ENVIRONMENTAL AUDIT REPORT OF

PRIYADARSHINI COLLEGE OF ENGINEERING

(Accredited with Grade A⁺ by NAAC)

Priyadarshini Campus, Near CRPF Camp, Hingna Road, Nagpur, Maharashtra 440019



JUNE 2020 TO FEBRUARY 2021

ENVIRONMENTAL AUDIT

CERTIFICATE

This is to certify that Priyadarshini College of Engineering, Behind CRPF Campus, Hingna Road, Nagpur, was successfully conducted an "Environmental Audit" on dated 24-26 Feb 2021.

The efforts taken by the college towards environment and sustainability is highly appreciated and commendable.

Place: Nagpur

Date: 02/03/2021

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ACKNOWLEDGEMENT



Environmental Audit Assessment Team thanks the Priyadarshini College of Engineering, Nagpur for assigning this important work of Environmental Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to Principal – Dr. M.P Singh & Team of colleague's for giving us necessary inputs to carry out this very vital exercise of Environmental Audit.

We are also thankful to Department Heads and other staff members who were actively involved while collecting the data and conducting field measurements.

Dr. Md. G. Pathan

Mr. Yogesh D. Chintanwar

Priyadarshini J. L. College of Engineering, Nagpur.

ENVIRONMENTAL AUDIT

Environmental audit was initiated with the beginning of 1970 with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. The intention of organizing Environmental Audit is to upgrade the environment condition in and around the institutes, colleges, companies and other organizations. It is carried out with the aid of performing tasks like waste management, tree plantation and others to turn into a better environmental friendly institute.

Goals of Environmental Audit

- More efficient resource management
- To provide basis for improved sustainability
- To create a better Environmental campus.
- To enable waste management through reduction of waste generation, solid-waste and water recycling.
- To create plastic free campus and evolve health consciousness among the stake holders.
- Recognize the cost saving methods through waste minimizing and managing Point out the prevailing and forth coming complications.
- Financial savings through a reduction in resource use.
- Development of ownership, personal and social responsibility for the College and its environment Enhancement of college profile.
- Developing an environmental ethic and value systems in youngsters.
- Environmental auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programs of the college

Benefits of Environmental Audit

- It would help to prepare plan to protect the environment.
- Recognize the cost saving methods through waste minimization and management.
- Point out the prevailing and forth coming impacts on environment.

- Ensures conformity with the applicable laws.
- Empower the organizations to frame a better environmental performance.
- It portrays a good image of an institute which helps building better relationships ' with the group of interested parties.

ENVIRONMENTAL AUDIT EXECUTIVE SUMMERY REPORT

Brief About College:

- 1. Name of the Institute: Priyadarshini college of engineering.(PCE)
- 2. No. of Branches: UG-05
- 3. Name of Branches: BE in Civil Engineering

BE in Electronics and Communication Engineering,

BE in Electrical Engineering,

BE in Mechanical Engineering

BE in Aeronautical Engineering

BE in Computer Technology

BE in Information Technology

MTECH in Industrial Drives and Control

MTECH in Communication Engineering

MTECH in Mechanical Engineering Design

- 4. No. of Students 880
- 5. No. of Faculty Members 60
- 6. No. of Non-Teaching Members 30
- 7. Total campus area : 10.12 Acre.
- 8. College Built up Area : 32900m²

ENVIRONMENTAL POLICY

Management, faculty and staff of Priyadarshini College of Engineering, Nagpur is committed for carrying out its activity Eco-friendly & use of Natural resources to promote sustainability. This had achieve through the following-

- To Use Solar Energy on College Campus by installing Solar Panel's.
- To bring in use the 'Rain Water Harvesting on the campus.
- To use the solid waste through Vermicompost on the campus and use it as a fertilizer.
- To reduce the sound pollution in the campus.
- To maintain Environmental campus by tree plantation in each year.

Constitution for Environmental Audit:-

The Environmental Audit is carried out as per the environmental policy of the PCE and Environmentalaudit checklist.

The aim of the audit is to check the existing practices and provide advice for the development of environmental policy and practice in the areas of:

- Waste Management.
- Solid waste management.
- Water conservation and management.
- Tree plantations.
- Bio-diversity and threatened/endangered species preservation's Energy use and conservation's
- Eco-friendly campus.
- Environmental environment and clean campus.

