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This guidance on Building Information Modelling for heritage (Historic BIM) offers guidance for owners, end-users and professionals in the fields of heritage and construction. By raising awareness of the potential advantages of a BIM approach, this guidance will help users successfully implement BIM in heritage projects. Historic BIM is, by definition, a multi-disciplinary process that requires the input and collaboration of professionals with very different skillsets. It is also a fast-developing field in terms of research, official guidance, standards and professional practice. This publication addresses the issues surrounding the production and use of BIM for history buildings, and provides information about guidance and standards available elsewhere for managing a building's entire life cycle effectively.

Principios, herramientas e implementación de Lean Construction aborda el desarrollo de los sistemas de producción desde la producción artesanal, su evolución hacia la producción en masa, hasta el cambio radical del paradigma de producción en el siglo con el modelo Toyota en Japón, cuyas bases fueron utilizadas para proponer la teoría "transformación-flujo-valor" en la construcción. Se describen algunas herramientas enmarcadas en los principios Lean y aplicables al entorno de la construcción, en sinergia con otros enfoques recientes como la construcción virtual y la construcción sostenible. Además, se desarrollan conceptos teóricos y aplicaciones prácticas recopiladas por el autor durante los últimos quince años a partir de su investigación sobre el tema, y de múltiples ejercicios de acompañamiento como consultor en la implementación de Lean Construction en empresas de Colombia, Panamá y Costa Rica.

The papers presented at Building Information Modelling 2017 (BIM) are from a range of forums, including plenary papers, workshops, seminars, and panel sessions. The conference was attended by experts from industry, practice and academia, sharing their work on key topics, the development of innovative solutions, and the identification future trends. The volume gives details of how BIM tools and techniques have fundamentally altered the manner in which modern construction teams operate, the processes through which designs are evolved, and the relationships between conceptual, detail, construction and life cycle stages. BIM is essentially value-creating collaboration throughout the entire life-cycle of an asset, underpinned by the statistics attached to them and has far and reaching consequences on both building procurement and infrastructure. BIM 2017 papers cover topics such as: BIM in design coordination, Construction operations; Building operation and maintenance; BIM and sustainability; Collaborative working and practices; Facilities management integration and GIS integration; Automation in construction; Health and safety; BIM and interoperability; Life cycle project management; Cultural heritage; BIM and Robotics; Risk analysis and management and Emergency analysis, planning and management

BIM ha llegado para quedarse y más pronto que tarde todos tendremos que adaptar nuestra forma de trabajar a esta metodología. Una de las mejores opciones es entrar en el mundo BIM con el conjunto de soluciones que ofrece la empresa CYPE Ingenieros (líder en el sector del software para arquitectura, ingeniería y construcción) y la plataforma por ellos desarrollada BIMserver.center*. Será fácil y compatible con muchos de los programas que ya utilizamos, a la vez que podremos incorporar en la medida de nuestras necesidades otros nuevos, muchos de ellos gratuitos. Este libro ofrece al lector una guía para iniciar el proceso o perfeccionarlo desde varios puntos de vista, el del proyectista individual que desarrolla el mismo todos los apartados del proyecto, el del proyectista que colabora con otros profesionales en distintas especialidades del proyecto y el del colaborador especialista. Todos estos profesionales necesitan conocer cómo implementar los nuevos procesos e integrarlos en sus tareas habituales, mediante programas informáticos que ya utilizan (algunos nuevos) y gracias a la información necesaria para dotar al modelo del edificio de toda la información (BIM). Utilizar el entorno común de datos (CDE) como es BIMserver.center nos abre un nuevo mundo de posibilidades que nos convertirán hoy en los profesionales del futuro.

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 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. 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 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.

