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Towards Sustainable Constructions: Trends in Sri Lankan Construction Industry - A Review

Ayesha Jayalath

*Urban Development Authority, Sri Lanka-
ayeshajayalath@ymail.com*

Terans Gunawardhana

*Department of Estate Management and Valuation
University of Sri Jayewardenepura, Sri Lanka
terans@sjp.ac.lk*

Abstract

Construction industry is one of the most significant industries that contributes toward the socio-economic growth especially to developing countries. However, in the developing countries the construction industry always faces problems and challenges, because the earth's resources are under severe due to increase in population and economic expansion. Especially, Construction activities have significant impacts on the environment. The extensive use of natural resources and energy, pollution of air, land, soils and water resources are some examples of the impact to environment from construction industry. There has been an increasing concern over the impacts of construction activity on the environment and sufficient measures have not been taken to mitigate them. But the traditional practices of the construction process fail to control the current challenges occur in construction industry. Therefore sustainable construction has become a central for countries worldwide now a day; which aims to minimize natural resource consumption and the resulting impact on ecological systems. Sustainable construction represents the responsibility of the construction industry towards sustainable development. This paper reviews the challenges and potentials face by construction industries all over the world, Sustainable Construction Practices and importance of Sustainable Construction Practices to Sustainable Development of Sri Lanka. Also this review contributes to sustainability thinking in Sri Lankan construction industry for a better future.

Keywords: Construction Industry, Sustainable Construction, Sustainable Development

Introduction

Sustainable construction is a new concept for the construction industry for achieving sustainable development from the various environmental, social-economics and cultural facets. It has become a focal point for countries worldwide, as the earth's resources are under severe pressure due to increase in population and economic expansion. As a result of this, most nations are

striving to implement sustainable construction practices in their various construction Industries (Ametepey et al., 2015). Traditional construction practices focuses on cost minimization, performance and quality objectives only, but sustainable construction practices also focuses to minimization of resource depletion, minimization of environment degradation and creating a healthy built environment (Hussin et al., 2013).

The development of the Sri Lankan construction industry has closely followed the economic changes during the past decade. The economic conditions were the main factors, which influenced demand and supply trends in the construction industry. The construction sector has seen to be the primary beneficiary with the blooming of many new infrastructure projects that serves the rapid urban development. Therefore the construction industry is a vital sector in the Sri Lankan economy and it is 4th largest sector, contributing 6-7% to GDP over past decade in Sri Lanka.

The review contributes to sustainability thinking in the Sri Lankan construction industry; identify barriers and limitation as well as it is recommended that strategies and actions which follow to create a sustainable development of the country. It reviews recent research into the development of sustainable construction and examines the literature related to the issues of sustainable construction and limitations.

Sri Lankan Construction Industry

The construction industry plays a vital role in the Sri Lankan economy. The construction sector of produces a wide range of products, from individual houses to major infrastructure such as roads, power plants and petrochemical complexes etc. The Sri Lankan construction industry is on an upward trend, due to the post-conflict scenario in the country. The end of the island's ethnic war in 2009 has revived the economic activity and resulted in an infrastructure building boom. Significant reconstruction activities are expected to be undertaken in the North and the East of the country. The other regions of the country are also expected to see significant development activities (ICRA Lanka, 2011).

According to the Central Bank Report (2016), Sri Lankan Construction Industry contributes 7.6% to Gross Domestic Product (GDP) and the value added of construction activities rebounded during the year recording a substantial growth of 14.9 per cent in 2016 recovering from 2.7 per cent contraction recorded in 2015. GDP from Construction in Sri Lanka decreased to 197,182 LKR Million in the first quarter of 2017 from 200,970

LKR Million in the fourth quarter of 2016. GDP From Construction in Sri Lanka averaged 133,568.86 LKR Million from 2010 until 2017, reaching an all-time high of 200,970 LKR Million in the fourth quarter of 2016 and a record low of 77,176 LKR Million in the second quarter of 2010 (Trading Economics, 2017).

Figure 1: Sri Lankan GDP from Construction 2010 Jan - 2017 Jan



Source: Department of Census and Statistics Sri Lanka, 2017

According to the Department of Census & Statistics (2017), currently employed person by Construction, Electricity, gas, steam and air conditioning supply, Water supply, sewerage, waste management and remediation activities are 684,970 in 1st Quarter of 2017.

New trends in Sri Lankan real estate sector are the major factor that affects the development of construction industry in Sri Lanka. Luxury residential trends, office market trends, affordable housing trends, hospitality trends and government's mega infrastructure development projects are directly affect to the construction industry in Sri Lanka now a day.

Sri Lanka's urban population has reverted from its declining trend has resulted in a sharp uptick in the demand for apartments over the last 2 years and the demand is growing despite many apartment projects being initiated. With Sri Lanka launching major development projects such as the Western Region Megapolis project, land prices have started rise significantly beyond affordability levels of the middle income population. This situation has also created additional demand for living in apartments (FC Research, 2016). There are number of luxury, semi-luxury and middle class housing apartment projects like The Emperor, Crescat Residences, Havelock City, the Monarch, Trillium Residences etc. Currently over 3000 units are under

development (Ex: Altair, Shangri-La, Astoria etc.) and these projects are due for completion between 2017-2019 (JLL, 2017).

