



Integrated Approach to Construction and Demolition Waste Management in Raipur

Abhinav Singh Gautam¹, Gulshan Chandrakar², N.K. Dhapekar³

¹Pro-Term Lecturer, Kruti Institute of Technology and Engineering, Raipur, C.G.

²Pro-Term Lecturer, Kruti Institute of Technology and Engineering, Raipur, C.G.

³Assistant Professor, Kruti Institute of Technology and Engineering, Raipur, C.G.

ABSTRACT

Management of construction and demolition waste management is a major problem for Raipur city due to the growing urban population, urbanization and lack of awareness of the people and the governing bodies of the respective development. This article highlights the actions required for renewable construction and demolition waste management in Raipur city by analyzing the waste generation, collection and disposal scenario of Raipur city along with the integrated frame work. It advocates a phased and integrated approach taking into account all the operational barriers and the capacity building of respective local bodies with the support of educational institutions.

Keywords -Integrated, Construction, demolition, Waste management, Renewable, Disposal.

I. INTRODUCTION

Storage, collection, transport, processing and disposal of construction and demolition waste; this includes building materials such as nails, electrical wiring, shingle, roofing, tree stumps [1]. Construction waste may also contain lead asbestos or other types of hazardous substances [2]. This type of construction waste is a concerned issue for public health, economics, aesthetics and also for environmental considerations of city Raipur [3]. Some of the construction wastes like waste wood, stones, steel frame work has the potential to recycle or reuse while certain components of construction waste are hazardous when land filled releases toxic gases [4]. The old and traditional way of disposing construction waste is to transport them from the site to the open ground and either dumping or land filling them [5]. But, by dumping or land filling them in to the earth often leads to many problems in the long duration [6].

- Natural resources of dumped area is affected
- Transportation of debris increases the construction cost
- Dumped debris occupies large area which is not aesthetically good
- Soil below debris get affected by the toxic waste in long period of time, becomes less fertile and quality of soil reduces
- Causes air as well as water pollution

Integrated approach to construction and demolition waste management would incorporate some appropriate ways of various elements of construction waste management which reflects the needs of the city Raipur as well as eco friendly solutions for the longest practical period of time economically [7]. It is a tough task to plan and execute this integrated approach [8]. Although this paper presents an overview of the current scenario of



construction waste management in city Raipur and suggests the necessary actions to make construction wastes sustainable [9].

II. INTEGRATED APPROACH

Any schemes or programs in Indian cities hinges on the structural and functional integration of education and community participation. Some of the major recommendation includes:

- Ensuring the participation of school children and college students in educating the public on construction waste management.
- Separate collection and disposal of the construction and demolition wastes.
- Use of appropriate equipment for collection, transport and processing of wastes.
- Rehabilitation of the open dumps to sustainable landfills.
- Setting up collection and transportation facilities for construction and demolishing wastes.

III. CONSTRUCTION WASTE MANAGEMENT APPROACH IN RAIPUR

Raipur is the capital city of Chhattisgarh (Latitude 21°25' and Longitude 81°63') covering an area of about 226 km² [10]. The population is about 1.01 million (2011 census). Raipur is a developing city and also future smart city, so many construction projects are on-going [11]. Moreover urbanization is also occurring in large scale in past years, many slum areas are evacuated and big tall buildings took place in those areas [12]. All these processes involve huge demolition of constructed buildings and solid waste as well [13]. At present there is no such management in Raipur to utilize this waste effectively [14]. There must be some local bodies or government agencies in Raipur to deal with the mass construction and demolition waste [15].

IV. CONCLUSION AND FUTURE SCOPE

So in-order to be a developed as well as a smart city Raipur has not only to be active in the part of new constructions but also it has to deal with the construction and demolishing waste actively. The construction and demolition waste of various ongoing projects and future projects shall be dumped in such an arranged manner that it should not cost harm to the nearby localities and ecosystem. The construction waste which can be recycled should be recycled and reuse again and the hazardous and non bio degradable wastes which are threat to the locals must bury or dumped far away from the city. Degradable construction waste if capable then must be used as manure or fertilizers for the soil to increase its capacity. As today and also in near future there will always a need of a system to deal with the construction and demolition waste in Raipur. Data published in references can be tested and hypothesized to check the validity of integrated approach.

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