



DAV POST GRADUATE COLLEGE

(An Institution for Higher Education & Research)

(Admitted to the Privileges of Banaras Hindu University)

(Accredited by NAAC with Grade 'A+')

NARHARPURA, AUSANGANJ, VARANASI (U.P.) INDIA - 221001



GREEN AUDIT REPORT

INTERNAL QUALITY ASSURANCE CELL (IQAC)

GREEN AUDIT REPORT FOR THE ACADEMIC PERIOD : 2017-2021



Dr. Anup Kumar Mishra
Audit Coordinator
Coordinator Environment Committee &
Associate Professor, Department of Economics
DAV P.G. College, Varanasi

GREEN AUDIT REPORT FOR THE PERIOD : 2017-2021

This report describes the status of environmental management at DAV PG College, Varanasi. The report provides an overall idea about existing conditions, efforts taken to make the area green compliant, increasing awareness amongst stakeholders etc. It helps in understanding the activities carried out by the college team as a responsible educational citizen and provides guidance on further scope for improvement. This report is prepared based on the evidences produced during the course of audit.

INTRODUCTION

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of institute. It aims to analyse environmental practices within and outside of the concerned place, which will have an impact on the eco-friendly atmosphere. Green audit is a valuable means for a college to determine how and where they are using the most energy or water or other resources; the college can then consider how to implement changes and make savings. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of green impact on campus. If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus, it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institutes which will lead for sustainable development and at the same time reduce a sizable amount of atmospheric CO₂ from the environment. The National Assessment and Accreditation Council, Bangalore (NAAC) has made it mandatory that 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

GREEN AUDITING

The college has adopted the 'Green Campus- Clean Campus' system for environmental conservation and sustainability. There are main three pillars i.e. zero environmental foot print, positive impact on occupation health and performance and 100% students demonstrating environmental literacy. The goal is to reduce CO2 emission, energy and water use, while creating atmosphere where students can learn and be healthy.

About DAV Post Graduate College, Varanasi

1. General Name: DAV Post Graduate College, Maharshi Dayanand Marg, Narharpura , Ausanganj, Varanasi , 221001 , India (Admitted to the privileges of Banaras Hindu University)
2. Mail: admin@davpgcvns.ac.in
3. Website: <https://davpgcvns.ac.in/>
4. Ph. No. 9453666088
5. Latitude & longitude: 25.3176° N, 82.9739° E
6. Total Area of the DAV Campus : 5720.5 Square meters
7. Population: 3500 (Approx annually)
8. Teaching Staff and Non-teaching Staff: Approx 150 (Permanent, adhoc and outsourced)
9. Students: 2500 - 3000 (Aprrox each year)
10. General Visitors: 350 (Annually)
11. For Competitive Exams – 1000-1200 (Annually)
12. Total built up area around 60 percent of the total area.
13. Buildup area including all floors-7928.9Sq.m (vertically)
14. Classrooms – 40
15. Adequate number of sanitary facilities separate for male candidates and female Candidates, Staff males and females are provided. (29 for male and 10 for female)
16. Environmental Management Program: Appropriate budget is allocated towards environmental protection and pollution prevention activities.
17. This includes plantation, monitoring expenses, treatment recurring costs etc. in addition to this, whenever there is any specific project or capital expenditure required for environmental protection, then college provides it as per the needs
18. Number of Stack rooms, study rooms are provided
19. Library is available with lot of books collections and chronicles.
20. E- Library promotes eco friendly environment.

Environmental Policy of DAV PG College

DAV PG College, Varanasi shows its sensitivity towards the environment by establishing its environmental policy.

The aims of the policy

The policy aims to eliminate or reduce all forms of environmental pollution and encourages all faculty members, staff, students and other stakeholders to do the same. The college always raises awareness of environmental issues among its staff/students/stakeholders and encourages initiatives leading towards a clean environment. Its academic departments, non-teaching members, NSS unit, Women Cell works towards this aim collectively.

