

Aec Uk Bim Standard

The RIBA Plan of Work 2013 Guide: Design Management is part of a brand new series providing must-read practical guidance to running efficient and successful projects using the new RIBA Plan of Work 2013. Each guide takes a core project task – in this case managing information exchanges - and explains the essential activities and considerations required at each stage of the new Plan of Work. Easy to use and navigate and in a small and handy format these guides will provide the ultimate quick reference support at your desk or on site. The author provides concise and pragmatic advice rooted in real world experience – a ‘how to’ that will resonate with practitioners. In-text features such as ‘hints and tips’, ‘checklists’, ‘forms and templates’ and ‘signposts’ to trusted resources will provide user-friendly support. Boxed examples will highlight best practice and illuminate common problems and solutions borne of hard won experience.

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. 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.

Understanding BIM presents the story of Building Information Modelling, an ever evolving and disruptive technology that has transformed the methodologies of the global construction industry. Written by the 2016 Prince Philip Gold Medal winner, Jonathan Ingram, it provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages its effective use can provide to a project team. Ingram, who pioneered the system heralding the BIM revolution, provides unrivalled access to case material and relevance to the current generation of BIM masters. With hundreds of colour images and illustrations showing the breadth and power of BIM, the book covers: The history of BIM What BIM is in technical and practical terms How it changes the day to day working environment Why we need BIM and what problems it can solve Where BIM is headed, particularly with regards to AI, AR, VR and voice recognition International case studies from a range of disciplines including: architecture, construction management, and retail Professionals and students in any field where the inter-disciplinary aspects of BIM are in operation will benefit from Ingram's insights. This book is an authoritative account of and reference on BIM for anyone wanting to understand its history, theory, application and potential future developments.

This book is quite simply about contract administration using the JCT contracts. The key features of the new and updated edition continue to be its brevity, readability and relevance to everyday practice. It provides a succinct guide written from the point of view of a construction practitioner, rather than a lawyer, to the traditional form of contract with bills of quantities SBC/Q2016, the design and build form DB2016 and the minor works form MWD2016. The book broadly follows the sequence of producing a building from the initial decision to build through to completion. Chapters cover: Procurement and tendering Payments, scheduling, progress and claims Contract termination and insolvency Indemnity and insurance Supply chain problems, defects and subcontracting issues Quality, dealing with disputes and adjudication How to administer contracts for BIM-compliant projects JCT contracts are administered by a variety of professionals including project managers, architects, engineers, quantity surveyors and construction managers. It is individuals in these groups, whether experienced practitioner or student, who will benefit most from this clear, concise and highly relevant book.

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

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

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.

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

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 gewährleistet. Die sich ständig weiterentwickelnde

Informationstechnologie und Methoden wie Building Information Modelling (BIM) wecken Erwartungen an einen verbesserten Informationsfluss zwischen den Projektphasen und Beteiligten. Auch mit dem Einsatz von Technologie und neuen Methoden muss jedoch zunächst geklärt sein, welche Informationen zu welchem Zweck benötigt werden und in welcher Phase des Immobilienlebenszyklus diese vorliegen müssen. In dieser Forschungsarbeit wird eine Methodik vorgestellt, mit deren Hilfe Informationsanforderungen in verschiedenen konkreten Projekt- oder Unternehmens-Situationen im Immobilienlebenszyklus ermittelt werden können. Grundlage bildet eine qualitative Inhaltsanalyse, in der Begriffe im Kontext von Informationen im Immobilienlebenszyklus analysiert und definiert werden. Die Methodik kann zur Ermittlung des Informationsbedarfs als Grundlage z. B. für die Einführung von BIM oder die Prüfung eines bestehenden Informationsmanagements genutzt werden.

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.

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.

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), 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.

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.

"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"- 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. 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.

Ponto de partida ideal para qualquer projeto de arquitetura, este livro trata de aspectos específicos do projeto, como materiais, acústica e iluminação, de dados gerais de projeto sobre as dimensões humanas (ergonomia e ergometria) e de necessidades espaciais. A obra fornece as exigências básicas para projetos considerando as mudanças de comportamento, climáticas e necessidades da sociedade, como projetar para áreas sujeitas a enchentes, inclusão de práticas de projeto sustentável, etc.

