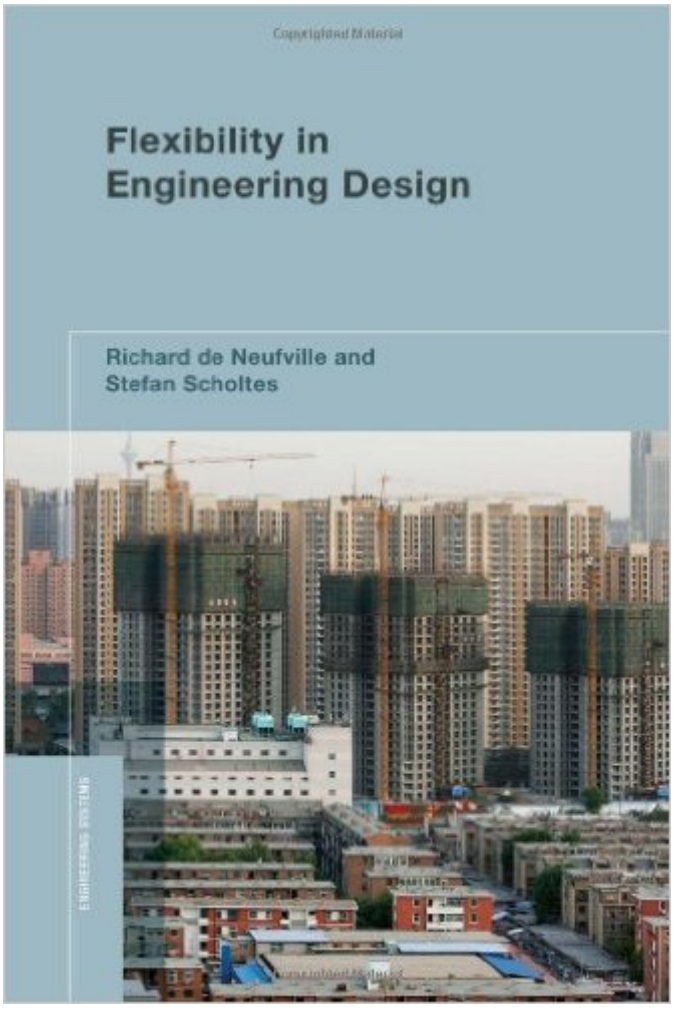
The book was found

Flexibility In Engineering Design (Engineering Systems)



PDF
Adobe
DOWNLOAD EBOOK

Synopsis

Project teams can improve results by recognizing that the future is inevitably uncertain and that by creating flexible designs they can adapt to eventualities. This approach enables them to take advantage of new opportunities and avoid harmful losses. Designers of complex, long-lasting projects -- such as communication networks, power plants, or hospitals -- must learn to abandon fixed specifications and narrow forecasts. They need to avoid the "flaw of averages," the conceptual pitfall that traps so many designs in underperformance. Failure to allow for changing circumstances risks leaving significant value untapped. This book is a guide for creating and implementing value-enhancing flexibility in design. It will be an essential resource for all participants in the development and operation of technological systems: designers, managers, financial analysts, investors, regulators, and academics.The book provides a high-level overview of why flexibility in design is needed to deliver significantly increased value. It describes in detail methods to identify, select, and implement useful flexibility. The book is unique in that it explicitly recognizes that future outcomes are uncertain. It thus presents forecasting, analysis, and evaluation tools especially suited to this reality. Appendixes provide expanded explanations of concepts and analytic tools.

Book Information

Series: Engineering Systems
Hardcover: 312 pages
Publisher: The MIT Press (August 12, 2011)
Language: English
ISBN-10: 0262016230
ISBN-13: 978-0262016230
Product Dimensions: 6 x 0.5 x 9 inches
Shipping Weight: 1.2 pounds (View shipping rates and policies)
Average Customer Review: 5.0 out of 5 starsÂ Â See all reviewsÂ (4 customer reviews)
Best Sellers Rank: #911,891 in Books (See Top 100 in Books) #85 inÂ Books > Engineering & Transportation > Engineering > Industrial, Manufacturing & Operational Systems > Economics #109 inÂ Books > Engineering & Transportation > Engineering > Design #274 inÂ Books > Science & Math > Physics > System Theory

