International
Journal
Of Advanced Research in Engineering& Management (IJAREM)
ISSN: 2456-2033 || PP. 01-04

"Control and management of Construction Material and Construction Waste in Construction Industry" A review

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Abstract: A wide variety of construction materials is available in Civil Engineering domain. The overall cost of construction materials as of required in construction may vary from an initial percentage of 60 to maximum of 80 in relation to total cost incurred on specific project. For an effective utilization of construction materials so as to relieve the economical footprints of construction industry an effective management is key. Due to tremendous construction going on in current era the construction waste also poses a serious threat to environmental footprint of particular area/region which needs to be tackled through certain control measures and effective management of squander produced during construction. Besides utilization of construction materials in reckless way Construction industries contribute a major percentage in environmental degradation by producing waste which has to be dumped which is not accounted by most of the industrialists. The stated paper puts forward a general review about the stated topic through organized investigation of various aspects related with the stated subject.

Index Terms: Construction Industry, Construction Material, Construction Waste, Control, Management, Economical Footprint, Environmental Footprint.

I. Introduction

This article puts light on a stepwise walkthrough by experts for writing a successful journal or a research paper starting Construction industry in India is taking the lead with tremendous speeds more over a conclusion from facts and statements provided by various organizations can be established that construction Industry holds rank as second largest economic activity in India after agriculture. The construction industry is greatly dependent on Environment for procuring materials to be utilized for construction. The demands of construction industry keep on changing because of innovative ideas, consumer demands and complexities that are accepted or faced by the industry there ultimately increasing the material demand. As stated in abstract that 60% to 80% of the total cost of project is directly incurred on construction amount of investment increases. Such an expansive venture requires extensive arranging and control in order to limit wastage which constantly influences the execution of the association. One of the significant issues in postponing development ventures is poor materials administration. Guaranteeing an opportune stream of materials is an imperative concern of material management. Material administration is fundamentally concerned about the arranging, distinguishing, acquiring, stockpiling, getting, and conveyance of materials for their effective utilization. Waste management implies that minimizing or nullifying waste achievable and reusing/recycling materials which could somehow or another end up noticeably squander. Extensive and different sorts of waste with various qualities are made in every phase of development appropriate from site planning, pulverization of pre-existing structures to definite item. The properties of squander may be diverse at different development stages. Accordingly squander era all through the development steps should be recognized and measured to limit the wastage.

Studies and Findings

I. Study: Control and Management of Construction Materials

S. No	Author	Year	Studies/Findings
1.	NB Kasim	2008	Inappropriate administration of materials amid site exercises is fundamental factor unfavorably affecting construction project cost. Noteworthy cost fluctuation is observed if material management is not undertaken during project period. A study of tools and equipment which were in use at that period suggested that some of them are very rarely used.
2.	Alin Veronika et al.	2006	The aggregate project cost can be all around controlled by taking restorative activities towards the cost variance occasion in the project. 30% of the total administrative problems and 5% reasons for unavailability of materials sum up error based material management.
3.	C H. Caldas et al.	2014	60% of the aggregate project cost is of Construction material and equipment.
4.	S V. Desale et al.	2013	A tremendous boon in use construction materials is observed in past decade (2000-2010).
5.	H. Randolph et al.	2005	Non effective management of materials was observed on many sites which caused time wastage and disturbance to economy.
6.	C.K.Georgekutty et al.	2009	Successful project execution is critically dependent on effective management of materials in any construction project. A team should operate centrally for guiding and managing the use of construction materials.
7.	S V. Desale et al.	2013	Planning of materials considers materials in the request of necessity at site.
8.	A R. Patil et al,	2013	The people engaged at construction sites should be enriched with knowledge of effective use of materials and their management for management of construction materials at every stage of construction.
9.	G.Kanimozhim et al.	2014	There should proper focus on scheduling of procurement of materials at site and adequate quality storage measures should be planned in order to avoid wastage of material leading cost fluctuation.
10.	Pauline Jeruto Keitany et al.	2014	Construction machinery, equipment and materials may overlap 70% of the total cost of project there a proper management of all these things is necessary. The present manual materials administration practices and control strategies in Indian construction industry are unacceptable as they are labor escalated, wrong and have many mistakes. Each of these reasons prompts waste and excess of development materials, delays in construction, diminish labor effectiveness and absence of upcoming data of the project.
11.	T. P. Madhavi et al.	2013	70% of government contracted projects in the United Kingdom, 40% of government contracted projects in India and 50% of government contracted in UAE showed schedule delays due to mis-management of materials that is procuring and maintaining materials at site.

II. Control and Management of Construction Waste Management

S. No	Author	Year	Studies/Findings
1.	A.Harikumar et al.	2014	Construction squander comprises of undesirable material created straight forwardly or unexpectedly by the development or industry. Construction squander is produced at all construction or demolition sites.
2.	L. Y. Shen et al	2013	A total of 81 factors were found to contribute the construction waste. They were further grouped in 7 categories namely project design, site materials handling, machinery handling, labor, project management, site condition and material procurement and other miscellaneous items.
3.	Jing Zhang et al	2005	Material waste has been perceived as a noteworthy issue in the construction business that has vital ramifications both for the effectiveness of the business and for the ecological effect of development ventures.
4.	M D. Meghani et al.	2011	For dealing with the waste there must be productive waste administration framework which can control the loss at source and deal with the loss at each stage or period of construction venture.
5.	L. Y. Shen et al.	2004	Squander administration in development exercises has been advanced for the point of securing the earth in accordance with the acknowledgment that the losses from development works contributes fundamentally to the contaminated condition.
6.	Tam et al.	2005	Development exercises by and large affect the environment, which incorporates the misuse of common land and different assets for improvement and the era of waste and different types of contamination.
7.	S. Sanmath	2011	Waste reduction is only possible by taking strict steps towards null wastage, legitimate choices at material arrangement, strict site administration, appropriate application and stocking of development materials, and codification of the same.
8.	A. Al-Hajj et al.	2011	Material waste rate estimation technique can be utilized to enhance the minimization of waste material, lessen the waste rate, and increase efficiency.
9.	Siti Akhtar Mahayuddin et al.	2013	The expectation of waste stream can be modeled through the building components at the development stages of construction.
10.	C. S. Poon et al.	2013	Government's intercessions like tax on landfill , higher duty for utilizing first hand development materials, charge credits for reusing and so forth can be utilized on development site for squander minimization.
11.	N. Bagdi et al.	2013	There is a requirement for different systems for Construction and Demolition squander diminishment additionally incorporate institutionalization of configuration, control of stock for lessening unnecessary requests, natural training to workforce and so forth.
12.	L. Y. Shen et al	2004	The construction material waste management is a global environmental problem experienced by by almost all the countries around the globe.

Conclusion

The precise writing survey distinguished that Materials administration forms require a change to enhance the by and large in treatment of materials for more productivity and viability on the development site. This fact is established on basis that poor treatment of construction materials influences the general management line. From the audit writing it is comprehended that talked zone require additional research to locate some achievable answers for control of aggregate venture cost. There is no appropriate framework for acquirement of construction materials. This offer lights to the way that pre-arranging and material obtainment are similarly essential in controlling the aggregate undertaking cost. It uncovers that the minimization of materials wastage amid the development stages is essential to maintain a strategic distance from loss of benefits. It is watched that significant research has been directed to examine singular development squander administration procedures at a particular phase of a development venture. At present, the lion's share of research endeavors have been given to the material misfortune in development exercises instead of the non-esteem including fill in as an immaterial

waste. Squander Generation Rate is a viable pointer for measuring development squander and benchmarking development squander administration execution

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