P.G.D.A.V. College

University of Delhi

Nehru Nagar, Ring Road, New Delhi – 110065

Website: http://pgdavcollege.in

Email: pgdavcollege.edu@gmail.com

Supporting document

for

Annual Quality Assurance Report, 2023-24

Criteria 7.1.6

Quality Audits

ENVIRONMENT POLLUTION ANALYSIS LAB

Bhiwadi, Alwar, Rajasthan

(AN ISO 9001, ISO 1400 & OHSAS 18001 , NABL & MoEF&CC , GOI, Accredited Organization)

Green Audit Certificate

Issued to

P.G.D.A.V. College
University of Delhi

For the successful completion of the green audit of the college for the period of 2023-2024, conducted by team of auditors from Environment Pollution Analysis Lab. The green audit encompassed sectoral audits of green practices implemented on the college campus, including waste management, water conservation, rainwater harvesting, carbon footprint reduction, biodiversity conservation, and energy conservation. Following critical evaluation, EPAL certifies that the college is implementing all necessary actions to promote environmental sustainability.

Dr. Shruti Dutta
Signature (Auditor)

Dr. Ujjwal Kumar
Signature (Auditor)
For Environment Pollution Analysis Lab

Date : 20/05/2024

PGDAV College

(University of Delhi)

GREEN AUDIT REPORT 2024

Submitted by

Environment Pollution Analysis Lab, Bhiwadi

(An ISO 9001, ISO 14001 & OHSAS 18001, NABL & MoEFCC, GOI Accredited)

PGDAV College (M)
University of Delhi

GREEN AUDIT REPORT 2023-24

Submitted by

Environment Pollution Analysis Lab (EPAL), Bhiwadi

(AN ISO 9001, ISO 14001 & OHSAS 18001, NABL, MoEF&CC , GOI Accredited Organization)

Contents

ACKNOWLEDGEMENT

Environmental Pollution Analysis Lab (EPAL), Bhiwadi, Rajasthan conveys sincere gratitude to management of **P.G.D.A.V. College, University of Delhi** for assigning this important work of ***Green Audit (Environmental Audit)***. We appreciate the cooperation of our team for the completion of study. Our special thanks to Principal, PGDAV College ***Prof. (Dr.) Krishna Sharma*** for her support and guidance. Team EPAL is thankful to the Green Audit Coordinators ***Dr. Mangal Deo***, ***Dr. Richa Agarwal, Dr Gaurav Kumar, Dr. Pradeep Singh*** for their efforts. We are thankful to the faculty coordinators for the green audit exercise, without their support, this audit would not have been completed.

We are thankful to the other Teaching Staff of College for giving us necessary inputs to carry out this very vital exercise of Green Audit. We are also thankful to other non-teaching staff members who were actively involved while collecting the data and conducting field measurements.

Dr. Ujjwal Kumar

for
Environment Pollution Analysis Labs (EPAL),
Bhiwadi Rajasthan

DISCLAIMER

Environmental Pollution Analysis Lab Green Audit Team*, Bhiwadi, Rajasthan has prepared this report for P.G.D.A.V. College, University of Delhi based on input data submitted by the representatives of college complemented with the best judgment capacity of the expert team. While all reasonable care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived at by best estimates and no representation, warranty or undertaking, express or implied, is made and no responsibility is accepted by the AuditTeam in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

Environmental Pollution Analysis Lab Green Audit Team, Bhiwadi, Rajasthan and its staff shall maintain confidentiality for all the information relating to your organization and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies.

Dr. Ujjwal Kumar
for
Environment Pollution Analysis Labs (EPAL)
Bhiwadi, Rajasthan

Place : Bhiwadi
Date : 20/05/2024

***Constitution of Audit Team**

1) **Prof Anirban Chakraborty**
2) **Dr. Shruti Dutta**

LIST OF FIGURES

CONTEXT FOR GREEN AUDIT

The National Assessment and Accreditation Council, New Delhi (NAAC) has recommended that from the academic year 2016–17, all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon footprint reduction measures.

Aims and objectives of Environmental Audit in Academic Institutes:

To nurture environmentally friendly management in academic University /institutions following aims and objectives were formulated:

- To assess environmental performance and the effectiveness of the measures to achieve the defined objectives and targets.
- To identify the different pressures on organizations to improve their environmental performance.
- To recognize the initiative taken by the organization towards the environment.
- To secure the environment and cut down the threats posed to human health.
- To provide baseline information to recognize the effects of an organization on the environment and vice versa.
- To identify and control the impact of activities of organizations on the environment.
- To suggest the best protocols for sustainable development organization and environment.
- To ensure that the natural resources are utilized properly as per the national policy of environment.
- To establish the parameters for maintaining health and welfare of the community of the organization.
- To set the procedure for disposal of all types of harmful wastes.
- To reduce energy consumption.

Green audit/environmental audit-questionnaire were considered during the audit trail that focussed on the areas of ecosystem approaches/environmental feasibility for green auditing to be followed/practiced by participating institutions as below:

i. Waste Minimization and Recycling.
ii. Biodiversity and greening the campus.
iii. Energy use & its conservation.
iv. Water use & conservation.
v. Carbon footprint.
vi. Clean air (campus desirable ambient air).
vii. Environmental legislation.
viii. Social welfare & community outreach.

INTRODUCTION

Established in 1957, Pannalal Girdharlal Dayanand Anglo-Vedic (P.G.D.A.V.) College has risen to address the challenges of higher education in young India. As one of the oldest institutions of University of Delhi, it carries the torch of the Dayanand Anglo Vedic movement, a 19th-century social reform movement with a rich legacy.

PGDAV College embodies the ideals of Swami Dayanand Saraswati, who had the vision of inculcating a modern, global education rooted in Indian values, amongst the youth of India. Thus, this college offers a blend of Shiksha and Samskara (values) - a modern education steeped in Indian values, fostering well-rounded individuals and nation-builders. The college provides undergraduate Honours and degree programmes in 13 diverse courses across 12 disciplines. Additionally, postgraduate programme in 4 disciplines is offered.

State-of-the-art infrastructure equips the college, including smart classrooms, conference halls, well-equipped labs, a beautiful auditorium, a user-friendly automated library, and world-class sports facilities with expert coaching. The dedicated and efficient staff ensures students benefit from these resources.

Beyond rigorous academics, PGDAV College values co-curricular and cultural activities for holistic learning. Committed to 'Sarvangin Vikas' (overall development), the college provides an environment and training facilities that nurture and groom students in sports, fine arts, music, dance, theatre and more. These opportunities have propelled students to national and international acclaim. PGDAV proudly boasts many alumni who are international sportspersons and renowned artists.

PGDAV College has transformed its campus into a green heptioaven, boasting

over 70% greenery coverage. A rich diversity of over 100 plant species flourishes on campus, including two expansive lawns, a cricket ground and recently established herbal gardens. Their dedication to sustainability is evident in their ongoing plantation drives, with nearly 450 new plants added last year. The variety of trees includes neem, golden shower, banyan, and several fruit trees, creating a vibrant mini-ecosystem that attracts birds and small animals.

Sustainable waste management is a priority at PGDAV College. They implement a color-coded bin system for segregation at the source, with green bins for biodegradable waste and blue bins for non-biodegradable waste. Kitchen scraps, leaves and grass clippings are diverted from landfills through vermicomposting beds and a compost pit, which convert them into valuable manure. Paper waste is responsibly recycled through partnerships with recycling organizations, and e-waste is sent to authorized recycling agencies. The college actively promotes the 5R environmental principles (Reduce, Reuse, Recycle, Rot, Repurpose) within the community.

PGDAV College's exceptional efforts have been recognized through prestigious awards. They were conferred the "National Environmental Education and Awareness Award" and were declared a "Zero Waste Institution" by the Municipal Corporation of Delhi. The Department of Higher Education, GOI, also awarded them a "Certificate of Recognition" for their leadership in waste management.

The college's environmental society, *Geo-Crusaders*, plays a vital role in organizing events, raising awareness and promoting environmental responsibility. Their dedication significantly contributes to the overall green culture at PGDAV College, making it a model for sustainable practices in educational institutions.