Auditors for Environmental audit:-

Sr.No.	Name of Auditor	Designation
1	Dr. Md. G. Pathan	HOD Civil Department, PJLCE.
2	Mr.Y. D. Chintanwar	Asst. Prof. Civil Department, PJLCE.
3	Dr. Mrs. S. Shrivastava	Assoc. Prof. First Year Department, PCE
4	Dr. P.T. Dhorabe	Asst. Prof. Civil Department, PCE.

Executive Summary

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. Priyadarshini college of engineering already done internal Environmental assessment and annual reports published for continual improvements; Quality System Programme and doing their bid towards environmental protection and environmental awareness at local and global front. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmentallegislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.

Good Points Observed:

- College has prepared Environmental Environmental policy and has taken efforts for sustainable development on the college campus.
- College has installed solar panels and has further plans of its expansion.
- College has conducted Environment Awareness Trainings and workshop forfaculty and students.
- College has Vermicomposting facility installed.
- College has Rain water harvesting facility installed.

Major Recommendations:

- College should install ETP plants.
- More number of flow meters to be installed for monitoring of water consumptionbuilding wise/department wise.
- PUC certificate for all the vehicles entering the campus to be made mandatory and tobe checked by security.
- A frequent visit should be conducted to ensure that the generated waste is measured, monitored
 and recorded regularly and information should be made available to administration.

ENVIRONMENTAL AUDIT REPORT

1. INTRODUCTION

Environmental Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Environmental Audit' aims to analyses environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting thework conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Through Environmental Audit, one gets a direction as how toimprove the condition of environment and there are various factors that have determined the growth of carrying out Environmental Audit. The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2016–17 onwards that all Higher Educational Institutions should submit an annual Environmental 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.

Environmental Audit or Environment Audit focuses on the Environmental Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Foot print etc. being implemented by the College Management.

2. About the PCE Environment

Priyadarshini College of Engineering is the Premier College of the Sanstha with 32 years of proven track record, endeavors to impart academic excellence through promoting technology, scientific thinking and Corporate, Social Responsibility. Priyadarshini College of Engineering has been awarded with an A+ grade status with CGPA 3.31 by NAAC for a term of 5 years up to 27/03/2024.

The institute has successfully received accreditation for eight of its departments namely Civil Engineering, Mechanical Engineering, Electronics & Telecommunication Engineering, Electrical Engineering (Electronics & Power), Computer science & Engineering, Chemical Engineering, Biotechnology and Electrical Engineering by National Board of Accreditation (NBA), New Delhi. The institute runs 15 Undergraduate Programs, 8 Post Graduate and 3 Ph.D. Programs. The institute has also been conferred with grade A by Government of Maharashtra for

Academic excellence and is the recipient of Gold Rank in 2017, 2018 and 2021 and Platinum Rank in 2019 in AICTE-CII survey. The institute has also received World Education Award 2017, innovation in Teaching Pedagogy, India's Education Excellent award in 2018 by Berkshire Media USA and Outstanding Engineering institute for Research and innovation held at 15-World Education Summit-2019

Objective:-

- To ensure high quality teaching learning process which commensurate with present and future growth trajectory of industry.
- To inculcate the culture of innovations and out of the box thinking among the learners and the facilitators.
- To usher in path breaking pedagogical practices so as to embolden the learners to be an active agent of positive change.
- To embark upon unfaltering journey of achieving respectable and reckon-able rankings by adapting to the tutelage promulgated by rating agencies like NAAC, NBA, NIRF to name a few.
- To rope in internal and external stake holders in academic process to make it more inclusive, relevant and time tested.
- To transmogrify the learners into a knowledge enriched and techno Savoy citizens through their qualitative equity and engagement in an ideally calibrated curriculum.
- To sensitize the learners and facilitators for piloting the quality benchmark in every process by way of organizing quality improvement programs.
- To form a prolific consortium with industry and research organizations for taking our journey of achieving quality bench marks to the next level.
- To emerge as prodigious centre of excellence for research and development.
- To culminate the intellectual capital of the institute into a growth agent.
- To roll out cutting edge value addition, add-on programs and certification programs for bridging the gap between academia and industry.
- To imbibe entrepreneurial spirit among the learners by creating an apt ecosystem for the growth and development of entrepreneurship.
- To encourage the students for start-up through incubation centre and venture capital and angel funding support.