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 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) refers to the consistent and continuous use of digital information throughout the entire lifecycle of a built facility, including its design, construction and operation. In order to exploit BIM methods to their full potential, a fundamental grasp of their key principles and applications is essential. Accordingly, this book combines discussions of theoretical foundations with reports from the industry on currently applied best practices. The book's content is divided into six parts: Part I discusses the technological basics of BIM and addresses computational methods for the geometric and semantic modeling of buildings, as well as methods for process modeling. Next, Part II covers the important aspect of the interoperability of BIM software products and describes in detail the standardized data format Industry Foundation Classes. It presents the different classification systems, discusses the data format CityGML for describing 3D city models and COBie for handing over data to clients, and also provides an overview of BIM programming tools and interfaces. Part III is dedicated to the philosophy, organization and technical implementation of BIM-based collaboration, and discusses the impact on legal issues including construction contracts. In turn, Part IV covers a wide range of BIM use cases in the different lifecycle phases of a built facility, including the use of BIM for design coordination, structural analysis, energy analysis, code compliance checking, quantity take-off, prefabrication, progress monitoring and operation. In Part V, a number of design and construction companies report on the current state of BIM adoption in connection with actual BIM projects, and discuss the approach pursued for the shift toward BIM, including the hurdles taken. Lastly, Part VI summarizes the book's content and provides an outlook on future developments. The book was written both for professionals using or programming such tools, and for students in Architecture and Construction Engineering programs.

Successfully managing your JCT contracts is a must, and this handy reference is the swiftest way to doing just that. Making reference to best practice throughout, the JCT Standard Building Contract SBC/Q and DB used as examples to take you through all the essential contract administration tasks, including: Procurement paths Payment Final accounts Progress, completion and delay Subcontracting Defects and quality control In addition to the day to day tasks, this also gives you an overview of what to expect from common sorts of dispute resolution under the JCT, as well as a look at how to administer contracts for BIM-compliant projects. This is an essential starting point for all students of construction contract administration, as well as practitioners needing a handy reference to working with the JCT.

Significantly updated in reference to the latest construction standards and evolving building types Many chapters revised including housing, transport, offices, libraries and hotels New chapter on flood-aware design Sustainable design integrated into chapters throughout Over 100,000 copies sold to successive generations of architects and designers - this book belongs in every design studio and architecture school library The Metric Handbook is the major handbook of planning and design information for architects and architecture students. Covering basic design data for all the major building types, it is the ideal starting point for any project. For each building type, the book gives the basic design requirements and all the principal dimensional data, and succinct guidance on how to use the information and what regulations the designer needs to be aware of. As well as building types, the Metric Handbook deals with broader aspects of design such as materials, acoustics and lighting, and general design data on human dimensions and space requirements. The Metric Handbook provides an invaluable resource for solving everyday design and planning problems.

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

3D GeoInfo aims to bring together international state-of-the-art research and facilitate the dialogue on emerging topics in the field of 3D geo-information. The conference offers an interdisciplinary forum in the fields of 3D data collection and modeling; reconstruction and methods for 3D representation; data management for maintenance of 3D geo-information or 3D data analysis and visualization. The book covers the best papers from 3D GeoInfo held in Istanbul in November 2013.

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 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 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 less time, labor, and capital resources.

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 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 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.

Die Gebäudetechnik steht vor einem bedeutenden Paradigmenwechsel. Getrieben durch die Integrale Planung und verknüpft mit der Methodik des Building Information Modelings (BIM) sowie den neuen Möglichkeiten der Digitalisierung (Stichwort: Internet of Things; IoT), tritt die ganzheitliche Betrachtung von digital unterstützten Prozessen in den Fokus und erfordert von Fachplanern eine neue Handlungsmaxime. Vor diesem Hintergrund beleuchtet dieses Fachbuch die konzeptionellen und rechtlichen Rahmenbedingungen, innerhalb derer sich dieser Paradigmenwechsel vollziehen wird. Danach gilt es zukünftig mehr denn je, die teils konkurrierenden Schutzziele wie Energieeffizienz oder Erhalt der Trinkwassergüte mit zeitgemäßen Komfortansprüchen bei zu vertretenden Kosten in Einklang zu bringen. Aufbauend auf den aktuellsten wissenschaftlichen und technischen Erkenntnissen werden dafür planerische und technologische Lösungswege aufgezeigt, wie sie heute schon praxisgerecht bei der Planung und in einem bedarfsgerechten und hocheffizienten Anlagenbetrieb umgesetzt werden können.

This book highlights current research and development in the area of sustainable built environments, currently one of the most important disciplines in civil engineering. It covers a range of topics, including sustainable construction and infrastructures, waste and wastewater management, enhanced sustainability, renewable and clean energy, sustainable materials and industrial ecology, building automation and virtual reality, and impact of climate change. As such it provides vital insights into responsible urbanization practices, and new tools and technologies in civil engineering that can mitigate the negative effects of the built environment.