I. WASTE MINIMIZATION AND RECYCLING

(Supporting documentary/photographic evidence attached as **Annexure I**)

<table>
<tr><td>1.</td><td>Does your college generate any waste? If so, what are they?</td><td colspan="4">Yes, paper waste, garden waste, biodegradable kitchen waste, non-biodegradable dry waste, E- Waste, sanitary waste from washrooms</td></tr>
<tr><td rowspan="2">2.</td><td rowspan="2">What is the approximate amount of waste generated per day? (in Kilograms/ month)</td><td>Biodegradable</td><td>Non Biodegradable</td><td>Hazardous</td><td>Electronics waste, Chemical discards & Others (MEDICAL WASTE)</td></tr>
<tr><td>50 Kg</td><td>15 kg</td><td>Nil</td><td>5 kg</td></tr>
<tr><td>3.</td><td>How is the waste generated in the Colleges managed?</td><td colspan="4">Biodegradable waste is managed through Vermicomposting beds and composting pits;

Paper waste is reused, recycled through authorized formal recycling company Green-O-Tech.

E-Waste is collected and recycled through authorized E-Waste recycling Company</td></tr>
<tr><td>4.</td><td>Do you use recycled paper in University?</td><td colspan="4">Yes</td></tr>
<tr><td>5.</td><td>Do you use reused paper in University?</td><td colspan="4">Yes</td></tr>
<tr><td>6.</td><td>How would you spread the message of recycling to others in the community? Have you taken any initiatives? If yes, please specify.</td><td colspan="4">Yes,
We regularly organize waste paper, E- waste, Plastic collection drives in the campus in the campus for sending them to authorized recyclers.
We have conducted outreach program in communities through our projects like Korakagaz, Sugandh, Nistaaran, Shri Ji Gavya to develop viable entrepreneurship models through recycling

Provide hands-on training to students on waste segregation, composting and bio-enzyme production</td></tr>
<tr><td>7.</td><td>Can you achieve zero garbage in your institute? If yes,</td><td colspan="4">We have achieved Zero Waste campus Award by MCD</td></tr>
</table>

	how?	
8.	How do you manage Hazardous and E-waste?	No Hazardous waste generated, E- Waste collected and Recycled through Authorized Recycler (E- Parisaraa Pvt Ltd)
9.	Is there any awareness programme on waste minimization being carried out by your university?	Yes, through our college societies and Eco- Clubs like Geo-Crusaders ENACTUS & Satark, we run awareness programs on waste management, also in collaboration of MCD.
10.	Are your college staff and students aware about MSW, E-Waste, Hazardous Waste Rules? 2016, 2011, 1989, respectively?	Yes, the rules are delivered during lectures to all the students under their course curriculum of AEC I paper of Environmental Science.

The college campus generates various types of waste including paper, garden waste, biodegradable kitchen waste, non-biodegradable dry waste, e-waste and sanitary waste from washrooms.

PGDAV college has implemented waste segregation and a recycling program to manage this waste. Waste is segregated into green and blue bins. Paper waste is reused or recycled through a formal recycling company, Green-O-Tech India. Biodegradable waste is managed through vermicomposting beds and composting pits. E-waste is collected and recycled through a separate authorized e-waste recycling company (E-Parisaraa Pvt Ltd). Hazardous waste is not generated according to the information provided by the concerned authorities.

The College also uses recycled paper and claims to take several initiatives to spread the message of recycling within the community. These initiatives include organizing waste collection drives for paper, e-waste, and plastic on campus. They have also conducted outreach programs in communities through projects focused on developing viable entrepreneurship models for recycling. Additionally, they provide hands-on training to students on waste segregation, composting and bio-enzyme production**.**

II. BIODIVERSITY AND GREENING THE CAMPUS

(Supporting documentary/photographic evidence attached as **Annexure II**)

1.	Are there any Biodiversity or Greening activities in your college?	Yes, we carry out regular mass plantation drives with students and faculty. We have also run a program of planting and adopting a sapling for 3 years to increase the success rate of plantation drives, we also conducted "Peepal Tree Extraction Drive" to extract Peepal saplings from buildings and nurturing them in nurseries for plantations (in collaboration with Give me Trees Trust)
2.	Is there any garden in your college?	Yes, there are three lawns and three herbal Gardens in the Campus.
3.	Do the students/College participate in the campus greening and biodiversity conservations?	Yes, extensively.
4.	Total number of Plants (Herb, Shrubs, Trees, Medicinal) in the Campus.	Around 100 species of plants with more than 205 trees exist in the campus. The college planted almost 450 new plants in 2021-22; more than 1000 herbal plants were planted since 2022.
5.	Name of some important plant's variety exists in your College campus. (Trees, vegetables, herbs, etc.)	**Trees** *Azadiracta indica* *Cassia fistula* *Ficus bengalensis* *Ficus racemosa* Bombyx cieba Milletia pinnata Butea monosperma Dalbergia sissoo Ficus virens Ficus religious Polyalthia Bauhinia variegata Eucalyptus and Alstonia **Fruit tree** Guava, Lemon, Jamun, Amla, Mulberry,and Banana.

		Essential herbs and medicinal plants Ashwagandha Holy Basil Shatavari Hibiscus Kala Bans AloeveraLemon Grass Damabel Pamarosa Elaichi, Ajwainpatta and Meethi Neem. **Horticulture species** Snakeplants Palms, Hedging Shrubs, Bougainvillaea, Creeping Plants Climbing Plants, Money Plants, Ornamental Ficus Syngonium
6.	Does the College/College campus have any Horticulture Department/Garden committee/Eco-club?	Yes, we have both Garden Committee and Eco-club (Geo-Crusaders)
7.	Number of Tree Plantation drives organized by college per annum. (If Any)	2-3 plantation drives per Annum, within as well as outside the college campus
8.	Is there any medicinal garden in your college?	Yes, medicinal Gardens
9.	Whether College is using compost or bio- fertilizer as a part of green farming?	Yes, we compost all our leaf litter, garden waste and kitchen waste to make compost and Vermicompost and use in our lawns and Gardens
10.	Does College organize a community awareness programme/Outreach workshops/Online programme for biodiversity conservation?	Yes, regularly through Geo-Crusaders, ENACTUS, Satark and NSS, Numerous online and offline International and National seminars, workshops, plantation drives are organized by the Eco-club for biodiversity conservation

PGDAV College carries out many biodiversity and greening activities. They regularly hold mass plantation drives with students and faculty. They also have a program where students adopt a sapling for 3 years to improve the survival rate of the new plants. Additionally, they collaborate with Give Me Trees Trust to extract Peepal saplings from buildings and nurture them in nurseries for planting.

The college campus is home to many plants with over 100 different species and more than 125 trees. In the last academic year (2021-2022), they planted nearly 450 new plants and over 1000 herbal plants. The college has a variety of trees including Neem, Golden shower, Banyan, Fig, Eucalyptus and medicinal plants like Ashwagandha, Holy Basil, Aloe Vera, and Lemon grass.

The college has a Garden Committee and an Eco-Club (Geo-Crusaders) to promote green initiatives. They hold 2-3 tree plantation drives per year both on and off campus. They also compost all their leaf litter, garden waste and kitchen waste to create compost and vermicompost for their lawns and gardens.

To raise awareness about biodiversity conservation, the college holds numerous online and offline workshops, seminars, and plantation drives through their Eco-Club, Geo-Crusaders, ENACTUS, Satark, and NSS.

III. ENERGY USE & ITS CONSERVATION

(Supporting documentary/photographic evidence attached as **Annexure III**)

1.	How much energy is used by the College in KW per month	30000-50000 kW per month
2.	List ten ways that you use energy in your college. (Electricity, LPG, firewood, others).	Electricity-lighting and Fans in classrooms, Office, accounts Section, staffrooms, Labs Seminar Halls, Library, Department Rooms, Canteen. ACs in Labs, Office, accounts Section, staffrooms, Labs, Seminar Halls, Library, Department Rooms Lights and Exhaust fans in Washrooms PNG in Kitchen.
3.	Are there any energy saving methods employed in your college? If yes, please specify. If no, suggest some methods.	The college makes extensive use of natural light. The college has replaced the old lighting with LED lighting and fixtures. Energy efficient fans and air conditioners energy-efficient electronic appliances and equipment (e.g. Refrigerators & Microwaves) Constant monitoring of energy uses throughout the year through sub metering and aspirate metering of each learning space and open space Installed a Solar Power Plant that is capable of producing on-site Renewable Energy Thoughtfully developed power distribution system so that the power supervisor is able to monitor the power supply in accordance with the appropriate requirements of the users Signs to switch off the lights and fans installed in the classrooms

4.	How many CFL/LED bulbs has your college installed? Mention energy used by LED bulbs as the University	Approximately 1500 LED
5.	Are any alternative energy sources employed / installed in your college? (Photovoltaic cells for solar energy, windmill, energy efficient stoves, etc.,) Please Specify.	Photovoltaic cells for solar energy Energy efficient PNG operated Burners
6.	Do you run "switch off" mock-drills at College?	Yes
7.	How much energy (per month) is being saved by the use of efficient light by source replacement by the University?	20000-25000 kW
8.	Does the classroom have sufficient solar light illumination? Provide details.	Yes, the classrooms have large glass windows to capture maximum Day light
9.	Does the College organize any workshops/ seminars/ campaigns to educate students and staff?	Yes, numerous online and offline International and National seminars, workshops, plantation drives are organized
10.	Does your machinery (TV, AC, Computer, printers, etc.) run on standby modes most of the time?	The machinery is switched off in the early evening after the college premises and are switched on in the morning. During the college hours, the systems may run on standby mode if not in use.

