

Access Free Imagining
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*Imagining Construction S
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Company*

Visit the Book site for more information Many large organizations are having to cede their market dominance to new disruptive players. Well-oiled organizations are hitting roadblocks due to unanticipated problems that are slowing down operations. VUCA is affecting organizations like never before - impacting schedules, delaying deliverables, and causing cost overruns. Managing projects has become a nightmare with the uncertainties and ambiguities of business, delaying integration of allied activities, making the project a non-starter even before it gets off the

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ground. In this VUCA world, it is imperative to confront the volatile, embrace the unknown, conquer the complex, and understand the ambiguous to be able to predict what lies ahead. This book helps managers master the art of dealing with VUCA by providing relatable experiences from the armed forces and advocating the use of RACE methodology. The book suggests disruptive tools and methods, and advises managers on the leadership traits needed for successfully completing projects by cutting losses and preventing chaos. It is a must-read for all managers involved in operations, supply chain, logistics, and production and manufacturing portfolios. Ex-army personnel who are starting a second career in the corporate/private sector will also

greatly benefit from reading this book.

This book is a sequel and extension to the book "Business Process Management Cases", published in its first edition by Springer in 2018. It adds 22 new cases for practitioners and educators to showcase and study Business Process Management (BPM). The BPM cases collection is dedicated to providing a contemporary and comprehensive, industry-agnostic insight into the realities of BPM. In particular it focuses on the lessons that only authentic cases can provide. The experiences documented cover both, the positive impact of deploying BPM as well as the lessons learnt from failed attempts. Each case takes a holistic approach and by doing so, each chapter recognizes that BPM in

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practice is a multidimensional endeavor covering strategy to operations, systems and infrastructure, governance and culture, models and running processes. This volume also introduces a new device to plan and scope BPM initiatives: the BPM Billboard. The Billboard helps professionals to link BPM projects to the corporate strategy and to build the organizational capabilities to reach such strategic directive. Digital technologies do not just facilitate innovative process designs, but enable entire new strategic options. This book provides a contemporary and comprehensive overview of how to create process-enabled strategies in an opportunity-rich environment. Martin Petry, Hilti CIO This is the first book to present

the BPM Billboard - A new management tool to plan and scope BPM initiatives. The Billboard together with the insightful real-world cases offers valuable guidance towards BPM success from a holistic perspective. Gero Decker, Signavio CEO

Accounting for Construction follows on from Measuring Construction, edited by the same team. It extends the coverage of some of the material in the first volume and expands the range of related topics to include, inter alia, shadow economies, accounting for informal construction and the treatment of the built environment sector in national accounts. Taken together, the two volumes collate a range of topics that are only addressed, if addressed at all, in occasional academic papers

and the publications of bodies such as national statistical offices and the World Bank. Accounting for Construction presents international examples from the UK, Australia and New Zealand and from both academic and professional contributors. This book is essential reading for all researchers and professionals interested in construction economics, construction management, and anyone interested in how the construction industry affects the global economy in ways previously under-represented in the literature.

This innovative Research Companion considers the history, nature and status of construction economics, and its need for development as a field in order to be recognised as a distinct discipline. It presents a state-

of-the-art review of construction economics, identifying areas for further research.

Youth Technical Sessions

Proceedings

Sustainable Materials in Building Construction

Collaborations in Architecture and Engineering

Accounting for Construction

Construction 4.0

A Practical Guide to Transforming the Construction Industry

A Practical Guide to Successful Construction Projects

Construction Project Management: An Integrated Approach is a management approach to leading projects and the effective choice and use of project management

tools and techniques. It seeks to push the boundaries of project management to take on board future needs and user issues. Integration of the construction project, meaning closer relations between the project team, the supply chain and the client, is long overdue; however, despite some signs of growth in this area, the industry nonetheless remains fragmented in its approach. The role of the project manager is to integrate diverse interests and unify objectives to achieve a common goal. This has now broadened to include a responsibility, on the parts of both client and team, to ensure

that construction addresses current and future societal needs. From an economic perspective, a great deal of waste is connected with conflict, thus a holistic approach that increases the efficiency and effectiveness of the task at hand will inject energy into project management. This third edition now takes on board the impact of technology in building information modelling and other digitised technologies such as artificial intelligence. Together, they open up avenues for more direct and incisive action to test creative design,

