

Stanford University Bim Execution Plan

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.

Delivering Value with BIMA whole-of-life approach
Routledge
eWork and eBusiness in Architecture, Engineering and Construction 2018
collects the papers presented at the 12th European Conference on Product and Process Modelling (ECPPM 2018, Copenhagen, 12-14 September 2018).

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The contributions cover complementary thematic areas that hold great promise towards the advancement of research and technological development in the modelling of complex engineering systems, encompassing a substantial number of high quality contributions on a large spectrum of topics pertaining to ICT deployment instances in AEC/FM, including:

- Information and Knowledge Management
- Construction Management
- Description Logics and Ontology Application in AEC
- Risk Management
- 5D/nD Modelling, Simulation and Augmented Reality
- Infrastructure Condition Assessment
- Standardization of Data Structures
- Regulatory and Legal Aspects
- Multi-Model and distributed Data Management
- System Identification

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Industralized Production, Smart Products and Services • Interoperability • Smart Cities • Sustainable Buildings and Urban Environments • Collaboration and Teamwork • BIM Implementation and Deployment • Building Performance Simulation • Intelligent Catalogues and Services eWork and eBusiness in Architecture, Engineering and Construction 2018 represents a rich and comprehensive resource for academics and researchers working in the interdisciplinary areas of information technology applications in architecture, engineering and construction. In the last two decades, the biennial ECPPM (European Conference on Product and Process Modelling) conference series, as the oldest BIM conference, has provided a unique platform for the presentation

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and discussion of the most recent advances with regard to the ICT (Information and Communication Technology) applications in the AEC/FM (Architecture, Engineering, Construction and Facilities Management) domains.

Technology development has provided fundamental benefits of speed, precision, and convenience to common business strategies; providing not only a means for functional integration, but also an opportunity to enhance competitive capability of a business firm.

Implementing IT Business Strategy in the Construction Industry brings together topics on understanding business strategy and competitive advantage, as well as essential benefits of concepts and technologies for improving efficiency of the

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construction industry. This reference source is directed toward researchers, policy-makers, practitioners, undergraduate, and postgraduate students, in order to gain insights into the complex workings of the traditional construction industry and the concepts and tools used to facilitate a strategically IT enabled industry.

Proceedings of the 3rd International
Conference on Green Environmental
Engineering and Technology

Architecture and Design:

Breakthroughs in Research and
Practice

Advanced Methodologies and
Technologies in Business Operations
and Management

Integrated Building Information
Modelling

Encyclopedia of Information Science
and Technology, Fourth Edition

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A whole-of-life approach

This book explains how to combine and exploit sensor networks and internet-of-things (IoT) technologies and Web-service design patterns to enrich and integrate Building Information Models (BIMs). It provides approaches and software architectures for facilitating the interaction with (and between) BIMs through Web services, and for enabling and facilitating the fusion of the information residing in such models or of information acquired from IoT technologies. The proposed software architectures are presented

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in the form of design patterns. This information fusion will facilitate many novel application fields ranging from emergency response, to urban monitoring and surveillance, and to smart buildings. The book consists of 8 chapters. The first 2 chapters focus on the basics of BIMs, while chapter 3 presents fundamental service-oriented architecture patterns for complex information models. Subsequently, chapters 4 and 5 elaborate on the hardware and software side of IoT, with a special focus on their use for BIMs. Chapter 6 provides advanced SOA patterns for BIMs, while

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chapter 7 details patterns for IoT, and for BIM and IoT information fusion. Lastly, chapter 8 summarizes the work and provides an outlook on promising future developments. Overall, the book will be beneficial for researchers and developers in the fields of building information models, IoT applications, and systems integration.

