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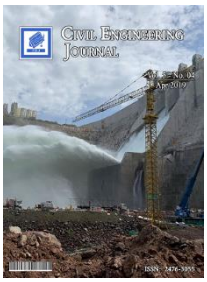

Embedded Life Cycle Costing Elements in Green Building Rating Tool

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Abstract

Green Building rating tools are the essential need of this era, to cope up with the sustainable development goals, climate change, and natural resource degradation through buildings. Realization of green building incentives decently increased within past few decades with abrupt declination in real estate markets and economic depletion has decelerated the interest of investors towards the green building projects. This research calculates influence of costing elements in MyCREST (IS-design) using questionnaire survey distributed amongst qualified professionals (QP'S) of green buildings and expert practitioners. Firstly, factor score and then weightage factor was performed to produce the final result with weightage output for evaluating weighatge and ranking of the relevant criteria of MyCREST and life cycle cost elements respectively. It is found that the criteria of storm water management has weighatge of 0.236 as highest and criteria environmental management plan (EMP) as 0.061 as lowest. Research also identified another perspective by finding association of cost element at design stage of MyCREST and found that management cost is highly associated at design stage with the value of 87.7%. The outcome of this research will add value to green building development and map road towards sustainable development using green building tools to uplift quality of life. Furthermore, this paves a way to integrate various stages of MyCREST with life cycle costing tool to potentially contribute in evaluating cost association through green building rating tool.

Keywords: Green Building Rating Tools; Life Cycle Cost Analysis; Sustainable Development.

1. Introduction

The world is moving faster towards a sustainable global cause, and green building rating tools (GBRT's) have emerged as a new trend in the innovative technological field of built environment [1]. Many developed and developing countries have set their goals and strategies to prioritize need of time and capture green building ventures. Zuo & Zhao, (2014) mentioned that the concept of green buildings has evolved in an astonishing way to achieve sustainable development [2]. Vyas & Jha, (2018) evaluated that green buildings have drastically increased footprints in past one decade in 2004 it was observed as 20,000 square feet and in 2015 drastically increased to 3 billion square feet thus, aims to achieve 10 billion square feet green buildings footprints by the year 2022 [3]. Similarly, Hamid et al., (2014) assessed that green building is delineated as the building that is designed, constructed and operated to be effectively resource efficient [4]. It is also speculated that there is need in various aspects of social, economic and environmental perspectives to set strategies for construction industry to bring innovative approach in infrastructure development from conventional to green buildings that can be assessed as green [5].

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