- To hone the much sought after soft skills among the learners to brighten their prospects for meaningful placement.
- To provide and promote agile and vibrant platform for co-curricular and extra-curricular activities to be ran in tandem for all round development of the learners.
- To spread and develop smart infrastructural net of the institute which plays a pivotal role in achieving our stated and unstated goals and objectives.
- To reorient and sensitize the learners for environmental concern by adopting green practices in campus such as less paper administration, rainwater harvesting, use of non-conventional energy resources, waste disposal, plastic free campus, tree plantation etc.

Vision

To become one of the India's leading Engineering institutes in both education and research. We are committed to provide quality and state-of-the-art technical education to our students, so that they become technologically superior and in turn contribute for creating a great society.

Mission

We commit ourselves to the pursuit of excellence in technical education and promise touphold the spirit of professionalism to serve the humanity.

Quality Policy

We are committed to impart value-added education that would enable us to fulfill the ever increasing demand soft he competitive and target-driven business environment.

3. ENVIRONMENT CONSERVATION COMMITTEE

Sr.No.	Name of Member	Designation	Title in Committee
1.	Dr. M.P.Singh	Principal	Chairman
2.	Dr. S. A. Dhale	HOD, Civil Engineering	Chief-Coordinator
3.	Dr. P. T. Dhorabe	Asst. Professor, Civil Engineering	Coordinator
4.	Dr. G. D. Mehta	B.E. Aeronautical Engineering	Member
5	Dr. Nita Thakare	HOD, Computer Technology	Member
6.	Dr. Kishor B. Porate	HOD, Electrical Engineering (Electronics & Power)	Member
7.	Dr. Virendra Taksande	HOD, Electronics And Telecommunications Engineering	Member
8.	Dr. P.S. Prasad	HOD, Information Technology	Member
9.	Dr. K. S. Zakiuddin	HOD(MTech),Mechanical Engineering	Member
10	Dr. K. S. Zakiuddin	HOD(MTech), Mechanical Engineering Design	Member
11.	Dr. Kishor B. Porate	HOD (MTech),Industrial Drives AndControl	Member
12	Dr. Mrs. S. Shrivastava	HOD First Year Department, PCE	Member

4. FUNCTION OF ENVIRONMENT CONSERVATION COMMITTEE

- To improve the environment of the college campus.
- To aware students and society about the environment conservation.
- To demand funds for environment conservation.
- To manage solid waste, liquid waste and e-waste of the college campus.
- To make efforts to reduce sound pollution.
- To make efforts to reduce water pollution.
- To make efforts for water conservation.
- To plant more trees and takes care of them.
- To create a healthier, tobacco free campus.
- To maintain plastic free College campus.
- To provide Security management.
- To conduct Environmental audit every year.
- To provide compost fertilizers with the help of wormy compost project.

OBJECTIVES OF THE STUDY

The main objective of the Environmental audit is to promote the Environment Management and Conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Environmental Audit are:

- To secure the environment and cut down the threats posed to human health by analyzing the pattern and extent of resource use on the campus.
- To establish a base line data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requires high cost.
- To bring out a status report on environmental compliance

5. METHODOLOGY

In order to perform Environmental audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations.

The study covered the following areas to summaries the present status of environment management in the campus:

- · Waste management.
- Rain water harvesting
- Noise pollution
- Water management
- Air pollution
- Energy Conservation
- Environmental are a management

6. FOCUS AREA OF STUDY

- Waste Management.
- Water harvesting
- Noise Pollution Management.
- · Water management.
- · Air Pollution Management.
- Energy use & conservation.
- Environmental Belt area & Bio-diversity.
- Environmental Initiative.

7. WASTE MANAGEMENT

A) Solid Waste Management:

The garbage management always tries to make the college campus Eco- friendly. Vermicompost's are prepared with the help of mulch of tree leaves, Kitchen waste and wastepaper that occurs around the college campus. These vermicompost's are again utilized to cultivate the botanical garden of college. For this purpose Waste bins have been kept in the college. To maintain college campus clean, the waste materials are collectedfrom containers and stored in tanks to produce Vermicompost's.



Fig. Dust Bin for collection of waste

VermiCompost Project:

The college produces vermin compost from the mulches of leaves of trees, kitchen waste, paper waste etc. which are scattered in the campus. The main purpose of this is to reduce disposable waste in the college campus. After complete process of vermicomposting, it is used as manure in the garden and lawns.



Fig. Flex near vermicompost plant

Use of Organic Fertilizers/Pesticides:

Organic Fertilizers and Pesticides are used instead of using chemical fertilizers andinsecticides.

