10 Lean Construction Institute

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Construction Supply Chain Management - Stephen Pryke 2009-09-15
This book provides a unique appraisal of supply chain management(SCM) concepts alongside lessons from industry, observation andanalysis gathered during the first decade of supply chainmanagement strategies in the UK construction industry. The research from leading international academics has been drawntogether with the experience from some of the industry's foremostSCM practitioners to provide both a definition of SCM and anoverview of its development as a strategy for managing constructionprojects. Key case study material -

from Slough Estates to BAA and T5 -illustrates the benefits to the industry of its adoption. Littlehas been written on the application of SCM to construction and thisbook provides an agenda for discussion for both the experiencedresearcher and the industry practitioner by offering a thoroughgrounding in its principles as well as an illustration of SCM as amethodology for industry. Construction Supply Chain Management studies makes animportant contribution to the debate on innovative systems andtheir significance in increasingly complex constructionprojects.

Lean Construction - Luis Alarco?n 1997

The application of a new production philosophy, leading to "lean production" (using less space, less human effort, less product development time etc), is expected to change almost every industry and bring about radical changes in the organization of work. This text examines this process.

Integrating Project Delivery - Martin Fischer 2017-03-27

A revolutionary, collaborative approach to design and construction project delivery Integrating Project Delivery is the first book-length discussion of IPD, the emergent project delivery method that draws on each stakeholder's unique knowledge to address problems before they occur. Written by authors with over a decade of research and practical experience, this book provides a primer on IPD for architects, designers, and students interested in this revolutionary approach to design and construction. With a focus on IPD in everyday operation, coverage includes a detailed explanation and analysis of IPD guidelines, and case studies that show how real companies are applying these guidelines on real-world projects. End-of-chapter questions help readers quickly review what they've learned, and the online forum allows them to share their insights and ideas with others who either have or are in the process of implementing IPD themselves.

Integrating Project Delivery brings together the owners, architect, engineers, and contractors early in the development stage to ensure that problems are caught early, and to address them in a collaborative way. This book describes the parameters of this new, more efficient approach, with expert insight on real-world implementation. Compare traditional procurement with IPD Understand IPD guidelines, and how they're implemented Examine case studies that illustrate everyday applications Communicate with other IPD adherents in the online forum The IPD approach revolutionizes not only the workflow, but the relationships between the stakeholders – the atmosphere turns collaborative, and the team works together toward a shared goal instead of viewing one another as obstructions to progress. Integrated Project Delivery provides a deep exploration of this approach, with practical guidance and expert insight.

Value and Waste in Lean Construction - Fidelis A. Emuze 2015-11-06

Non-value adding activities are otherwise known as 'waste' in the lean construction lexicon. The aim of this collection is to build a common understanding of the role and contribution of value-adding activities in achieving stipulated objectives and continuous improvement in construction projects, and to contrast this with waste. Although the lean approach to construction projects has been widely covered, this is the first book that explicitly provides the link between value and waste in the Architecture, Engineering and Construction (AEC) sector. This internationally researched collection seeks to create a paradigm shift, which will shape work processes and future directions for how value is conceptualized and operationalized in both the project management and business aspects of construction. The readers will gain an understanding of: The value-adding paradigm in construction How to make value-supporting decisions Waste identification and control in practice With contributions from South Africa, Brazil, Norway, and the USA, the implications of this book are globally relevant. This is essential reading for all higher level students of construction management and economics, and all professionals interested in value management.

The Lean Office - Productivity Press Development Team 2005-01-31

The Lean Office: Collected Practices and Cases is a compilation of articles previously published in the Productivity Press newsletter, Lean Manufacturing Advisor. These articles discuss lean implementations in non-manufacturing operations, from design to processing invoices to customer service. Most articles are written in the form of case studies. Highlights include— Practical, in-depth description of lean implementation, written in a conversational, easy-to-read style A large quantity of case studies unavailable from any other single source Responds to your desire for real-world lean office information

Building Lean, Building BIM - Rafael Sacks 2017-12-06

Building Lean, Building BIM is the essential guide for any construction company that wants to implement Lean Construction and Building Information Modelling (BIM) to gain a strategic edge over their competition. The first of its kind, the book outlines the principles of Lean, the functionality of BIM, and the interactions between the two, illustrating them through the story of how Tidhar Construction has implemented Lean Construction and BIM in a concerted effort over four years. Tidhar is a small-to-medium-sized construction company that pioneered a way of working that gave it a profit margin unheard of in its market. The company's story serves as a case study for explanation of the various facets of Lean Construction and BIM. Each chapter defines a principle of Lean and/or BIM, describes the achievements and failures in Tidhar's implementation based on the experiences of the key people involved, and reviews the relevant background and theory. The implementation at Tidhar has not been a pure success, but by examining their motives alongside their achievements and failures, readers will learn about what pitfalls and pinnacles to expect. A number of chapters also compare the experience of Tidhar with those of other companies who are leaders in their fields, such as Skanska and DPR. This book is highly relevant and useful to a wide range of readers from the construction industry, especially those who are frustrated with the inefficiencies in their companies and construction projects. It is also essential reading for Lean and BIM enthusiasts, researchers and students from a variety of industries and backgrounds.

