THE - Impact Rankings 2026

The Institution has established a system for the management of various wastes produced in the campus, to provide a clean environment through the concept of (3R) Reduce,Recycle, Reuse which in turn creates wealth and also supports wellbeing of students, faculty and staff and to enhance the quality of life within the campus. All necessary facilities for the management of wastes are also in place. The wastes generated such as paper, cardboard, computers, electronic equipment, glass batteries, wood, concrete, agriculture and food wastes. Wherever reuse is possible, the university is committed to recycling those materials by different methods of waste tracking process.

1. Reduce

- Paperless Administration: Encouraging digital submissions, e-circulars, and online communication to limit paper use.
- Minimal Plastic Usage: Phasing out single-use plastics in canteens, hostels, and events.
- Awareness Drives: Campaigns to sensitize students and staff about responsible consumption and waste minimization.

2. Reuse

- Reuse of Stationery & Office Supplies: Collection centers for leftover books, files, and stationery for redistribution.
- Reusable Utensils in Canteens: Promotion of steel or reusable containers instead of disposable cups and plates.
- Furniture and Equipment Refurbishment: Repair and reuse of old furniture, computers, and lab instruments where applicable.

3. Recycle

- Segregated Waste Bins: Color-coded bins deployed across academic blocks, labs, hostels, and public areas for paper, plastic, metal, and organic waste.

- Tie-up with Authorized Recyclers: Regular transfer of recyclable materials like paper, cardboard, plastic, and e-waste to certified recycling agencies.

- On-Campus Composting: Organic waste from hostels and canteens processed in compost pits or biogas units, used for campus landscaping.

Overview of Waste Management at KARE Campus

For creating sustainable development in our institution we are following a standard waste reduction policy(https://www.kalasalingam.ac.in/wp-content/uploads/2024/11/12.2.4-Policy-waste-disposal-Landfill-policy.pdf) A practical framework for minimizing waste and promoting sustainability by (3 R) concept to Reduce, Recycle, Reuse, Repurpose and Recycle. Integrative methodology was followed for sustainable management of waste. The agriculture and food wastes are recycled and converted into value added products. various processes and enhance the quality of life within the campus. Every three months we are regularly conducting campus clean up drives. Collecting waste paper, cardboard, computers, electronic equipment, glass batteries, wood, concrete,and segregating waste and planting trees inside the campus regularly.

I. Solid Waste Management:

KARE has a well-defined solid waste management policy. Solid waste generated inside the campus was collected at various points categorized as degradable and non-degradable waste using separate bins for collection. Each block's sufficient number of collection waste bins are kept and waste collected throughout the campus uniformly. The collected waste is brought to a central location by designated workers using trucks.

- **Food and Agricultural Waste Management**

Vermicomposting: The agricultural residues and food wastes that are categorized under degradable, further it converted into biofertilizer using vermicomposting methods. On an average 1.1 tons of waste per day is being recycled resulting in about 12 tons of compost. The institution uses this compost in the agriculture farm and also sells to the farmers at a nominal cost. We are given public training to the farmers. This training promotes the circular economy by reusing agricultural waste as biofertilizer by products.

Figure:1 PREPARATION OF VERMICOMPOST BED

Collection of raw materials

Bed preparation

Bed preparation

Application of earthworms

Moisture Management

Weekly Observation

Figure:2 PREPARATION OF VERMIWASH

Vermiculture

Vermiwash tank preparation

Vermiwash

Organic Sanitary Napkins Production: Plant fibers based anti-microbial organic sanitary napkins,preparation promoting the usage of plant fibers will practice sustainability and contribute to the environmental impacts.

Figure:4 Plant fiber based Organic sanitary napkin

Door Panel from Waste Materials: Coconut sheath fibers produced from our farm are used in preparing composite materials to prepare door panels; they are used as a replacement for plywood.

Biogas Plant: Part of the hostel kitchen waste is used to feed the biogas plants and the biogas produced is used in cooking conserving the use of LPG.