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 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.

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.

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.

and analyze BIM information Key Features Boost productivity in Revit and apply multiple workflows to work efficiently on BIM projects Optimize your daily work in Revit to perform more tasks in less time Take a hands-on approach to improving your efficiency with useful explanations, which will step-change your productivity Book Description Revit software helps architects, BIM coordinators, and BIM managers to create BIM models and analyze data to improve design and construction. Building Information Modeling (BIM) has promoted a transformation in the engineering and construction industries where information is at the core of a methodology that improves productivity, providing several benefits in comparison to the traditional 2D CAD process. This book takes a hands-on approach to implementing this new methodology effectively. Complete with step-by-step explanations of essential concepts and practical examples, this Revit book begins by explaining the principles of productivity in Revit and data management for BIM projects. You'll get to grips with the primary BIM documentation to start a BIM project, including the contract, Exchange Information Requirements (EIR), and BIM Execution Plan (BEP/BXP). Later, you'll create a Revit template, start a Revit project, and explore the core functionalities of Revit to increase productivity. Once you've built the foundation, you'll learn about Revit plugins and use Dynamo for visual programming and Power BI for analyzing BIM information. By the end of this book, you'll have a solid understanding of Revit as construction and design software, how to increase productivity in Revit, and how to apply multiple workflows in your project to manage BIM. What you will learn Explore the primary BIM documentation to start a BIM project Set up a Revit project and apply the correct coordinate system to ensure long-term productivity Improve the efficiency of Revit core functionalities that apply to daily activities Use visual programming with Dynamo to boost

productivity and manage data in BIM projects Import data from Revit to Power BI and create project dashboards to analyze data Discover the different Revit plugins for improved productivity, visualization, and analysis Implement best practices for modeling in Revit Who this book is for This book is for architects, designers, engineers, modelers, BIM coordinators, and BIM managers interested in learning Autodesk Revit best practices. Increasing Autodesk Revit Productivity for BIM Projects will help you to explore the methodology that combines information management and research for quality inputs when working in Revit.

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.

Der neue Beton-Kalender 2018 mit den Schwerpunkten Bautenschutz und Brandschutz bietet eine solide Arbeitsgrundlage und ein topaktuelles und verlässliches Nachschlagewerk für die fehlerfreie Planung dauerhafter Betonkonstruktionen. Dabei geht es um den Schutz vor Betonschäden und den Schutz der Bewehrung, um die Sicherstellung der Gebrauchstauglichkeit, sowie um die Abwehr von Gefahren für Füllgüter oder für die Umwelt. Das Buch stellt den neuesten Stand der Technik der Oberflächenschutzsysteme für verschiedene Anforderungen dar und enthält praxisgerechte Hinweise für die Planung wirtschaftlicher Betonkonstruktionen mit minimalen Instandsetzungskosten und nachhaltig wirksamer Schutzmaßnahmen im Bestand. Eine wesentliche Innovationskraft der Betonbauweise besteht in neuen Betonen und in der immer besseren Verarbeitung und Qualitätssicherung, wie z. B. mit dem neuen System der Frischbetonverbundfolie. Diese bietet für wasserundurchlässige Betonbauwerke eine zusätzliche Sicherheit bei besonderen und schwierigen Randbedingungen oder bei hohen Nutzungsanforderungen. Ihre Anwendung dient der Abdichtung erdberührter Bauteile, aber auch z. B. zum Verkleben von Wärmedämmung auf Außenwänden. Zusätzlich werden aktuelle Erläuterungen zur Neuausgabe der DAfStb-Richtlinie WU-Beton aus erster Hand gegeben. Ein Kapitel befasst sich auf aktuellem Stand mit der Bemessung der Schalungssysteme aufgrund von Frischbetondruck. Dabei stellen geneigte oder gekrümmte Betonbauteile hohe Anforderungen an die Schalungstechnik und die