manufacture directly and communicate spontaneously and intuitively. In time, such technologies will change the role of project managers but will never take away their responsibility to be passionate about construction and to integrate the team. A new chapter has been added that considers future societal needs. This edition is also reordered to make the project life cycle and process chapters clearer. This book combines best practice in construction with the theories underpinning project management and presents a wealth of practical case studies - many new. It

focuses on all construction disciplines that may manage projects. The book is of unique value to students in the later years of undergraduate courses and those on specialist postgraduate courses in project management and also for practitioners in all disciplines and clients who have experienced the frustration caused by the fragmentation of construction projects.

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 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, 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.

Green engineering involves the designing, innovation, and commercialization of products and processes which promote sustainability without eliminating both efficiency and economic viability. This handbook focuses on sustainable development through green engineering and technology. It is intended to address the applications and issues involved in their

practical implementation. A new range of renewable-energy technologies, modified to provide green engineering, will be described in this handbook. It will explore all green technologies required to provide green engineering for the future. These include, but are not limited to, green smart buildings, fuel-efficient transportation, paperless offices, and many more energy-efficient measures. Handbook of Sustainable Development through Green Engineering and Technology acts as a comprehensive reference book to use when identifying development for programs and

sustainable initiatives within the current legislative framework. It aims to be of great interest to researchers, faculty members, and students across the globe.

Paves the path for the adoption and effective implementation of BIM by design firms, emphasizing the design opportunities that this workflow affords This book expands on BIM (Building Information Modeling), showing its applicability to a range of design-oriented projects. It emphasizes the full impact that a data modeling tool has on design processes, systems, and the high level of

collaboration required across the design team. It also explains the quantitative analysis opportunities that BIM affords for sustainable design and for balancing competing design agendas, while highlighting the benefits BIM offers to designing in 3D for construction. The book concludes with a deep look at the possible future of BIM and digitally-enhanced design. Through clear explanation of the processes involved and compelling case studies of design-oriented projects presented with full-color illustrations, BIM for Design Firms: Data Rich Architecture

at Small and Medium Scales proves that the power of BIM is far more than an improved documentation and sharing environment. It offers chapters that discuss a broad range of digital design, including problems with BIM, how readers can leverage BIM workflows for complex projects, the way BIM is taught, and more. Helps architects in small and medium design studios realize the cost and efficiency benefits of using BIM Demonstrates how the use of BIM is as relevant and beneficial for a range of projects, from small buildings to large and complex

commercial developments
Highlights the quantitative
analysis opportunities of data-
rich BIM models across design
disciplines for climate
responsiveness, design
exploration, visualization,
documentation, and error
detection Includes full-color
case studies of small to
medium projects, so that
examples are applicable to a
range of practice types
Features projects by Arca
Architects, ARX Protugal
Arquitectos, Bearth &
Deplazes, Durbach Block
Jagers, Flansburgh
Architects, and LEVER
Architecture BIM for Design

Firms is an excellent book for architects in small and medium-sized studios (including design departments within large firms) as well as for architecture students. The Forward-Looking Manager in a VUCA World CAiSE Forum 2022, Leuven, Belgium, June 6-10, 2022, Proceedings Digital Concrete 2020 Disruptive Technologies CSCE21 Construction Track Volume 1 Rapid Excavation and Tunneling Conference 2021 Proceedings BIM for Design Firms The forces of volatility,

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uncertainty, complexity and ambiguity (VUCA) in today's world are shaping businesses and calling into question the wisdom of existing business models. VUCA challenges businesses to digitalize and transform in ways they had not contemplated before. This book looks at how successful businesses have revitalized and innovated their business models. It illustrates through cases how these businesses have adapted to new forms of globalization through the lens of Business Model Innovation (BMI) theories in

a digital world. This book's chapters are divided into three sections. The first section examines the existing literature, the second section focuses on business processes and behaviour, and lastly the third section presents four case studies of sustainable international businesses from sectors such the fashion and digital services industry. Paying attention to business decisions and outcomes, the contributors critically examine which theories and practices would be most applicable for a digitally transforming

world. This book provides insights that will interest researchers and academics in the fields of sustainable business, organizational change, and digital transformation, amongst others. Its observations into sustainable digital transformation may also interest business leaders and consultants.

