



CASE STUDY ON CONSRUCTION WASTE MANAGEMENT

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Abstract

This paper refers to the management of construction and demolition waste. the management of construction process is to reduce, recycle & effective disposal of waste has serious command on the quality, time, final cost, and impact of project on environment. initially the paper present waste status of C&D waste including the amount and composition of C&D waste. This paper show research of practice of construction material wastes management in Yavatmal district. This research paper not only deal with disposal of C&D waste but also give guidance about reducing environmental pollution which generally cause due to severe practices generally adopted in yavatmal district for example landfilling, incineration etc.

Key words: *waste management, waste recovery, demolition etc.*

1. INTRODUCTION

Construction waste consist of unwanted material produce directly or incidentally by construction industries. construction waste may contain lead and asbestos or other biohazardous substances. Also, it includes building material such as insulation, nails, electrical wiring, shingle and roofing as well as waste organising from site preparations such as degrading material, tree stump.

Much building waste material such as brick concrete and wood damaged or unused for various reasons during construction. observation research has been shown that this has been high as (0 – 15 %) of the material that goes in building a much higher % than the 2.5-5%. usually assumed by quantity surveys and construction industries, since considerable variability exits between construction sites there is much opportunity for reducing this waste.

1.1 classification of construction waste

1) concrete brick tiles ceramic

Table.1

a) concrete	non-hazardous
b) bricks	non-hazardous
c) tiles and ceramic	non-hazardous
d) concrete bricks tiles and ceramic (alone or in mixture)	containing hazardous substances

2) insulation and asbestos material

Table.2

a) insulation containing asbestos	hazardous
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b) other insulation containing hazardous substances	hazardous
c)other insulation material	Non-hazardous
d)other construction material contain asbestos	hazardous

3) wood glass and plastic

Table.3

a) wood untreated	Non-hazardous
b) glass uncontaminated	Non-hazardous
c) Plastic exclude packaging waste	Non-hazardous
d) treated wood, glass, plastic, (alone or in mixture) containing hazardous substances	hazardous

4) metallic waste include waste

Table.4

a) copper bronze and brass	Non-hazardous
b) aluminium	Non-hazardous
c)lead	Non-hazardous

5) paint and varnishes

Table.5

a) containing organic solvent or other hazardous substances	hazardous
b) not containing organic	Non-hazardous

solvent or other hazardous substances	
c) paint and varnish removal	hazardous
d) paint cans	hazardous

6) adhesive and sealant

a) contain organic solvent or other hazardous substances	hazardous
b) not containing organic solvent and other hazardous substances	Non-hazardous
c) adhesive or sealant containers	hazardous

7) Soil, contaminated soil, and dredging spoil

a) soil and stone containing hazardous substances	hazardous
b) other soil and stone	Non-hazardous
c) dredging spoil containing hazardous substances	hazardous
d) other dredging spoil	non-hazardous

1.2 Reason for increase in construction and demolition waste

- Many old building concrete pavement bridges and other structure have overcome their age and limit of use due to structural deterioration beyond repairs and need to be demolish
- New construction for better economic growth.
- Structure is turn into debris resulting from natural disaster like earthquake cyclone etc.

2. Benefits of reducing the disposal of construction (demolition material)

- Reduce overall building project expenses through avoided porches / disposal cost and the donation of recovered material to modified 501 (c) (3) Charites which provides tax benefits on site reuse also reduces transportation cost.
- Lead to few disposal facilities potentially reducing the associated environmental issues.
- Offset the environmental impact associated with the extraction and consumption of verging resources and production of new material.
- Conserve landfill space.

2.2 What you can do : Reduce Reuse Recycle and Rebuying of C&D materials.

- How you can practice source reduction by using less material and generating less waste from your project
- What the construction means and what C&D material you can salvage for reuse during construction.
- How C&D material can be recycling and how you can find recycler to recycle them for you.

3.1 Source Reduction / Reducing material

Source reduction reduces life cycle material energy use and waste generation. EPA gives it the highest priority for addressing solid waste issue while reuse and recycling are important method to sustainably manage waste one's waste has already been generated source reduction prevent waste form being generated in first place.

Example of C&D source reduction measure include preserving existing building rather than constructing new one; optimizing size of new building; designing new building for adoptability to prolong their useful lives; using construction method that allow disassembly and facility reuse material.

4. Common method generally adopted by C&D waste management in Yavatmal district.

The management of construction waste is important today. The use of construction waste is a solution to the reducing the formation of waste. Visit has been done to the construction site at Shetakari Saulamban Kendra Yavatmal. On this site general method was being adopted which seriously affect our environment. They are as follow.

a) Landfilling

Most construction waste goes into landfill, increasing the Burdon on landfills loading and operation. Waste from source such as solvent or chemically treated wood can result in soil and water pollution.

The C&D landfill consist of construction and demolition debris, which generally include the road work material excavated ,demolition waste, renovation waste and site clearance waste.

b) Incineration

Incineration is the process which include combustion construction waste. Incineration can also be described as thermal treatment. Incineration of waste material can convert it into ash, gas, flue heat etc. The flue gases must be clean from the particulate pollutant before they are dispersed into atmosphere.

5. Effective disposal of C&D waste

Method which are adopted generally in yavatmal district produce harm to the environment & also increase cost of the project due to the transportation of this waste to disposal site. To overcome this issue following method should be adopted for effective disposal of C&D waste:

a) Reuse

Some material can be reuse for example, doors and window in good, resalable condition might substitute for new product, or be donated or sold for use on another project a form of binomial reuse.

Material and product which can't efficiently and effectively be eliminated, minimized or reuse ultimately are collected and unless managed, will probably be disposed at lowest cost.

b) Recycling

Some material can be recycled to form new product for use. Unfortunately recycling requires reprocessing which is not generally economically feasible. Unless a facility required for recycling process resources should be located near the material source. Many construction waste can also have donated to non-profit organization. Which keep the construction waste material away from land filling.

For recycling purpose the main step is segregation of construction waste.

Initially it will take some extra efforts or training, segregation is completed on site and it won't require additional cost.

Good planning is also important step in the construction waste reduction.

c) Rebuying

Buying used C&D material and recycle its content product for the use in new construction can:

- Boost the local economy as recovered material are typically local sourced.
- Lower construction and renovation cost while maintaining the building and performance.
- Ensure the material collected from reuse and recycling program will be use again in the manufacture of new product and new construction, there by fully realizing the benefit of reuse and recycle.

Photograph collected from the field visit at construction site in Yavatmal. This waste produce during the construction activities and common method generally adopted for the disposal of this waste are land filling and incineration.

**Fig.1****Fig.2****3. CONCLUSION**

The field visit show that general practice of C&D waste management is very poor and which causes the environmental pollution. so that the paper is focused on the methods which can be adopted for future for achieving Economy during the project and for proper disposal of waste.

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