Project Management for Engineering, Business and Technology - John M. Nicholas 2017-01-20

Project Management for Engineering, Business and Technology, 5th edition, addresses project management across all industries. First covering the essential background, from origins and philosophy to methodology, the bulk of the book is dedicated to concepts and techniques for practical application. Coverage includes project initiation and proposals, scope and task definition, scheduling, budgeting, risk analysis, control, project selection and portfolio management, program management, project organization, and all-important "people" aspects—project leadership, team building, conflict resolution and stress management. The Systems Development Cycle is used as a framework to discuss project management in a variety of situations, making this the go-to book for managing virtually any kind of project, program or task force. The authors focus on the ultimate purpose of project management—to unify and integrate the interests, resources and work efforts of many stakeholders, as well as the planning, scheduling, and budgeting needed to accomplish overall project goals. This new edition features: Updates throughout to cover the latest developments in project management methodologies New examples and 18 new case studies throughout to help students develop their understanding and put principles into practice A new chapter on agile project management and lean Expanded coverage of program management, stakeholder engagement, buffer management, and managing virtual teams and cultural differences in international projects Alignment with PMBOK terms and definitions for ease of use alongside PMI certifications Cross-reference to IPMA, APM, and PRINCE2 methodologies Extensive instructor support materials, including an Instructor’s Manual, PowerPoint slides, answers to chapter review questions, problems and cases, and a test bank of questions. Taking a technical yet accessible approach, Project Management for Business, Engineering and Technology, 5th edition, is an ideal resource and reference for all advanced undergraduate and graduate students in project management courses as well as for practicing project managers across all industry sectors.

Collaboration and Integration in Construction, Engineering, Management and Technology - Syed M. Ahmed 2020-12-21 This book gathers papers presented at the 11th International Conference on Construction in the 21st Century, held in London in 2019. Bringing together a diverse group of government agencies, academics, professionals, and students, the book addresses issues related to construction safety, innovative technologies, lean and sustainable construction, international construction, improving quality and productivity, and innovative materials in the construction industry. In addition, it highlights international collaborations between various disciplines in the areas of construction, engineering, management, and technology. The book demonstrates that, as the industry moves forward in an ever-complex global economy, multi-national collaboration is crucial, and its future growth will undoubtedly depend on international teamwork and alliances.

Building (in) the Future - Phillip Bernstein 2012-04-17

There is no denying the transformational role of the computer in the evolution of contemporary architectural practice. But does this techno-determinist account tell the whole story? Are humans becoming irrelevant to the overall development of the built environment? Bulding (in) the Future confronts these important questions by examining the fundamental human relationships that characterize contemporary design and construction. Thirty-four contributors including designers, engineers, fabricators, contractors, construction managers, planners, and scholars examine how contemporary practices of production are reshaping the design/construction process

Construction Contracting - Richard H. Clough 2015-03-04

The definitive contracting reference for the construction industry, updated and expanded Construction Contracting, the industry's leading professional reference for five decades, has been updated to reflect current practices, business methods, management techniques, codes, and regulations. A cornerstone of the construction library, this text presents the hard-to-find information essential to successfully managing a construction company, applicable to building, heavy civil, high-tech, and industrial construction endeavors alike. A wealth of coverage on the basics of owning a construction business provides readers with a useful "checkup" on the state of their company, and in-depth exploration of the logistics, scheduling, administration, and legal aspects relevant to construction provide valuable guidance on important facets of the business operations. This updated edition contains new coverage of modern delivery methods, technology, and project management. The field of construction contracting comprises the entire set of skills, knowledge, and conceptual tools needed to successfully own or manage a construction company, as well as to undertake any actual project. This book gives readers complete, up-to-date information in all of these areas, with expert guidance toward best practices. Learn techniques for accurate cost estimating and effective bidding Understand construction contracts, surety bonds, and insurance Explore project time and cost management, with safety considerations Examine relevant labor law and labor relations techniques Between codes, standards, laws, and regulations, the construction industry presents many different areas with which the manager needs to be up to date, on top of actually doing the day-to-day running of the business. This book provides it all under one cover – for the project side and the business side, Construction Contracting is a complete working resource in the field or office.