Bauausführung. Ein neues Ingenieurmodell zur Betrachtung der Standsicherheit wird vorgestellt. Zum Schwerpunkt Brandschutz wird das Verhalten von Beton unter Brandbeanspruchung grundlegend zusammengefasst. Außerdem werden ausführliche Hintergrunderläuterungen zum konstruktiven baulichen Brandschutz gegeben. Für die "Heißbemessung" dient eine zusammenfassende Darstellung der wichtigsten bzw. gebräuchlichsten Bemessungstabellen aus DIN EN 1992-1-2 mit NA und aus DIN 4102-4/ DIN 4102-22 (Tabellenverfahren) einschließlich Beispielen dem schnellen Zugriff in der Praxis. Für die tägliche Berechnungs- und Bemessungspraxis wird die nichtlineare Berechnung von Stahlbetonbauteilen und -tragwerken mit Hilfe der FE-Methode übersichtlich aufbereitet. Dabei wird besonderes Gewicht auf praxistaugliche Hinweise für die Vorbereitung und Durchführung solcher Berechnungen gelegt. Die Digitalisierung und der damit verbundene technologische Fortschritt ermöglichen die Einführung von innovativen, digital gestützten Methoden und Werkzeugen. Vor diesem Hintergrund wird bereits seit einigen Jahren Building Information Modeling (BIM) als neue Arbeitsmethodik angewandt. Es werden die mit der Einführung und Nutzung von BIM verbundenen Themenbereiche und Prozesse bezüglich Technologie, Einbindung in das Rechtsgefüge, Standardisierung und Zusammenarbeit übersichtlich dargestellt. Praxisbeispiele und konkrete Projekterfahrungen verdeutlichen die nutzbringende Anwendung. Untersuchungen zur Ermittlung des Ermüdungswiderstandes von Betonbauteilen unter sehr hohen Lastwechselzahlen führten zu neuen Erkenntnissen über die Schädigungsentwicklung - die Thematik wird unter Einbeziehung der Modelle und Bemessungskonzepte grundlegend behandelt. Der Beton-Kalender 2018 ist wiederum eine besondere Fundgrube für Ingenieure in Planungsbüros und in der Bauindustrie.

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.

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.

Questa edizione italiana del testo di riferimento internazionale sul BIM è nata dall'esigenza, condivisa con gran parte del mondo della progettazione e produzione edilizia, di fornire al panorama della committenza pubblica o privata, delle professioni e delle imprese, un volume che fosse capace di mettere in evidenza la grande novità rappresentata dall'adozione del BIM all'interno dei propri processi ideativi, produttivi e gestionali. Nella prima parte il volume affronta le tematiche relative alla gestione contrattuale del settore delle costruzioni e di come l'introduzione del BIM stia spostando l'attenzione degli attori su processi collaborativi; esamina quindi tutto l'apparato tecnologico (hardware e software) in termini di interoperabilità e di piattaforme BIM. I capitoli successivi riguardano rispettivamente i proprietari o i gestori dell'edificio, i progettisti, le imprese esecutrici e infine i subappaltatori e i fornitori; questi capitoli evidenziano gli sforzi richiesti dallo sviluppo del BIM all'interno dei processi aziendali, i

possibili elementi di resistenza, ma soprattutto permettono di intravedere le ottimizzazioni di quegli elementi di scarsa produttività che la gestione tradizionale mantiene fortemente in essere. Un intero nuovo capitolo introduce l'importante punto di vista offerto dagli autori su come il BIM sia destinato a modificare questo settore nel breve e nel medio termine, cui fa seguito un capitolo che presenta il livello di diffusione del BIM nei diversi continenti, riportando una scheda riepilogativa per paese da cui è possibile estrarre sia norme tecniche sia report applicativi o linee guida. L'ultimo capitolo offre, tra gli altri, alcuni casi studio afferenti alla realtà italiana, a riprova dell'attenzione che anche nel nostro Paese va rivolgendosi nei confronti del BIM.

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.

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.

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.

3D GeolInfo 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 GeolInfo held in Istanbul in November 2013.

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.

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

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

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vision of the future research.

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