PGDAV College demonstrates a commitment to sustainability through a combination of energy-saving practices, renewable energy generation and educational programs. By addressing standby power consumption and implementing additional measures, the college can continue to reduce its environmental footprint. PGDAV College consumes

a significant amount of energy (30,000-50,000 kW monthly) for lighting, appliances, and air conditioning. To combat this, they've replaced conventional lighting with LEDs, installed a solar power plant and utilize natural light whenever possible. Their commitment to sustainability goes beyond energy with extensive tree planting, composting initiatives, and educational programs to raise awareness among students and staff.

IV. WATER USE & ITS CONSERVATION

(Supporting documentary/photographic evidence attached as **Annexure IV**)

1.	What are the sources of water in the College?	Jal Board
2.	List uses of water in your college?	Drinking Cleaning Lawn And Gardens, Washrooms Canteen
3.	Daily quantity of water uses per day?	Around 20000 litres/day (only for morning college) (combined bill is generated for morning and evening so the consumption value is halved)
4.	How does your college store water? Are there any water saving techniques followed in your college?	Rooftop Water tanks Rainwater harvesting system installed since 2016 RO effluent water reused in washrooms for flushing, handwash and cleaning purposes
5.	Are there signs reminding students/ staff to turn off water taps?	Yes
6.	Write down ways that could reduce the amount of water used in your college and is being practiced.	Rainwater harvesting system installed since 2016 RO effluent water reused in washrooms for flushing, handwash and cleaning purposes Immediate repair/ replacement of leaky taps Installation of Sign boards to turn off the taps Watering plants through sprinklers to save water Growing drought resistant native plants in campus
7.	Water use from the College water meter for one year? And annual water charges paid for water uses?	Around 3500 KL/year Rs. 460,000/- (Combined bill for morning and evening college)
8.	Does your College harvest rainwater?	Yes, the campus is fully equipped with Rainwater harvesting system with three recharge pits installed since 2016;

		even a single drop of rainwater goes to RWH system
9.	Is there any water recycling system or treatment of water?	RO effluent water reused in washrooms for flushing, handwash and cleaning purposes
10.	Does College organize workshops/ conferences/ training/seminars for the students and Collegestaff for water management and conservation?	Yes, seminars and workshops organized to observe international water Day, Nadi ko Jano Andolan, awareness programs regarding zero Day

PGDAV College takes a multi-pronged approach to managing their water consumption. They source water from the Jal Board and supplement it with groundwater. The college uses water for various purposes, including drinking, cleaning, maintaining gardens, and operating the canteen. Their daily water consumption is around 20,000 liters, catering to the morning session only.

The college prioritizes water conservation through several practices. College has a rainwater harvesting system implemented since 2016 to capture and store rainwater for later use. RO effluent water is reused for flushing toilets, handwashing and cleaning in washrooms. Additionally, they promptly repair leaky taps, use signs to remind users to conserve water, and promote water-efficient practices like using sprinklers and planting drought-resistant plants.

The college organizes workshops, conferences, and training sessions to raise awareness about water management and conservation. These events are held during International Water Day, Nadi Ko Jano Andolan (Clean River Movement), and programs related to achieving "Zero Water Day." Their commitment to sustainable water management practices helps reduce their environmental impact

V. CARBON FOOTPRINT

(Supporting documentary/photographic evidence attached as **Annexure V**)

1.	Total Number of vehicles used by the stakeholders of the College(per day). Number of visitors with vehicles per day?	Around 75
2.	No. of two wheelers used by the staff members and students? (Annual average of fuel used).	Around 40
3.	No. of cars used per day by the staff and students of the College? (Annual average of fuel used)	Around 35, some staff members and students have electric vehicles
4.	No. of cycles used by the staff members and students and no. of persons using common (public) transportation?	No of cycles used 15 Public transportation: since Vinoba Puri Metro Station is just outside the gate of the college most of the staff and students use metro and public transportation
5.	Number of generators used every day (hours). Give the amount of fuel used per day? (monthly average of fuel used)	Around 250 lites per annum or 20-21 litres per month
6.	Number of LPG cylinders used in the canteen (Give the amount of fuel used per month and amount spent).	PNG connection in college canteen, (its day college, no Hostel)
7.	Quantity of kerosene/diesel/petrol used in the canteen/labs (Give the amount of fuel used per month and amount spent).	• Diesel used only for lawn more, • And generator for power back up
8.	Amount of taxi/auto charges paid and the amount of fuel used per month for the transportation of vegetables and other materials to the canteen? (Please state the distance traveled in kilometers).	Rs 2500

9.	Amount of taxi/auto charges paid per month for the transportation of office goods to the College? (Please state the distance traveled in kilometers).	Rs 1000
10.	Use of any other fossil fuels (Coal, wood etc.) in the College(Give the amount of fuel used per day and amount spent).	Nil
11	No. of air conditioners used in Classroom, Staff room, faculty room?	Classrooms do not Have Air Conditioners Staff Room- 6 Faculty Rooms 13

Total Carbon footprint of PGDAV College :

The total carbon footprint including all the details provided, considering that only 20% of the total students and faculty own vehicles, we'll need to adjust the calculations accordingly.

Given that there are 4000 students and faculty in total, and only 20% of them own vehicles, we can calculate the number of stakeholders who own vehicles:

Number of stakeholders owning vehicles = 4000 * 20% = 800

Now, let's proceed with the calculations:

1. **Emissions from vehicles**:

For cars:
Emissions from cars=35 cars/day×10 km1 liter×11.6 kg CO_2/liter×Number of days i n a year

For two-wheelers: Emissions from two-wheelers=40 two-wheelers/day×40 km/liter×11.6 kg CO_2 /liter×Number of days in a year

Now, we'll multiply these emissions by the number of stakeholders who own vehicles:

Total emissions from vehicles = (Emissions from cars + Emissions from two-wheelers) * Number of stakeholders owning vehicles

2. **Emissions from generators**:

Annual emissions from generator=1.7936 kg CO_2/day×365 days/year

Now, let's sum up the emissions from vehicles and generators to get the total carbon footprint:

Total carbon footprint = Total emissions from vehicles + Annual emissions from generator

Let's perform the calculations:
First, let's calculate the number of stakeholders who own vehicles:

Number of stakeholders owning vehicles = 4000 * 20% = 800

Now, let's calculate the emissions from vehicles:

For cars: Emissions from cars=35 cars/day×10 km1 liter×11.6 kg CO_2/liter×365 days/year

Emissions from cars=35×101.6×365=218.75 kg CO_2

For two-wheelers:

Emissions from two-wheelers=40 two-wheelers/day×40 km1 liter×11.6 kg CO_2/liter×365 days/year

Now, let's calculate the total emissions from vehicles:

Total emissions from vehicles=(218.75+1000) kg CO_2×800

Total emissions from vehicles=974,000 kg CO_2

Next, let's calculate the total emissions from the generator:

Annual emissions from generator=1.7936 kg CO_2/day×365 days/year

Annual emissions from generator=653.024 kg CO_2

Now, let's sum up the emissions from vehicles and the generator to get the total carbon footprint:

Total carbon footprint=974,000 kg CO_2+653.024 kg CO_2

Total carbon footprint=974,653.024 kg CO_2

So, the estimated total carbon footprint of PGDAV College, including all the details provided, is approximately 974,653.024 kg CO_2.