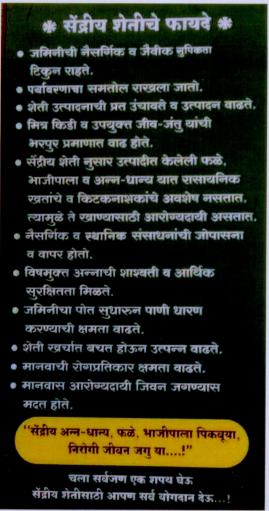


Fig. Flex for use of organic fertilizer

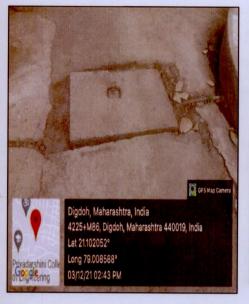
B) Liquid Waste Management:

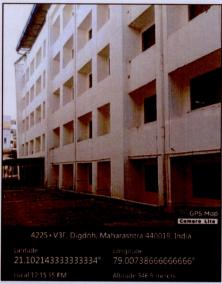
Disposal of Wasted and Hazardous Chemicals:

The source waste water is categorized in two types

- i. Laboratory Waste Water which can be said as Effluent.
- ii. Domestic Waste Water i.e. Sewage Water.

Hazardous chemicals & sewage, generated in institute is collected with help of plumbing system and disposed in municipal sewer, to municipal sewage treatment plant for further treatment process. Due to that soil pollution, underground water pollution & adverse effect of waste on human health is prevented.





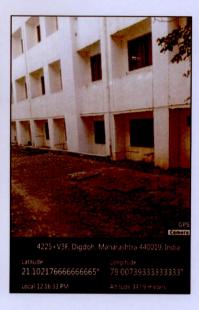


Fig. Collection of Liquid waste

C) E-Waste management:

- Drives, Monitors, Keyboards, Cartridges, etc.is disposed through outside agencies as ascrap.
- UPS batteries are recharged/repaired/exchanged by the suppliers.
- The cartridge of laser printers is refilled outside the college campus.



Fig. E-waste Management by External agency

8. Waste generated in PCE:

- 1. Plastic Waste:-Poly-ethylene bags and packaging, Containers, Disposables, Bottles etc.
- 2. Hazardous Waste:-Florescent Tubes and CFL Bulbs, Electrical waste, Laboratory Waste, etc.
- 3. Wooden Waste:-Damaged Furniture, Wooden Packaging
- 4. Metal Waste:-Scrap Metal, broken utensils, Damaged machinery from Laboratory
- 5. Food Waste:-Unused food from Canteen and Kitchen.
- 6. Non-Biodegradable Waste: Plastic Coated Papers,
- 7. **Biodegradable-waste:-**Tree Leaves and biomass produced in garden, uncooked vegetable remaining from Kitchen of office and Canteen.
- 8. Municipal Solid Waste:-All the waste generated in gardens, collected during sweeping & Housekeeping of the College.

9. Observations

10. A- Solid waste

- 1. Types of waste paper, plastic, waste books, e-waste etc.
- 2. Paper consumption- collected at separate stores.
- 3. Reuse of paper-system is evident. Paper recycling is done by both side usage.
- 4. Garbage segregated into wet and dry, monitored by security.
- 5. Book recycling is evident by library.
- 6. Old magazines-from 2010 are evident.
- 7. Waste segregation in various dustbins at place.
- 8. College has vermin culture composting of 130Sq.Ft. Capacity which is not intechnically appropriate and sufficient.

B- Liquid Waste

- Chemicals from labs are directly disposed into Municipal sewer by using houseplumbing system.
- 2. Sewage, sullage generated in WC, Toilet's kitchen basin, handwash basin is disposed in Municipal sewer.

12. RAIN WATER HARVESTING MANAGEMENT:

The college is having rain water harvesting system to conserve the rain water. The earth water level is increased which helped to have water in college. It increases natural storage of water, and helps the college in getting water for various purposes. In PCE Civil engineering building is provided with the rain water harvesting system and then this water is discharge in ground water and for artificial lake.



Fig. Rain water harvesting collection system.

13. NOISE POLLUTION MANAGEMENT:

A) Silence zones in the college:-

Various display boards have been placed in the library and-other places for awareness tomaintain silence in the college.



Fig. sign board for silence zone.

