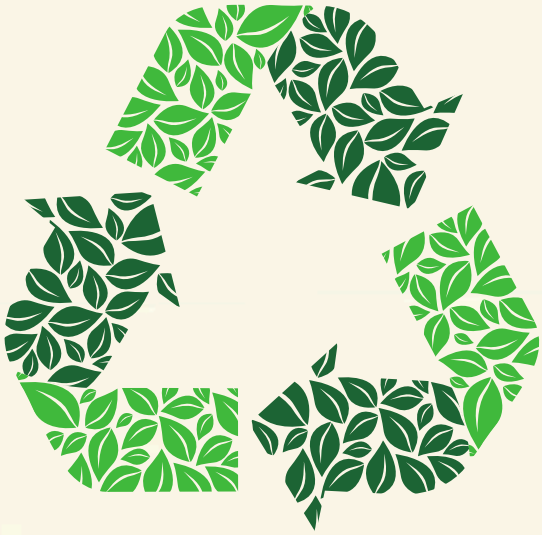
CHITKARA UNIVERSITY

CHITKARA UNIVERSITY Centre of Excellence for Sustainability

WASTE MANAGEMENT REPORT

CHITKARA UNIVERSITY, PUNJAB



2024-2025

Report 2024-2025

Introduction

Waste could be explained as anything which is of no use or purpose. Depending on nature, it could be solid, liquid or gaseous. Waste could be biodegradable depending upon its ability to get decomposed.

Where there is life, or any kind of action/operation, waste gets generated. Waste management is a critical aspect of environmental sustainability. Effective waste management is crucial for protecting public health, the environment, and conserving resources. It minimizes pollution, reduces health risks, promotes sustainability, and enhances the quality of life by preventing the harmful effects of waste accumulation. Without proper waste management, the environment and human health are at risk, and valuable resources are wasted.

Mismanagement of waste can lead to serious concerns and hence, Chitkara University, has taken proactive steps to ensure that waste generated on campus is managed as best as possible, as per laid norms.

Recycling and reusing materials reduce the need to extract new raw materials, minimizing deforestation, mining, and other resource-intensive processes. With a focus on minimizing landfill contributions and maximizing resource recovery, the university has categorized its waste streams and developed tailored processes for disposal and recycling. These efforts align with global sustainability standards and support the university's commitment to the Sustainable Development Goals (SDGs).

This report outlines the comprehensive waste management strategy at Chitkara University, highlighting key practices, and future aspirations to maintain a cleaner, greener campus.

The University generates waste from various sources, including:

a)Academic areas

b)Administrative areas

c)Residential areas

d)Refreshment areas

e)Dispensary

f)Landscaping and gardening activities

TYPES OF WASTE ON CAMPUS

Types of Waste

There are 10+ types of waste and is categorized under 4 categories

Solid Waste

- General Waste
- Sanitary Waste
- Leaves/Grass
- Paper Waste
- Food Waste
- Sludge Compost
- Scrap Material

Liquid Waste

- Used oil
- Waste water

Construction Waste

- Rubble
- Wood
- Glass

Other Waste

- E Waste
- Medical Waste

Process Adopted for Disposal of Waste

1. Waste Segregation at Source

The university has implemented a color-coded waste segregation system at the source to ensure effective disposal and recycling.

2. Color-Coded Dumpsters

• Separate bins for degradable, non-degradable, and recyclable waste.
•Separate bins for sanitary waste.
•Specific dumpstersfor hazardous waste such as medical and e-waste.
•Each bin is labeled with clear instructions to enable proper use.

3. Solid Waste Management

General Waste

General waste generated from classrooms, offices, and common areas is collected in designated dumpsters and transferred to main waste yard.

The waste is further segregated and sent to recyclers or municipal waste yards under contractual agreements.

We have approximately 3485 dustbins (indoors) and approximately 323 dustbins (outdoors) across the campus.

Paper Waste

Old answer sheets, newspapers, and departmental waste are collected and sent to the university's Paper Recycling Plantor approved vendors.

This initiative recyclesapproximately 90% of the paper waste, contributing significantly to resource conservation.

More than 25,000 kgs of paper are recycled/repurposed annually.