This book presents Proceedings of the 2021 Intelligent Systems Conference which is a remarkable collection of chapters covering a wider range of topics in areas of intelligent systems and artificial intelligence and their applications to the real world. The conference attracted a total of 496 submissions from many academic pioneering researchers, scientists, industrial engineers, and students from all around the world. These submissions underwent a double-blind peer-review process. Of the total submissions, 180 submissions have been selected to be included in these proceedings. As we witness exponential growth of computational intelligence in several directions and use of intelligent systems in everyday applications, this book is an ideal resource for reporting latest innovations and future of AI. The chapters include theory and application on all aspects of artificial intelligence, from classical to intelligent scope. We hope that readers find the book interesting and valuable; it provides the state-of-the-art intelligent methods and techniques for solving real-world problems along with a vision of the future research.

Building Information Modelling (BIM) harnesses digital technologies to unlock more efficient methods of designing, creating and maintaining built environment assets, so the Construction Manager's BIM Handbook ensures the reader understands what BIM is, what the UK strategy is and what it means for key roles in the construction team. ensure that all readers understand what BIM and are fully aware of the implications of BIM for them and their organisations provides concise summaries of key aspects of BIM ensure that all readers can begin to adopt this approach in future projects includes industry case studies illustrating the use of BIM on large and small projects

This book connects the different topics and professions involved in information technology approaches to architectural design, ranging from computer-aided design, building information modeling and programming to simulation, digital representation, augmented and virtual reality, digital fabrication and physical computation. The contributions include experts' academic and practical experiences and findings in research and advanced applications, covering the fields of architecture, engineering, design and mathematics. What are the conditions, constraints and opportunities of this digital revolution for architecture? How do processes change and influence the result? What does it mean for the collaboration and roles of the partners involved. And last but not least: how does academia reflect and shape this development and what does the future hold? Following the sequence of architectural production - from design to fabrication and construction up to the operation of buildings - the book discusses the impact of computational methods and technologies and its consequences for the education of future architects and designers. It offers detailed insights into the processes involved and considers them in the context of our technical, historical, social and cultural environment. Intended mainly for academic researchers, the book is also of interest to master's level students.

Building Information Modelling (BIM) in Design, Construction, and Operations contains the proceedings of the first in a planned series of conferences dealing with design coordination, construction, maintenance, operation and decommissioning. The book gives details of how BIM tools and techniques have fundamentally altered the manner in which modern construction teams operate, the processes through which designs are evolved, and the relationships between conceptual, detail, construction and life cycle stages. The papers contributed by experts from industry, practice and academia, debate key

topics, develop innovative solutions, and predict future trends. The interdisciplinary nature of the contents and the collaborative practices discussed, so important within the built environment, will appeal to those engaged in design, surveying, visualisation, infrastructure, real estate, construction law, insurance, and facilities management. Topics covered include: BIM in design coordination; BIM in construction operations, BIM in building operation and maintenance; BIM and sustainability; BIM and collaborative working and practices; BIM health and safety and BIM-facilities management integration, among others. ePart 4: Building up a BIM Support Infrastructure: Addressing the 'back of house' aspect of BIM Management, this ePart outlines how to go about developing a range of in-house BIM standards and guidelines. It highlights how BIM Managers go about establishing a training programme for staff and the setting up and management of an organisation's BIM content library. It covers the support needed to move BIM information into the field and further into facilities and asset management. It emphasises the importance of internal messaging, and articulating how to nurture a culture of peer-to-peer support and advancement of skills by individual staff members. Looking beyond a single firm's or organisation's requirements, the ePart positions BIM support infrastructure in the wider context of key global BIM policies and guidelines. Obook ISBN: 9781118987896; ePub ISBN: 9781118987919; ePDF ISBN:9781118987834; published August 2015

This practical guide to cost studies of buildings has been updated and revised throughout for the 6th edition. New developments in RICS New Rules of Measurement (NRM) are incorporated throughout the book, in addition to new material on e-business, the internet, social media, building information modelling, sustainability, building resilience and carbon estimating. This trusted and easy to use guide to the cost management role: Focuses on the importance of costs of constructing projects during the different phases of the construction process Features learning outcomes and self-assessment questions for each chapter Addresses the requirements of international readers From introductory data on the construction industry and the history of construction economics, to recommended methods for cost analysis and post-contract cost control, Cost Studies of Buildings is an ideal companion for anyone learning about cost management.