Every two years, industry leaders and practitioners from around the world gather at the Rapid Excavation and Tunneling Conference (RETC), the authoritative program for the tunneling profession, to

learn about the most recent advances and breakthroughs in this unique field. The information presented helps professionals keep pace with the ever-changing and growing tunneling industry. This book includes the full text of 106 papers presented at the 2021 conference. Though the tunneling industry continues to develop both technically and contractually, one notable adaptation of the last two years has been the onset and management of COVID-19. The hallmarks of

tunneling professionals include adaptability, resiliency, optimism, and management of change. These are traits that have been recently put to an entirely new challenge over the last year or so. We have truly witnessed why what we do is deemed “essential” infrastructure. The COVID-19 pandemic has impacted each of us, personally and professionally, and while times have been hard, we are fortunate to work in a field that is able to meet the challenge and thrive thereafter. Congratulations

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are in order to everyone in our industry for keeping the planning and development of projects moving forward and for maintaining safe and productive worksites in these challenging times. Over a decade ago the World Petroleum Council launched an initiative to hold an international professional youth forum. The first forum took place in October 2004 in China, and had as its motto: "Young people and innovations are the future of the oil industry." It was the first major event in the

history of the WPC in which young professionals and academics had the leading role, and had the opportunity to exchange their ideas in insights on the oil and gas industry with industry leaders and main representatives of the oil and gas industry. Since then, issues of professional development and the disclosure of the creative potential of young industry professionals have been on the agenda of the World Petroleum Council as one of the key areas for the development of international cooperation

focused on a strategic perspective. The Future Leaders Forum of the World Petroleum Council VI is the largest international platform for professional communication of young specialists in the oil and gas industry. The contributions in this book are much of interest to professionals and scientists interested or involved in the oil and gas industry or related areas. This book presents a selection of recent research works that provide best practice solutions, case studies and practical advice

on the implementation of sustainable construction techniques. The topics covered include innovations in building sustainability assessment, sustainable construction and materials, service-life prediction, construction 4.0, digitalization of the construction process, and circular economy.

Reviewing the current state of knowledge, the book will benefit scientists, students, practitioners, lecturers and other interested parties in a range of scientific and engineering disciplines, e.g. civil, materials and

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**mechanical engineering.
A Modern Guide to the
Digitalization of
Infrastructure
CSCE21 General Track
Volume 1
Management of Nuclear
Power Plant Projects
Innovation in Construction
Handbook on Digital
Business Ecosystems
Data Rich Architecture at
Small and Medium Scales
Proceedings of the 13th
European Conference on
Product & Process
Modelling (ECPPM 2021),
5-7 May 2021, Moscow,
Russia**

This timely Handbook on

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Digital Business Ecosystems provides a comprehensive overview of current research and industrial applications as well as suggestions for future developments. Multi-disciplinary in scope, the Handbook includes rigorously researched contributions from over 80 global expert authors from a variety of areas including administration and management, economics, computer science, industrial engineering, and media and communication.

This book gathers peer-reviewed contributions presented at the 2nd RILEM International Conference on Concrete and Digital

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Fabrication (Digital Concrete), held online and hosted by the Eindhoven University of Technology, the Netherlands from 6-9 July 2020. Focusing on additive and automated manufacturing technologies for the fabrication of cementitious construction materials, such as 3D concrete printing, powder bed printing, and shotcrete 3D printing, the papers highlight the latest findings in this fast-growing field, addressing topics like mixture design, admixtures, rheology and fresh-state behavior, alternative materials, microstructure, cold joints

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& interfaces, mechanical performance, reinforcement, structural engineering, durability and sustainability, automation and industrialization.

Many of the books on construction risk management concentrate on theoretical approaches to the accurate assessment of the overall risks of taking on a new project. Less attention is paid to the typical risks to which the operational level of a project is exposed and how operational managers should approach those risks during project implementation. This book identifies precisely where the major EPC/Design-Build

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risks occur within an operational framework and shows how best to deal with those risks. The book attempts to offer practical advice, approaches and tools for dealing with risks to which the various operational departments are exposed.

Organized around Baseline-Approach of program/project execution, the purpose of the Indian Infrastructure Body of Knowledge (InBoK) is to provide guidance on concepts and processes of program and project management and enshrines a programmatic approach to infrastructure development in India. InBoK is a

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comprehensive guidebook for the implementation of programs and execution of constituent projects.