A tactical guide to successful Virtual Design and Construction project coordination, featuring case studies from leading VDC firms. Virtual Design Coordination (VDC) employs information-rich Building Information Modeling (BIM)

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to enable specialty designers and contractors to create a single, coordinated set of designs that can prevent cost overruns, avoid schedule delays, and identify issues in the field. Although BIM-based design coordination is widely used in the commercial construction industry, there remains a need for a standardized practice. BIM for Design Coordination formalizes industry best practices and provides structured guidelines to the process. Helping readers gain the benefits of BIM-based design coordination, this practical guide covers areas such as

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setting up a project for success, model quality impacts on design coordination, carrying out a successful VDC session, and more. Specific guidelines for various project stakeholders are laid out in detail, while real-world examples of project design coordination workflows and templates for BIM Project Execution Plans (PxPs) are provided throughout the text. Written by a leading expert and educator in the field, this book: Provides a formal set of BIM-based design coordination guidelines that emphasize construction-stage coordination Features real-

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life case studies that illustrate how leading firms approach design coordination Covers BIM-based design coordination in other industries, such as infrastructure and industrial sectors Presents guidelines for all project stakeholders, including subcontractors, architects, engineers, fabricators, and owners Includes chapters on teaching BIM-based design coordination and the future of the field BIM for Design Coordination: A Virtual Design and Construction Guide for Designers, General Contractors, and MEP Subcontractors is a much-needed resource for general

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contractors and members of VDC teams, as well as academics, students, and professionals new to BIM-based design coordination. ICIEMS 2013 is to provide a platform for researchers, engineers, academicians as well as industrial professionals from all over the world to present their research results and development activities in Industrial Engineering and Management Science. This conference provides opportunities for the delegates to exchange new ideas and experiences face to face, to establish business or research relations and to find global

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partners for future collaboration.

The sudden arrival of Building Information Modelling (BIM) as a key part of the building industry is redefining the roles and working practices of its stakeholders. Many clients, designers, contractors, quantity surveyors, and building managers are still finding their feet in an industry where BIM compliance can bring great rewards. This guide is designed to help quantity surveying practitioners and students understand what BIM means for them, and how they should prepare to work

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successfully on BIM compliant projects. The case studies show how firms at the forefront of this technology have integrated core quantity surveying responsibilities like cost estimating, tendering, and development appraisal into high profile BIM projects. In addition to this, the implications for project management, facilities management, contract administration and dispute resolution are also explored through case studies, making this a highly valuable guide for those in a range of construction project management roles. Featuring a chapter describing how the

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role of the quantity surveyor is likely to permanently shift as a result of this development, as well as descriptions of tools used, this covers both the organisational and practical aspects of a crucial topic.

BIM for Design Coordination
Technology, Design and
Process Innovation in the
Built Environment
Enhanced Building
Information Models
ECPPM 2021 - eWork and
eBusiness in Architecture,
Engineering and Construction
Proceedings of the 13th
European Conference on
Product & Process Modelling
(ECPPM 2021), 15-17

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September 2021, Moscow,

Russia

Building Information

Modeling

eWork and eBusiness in

Architecture, Engineering and

Construction 2021 collects the

papers presented at the 13th

European Conference on

Product and Process Modelling

(ECPM 2021, Moscow, 5-7

May 2021). The contributions

cover a wide spectrum of

thematic areas that hold great

promise towards the

advancement of research and

technological development

targeted at the digitalization of

the AEC/FM (Architecture,

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Engineering, Construction and Facilities Management) domains. High quality contributions are devoted to critically important problems that arise, including:

- Information and Knowledge Management
- Semantic Web and Linked Data
- Communication and Collaboration Technologies
- Software Interoperability
- BIM Servers and Product Lifecycle Management Systems
- Digital Twins and Cyber-Physical Systems
- Sensors and Internet of Things
- Big Data
- Artificial and Augmented Intelligence in AEC
- Construction Management
- 5D/nD Modelling and Planning
- Building Performance Simulation

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Contract, Cost and Risk
Management Safety and Quality
Sustainable Buildings and Urban
Environments Smart Buildings
and Cities BIM Standardization,
Implementation and Adoption
Regulatory and Legal Aspects
BIM Education and Training
Industrialized Production, Smart
Products and Services Over the
past quarter century, the biennial
ECPPM conference series, as
the oldest BIM conference, has
provided researchers and
practitioners with a unique
platform to present and discuss
the latest developments
regarding emerging BIM
technologies and complementary

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issues for their adoption in the AEC/FM industry.