Wood Waste Management

Wood Dust as a Carrier for Biofertilizers: Waste Wood dust generated is being used as a carrier for microbial inoculants that are used as biofertilizers. This work is supported by a project sanctioned by DST through DST-SEED-STI Hub.(Public training)

Concrete Waste Management

Geopolymer Bricks and Paver Blocks: Fly ash and Ground Granulated Blast-furnace Slag (GGBS), are used as source materials for the manufacture of eco-friendly construction products such as bricks and paver blocks.

Construction Waste-based Concrete Bricks: Fly ash, marble dust, granite dust, Ground Granulated Blast-furnace Slag (GGBS), wood ash generated as construction waste and paper burnt ash, sugarcane bagasse ash is used to produce low-cost construction mixture by partially replacing with conventional concrete. These wastes are mixed with conventional concrete and casted in different shapes.

Concrete/Steel Waste Management : Fly ash and Ground Granulated Blast-furnace Slag (GGBS), a by-product of iron industry, are used as source materials for the manufacture of eco-friendly and economical construction products such as bricks and paver blocks by replacing the conventional techniques.

Recycling of Construction and Demolition Waste

Our initiative focuses on the collection, segregation, and recycling of construction and demolition (C&D) waste materials from various construction sites and building maintenance activities. On average, 0.5 to 0.7 tons of waste materials are collected daily, contributing to sustainable waste management and eco-friendly building practices.

Process Overview

Collection & Storage: Waste materials are collected from multiple construction and maintenance sites. Daily collection averages between 0.5–0.7 tons. Materials are transported and stored at a designated facility.

Segregation & Preparation:

Waste materials are carefully segregated and cleaned. Construction waste is processed under the monitoring and guidance of our technical team. Utilization in Manufacturing: Waste materials are used as partial replacements for fine or coarse aggregates. Our in-house paver block manufacturing plant incorporates recycled waste in production, reducing dependency on natural resources. Circular Economy Contribution: Recycling C&D waste supports the circular economy

concept by extending material life cycles. It aligns with green infrastructure practices by minimizing environmental impact.

Achievements

- Recycled approximately 180 to 220 tons of waste material in the past year.
- Manufactured durable and eco-friendly paver blocks using recycled aggregates.
- Demonstrated practical potential for recycling construction waste into sustainable building products.

Process of Inorganic waste recycling: Concrete waste converted into Biobrick

Images can be added here to illustrate the collection, manufacturing, curing, and laying processes. The entire process begins with the collection of waste materials from construction and building maintenance sites. After collection, the materials are transported and stored in a designated facility where segregation and cleaning take place. Once prepared, the waste is utilized in our manufacturing plant as a replacement for fine or coarse aggregates. The paver blocks produced are then cured to ensure durability and strength before being laid for practical use. This step-by-step process demonstrates the transformation of construction waste into sustainable building products.






By systematically collecting, processing, and recycling construction waste, we have established a model for sustainable construction practices. Our approach not only reduces landfill waste but also promotes eco-friendly manufacturing, paving the way toward a greener future in construction.

Paper Waste Management

KARE is also partnering in WoW (Well-being Out of Waste), a National Recycling Initiative, by ITC Ltd, by contributing 21,110 kg of paper waste for the recycling project, amounting to saving 564 trees in a year.

Partnership Collaboration with Industry: Waste Management

Graf From Seri-Wastes: The cocoon waste from sericulture is effectively used to make eye-catching art such as flowers, garlands, dolls, pen stands, wall hangings and window strings etc. .(Public training- DSIR TDPUW/ 2022)