The policy promotes the **3 R's** for waste in the following order : **Reduce, Reuse and Recycle** and provide convenient waste collection points and guidance for the disposal of Paper, Cardboard, Glass, Plastic, Electrical items and white goods, Hazardous waste g. and e-wastes.

Audit Scope

The audit is carried out for the activities carried out DAV PG College, Varanasi

- a. Applicable guidelines of NAAC
- b. Applicable Environmental Legislation
- c. Best environmental practices

Audit Objective

In line with the audit definition, the objective of the audit is to have systematic, periodic, planned evaluation against objective evidences and reporting the results to the management as per the focus of the audit. Green Audit focuses on the basis of the environmental sustainability in terms of applicable environmental elements like Air, Water, Land, Flora, Fauna, Natural resources and Human being. The very objective of this audit is to evaluate the institutes green performance based on the focus indicators as stated above in view of the goal towards Environmental Sustainability, applicable legislation, environmental policies and standards.

The green audit objectives can be stated as follows.

S.No.	OBJECTIVES
1.	To review the knowledge and awareness concerns of the institute for the journey of sustainability
2	To review the efforts made to protect the environment by preventing pollution and conserving the natural resources being used in the campus

3	To establish a baseline data to assess future sustainability and avoid heavy environmental tolls.
4	To bring out a status report on environmental compliance
5	To assess the environmental performance and report it to management/authorities

Audit methodology

The scope of the audit is divided into various environmental areas like Land use, water, effluent, sewage, energy etc. Each such area is analyzed based on the evidences produced by the college. The evidences are collected in form of discussions/interactions, documents and records, practical site conditions and photographs of it.

Observations and Recommendations

Land Use

Due to high crowds in the city it is very difficult to have green belt development within the campus. However, college has maintained greenery and still some cultivation of ornamentals in pot gardening to have rich green effect.

Recommendations

As of now there is a count of the trees being planted. Localized species can be more used for plantation since they are more suitable to the local environment and habitat. It can become a habitat of the native birds, animals and insects and can help in biodiversity conservation and reclamation. A count of variety of species can also be kept handy. It can be treated as a structural biodiversity creation effort for achieving substantial positive results.

TREE DIVERSITY OF DAV PG COLLEGE

Most of these tree species are planted in different periods of time through various plantation programmes organised by the college environmental Committee, NSS, Women cell etc. and have become an integral part of the college.



Open Area at old campus of college



Sports field view from college campus

The trees of the college have increased the quality of life, not only the college fraternity but also the people around of the college in terms of contributing to our environment by providing oxygen, improving air quality, climate amelioration, conservation of water, preserving soil, controlling climate by moderating the effects of the sun, rain and wind. Leaves absorb and filter the sun's radiant energy, keeping things cool in summer.

Many species of birds are dependent on these trees mainly for food and shelter. We found more than 65 species of birds which includes hornbill, tree pie, owl, sunbirds, robins etc. Adding to the vibrancy are around 25 species of butterflies in the campus. We often make an emotional connection with these trees and sometime become personally attached to the ones that we see every day.



Our Green College



Green Lawn at old campus

A thick belt of large shady trees in the periphery of the college have found to be bringing down noise and cut down dust and storms. More than 150 trees of all varieties such as Chir, Palash, Palm, Neem, Peepal, Sagwaan, Ashok, Amrood, Meethi Neem, Parijaat are there in the periphery of the college. For the purpose of greenery and mental peace college has decorated more than 500 eco friendly flower pots (gamala) with all varieties of plants and flowers. Thus, the college has been playing a significant role in maintaining the environment of the entire college and in its surrounding areas. Tree human ratio in our college is 1: 05 (one plant, for 05 people).