The construction industry is amidst a digital transformation that is focused on addressing well-documented issues and calls for significant improvements and changes through increased productivity, whole-life value, client focus, reduction of waste, and being more sustainable. The key aspect to driving change and transformation is the education and upskilling of the required workforce towards developing the required capacities. Various approaches can be taken to embed digital construction within education and through

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collaborative efforts in order to drive change and facilitate improvements. The Handbook of Research on Driving Transformational Change in the Digital Built Environment focuses on current developments in practice and education towards facilitating transformation in the built environment. This book provides insight, from a practice perspective, in relation to the client's understanding, digitally enabled collaboration, interoperability and open standards, and maturity/capability. Covering topics that include digital transformation and construction,

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digitally enabled infrastructure, building information modelling, collaborative digital education, and the digital built environment, this book is an ideal reference source for engineers, professionals, and researchers in the field of digital transformation as well as doctoral scholars, doctoral researchers, professionals, and academicians.

Buildings and infrastructure represent principal assets of any national economy as well as prime sources of environmental degradation. Making them more sustainable represents a key challenge for the construction,

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planning and design industries and governments at all levels; and the rapid urbanisation of the 21st century has turned this into a global challenge. This book embodies the results of a major research programme by members of the Australia Co-operative Research Centre for Construction Innovation and its global partners, presented for an international audience of construction researchers, senior professionals and advanced students. It covers four themes, applied to regeneration as well as to new build, and within the overall theme of Innovation: Sustainable Materials and

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Manufactures, focusing on building material products, their manufacture and assembly – and the reduction of their ecological ‘fingerprints’, the extension of their service lives, and their re-use and recyclability. It also explores the prospects for applying the principles of the assembly line. Virtual Design, Construction and Management, viewed as increasing sustainable development through automation, enhanced collaboration (such as virtual design teams), real time BL performance assessment during design, simulation of the construction process, life-cycle

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management of project information (zero information loss) risk minimisation, and increased potential for innovation and value adding. Integrating Design, Construction and Facility Management over the Project Life Cycle, by converging ICT, design science engineering and sustainability science. Integration across spatial scales, enabling building – infrastructure synergies (such as water and energy efficiency). Convergences between IT and design and operational processes are also viewed as a key platform increased sustainability. Since 1994, the European

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Conferences of Product and
Process Modelling
(www.ecppm.org) have provided
a review of research,
development and industrial
implementation of product and
process model technology in the
Architecture, Engineering,
Construction and Facilities
Management (AEC/FM) industry.
Product/Building Information
Modelling has matured sig
BIM Development and Trends in
Developing Countries: Case
Studies
IConGEET 2021, Penang,
Malaysia
ECPPM 2012
EASEC16

BIM Handbook

BIM and Quantity Surveying

Building information modelling (BIM) is a set of interacting policies, processes and technologies that generates a methodology to manage the essential building design and project data in digital format throughout the building's life cycle. BIM, makes explicit, the interdependency that exists between structure, architectural layout and mechanical, electrical and hydraulic services by technologically coupling project organizations together.

Integrated Building Information Modelling is a handbook on BIM courses, standards and methods used in different regions (Including UK, Africa and Australia). 13 chapters outline essential information about integrated BIM practices such as the

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BIM in site layout plan, BIM in construction product management, building life cycle assessment, quantity surveying and BIM in hazardous gas monitoring projects while also presenting information about useful BIM tool and case studies. The book is a useful handbook for engineering management professionals and trainees involved in BIM practice. Building Information Modeling (BIM) is a new way of working and AEC professionals and researchers are trying to understand its implementation and impacts. To develop this understanding, one of the approaches is to study what happened on past projects that have implemented BIM and to synthesize the differences and commonalities. However, the current BIM stories typically present fragmented project data that cannot

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capture BIM implementations in a structured, sufficient, and consistent way. In addition, the currently available BIM guidelines lack validation by a large number of projects. Given these shortcomings, AEC professionals and researchers cannot achieve knowledge that guides them towards well-defined, measurable, and monitored BIM implementations. A framework to characterize BIM implementations is needed to link the broken chain "from data to knowledge". Through case studies on 40 construction projects, this research provides a framework to characterize why, when, for whom, in what level of detail, with which tools, how, for how much, and how well BIM implementations are done on projects. With the characterization framework, past projects can be documented

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sufficiently and consistently so that BIM managers or BIM researchers can compare a group of BIM projects to gain insight into how to maximize the benefits of BIM. The contribution of this research is a characterization framework that: 1) Organizes project data of BIM implementations into categories, factors, and measures with an increasing levels of detail; 2) Sufficiently and consistently captures why, when, for whom, at what level of detail, with which tools, how, for how much, and how well BIM implementations were done on the 40 case projects; and 3) Supports cross-project comparisons of BIM implementations to gain insights into implementation patterns (i.e., how to plan a BIM implementation to maximize benefits).

