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Solid waste management

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Introduction

Waste is any unwanted or useless material. Human activity generates waste materials which can be discarded as they are useless. Based on the nature waste can be categorised into three types. They are the solid, semi-solid, liquid waste. The management of this waste has become the most significant problem in our time because of the lifestyle of the people. The primary objectives of solid waste management are to control, collect, process, utilise and dispose of solid wastes in an economical way compatible with public health protection.

Generation of solid waste

Solid waste is generated in different ways. The main criteria for the generation of solid waste are the growth of population, the increase in urbanisation, and the rise in standards of living due to technological innovation. The major complexity in recycling and utilisation of waste is its heterogeneous characteristics. The similar physic-chemical characteristics of solid waste generated from hazardous and nonhazardous waste sources makes the segregation process challenging.

Critical components of solid waste management:

There are five main stages for solid waste management.

Generation: Solid wastes are generated when the mateials become worthless to the owner, and need them no longer.

Storage: Storage is a system for keeping waste materials after they have been discarded. It is stored in small and large containers, shallow pits and communal depots.

Collection: Collection refers to how the waste is collected for further transportation and treatment technologies. Any collection should be done carefully and thoroughly planned to ensure the storage facilities of waste.

Transportation: At this stage the solid waste is transported to the final disposal. The types of transportation can be divided into three categories.

Treatment: The main methods of waste treatment are thermal treatment, dumps and landfills and biological waste treatment.

Thermal treatment:

The thermal treatment refers to the process that uses a high temperature of heat. Most commonly used thermal waste techniques are incineration, pyrolysis, gasification, and open burning. Incineration is the combustion of waste material in the presence of oxygen. Gasification and pyrolysis are two similar methods of waste treatment which decomposes organic waste by exposing waste to low amounts of oxygen and high temperature.

Disposal methods:

The common disposal methods are recycling, incineration, composting, landfill and disposed of in the ocean or sea. Recycling is to transform the waste into products of their group through industrial processes. There are two types of composting are vermicomposting and composting. Landfills involve the dumping of waste into a landfill. Landfills are created in places with a low groundwater level.

Conclusion

Waste generation and waste reduction affect many economic and social factors. The management of waste generated is an essential factor for the reduction of waste. Modern methods of waste management are safer for people and the environment. Recycling and composting make rapid progress in the reduction of waste. Public education and properly planned waste management programmes also need to be introduced in the current waste management system.

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