

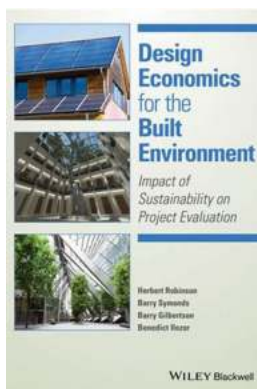
# Design Economics For The Built Environment: Maximizing Value and Sustainability

In today's rapidly evolving world, the built environment plays a crucial role in our daily lives. Whether it's our homes, offices, or public spaces, the design and construction of these spaces have a significant impact on our well-being, productivity, and overall quality of life. However, the process of designing and building these spaces is not only dependent on aesthetic considerations but also on economic factors. This is where the concept of design economics comes into play.

Design economics is a multidisciplinary field that combines aspects of architecture, engineering, finance, and management to optimize the economic value and sustainability of the built environment. It seeks to strike a balance between functionality, aesthetics, cost-effectiveness, and environmental impact.

## The Role of Design Economics in Building Projects

Design economics begins with the initial concept and continues throughout the entire lifecycle of a building project. It involves making informed decisions at every stage to ensure the optimal allocation of resources and the achievement of desired outcomes.



## Design Economics for the Built Environment: Impact of Sustainability on Project Evaluation

by Barry Gilbertson (1st Edition, Kindle Edition)

★★★★★ 5 out of 5

Language : English

File size : 45840 KB

Text-to-Speech : Enabled

Enhanced typesetting : Enabled

Print length : 411 pages  
Lending : Enabled  
Screen Reader : Supported



One of the primary goals of design economics is to maximize value for end-users and stakeholders. This includes considering factors such as the functionality and flexibility of the space, the comfort and well-being of its occupants, and the long-term maintenance and operational costs.

Another crucial aspect of design economics is sustainability. By adopting sustainable design practices, buildings can reduce energy and water consumption, minimize waste generation, and create a healthier and more environmentally friendly environment for occupants. This not only benefits the planet but also helps to lower costs in the long run.

## **The Key Principles of Design Economics**

Several key principles guide the practice of design economics in the built environment:

### **1. Life Cycle Costing**

Life cycle costing involves assessing the costs associated with a building project over its entire lifespan, including construction, operation, maintenance, and disposal. By considering the long-term costs, designers and project managers can make more informed decisions that optimize value and minimize financial risks.

### **2. Value Engineering**

Value engineering aims to increase the value of a building project by identifying and eliminating unnecessary costs without compromising functionality or quality. It involves examining alternative materials, construction methods, and design options to achieve the best balance between cost and value.

### **3. Whole-Life Performance**

Whole-life performance focuses on optimizing a building's performance across its entire lifespan. This includes aspects such as energy efficiency, durability, adaptability, and ease of maintenance. By considering how a building will perform in the long run, designers can design spaces that are more sustainable and cost-effective.

### **4. Cost Planning**

Cost planning involves forecasting and managing costs throughout the design and construction process. It requires a thorough understanding of project requirements, market prices, and budget constraints. By proactively managing costs, design economics ensures that projects stay within budget without compromising quality or functionality.

## **The Benefits of Incorporating Design Economics into the Built Environment**

The integration of design economics in the built environment offers various benefits:

### **1. Cost Savings**

By considering the economic implications at every stage, design economics helps optimize resource allocation, minimize waste, and reduce operational costs. This leads to significant cost savings throughout the building's lifecycle.

## **2. Increased Value**

Design economics ensures that the final product meets the needs and expectations of end-users and stakeholders. By maximizing functionality, aesthetics, and sustainability, buildings that embody good design economics principles tend to possess higher value, both in monetary terms and user satisfaction.

