

Title of the practice:

"Green Campus Revolution: Nurturing Sustainable Practices and Responsible Citizens"

Context:

Leadership Vision: Our college, under the guidance of President His Divine Holiness Hariprasad Swamiji Maharaj and Secretary Param Pujya Tyagvallabh Swamiji Maharaj, envisioned a holistic education that goes beyond academics.

Holistic Education: Our campus imparts values, life skills, and a commitment to sustainable development, nurturing well-rounded individuals.

Environmental Imperatives and Youth Potential in India: With pressing environmental challenges in India and a youth population holding immense potential, our sustainable green campus initiative is aligned to UN - SDGs.

Practices (Multifaceted Sustainable Initiatives):

Our all the initiatives are mainly anchored to 3R + R (Reuse, Reduce, Recycle+ Re think) approach, leading to nurturing of natural resources and developing holistic academic experiences.

A) Harvesting Clean Energy

We've installed 499 KW solar panels on our building, generating 60,000 units of clean energy per month. Innovative maintenance with an automated cleaning system ensures panel efficiency. This transition has cut greenhouse gas emissions, leading to monthly savings of Rs. 2, 00,000/- and annual savings of Rs. 24, 00,000/-.

B) Enhancing Energy Efficiency

We have designed well-ventilated and naturally lit learning infrastructures to reduce usage of electric fan and lights.

We have embraced the up-gradation towards energy-efficient appliances, leading to reduced energy consumption, contributing to lower bills and lowering of greenhouse gas emission.

C) Electric Vehicle Alternating Charging Stations on the campus

We've installed two Electric Vehicle Alternating Charging Stations on campus, for internal vehicles and vehicles of faculty members, students, and other affiliated members.

D) Enhancing Air Quality & Laboratory Safety: Wet Scrubber for Gas Treatment

Alkali wet scrubbers in our laboratory exhaust systems effectively control pollution, removing harmful substances.

Comprehensive air pollution reduction ensures cleaner emissions and compliance with environmental standards.

E) Safeguarding from Toxic Fumes: Effective Use of Fume Hoods

Fume hoods efficiently capture and remove hazardous fumes, vapours, and particulates from labs, ensuring safety. Improved well-being of students, with practically no respiratory issues

F) Glass Blowing Facility and Customized Glassware Production

We optimize glass blowing processes for resource efficiency and sustainability. Repair and reuse of glass items, along with the use of recycled glass, support a circular economy. Customized glass instruments cater to faculty, researchers, and students, enhancing productivity.

Total repair of 1285 glass wares, 520 customization, 2400 packets of capillary produce; which has financial impact of Rs. 115650/- past five years.

G) Holistic Waste Recycling: Paper, Plastic, and Solvent Management

We recycle waste Papers, using it to create items like filter papers, paper dishes and paper bags. In **Paper Recycling Unit** paper is turned into pulp by soaking it in water, forming thin sheets, and drying them. Die-cutting machines shape the paper into circles, and heat and pressure create the final products.

Total 223 kgs of paper waste have been recycled to 6800 multipurpose paper sheets of 46 x 57 cm have been generated during past 4 years.

Plastic Recycling Unit installed with the support of Pandit Deendayal Upadhyay Smriti Manch, NGO. This plastic recycled waste is further use by the companies for Sustainable Active wear like Sports shoes, T-Shirts etc., Recycled Mats & Rugs; Recycled Furniture & similar products.

A 25 lit. **Pilot Plant** with **distillation facility** serves as **Solvent Recycling Unit**. Purification of commercial grade used solvents by distillation to lab grade pure solvents. It's not only reduces waste but also offers cost savings and environmental benefits by decreasing the need for new solvent production.

H) Rainwater Harvesting and RO Wastewater Reuse

We have installed rainwater harvesting facility on the campus that conserves resources and reduces reliance on municipal water. Cost savings on water bills result from our commitment to rainwater harvesting.

Repurposed RO wastewater nourishes our garden, reducing freshwater use.

I) Integrated Waste Recycling for Agricultural, Flowers, Food, and Gaushala

Organic waste composting turns cooked food waste into eco-friendly compost.