At the beginning of the Fourth

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Industrial Revolution, the advent of digitalization, innovative technologies and materials, and new construction techniques have begun transforming the way that infrastructure, real estate, and other built assets can be designed, constructed, and operated in order to create a more attractive, energy-efficient, comfortable, affordable, safe, and sustainable built environment. Developments in materials and cutting-edge technologies (such as artificial intelligence, robotics, nanotechnology, 3D printing, and biotechnology) have finally started to move the construction towards a new era. Massive changes are occurring as a result of the possibilities created by big data and the Internet of Things, along with the technological advances that are driving down the cost of sensors, data

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storage, and computer services. Construction 4.0: Advanced Technology, Tools and Materials for the Digital Transformation of the Construction Industry presents a thorough review of developments in materials, emerging trends, cutting-edge technologies, and strategies in the fields of smart building design, construction, and operation, providing the reader with a comprehensive guideline on how to exploit the new possibilities offered by the digital revolution. It will be an essential reference resource for academic researchers, material scientists, and civil engineers, undergraduate and graduate students, and other professionals working in the fields of smart eco-efficient construction and cutting-edge technologies applied to construction. Features discussions on

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how nanomaterials, bio-based materials, and recycled materials are applied in the construction of buildings
Analyzes the lifecycle of materials, buildings and design and construction operations
Covers new methodologies and construction processes
Provides case studies on cutting-edge digital technology such as AI and machine learning
Examines all aspects of sustainability, including end-of-life of buildings

Building Information Modelling (BIM) is a global phenomenon which is gaining significant momentum across the world. Currently there is little information on how to realise and monitor benefits from implementing BIM across the life-cycle of a built environment asset. This book provides a practical and strategic framework to realise value from implementing BIM

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by adapting Benefit Realisation Management theory. It presents an approach for practitioners aiming to implement BIM across the life-cycle of built environment assets, including both buildings and infrastructure. Additionally, the book features: wide-ranging information about BIM, the challenges of monitoring progress towards benefit goals and the greater context of implementation; a set of dictionaries that illustrate: how benefits can be achieved, what the benefit flows are and the enabling tools and processes that contribute to achieving and maximising them; a suite of measures that can serve to monitor progress with examples of how they have been used to measure benefits from BIM; real-world examples from across the world and life-cycle phases that show how these benefits can be

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achieved; and information on international maturity and competency measures to complement the value realisation framework. Including a blend of academic and industry input, this book has been developed in close collaborative consultation with industry, government and international research organisations and could be used for industry courses on BIM benefits and implementation for asset management or by universities that teach BIM-related courses.

Advanced Technology, Tools and Materials for the Digital Transformation of the Construction Industry
Implementation for Students and Educators

Implementing IT Business Strategy in the Construction Industry

Building Information Modelling (BIM) in Design, Construction and Operations

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III

Proceedings of The 16th East Asian-Pacific Conference on Structural Engineering and Construction, 2019 BIM Teaching and Learning Handbook

Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and

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built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working, national and major construction clients, BIM standards and guides A discussion on how various

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professional roles have expanded through the widespread use and the new avenues of BIM practices and services. A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions. Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require

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less time, labor, and capital resources.

The bright future and exciting possibilities of BIM Many architects and engineers regard BIM as a disruptive force, changing the way building professionals design, build, and ultimately manage a built structure. With its emphasis on continuing advances in BIM research, teaching, and practice, *Building Information Modeling: BIM in Current and Future Practice* encourages readers to transform disruption to opportunity and challenges them to reconsider their preconceptions about BIM.

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Thought leaders from universities and professional practice composed essays exploring BIM's potential to improve the products and processes of architectural design including the structure and content of the tools themselves. These authors provide insights for assessing the current practice and research directions of BIM and speculate about its future. The twenty-six chapters are thematically grouped in six sections that present complementary and sometimes incompatible positions: Design Thinking and BIM BIM Analytics Comprehensive BIM Reasoning

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with BIM Professional BIM BIM Speculations Together, these authors provide stimulating ideas regarding new directions in building information modeling.