Project Management for Construction - Chris Hendrickson 1989

Total Construction Management - John S. Oakland 2017-02-17

A convergence of lean management and quality management thinking has taken place in organizations across many industries, including construction. Practices in procurement, design management and construction management are all evolving constantly and understanding these changes and how to react is essential to successful management. This book provides valuable insights for owners, designers and constructors in the construction sector. Starting by introducing the language of total quality, lean and operational excellence, this book takes the reader right up to the latest industry practice in this sector, and demonstrates the best way to manage change. Written by two of the world's leading experts, Total Construction Management: Lean quality in construction project delivery offers a clearly structured introduction to the most important management concepts and practices used in the global construction industry today. This authoritative book covers issues such as procurement, BIM, all forms of waste, construction safety, and design and construction management, all explained with international case studies. It is a perfect guide for managers in all parts of the industry, and ideal for those preparing to enter the industry.

Architectural Management - Stephen Emmitt 2009-04-13

Architectural Management represents the state of the art of research and practice in the field and includes contributions from leading international figures. The book looks back at over a decade of research into architectural management, considers the present challenges and opportunities, and looks to the future. You'll find a review of earlier work and developments as well as a focus on new research areas. The book is divided into six sections representing topical themes, each section contains two research-based chapters and one practical case study. Case studies are from six European countries - Belgium, Denmark, Finland, The Netherlands, Norway, and the UK.

Lean Manufacturing -

Lean Architecture - Michael F. Czap 2021-04-06

Apply lean principles to your next architectural project and improve your bottom line with the help of this practical volume Lean Architecture: Excellence in Project Delivery shows readers a path to improve their project delivery via the application of lean concepts and process management. Authors Michael Czap and Gregory Buchanan challenge readers to reexamine their approach to architectural practice and projects by presenting a unique and compelling alternative. Lean Architecture details the crucial metrics and implementation strategies that combine to improve the efficiency and profitability of projects taken on by firms of all sizes. Readers will learn to: Maximize the use of their resources to deliver superior results in less time Minimize waste, cost, and inefficiency in their firm's operations Move between radically different project scales while retaining efficient and effective processes Lean Architecture is perfect for firm leaders, project managers, and project architects who seek to improve their ability to deliver better results while reducing their cost base. Students, designers and emerging professionals will also benefit by learning key principles for more effectively executing design ideas.

Ludic, Co-design and Tools Supporting Smart Learning Ecosystems and Smart Education - Óscar Mealha 2020-09-09

This book presents papers from the 5th International Conference on Smart Learning Ecosystems and Regional Development, which promotes discussions on R&D work, policies, case studies, entrepreneur experiences, with a particular focus on understanding the relevance of smart learning ecosystems for regional development and social innovation, and how the effectiveness of the relation of citizens and smart ecosystems can be boosted. The book explores how technology-mediated instruments can foster citizens' engagement with learning ecosystems and territories, providing insights into innovative human-centric design and development models/techniques, education/training practices, informal social learning, innovative citizen-driven policies, and technology-mediated experiences and their impact. As such, it will inspire the social innovation sectors and ICT, as well as economic development and deployment strategies and new policies for smarter proactive citizens.

This is Lean - Niklas Modig 2012

This book is relevant to any kind of business and is currently being used by a number of multi-national companies, including AstraZeneca, Ericsson, Scania and Volvo.

Advances in Production Management Systems. Artificial Intelligence for Sustainable and Resilient Production

