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Necessity of Construction and Demolition Waste Management

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ABSTRACT: Construction industry growing day by day so that infrastructural growth responsible for C & D waste, Due to the various activity of construction, Demolition, Renovation of old construction structure like building, road, bridges, outdated & wrong construction structure create a various types of construction debris. Out of some debris require proper disposal to avoid environmental & health effect. Segregation of C & D waste done onsite or offsite done manually or mechanically in different countries in different methodology. In India lack of waste management is seen due to various reasons, public approach & lack of government policies. Every city producing a tonnes of waste of construction. In this paper discussed about necessity of C & D Waste management. This paper helpful for the areas of adverse effect ultimately along with necessity of waste management. This helps us for basic guideline for recycle & Reuse.

I. INTRODUCTION

C & D waste management is related with construction activity, Due to the various activity create a large amount of debris, so its proper analysis, necessity is to be known. If we use Debris waste for various purposes so natural resources can be saved. Reduce, reuse, recycle guide some extent, but before that we require proper necessity study so that we reduced harmful effect & we understand the percentage amount debris. If possible we find waste to product i.e. energy through waste material. Construction cost reduced somewhat if proper management & design along with material management is done. Necessity of C & D waste management gives us benefits of waste management as well as alert about hazardous effect of demolished waste.

II. PROBLEMS OF C AND D WASTE MANAGEMENT

Due to the globalization population as well as standard of living increased so construction industry increased rapidly resulted increased in construction waste. Construction waste consists of unwanted material produced directly or indirectly by the construction industries. Construction wastes in any project are in the form of building debris form demolition process, rubble, earth material, concrete waste, steel waste, timber waste, and mixed site clearance construction materials, arising from different construction activities of project including land excavation or formation on site, civil and building construction materials, site clearance waste, demolition activities waste, roadwork waste, and building renovation waste. The various waste materials from excavation, demolition and construction will be assessed to determine whether they should be prioritized for either waste minimization or recycling, re-use. For effective waste management system we have planned properly to manage waste material at source & every stage of project from starting phase. Waste management adopted for sustainable environment & to solve problem of construction debris.^[1]

III. ADVERSE IMPACT OF C & D WASTE MANAGEMENT ON HUMAN & ENVIRONMENT

Construction & Demolition waste directly or indirectly effects on human health and environment, many animal species get affected due to various waste. Air, land pollution generates unstable climatic conditions, environmental degradation, land depletion, solid waste pollution, discharge of dust and gas, noise pollution effects are seen. Due to global

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warming climatic changes occurs which indicates warning to treat debris & changes in construction projects. Improper activity responsible for generation of waste. Respiratory and lungs diseases mainly occurs due to particle dust like cement, sand, 60% dust in urban area responsible for pollution. Paints, oils, solvents, chemicals damages the fertile land, so soil pollution occurs.

IV. NECESSITY OF CONSTRUCTION AND DEMOLITION WASTE MANAGEMENT

Global concern of conservation of energy and natural resources, there is urgent requirement of implementing C & D waste management strategies through technical and design solutions of adoptability, deconstruction, recycling and reusing and effective formation of legislative, administrative and monitoring framework for implementation of the waste management. Training at various level conducted to create awareness among the common people related with waste management.^[2]

“Sustainable building” has become a global need in upcoming days. In future every project follow the carbon footprint to develop a sustainable building. In providing materials to local vendors and recyclers, job site recycling creates employment opportunity for needy people. It's possible to produce useful material or product from raw waste for various industry. That is, in addition to conserving raw materials, recycling conserves energy and water, and reduces the production of greenhouse emissions and other pollutants. Recycling is best option for proper utilization of waste. So for many reasons - environmental, economic, practical and environmental compliance – recycling industry is established near city. Material is used efficiently at requirements and finally, use recycled or raw-content products. In previous days no firm market for construction waste, businessman not involved business required costly investments & lack of skill in operations, so its scope to find out some another solutions over conventional.^[4]

V. BENEFITS OF CONSTRUCTION WASTE MANAGEMENT

Effective recycling and reusing of waste building materials saves the natural raw material, reduces materials to be disposed in the MSW landfill, transportation cost of disposal and creates a cleaner and safer project site. It also avoids mixing of C & D waste with bio-degradable waste and avoids nuisance of its potential for spoiling processing of biodegradable as well as other recyclable waste. Due to waste management reduces dependence on natural resources such as trees, oil, and minerals plus creates less pollution by reducing manufacturing and transportation related emissions. Reduction of the energy and water required to produce building materials from virgin materials contributes to reduced greenhouse gasses related to the manufacturing and transportation of those materials. Thus, the environmental impact of the project can be minimized. Segregation of C & D waste at source increases the efficiency of waste materials for reuse and recycle and increases salvage value of the same. Construction management techniques also help the developer to promote and sale their project in the market. Deconstruction and Segregation of waste are labor intensive activities. This will generate labor employment opportunity. Market of reusable materials, salvageable materials will cut down the project cost for developers on one hand and on the other hand, it will give opportunities to poor section of the society to build their own houses by purchasing these materials at discounted rate from resale markets.^[2]

- Reduce Cost: Due to the reuse and recycle raw material used, so construction cost reduce.
- Market opportunity: Recycle helps in Green building technology.
- Tax benefits: In some country's schemes of tax benefits if clients submit their reusable waste to recycling authority
- Reduce Environmental and health hazards impacts
- Reduce natural resources
- Reduce greenhouse gases and global warming
- Prevent waste at site by proper design and planning
- Proper methodology for deconstruction
- To enhance resource efficiency
- To minimize construction cost

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- Waste to energy
- Opportunity for contractors, local recyclers & researcher

VI. CONCLUSIONS

Construction and Demolition waste from various construction activity is not a waste, Its a waste to product or energy sources. Waste management saves the natural resources and also reduces harmful effect on human health, so the sustainable environment can be achieved. Waste management fulfilment the requirements of various industry like scrap for steel industry, wooden waste material for furniture industry. We can use one location waste at another location as per its usability.

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