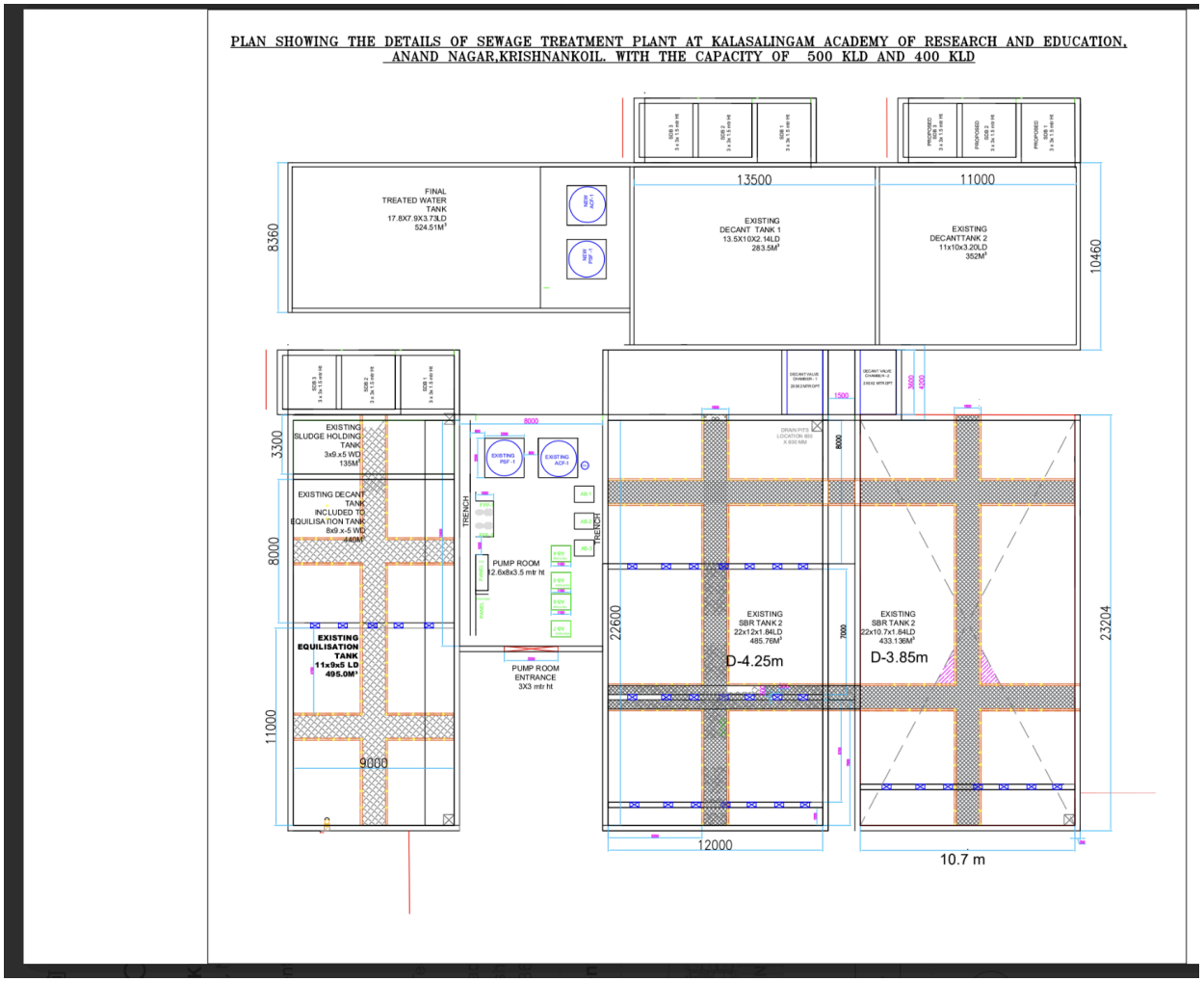
Animal Feed: The waste pupae which are rich in protein source are used for the preparation of pupae feed poultry.

Sanitary Napkin Incinerators are provided in Girls common rooms and hostel rest rooms. They help in disposing the used napkins in an eco-friendly manner.

II. Liquid Waste Management:

A proper waste water disposal system was followed in our campus without spilling and leakaging of water from hostels, and other buildings with a proper collecting system. After collection water is treated by separate sewage water treatment plants. The sewage treated plant has a total capacity of 800 KL per day. KARE has a separate sustainable environment policy that deals with liquid waste management towards our sustainability models for reducing and reusing water at our campus.