Systems - Alexandre Dolgui 2021-08-31 The five-volume set IFIP AICT 630, 631, 632, 633, and 634 constitutes the refereed proceedings of the International IFIP WG 5.7 Conference on Advances in Production Management Systems, APMS 2021, held in Nantes, France, in September 2021.* The 378 papers presented were carefully reviewed and selected from 529 submissions. They discuss artificial intelligence techniques, decision aid and new and renewed paradigms for sustainable and resilient production systems at four-wall factory and value chain levels. The papers are organized in the following topical sections: Part I: artificial intelligence based optimization techniques for demand-driven manufacturing; hybrid approaches for production planning and scheduling; intelligent systems for manufacturing planning and control in the industry 4.0; learning and robust decision support systems for agile manufacturing environments; low-code and model-driven engineering for production system; meta-heuristics and optimization techniques for energy-oriented manufacturing systems; metaheuristics for production systems; modern analytics and new AI-based smart techniques for replenishment and production planning under uncertainty; system identification for manufacturing control applications; and the future of lean thinking and practice Part II: digital transformation of SME manufacturers: the crucial role of standard; digital transformations towards supply chain resiliency; engineering of smart-product-service-systems of the future; lean and Six Sigma in services healthcare; new trends and challenges in reconfigurable, flexible or agile production system; production management in food supply chains; and sustainability in production planning and lot-sizing Part III: autonomous robots in delivery logistics; digital transformation approaches in production management; finance-driven supply chain; gastronomic service system design; modern scheduling and applications in industry 4.0; recent advances in sustainable manufacturing; regular session: green production and circularity concepts; regular session: improvement models and methods for green and innovative systems; regular session: supply chain and routing management; regular session: robotics and human aspects; regular session: classification and data management methods; smart supply chain and production in society 5.0 era; and supply chain risk management under coronavirus Part IV: AI for resilience in global supply chain networks in the context of pandemic disruptions; blockchain in the operations and supply chain management; data-based services as key enablers for smart products, manufacturing and assembly; data-driven methods for supply chain optimization; digital twins based on systems engineering and semantic modeling; digital twins in companies first developments and future challenges; human-centered artificial intelligence in smart manufacturing for the operator 4.0; operations management in engineer-to-order manufacturing; product and asset life cycle management for smart and sustainable manufacturing systems; robotics technologies for control, smart manufacturing and logistics; serious games analytics: improving games and learning support; smart and sustainable production and supply chains; smart methods and techniques for sustainable supply chain management; the new digital lean manufacturing paradigm; and the role of emerging technologies in disaster relief operations: lessons from COVID-19 Part V: data-driven platforms and applications in production and logistics: digital twins and AI for sustainability; regular session: new approaches for routing problem solving; regular session: improvement of design and operation of manufacturing systems; regular session: crossdock and transportation issues; regular session: maintenance improvement and lifecycle management; regular session: additive manufacturing and mass customization; regular session: frameworks and conceptual modelling for systems and services efficiency; regular session: optimization of production and transportation systems; regular session: optimization of supply chain agility and reconfigurability; regular session: advanced modelling approaches; regular session: simulation and optimization of systems performances; regular session: AI-based approaches for quality and performance improvement of production systems; and regular session: risk and performance management of supply chains *The conference was held online.

The End of Project Overruns - Robert M. Patty 2009-11

Applying the principles in this book unleashes ingenuity that achieves, solidifies and perpetuates a new performance culture of mutual benefit. In this culture, project teams will prepare their work in task packages and enable workflow necessary to leave inefficiency of time and resource, literally, no place to hide. Project examples will help teams implement the principles that shorten cycle times, eliminate error, improve quality and reduce costs to succeed in meeting project commitments. Emerging Lean enterprise relationships between clients, EPC contractors and their entire supply chain will advance what constitutes the new, market-differentiating performance of individuals, project teams and companies - justifying high levels of trust and inter-organizational efforts to improve. Client executives will learn to recognize root causes of risk and sources of excellence to mitigate them. Well-developed strategic improvement is often constrained because the traditional way - current means and methods - fit squarely in everyone's comfort zone. By learning to ask the right questions, top-client leadership will soon render overruns from the best traditional systems as "not-good enough" and strive for a new level of excellence. EPC executives will better engage creative voices from their best resources and stakeholders to resolve all concerns and define a unified vision for how to deliver on clients' expectations without overruns during capital project delivery. Lean methods will effectively assure that vision, principles and best expectations are understood and implemented at the workface. Department, discipline and stakeholder leaders will align and no longer frustrate each other and their clients. They will plan and execute with increased efficiency and effectiveness. Cost reduction will accelerate, retaining only client-valued quality - enabling a nimble response to market opportunities and threats. Project and program managers will confidently accept intense, market-induced cost and schedule-reduction efforts. They will apply new metrics, measure potential and extract, align and pilot improvements. They will make workface progress transparent to simplify resource balancing, full utilization and workface flow during all project phases. The results will differentiate team members and their project's performance on the world stage. Project professionals and the skilled labor force will gain confidence to make and keep increasingly difficult commitments and experience thereby increasing opportunity in an organization known for excellence. They will fully engage heart and mind for leaders who expect excellence and they trust to enable and reward best practice performance while they jointly eliminate root causes of problems before they happen. This book guides readers through each essential role for the transformation to Lean…not just at the lowest levels but of the entire business model and all the supporting processes. Resulting market recognition of sustained excellence of people, their systems and they way they work together will create a market-leading force.

Location-Based Management for Construction - Russell Kenley 2006-09-27

With extensive case studies for illustration, this is a practitioner's guide to an entirely new production system for construction management using flowline scheduling. Covering the entire process of presenting a comprehensive management system – from design, through measurement, scheduling, and visualization and control – its emphasis is on reducing cost and increasing quality. Drawing its components together into a management system, the authors not only include theory and explanations of how and why it works, but also examine and present a suite of methods for successful project implementation. Perfect as a how-to guide for researchers and advanced construction students to discover the simple application of the new techniques, and invaluable for acquiring the practical tools for planning and controlling projects.

