

Foreword

Waste is the unwanted or useless solid materials generated from combined residential, industrial and commercial activities in a given area. It may be categorized according to its origin (domestic, industrial, commercial, construction or institutional); according to its contents (organic material, glass, metal, plastic paper etc); according to hazard potential (toxic, non-toxin, flammable, radioactive, infectious etc). Waste minimization is an important element of sustainable development because it allows improvements to business performance to be created concomitantly with improvements to environmental performance. Elimination of waste followed by reduction at source and then recycling form the preferred hierarchy of options. Reduction at source techniques includes good practice as well as changes to raw materials, processes, and products. Recycling on-site is preferred to recycling off-site, and of the four levels in the hierarchy of recycling, direct re-use is preferred since the material to be recycled is homogeneous, and from a known and reliable source. Systematic approaches to design and change can be implemented by considering first the service that needs to be provided, then the products needed to provide the service, and then the processes in which the products are made. Such a logical approach allows wastes arising from a variety of activities to be incorporated into integrated waste minimization studies. Such risings include product waste, process waste, and utility waste, the latter being created in the utility systems that drive manufacturing processes. There are 7Rs viz. Refuse, Reduce, Repurpose, Reuse, Recycle, Rot, Rethink. Every year, millions of tons of waste are generated from both households and building construction, most of which end up in landfills with a small percentage being recycled. Thus, there is a great need for waste minimization as this will not only have a huge environmental impact but also present substantial economic and social benefits.

Waste minimization entails limiting the amount of waste that is generated, thereby helping to eliminate the production of persistent and harmful wastes, effectively supporting efforts that promote a society that is sustainable. Thus, waste minimization involves a change of societal patterns that relate to production and consumption as well as redesigning products to eliminate the generation of waste. Waste Minimization is reduction in the quantity of hazardous wastes achieved through a conscientious application of innovative or alternative procedures. Simple adjustments to a process producing wastes may be the only requirement to achieve some results. However, looking at the broader picture in the University environment, it is often difficult to recognize waste reductions due to the complex and changing growth patterns within the campus community. Reductions are often offset by increased staff and student growth and/or building construction. Reuse of waste means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.

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Here, in the current book, Dr. Ashok K. Rathoure has done a great job for the same in the area of waste minimization techniques especially for industrial sector. This will be a milestone in the current era where the waste is a major global problem.

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