

CWM IN INDIA: A STUDY

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ABSTRACT

Food, Clothing & Shelter are the important components and basic needs of Life. Without sustenance and a place to sleep and protect oneself from the environmental conditions, it is almost impossible to live and interestingly all the 3 components contribute to the growth of the Economy. As the Indian Economy is rising and reaching commanding heights the construction industry is also rising, paving the way for increase in construction activities. In this context Construction Waste Management (CWM) plays a pivotal role in designing the strategies to mitigate the cost & construction waste. According to IBEF (India Brand Equity Foundation, Ministry of Commerce and Industry, Government of India), The size of Indian Real Estate market is expected to reach US \$ 1 trillion by 2030, there are estimations that it will contribute nearly 13% to the country's GDP BY 2025. As the economy is emerging, Housing industry in India is doing well and the purchasing power of the individuals is also improving and driving a residential housing boom in India. The present paper is a theoretical and general study, an attempt is made to examine the "CWM in India" to know as how it is emerging and shaping up the construction & infra industry and at the same time to find out its role in minimizing the cost factor as well. Thus, reducing construction waste and implementing ideas will pave the way for affordable housing which is good for developers and the customers too.

KEYWORDS: CWM, GDP, IBEF, Indian Economy, Purchasing Power.

Introduction



Construction is an age old and well established topic on which, at any time, it can be taken for granted and on the other hand reducing construction waste is a new and emerging topic. Furthermore, there will be an outpouring of views and literature from weekly columns on the subject in newspapers like The Economic Times and Business Standard to the learned journals like Journal of Architecture,

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Engineering and Applied Sciences. It is very appropriate to commence this review with the globalization scenario in Construction industries to mitigate construction waste, which will pave the way for affordable housing.

The present study aims to study the Control of Construction Waste for Affordable Urban Housing in Indian Infrastructure Companies. The table given below highlights a brief profile of Indian infra companies.

Brief Profile of Major Construction Companies in India

Name of the company and year of establishment	No. of employees	Projects & Key sectors	Market Capital	Revenue
Larsen & Toubro-1938	44761	Hydrocarbon, Infrastructure, Power, Process Industries and Defence	Rs 203165 Cr	Rs. 141007 Cr
GMR -1978	292	Housing Projects, Construction of Roads, Airports and power	21800 Cr.	Rs 7500 Cr
Reliance Infrastructure Ltd-1929	44761	RInfra is a major player in providing Engineering, Procurement, and Construction (EPC) services for developing power, infrastructure, metro and road projects.	Rs. 2756.Cr	Rs 20,361 Cr
My Home Constructions Private Limited – 1992	280	Construction Projects, Cement and Schools	Rs. 426.8 Cr.	Rs 500 Cr

Source: Indian Companies.in - 2021

The Construction Companies always feels that its business should be so built that its technology, leadership and their strategies meet customer needs which are at the heart of its functioning.

Reviews

According to Mr. M Anshuman who has over 25 years of experience in the real estate industry and is currently the Head of India at CBRE (Coldwell Banker Richard Ellis) said that the policy push for affordable housing sector, provided through several announcements in the Interim Budget for 2020, not only strengthened the government agenda of ensuring 'Housing for All by 2022' but also provided for a healthy growth trajectory for the real estate sector at large.

Atiq Uz Zaman, "Steffen Lehmann (2011), "Urban growth and waste management optimization towards Zero Waste City", According to Atiq et al, the concept of the 'zero waste city', includes a 100% recycling rate and recovery of all resources from waste materials. However, transforming current over-consuming cities to zero waste cities is challenging. Therefore, this study aims to understand the key drivers of waste management. It also focuses on challenges, threats and opportunities in transforming traditional waste streams and optimizing practices toward zero waste practices. This study is an in-depth case analysis of waste management systems in Australia. The study analyzed the waste management systems in the context of waste generation, management treatment and environmental impacts.

Joseph Laquatra and Mark Pierce (2011) According to Joseph Et Al, in their study on "Waste Management at the Construction site", laid emphasis on construction and Demolition (C&D) waste at different levels of federal, state and local. While the federal government has mostly left management of C and D debris to the states, Furthermore, these are the issues which can be well handled at the local level.

The study focused on the need to assume greater responsibility for improved management of Construction and Demolition debris in the United States of America. The growing complexity of issues related to C and D debris produced at a construction site involves the use of advanced framing (Designed to optimize material usage and increase energy efficiency). Issues that pertain to C and D landfills were evaluated along with concerns that relate to specific materials. The study mostly relied on the information gathered by contacting appropriate personnel of the landfill-regulating agencies in every state. Minaxi Rani, Alisha Gupta (2016), " Construction waste management in India", Minaxi & Alisha laid emphasis on CWM in India, they found that there is no satisfactory mechanism to control the problem of CWM because the perception of the people in India is that the waste management is confined only to municipal corporation.

