

Central Power Research Institute – Bangalore

Total Area – 130 acre

Residential colony – 280 units, Medical Centre, Day Care, Community Centre, Small Shopping area

Main Campus – Office Area, Administrative Building, Labs, 2 Canteen, Guest House, Large Green space, Scrap Yard

Summary

Pro waste has successfully implemented waste management systems in the Central Power Research Institute. The project was initiated in 2014. CPRI generated about 230kgs of mixed waste everyday which was dumped in the landfills. Bio mass and some amount of waste paper and plastic were burnt in the premises to get rid of waste. Pro waste concepts implemented decentralized waste management systems for CPRI – the project runs in auto mode. All categories of waste is now handled efficiently and disposed off safely.

Problem

CPRI had to spend around Rs.70,000/- per month to get rid of the mixed waste from their campus by engaging the services of a private vendor. Most of the waste from the premises was dumped in a landfill while some was burnt in the premises. There was absolutely no awareness and credibility for handling of various categories of waste produced in the campus. The house keeping team were working in unhygienic and inhumane conditions, as they had to deal with mixed waste. The generation of the waste was also huge, as disposables were used to serve tea/coffee and also during the meetings and events. The waste from the labs – oil, scrap, electrical and electronic waste , glass etc was dumped in the empty spaces which was contaminating the soil and polluting the air.

Implementation of the SWM systems

Pro waste concepts has successfully set up the SWM systems which run in an auto mode. The SWM project was implemented phase wise after a thorough review. The review is essential to determine our approach and customization of guidelines and infrastructure on the project site to ensure that waste is segregated at source, it is collected efficiently and transported to its final disposal point. The success of each phase is closely dependent on the implementation, monitoring and strong ground level communication. We successfully implemented the Solid waste management processes – namely, segregation at source, collection, storage, transportation and disposal. The whole system was completely synchronized and streamlined efficiently. Awareness sessions for the generators of waste were regularly organised. Interaction and training for the housekeeping team to ensure that the guidelines were followed and to solve the doubts and ground level issues was done regularly. Proper infrastructure to handle all categories of waste and capacity building played the crucial role for the success of the project. Measures were taken to reduce the quantum of generation of waste; eco friendly alternatives were introduced to replace disposables.

Pro Waste model: Steps to “Zero Waste Campus”

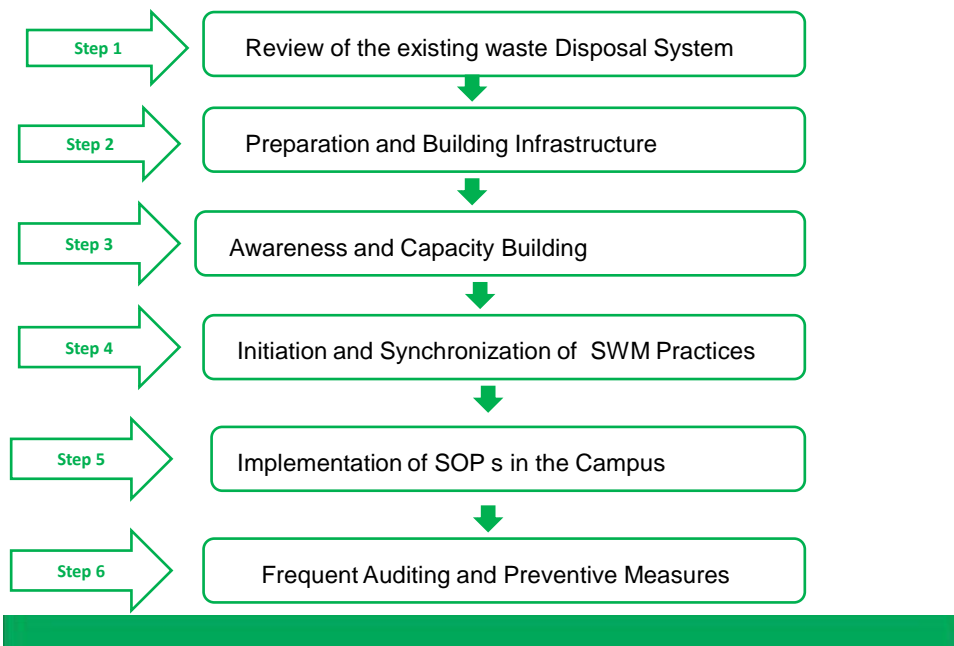


Fig 1: Steps to “Zero Waste Campus”

Category of Waste	Source of generation	Disposal method
Organic waste -Food waste -Garden waste	Canteen and residential areas.	Insitu Composting unit: 150 kgs per day. Compost is used in the green space.
Recyclable waste	Offices, labs and residential areas.	Collected by recycling vendors: 1.5 tonnes per month.
Biomedical waste -Sanitary waste -Unused and expired medications.	Residential areas and restroom facilities. Unused and expired medications are collected from the CPRI clinic.	Collected by vendors and incinerated. Expired medication is sent for treatment and subsequent disposal and the medications which are still viable are used.
Hazardous waste	Labs.	Collected by certified agencies.
E-waste	Labs and residential areas.	Collected by suitable vendors.

Table 1: Details about the source and fate of the waste generated at CPRI

Impact:

After the implementation of a suitable solid waste management plan by pro waste concepts, a large amount of dry waste is being recycled instead of being dumped into a landfill. The whole community segregates their waste at source. An effective collection of waste happens each morning; the organic waste is transported to the in-situ composting unit. All the organic waste and dry leaves are shredded and composted which is then used for gardening.

The recyclable waste is stored safely in a storage area, which is collected by the vendor once in 10 days. The bio medical and sanitary waste is collected separately which is sent for safe disposal method. The housekeeping team works in more hygienic conditions using a protective masks and gloves. All this has been achieved with a small investment to set up composting units and to buy dustbins and collection trolleys. CPRI also generates a small income by selling the recyclable waste. Pro Waste Concepts has helped CPRI to divert 600 kgs of waste per day from going into a landfill. They do not spend any money to send waste out of their premises. The CPRI –Bangalore campus is cleaner and greener than ever.



Before – dumps of waste in the premises, burning of waste was usual.



After- Waste is segregated at source and collected in colour coded bins.