B) Noise controlling the college:-

The college adopts no honking policy and prevents use of any honk and noise in campus. Certain areas like library, class room, parking area are declared as Silence zone and noise pollution is kept to minimum on college campus.



Fig. Signage for No Horn

C) DG Set

The college has DG set of capacity 2x125 KW & 1x140 KW Diesel as power backup and used whenever there is power cutoff due to load shading or maintenance of MAHADISCOM. It is observed that acoustication is done on DG Set for noise pollution reduction & also The DG set used is Environmental rating so it will also reduce the air pollution while switch-on mode. The exhausted gases are not monitored, tested and analyzed to know the pollution load.

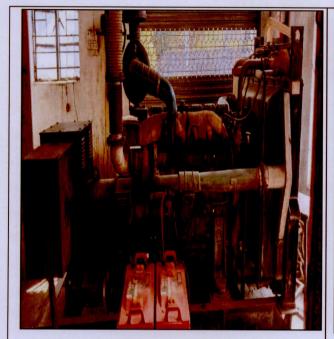




Fig. Environmental DG Generator

D) Notification on Using Mobile in Silent Mode

An instruction has been given to students to operate mobile phones in silent mode, especially at the library and auditorium hall.



14. WATER MANAGEMENT

Main source of water for drinking purpose is MIDC Water added to this source Ground water is also extracted to fulfill the requirement. At present there is one well from where water is supplied to overhead tanks with the help of pump. The duration of pump operation is measured for electricity consumption but the quantum of water extracted is not measured by the management of the college.

Sources of Water

- Municipal corporation Water
- Well water

PCE WATER TANK DETAILS

Sr No	Туре	Location	Capacity Ltr	Purpose/Use	OHT/UGT
1	RCC	Wing A	12 500	Fire	OHT
2	RCC	Wing B	20 000	Fire & General	OHT
3	RCC	Wing B	20 000	General	OHT
4	RCC	Wing e	35 000	Fire & General	OHT
5	RCC	Wing e	12 000	General	OHT
6	RCC	Wing o	70 000	Fire & General	OHT
7	RCC	Wing E	28 000	Fire	OHT
8	RCC	Wing F	56 000	Fire & General	OHT
1	RCC	Wing A	3 00 000	Fire & General	UGT
11	RCC	Wing A	27 000	Drinking	UGT
111	RCC	Wing A	28 000	Garden	UGT
IV	RCC	Wing e	40 000	. Fire & General	UGT
V	RCC	Wing I	21000	Garden	UGT
a	PVC	Wing A	3 000	Drinking	ОНТ
b	PVC	Wing B	2 000	Drinking	OHT
С	PVC	Wing e	2 000	Drinking	OHT
d	PVC	Wing o	1000	Drinking	OHT
е	PVC	Wing E	2 000	Drinking	OHT
f	PVC	Wing F	2 000	Drinking	ОНТ
g	PVC	Wing G	2 000	Drinking	OHT
Α	PVC	Wing A	8 000	General	ОНТ
В	PVC	Wing E	6 000	General	OHT
С	PVC	WING H	3000	General	ОНТ

Table. Water Tank Details

The college stores the water in overhead tank (OHT) & underground tank (UGT) in various wings as shown in the above table, which also shows that the institute has capacity to store 253500 lit. Water in OHT for fire & general uses 340000 lit. Water in UGT for fire & general uses 14000lit. Water in OHT for drinking purpose 27000 lit. Water in OHT for drinking purpose & 49000 lit capacity in UGT for Gardening Purpose. As there is no data available for daily consumption of ground extracted water & also the data for uses of pump, day wise/ hour wise/ month wise so it was not measured.

Every day the usage of MIDC water is avg. 40383.56 liters/day whereas the quantum of ground water extracted is not measured. The organization does not have any automatic leak detection

system and all the leakages are controlled by manual observation hence leak quantum water is another issue which shall be considered in designing the water conservation scheme. No leakage of water from pipes is observed from pipes by auditor team but leakages in taps were observed in some urinals. The water bill for last 12 months is as given below for water meter. (Only six Month bills is available so the average is taken for calculation purpose here)

Water Meter Reading:-

Month	June20 (avg)	July20 (avg)	Aug20 (avg)	Sept20 (avg)	Oct 20 (avg)	Nov20	Dec20	Jan21	Feb21 (avg)	Mar21
Unit Consumed	1340	1340	1340	1340	1340	1107	1322	1562	1340	1369
Water used in lit./month	1340000	1340000	1340000	1340000	1340000	1107000	1322000	1562000	1340000	1369000

Water Bill for 12Months



Fig. Main Well

Fig. MIDC Water Meter

16. ORGANIZATION OF TREE PLANTATION PROGRAMME

Environmental conservation committee, NSS, Department of life-long learning and extension arranges tree plantation programme every year. All trees in the campus are cultivated through these departments. Thus air pollution in college campus is reduced.

