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# A Review Paper on Construction Waste Management and its Impact on Cost of The Project

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***Abstract*** *- The construction industry plays an important role in establishing the infrastructure required for socio-economic development. India is a developing country that has great development in the construction industry. Construction is necessary connection infrastructure and the growth of the industry in India. Generation of waste is measure impact of the construction industry. The project aims to find out how much waste is arising at the site and its impact on the cost of the project in construction site and find out various sources and also attempt to suggest the construction industry to a minimum and maximum profit of construction waste.*

**Keywords** — *Waste management, Project cost, Indian construction industry, Construction.*

## I. INTRODUCTION

The construction industry is a very large industry that plays a vital role in the progress of any nation. Materials management is an important element in project management. Effective construction materials management process is key to the success of a construction project. The diversion of construction and demolition (C and D) waste from landfill sites is an issue that has been gaining attention within both the public and private sectors. Many landfill sites are reaching their capacity. In addition, C and D waste is sometimes illegally dumped or burned, causing land, air, and water pollution. The increasing costs of disposal are ultimately reflected in project costs, as contractors must incorporate anticipated disposal costs in their bid costing. The Indian construction industry is one of the largest in terms of economic expenditure, the volume of raw materials/natural resources consumed, volume of materials and products manufactured, employment generated, environmental impacts, etc. Owing to the growth in the construction activity, it is appropriate to link C&D waste generation with the national and global economic growth-related issues. Presently there is a lack of awareness of resource-efficient construction practices and techniques. Project managers and construction contractors have long recognized the importance of reducing waste and salvaging high-value construction and demolition materials such as copper and other metals. Contractors are usually careful about the number of materials ordered, how materials are used, and how to carefully de-construct valuable materials. Unfortunately, some contractors do not realize that there are new opportunities for waste minimization, while others are reluctant to implement environmental practices because they believe these practices will increase their project costs. Most contractors are concerned about the cost of the labor that is needed to deconstruct materials for reuse or recycling. However, it has been shown that effective waste.

## II. LITERATURE SURVEY

**Meghani et al (2011)** This research work is based on waste material waste management in building construction. They can find reasons for wastage in the construction industry and how it can be decreased. In construction, Material, Manpower, Money play a vital role. Depending on the type of housing project, building materials account for 60% to 70% of the project cost.

This paper describes mainly the result of research studies carried out in Anand (Gujarat). There are various sites investigated different buildings located in different locations of Anand in India. Most of this waste can be avoided by strict supervision and control of the material.

**Sasitharan Nagapan, Ismail Abdul Rahman et.al (2012)** studied Construction wastes have become many developing countries and have negative effects on the environment, economy, and social aspects. The common issue created from the physical construction waste and besides that non-physical

waste like cost and time overruns is not properly addressed among the construction. This paper explores the impacts of construction on sustainable construction and contributing causes which will help the practitioners to formulate ways in avoiding or reducing the waste. The paper has also focused on causal factors that can be mitigated for sustainably managing construction waste. To incorporate sustainability in managing construction waste, the waste management hierarchy should be adopted as a way forward in making the construction industry look greener. The best way that can be a supportive tool in handling construction waste. Lastly, this ongoing research will develop Construction Waste Guidelines in proper Solid Waste Management and in-order to sustain the environment, economy, and social development.

**Mansi Jain (2012)** The excessive wastage of materials, improper management on-site, and low awareness of the need for waste reduction are common in the local construction sites in India. Today, in most European countries, it is economically feasible to recycle up to 80–90% of the total amount of construction waste and most demolition and recycling technologies are generally easy to implement and control (Lauritzen, 1998). Considering the enormous increase in the amount of waste generation owing to the growth in the construction industry can lead to wastage of materials which has its economic value. Currently, the existence of regional and national policies, laws, and regulations governing reuse and recycle principles for C & D waste is minimal in India. Thus, the paper aims to focus on the economic feasibility of waste minimization of construction waste materials in terms of cost savings in India.

**Karrar Raoof Kareem et.al (2013)** studied the project the increased economic growth, as well as urbanization in developing countries, have led to extensive construction activities that generate large amounts of wastes. Material wastage in construction projects resulted in huge financial setbacks to builders and contractors. In addition to this, it may also cause significant effects on aesthetics, health, and the general environment. These wastes need to be managed as well as their impacts need to be ascertained to pave way for their proper management, however, in many cities of India wastes materials management is still a problem. In this research work we are discussing the method for the management and control of waste construction materials. this result the scientist will conclude that our native construction industries have place lots of effort in making ready and designing for the waste management system however from implementation wise it's still off from effective.

