

Short Communication on STUDY ON CONSTRUCTION WASTE

Dr. Krishan Kumar Saini¹, Dr. Suresh Singh Sankhla², Mohit Bhoot³

¹Assistant professor, Jaipur Engineering College and Research Centre Jaipur, Rajasthan.

²Professor, MBM University Jodhpur Rajasthan.

³Assistant Engineer, Gujarat Water Supply & Sewerage Board, SHIHORI (Banaskantha)

ABSTRACT.

Abstract: Construction activities are continuously increasing with the growth of the country that's why the problem of construction waste is also increase exponentially. It gives its impact on environment in terms of cost, time and productivity. To reduce this problem, there is need of a comprehensive study about its generation and it's management effectively.

Keywords: Impact on environment in terms of cost, time and productivity.

INTRODUCTION

Construction waste contain the debris of buildings which are produced during the process of construction or demolition of any type of buildings or structure.

Generally construction and demolition waste is a type of a uncontaminated solid waste as brick, stone, steel etc., that produced in almost every stage of construction means in site clearance, construction, repair, remoulding and demolition.

In present scenario the waste generated from demolition is 40-50%, from construction is 35-40%, and from renovation is about 10-15%. This is the recorded data at a general observation so it may vary place to place or site to site according to season.

The study of construction and demolition waste is also useful for the purpose of identification of the data of waste generated and rules and regulations along the process of this waste management, so they can be modified accordingly the present scenario.

In present situation the develop cities produced 1.3 billion tons of construction waste that seems to be increase as 2.1 billion in further some years by about 2025.

BENEFITS OF CONSTRUCTION WASTE MANAGEMENT

1. If we use the construction or demolition waste in any other new project then we can reduce the consumption of new resources for example we can use the broken stone as aggregate in stead of using virgin aggregate
2. If we transfer all the waste material for land filling than it will create burden on municipal corporations because we have limited land for using land filling as disposal of the same so by recycling and reuse we can handle waste by reducing its quantity.
3. As we need a good transportation system for the disposal and for public health land filling areas are situated very far from the city and it increases the transportation cost if we minimize the quantity of waste it will automatically reduce the cost of transportation
4. As recycling and reuse can be a new market in construction industry so it can be helpful for providing new region of employment.
5. By reusing and Recycling we can reduce the overall cost of any project because virgin materials are quite expensive.
6. Reuse and recycling methods will provide a clean surrounding for the workers.

COMPONENTS OF CONSTRUCTION&DEMOLITION WASTE

As per the name construction and demolition waste, it is basically generated by the following way

1. When any new structural practice is performed the excess quantity of material which is not used in practice this generates construction waste.

2. When any demolition activity is performed on the existed structure then by this work the produced waste are categorised as demolition waste.

Now the components of construction and demolition waste mainly consist 3 constituents

- Brittle materials like bricks concrete aggregate etc.
- Metals like bars windows and doors etc.
- In this we categorised the materials which can not be decomposed in nature like plastic fibers etc.
- Easily compostable materials like wood etc.

CONSTRUCTION& DEMOLITION WASTE HANDLING

So it is an major issue so we can handle it effectively by

1. Regulating the process by the help of laws as ministry of environment and climate change has issued 2016 act for minimize the land filling.
2. By generating market for it for e.g. municipal corporations can issue tenders for waste handling.
3. We can use site segregation method for effective management.

As it divides site in 3 space

- Composting
- Semi composting
- Scrap

RESULT OF CASE STUDY

1. Ahmedabad Municipal Corporation (AMC) done their study on 16 places in the city where peoples will have dump their construction Waste while Mumbai Municipal Corporation (MMC) done their study on 27 places around the city where peoples will have dump their C & D Waste.
2. Ahmedabad Municipal Corporation (AMC) done their study over an area of 466 Sq. KM earlier 300 tons per day. While Mumbai Municipal Corporation (MMC) came up with debris management regulation, aim it taking care of the 2000 tons of construction debris produces every day.
3. Ahmedabad C&D waste model based on public private participation (PPP). Ahmedabad Enviro projects private limited (AEP) is the agency to manage all the C&D waste in the city.

EFFECT OF CONSTRUCTION&DEMOLITION WASTE

Negative effects of C & D waste on the environment are

- Depletion of Land
- High Energy requirement and usage
- Production of solid waste
- Air pollution
- Noise pollution
- High resource consumption
- Depletion of resources
- Water pollution

CONCLUSION

This project is basically oriented on the detailed study of the generation and disposal of C& D waste. C & D waste consists of demolition, renovation, construction & repair of the roads, buildings, flyovers, houses, bridges, etc. During the process of constructions, deconstruction, remodelling, reparation, or demolition of any kind of structure and pavements like commercial buildings, residential buildings produces waste like bricks, concrete, doors , windows, fibres etc. Comprises within C & D waste. But C & D waste don't include solid, infectious or hazardous waste.

REFERENCES

1. Bagdi, N. (2013). Management of Construction Waste in India: A case of Green Technology. *Global Journal of Management and Business Studies*, 361-364.
2. (2014). *Centre for Science and Environment Report*.
3. Cha, S. H. (2009). Identifying and Assessing Influence Factors on Improving Waste Management Performance for Building Construction Projects. *Journal of Construction Engineering and Management*, 647-656.
4. Chen, Z. (2002). An application of bar-code system for reducing Construction Wastes. *Automation in construction*, 521-533.

5. Rama, A. (2010). MANAGEMENT OF CONSTRUCTION AND DEMOLITION WASTE. *Journal of Environmental Research and Development*, 96-104.
6. (2011). *Report of the Working Group on Construction Sector for 12th Five Year Plan*. Construction Industry Development Council.



Dr. Krishan Kumar Saini

B.E., M.E. and Ph.D.

MBM Engineering College affiliated with Jai Narain Vyas University Jodhpur

Assistant Professor

Jaipur Engineering College and Research Centre Jaipur, Rajasthan.



Dr. Suresh Singh Sankhla

B.E., M.E. and Ph.D.

Professor

MBM University Jodhpur



Mohit Bhoot

B.E., M.E.

MBM Engineering College affiliated with Jai Narain Vyas University Jodhpur

Assistant Engineer

Gujarat Water Supply & Sewerage Board, SHIHORI (Banaskantha).