A practical look at extending the value of Building Information Modeling (BIM) into facility management—from the world's largest international association for professional facility managers Building owners and facility managers are discovering that Building Information Modeling (BIM) models of buildings are deep reservoirs of information that can provide valuable

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spatial and mechanical details on every aspect of a property. When used appropriately, this data can improve performance and save time, effort, and money in running and maintaining the building during its life cycle. It can also provide information for future modifications. For instance, a BIM could reveal everything from the manufacturer of a light fixture to its energy usage to maintenance instructions. BIM for Facility Managers explains how BIM can be linked to facility management (FM) systems to achieve very significant life-cycle advantages. It presents

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guidelines for using BIM in FM that have been developed by public and private owners such as the GSA. There is an extensive discussion of the legal and contractual issues involved in BIM/FM integration. It describes how COBie can be used to name, capture, and communicate FM-related data to downstream systems. There is also extensive discussion of commercial software tools that can be used to facilitate this integration. This book features six in-depth case studies that illustrate how BIM has been successfully integrated with facility management in real-life

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projects at: Texas A&M Health Science Center USC School of Cinematic Arts MathWork's new campus Xavier University State of Wisconsin Facilities University of Chicago Library renovation BIM for Facility Managers is an indispensable resource for facility managers, building owners, and developers alike.

A revolutionary, collaborative approach to design and construction project delivery Integrated Project Delivery is the first book-length discussion of IPD, the emergent project delivery method that draws on each stakeholder's unique knowledge to address

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problems before they occur. Written by authors with over a decade of research and practical experience, this book provides a primer on IPD for architects, designers, and students interested in this revolutionary approach to design and construction. With a focus on IPD in everyday operation, coverage includes a detailed explanation and analysis of IPD guidelines, and case studies that show how real companies are applying these guidelines on real-world projects. End-of-chapter questions help readers quickly review what they've learned, and the online forum allows

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them to share their insights and ideas with others who either have or are in the process of implementing IPD themselves. Integrated Project Delivery brings together the owners, architect, engineers, and contractors early in the development stage to ensure that problems are caught early, and to address them in a collaborative way. This book describes the parameters of this new, more efficient approach, with expert insight on real-world implementation. Compare traditional procurement with IPD Understand IPD guidelines, and how they're implemented

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Examine case studies that illustrate everyday applications
Communicate with other IPD adherents in the online forum
The IPD approach revolutionizes not only the workflow, but the relationships between the stakeholders – the atmosphere turns collaborative, and the team works together toward a shared goal instead of viewing one another as obstructions to progress. Integrated Project Delivery provides a deep exploration of this approach, with practical guidance and expert insight.
A Guide to Building Information Modeling for Owners,

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Designers, Engineers,
Contractors, and Facility
Managers

Handbook of Research on
Driving Transformational
Change in the Digital Built
Environment

Claims, Disputes and Litigation
Involving BIM

BIM for Facility Managers

Proceedings of the 12th
European Conference on
Product and Process Modelling
(ECPPM 2018), September
12-14, 2018, Copenhagen,
Denmark

***This book presents articles
from The 16th East Asian-
Pacific Conference on***

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Structural Engineering and Construction, 2019, held in Brisbane, Australia. It provides a forum for professional engineers, academics, researchers and contractors to present recent research and developments in structural engineering and construction.

This book sets out the innovative practices that have been introduced from other industries and shows how the construction industry has learnt from these.

In recent years, our world has experienced a profound shift and progression in available computing and

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knowledge sharing innovations. These emerging advancements have developed at a rapid pace, disseminating into and affecting numerous aspects of contemporary society. This has created a pivotal need for an innovative compendium encompassing the latest trends, concepts, and issues surrounding this relevant discipline area. During the past 15 years, the Encyclopedia of Information Science and Technology has become recognized as one of the landmark sources of the latest knowledge and discoveries in this discipline. The Encyclopedia

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of Information Science and Technology, Fourth Edition is a 10-volume set which includes 705 original and previously unpublished research articles covering a full range of perspectives, applications, and techniques contributed by thousands of experts and researchers from around the globe. This authoritative encyclopedia is an all-encompassing, well-established reference source that is ideally designed to disseminate the most forward-thinking and diverse research findings. With critical perspectives on the impact of information science management and new technologies in modern

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settings, including but not limited to computer science, education, healthcare, government, engineering, business, and natural and physical sciences, it is a pivotal and relevant source of knowledge that will benefit every professional within the field of information science and technology and is an invaluable addition to every academic and corporate library.