VI. CLEAN AIR (CAMPUS DESIRABLE AMBIENT AIR)

(Supporting documentary/photographic evidence attached as **Annexure VI**)

1.	Are the Rooms in Campus being well ventilated?	yes
2.	Window floor ratio of the Rooms	Around 20-25%
3.	What is the ownership of the vehicles used by your university? (Please Tick only one)	Only one car
4.	Provide details of school-owned motorised vehicles?	
	No. of vehicles	1
	No. of vehicles more than five years old	0
	No. of Air-conditioned vehicles	1
	PUC done	yes

5.	Specify the type of fuel used by your school's vehicles:	Buses	Cars/ Vans	Two wheelers (Scooter/Motor Bikes) etc.	Other	Total
	Diesel	-	-	-		
	Petrol	-	1	-		1
	CNG	-	-	-		
	LPG	-	-	-		
	Electric	-	-	-		
6.	Air Quality Monitoring Program (If Any)	Yes - completely smoke-free campus, and anti-smoking policies - burning of waste Banned - sufficiently ventilated spaces and classrooms - learning facilities on campus, including				

		classrooms, are well constructed in accordance with statutory standards - utilize low-emission materials, particularly paints - maintaining a dust free environment - all the non-concrete area covered woth plantation - Exhaust Fans are installed in all the campus's toilets, urinals, canteens, and laboratories - Air purifying plants are used indoors as air filters - Air Quality Monitoring system installed in the campus
7.	Students suffer from respiratory ailments? (If Any)	Not known
8.	Details of Genset	
9.	Does the Collegeban on biomass (Horticulture or Solid waste) burning?	Yes
10.	Does the College follow Construction and Demolition Rules, 2016?	Yes

VII. ENVIRONMENTAL LEGISLATIVE COMPLIANCE

(Supporting documentary/photographic evidence attached as **Annexure VII**)

1.	Are you aware of any environmental laws pertaining to different aspects of environmental management?	Yes
2.	Does your college have any rules to protect the environment? List possible rules you could include.	Use of energy efficient appliances, LED Lighting, Rule to switch off main switches of all appliances after the college hours are over Policies to discourage single use plastics Reusing paper after (re printing at the back of the paper, minimizing printing, no tolerance to leaky taps, waste recycling, composting of canteen and garden waste, regular plantation drives, all the dignitaries and visitors are given saplings instead of bouquets, plantations in the campus by students, faculties and eminent personalities visiting the campus
3.	Environmental Ambient Air Quality Monitoring conducted by the College?	Yes Air Quality Monitoring system installed in the campus Students are also trained to check the air Quality through online websites such as CPCB and aqicn.org
4.	Does Environmental Water and Wastewater Quality monitoring conduct by the Institute?	No

5.	Does stack monitoring of DG sets conducted by the Institute/or through Accredited laboratory?	
6.	Is any warning notice, letter issued by state government bodies?	No
7.	Is there any Hazardous waste generated by the College? If yes, explain its category and disposal method.	No
8.	Does any Bio medical waste/Electronic waste generated by the College? If yes explain its category and disposal method	E- Waste, Recycled through Authorized Recycling Agency E-Parisar

VIII. SOCIAL WELFARE & COMMUNITY OUTREACH

1.	Are you aware of any environmental Laws pertaining to different aspects of environmental management?	Yes
2.	Does your Collegehave any rules to protect the environment? List possible rules you could include.	Use of energy efficient appliances, LED Lighting, Rule to switch off main switches of all appliances after the college hours are over Policies to discourage single use plastics Reusing paper after (re printing at the back of the paper, minimizing printing, no tolerance to leaky taps,waste recycling, composting of canteen and garden waste, regular plantation drives, all the dignitories and visitors are given saplings instead of bouquets, plantations in the campus by students, faculties and eminent personalities visiting the campus
3.	Does housekeeping schedule on your campus?	Yes
4.	Are students and faculties aware of environmental cleanliness ways? If Yes explain	Yes. All the students study a compulsory paper on environmental awareness, regular programs, events and drives are conducted in the campus, we have been extremely active

		Eco-club to spread awareness regarding environmental cleanliness, cleanliness drives are regularly organized, regular – waste paper and E-waste collection drives and recycling, placements of green and blue dustbins at multiple places throughout the campus and many more activities are conducted
5.	Do Important Days Like World Environment Day, Earth Day and Ozone Day etc. eminent in Campus?	Yes
6.	Does College participate in National and Local Environmental Protection Movement?	Yes
7.	Does College have any Recognition/Certification for environment friendliness?	Yes, zero waste Campus declared By MCD, Sustainable Campus awarded by MGNCRE, National Environmental Education and Awareness award by International Association for Educators for World Peace
8.	Does College use renewable energy?	Yes
9.	Does College conduct a green/ environmental audit of its campus?	Yes
10.	Has the College been audited / accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?	Yes

IX. BEST PRACTICES

Best Practices Adopted		
A	**Renewable Energy** **I.** Adoption of Cycling practices for **Carbon Footprint**. **II.** Annual Sports activity improves the **health of students and staff**. **III.** Solar water Heater at **campus** **IV.** A clean source of **energy is utilized at campus**. **V.** Efforts towards **Carbon Neutrality.** **VI.** The Solar plant on building roofs	
B	**Biodiversity Conservation** Flora and fauna conservation	Workshops, Seminars, plantation drives, tree measurement (Annexure II)
C	**Tree Plantation Drives** Two Drives Annually as well as every guest is honored by Tree Plantation at Campus.	yes
d	**Groundwater Recharge** Through Rain Water Harvesting System.	yes
E	**Pollution Reduction** Promoting battery operated vehicles (Students) and using public transport by students and staff at campus	yes
F	**E-Waste Management** Old Computers donated to Government School	Recycling through E- parisar
G	**Solid Waste Management** Lifting of garbage from college campus on alternate days by Municipal Corporation.	Segregated waste collection Composting, vermicomposting, paper recycling, plastic recycling
H	**Water Conservation**	

X. IMPROVEMENT & RECOMMENDATIONS

AREAS OF IMPROVEMENTS

- Waste Water recycling units should be used to conserve water
- Increase capacity of solar panels for self-reliance.
- More energy efficient devices should be used such as high star (5 star) ACs, refrigeration
- Environmental monitoring and quality assessment should be ensured on a regular basis.
- To establish Biomedical/hazardous/chemical waste management system for future use

RECOMMENDATIONS

- To set up a waste water recycling unit where the recycled water can be used for gardening in college.
- To increase the capacity of Solar panels to generate more electricity as renewable energy.
- More energy efficient air conditioners (of 5-star ratings) and coolers should be encouraged to be used in the college campus.

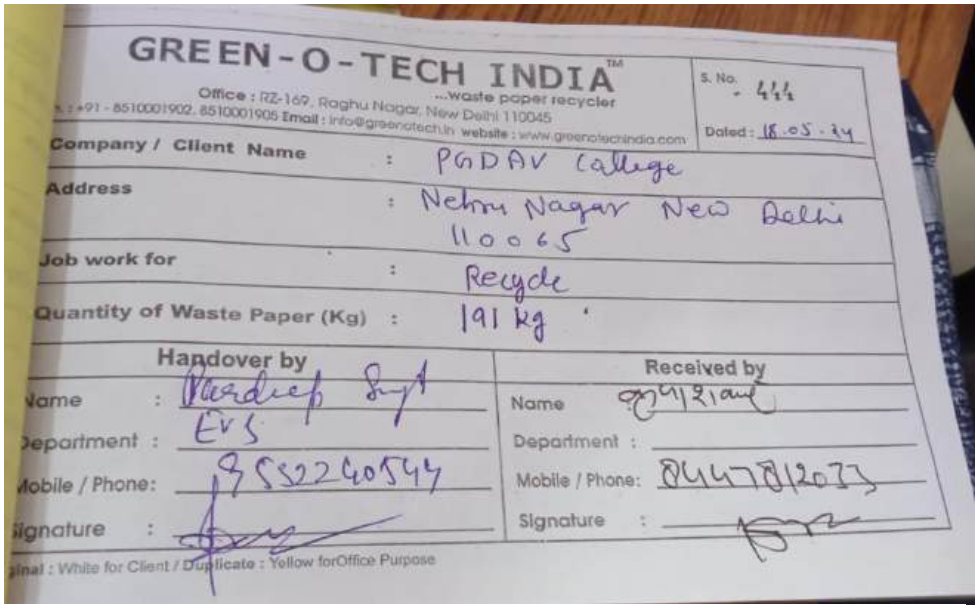
ANNEXURE REPORT OF GREEN AUDIT

for

PGDAV College
University of Delhi

ANNEXURE I

WASTE MINIMIZATION AND RECYCLING



GREEN-O-TECH INDIA™
...waste paper recycler
Office : RZ-169, Raghu Nagar, New Delhi 110045
Tel. : +91 - 8510001902, 8510001905 Email : info@greenotech.in website : www.greenotechindia.com

S. No. 414
Dated : 18.05.24

Company / Client Name : PGDAV College
Address : Nehru Nagar New Delhi 110065
Job work for : Recycle
Quantity of Waste Paper (Kg) : 191 kg

Handover by	Received by
Name : Pardeep Sharma	Name
Department : EVS	Department :
Mobile / Phone: 9582240544	Mobile / Phone: 9447812073
Signature :	Signature :

Final : White for Client / Duplicate : Yellow forOffice Purpose

Fig I. 1 : Waste collection is done by Green-O-Tech India from PGDAV College

E-Parisaraa Pvt. Ltd.

