

APPLICATION OF BAMBOO IN SRI LANKAN CONSTRUCTION PROJECTS

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Declaration

I declare that this is my own work and this dissertation does not incorporate without acknowledgement any material previously submitted for a Degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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The above candidate has carried out research for the Masters Dissertation under my supervision

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Abstract

Due to the complexity of civil engineering contracts and arising awareness of sustainable development internationally, sustainability has become an ultimate goal for many industries including construction industry. Continuously increasing consumption patterns of the construction industry has resulted badly on sustainability of global resources and that has caused the crisis on food, climate and other basics of livelihood.

Using of bamboo in current construction industry is very popular internationally for its sustainability. However, despite on researches carried out towards the essential characteristic of bamboo, its sustainability has not been critically analyzed and used.

This research was targeted to investigate the basic sustainable construction applications of bamboo in Sri Lanka. Also it outlines to review key concepts related to bamboo, to investigate the global and local applications of bamboo in construction, to analyze the benefits of using bamboo in the construction industry, to examine the barriers to using bamboo in construction and to make recommendations for promoting bamboo usage in Sri Lanka.

Research findings indicated that 90% of respondents were agreeing the suitability of bamboo as a replacement for conventional materials such as concrete, wood, and aluminum. Even though 90% agreed, it was also found that only 30% of respondents have used or have seen bamboo in their construction work. So considering the reason for this gap, it was revealed that 47% and 33% of respondents identified knowledge gaps and market availability, respectively, as significant barriers to the use of bamboo in the construction field. In addition to these, other barriers such as purchasing and transportation were also identified.

Under this background, recommendations were developed to improve the bamboo usage in construction industry. Finally areas that needs further studies were identified.

Key words: Construction industry, Sustainability, Barriers

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List of Abbreviations

BFRC	- Bamboo Fiber-Reinforced Concrete
BRC	- Bamboo-Reinforced Concrete
CIDA	- Construction Industry Development Authority
CLT	- Cross-Laminated Timber
LCA	- life Cycle Assessment
NGO	- Non-governmental organization
UNA	- United Nations Association
UNIDO	- United Nations Industrial Development Organization
USAID	- United States Agency for International Development
WB	- World Bank
WMR	- Weighted Mean Rating

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