Recommendation

According to an Indian Institute of Science (IISc) report, the ideal ratio tree-human ratio should be seven trees for every person. The tree- human ratio in our college is still lagging behind the ideal ratio. So our recommendation for the college authority is to maintain this ratio by massive plantation activities in a mission mode,



Open play ground with huge plantation New Campus 'Green and Clean DAV'

Positive Externalities

Economists use the term externality to describe any time the price determined by a market doesn't reflect the true cost of an action. A positive externality is a good consequence that isn't taken into account. Plantation at college causes a positive externality because they give benefits (for instance, higher property values) to other people in the neighborhood. As per norms on average, one tree produces nearly 260 pounds (117.93 kilogram) of oxygen each year and 02 mature trees can provide enough oxygen for family of four. DAV PG College is providing oxygen for more than 1000 people living in the neighborhood.

NOISE LEVEL IN THE SURROUNDING OF COLLEGE

The human ear is constantly being assailed by man-made sounds from all sides, and there remain few places in populous areas where relative quiet prevails. There are two basic properties of sound: Loudness and Frequency. Loudness is the strength of sensation of sound perceived by the individual. It is measured in terms of Decibels.



At old campus



At new campus

The WHO has fixed 45 dB as the safe noise level for a city. For international standards a noise level up to 65 dB is considered tolerate. DAV PG College fits into permissible level.

WASTE DISPOSAL OF DAV PG COLLEGE

Waste disposal are the activities and actions required to manage waste from its inception to its final disposal. This includes the collection, transport, treatment and disposal of waste, together with monitoring and regulation of the waste management process. The waste from all around the college is separated daily as wet and dry waste in different bags which are disposed separately.



Cleanliness Motive

Dry waste includes paper, cardboard, glass tin cans etc. on the other hand; wet waste refers to organic waste left-over food etc. Separation of waste is essential as the amount of waste being generated today causes immense problem. The material was composted and evaluated as a fertilizing material. Disposal of these waste results in the production of good quality organic manure that can be used as soil amendments and source of plant nutrients. With smart initiatives like **“Think Green Campus Model”**,

and “**Green DAV – Clean DAV**” waste management is helping our college to achieve a higher level of environmental performance. By reusing or recycling we are contributing to the conservation of natural resources, saving energy, helping to protect the environment, reducing landfill. We will also reduce our impact on the environment by minimizing the carbon emissions associated with both disposing of old products and obtaining new ones.

TRANSPORTATION AT COLLEGE

Being a large campus in Varanasi and located centrally, DAV PG College faculty, staff and students commute on their own. The college is dedicated to provide its students and staff all the comfort and convenience to help them to achieve their targets. The students are encouraged to use cycles, two wheelers rather than four wheelers which leads to fuel saving and also the contribution of pollutants to atmosphere is less.



Promotes Eco -friendly vehicles

ELECTRICAL POWER CONSUMPTION AT COLLEGE:

DAV Post Graduate College being one of the largest colleges of Varanasi, consumes on an average 250 KW / per day of electricity



Separate Transformer for DAV PG College



Power Storage through UPS

As a policy decision, the authority of the college keeps on replacing the old filament bulbs, CFL bulbs and tube lights by low energy consuming LED bulbs and LED tubes and bulky high-power consuming fans by energy efficient fans in order to keep the electricity consumption of the college as low as possible.

In addition to making Environmental Studies a very vital subject in our syllabus, DAV PG College has gone a step further by putting that theory into practice.



Perfect Power Control System



Batteries for Solar Panel

The college has installed one set of solar panels having a capacity of 1kWper day, on administrative block. The energy from this solar installation is helping offset the college daytime peak electricity demand from the grid.

Water Harvesting



Green and Clean view at old campus



Water Harvesting



Chambers with eco- friendly environment



E- Library with optimum power consumption



Clean Sanitation and Water Supply



Healthy Sanitation Facilities

Water Supply

The main source of water supply for the college is underground water and government supply. College has installed the Water harvesting system in old building.