Construction Project Management - Peter Fewings 2013-05-07

The role of the project manager continues to evolve, presenting new challenges to established practitioners and those entering the field for the first time. This second edition of Peter Fewings' groundbreaking textbook has been thoroughly revised to recognise the increasing importance of sustainability and lean construction in the construction industry. It also tackles the significance of design management, changing health and safety regulation, leadership and quality for continuous improvement of the service and the product. Using an integrated project management approach, emphasis is placed on the importance of effectively handling external factors in order to best achieve an on-schedule, on-budget result, as well as good negotiation with clients and skilled team leadership. Its holistic approach provides readers with a thorough guide in how to increase efficiency and communication at all stages while reducing costs, time and risk. Short case studies are used throughout the book to illustrate different tools and techniques.

Combining the theories underpinning best practice in construction project management, with a wealth of practical examples, this book is uniquely valuable for practitioners and clients as well as undergraduate and graduate students for construction project management.

Lean Construction - Luis Alarcón 1997-01-01

The application of a new production philosophy, leading to "lean production" (using less space, less human effort, less product development time etc), is expected to change almost every industry and bring about radical changes in the organization of work. This text examines this process.

The Lean Builder: A Builder's Guide to Applying Lean Tools in the Field - Joe Donarumo 2019-08-16

Sam Brooks, a young superintendent with ProCon Builders, has been given responsibility for the largest and most complicated project of his career. He struggles with all of the common difficulties in construction -- lack of communication, coordination issues, and other kinds of wasteful occurrences that rob his project of time and money, while leaving him and his team frustrated and overworked. Luckily, his friend, mentor, and co-worker, Alan Phillips, brings the benefit of his experience and his knowledge of Lean Construction tools and processes to help Sam learn valuable skills for improving the operation of his project. Together, Sam and Alan discuss the merits and explore the practical applications of: Daily Huddles Visual Communication The "Eight Wastes" Managing Constraints Pull Planning The Last Planner System(TM) Percent Plan Complete

Handbook for Construction Planning and Scheduling - Andrew Baldwin 2014-06-23

The authoritative industry guide on good practice for planning and scheduling in construction This handbook acts as a guide to good practice, a text to accompany learning and a reference document for those needing information on background, best practice, and methods for practical application. A Handbook for Construction Planning & Scheduling presents the key issues of planning and programming in scheduling in a clear, concise and practical way. The book divides into four main sections: Planning and Scheduling within the Construction Context; Planning and Scheduling Techniques and Practices; Planning and Scheduling Methods; Delay and Forensic Analysis. The authors include both basic concepts and updates on current topics demanding close attention from the construction industry, including planning for sustainability, waste, health and safety and Building Information Modelling (BIM). The book is especially useful for early career practitioners - engineers, quantity surveyors, construction managers, project managers - who may already have a basic grounding in civil engineering, building and general construction but lack extensive planning and scheduling experience. Students will find the website helpful with worked examples of the methods and calculations for typical construction projects plus other directed learning material. This authoritative industry guide on good practice for planning and scheduling in construction is written in a direct, informative style with a clear presentation enabling easy access of the relevant information with a companion website providing additional resources and learning support material. the authoritative industry guide on construction planning and scheduling direct informative writing style and clear presentation enables easy access of the relevant information companion website provides additional learning material.

Integrated Project Delivery - Renee Cheng 2019-04-25

This is a resource prepared for practitioners of Integrated Project Delivery. It is a step by step guide to the implementation of Integrated Project Delivery for new and experienced leaders. It is full of real project examples and pictures.

Lean Project Delivery and Integrated Practices in Modern Construction - Lincoln H. Forbes 2020-03-18

Lean Project Delivery and Integrated Practices in Modern Construction is the new and enhanced edition of the pioneering book Modern Construction by Lincoln H. Forbes and Syed M. Ahmed. This book provides a multi-faceted approach for applying lean methodologies to improve design and construction processes. Recognizing the wide diversity in the landscape of projects, and encompassing private and public sector activity, buildings and infrastructure, the book expands upon the detailed coverage of integrated project delivery and new lean tools and techniques to include: Greater emphasis on the importance of creating a lean culture and the initiatives required to transform the industry; Expanded discussions of the foundational writings in lean construction theory; Exploration of the synergies between "lean" and "green" initiatives; Specific procedures for modifying planning and scheduling activities to improve the performance of the project team; Expanded sections on quality, and topics that have become a part of the lean lexicon, such as Choosing by Advantages, "line of balance"/location-based scheduling, virtual design teams, takt time planning and set-based design; Discussion questions for beginners and advanced lean practitioners; and Improved cross-referencing within the text to help the reader navigate the frameworks, techniques and tools to support the application of lean principles. The techniques described here enhance the use of resources, reducing waste, minimizing delays, increasing quality and reducing overall costs. They enable practitioners to improve the quality of the built environment, secure higher levels of customer/owner satisfaction, and simultaneously improve their profitability. This book is essential reading for all those wanting to be at the forefront of construction management and lean thinking.