**M. A. Othuman Mydin et.al (2014)** studied the concept of construction waste management was introduced a long time ago but the effort of waste minimization has, merely been observed and not practiced. Additionally, an increasing allocation of landfills has indicated a growing production of waste. However, the allocation of funding or skills for the prevention of waste has been scarce as waste minimization has not been given enough attention. One such example is the undertaking of different stages of construction, which often does not account for future problems in construction waste. Hence, this study is intended to investigate common waste management practices on construction sites in Malaysia. As part of this investigation, site observations and questionnaires were conducted to collect information from the respondents. The awareness and implementation of waste minimization were of concern in only certain areas.

**Harish. P. Gayakwad et.al (2015)** studied the construction industry has gained very fast growth in recent decades due to the increase in the population, increase in the IT sector and increase in the industrialization and also the introduction of new infrastructure projects increased construction industry drastically. Due to which the demand for construction materials is huge for the construction activities which results in the generation of the huge amount of construction waste. Construction material wastage resulted in huge financial setbacks to builders, contractors, regionals authorities, and also the country. The production of waste due to the demolition of structures is more than the wastage which occurs during the construction of structures, so there is a need for management of Construction and Demolition (C&D) wastes, as distinct Municipal Solid wastes, which is a relatively new subject in India. There is a huge challenge to manage C & D waste in near future. Data should be generated on the C & D waste generation and its characteristics.

**Subhasish Das et.al (2019)** Solid waste management (SWM) is an integral part of an environmental management system. SWM approaches have been modified into a more practical and effective option to establish sustainability based on the “reduce”, “reuse”, and “recycle” (3R) principles. This review provides an overview of a wide range of existing SWM strategies with the following key objectives: (i) to comprehensively describe current technologies, strategic innovations, and monitoring tools, (ii) to identify the roles of life cycle assessment (LCA) and other modeling tools in SWM, and (iv) to showcase feasible approaches for sustainable recycling and utilization of solid wastes. The current review finds that geographical positions and the economic status of nations are important to dictate waste characteristics. The concepts like an investment in the solid waste sector could also be regarded as a positive step towards sustainable waste management worldwide. On the other hand, incentives, as well as taxes/levies, may be imposed by the Governments and local bodies depending on the socio-economic strata, although the success of this polluters-pay concept is yet questionable.

**Chakkrit Luangcharoenrat et.al (2019)** studied the Rapid growth in construction activities as a result of a growing population and urbanization in many parts of the world generates a large amount of waste from construction. To reduce and manage these wastes, a comprehensive understanding of the construction waste generation factors is needed. The purpose of this study is to identify the contributing factors of construction waste. The causes of construction waste can be analyzed construction industry. Causes of construction waste were identified and grouped into four types: design and documentation, construction method and planning, and human resources. To determine the significance level of each factor, a structured questionnaire survey was carried out to gather information from contractors about the causes of construction material waste. The results show that the categories contributing to construction waste rank as design and documentation, human resources, construction methods, and planning, and material and procurement, respectively.

**B.Nandhinipriya et.al (2016)** the studied Management of waste as an essential aspect of sustainable building. In this context, managing waste means eliminating waste where possible; minimizing waste where feasible, and reusing materials that might otherwise become waste. Solid waste management practices have identified the reduction, recycling, and reuse of wastes as essential for sustainable management of resources. All or part of the construction and demolition waste stream is unlawfully deposited on land, or in natural drainages including water, contrary to regulations to protect human health, commerce, and the environment. Effective management of building-related waste requires the coordinated action of governmental, business, and professional groups and their activities. This paper determines the factors that contributed to the generation of construction waste. These seven factors were based on the co-ordination namely-Design, Handling, Worker and Management, Site condition, Procurement, and External factor. The significant factors of each category of waste were determined. These findings will help contractors to avoid, reduce, and recycle the physical and non-physical wastes.

**B.Sasidharani (2015)** study by the construction industry plays an important role in establishing the infrastructure required for the development. It also consumes large quantities of raw materials. And it is generating a large amount of construction waste. The generation of construction waste constitutes a major impact on the environment. The awareness among contractors and builders regarding waste minimization is still low although various research has proved the environmental problems are getting more critical. This study is conducted to investigate the cause of waste, waste prevention method, and the wastage level in the construction site. There are three concepts to manage waste. They are reduced, reuse, and recycle (3R). Reduce is the most significant method for construction waste minimization. Targeting the potential areas for waste generation in construction projects can help to significantly reduce the quantity of construction waste created.

## III. CONCLUSIONS

The construction and demolition sector in India contributes to a large amount of production in the country. Construction company every year a large amount of construction waste.

This is also observed the cost of the project get increased in the construction cost of the project & its impact on the cost of the project. Waste generated by the construction industry hurts our environment.

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