In today's digital, green, and consumer driven marketplace, it is critical to be knowledgeable about the latest approaches, tools and systems that can help you seamlessly and reliably

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conduct building performance verification assessments. This groundbreaking book provides you with a solid understanding of the underpinnings of embedded commissioning (ECx) as the overarching building evaluation approach. You find a review of significant and emerging approaches within ECx, including product models, process models, BIM (building information modeling), laser technology based modeling, mapping between process and product models, building codes, and data access and exchange standards. Moreover, this forward-looking resource provides you with details on

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the latest research findings in the areas of sensor networks, value based design, fields tools and AR/AV methods, just-in-time technologies, and wearable computers."

A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors

eWork and eBusiness in Architecture, Engineering and Construction

Atlas of Digital

Architecture

Construction 4.0

BIM in Current and Future Practice

An Evidence-Based Project Success Model

This book presents high-quality

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peer-reviewed papers from the 3rd International Conference on Green Environmental Engineering and Technology (IConGEET), held in July 2021, Penang, Malaysia. The contents are broadly divided into four parts: (1) air pollution and climate change, (2) environment and energy management, (3) environmental sustainability, and (4) water and wastewater. The major focus is to present current researches in the field of environmental engineering towards green and sustainable technologies. It includes papers based on original theoretical,

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practical, and experimental simulations, development, applications, measurements, and testing. Featuring the latest advances in the field, this book serves as a definitive reference resource for researchers, professors, and practitioners interested in exploring advanced techniques in the field of environmental engineering and technologies. Discover BIM: A better way to build better buildings. Building Information Modeling (BIM) is a new approach to design, construction, and facility management in which a digital representation of the building

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process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers, and Contractors provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can

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provide to all members of a project team. The Handbook: Introduces Building Information Modeling and the technologies that support it Reviews BIM and its related technologies, in particular parametric and object-oriented modeling, its potential benefits, its costs, and needed infrastructure Explains how designing, constructing, and operating buildings with BIM differs from pursuing the same activities in the traditional way using drawings, whether paper or electronic Discusses the present and future influences of BIM on regulatory agencies; legal practice

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associated with the building industry; and manufacturers of building products Presents a rich set of BIM case studies and describes various BIM tools and technologies Shows how specific disciplines owners, designers, contractors, and fabricators can adopt and implement BIM in their companies Explores BIM's current and future impact on industry and society Painting a colorful and thorough picture of the state of the art in Building Information Modeling, the BIM Handbook guides readers to successful implementations, helping them to avoid needless

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frustration and costs and take full advantage of this paradigm-shifting approach to build better buildings, that consume fewer materials, and require less time, labor, and capital resources.

Building Lean, Building BIM is the essential guide for any construction company that wants to implement Lean Construction and Building Information Modelling (BIM) to gain a strategic edge over their competition. The first of its kind, the book outlines the principles of Lean, the functionality of BIM, and the interactions between the two,

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illustrating them through the story of how Tidhar Construction has implemented Lean Construction and BIM in a concerted effort over four years. Tidhar is a small-to-medium-sized construction company that pioneered a way of working that gave it a profit margin unheard of in its market. The company's story serves as a case study for explanation of the various facets of Lean Construction and BIM. Each chapter defines a principle of Lean and/or BIM, describes the achievements and failures in Tidhar's implementation based on the

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experiences of the key people involved, and reviews the relevant background and theory. The implementation at Tidhar has not been a pure success, but by examining their motives alongside their achievements and failures, readers will learn about what pitfalls and pinnacles to expect. A number of chapters also compare the experience of Tidhar with those of other companies who are leaders in their fields, such as Skanska and DPR. This book is highly relevant and useful to a wide range of readers from the construction industry,

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especially those who are frustrated with the inefficiencies in their companies and construction projects. It is also essential reading for Lean and BIM enthusiasts, researchers and students from a variety of industries and backgrounds. Originating from the 2019 International Conference on Building Information Modelling this book presents latest findings in the field. This volume presents research from a panel of experts from industry, practice and academia touching on key topics, the development of innovative

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solutions, and the identification
future trends.