Developed by expert practitioners from the government, PSEs, leading Indian infrastructure firms as well as global leaders in infrastructure, InBoK introduces a common language of Program Management to serve as a guidebook for professionals involved in the execution of infrastructure projects in India.

Creating a Culture of Predictable Outcomes
Handbook of Research on Driving Transformational Change in the Digital Built

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Environment

A Guide to the BIM Body of Knowledge with Metrics, KSAs, and Learning Outcomes
EG-ICE 2020 Workshop on Intelligent Computing in Engineering
Research Companion to Construction Economics
Advanced Technology, Tools and Materials for the Digital Transformation of the Construction Industry
VI Youth Forum of the World Petroleum Council - Future Leaders Forum (WPF 2019), June 23-28, 2019, Saint Petersburg, Russian Federation

At the beginning of the Fourth 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 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 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
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) 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 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-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 contractors and members of VDC teams, as well as academics, students, and professionals new to BIM-based design coordination. This new edition of

Collaborations in Architecture and Engineering explores how to effectively develop creative collaborations among architects and engineers. The authors, an architect and an engineer, share insights gained from their experiences and research on fostering productive communication, engaging in interdisciplinary discussions, and establishing common design goals. Together, they share the tools, methods, and best

practices deployed by prominent innovative architects and engineers to provide readers with the key elements for success in interdisciplinary design collaborations. The book offers engaging stories about prominent architect and engineer collaborations—such as those between SANAA and Sasaki and Partners, Adjaye Associates and Silman, Grafton Architects and AKT II, Studio Gang and Arup, Foster + Partners and

***Buro Happold, Steven
Holl Architects and Guy
Nordenson and
Associates, and among
the engineers and
architects at SOM. In
the second edition, the
newly added case studies
showcase extraordinary
buildings across the
globe at a range of
scales and typologies,
tracing the facets of
high-quality
collaborations. Through
the examples of these
remarkable synergies,
readers gain insights
into innovative design***

processes that address complex challenges in the built environment. The second edition of Collaborations in Architecture and Engineering is a terrific sourcebook for students, educators, and professionals interested in integrative design practice among the disciplines.

Tall wood buildings have been at the foreground of innovative building practice in urban contexts for a number of years. From London to

Stockholm, from Vancouver to Melbourne timber buildings of up to 20 storeys have been built, are under construction or being considered. This dynamic trend was enabled by developments in the material itself, prefabrication and more flexibility in fire regulations. The low CO2 footprint of wood - often regionally sourced - is another strong argument in its favour. This publication explains the typical

construction types such as panel systems, frame and hybrid systems. An international selection of 13 case studies is documented in detail with many specially prepared construction drawings, demonstrating the range of the technology.

**Construction
Digitalisation
Business Process
Management Cases Vol. 2
Sustainable
International Business
Models in a Digitally
Transforming World**

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***How Leadership,
Collaboration, and
Decision-Making Drive
Architecture and
Construction
Intelligent Information
Systems
Proceedings of ICACIE
2020
Progress in Advanced
Computing and
Intelligent Engineering
Written by experienced and
innovative projects lawyer
Arent van Wassenauer, this
book explains what the
critical success factors are
for construction projects to
be completed on time,***

within everyone's budget, to the right quality, with all stakeholders satisfied and without disputes. In so doing, van Wassenauer discusses how such projects could be structured, tendered for, executed and completed, and what legal and non-legal mechanisms are available to achieve success in construction projects. Using examples of real projects, A Practical Guide to Successful Construction Projects provides tools for those in leading and managerial positions within the

construction industry to change - where necessary - their usual operational methods into methods which are aimed at achieving project success.

Member States intending to introduce a nuclear power programme will need to pass through several phases during the implementation.