To whomsoever it may concern

This is to certify that SATARK, Consumer Club of PGDAV college, Nehru Nagar is actively involved in getting E-waste generated by college & students at home, recycled in Environmental friendly manner. For Financial year 2021-22, they collected and disposed 587 kgs of E-waste.

We, E-Parisaraa Pvt. Ltd. appreciate efforts of students and teachers involved in all the activities for spreading awareness.

Manoj Kandpal
Assistant Manager
E-Parisaraa Gurgaon

Recycling Facility at:

Fig I. 2 : E-waste collection by E-Parisara Pvt Ltd from PGDAV College

GREEN-O-TECH INDIA™
One Step Towards Waste To Wealth™

HISTORY CARD
For Recycling Job Work

For the year ...2019.....

Green Warrior : Enactus PGDAV Green Warrior ID :
Address : PGDAV College Nehru Nagar, Ring Road DELHI
Contact Person : Contact No.:
Email ID : Services : Waste Paper Recycling

B-1/13, 3rd Floor, Raghu Nagar, New Delhi-110045
Contact : +91 78400 34848, 78400 34848 Write us : info@greenotech.in
www.greenotechindia.com

Fig I. 3 : Waste paper recycling by Green-O-Tech India for PGDAV College

Fig I. 4 : Waste segregation at source at PGDAV College

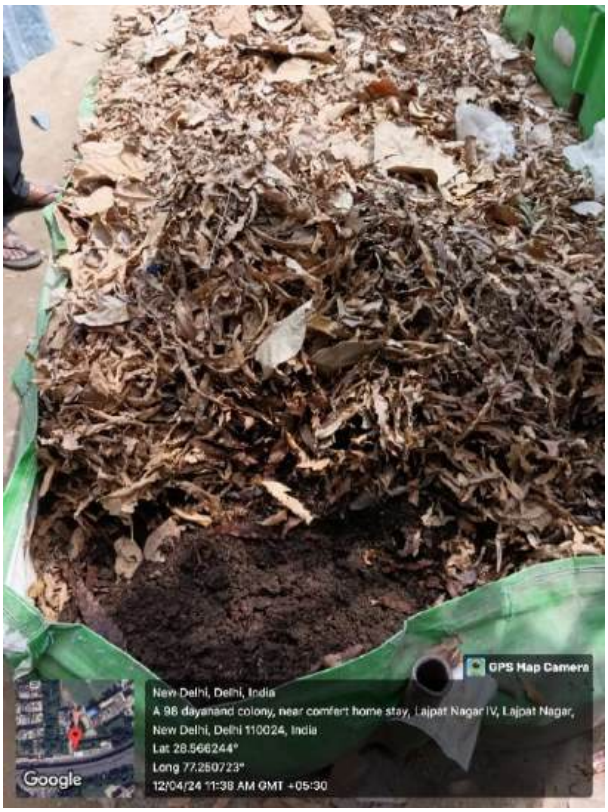


Fig I. 5 : Vermicomposting for kitchen waste and litters at PGDAV College

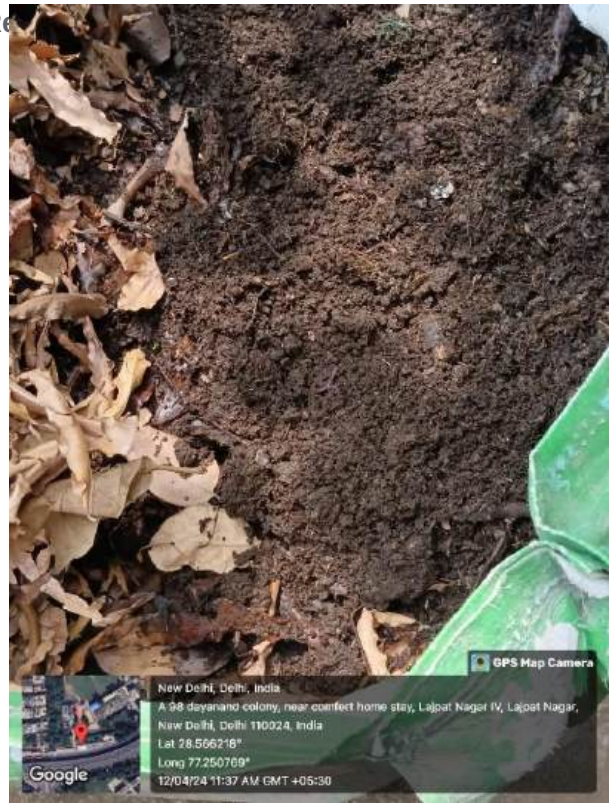


Fig I. 6 : Prepared manures/composts through vermicomposting

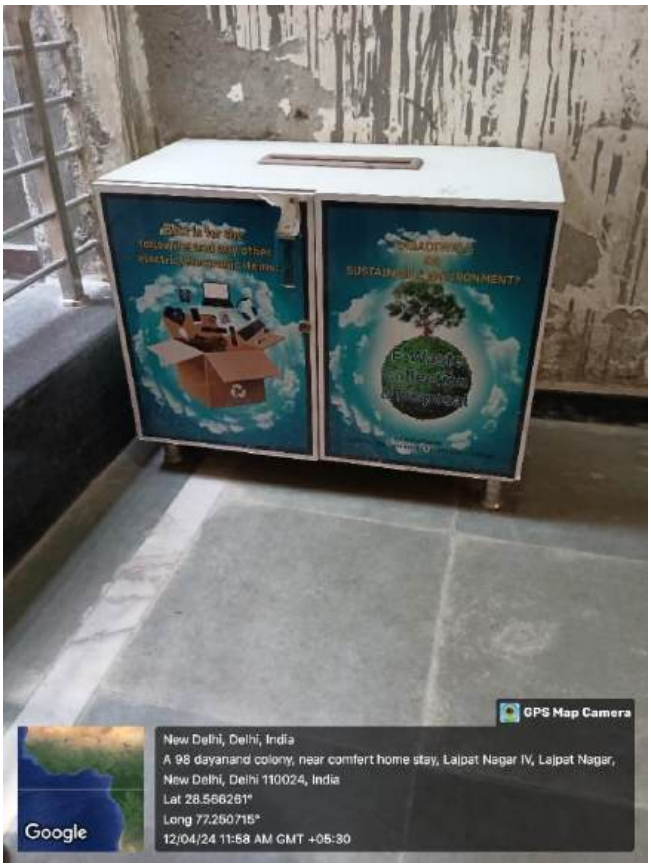


Fig I. 7 : E waste collection at PGDAV College

Fig I. 8 : Certificate of recognition as "Zero Waste Institution" from Municipal Corporation of Delhi