Sr. No.	Programs organized	Date	Photos	Remark
1	Tree Plantation	05/07/2020		The Students of the Department with Rotaract Club of PCE planted various trees. Total No of trees planted by Students was 138. This was a small tribute given to the brave souls of the soldiers them so that all the people of our country remember all those brave souls and sacrifice given by them for the Country: From the Department Prof. Harsh Dubey and Student Saloni Bagwani coordinatedthe event.
2	Tree Plantation	05/06/2021		Event: World EnviornmentDay Date: 05/06/2021 (Online) Participants: More than 20 students and Faculties of Electricaldepartment.

Fig. Tree Plantation Conducted By Institute

17. PERIODIC AWARENESS PROGRAMME FOR STAFF, STUDENTS AND SOCIETY

During audit it has been told to auditor's that college has been continuously conducting awareness programme for staff, students and society for protecting and maintaining environment. The awareness is also done by arranging programme, rallies on various issues related to environment and health. The college students and faculty members are involved in the activities through NSS activity, but audit team could not find any display board for conservation of Environment in the college premises.

1	Periodic Awareness Programme For Staff, Students And Society For Protecting And Maintaining Environment	05/07/2020		Event:- International PlasticBag Free Day. No of Students: - 50
2	If any additional program conducted	10/09/2020	TYPES OF POLLUTION PRINCE NOTICE A POLICY Sold Very Company Sold V	Event:-An open house Debate "No natureNofuture" The students actively participated in the debate competition and this created environmental awareness ofkeeping surroundings greenand clean. No.of participants: 30
3	Etc	10/02/2021	Pellavi I Lajrus I I I I I I I I I I I I I I I I I I I	Event: Declamation Competition on "Adopt Electric Vehicle to create eco-friendly environment"Remark: This activity was organized to help students inhoning their speaking skills and also make them aware about the various ways to keep the environment eco- friendly. No. Of Students participated: 30

FIG. Environmental Awareness programme conducted for Students

18. ENERGY USE AND CONSERVATION

The institute take very serious initiative against the above issue & done energy audit report forthe duration June 2020 - FEB 2021 on following points:-

- 1. Energy Consumption Profile.
- 2. CO₂ Emission for energy use.
- 3. Historical Data Analysis.
- 4. Actual Measurements and its Analysis.
- 5. Electrical System.
- 6. Air Conditioners.
- 7. Energy Conservation Proposals.

19. NO SMOKING, NO TOBACCO IN THE CAMPUS AREA:

Smoking and chewing tobacco is strictly prohibited in the college campus.



20. NO VEHICLE DAY

The college has declared the first and third Saturday of every month as a 'No Vehicle Day'. This initiative has helped to reduce air pollution and create awareness about air pollution students and community.



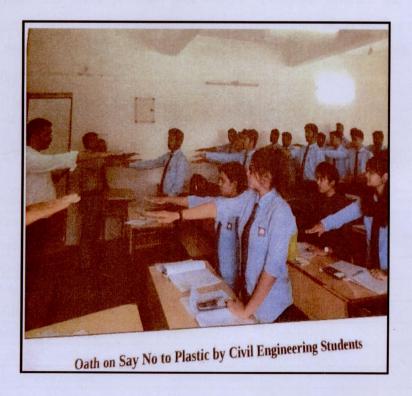
21. PAPERLESS OFFICE

Deliberate efforts are made to use least amount of paper in administrative work, and academic work by using enterprise resource Planning (ERP) software which is great initiative. The college prefers information technology like the website, email, What's App, phone instead of the paper work. E-sources are available for Faculty as teaching aids. Wi-Fi facility enables to create paperless activities.



22. PLASTIC FREE CAMPUS

It is increasing pollution as it is non-degradable. It doesn't dispose and when people dump it, it remains there for years. Priyadarshini College of Engineering is a Plastic Free Campus. Plastic bags and materials are banned in the Campus. For this an oath has been taken by all the Staff members and students of Priyadarshini College of Engineering. Non-woven bags are distributed to all the staff and students of the Institute & also taken an oath from Students to "say no for plastic use".



