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Factors Affecting Design Economics of Buildings

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ABSTRACT

Design economics play an essential role in the success of construction projects, as it involves a thorough analysis of the costs and benefits associated with design choices to make informed decisions while adhering to budget constraints. Various factors influence design economics, including policy attributes, location, building characteristics such as building shape, area, ceiling height, building height and openings, construction methods, finishing systems, materials, labor and ongoing operational costs. The scale of a construction project directly impacts its design economics, with larger projects necessitating more resources and specialized materials. While traditional construction methods may be readily available, they can be time-consuming and labor-intensive. On the other hand, innovative construction techniques offer advantages such as fast construction time, reduced labor costs and enhanced quality control.

The study highlights the challenges posed by project delays and cost escalations, which can deter stakeholders from embarking on new initiatives. To address these issues, the research aims to identify the key factors that contribute to cost reduction in projects, including efficiency improvements, life cycle cost analysis, standardization of processes, technological innovations and the optimization of design economics to enhance project performance while minimizing costs. The research presents a methodology for managing these factors, emphasizing the importance of evaluating cost reduction strategies during the architectural design phases to enhance the project performance and achieve the lowest facility cost without compromising on quality.

In the realm of housing design economics, factors such as state policies, market conditions, economic trends and social considerations play a significant role. Understanding and navigating these factors are essential for architects, engineers and project managers to make informed design decisions and ensure economic viability. By adhering to established standards and guidelines, stakeholders can gain insights into the intricate interplay of factors influencing design economics and strive to achieve the highest level of performance at the lowest possible cost. This comprehensive approach highlights the significance of optimizing design decisions to achieve economic efficiency while maintaining high performance standards in construction projects.