Experience shows that careful planning of the objectives, roles, responsibilities, interfaces and tasks to be carried out in different phases of a nuclear project is important for success. This publication

presents a harmonized approach that may be used to structure the owner/operator management system and establish and manage nuclear projects and their development activities irrespective of the adopted approach. It has been developed from shared management practices and consolidated experiences provided by nuclear project management specialists through a series of workshops and working groups organized by the IAEA. The resultant

publication presents a useful framework for the management of nuclear projects from initiation to closeout and captures international best practices. This book is designed to help practitioners and students in a wide range of construction project management professions to understand what building information modelling (BIM) and big data could mean for them and how they should prepare to work successfully on BIM-compliant projects and maintain their competencies in this

essential and expanding area. In this book, the state-of-the-art information technologies that support high-profile BIM implementation are introduced, and case studies show how BIM has integrated core quantity surveying and cost management responsibilities and how big data can enable informed decision-making for cost control and cost planning. The authors' combined professional and academic experience demonstrates, with practical examples, the importance of

using BIM and particularly the fusion of BIM and big data, to sharpen competitiveness in global and domestic markets. This book is a highly valuable guide for people in a wide range of construction project management and quantity surveying roles. In addition, implications for project management, facilities management, contract administration, and dispute resolution are also explored through the case studies, making this book essential reading for built environment and

**engineering professionals.
Providing a coherent and
multidisciplinary approach
to digitalization, this
Modern Guide aims to
systematize how the
digitalization process affects
infrastructure-based
industries, including
telecommunications,
transport, energy, water and
postal services.**

**A Capability Maturity Model
for Construction
Organisations
Sustainability in Energy and
Buildings 2021
Manage Risks Effectively -
Stop the Losses**

**BIM and Big Data for
Construction Cost
Management
Handbook of Sustainable
Development Through Green
Engineering and Technology
ECPPM 2021 - eWork and
eBusiness in Architecture,
Engineering and
Construction
Digital Transformation -
Strategy, Processes and
Execution**

How should we train?

What should we learn?

What is our value?

Disruptive technologies
have increased

speculation about what

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it means to be an architect. Innovations simultaneously offer great promise and potential risk to design practice. This volume identifies the game-changing trends driven by technology, and the opportunities they provide for architecture, urbanism and design. It advocates for an approach of intelligent control that transforms practice with specialist knowledge of technological models and systems. It features new

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developments in automation, generative design, augmented reality, videogame urbanism, artificial intelligence and robotics, as well as lived experiences within a continually shifting landscape. Showcasing evolving research, it discusses the cultural, social, environmental and political implications of various technological trajectories. In doing so it speculates upon future urban, spatial,

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aesthetic and formal possibilities within architecture. The future is already here. Now is the time to act.

Features: Austrian Institute of Technology AiT - City Intelligence Lab CiT, Bryden Wood, Mollie Claypool, Soomeen Hahm, Hawkins\Brown, LASSA Architects, The Living, Danil Nagy, Odico Construction Robotics, Stefana Parascho, Luke Caspar Pearson, SHoP Architects, Kostas Terzidis, Mette

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Ramsgaard Thomsen and
Sandra Youkhana.

Creating a Culture of
Predictable Outcomes
demonstrates the
importance of creating
cultures in the design
and construction
industries grounded in
sophisticated-caring
leadership, high-
performing collaborative
teams, and master-level
decision-making
discipline, informed by
values, to finally
address massive
inefficiencies, waste,
and unpredictability.

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Barbara White Bryson offers specific guidance to industry stakeholders to succeed in achieving project-related predictable outcomes by focusing on culture rather than process. This includes selecting the right team members by hiring and firing bravely, valuing psychological safety, leading with values, practicing respect and transparency, fostering empowerment to make decisions at the right level at the right time,

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and more. This book is a must-read for design and construction

professionals who want to finally understand how to set goals and meet those goals for their clients as well as for their teams.

This book gathers the latest advances, innovations, and applications in the field of information technology in civil and building engineering, presented at the 18th International Conference on Computing in Civil

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and Building Engineering
(ICCCBE), São Paulo,
Brazil, August 18-20,
2020. It covers highly
diverse topics such as
BIM, construction
information modeling,
knowledge management,
GIS, GPS, laser
scanning, sensors,
monitoring, VR/AR,
computer-aided
construction, product
and process modeling,
big data and IoT,
cooperative design,
mobile computing,
simulation, structural
health monitoring,

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computer-aided structural control and analysis, ICT in geotechnical engineering, computational mechanics, asset management, maintenance, urban planning, facility management, and smart cities. Written by leading researchers and engineers, and selected by means of a rigorous international peer-review process, the contributions highlight numerous exciting ideas that will spur novel

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research directions and foster multidisciplinary collaborations.