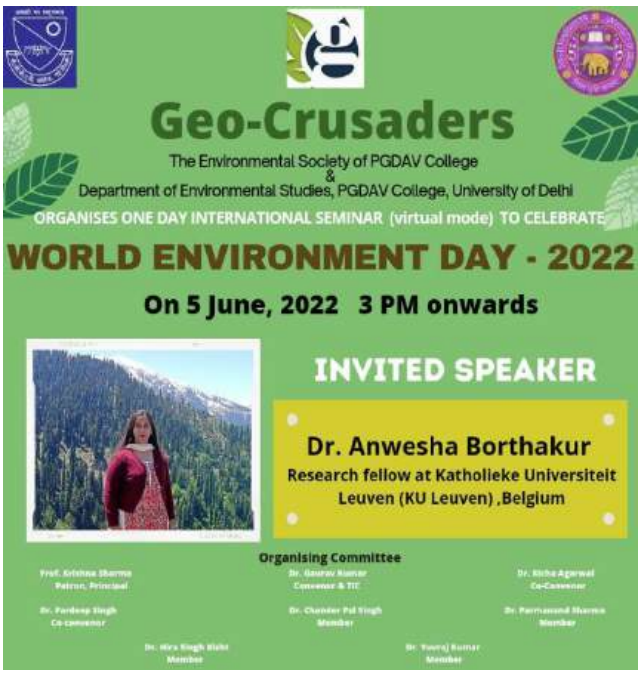
ANNEXURE II

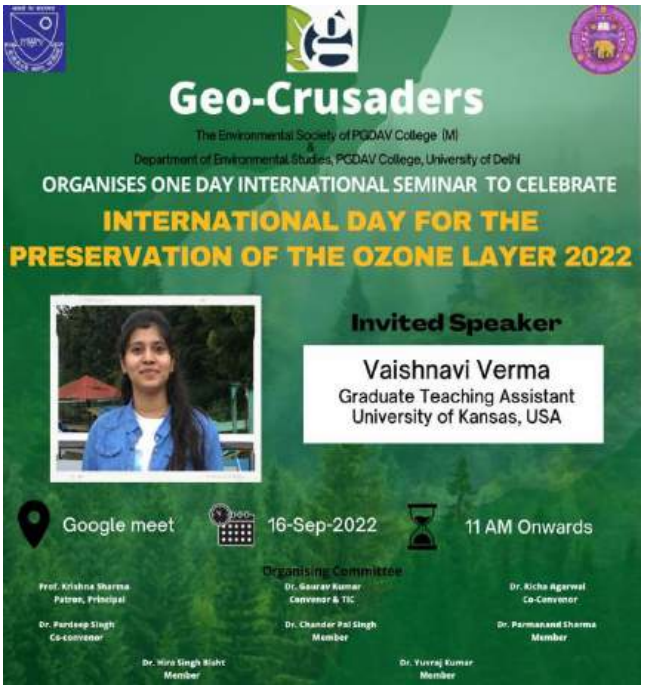
BIODIVERSITY AND GREENING THE CAMPUS

Fig II. 1 : Medicinal plants gardens at PGDAV College campus

Fig II. 2 : List of medicinal plants with their medicinal properties available at PGDAV college's medicinal plants garden

Fig II. 3 : The eco-club Enactus activity : Collecting flowers from nearby temple and preparing incense





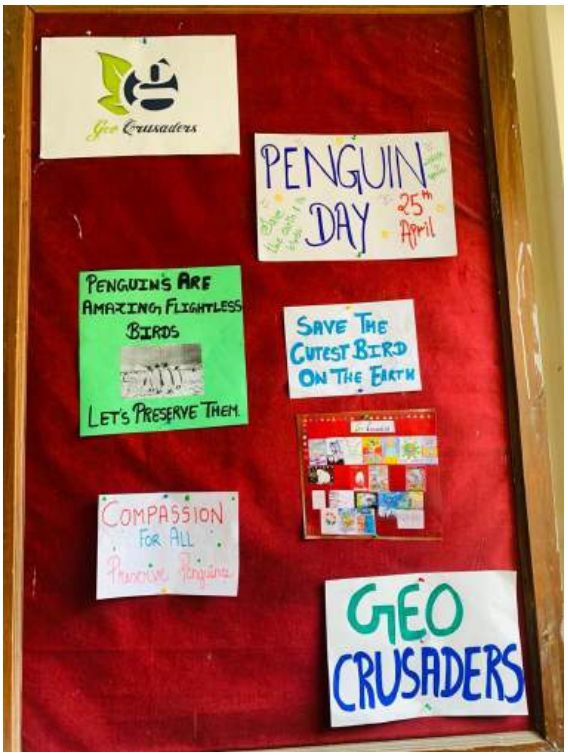


Fig II. 4 : PGDAV college's eco-club "Geo Crusaders" activities


World Environment Day: DU's eco clubs to lead the way, one initiative at a time

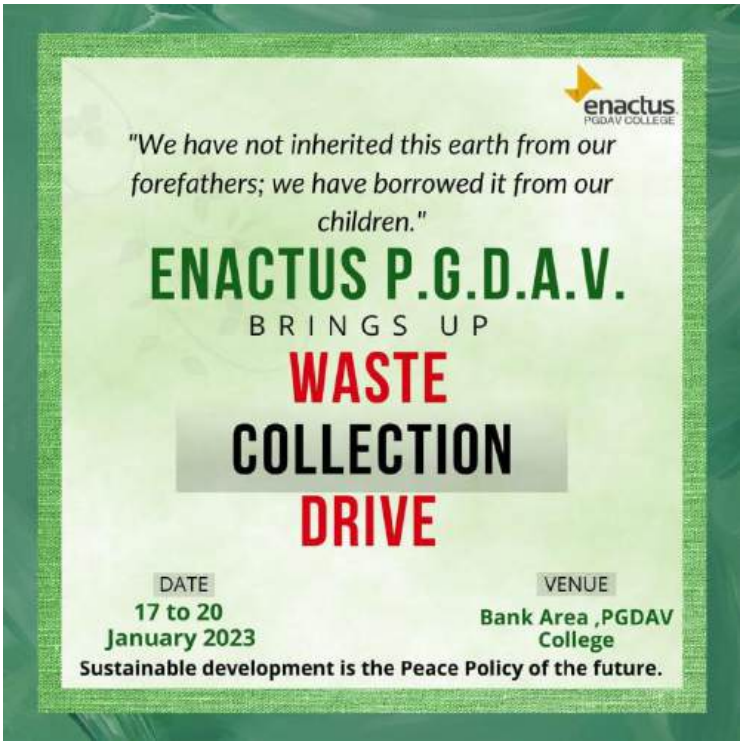
We'll conduct a webinar to spread awareness among students, followed by a plantation drive.

We'll host an online workshop on how to make seed balls.

SUCHI DHIMAN,

Fig II. 6 : PGDAV college's green initiatives coverage in newspaper

Fig II. 5 : Geocrusaders online workshop on "how to make seedballs"



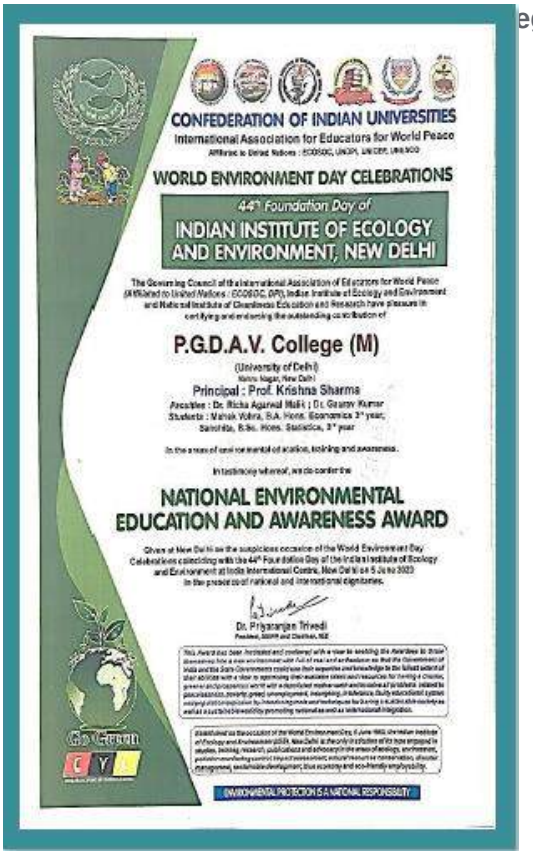


Fig II. 8 : PGDAV college celebration of "World Environment Day"

Fig II. 7 : Plantation drive at PGDAV College

Fig II. 9 : Green initiatives and plantation drive at PGDAV College

Mahatma Gandhi National Council of Rural Education, Department of Higher Education
Ministry of Education Government of India

Certificate of Recognition

This is to recognize *PGDAV College, New Delhi* as the Sustainable Campus. The Institution has done the best work for making the campus sustainable in *the areas of Sanitation, Hygiene, Waste Management, Water Management, Energy Management, and Greenery Management*. This program is organized by Mahatma Gandhi National Council of Rural Education, Department of Higher Education Ministry of Education Government of India.

Dr W G Prasanna Kumar
Chairman
MGNCRE, Ministry of Education
Government of India

Fig II. 10 : Certificate of recognition as "Sustainable Campus" from MGNCRE (Mahatma Gandhi National Council of Rural Education), Ministry of Education, Govt of India

03 YOUTH Today

पंजाब केसरी
दिल्ली/जयपुर
मंगलवार, 30 अक्टूबर, 2018

पर्यावरण बचे तो प्राण बचे

कॉलेज में लगा है कम्पोजिट पिट

क्या कहा युवाओं ने

युवा कर रहे काम

विचार की है जरूरत

प्रदूषण हो नियंत्रित

अंबेडकर कॉलेज ने उठाया कप

DDA starts beautification work around Sultan Garhi tomb

Around 300 children from different schools in the vicinity and PGDAV college were present in the programme and planted saplings in the area.

