

A Case Study of Life Cycle Cost Comparison Between a Green Building and a Non-Green Building in Sri Lanka

CV Rajasekara^{1#}, DVH Dodangoda¹, WN Kawmudi¹, and KPSPK Bandara¹

¹Faculty of Built Environment and Spatial Sciences, General Sir John Kotelawala Defence University, Ratmalana, Sri Lanka

#37-qs-0030@kdu.ac.lk

Abstract

As the world moves towards more sustainability, Increasing the adoption of green construction has risen to the top of the construction sector worldwide. Green building is a key strategic step towards achieving sustainable development by saving resources, energy, and environment. As the world moves to a greater sustainability, green building has gone to the construction industry's priority list. While currently Sri Lanka is facing an economic and energy crisis, the green building concepts can help the economy by boosting the construction sector. If the implement process of green building concept in Sri Lanka develops within the next 30 or 40 years, it may be capable of converting revenue generating opportunities on construction sector. People only consider the construction's initial cost rather than the total cost over its entire life cycle. When it comes to construction time span, it's near to 3 to 4 years, while the total life span of a building counts over 60 to 70 years. It's better to consider the Life Cycle Cost (LCC) of a building which consists of maintenance, overhaul, services, and repair cost parameters. Thus, the primary goal of this study is to analyze the cost of a green building and a non-green building in Sri Lanka. A case study was done on two selected university buildings. A cost benefit analysis was carried out, accounting for the initial cost in comparison to LCC. Site visits & semi structured interviews which were selected by purposive sampling were used for the data collection. This was done with a mixed method of qualitative & quantitative analysis through a comprehensive study. With the aim of economic consideration of green building concept, this will be a timely research study to Sri Lanka to overcome this emerged economic & energy crisis.

Keywords: *Cost Benefit Analysis, Green Buildings, LCC, Sustainable Construction*