Feeding raw vegetable waste to cows reduces food waste and supports sustainable practices.

Repurposing dried plant materials in floral arrangements combines aesthetics with sustainability.

Positive feedback and admiration affirm the aesthetic and creative value of repurposed bouquets.

J) Nurturing Earth's Lifeline: Jivamrut & Amrut Soil - Solid & Liquid Manure for Sustainable Gardening

The Jivamrut & Amrut Soil initiative, launched in 2008, emphasizes sustainable gardening and environmental preservation.

Amrut Soil, a balanced mixture of cow dung, cow urine, and biomass, supports robust plant growth with ideal pH, rich carbon content, and water-holding capacity.

Jivamrut is liquid manure cum pesticide made from cow urine and agri waste.

K) Niramay – Advancing Farming Technologies & Hardening Facility

Advanced farming techniques like **Hydroponics**, **Vertical farming**, and **Terrace gardening** are under the **Niramay** Initiative for sustainable agriculture. Local ingredients like **Amrut Soil & Jivamrut** are used to self-sufficiency and sustainability.

Polyhouse with humidity control serves as **Plantlet hardening** facility for PTC / lab grown plantlets. Also useful for conducting bio-fertilizer/ stimulants trials & optimization

L) Promoting Sustainability through Neem Tree Plantation

Our campus includes 500+ nurtured neem trees enhancing the environment. We collaborate with the local community for tree planting, strengthening relationships.

From 2016-2017 to 2023-2024, a total of 5,687 trees have been planted by students across various locations of the Rajkot district.

M) Paperless Efficient Campus Automation

We've digitized and automated campus operations with our in-house CMS - ERP software.

The software covers admissions, record-keeping, ILMS – library, examination management, and more.

N) Integration in Curriculum

The college have successfully integrated following courses into the regular curriculum with academic credit status for sensitization of the students towards environmental challenges and sustainable solutions.

Introduction to SDG, Environmental Science, Jeevan Vidya, Design Thinking- Concept to Practice, Community Engagement Internship, Environment Audit and Monitoring courses.

O) Environmental Audit & Consultancy Cell recognised by GPCB

Our institution holds Environment Audit Team (Schedule-I) of GPCB since 2012. We conduct comprehensive on-site assessments and sample collection, adhering to environmental

legislations. We have well equipped dedicated labs for environment auditing & monitoring which is regularly calibrated to GPCB standards.

The Environmental Audit & Consultancy Cell has conducted successful audits for 24 industries, generating revenue exceeding 70 lakhs during the period from 2017 to 2022.

P) Rural Empowerment through Soil Health Card: A Path to Sustainable Agriculture Education

We collaborate with the Agriculture Department and NMSA for this initiative which offers practical learning and skill development for faculty and students.

Total 39,953 soil samples from 13 tehsil of 3 districts; have been analysed for 10 different major & micro nutrients and 2, 18,498 Soil Health Cards have been prepared during 2017 to 2019

Evidence of Success:

Clean Energy Generation: Solar panels produce 60,000 units of clean energy monthly.

Laboratory Safety through fume hoods & Air Quality Improvement through Wet scrubbers & Tree plantation

Biowaste Management: Organic waste converts to high-quality compost.

Water Conservation: Rainwater and RO water conserve resources.

Paperless Admin & Glass blowing facility: Reduces resource usage.

Soil Health cards & advanced farming techniques supports agriculture.

Industrial Responsibility: Audits enhance pollution control.

Challenges:

Solar Panel Investment & Maintenances

Equipment Maintenance: Acquiring expertise and training.

Waste Segregation: Educating and enforcing waste segregation.

Paperless Administration: Addressing technological challenges.

Environment Audits: Engaging with industries and allocating resources.

Resource Requirements:

Funding: Securing financial resources.

Expertise & Equipment Maintenance: Allocating resources for maintenance.

Waste Management: Providing infrastructure and resources.

Rainwater Harvesting: Establishing infrastructure for collection.

Advanced farming tech.: Procuring resources

Technological Infrastructure: Investing in technology.

Soil Analysis & Environment Audits: Providing lab equipment & resource allocation.

Environmental Education: Ensuring faculty expertise.