This book focuses on theory, practice and applications in the broad areas of advanced computing techniques and intelligent engineering. This book includes 74 scholarly articles which were accepted for presentation from 294 submissions in the 5th ICACIE during 25-27 June 2020 at Université des Mascareignes (UdM), Mauritius, in collaboration with Rama

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Devi Women's University,
Bhubaneswar, India, and
S'O'A Deemed to be
University, Bhubaneswar,
India. This book brings
together academicians,
industry persons,
research scholars and
students to share and
disseminate their
knowledge and scientific
research work related to
advanced computing and
intelligent engineering.
It helps to provide a
platform to the young
researchers to find the
practical challenges
encountered in these

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areas of research and the solutions adopted. The book helps to disseminate the knowledge about some innovative and active research directions in the field of advanced computing techniques and intelligent engineering, along with some current issues and applications of related topics.

Tall Wood Buildings

The Indian

Infrastructure Body of Knowledge: Volume 2

Design Studio Vol. 2:

Intelligent Control

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Second RILEM

International Conference
on Concrete and Digital
Fabrication

Developing BIM Talent

Frameworks,

Productivity, Cost and

Performance

Construction Project

Management

The 27th EG-ICE International

Workshop 2020 brings together

international experts working at the

interface between advanced

computing and modern engineering

challenges. Many engineering tasks

require open-world resolutions to

support multi-actor collaboration,

coping with approximate models,

providing effective engineer-

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computer interaction, search in multi-dimensional solution spaces, accommodating uncertainty, including specialist domain knowledge, performing sensor-data interpretation and dealing with incomplete knowledge. While results from computer science provide much initial support for resolution, adaptation is unavoidable and most importantly, feedback from addressing engineering challenges drives fundamental computer-science research. Competence and knowledge transfer goes both ways.

Der 27. Internationale EG-ICE Workshop 2020 bringt internationale Experten zusammen, die an der Schnittstelle zwischen fortgeschrittener Datenverarbeitung und modernen technischen

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Herausforderungen arbeiten. Viele ingenieurwissenschaftliche Aufgaben erfordern Open-World-Resolutionen, um die Zusammenarbeit mehrerer Akteure zu unterstützen, mit approximativen Modellen umzugehen, eine effektive Interaktion zwischen Ingenieur und Computer zu ermöglichen, in mehrdimensionalen Lösungsräumen zu suchen, Unsicherheiten zu berücksichtigen, einschließlich fachspezifischen Domänenwissens, Sensordateninterpretation durchzuführen und mit unvollständigem Wissen umzugehen. Während die Ergebnisse aus der Informatik anfänglich viel Unterstützung für die Lösung bieten, ist eine Anpassung unvermeidlich, und am

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wichtigsten ist, dass das Feedback aus der Bewältigung technischer Herausforderungen die computerwissenschaftliche

Grundlagenforschung vorantreibt. Kompetenz und Wissenstransfer gehen in beide Richtungen.

A systematic Building Information Modeling (BIM) framework features cutting-edge use cases and

competencies for students and professionals pursuing BIM

careers. Developing BIM Talent: A Guide to the BIM Body of

Knowledge with Metrics, KSAs, and Learning Outcomes leads readers through the process of

implementing a state-of-the-art BIM training and education program.

Authored by a team of celebrated and highly qualified scholars and

practitioners, this exciting new BIM

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education and workforce development guide offers a roadmap that navigates readers through the comprehensive BIM metrics and KSAs detailed in the BIM Body of Knowledge sponsored by the Academic Interoperability Coalition (AiC). Developing BIM Talent offers: A solid foundation and guidelines for educators and practitioners for starting or enhancing a BIM curriculum or training program Templates, expert interviews, and case studies that provide in-depth knowledge and lessons learned that can facilitate process changes and strategic action plans Strategies for standardizing emerging BIM job tasks, descriptions, and methods for benchmarking performance This guide to contemporary and

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comprehensive metrics of BIM competency is an essential resource for corporate trainers and instructors teaching BIM, human resources professionals charged with recruiting BIM talent, as well as leadership interested in credentialing and BIM certification programs.

eWork and eBusiness in Architecture, Engineering and Construction 2021 collects the papers presented at the 13th European Conference on Product and Process Modelling (ECPPM 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

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(Architecture, 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 Contract, Cost and Risk Management Safety and Quality Sustainable Buildings and Urban Environments Smart

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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 issues for their
adoption in the AEC/FM industry.
This book comprises the
proceedings of the Annual
Conference of the Canadian Society
of Civil Engineering 2021. The
contents of this volume focus on
specialty conferences in

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construction, environmental, hydrotechnical, materials, structures, transportation engineering, etc. This volume will prove a valuable resource for those in academia and industry.