Drinking Water Facility with awareness message



Water Tank with RO

The drinking water is provided through 150 liters water treatment facility and thereafter to the dispensers at various locations for the ease of access to the students and staff. The drinking water is periodically tested from the laboratory and ensured its portability for drinking purpose. We also two sets of RO fridge for safe drinking.

The college aims to minimize the consumption of water and thereby to contribute to the Proper use of the natural resource by the following ways:

- a. Encouraging reporting leaks and rectifying them promptly
- b. Progressively replacing/supplementing water-taps in the staff room, washroom, etc. if
- c. needed.
- d. Exploring options for using waste/roof water wherever possible
- e. Establishing rainwater harvesting schemes in the old buildings of the campus
- f. Minimizes the consumption of electricity where opportunities arise
- g. Progressive replacement of light bulbs with energy efficient ones
- h. Encouraging staff to turn off electrical appliances when not in use
- i. Conserving energy by promoting the use of daylight
- j. Conducting frequent preventive and corrective maintenance

Recommendations

Further to the provisions of water in the institution, methods can be applied to use the rainwater harvesting water for drinking and sanitary purposes by advanced water treatments. Specific efforts for conservation of fresh water through auto water taps based on occupancy sensing mechanism.

Energy Source

Purvanchal Vidyut Vitaran Nigam Limited is the major source of electricity. 250 KWH separate transformer is installed in our college.



Generator Set for emergency

Clean and Eco-friendly Computer lab

Use of non-conventional sources

The Solar panel generation device generates 1 KWH per day. This solar panel system has shared the load of 30 KWH/ month from the overall requirement from the conventional source. College have total three sets of generators (125 KW + 85 KW + 63 KW) distributed in old and new buildings. For green energy we have more than 80 KW UPS for power storage. Energy audit has been conducted and the recommendation has also been implemented specifically for replacement of regular tubes and bulbs with LED bulbs and tubes.

Recommendation

Periodic energy audits can be planned to have enough data on savings and contribution through use of green energy. Occupancy sensors can be planned to avoid manual intervention in shutting off and starting on the lighting systems in various rooms.

Domestic sewage management

Domestic sewage is generated through the use of water for sanitary purposes. The sewage generated after the use is connected to the municipal sewer lines through the underground tanks.

Recommendation

Based on the population of each day and the daily water supply quantities, domestic sewage can be quantified for further water conservation purpose.

Specific water audit can be conducted to know the water inflow and out flow along with the losses, leakages, wastages etc. so as to plan actions for water conservation.

Solid waste management

Solid waste major sources are from the canteen and stationary wastes. The food waste is treated through compost fertilizer plant and then the manure is used for the plantation site. General solid waste i.e. stationary waste is segregated as paper waste, plastic waste and is recycled as per the volumes generated.

Recommendation

Quantification of every day canteen waste can be taken up and it can also be displayed in the canteen to refrain and educate the consumers about the wastages and losses to the environment and human efforts.

E-waste management

Since the organization is well established and equipped with the necessary and up-to-date electronic infrastructure, the e-waste generation is very minimal. However, as a proactive initiative, an authorized vendor is identified for disposal of e-waste in case it is generated. Usually, the contracts for electronic items are done with the buyback assurance so as to meet the e-waste disposal requirements of the legislation. E-waste after generation is segregated from other sources and kept separately identified for disposal in systematic way through the authorized vendors.

Recommendation

E-waste listing and quantification in detail can be useful further to reduce the e-waste generation.

Other Environmental Initiatives

- a. Approximately 1000 to 1200 visitors visit the campus every year. Institute offer warm and green welcome to them and describes the green initiatives as a part of the induction to them on their visit. Institute runs career-oriented course for students "Biodiversity and its Conservation" which is UGC recognized from last 5 years.

Related to environmental awareness

- Regular Lectures and also annually events like debates, essay witting, poetry compactions.
- Plantation (Regularly)

- Training (As course study)
- Field visit
- Environmental CSR activities are also conducted every year and specific activities are also carried out each year differently. A Lecture series organize for the environmental awareness and related issues every year under Extension Education Activities by the coordinator of the Environmental Committee of the College and few external experts to take benefits of it.



