

# Review on Minimization of Construction Waste

Meenu Raj<sup>1</sup>, Sherin k Rehman<sup>2</sup>

<sup>1,2</sup>Dept of Civil(Construction management)

<sup>1,2</sup>Toc-H Institute of Science and Technology, Ernakulam

**Abstract-** *The increasing quantities of waste have created a bad image for the construction industry. In the present situation large amount of Construction waste generated in construction sites its minimization process is very difficult. In addition, an ineffective planning and control of materials on sites could lead to poor performance and undesirable project outcomes. Many of the construction activities result in the depletion of limited natural resources. Construction material contributes significantly to the cost of construction project; therefore, material wastage has adverse impact on construction cost, contractor's profit margin, construction duration. Prevention of waste generation in the construction industry has been a critical issue .*

**Keywords-** construction activities, construction industry, Construction waste, material wastage

## I. INTRODUCTION

The construction industry is one of the largest industry in the world, being at the same time the main consumer of natural resources and one of the largest polluters. Construction material contributes significantly to the cost of construction project; therefore, material wastage has adverse impact on construction cost, contractor's profit margin, construction duration and can be a possible source of dispute among parties to a project. Prevention of waste generation in the construction industry has been a long-debated issue. The cost reduction achieved by preventing the generation of construction waste is equally of direct benefit to all stakeholders of a construction project the causes of construction material waste can be measured and evaluated using a large number of construction phase related factors such as design and documentation, materials procurement and management, operations, environmental conditions, site management practices and site supervision.

## II. CONSTRUCTION WASTE IN THE INDUSTRY

Madelyn Marrero (2016) Now a day's society consider C&D waste two perspective manners one in ecological other is economical. A well-established waste quantification is assessed by urbanization work. Work breakdown system is used for these analyzing. For studying purpose different work are analysed in different areas. These

also include different strategies. The studies show that most of the waste cause to earth work and tree felling. More earth footprints are due to fuel consumption of different equipments. In such situation an idea was originated and is used for further work and aggregate is crushed and it also used for further works. These ideas also reduce footprint. These also reduce C&D waste. The study also implies EF indicator helped for reduce waste reduction. The site production is due to waste production so we find a solution for it. Tree felling is very important problem these stopping is a anticipatory method. The trees are cuted and new trees are replanted it is a better solution for it. This replanation is complicated ND these also cause some ecological impact. Reuse of material or soil is better method but we have a better planning in construction stage also. EF model is a better method for reduce waste in site. In larger projects EF modeling is profitable and it have more cost in smaller projects these have lesser profit. EF is mainly carbon footprint it causes machinery and other equipments. This study is effective and important in carbon footprint impact.

Sevilay Demirkesen (2017) Construction projects have different dimension parameters. This integration of parameters is very important in construction projects. This study also implies relationship of these parameters and their influence on it. The proposed components are different dimensions which also influenced on time, cost, quality, safety, and client satisfaction. The questionnaires also prepared and these are also analyzed with help of BIM software. In this study also implies that this integration method is very helpful for analysis. The experts also commended that these framework methods is very helping for execution of work. This study also shows the relationship between integration and execution of projects and also it is a considerable strength. The study tools strategies etc are define in construction phase. These give better coordination for client and contractor or authority. These tools are some software and some other analysing tools. Some limitations are also originated means these shows variations in different collecting data. These limitations also affected project execution. The conclusion is that the integration helps in smooth execution and also implies smooth comparison.

## . CONSTRUCTION WASTE MINIMIZATION METHODS

Lukumon O (2017) Site management practices are also helps to proper construction waste minimization. Field study and survey practices are also used as data collections. Kruskal Wallis test helps to data analyzing. This is proper practicing test. The study supported that site management functions which shows reduce waste generation which can achieved by proper drawings and their execution. Waste skips for specific materials and on site reuse are factors of waste minimization. The measures include some factors, waste segregation maximization of material reuse and logistics management. Designer have unavoidable role because waste reduction design procedure is the main cause of waste reduction. On site waste reduction is helps to waste reduction or waste seggregation.