Fig II. 11 : The coverage of Green initiatives and environment awareness activities by PGDAV college in newspapers

ANNEXURE III

ENERGY USE & ITS CONSERVATION

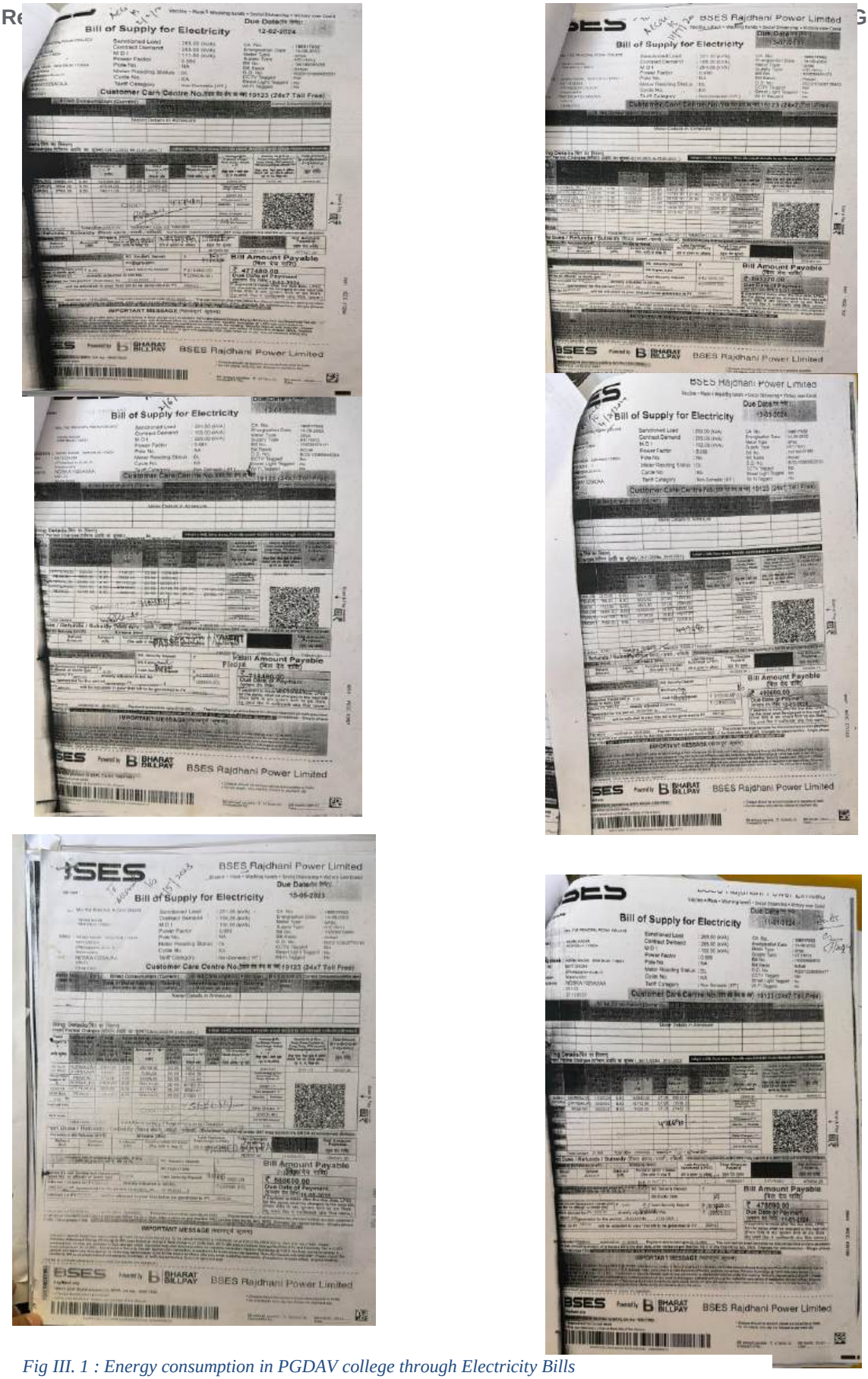


Fig III. 1 : Energy consumption in PGDAV college through Electricity Bills

Fig III. 2 : All classes, library, conference rooms are equipped with LED bulbs at PGDAV College

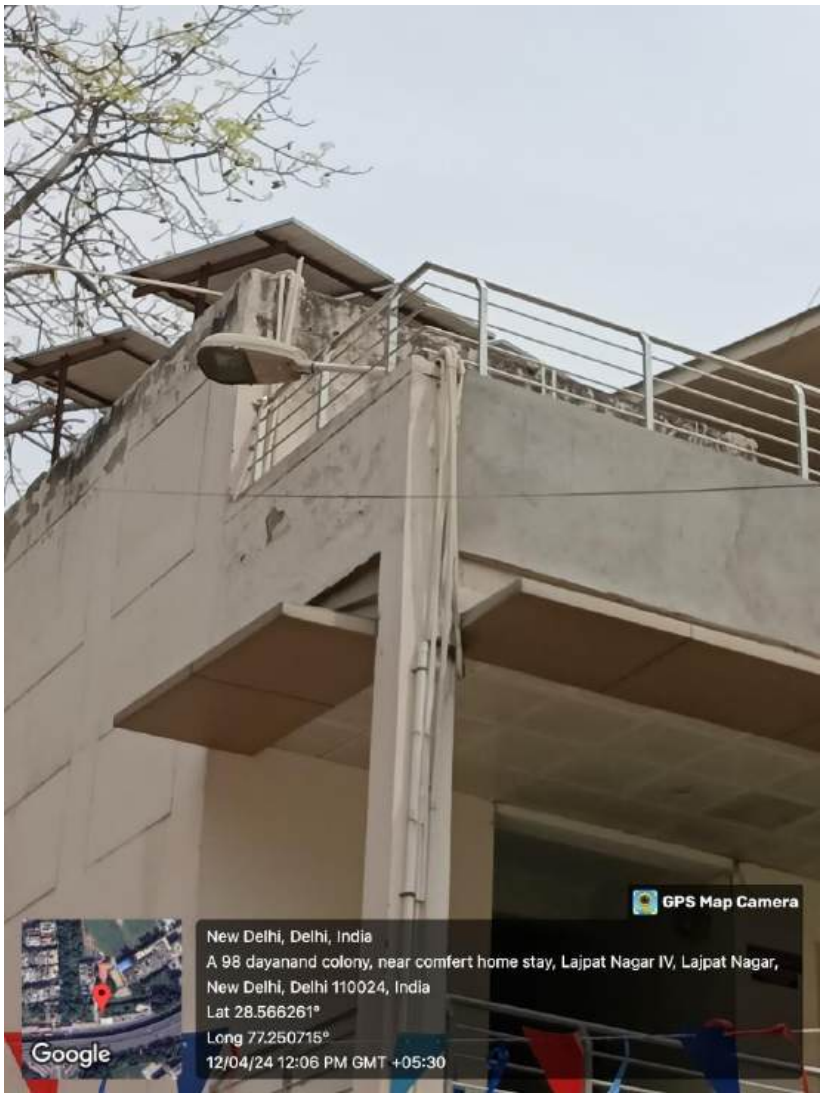


Fig III. 3 : Solar panels at rooftop of PGDAV college

ANNEXURE IV

WATER USE & ITS CONSERVATION

Fig IV. 1 : Water usage at PGDAV College through Water Bills

ANNEXURE V

Carbon Footprint

Fig IV. 2 : Rainwater harvesting system at PGDAV college

Fig V. 1 : Vinobapuri Metro Station is just in front of PGDAV College Campus. Most of the students / staffs use Metro services to travel to College campus

ANNEXURE VI

Clean Air (Campus desirable ambient air)