Sanitary Waste

The facility of sanitary napkin vending machines are provided on campus. Further for collection of Sanitary waste, designated bins are placed in ladies' and girls' restrooms. This waste is incinerated in the central incinerator or in the building napkin incinerators.

Scrap Material

Obsolete furniture, metal drums, and plastic cans are repaired, reused, or shared with underprivileged communities.

Unsalvageable items are sold to recyclers, ensuring minimal landfill contribution

Leaves and Grass

Garden waste is deposited in dedicated decomposer placed at Yellow Point Farm, converting it into manure for use in horticulture.

University uses green waste pits for efficient organic waste management on campus.

Unconsumed Food

Under the **Green Plate Initiative**, surplus food (food that is not consumed by students for various reasons), from messes and kitchens is distributed annually to **2,100** labourers residing on campus.

Food Waste Management

Food waste such as vegetable peels and left oversis processed in vermicomposting pits and decomposers at Yellow Point Farms.

A portion of the waste is routed to the campus **biogas plant**, generating renewable energy for various uses.

In 2024-2025, 9,872 kg of compost was utilized for horticulture.

•**Animal Feed** 95,214kgs of food waste is sustainably repurposed annually, supplying a piggery through a dedicated contract.

4. Liquid Waste Management

Sewage Treatment Plants (STPs)

The campus has two Sewage Treatment Plants (STPs) that process wastewater. The treated water is then reused for:

-Horticulture and landscaping

-Dual plumbing systemsfor toilet flushing

-Vertical and rooftop gardens

The campus uses over 100,000 liters of treated water monthly, which significantly lowers their need for fresh water.

Around 90% of the water used on campus is treated by the STPs.

Treated water (100%)is put to use in the ways mentioned above and is also shared with nearby villages.

5. Other Waste Management

E-Waste

•Electronic waste generated from IT and engineering labs and electrical waste are collected in designated bins, stored in a restricted area and disposed of through authorized recyclers as per laid process of the Pollution Board.

This process complies with state and national pollution control norms.

Used Oil

Oil from diesel generators is stored in a restricted area and handed over to certified recyclers.

Necessary documentation and pollution board compliance are ensured during disposal.

Medical Waste

Medical waste generated in health sciences labs and the campus dispensary is segregated using color-coded bins and disposedof via contracts with nearby hospitals.

Animal waste from the animal house is incinerated as per government norms.

Unconsumed Food

Under the Green Plate Initiative, surplus food (food that is not consumed by students for various reasons), from messes and kitchens is distributed annually to 2,100 labourers residing on campus.

Food Waste Management

Food waste such as vegetable peels and left overs is processed in vermi composting pits and decomposers at Yellow Point Farms.

A portion of the waste is routed to the campus biogas plant, generating renewable energy for various uses.

In 2024-2025, 9,960 kg of compost was utilized for horticulture.

Animal Feed 95,214kgs of food waste is sustainably repurposed annually, supplying a piggery through a dedicated contract.

6. Key Initiatives

a) Recycling and Reuse Initiatives

Furniture and Fixtures

Damaged furniture is repaired and reused where possible.

Usable items are donated to rural communities or other organizations.

Items beyond repair are recycled or repurposed.

Composting Initiatives

Organic waste is processed into manure, which is used extensively for campus horticulture, reducing dependence on chemical fertilizers

b) Community Engagement and Awareness

Green Plate Initiative

An innovative approach to utilize surplus food and prevent wastage while supporting the labor community on campus

Educational Campaigns

Regular workshops and training sessions for students and staff to promote waste segregation and recycling practices.

Collaborations with Vendors
The university collaborates with certified vendors and recyclers for efficient waste disposal, recycling, and compliance with environmental norms.

c) Infrastructure Development for Waste Management
Strategic Dumpster Placement: Dumpsters are placed at convenient locations across the campus, ensuring accessibility and proper waste disposal.
Dedicated Waste Yards: Separate areas for generalwaste, hazardous waste, and scrap material, with restricted access to ensure safety.
Biogas Plant and Vermicomposting Pits: On-campus facilities for processing organic waste into biogas and compost.

d) Sustainable Construction Waste Management

- Waste from construction and renovation activities, such as rubble, wood, and glass, is handled through:
- Repurposing usable materials.
- Depositing rubble in designated landfill areas within the campus.

e) Sustainable Practices

- Single-use plastics have been banned since 2022.
- Encouragement of reusable materials across campus facilities.