Lean Construction - Patricia Tzortzopoulos 2020-02-26

This book collates the main research developments around Lean Construction over the past 25 years with contributions from many seminal authors in the field. It takes stock of developments since the publication of Koskela's (1992) Application of the New Production Philosophy to Construction and, in doing so, challenges current thinking and progress. It also crystallises theoretical conceptualisations and practically situated learning whilst identifying future research challenges, agendas and opportunities for global collaborative actions. The contributors present the development of Lean Construction as a fundamental part of improving construction productivity, quality and delivery of value to clients and users of built infrastructure. In doing so, the book introduces the reader to the foundational principles and theories that have influenced the way we now understand Lean Construction and has provided very useful insights to students, practitioners and researchers on key junctures over the last 25 years. Highlighting the key contemporary developments and using global case study material the chapters demonstrate good practice but also help introduce new thinking to both lay readers and experienced practitioners alike. This book is essential reading for undergraduate and postgraduate students, researchers and practitioners with an interest in Lean Construction and construction management, providing a general understanding of the area, current state of the art knowledge as well as providing an insight into areas for future research.

The Choosing by Advantages Decisionmaking System - Jim Suhr 1999

Choosing By Advantages is a set of concepts and methods designed to make decisionmaking more effective for organizations, communities, and individuals. The system is particularly useful for strategic planners, engineers, consultants, and managers, though anyone, from families to the largest firms, will find the concepts valuable and simple to follow.

The 10th International Conference on Engineering, Project, and Production Management - Kriengsak Panuwatwanich 2020-03-03

This book gathers the proceedings of the EPPM 2019 conference, and highlights innovative work by researchers and practitioners active in various industries around the globe. Recent advances in science and technology have made it possible to seamlessly connect and integrate various elements of engineering systems, and opened the door for innovations that have transformed how we live and work. While these developments have yielded enhanced efficiency and numerous improvements in our current practices, the problems caused by the increased complexity of these integrated systems can be extremely difficult. Accordingly, solving these problems involves applying cross-disciplinary expertise to address the heterogeneity of the various elements inherent in the system. These proceedings address four main themes: (I) Smart and Sustainable Construction, (II) Advances in Project Management Practices, (III) Toward Safety and Productivity Improvement, and (IV) Smart Manufacturing, Design, and Logistics. As such, they will be of interest to and valuable to researchers and practitioners in a range of industries seeking an update on the translational fields of engineering, project, and production management.

Developing Lean Leaders at All Levels - Jeffrey K. Liker 2014-08-14

In Developing Lean Leaders at all Levels we build on the theory in the original book, The Toyota Way to Lean Leadership, and answer the questions: How can I apply this in my organization? What concrete actions can I take to begin the journey of becoming a lean leader? How can I spread this learning to all parts of the organization? What critical tools are needed to turn the theory to practice? This book adds examples from over twenty years of experience by Dr. Liker in working with companies outside of Toyota. The book treats you as a student who will be actively engaged in developing lean leader skills as you read. It acts as a tutorial for beginning the journey.

Modern Construction - Lincoln H. Forbes 2010-10-13

During the past several decades, the manufacturing and service industries significantly increased their levels of productivity, quality, and profitability through the application of process improvement techniques and information technology. Unfortunately, the construction industry lags far behind in the application of performance improvement and optimization techniques, as well as its overall competitiveness. Written by Lincoln H. Forbes and Syed M. Ahmed, both highly regarded for leadership and innovation, Modern Construction: Lean Project Delivery and Integrated Practices offers cutting-edge lean tools and other productive strategies for the management of people and processes in the construction industry. Drs. Forbes and Ahmed focus mainly on lean construction methodologies, such as The Last Planner(R) System, The Lean Project Delivery System (TM), and Integrated Project Delivery(TM). The tools and strategies offered draw on the success of the world-renowned Toyota Production System (TPS) adapted to the construction environment by construction professionals and researchers involved in developing and advocating lean construction methods. The book also discusses why true lean construction can best occur when all the construction stakeholders, owners, designers, constructors, and material suppliers are committed to the concept of optimizing the flow of activities holistically while de-emphasizing their self-interest. The authors also reintroduce process improvement approaches such as TQM and Six Sigma as a foundation for the adoption of lean methodologies, and demonstrate how these methods can improve projects in a so-called traditional environment. The book integrates these methods with emerging interest in "green construction" and the use of information technology and Building Information Modeling (BIM), while recognizing the human element in relation to motivation, safety, and environmental stresses. Written specifically for professionals in an industry that desperately needs to play catch up, the book delineates cutting-edge approaches with the benefit of successful cases and explains how their deployment can improve construction performance and competitiveness.