Figure: 6 500kld Sewage treatment Plant



III. Biomedical Waste Management:

Biomedical waste that are generated within the campus are subjected to sterilization using an autoclave and disposed of as a landfill through an MoU signed with a designated agency. Biomedical waste is being generated by the health center present in the campus and by the Department of Biotechnology that uses animals for their research. The bacterial cultures are autoclaved and disposed of. The solid biomedical wastes such as blood-stained cotton, animal carcasses generated within the campus are subjected to sterilization using an autoclave that kills harmful pathogens and disposed through an MoU signed with a designated agency. The laboratory produces biomedical wastes that include tissue, blood soiled cotton and microorganisms and cultured cells. The waste generated in the Biotechnology and biomedical department such as microbial cultures and cultured cells are disinfected through autoclaving and disposed. Soiled surgical equipment such as scissors and knife are disinfected, autoclaved, washed and replaced.

Figure: 6 Biomedical waste treatment unit

VI. Hazardous Chemicals and Radioactive Waste Management:

The HEI does not use radioactive materials and hence there is no radioactive waste generated. **Chemical wastes** generated in the laboratories are neutralized, diluted and used for the cultivation of azolla. The harvested azolla is used as a biofertilizer. An MoU is also signed with a designated agency for the disposal of chemical wastes.

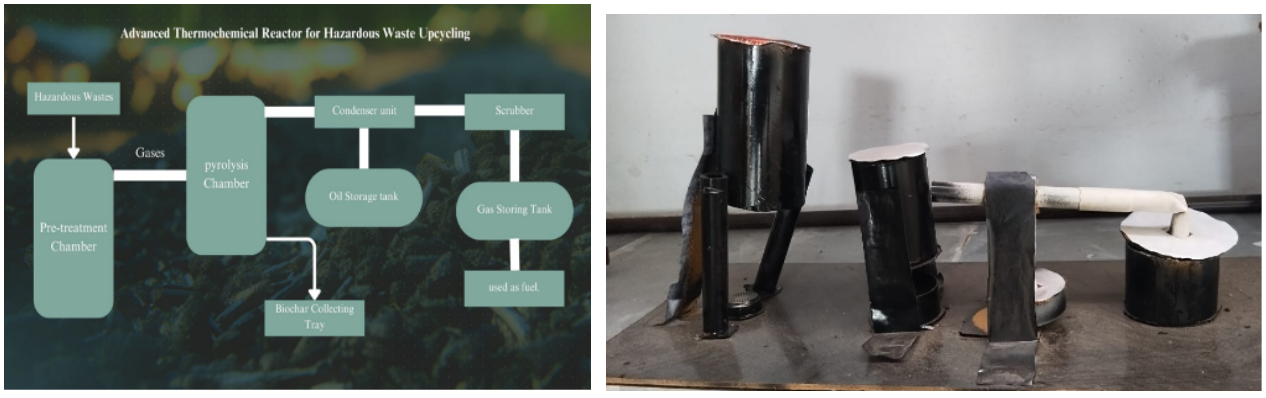


Figure: 7 Advanced Thermo Chemical Reactor Hazardous waste upcycling Model Chemical reactor

Green Initiative-Sustainable Environment Policy

As an environmentally friendly effort, the institution believes in reducing the amount of waste generation, the institution has implemented E-governance and banned the usage of plastic in the campus. As a part of E-governance and Green Initiative, all the circulars to various administrative and academic units are sent through e-mail.Hence, the generation of such wastes is highly minimized. The campus community is educated on the harmful effects of plastics and "Say No to Plastic" sign boards are placed at various locations inside the campus. Alternatively, the hostels, canteens and coffee kiosks throughout the campus are advised to use stainless steel plates, bottles and glasses.

Solid Waste Management Unit

The pilot scale pedalled composter consists of shredder, pedal, seat, cylindrical composter with the capacity of 500 litre with small holes with uniform spacing for air circulation, inlet for feed, outlet for manure collection and leachate collector.