23. LAND MANAGEMENT, ENVIRONMENTAL BELT AREA & BIO-DIVERSITY

The campus of college is eco-friendly because of botanical garden and many planted trees in the campus. The soil erosion is controlled by tree plantation in the area. Also the college prefers organic fertilizers and pesticides instead of chemical fertilizers and pesticides to maintain soil properly.

The Environmental Belt Area is meant for conservation of nature and esthetic value of the college premises, the total area of the plot is 10.12Acre. As per the requirement of National Environmental Tribunal the Environmental belt shall be developed as per the guide lines of Central Pollution Control Board. The area of Environmental Belt in this College ought to be 3.33 Acre i.e. 33% of the total plot area.

Observations

Campus is located in the vicinity of approximately 28 types (species) trees. Various tree plantationprograms are being organized during the month of July and August at college campus and surrounding villages through NSS unit. This program helps in encouraging eco-friendly environment which provides pure oxygen within the institute and awareness among villagers. Theplantation program includes various types of indigenous species of ornamental and medicinal. Instead of maintaining biodiversity the similar species planted is observed for example "NEEM".

- Total land area covered by plantation. >40% of plot area.
- No. of trees planted in campus 3193.

Trees, Shrubs and Lianas occurs in (PCE) Premises 2020-21

Sr. No	Botanical Name	Family	Common Name	Total of Individuals
1.	Azadirachata indica	Fabaceae	NEEM	361
2.	Plumeria	Apocynaceae	Chafa	256
3.	Ficus religiosa	Moraceae	Pipal	53
4.	Prosopis	Fabaceae	Peltafarm	50
5.	Millettia pinnata	Fabaceae	Karanjee	30
6.	Bahunia purpurea	Fabaceae	Bahuniya	212-
7.	Astonia scholaris	Apocynaceae	Saptaparni	36
8.	Mangifera indica	Anacardiaceae	Mango	03
9.	Tamarindus indica	Fabaceae	Tamerind	48

10.	Ficus benghalensis	Moraceae	Bargad	20
11.	Bamboosa valgaris	Poaceae	Bamboo	150
12.	Dalbargia sissoo	Fabaceae	Shisham	02
13.	Neolamarckia cadamba	Rubiaceae	Kadamb	51
14.	Tabebuia rosea	Bignoniaceae	Tabobiya	30
15.	Roystone regia	Arecaceae	Royal plam	07
16.	Calliandra haematocephala	Fabaceae	Powder pop	03
17.	Combretum indicum	Combretaceae	Madhumalti	08
18.	Tectona grandis	Lamiaceae	Teekwood	1672
19.	Terminalia catappa	Rosaceae	Badam	06
20.	Nyctanthes arbor-tirstis	Oleaceae	Parijatak	03
21.	Polyanthia longifolia	Fabaceae	Ashoka	16
22.	Cocos nucifera	Arecaceae	Coconut	03
23.	Delonix regia	Fabaceae	Gulmohar	06
24.	Juniperus procera	Rubiaceae	Junifar	26
25.	Dypsis lutescnes	Bignoniaceae	Arika palm	18
26.	Nerium indicum	Arecaceae	Kaner big	63
27.	Capparis sinsa	Fabaceae	Ticomba	52
28.	Petrocarpus santalinus	Combretaceae	Red sandal	08
			Total	3193

24. Carbon Foot print Audit

The most common Environmental house gases are carbon dioxide, water vapour, methane, nitrous oxide and ozone. Of all the Environmental house gases, carbon dioxide is the most prominent Environmental house gas, comprising 402 ppm of the Earth's atmosphere. Each human being is contributing towards adding Environmental-house gases to the atmosphere depending upon his day to day activities and usage of instruments and machinery for different purpose. Release of carbon dioxide gas into the Earth's atmosphere through human activities is commonly known as carbon footprint. An understanding about the same of any institute where large number of anthropogenic activities are happening is important to assess the contribution of emission of gasesthat are responsible for Environmental House Effect. Auditing for carbon foot print of Priyadarshini College of Engineering was done using a detailed questionnaire, so that the impact of the community on global environment can be assessed