Awareness messages for the students and staff members



Cautious about cleanliness and health



Promotes Regular Plantation Activities



A Race against E- Waste



Regular lectures for the Sustainable Development Goal

Green Audit during COVID Period (2020-2021)

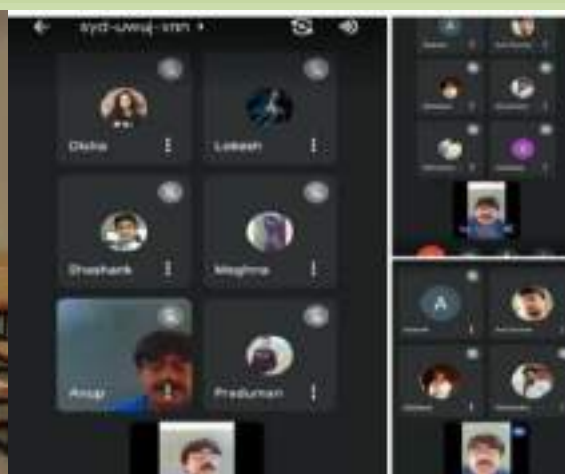
At the beginning of the March 2020, the opening of college poses new challenges but on other side we saved 70 percent of the energy due to classes runs from home. All the notices, information's were on email or mobile which results huge paper savings. College also planted number of plants in the year 2020 and 2021 on many occasions.



COVID Period – Saved Energy



Health Cautious



Online Classes – Saved Energy during COVID period

Saved Energy during COVID Period

Online teaching was the practicing mode during COVID period and teachers were engaging the classes for nearly 3000 students which saved enormous energy.

During COVID period College regularly arranged plantation program at various occasions.



Plantation at Every Occasion



Eco Friendly Indoor Stadium



Fight Against COVID



Safety Measures at Every Corners

Steps taken and mechanism

- a. The college adapts health, safety, and environments-based codes of practice and relevant guidance and comply with legislation.
- b. The college has planned for more Solar panel systems on the campus.
- c. The college campus is completely free from plastic bags and cups.
- d. Waste bins are placed at appropriate locations to maintain a clean and tidy campus.
- e. Green initiatives are taken by developing pot plantation through adequate plantation by the college NSS Unit and the other academic cells.
- f. The arrangement to set off the fire causing environmental damage by setting the fire extinguishers at different places on the premises.
- g. Environment committee work towards to green initiative at the college campus

• Best Ways for College to Go Green

- Energy supply.
- Using electronics instead of paper.
- Canteen with a local eco food.
- Having a place for refilling a water bottle.
- Special campaigns for students.
- Eco friendly transportation
- Creating eco-friendly rules in a campus.

Creating eco-friendly rules in college campus

- Turn off lights, fans and system when not in use.
- Using LED light bulbs
- Reduce, reuse, recycle
- Water-usage control
- Buy recyclable and eco products
- Use power bars
- Wash cups and plates, don't use disposable paper or plastic utensils
- Walk, bicycle, bike instead of a car

CONCLUSION

The college strives hard and sincerely towards conservation of environment. Starting with the Environmental awareness programs till the practical changes like Solar panel system installation to conserve energy. The college has put lot of efforts in the waste water management and water harvesting system also. It shows the commitment and responsibility towards the Mother Nature. There are always opportunities for improvements which are noted in the different sections for making the activities robust. These would help in the journey of sustainable development which already have been started and reached at a remarkable height. College takes care of the students and staff well. The rooms are well ventilated and having sufficient light levels. There is no much noise that would disturb the education process.



A handwritten signature in pink ink.

(Dr. Anup Kumar Mishra)

*Coordinator Environment Committee &
Associate Professor, Department of Economics
DAV P.G. College, Varanasi*