A Virtual Design and
Construction Guide for
Designers, General Contractors,
and MEP Subcontractors

Leading Collaborative
Architectural Practice

Terminology, Concepts,
Methods, Tools, Examples,
Phenomena

Building Lean, Building BIM

BIM in the Construction

Industry

Embedded Commissioning of

Building Systems

Managing IT in Construction/Managing

Construction for Tomorrow presents

new developments in:- Managing IT

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strategies - Model based management tools including building information modeling- Information and knowledge management- Communication and collaboration - Data acquisition and storage- Visualization and simulation- Architectural design and

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

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developments in real estate and construction management. Technological evolutions have changed the field of architecture exponentially, leading to more stable and energy-efficient building structures. Architects and engineers must be prepared to further enhance their knowledge in the field in order to effectively meet new and advancing standards. Architecture and Design: Breakthroughs in Research and Practice is an authoritative resource for the latest research on the application of new technologies and digital tools that revolutionize the work of architects globally, aiding in architectural design, planning, implementation, and restoration. Highlighting a range of pertinent topics such as design anthropology, digital preservation, and 3D modeling, this

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publication is an ideal reference source for researchers, scholars, IT professionals, engineers, architects, contractors, and academicians seeking current research on the development and creation of architectural design.

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

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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

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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. Leadership, Ethics, and Project Execution

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Proceedings of the 17th International
Symposium on Advancement of
Construction Management and Real
Estate

A Characterization Framework to
Document and Compare BIM
Implementations on Construction
Projects

Delivering Value with BIM
Integrating Project Delivery
Research Companion to Building
Information Modeling

**Are you unsure about:
the current US legal
environment with respect
to BIM and VDC? the
evolving standards of
care for design and
construction
professionals using BIM**

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and VDC? what practical methods and techniques can be used for analyzing construction claims and disputes involving BIM technologies and VDC processes? Building Information Modeling (BIM) technologies and Virtual Design and Construction (VDC) processes are aggressively and fundamentally changing the design, construction and operation of buildings. Supporters of BIM have highlighted the

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potential these technologies have to reduce the need for claims, disputes and litigation, but evidence from several early sources shows they are not universally successful in this. This timely and unique book provides crucial new methods for analyzing construction disputes in this emerging AEC technological landscape. It explains how BIM & VDC has significantly altered the production and delivery of

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construction drawings, quantity surveys, and schedules, and how these changes might impact construction disputes. The findings and advice in this book are indispensable to any stakeholder in a construction project using BIM. It will help Contractors, Cost Managers, Architects, Building Designers, Quantity Surveyors, and Project Managers to navigate and understand their responsibilities and exposure to risk

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when working with this new technology.

Building Information Modeling (BIM), or the process of generating and managing digital information about physical representations of constructions, has been effectively adopted and benefited numerous civil engineering projects across the globe, particularly in developed countries. BIM Development and Trends in Developing Countries addresses the philosophies and

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practices for improved application of BIM in developing countries. Two case studies are presented in this reference: one from Malaysia and another representing Sri Lanka. Readers are given an introduction and background of the Malaysian and Sri Lankan construction industry and a critical review of BIM's philosophies, development and applications in different stages of a construction project.

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The authors present their recommendations on the way forward for BIM practices articulated from the two perspectives, namely, academia and industrial BIM practice. The case studies in this book highlight the role of adequate BIM software techniques and the importance of governmental support in facing building challenges at the moment. . BIM Development and Trends in Developing Countries

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provides readers useful insights on the evolution of BIM practice in emerging countries and is a unique report on two specific scenarios in BIM development.

Engineers, architects, urban planners and policy makers around the globe seeking to understand practical BIM implementation and trends will find this reference invaluable. Businesses consistently work on new projects, products, and workflows

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to remain competitive and successful in the modern business environment. To remain zealous, businesses must employ the most effective methods and tools in human resources, project management, and overall business plan execution as competitors work to succeed as well.