SoP in Place	CU/PB/Admin/ SoP 1 of 2023	
Contracts in Place	• Scrap and E-Waste • Bio-Medical Waste • Solid Waste • Food Waste	✔ ✔ ✔ ✔

Solid Waste Generation- Recycling and Reuse Report (2024-2025)									
Sl.	Category	Generated	Unit	Recycled	Unit	Reused	Unit	Land Filled	Unit
Inorganic Waste									
1	**Foam**	2457	Kgs	1842.75	Kgs	614.25	Kgs	0	Kgs
2	**Glass**	2960	Kgs	2220	Kgs	740	Kgs	0	Kgs
3	**Metal**						Kgs	0	
	Iron	48702	Kgs	36526.5	Kgs	12176	Kgs	0	Kgs
	Aluminium	1373	Kgs	1030	Kgs	343.25	Kgs	0	Kgs
	Brass	620.9	Kgs	620.9	Kgs	0	Kgs	0	Kgs
	TMT Bar	7480	Kgs	3740	Kgs	3740	Kgs	0	Kgs
4	**Plastic**	2930	Kgs	2197.5	Kgs	732.5	Kgs	0	Kgs
5	**Solid Waste**	52741	Kgs	35782	Kgs	0	Kgs	16959	Kgs
6	**Plastic Bottles Waste**	2422.12	Kgs	0	Kgs	2422.1	Kgs	0	Kgs
	Total	**121686.02**	**Kgs**	**83959.7**	**Kgs**	**20768**	**Kgs**	**16959**	**Kgs**
Organic Waste									
7	**Paper**	14326	Kgs	14326	Kgs	0	Kgs	0	Kgs
8	**Wood**	23494.45	Kgs	19970.3	Kgs	3524.2	Kgs	0	Kgs
9	**Food Waste**	88427	Kgs	81059	Kgs	748.5	Kgs	6619.5	Kgs
10	**Sanitary Pad Waste**	72.59 (8541 Nos.)	Kgs	0	Kgs	0	Kgs	0	Kgs
	Total	**126320.04**	**Kgs**	**115355**	**Kgs**	**4272.7**	**Kgs**	**6619.5**	**Kgs**
Hazardous Waste									
11	**Bio Medical Waste**	28.916	Kgs	0	Kgs	0	Kgs	28.916(Given to Authorised Vendors)	Kgs
12	**Hazardous Oil**	340 (0.4Kl)	Kgs	340 (0.4Kl)	Kgs	0	Kgs	0	Kgs
13	**E-waste**	1325	Kgs	1325	Kgs	0	Kgs	0	Kgs
	Total	**1693.916**	**Kgs**	**1665**	**Kgs**	**0**	**Kgs**	**28.916**	**Kgs**

Sl.	Category	Generated	Unit	Recycled	Unit	Reused	Unit	Land Filled	Unit
1	Inorganic Waste	121.686	tons	83.959	tons	20.767	tons	16.959	tons
2	Organic Waste	126.32	tons	115.355	tons	4.273	tons	6.619	tons
3	Hazardous Waste	1.694	tons	1.665		0		0.029	tons
	Total	**249.7**	**tons**	**200.979**	**tons**	**25.04**	**tons**	**23.607**	**tons**

SUMMARY	
Total Recycled	90.53%
Total Land filled	9.47%

Future Goals

- Achieving zero waste to landfill by 2029.
- Expanding recycling infrastructure to process additional waste categories.
- Implementing advanced waste tracking systems for better monitoring and reporting.
- Engaging the university community through green initiatives and workshops.
- Spreading awareness to society on the necessity of solid waste management so that we can contribute to the environment in a better way.

Conclusion

Chitkara University's solid waste management system reflects its dedication to environmental sustainability and aligns with the United Nations Sustainable Development Goals (SDGs). Through continued innovation and active participation from the university community, Chitkara is setting an example for effective waste management in educational institutions.