Strategies, Platforms, Technologies, Governance and Societal Challenges

Proceedings of the 18th International Conference on Computing in Civil and Building Engineering

Australasian Conference on Information Systems 2018

BIM for Design Coordination

An Integrated Approach

Proceedings of the Canadian Society of Civil Engineering Annual Conference 2021

ICCCBE 2020

This book explores

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construction digitalisation, particularly in developing countries. The book conceptualises a digitalisation capability maturity model that will enable construction organisations to self-assess and benchmark their digital capabilities in their quest for digital transformation. Digitalisation offers a significant solution to the age-long problems of the construction industry. Research shows that when construction organisations transform from a traditional service delivery approach to a more digitalised approach, significant improvement in project delivery and better

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competitive advantage for these organisations will be attained. The attainment of these benefits is evident in developed countries where the digitalisation of construction activities continues apace.

Unfortunately, the story is not the same for construction organisations in developing economies.

While some organisations might be willing to be digitally transformed, most have no clue how to go about it. To this end, this book provides guidelines for construction organisations seeking to transform their entities digitally. Its content is a valuable read

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for construction company owners as it provides a model which they can use in the digitalisation of their activities. Also, regulatory bodies in the construction industry can adopt the capabilities identified in the book as essential prerequisites for their members. Furthermore, the book serves as excellent theoretical background reading for management researchers seeking to expand their knowledge on the digitalisation of the construction industry and other associated industries. This book contains the proceedings of the 13th KES International Conference on

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Sustainability and Energy in Buildings 2021 (SEB2021) held in Split, Croatia, during 15-17 September 2021 organized by KES International. SEB21 invited contributions on a range of topics related to sustainable buildings and explored innovative themes regarding sustainable energy systems. The conference formed an exciting chance to present, interact and learn about the latest research and practical developments on the subject. The conference attracted submissions from around the world. Submissions for the Full-Paper Track were subjected to a blind peer-

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review process. Only the best of these were selected for presentation at the conference and publication in these proceedings. It is intended that this book provides a useful and informative snapshot of recent research developments in the important and vibrant area of sustainability in energy and buildings. Automation and Robotics in the Architecture, Engineering, and Construction Industry provides distinct and unified insight into current and future construction robotics, offering readers a comprehensive perspective for constructing a road map

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and illuminating improvements for a successful transition towards construction robotization. The book covers the fundamentals and applications of robotics, autonomous vehicles, and human-perceptive machines at construction sites. Through theoretical and experimental analyses, it examines the potential of robotics and automated systems for current and future fieldwork operations and identifies the factors that determine their implementation pace, adoption scale, and ubiquity throughout the industry. The book evaluates the technical, societal, and

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economic aspects of adopting robots in construction, both as standalone and collaborative systems, which in return can afford the opportunity to investigate these AI-enabled machines more systematically.

Provides promising solutions to transform and reinvent the construction industry;
Discusses the application of construction site robotics and automation; Includes case studies from around the world.

Fabricate 2020 is the fourth title in the FABRICATE series on the theme of digital fabrication and published in conjunction with a triennial conference

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(London, April 2020). The book features cutting-edge built projects and work-in-progress from both academia and practice. It brings together pioneers in design and making from across the fields of architecture, construction, engineering, manufacturing, materials technology and computation. Fabricate 2020 includes 32 illustrated articles punctuated by four conversations between world-leading experts from design to engineering, discussing themes such as drawing-to-production, behavioural composites, robotic assembly, and digital craft. Fabricate 2020

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Practical Risk Management
for EPC / Design-Build
Projects

Automation and Robotics in
the Architecture,
Engineering, and
Construction Industry

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

Design, Construction and
Performance. Second and
expanded edition

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

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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

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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.