Nitish Bagdi, Vipin Aggarwal and Neetu Sherwal (2013) in their work on “Management of Construction Waste in India: A Case of Green Technology” discussed on construction waste minimization and the challenges associated with it. The study found out that CWM should be guided with proper and effective machinery or otherwise the significance of construction waste Management considerably decreases. The modus operandi of the study is observatory in nature and challenges the major hindrances in effective execution of CWM practices in Indian Infrastructure Companies. The study mostly relied on secondary Data and ignored the concept of affordable housing.

Affordable Housing

The concept of affordable housing has remained fragmented from city to city and across income classes, Meanwhile, the definition of the affordable housing too was changed by the Federal Department of Housing and Urban Development in India for both metro and non-metro cities. As per the new rules, a 60 sq. m. house in metropolitan cities (Delhi-NCR including Delhi, Noida, Greater Noida, Ghaziabad, Gurgaon and Faridabad), Bangalore, Mumbai – MMR region, Chennai, **Hyderabad** and Kolkata) having value up to INR 45 lakhs will now be considered under projects marked for affordable housing. The same limit has been revised to 90 sq. m. in non-metropolitan cities/ towns with value up to INR 45 lakhs.

The previous limit for metro cities was 30 sq. m and 60 sq. m. for non-metro cities. This will further increase the demand in affordable housing segment and will help increase its consumer base both in metro and non-metro cities. Besides bringing in more projects under finance schemes, it will also help address the housing requirement of people according to their aspirations.

CWM

The waste material consists of Plaster, Plastics, metals, broken tiles, wood, concrete rubbles, asphalt concrete, excavated materials, steel masonry and wastage of chemicals. The concrete, brick and masonry together constitutes more than 50 % of the total construction and demolition waste. The project activities are to be planned at every stage by all the individuals who are involved directly or indirectly to minimize the overall construction waste.

Now, the question is as “How to make affordable housing projects successful ?”, it is only by Creating affordability in the residential segment which has been a well-intentioned problem that Indian developers have been unraveling over the past decade. With tenets of real estate’s hard-earned perspectives have been displaced and precious learning from failures have galvanized many success stories in this rather highly demanding segment. Mr. Chakraborty (Real Estate Developer) said that the strategy around land acquisition, approval sanction and capital infusion in the affordable housing backdrop determine the project’s success even more.

The general application of a construction waste management plan is to minimize the amount of materials going to landfills during construction by diverting the construction waste and demolition and land clearing debris from landfill disposal. It also helps redirect recyclable recovered resources back to the manufacturing process and redirect reusable materials to appropriate sites. From the very beginning construction waste should be recognized and identified as an integral part of overall materials management.

Apart from reducing construction waste for affordable housing there are few strategies/ideas where developers should focus upon to reduce the cost of construction, for instance, a project in Bhiwandi (Mumbai) sold 1000 units during 2020, forcing the competition to slash prices, the strategy worked out well and there was an increase in sales volume. The strategy worked out because the idea was revolving around FAR(floor area ratio), FAR inflection point helped reduce exposure of input costs on most counts and choosing MLCPs (multilevel car parking) over basements for parking and reducing the building heights by optimizing FAR have the ability to garner decent profits for the developer.

Major Findings

- Interim Budget for 2020, not only strengthened the government agenda of ensuring ‘Housing for All by 2022’ but also provided for a healthy growth trajectory for the real estate sector at large.
- The ‘zero waste city’, includes a 100% recycling rate and recovery of all resources from waste materials, However, transforming current over-consuming cities to zero waste cities is challenging.
- There is no satisfactory mechanism to control the problem of CWM because the perception of the people in India is that the waste management is confined only to municipal corporation.

- The general application of a construction waste management plan is to minimize the amount of materials going to landfills
- CWM should be guided with proper and effective machinery or otherwise the significance of construction waste Management considerably decreases.

Conclusion

The study mainly deals with mitigating the construction waste in infra companies with respect to affordable housing in urban areas. As the Indian economy is emerging and growing victorious day by day, there is a need to explore and investigate in the area of construction waste management & affordable housing. There is an estimate that Infra Industry will be contributing to 13% of the country's GDP by 2025. Accordingly, the present study focused and examined the Construction Waste Management in urban affordable housing and infrastructure companies in India.

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