Figure: 8 Solid Waste Management: A green Initiative

E-waste Management:

A 3 R Policy (Reduce, Reuse and Recycle) for the management of waste including E-waste. KARE has a plan to reduce generation of E-waste. E-waste – E-waste that is generated such as computers, monitors and electronic gadgets are collected from various divisions of the campus and stored at a center place and disposed through authorized agencies. Computers, servers, projectors and other electronic equipment are maintained properly to maximize their life. Toners are also reused. The e-waste generated are collected and stored in rooms before handed over to the certified vendor.

Computer, server, projector and other electronic equipment are subjected to maximum utilization by having regular maintenance, preventive maintenance, and other checkups. Toners are reused. The used electronic equipment is also disposed through vendors including the n-buy back mechanism. The e-waste generated is collected and handed over to the certified vendors. MoU was signed with Green era recyclers for the proper disposal of regular e-waste. Green era recyclers is an authorized dismantling and disposal of E-waste by TamilNadu Pollution Control Board.

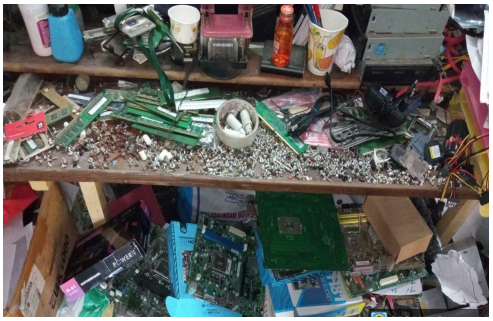
The HEI has a plan to reduce generation of E-waste. Computers, servers,projectors and other electronic equipment are maintained properly to maximize their life. Toners are also reused. The computers are also donated to nearby rural communities and schools. The e-waste generated are collected and handed over to the certified vendor.

Environmental-friendly mobile cases and bags: Biodegradable polymers, obtained from waste seaweed, incorporated with natural plant pigments are used for the production of environmental-friendly mobile cases and bags.

The HEI adopts a 3R policy (Reduce, Reuse and Recycle) for the management of waste including E-waste. Computers, servers, projectors and other electronic equipment are subjected to maximum utilization by having regular maintenance, preventive maintenance and other check-ups. Toners are reused. The computers are also donated to nearby rural communities and schools. The used electronic items are periodically collected by the issue circular in each department after collection it is disposed through vendors including a buy-back mechanism. The e-waste generated are collected and handed over to the certified vendor.

E-waste Storage Room:

As per Rule 15 (9) of the E-Waste (Management) Amendment Rules, 2024 we are following the guidelines laid down by the central pollution control board. To prevent its accidental breakage of collected E-waste, it must be kept in an isolated area after becoming nonfunctional / un-repairable. The following images are taken from the collected E-waste storage room.




Collected E-Waste from different places in university

E-Waste Management- Policy:

Our Policy emphasizes adapting environmentally friendly recycling practices. We strictly adhere to the regulatory requirements of all relevant legislations. We are committed to creating an awareness program among stakeholders on the need of e-waste management. We purchased the electronics items with a buy-back policy and preference given to the vendors having a sound e-waste management process. Our E-Waste containing harmful substances including cadmium, lead, mercury are properly handed over to authorized recyclers only.

Policies Available in University Website

Recycle Policy:
https://kalasalingam.ac.in/wp-content/uploads/2021/11/Recycle-Policy.pdf
Solid Waste Policy:
https://drive.google.com/file/d/1rKQ73lDJlwqlYT0j0vw7SCTr5FN49UDP/view?usp=drive_link
Liquid Waste Policy:
https://drive.google.com/file/d/1rKQ73lDJlwqlYT0j0vw7SCTr5FN49UDP/view?usp=drive_link
E-Waste Management-
https://kalasalingam.ac.in/wp-content/uploads/2021/11/e-waste_policy.pdf