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.

Der BIM Manager jetzt auch in englischer Übersetzung: Im Zentrum der Ausführungen steht die erfolgreiche Einführung von BIM im eigenen Unternehmen. Der Autor erklärt die wichtigsten Begriffe und erläutert anschaulich Methoden (Open BIM, Collaborative BIM), Technologien, Projektanforderungen und Verantwortlichkeiten. Die wesentlichen Grundsätze werden anhand konkreter Projektbeispiele dargestellt. Der Leser erhält viele hilfreiche Tipps für die praktische Anwendung. "Der BIM-Manager" eignet sich besonders für Geschäftsführer, Abteilungsleiter, BIM-Anwender, BIM-Manager sowie für Architekten und Bauingenieure.

The BIM Manager's Handbook: Guidance for Professionals in Architecture, Engineering, and Construction Building Information Modelling (BIM) is a design and construction software that manages not just graphics, but also information—information that enables the automatic generation of drawings and reports, design analysis, schedule simulation, facilities management, and cost analysis—ultimately enabling any building team to make better-informed decisions. This allows a range of professionals—architects, engineers, construction managers, surveyors, cost estimators, project managers, and facility managers—to share this information throughout a building's lifecycle. BIM is now recognized worldwide for the efficiencies it delivers in terms of working collaboratively, communication, processes, cost savings, and a property's lifecycle management. With the widespread adoption of BIM, BIM Managers have become a much-needed new breed of professionals in architectural, engineering, and construction practice. Their role is often misunderstood and ill-defined, and such are the day-to-day deliverables that they are likely to face. The BIM Manager's Handbook provides an in-depth account of the breadth of activities that any BIM Manager or staff member, who is actively engaged in the delivery of project, is required to undertake. Providing prereleases of the final work, The BIM Manager's Handbook ePart series isolates significant topics around BIM management. In the sixth and final ePart, BIM is taken to the next level by outlining what is required to truly excel as a BIM Manager. It highlights how BIM Managers acquire the necessary communication skills to maximize an efficient information flow between the BIM Manager and others. It illustrates how BIM Managers tie their activities to cutting-edge BIM research and development globally. Lastly, this ePart lays out how to promote BIM excellence both within an organization and beyond.

Construction projects involve a complex set of relationships, between parties with different professional backgrounds trying to achieve a very complex goal. Under these difficult circumstances, the quality of information on which projects are based should be of the highest possible standard. The line-based, two dimensional drawings on which conventional construction is based render this all but impossible. This is the source of some major shortcomings in the construction industry, and this book focuses on the two most fundamental of these: the failure to deliver projects predictably: to the required quality, on time and within budget; and the failure of most firms in the industry to make a survivable level of profit. By transforming the quality of information used in building, BIM aims to transform construction completely. After describing and explaining these problems, the way in which BIM promises to provide solutions is examined in detail. A discussion of the theory and practice of BIM is also provided, followed by a review of various recent surveys of BIM usage in the US, UK and selected European economies. The way in which other industries, including retail and manufacturing, have been transformed by information are explored and compared with current developments in the deployment of BIM in construction. Five case studies from the UK show how BIM is being implemented, and the effects it is having on architects and contractors. This book is perfect for any construction professional interested in improving the efficiency of their business, as well as undergraduate and postgraduate students wishing to understand the importance of BIM.

Im Lebenszyklus einer Immobilie – von Planung über Bau, Betrieb, ggf. Umnutzung und Verwertung – ist es von fundamentaler Bedeutung, dass relevante Informationen zum richtigen Zeitpunkt der richtigen Stelle vorliegen. Vor allem bei komplexen Immobilien ist ein durchgängiger Informationsfluss, der sicherstellt, dass die benötigten Informationen vorliegen, nicht immer

