanced results in GIS.

Parametric Building Design Using Autodesk Maya - Ming Tang 2014-03-26
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..... The book promotes parametric design. It integrates the theoretical research of computational design and Maya non-linear modeling techniques associated with simulation, animation, digital fabrication and form-finding within 2D & 3D design. Readers will learn: 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 create a digital simulation to simulate all aspects of surface properties and dynamic forces with Maya physics engine. How to use Maya skeleton system and animation tools to control complex architectural forms. How to create photo-realistic renderings with Maya

lighting, material and texture mapping. Using several real projects as examples, the book will go through the entire rendering process step by step. 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 crucially a fantastic online resource which includes video tutorials, scripts, and Maya source files.

Architectural Technology - Stephen Emmitt 2013-03-25
... it gives me great pleasure to support the first everpublication to specifically address the area of research, and inparticular its relationship with practice, in the discipline ofarchitectural technology...not only ground breaking because itis the first book of its kind, but also because it provides at longlast one of the accepted foundations needed to underpin theemerging academic discipline, namely a recognised researchbase. CIAT, in supporting this publication, is aware of the needfor books such as this to sustain the process of research informedpractice, as an aid for both students and those practising withinthe discipline of architectural technology. Norman Wienand MCIAT, Vice President Education, CharteredInstitute of Architectural Technologists Architectural technology is the realisation of architecturethrough the application of building science, forming theconstructive link between the abstract and the physical. Architectural Technology: research and practice demonstratesthe importance of research in architectural technology and aims tostimulate further research and debate by enlightening, informingand challenging readers. Chapter authors address the interplay between research andpractice in the field of architectural technology, examining theinfluence of political, economic, social, environmental andtechnological issues. The focus throughout is on creatingsustainable buildings that are constructed economically andfunction effectively and efficiently within their service lifecycle. The book's mix of chapters and case studies bring togethera number of different themes and provides invaluable insights intothe world of research from the perspective of those working withinthe architectural technology field - practitioners, academics andstudents. The underlying message is that architectural technologyis not just a profession; it is a way of thinking and a way ofacting. This is highlighted by contributions from architects andarchitectural technologists passionate about architecturaltechnology as a field of knowledge. Contributions range from thetheoretical and polemic to the pragmatic and applied, furtherhelping to demonstrate the richness of the field. About the Editor Stephen Emmitt is Professor ofArchitectural Technology at Loughborough University UK and VisitingProfessor of Innovation Sciences at Halmstad University, Sweden anda member of CIAT's Research Group.

Leading Collaborative Architectural Practice - Erin Carraher 2017-02-22
The groundbreaking guide to modern leadership in architectural practice Leading Collaborative Architectural Practice is the leadership handbook for today's design and construction professionals. Endorsed by the American Institute of Architects, this book describes the collaborative approach to leadership that is becoming increasingly prevalent in modern practice; gone are the days of authoritative "star" architects—today's practice is a brand, and requires the full input of every member of the team. This book builds off of a two-year AIA research project to provide a blueprint for effective leadership: the ability, awareness, and commitment to lead project teams who work together to accomplish the project's goals. Both group and individual hands-on exercises help facilitate implementation, and extensive case studies show how these techniques have helped real-world firms build exemplary success through collaborative teamwork and leadership. Highly illustrated and accessible, this approach is presented from the practicing architect's point of view—but the universal principles and time-tested methods also provide clear guidance for owners, contractors, engineers, project managers, and students. Build a culture of collaboration, commitment, and interpersonal awareness Adopt effective leadership techniques at the team, project, or practice level Handle conflict and resolve communication issues using tested approaches Learn how real-world projects use effective leadership to drive success The last decade has seen a sea-change in architectural leadership. New practices no longer adopt the name and identity of a single person, but create their own identity that represents the collaborative work of the entire group. Shifts in technology and changing workplace norms have made top-down management structures irrelevant, so what does it now mean to lead? Forefront presents effective contemporary leadership in the architectural practice, and real-world guidance on everyday implementation.

The Architecture Co-laboratory - Kas Oosterhuis 2006
Publicatie n.a.v. de conferentie gehouden op 1 april 2006 op de faculteit Bouwkunde van de TU Delft over de huidige en toekomstige veranderingen rond de digitaal ontworpen architectuur- en designpraktijk.