## **3. Enhanced Sustainability**

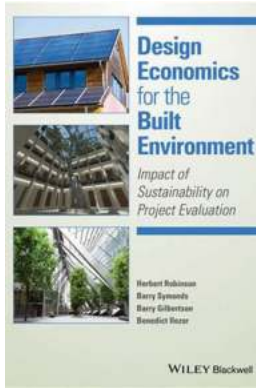
Through sustainable design practices, design economics promotes the efficient use of resources, reduces environmental impact, and creates healthier spaces for occupants. This contributes to the overall sustainability of the built environment and helps preserve natural resources for future generations.

## **4. Improved Decision-Making**

By providing a structured framework for evaluating the economic viability of design choices, design economics facilitates informed decision-making. It enables stakeholders to understand the potential economic consequences and benefits of their decisions, leading to better project outcomes.

Design economics plays a crucial role in the built environment by integrating economic considerations into the design and construction processes. By optimizing value and sustainability, it enhances the quality of our built spaces and creates long-lasting benefits for both individuals and society as a whole. Embracing design economics principles is essential to ensure that the built environment meets the evolving needs of our contemporary world while also safeguarding the well-being of our planet.

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The drive towards environmentally friendly buildings and infrastructure has led to a growing interest in providing design solutions underpinned by the core principles of sustainability to balance economic, social and environmental factors.

Design Economics for the Built Environment: Impact of sustainability on project evaluation presents new directions, reflecting the need to recognise the impact of climate change and the importance of sustainability in project evaluation. The aim is to provide a new approach to understanding design economics in the context of the changing policy environment, legislative and regulatory framework, and increasing economic, environmental and social pressure as result of the sustainability agenda.

The book follows a structured approach from theories and principles in the earlier chapters, to the practical applications and emerging techniques focusing on value and social, economic and environmental considerations in making design decisions. It starts with the policy context, building on various theories and principles such as, capital cost, value of design and resource-based theories, the new rules of measurement (NRM) to explore cost planning, the relationship between height and costs, key socio-economic and environmental variables for

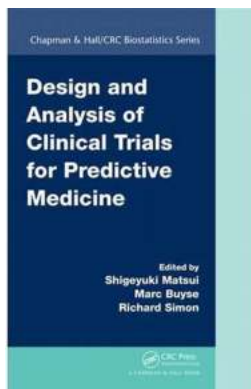
design appraisal, eco-cost/value ratio (EVR), whole life theory and the treatment of carbon emission as external costs, productivity and efficiency, fiscal drivers and legal framework for carbon reduction, procurement and allocation of risks in contracts.

Case studies, practical examples and frameworks throughout reinforce theories and principles and relate them to current practice. The book is essential reading for postgraduate students in architecture, building and quantity surveying and is also a valuable resource for academics, consultants and policy-makers in the built environment.



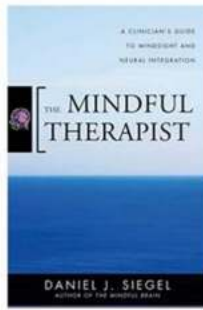
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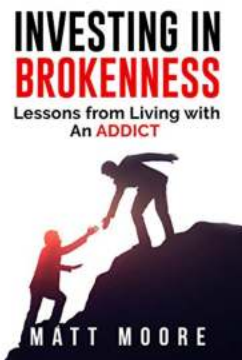
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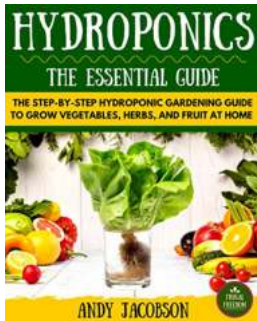
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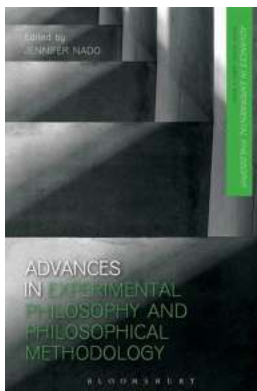
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