

Sustainable Cost Control for Green Buildings in Sri Lanka: Integrating Life-Cycle Value and Environmental Performance

I. G. W. R. Jayaweera^{1*} and K. A. P. B. K. Arachchi¹

¹*Department of Quantity Surveying, Faculty of Built Environment and Spatial Sciences, General Sir John Kotelawala Defence University, Southern Campus, Sri Lanka*

**Corresponding author: vimansijayaweera@gmail.com*

DOI: <https://doi.org/10.31705/ICEWSE.2026.96>

Abstract

The construction sector plays a significant role in resource consumption and environmental impacts, creating a growing need for cost management approaches that support sustainable and environmentally responsible building development. Green buildings can contribute to improved resource efficiency and long-term environmental performance; however, higher perceived initial costs and inadequate cost-control practices remain important challenges to their wider adoption in Sri Lanka. This study investigates industry perspectives on the importance of sustainable cost control in Sri Lanka's green building sector, with particular emphasis on lifecycle costing, environmental performance, procurement practices, and long-term value creation. A mixed-method research approach was adopted, combining a questionnaire survey with semi-structured interviews involving construction industry professionals. Quantitative data were analyzed using descriptive statistics and the Relative Importance Index (RII), while interview responses were examined through thematic analysis. The findings indicate that green building cost control is perceived as more challenging than conventional cost management practices, while sustainability considerations are frequently incorporated at later stages of the project. The findings further highlight limitations in the application of lifecycle costing, integration of environmental objectives into cost planning, procurement practices, and institutional and regulatory support. Industry perspectives also emphasize the importance of early collaboration among quantity surveyors, designers, and other project stakeholders, together with the use of BIM and digital technologies to integrate cost and environmental information. The study highlights the need to shift from short-term initial-cost considerations towards lifecycle value-based decision-making to support economically viable, resource-efficient, and environmentally sustainable green buildings in Sri Lanka.

Keywords: *environmental performance; green buildings; lifecycle costing; Sri Lanka; sustainable construction; sustainable cost control*