

# Exploration of BIM Software Applications for Improving Efficiency and Reducing Costs: Post-print

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## Abstract

The construction industry is undergoing a historic transformation through digitalization, and BIM (Building Information Modeling) technology, leveraging its characteristics of visualization, collaboration, and data-driven approaches, has become a core tool for enterprises to achieve cost reduction and efficiency enhancement. This paper systematically analyzes the innovative value of BIM technology in design optimization, cost control, construction coordination, and operation and maintenance management, by integrating practical application cases of mainstream BIM software such as Glodon, Pinming, and Chenxi, including projects like stadium renovation, international duty-free city, and standardized factory buildings. Through quantitative data and process decomposition, it reveals how BIM technology transitions from “tool application” to “value creation”, providing practical references for construction enterprises to deepen their digital transformation.

## Full Text

### Preamble

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### Abstract

The construction industry is undergoing a historic digital transformation. BIM (Building Information Modeling) technology, characterized by its visualization,

collaboration, and data-driven capabilities, has become a core tool for enterprises to achieve cost reduction and efficiency enhancement. This paper systematically analyzes the innovative value of BIM technology in design optimization, cost control, construction coordination, and operation and maintenance management, drawing on practical application cases of mainstream BIM software such as Glodon, Pinming, and Chenxi across projects including stadium renovation, international duty-free city, and standardized factory buildings. Through quantitative data and process breakdown, it reveals how BIM technology advances from “tool application” to “value creation,” providing practical guidance for construction enterprises to deepen their digital transformation.

**Keywords:** BIM technology; cost reduction and efficiency enhancement; intelligent construction; value creation; refined management

*Note: Figure translations are in progress. See original paper for figures.*

*Source: ChinaXiv — Machine translation. Verify with original.*