Heritage Building Information Modelling - Yusuf Arayici 2017-02-10
Building Information Modelling (BIM) is being debated, tested and implemented wherever you look across the built environment sector. This book is about Heritage Building Information Modelling (HBIM), which necessarily differs from the commonplace applications of BIM to new construction. Where BIM is being used, the focus is still very much on design and construction. However, its use as an operational and management tool for existing buildings, particularly heritage buildings, is lagging behind. The first of its kind, this book aims to clearly define the scope for HBIM and present cutting-edge research findings alongside international case studies, before outlining challenges for the future of HBIM research and practice. After an extensive introduction to HBIM, the core themes of the book are arranged into four parts: Restoration philosophies in practice Data capture and visualisation for maintenance and repair Building performance Stakeholder engagement This book will be a key reference for built environment practitioners, researchers, academics and students engaged in BIM, HBIM, building energy modelling, building surveying, facilities management and heritage conservation more widely.

Handbook Of Digital Enterprise Systems: Digital Twins, Simulation And Ai - Wolfgang Kuhn 2019-06-04
Digitalization is changing nearly everything. This compendium highlights a comprehensive understanding of the concepts and technologies about digitalization in industrial environments, using the Industrial Internet of Things, Digital Twins and data-driven decision-making approaches including Artificial Intelligence.The overview of industrial enterprise platforms and the consideration of future trends gives a fundamental idea of concepts and strategies, how to get started and about the required changes of business models.

Research Companion to Building Information Modeling - Lu, Weisheng 2022-03-22
Offering critical insights to the state-of-the-art in Building Information Modeling (BIM) research and development, this book outlines the prospects and challenges for the field in this era of digital revolution. Analysing the contributions of BIM across the construction industry, it provides a comprehensive survey of global BIM practices.

Autodesk Architectural Desktop 2005 - H. Edward Goldberg 2004-10
This versatile text provides a hands-on, guided tutorial through Autodesk Architectural Desktop 2005. Tool Palettes are presented in the order in which they are commonly used, which provides a logical organization to the text. Numerous walk-throughs and hands-on activities are used throughout the text to teach commands and routines in relation to the production of architectural drawings. The organization of topics and the presentation of commands in context of applications make this text appropriate for both the traditional classroom and self-paced instruction.

CIB Proceedings 2015: Going north for sustainability: Leveraging knowledge and innovation for sustainable construction and development - Prof. Charles Egbu 2016-02
This International Conference is about sustainability in its wider sense. It is an important area of discourse, as it pertains to how we work and how we lead our lives while considering the lives and workplaces of future generations. The conference particularly sets out to explore some of the developments and challenges taking place in academia and industry in both the Northern and Southern hemispheres. The conference is entitled "Going north for sustainability". The North signifies progress in technology, education and other areas of human endeavour to many people. Progress requires that people learn across continents and cultures.

BUILDING A SPORTSCAR EXTERIOR TO CLASS-A SURFACING STANDARDS TUTORIAL - Serdar Hakan DÜZGÖREN
PREFACE INTRODUCTION TO 'CLASS A SURFACING' 'Class A surfacing' is to produce mathematical surfaces to the most exacting standard. Once completed the 'A Class surface' is the final output of styling design. These surfaces are the 'Master' for making the tools that produces the product itself. 'Class A' surfacing is one of the most complex and tedious 3D computer modeling tasks you can do. 'Class A' surface development occurs in the final phase of a project, when constraints are much tighter to adhere to. Modeling under these conditions is very hard without adoption of certain 'surface basics' rules. 3D computer modeling is still based on the knowledge and skill set of the