Advanced Methodologies and Technologies in Business Operations and Management provides emerging research on business tools such as

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employee engagement, payout policies, and financial investing to promote operational success. While highlighting the challenges facing modern organizations, readers will learn how corporate social responsibility and utilizing artificial intelligence improve a company's culture and management. This book is an ideal resource for executives and managers, researchers, accountants, and financial investors

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seeking current research on business operations and management.

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

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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

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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,

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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

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for guidance on what the industry expects when it comes to BIM competency.

Breakthroughs in Research and Practice International Conference on Industrial Engineering and Management Science-2013 Using IoT Services and Integration Patterns Lean Project Delivery and Integrated Practices in Modern Construction Improving Construction the Tidhar Way Construction Innovation and Process Improvement Digital technology and architecture

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have become inseparable, with new approaches and methodologies not just affecting the workflows and practice of architects but shaping the very character of architecture. This compendious work offers a wide-ranging orientation to the new landscape with its opportunities, its challenges, and its vast potential.

Contributing Editors: Ludger

Hovestadt, Urs Hirschberg, Oliver

Fritz Contributors: Diana Alvarez-

Marin, Jakob Beetz, André

Borrmann, Petra von Both, Harald

Gatermann, Marco Hemmerling,

Ursula Kirschner, Reinhard König,

Dominik Lengyel, Bob Martens,

Frank Petzold, Sven Pfeiffer, Miro

Roman, Kay Römer, Hans Sachs,

Philipp Schaerer, Sven Schneider,

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Odilo Schoch, Milena Stavric, Peter Zeile, Nikolaus Zieske
Writer: Sebastian Michael
atlasofdigitalarchitecture.com
Leadership, Ethics, and Project Execution provides a masterclass in the project and people management skills that set apart the most accomplished design and construction professionals. This textbook for graduate and advanced undergraduate students distils the insights gleaned over the authors' decades of experience in academia and industry into actionable principles for success in a notoriously demanding field. Combining real life case studies with original research, Leadership, Ethics, and Project Execution points

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the way from the classroom to the jobsite. Interactive exercises allow readers to take the role of junior project managers and other emerging professionals and reason through the ethical dilemmas surrounding building projects from the initial bid to completion. Chapters on stakeholder alignment, productivity, and project success ensure that aspiring leaders' business decisions are as economically sound as they are ethically correct. From its accessible, conversational tone to the lifetime's worth of construction wisdom it shares, Leadership, Ethics, and Project Execution offers an extended mentoring session with three giants of the building industry.

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This book contains 19 peer-reviewed papers on the subject of BIM in the construction industry. These articles cover recent advances in the development of BIM technologies and applications in the field of architecture, engineering, and construction (AEC) industry. Lean Project Delivery and Integrated Practices in Modern Construction is the new and enhanced edition of the pioneering book Modern Construction by Lincoln H. Forbes and Syed M. Ahmed. This book provides a multi-faceted approach for applying lean methodologies to improve design and construction processes. Recognizing the wide diversity in the landscape of projects, and encompassing private

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and public sector activity, buildings and infrastructure, the book expands upon the detailed coverage of integrated project delivery and new lean tools and techniques to include: Greater emphasis on the importance of creating a lean culture and the initiatives required to transform the industry; Expanded discussions of the foundational writings in lean construction theory; Exploration of the synergies between "lean" and "green" initiatives; Specific procedures for modifying planning and scheduling activities to improve the performance of the project team; Expanded sections on quality, and topics that have become a part of the lean lexicon, such as Choosing by Advantages, "line of

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balance"/location-based scheduling, virtual design teams, takt time planning and set-based design; Discussion questions for beginners and advanced lean practitioners; and Improved cross-referencing within the text to help the reader navigate the frameworks, techniques and tools to support the application of lean principles. The techniques described here enhance the use of resources, reducing waste, minimizing delays, increasing quality and reducing overall costs. They enable practitioners to improve the quality of the built environment, secure higher levels of customer/owner satisfaction, and simultaneously improve their profitability. This book is essential reading for all those

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wanting to be at the forefront of construction management and lean thinking.

Managing IT in
Construction/Managing
Construction for Tomorrow