Managing to Learn - John Shook 2008

"The process by which a company identifies, frames, acts and reviews progress on problems, projects and proposals can be found in the structure of the A3 process ... follow the story of a manager ... and his report ... which will reveal how the A3 can be used as a management process to create a standard method for innovating, planning, problem-solving, and building structures for a broader and deeper form of thinking - a practical and repeatable approach to organizational learning"--Publisher's description.

The Fifth Discipline Fieldbook - Peter M. Senge 2014-05-14

Senge's best-selling The Fifth Discipline led Business Week to dub him the "new guru" of the corporate world; here he offers executives a step-by-step guide to building "learning organizations" of their own.

Design and Construction - Rick Best 2007-06-01

The design and construction of buildings is a lengthy and expensive process, and those who commission buildings are continually looking for ways to improve the efficiency of the process. In this book, the second in the Building in Value series, a broad range of topics related to the processes of design and construction are explored by an international group of experts. The overall aim of the book is to look at ways that clients can improve the value for money outcomes of their decisions to construct buildings. The book is aimed at students studying in many areas related to the construction industry including architecture, construction management, civil engineering and quantity surveying, and should also be of interest to many in the industry including project managers, property developers, building contractors and cost engineers.

Lean Construction Management - Shang Gao 2014-05-23

The book presents a mixed research method adopted to assess and present the Toyota Way practices within construction firms in general and for firms in China specifically. The results of an extensive structured questionnaire survey based on the Toyota Way-styled attributes identified were developed and data collected from building professionals working in construction firms is presented. The quantitative data presented in the book explains the status quo of the Toyota Way-styled practices implemented in the construction industry, as well as the extent to which these attributes were perceived for lean construction management. The book highlights all the actionable attributes derived from the Toyota Way model appreciated by the building professionals, but alerts the readers that some attributes felled short of implementation. Further findings from in-depth interviews and case studies are also presented in the book to provide to readers an understanding how these Toyota Way practices can be implemented in real-life projects. Collectively, all the empirical findings presented in this book can serve to enhance understanding of Toyota Way practices in the lean construction management context. The readers are then guided through to understand the gaps between actual practice and Toyota Way-styled practices, and the measures that they may undertake to circumvent the challenges for implementation. The book also presents to readers the SWOT analysis that addresses the strengths, weaknesses, opportunities and threats towards the implementation of the Toyota Way in the construction industry. The book prescribes the Toyota Way model for use in construction firms to strategically implement lean construction management. The checklist presented in the book enables readers to draw lessons that may be used additionally as a holistic assessment tool for measuring the maturity of firms with respect to their Toyota Way implementation. Consequent to this, management would then be in a better position to develop plans for Toyota Way implementation by focusing on weak areas, strengthening them, and thus increasing the likelihood of success in the implementation of the Toyota Way. In a nutshell, this book provides a comprehensive and valuable resource for firms not only in the construction industry but also businesses outside of the construction sector to better understand the Toyota Way and how this understanding can translate to implementation of lean construction/business management to enhance profitability and survivability in an increasingly competitive global market place.

Lean Project Delivery - David Umstot 2017-08-21 Lean Project Delivery - Building Championship Project Teams This book was inspired by the need for an integrated resource for those in the design and construction industry wanting to better understand how Lean can improve project performance and outcomes. In eye-opening stories and brilliant color graphics, David and Dan share the value proposition and mechanics of Lean design and construction. The authors have broken the book into bite-size units on the origins of Lean, the compelling case for the need for Lean, a history of Lean as it has evolved in the AEC industry, Lean thinking and various Lean tools with specific applications and examples in design and construction, making learning Lean fun, and how to effectively establish an organizational and project culture that will enable and sustain Lean practices. In the spirit of Lean visual management, this book is purposefully designed with color illustrations. Whether you are a design professional, site superintendent, project manager, or C-suite executive, this book will help all understand how Lean can make your team perform at a championship level.