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

Handbook of Green Building Design and Construction: LEED, BREEAM, and Green Globes, Second Edition directly addresses the needs of building professionals interested in the evolving principles, strategies, and concepts of green/sustainable design. Written in an easy to understand style, the book is updated to reflect new standards to LEED. In addition, readers will find sections that cover the new standards to BREEAM that involve new construction Infrastructure, data centers, warehouses, and existing buildings. Provides vital information and penetrating insights into three of the top Green Building Codes and Standards applied Internationally Includes the latest updates for complying with LEED v4 Practices and BREEAM Presents case studies that draws on over 35 years of personal experience from across the world

Structural integrity and failure assessment have been considered by many fields of engineers as it is a multi-disciplinary concept. The assessment procedure vitally ensures that structural elements will remain functional throughout their service lives. Structural failure refers to the loss of structural integrity by means of loss at the component- or system-level elements. The main concern of integrity assessment is that a structural failure may be avoided at the service level by designing the structure to withstand its designated loads. Hence, for satisfactory structural performance, structural safety, failure, and interaction between them should be considered throughout the design and analysis stages. This book is a collection of chapters that provide the researcher with a comprehensive perspective on structural integrity and its sub-disciplines.

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.

Rapid urbanization has created an unprecedented pressure on the use of land in cities around the world, resulting in physical and legal complexities. This book explains the theoretical basis and practicality of connecting urban land administration practices with the 3D digital data environment of Building Information Modelling (BIM). The main focus is to adopt a BIM-based paradigm for enhancing communication and management of complex ownership rights in multi-story buildings, which are prevalent in urban built environments. This book first elaborates on a range of data elements required for managing legal information in current land administration practices pertaining to subdivision of legal interests within multi-story building developments. It then explains how an open data model in the BIM domain – Industry Foundation Classes (IFC) – can be extended with legal data elements to lay the foundation for adopting BIM in urban land administration. The book also highlights benefits and barriers of implementing BIM-enabled urban land administration. Features Explains the theoretical basis and practicality of connecting urban land administration practices with the 3D digital data environment of BIM. Highlights the existing challenges associated with current practice of urban land administration for multi-story buildings. Introduces the potential of 3D digital environment of BIM for the purpose of mapping and registering legal interests. Describes how BIM-based data models can be extended for recording, managing, and representing legal ownership of properties over a building's lifecycle. Includes models of multi-story buildings as case studies to demonstrate the feasibility of extended BIM-based data models.

Matthias Stange untersucht die Auswirkungen der Anwendung von Building Information Modelling (BIM) im Planungs- und Bauprozess aus planungsökonomischer Perspektive. Ziel der Untersuchung ist es, die aus zahlreichen qualitativen Studien abgeleiteten Verbesserungspotentiale durch die Anwendung der BIM-Methode anhand realer Projektdaten im globalen Kontext zu überprüfen. Mit quantitativen Methoden analysiert der Autor Primärdaten aus weltweit 105 Bauprojekten der Bereiche Wohnbau, Gewerbebau, Industriebau, Infrastruktur- und Wasserbau. Dabei wird dem Einfluss des projektbezogenen BIM-Reifegrades besondere Beachtung eingeräumt.

"An essential reference resource for any architect or architect student, the *Metric Handbook* is the major handbook for planning and design data. For each building type, the book gives basic design requirements, principal dimensional data and details of relevant building regulations. The book also contains information on broader aspects of design applicable to all building types, such as materials, acoustics and lighting, and data on human dimensions and space requirements. Significantly updated, the new edition of this work focuses on sustainable design practice to make projects competitive within a green market. As well as a full revision, including additional new building types and the latest updates to regulation and practice, the book features an improved new layout with color images and text to make it easier to find vital information quickly. *Metric Handbook* is a tried and tested, authoritative reference for solving everyday planning problems - it is a must have for every design office desk and drawing board"-

The book reports on the great improvements in the information and knowledge management due to the digitalization of the building sector. By summarizing several research projects addressing the implementation of BIM in different stages of the building process, and the definition of standards at Italian, European and international levels for managing information relying on the implementation of BIM-based processes, it showcases the efforts, especially within the Italian building sector, to build a standardized structure of information and develop tools for collecting, sharing and exchanging information between stakeholders involved in different stages of the building process, so as to enhance the storage, traceability, usability and re-usability of information management. Further, it presents an enhanced use of information that relies on the adoption of the standardized structure of information, and proposes dedicated applications for

automating the process of information fruition. Lastly, it features a digital platform for different stakeholders in the building sector, such as manufacturers, producers and construction companies.

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