Customer Reviews

Planning for large-scale infrastructure systems is a problem as monumental as the systems themselves. De Neufville and Scholtes present a powerful and innovative new way of thinking about

this persistent challenge. It should compel any engineer, planner, or policy maker involved with mega-projects to rethink how we conceive future systems and how we develop strategies for their realization. It is a significant advance. (Gregory Baecher, Glenn L. Martin Institute Professor of Engineering, University of Maryland)De Neufville and Scholtes convincingly show us that enhancing flexibility in engineering design can help us a lot to improve our performance. Anchored in their research, the book is an easy read because both authors are also excellent pedagogues who take the reader step by step through some difficult materials. This book is a real must read for anybody involved in big scale projects. (Arnoud De Meyer, President and Professor, Singapore Management University)This book is an important reference for those involved in planning infrastructure or building projects. It uniquely tackles the fact that uncertainty hangs over our planning of infrastructure development. Frequently we don't appreciate that building flexibility into future use may create the best value. The authors bring together the theory with practical examples to create a book which will help to reshape the thinking behind our approach to investment in our built environment. (Michael Haigh, Managing Director, Mott MacDonald Middle East and South Asia)Forecasts are a necessary part of planning major capital projects. The problem is these forecasts are almost always wrong. It is very important to recognize this truth and even more important to shield projects from the potential downsides of an uncertain future by building in flexibility. Professors de Neufville and Scholtes have provided a clear and practical guide, well supported by specific examples, on the science of identifying, justifying, and implementing flexibility in design. (Lloyd McCoomb, President and Chief Executive Officer, Toronto Pearson International Airport)With this book, de Neufville and Scholtes have tackled the issue of flexibility in engineering design head-on, producing an essential companion for current and future engineering leaders. It is both a motivating and practical analysis of the power of flexibility to intelligently manage risks and seize the benefits that, in my long experience, are inherent in all major projects. (Ray O'Rourke, KBE, Founder and Chairman, The Laing O'Rourke Group)

Richard de Neufville is Professor of Engineering Systems and Civil and Environmental Engineering at MIT. He was Founding Chairman of the MIT Technology and Policy Program. Stefan Scholtes is Dennis Gillings Professor of Health Management and Academic Director of the Centre for Health Leadership and Enterprise at the Judge Business School, University of Cambridge.

Download to continue reading...

Flexibility in Engineering Design (Engineering Systems) The Stretch Workout Plan: Simple Exercises to Improve Flexibility, Increase Mobility and Relieve Tension Somatics: Somatics 101:

Somatics - For: Flexibility, Posture, Pain Management & Movement (Posterior Chain, Hips, Chi Kung, Craniosacral, Neurosculpting, Self Adjusting, Chronic Pain) Introduction to Yoga and Pilates - Improve Your Flexibility, Increase Mobility and Relieve Tension: Learn How To Transform Your Life (Maximize Your Human Potential) Resistance Flexibility 1.0: Becoming flexible in all ways... RUNNING: STRETCHING: Pre and Post Running Stretching Exercises (Flexibility, Warm Ups, Cool Downs, Fitness, Strength) Engineering a Safer World: Systems Thinking Applied to Safety (Engineering Systems) C#: Design Patterns: The Easy Way Standard Solutions for Everyday Programming Problems; Great for: Game Programming, System Administration, App Programming, ... & Database Systems (Design Patterns Series) C#: Design Patterns: The Easy Way Standard Solutions for Everyday Programming Problems; Great for: Game Programming, System Administration, App ... & Database Systems (Design Patterns Series) The Engineering Design of Systems Frontend Architecture for Design Systems: A Modern Blueprint for Scalable and Sustainable Websites Communications for Control in Cyber Physical Systems: Theory, Design and Applications in Smart Grids Real-Time Software Design for Embedded Systems Tall Building Design: Steel, Concrete, and Composite Systems Digital Design Using VHDL: A Systems Approach Real-Time Embedded Components and Systems with Linux and RTOS (Engineering) Energy Systems Engineering: Evaluation and Implementation, Third Edition Getting Started With UAV Imaging Systems: A Radiometric Guide (Press Monograph) Create Your Own Operating System: Build, deploy, and test your very own operating systems for the Internet of Things and other devices Cyber-security of SCADA and Other Industrial Control Systems (Advances in Information Security)

Dmca