The Design Manager's Handbook - John Eynon 2013-01-23

Design management as a recognised role in the built environmentindustry is relatively new, initially arising from the need forbetter co-ordination and delivery of design information from designteams to main contractors - particularly important as procurementroutes involving contractor led design have become much morecommonplace. The advent of design packages driven by specialistsub-contractors has also increased the need for co-ordination andmanagement of the design process. With the growing complexity ofconstruction projects, effective design management is increasinglycentral to project success. BIM, as it gains acceptance across theindustry will undoubtedly have a huge impact on project deliveryprocess and the role of the Design Manager. The CIOB Design Manager’s Handbook covers subjectssuch as design process and management tools, the role of the DesignManager, value management and innovation, procurement routes andimplications, people dynamics, and factors that will affect thedevelopment of the Design Manager’s role in the future,including BIM. It will ensure Design Managers understand theprocesses, tools and skills that are required to be successful inthe role, and will assist them in delivering real value to complexconstruction projects. Written for both the Design Manager practitioner and students onconstruction related degree courses, anyone interested inconstruction based design management will also find the bookuseful.

Lean Project Delivery and Integrated Practices in Modern Construction - Lincoln H. Forbes 2020-04-01

Lean Project Delivery and Integrated Practices in Modern Construction is the new and enhanced edition of the pioneering book Modern Construction by Lincoln H. Forbes and Syed M. Ahmed. This book provides a multi-faceted approach for applying lean methodologies to improve design and construction processes. Recognizing the wide diversity in the landscape of projects, and encompassing private and public sector activity, buildings and infrastructure, the book expands upon the detailed coverage of integrated project delivery and new lean tools and techniques to include: Greater emphasis on the importance of creating a lean culture and the initiatives required to transform the industry; Expanded discussions of the foundational writings in lean construction theory; Exploration of the synergies between "lean" and "green" initiatives; Specific procedures for modifying planning and scheduling activities to improve the performance of the project team; Expanded sections on quality, and topics that have become a part of the lean lexicon, such as Choosing by Advantages, "line of balance"/location-based scheduling, virtual design teams, takt time planning and set-based design; Discussion questions for beginners and advanced lean practitioners; and Improved cross-referencing within the text to help the reader navigate the frameworks, techniques and tools to support the application of lean principles. The techniques described here enhance the use of resources, reducing waste, minimizing delays, increasing quality and reducing overall costs. They enable practitioners to improve the quality of the built environment, secure higher levels of customer/owner satisfaction, and simultaneously improve their profitability. This book is essential reading for all those wanting to be at the forefront of construction management and lean thinking.

Advancing the Competitiveness and Efficiency of the U.S. Construction Industry - National Research Council 2009-11-09

Construction productivity--how well, how quickly, and at what cost buildings and infrastructure can be constructed--directly affects prices for homes and consumer goods and the robustness of the national economy. Industry analysts differ on whether construction industry productivity is improving or declining. Still, advances in available and emerging technologies offer significant opportunities to improve construction efficiency substantially in the 21st century and to help meet other national challenges, such as environmental sustainability. Advancing the Competitiveness and Efficiency of the U.S. Construction Industry identifies five interrelated activities that could significantly improve the quality, timeliness, cost-effectiveness, and sustainability of construction projects. These activities include widespread deployment and use of interoperable technology applications; improved job-site efficiency through more effective interfacing of people, processes, materials, equipment, and information; greater use of prefabrication, preassembly, modularization, and off-site fabrication techniques and processes; innovative, widespread use of demonstration installations; and effective performance measurement to drive efficiency and support innovation. The book recommends that the National Institute of Standards and Technology work with industry leaders to develop a collaborative strategy to fully implement and deploy the five activities

Lean Construction - Patricia Tzortzopoulos 2020-02-26

This book collates the main research developments around Lean Construction over the past 25 years with contributions from many seminal authors in the field. It takes stock of developments since the publication of Koskela's

(1992) Application of the New Production Philosophy to Construction and, in doing so, challenges current thinking and progress. It also crystallises theoretical conceptualisations and practically situated learning whilst identifying future research challenges, agendas and opportunities for global collaborative actions. The contributors present the development of Lean Construction as a fundamental part of improving construction productivity, quality and delivery of value to clients and users of built infrastructure. In doing so, the book introduces the reader to the foundational principles and theories that have influenced the way we now understand Lean Construction and has provided very useful insights to students, practitioners and researchers on key junctures over the last 25 years. Highlighting the key contemporary developments and using global case study material the chapters demonstrate good practice but also help introduce new thinking to both lay readers and experienced practitioners alike. This book is essential reading for undergraduate and postgraduate students, researchers and practitioners with an interest in Lean Construction and construction management, providing a general understanding of the area, current state of the art knowledge as well as providing an insight into areas for future research.