Also end of the war amidst the rise in tourist arrivals and a sharp increase in hotel projects and shopping mall projects have been initiated as illustrated by the investment into the sector. Therefore Major Hotel & Shopping Mall projects will continue to support construction sector in Sri Lanka. For Example: Shangri-La, ICT Hotels, Cinnamon Life, Grand Hyatt etc. (FC Research, 2016).

There is a significant growth in the office space construction market is likely in the coming years. Sri Lanka's current office space stands at 2.3mn sq ft. while the demand for Grade A office space is estimated to be 3.8mn sq ft. Some of the larger "Grade A office space category" construction projects are already in progress with projects expected to be completed over the next 2 years. Orion Towers, Access towers Phase II, Water front, Cinnamon Life and Shangri-La are the upcoming major office space construction projects in Sri Lanka within next 2 years (FC Research, 2016).

Government Infrastructure Drive is another trend in Sri Lankan construction industry. Numbers of stalled mega development projects are being re-started. Road development projects, water projects, port city and expressway are some of the major Government led construction projects. The Government also has initiated a large number of rural road development projects in North Central Province, a large number of water projects in some of the key districts, Port expansion projects, Airport expansion projects and the creation of a logistics corridor between the port and the airport (FC Research, 2016). Bandaranayke International Airport extensions-stage II, Port City Colombo, The Southern Expressway Matara to Hambantota, The Central Expressway, Light metro system, Electrifying of Railway are the ongoing key projects in Sri Lanka (JLL, 2017).

Western Region Megapolis is an urban planning, zoning, and development project aimed at creating a planned Megapolis in Sri Lanka's Western Province by 2030. Government has initiated USD 44 Billion with the aim of developing special zones within the Western Region and providing the required infrastructure to develop the zones, through 142 identified projects. WRM project has identified 8 specialized zones which are expected to be upgrade and developed. They are Downtown Colombo, Industrial Township in Horana, Science & Technology City in Malabe, Plantation City in Avissawella, Industrial Township in Mirigama, Aero City in Katunayake,

Logistics Corridor between Port City and Aero City and Forest City Mathugama. The development of the identified projects is expected to significantly increase demand for construction and building material across the sector (FC Research, 2017 and JLL, 2017).

Also Construction industry growth was reflected in the significant increase in cement production by 25.3 per cent in 2016 compared to 5.8 per cent growth recorded in 2015. Accordingly, both local productions as well as imports of cement increased substantially by 17.8 per cent and 29.5 per cent, respectively, in 2016. Meanwhile, investment goods and building materials imports volume indices increased by 20.0 per cent and 22.9 per cent, respectively, in 2016 indicating the positive developments in construction activities (Central Bank Report, 2016) .

There are number of stakeholders in Sri Lankan construction industry and they are acting as facilitators of construction demand and supply in the Sri Lanka. Public sector consists with Central government Ministries (Megapolis, Highway and Housing), Departments, Authorities (UDA, NHDA, and CEA), and Provincial Council and Local Government Authorities. Also Architects, Engineers, Quantity Surveyors, Project Managers, Surveyors, Interior Designers, Landscape designers and Planners, Material manufacturers/suppliers/industries (Ex: Cement Industry, Tile Industry, Cable Industry, Aluminums Industry), Financial Institutions, Insurance Organizations, property investment & development companies (Ex: Overseas Realty (Ceylon) PLC, CT Holdings PLC, John Keells Holdings PLC), Construction Companies (Ex: International Construction Consortium (Pvt) Ltd, Maga Engineering, MTD Walkers PLC, Sanken Lanka (Private) Limited, State Engineering Corporation of Sri Lanka (SEC), Sierra Construction (Pvt) Ltd etc.), Investment Promotion Agencies (Ex: Board of Investment (BOI) and Bureau of Infrastructure Investment) , Research & Development organizations (Ex: JLL, ICRA Lanka, FC Researches) Regulatory Bodies (Ex: UDA, CEA, ICTAD), are the major stakeholders in Sri Lanka construction industry. They provide various facilities for construction project implement in all over the country (Rameezdeen, 2006; ICRA Lanka, 2011; JLL, 2013, FC Research, 2016).

However, there are many problems faced by the construction industry in Sri Lanka. High cost of construction material, Lack of availability of funds, Low supply of high grade steel, Lack of skilled workers, Pollution, Delays in land acquisition, Frequent changes in regulations are the key issues of Sri Lankan construction industry (ICRA Lanka, 2011).

Construction industry contributes significantly to most economies in terms of GDP and employment. However, on the other side construction activities have several negative impacts on the society and planet itself these include: carbon emissions; pollution (noise, air, water quality) and waste generation. Therefore, sustainability has become an important agenda on the company's strategic decision making (Afzala et al., 2016). The construction industry is a major consumer of non-renewable resources and sizeable source of waste, a polluter of water and air and a major contributor to landfill. These issues and impacts emanating from construction activities can only be corrected by developing sustainable ways in carrying out construction projects (Aigbavboaa et al., 2016).

Conclusion

Literature suggests numerous factors that are affecting on Sustainable Construction; Traditional construction practices merely focuses on cost minimization, performance and quality objectives only, but sustainable construction practices also focuses to minimization of resource depletion, minimization of environment degradation and creating a healthy built environment. It is obvious that economic development and environment protection are mutually contradicting concepts; high level of attention would be paid on economic development and environment protection. This review could be used as an eye-opener for both policy makers and industry specialists to further improve sustainability performances of the construction industry.

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