Olugbenga O Akinade(2017) Efficient waste design is effective method to reduce demolition waste. These studies attribute waste design and design documents. In UK experts are also discuss about waste reduction design. Waste efficiency design has proper coordination and their useful. These studies understand set of measures and findings. These studies also assist design and design documents. These studies have phenomenal approach for design and their execution. BIM software also helps to waste reduction design. In BIM techniques avoid activity crash and proper waste design. These study shift techniques to waste effective construction strategies. Prefabrication method and other modular techniques help to achieve waste reduction. Sizes in design, material use, and proper cutoff are also helps to waste reduction. Efficient waste reduction design is successful method for achieving waste reduction.

Mohd Reza Esa (2016) In Malaysia government also implement some rules and regulations these regulations are also helps to reduce waste production in 5%.Malasya government implement some techniques it is they prepare some questionnaires and these send to contractors and developers the result of these are helps to regulate rules and regulations. The planning of reduction is planned in design stage and activities are implemented in construction stage. Also a loop diagram is implemented for reduced C&D waste. The focal point is to use mathematical method for reduce waste strategies. The questionnaires are sending to four groups and they send their findings. Their findings are the players have main role for reduce waste and they have awareness for waste reduction. Another one is 3R have main factors in reduce waste

reduction these are some strategies. Reimage and reuse is better methods for reduce waste reduction.

## IV. DEVELOPMENT OF RESOURCE MANAGEMENT MODELS

Yiliao song (2016) C&D waste is important issue in china because china's population and short life span period of buildings. For reducing these strategies a proper management and modeling is needed. Lack of estimation of C&D waste is major cause of construction waste. This study is forecasting techniques for waste reduction in china. The forecasting method is gray model and support vector regression. C&D volume are listed and analyzed and a new technique is these mathematical analyzing software. These software are give information of C&D waste. Also china government implement some rules and major cause of failure. Major critical solution is estimate future C&D waste. These is a prediction procedure for waste implementation. The constructed floor area can be calculated and it is analyzed by GM and SVR software it helps to future prediction. These are multiplied with translation matrixes. regulations for reduce waste but it is not sufficient for reducing waste. Immature marketization and statistical adequacy are

Jongsung Won (2015) In solid waste in construction cause major waste in South Korea in 2013. BIM also helps to reduce wastage. Construction waste cause to improper design and unexpected design change. This paper also examined use of BIM software in error of designing section. Two projects in Korea, BIM software helps to detect error in design stage. Two errors are in like hood of detection before construction. BIM also helps to reduce 4.3-15.2% of waste reduction. Construction waste reduction is one of the main benefits in construction field. In proper use of BIM software reduce rework and reconstruction work. In structural and architectural waste can be reduced without use BIM software. MEP waste reduction without BIM is very difficult so we are concentrating only in architectural and structural field.

Hongping Yuan (2012) Construction and demolition (C&D) waste has received increasing attention from construction practitioners and researchers .A model is important because reduce the waste and strategies for C&D waste reduction. In contain dynamic approach which integrates major variables included in C&D. this research contains such loops. These loops firstly contain relationship in C&D then stock flow finally case study for validation. One major

contribution of this study is the development of a dynamic model for evaluating C&D waste reduction strategies under various scenarios. These project aim into a inter relationship between variables. The contributions of this study mainly lie in three dimensions. Firstly, the causal loop diagram delineating the interconnected relationships among major variables. Secondly, the established model in stock-flow diagram. Finally, the results of the case study provide insights into the measures that could play a role in reducing C&D waste of the project.

## V. CONCLUSION

All literatures states about the identification and minimization of construction waste in the construction industry. Construction waste minimization is very urgent for all construction sites because their impact is very high.

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