individual user. Therefore productivity and surface quality is user dependent. The surfacing task can begin from the scan of a physical model, as in this tutorial, but it can also start from 2D sketch or verbal input. In most cases it is the continuation of a concept 3D digital model. Most of the time you will also need to be aware of and include flanges, draft angles, tool split lines and other engineering constraints In the tutorial these are not included. To include them would put even more constraints on the modeling/surfacing itself. This tutorial demonstrates only one small part of 'class A' surfacing, but a very important element of creating good quality surfaces When you are starting a project or a part, always take some time to think how you will build this before you start. It is not a good idea to rush in the beginning of a project. To be successful and to achieve that right quality in the time given you need a 'strategy'. Without this you can find yourself in a corner from which you can never escape a dead end. These points below are, in my opinion, the most important, basic rules to succeed. ☐☐ It is very important to have a strategy on methodology, surface layout and surface construction. ☐☐ Always try to build the surfaces to allow easy modification. ☐☐ Keep the surfaces as simple as possible. ☐☐ Always try to build to an intersection. By following these basic rules you have come a long way to succeeding in your modeling. Good luck.

Building Information Modelling, Building Performance, Design and Smart Construction - Mohammad Dastbaz 2017-03-31
This book charts the path toward high performance sustainable buildings and the smart dwellings of the future. The volume clearly explains the principles and practices of high performance design, the uses of building information modelling (BIM), and the materials and methods of smart construction. Power Systems, Architecture, Material Science, Civil Engineering and Information Systems are all given consideration, as interdisciplinary endeavours are at the heart of this green building revolution.

Building Information Modeling - André Borrmann 2018-09-19
Building Information Modeling (BIM) refers to the consistent and continuous use of digital information throughout the entire lifecycle of a built facility, including its design, construction and operation. In order to exploit BIM methods to their full potential, a fundamental grasp of their key principles and applications is essential. Accordingly, this book combines discussions of theoretical foundations with reports from the industry on currently applied best practices. The book's content is divided into six parts: Part I discusses the technological basics of BIM and addresses computational methods for the geometric and semantic modeling of buildings, as well as methods for process modeling. Next, Part II covers the important aspect of the interoperability of BIM software products and describes in detail the standardized data format

Industry Foundation Classes. It presents the different classification systems, discusses the data format CityGML for describing 3D city models and COBie for handing over data to clients, and also provides an overview of BIM programming tools and interfaces. Part III is dedicated to the philosophy, organization and technical implementation of BIM-based collaboration, and discusses the impact on legal issues including construction contracts. In turn, Part IV covers a wide range of BIM use cases in the different lifecycle phases of a built facility, including the use of BIM for design coordination, structural analysis, energy analysis, code compliance checking, quantity take-off, prefabrication, progress monitoring and operation. In Part V, a number of design and construction companies report on the current state of BIM adoption in connection with actual BIM projects, and discuss the approach pursued for the shift toward BIM, including the hurdles taken. Lastly, Part VI summarizes the book's content and provides an outlook on future developments. The book was written both for professionals using or programming such tools, and for students in Architecture and Construction Engineering programs.
ACADIA 22 - Kevin R. Klinger 2003

AutoCAD 2009 and AutoCAD LT 2009 All-in-One Desk Reference For Dummies - Lee Ambrosius 2008-08-04
Nobody ever said AutoCAD was easy, which is why you need AutoCAD & AutoCAD LT 2009 All-In-One Desk Reference for Dummies! These nine minibooks cover all the stuff you need to know to set up AutoCAD for 2D or 3D, create drawings, modify and share them, publish your work, and more. There's even a minibook devoted to increasing your options with AutoCAD LT! This one-stop guide to creating great technical drawings using AutoCAD 2009 shows you how to navigate the AutoCAD interface, set up drawings, use basic and precision tools, and use drawing objects. You'll learn how to annotate your drawings, use dimensioning and hatching, and work with AutoCAD's new Annotation Scaling feature. You'll also find out how to work with solids, texture surfaces, add lighting, and much more. Discover how to Navigate the AutoCAD interface Work with lines, shapes, and curves Add explanatory text Understand AutoCAD LT's limitations Render your drawings Create and manage blocks Use AutoCAD advanced drafting techniques Comply with CAD management and standards Share your work with others Customize the AutoCAD interface, tools, and more Complete with Web links to advanced information on navigating the AutoCAD programming interfaces, using custom programs, getting started with AutoLISP, and working with Visual Basic for AutoCAD, AutoCAD & AutoCAD LT 2009 All-In-One Desk Reference for Dummies is the only comprehensive AutoCAD guide you'll ever need.