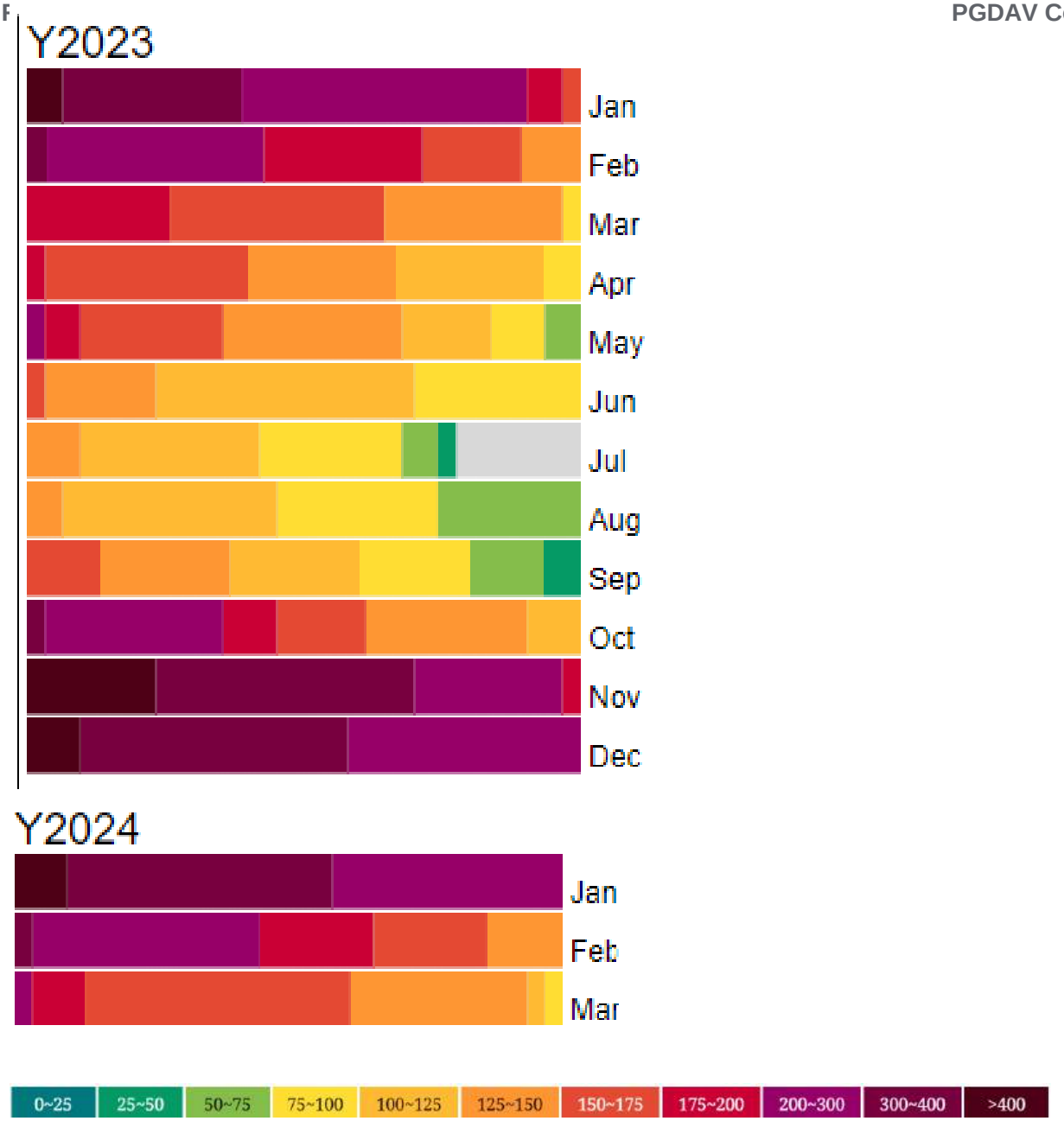


Fig VI. 1 : Air Quality (AQI) at PGDAV College during 2023-24
(Source :CPCB : https://aqicn.org/city/delhi/pgdav-college--sriniwaspuri/)

ANNEXURE VII

ENVIRONMENTAL LEGISLATIVE COMPLIANCE

Environmental policy of P.G.D.A.V. College (M) and University of Delhi

P.G.D.A.V. College (M) recognises the urgent need for sustainable practises to protect our planet's ecosystem and ensure a healthy future for generations to come. As an academic institution committed to excellence in education and research, we understand our responsibility to lead by example in environmental stewardship. Hence, the college has formulated its environmental policy to achieve following objectives.

1. **Compliance and legal requirements** for ensuring the institutions compliance with all relevant environmental laws, regulations and standards.
2. **Protection and conservation of environment** through establishing a framework to protect and conserve natural resources, ecosystems and biodiversity within the institution**.**
3. **Promoting resource efficiency** and waste reduction through implementation of best practises, technology and management systems.
4. **Engagement of stakeholders** like students faculty staff administration and broader community in the development, implementation and evaluation of environmental policies and initiatives.
5. **Sustainability integration** in all aspects of campus operations, including facilities, management, procurement, curriculum development and research activities.
6. **Climate change mitigation and adaptation** through developing strategies to reduce the institutions carbon footprint and adapt to the impacts of climate change.
7. **Education and awareness** in the campus community About environmental issues sustainable practises and their roles in promoting environmental stewardship.
8. **Encouraging innovation and research** in areas related to environmental sustainability such as waste management, green technology and ecosystem management.
9. **Continuous improvement** through establishing mechanisms for monitoring reporting evaluation and improvement of environmental performance.
10. **Leadership and collaboration** with other institutions, government agencies, industry partners and non-profit organisations to advance shared environmental goals.

The college has formulated the environmental policy to achieve the above mentioned goals:

1. **Waste Management**
    - We are committed to reducing waste generation across all areas of our campus operations.
    - We will prioritise waste reduction through practises such as source reduction, reuse, recycling and composting.
    - All the paper waste will be recycled through an authorised recycling agency.
    - The already established Scrap Disposal and E-waste Disposal committees in the college will facilitate the proper disposal of waste in the campus.
    - We strive to become a plastic free and zero waste campus.

- Regular waste audits will be conducted to identify opportunities for improvement and measure progress towards waste reduction goods.

2. **Composting**
    - P.G.D.A.V. College (M) strives to establish composting programmes to divert organic waste from landfills and promote soil health.
    - Operation and monitoring of already established vermicompost beds and compost pits will be conducted to efficiently manage garden and food waste generated in the campus
3. **Water Conservation**
    - P.G.D.A.V. College (M) is dedicated to conserving water resources through efficient management practises.
    - We will implement water saving technologies such as low flow fixtures and irrigation systems across campus.
    - We are already reusing the effluent water from the RO system in the washrooms Regular monitoring and repair of leaky tabs will be conducted.
    - Building committee and caretaker committee will facilitate regular monitoring and maintenance of taps and other fixtures in the college.
    - Educational initiatives will be developed to raise awareness about the importance of water conservation and encourage responsible water use among students, faculty and staff.
4. **Energy conservation**
    - We will try to minimise energy consumption and promote energy efficiency through our facilities.
    - Implementing energy efficient technologies and practises will be a priority in new construction and renovations.
    - Building Committee and Caretaker Committee will facilitate regular monitoring and maintenance of led lighting and other electrical appliances in the college.
    - We will encourage the campus community to adopt behaviours that reduce energy usage, such as turning off lights, unplugging electronic devices when not in use, using energy efficient appliances and lighting, and maximising the use of daylight.
5. **Greening of campus and biodiversity management**
    - We are committed to enhancing the ecological integrity of our campus by expanding green spaces and promoting biodiversity.
    - Tree planting initiatives and native landscaping projects are undertaken to beautify the campus and provide habitat for local wildlife.
    - Sustainable landscaping practises such as rainwater harvesting, and plantation of native vegetation are already integrated into campus design and maintenance.
6. **Carbon footprint reduction**
    - P.G.D.A.V. College (M) Acknowledges the urgent need to mitigate climate change by reducing greenhouse gas emissions.
    - We will implement strategies to minimise our carbon footprint, including energy efficiency improvements, renewable energy adoption and transportation initiatives.

- Investment in renewable energy sources such as solar panels will be explored to transition towards a low carbon energy supply.
- Carbon offset programmes may be considered to neutralise unavoidable emissions with a focus on supporting projects that promote sustainable development and ecosystem restoration.

7. Clean air

- P.G.D.A.V. College (M) is committed to reducing air pollution from campus operations and transportation activities.
- Measures to minimise vehicle emissions will be implemented, including promoting car-pooling, use of electric and hybrid vehicles and public transportation.
- Indoor air quality will be prioritised using non-toxic building materials, proper ventilation systems and indoor plants known for air purification.

8. Sustainability

- Sustainability will be integrated into all aspects of operations, including procurement, transportation, and academic programming.
- We will collaborate with stakeholders across campus to develop and implement sustainability initiatives that address the social, economic and environmental dimensions of sustainability.
- Regular assessment and reporting will be conducted to track progress towards sustainability goals and identify opportunities for improvement.

P.G.D.A.V. College (M) Is committed to upholding the principles outlined in this environmental policy and will continually strive to minimise our environmental footprint while fostering a culture of sustainability within our campus community Together, we can make a positive impact on the environment and create a more sustainable future for all. P.G.D.A.V. College (M) Through its environmental policy reaffirms its commitment to competing climate change, improving air quality and protecting the health and well-being of our campus community and the broader environment.