					LEGE OF EN	GINEERING			
				INGNA N					
		CARBON	FOOT P	RINT CAI	LCULATION	FOR VEHIC	LE		
TYPE OF VEHCLE	FUEL	OF	ON	stion	Daily distance covered (km/vehicle)*	Annual distance covered (km/vehicle)*	Total Annual CO2 EMISSION (gm/vehicle)	NO. OF VEHICL E	Total Annual CO2 EMISSION in(KG)
				TWO V	VHEELER				
MOPED	PETROL	50	2.296	4.59	25	5500	25256	51	1288.06
2 STROKE BIKE	PETROL	55	2.296	4.17	25	5500	22960	70	1607.20
4 STROKE BIKE	PETROL	60	2.296	3.83	25	5500	21046.66	50	1052.33
				FOUR	WHEELER				
SMALL CAR	PETROL	18	2.653	14.74	25	5500	81063.88	10	810.64
SUV CAR	PETROL	15	2.653	17.69	25	5500	97276.66	8	778.21
XUV CAR	PETROL	8	2.653	33.16	25	5500	182393.75	7	1276.76
SEDAN CAR	PETROL	10	2.653	26.53	25	5500	145915	20	2918.30
SMALL CAR	DIESEL	25	2.653	10.61	20	4400	46692.8	5	233.46
SUV CAR	DIESEL	20	2.653	13.27	20	4400	58366	10	583.66
XUV CAR	DIESEL	12	2.653	22.11	20	4400	97276.66	4	389.11
SEDAN CAR	DIESEL	14	2.653	18.95	20	4400	83380	12	1000.56
			TO	OTAL NO	OF VEHICLE			247	
		TOTAL A	NNUAI	CO2 Emi	ission form V	EHICLE IN	(KG)		11938.28

Table. Carbon Foot Print Emission by Vehicle

25. FIRE SAFETY

Fire Extinguishers have been setup in various places in the college so as not to cause the loss of life and financial loss through fire.



Fig: Fire-Extinguisher Plan and Photograph

26. MANAGEMENT OF HUMAN HEALTH AND SAFETY

The college has given special priority for human health and safety. The following various factors help to manage human health and safety.

A) Regular Health Check-up:

Every year, the college organizes blood donation, group check-up and HB check-up ofstudents. Students took active part in this event.



Fig: Health checkup drive for staff & student

B) Separate Toilet facility:

Separate toilets are available for students, Staff & also for Div-yang people in the college.



Fig. Separate toilet facility in college

C) First Aid Box

In case of any accidental injury, first aid boxes are available in the college.



Fig.: First Aid Kit

D) Flexes of Health Awareness

In order to create health awareness among students and society, The College has setup flexes to spreadawareness about the health related information in the college campus.

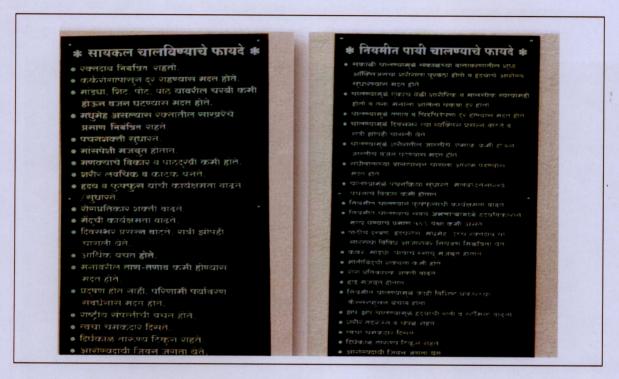


Fig. Flex for health awareness

E) PUBLIC AWARENESS ABOUT ENVIRONMENTAL CONVERSATION:

Environment will not prevail if public awareness is not spread, keeping this thing in mind, the college has tried to aware students towards environmental conservation.

The college campus has been flexed to create awareness about environmental conservation. Through this, the college tried its best to create awareness about environmental conservation

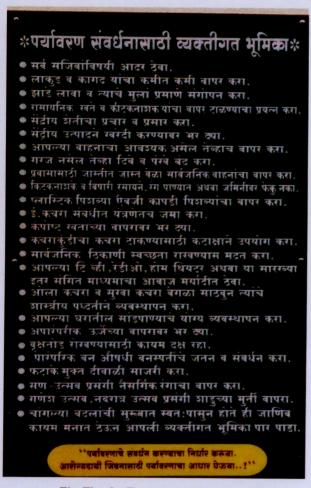


Fig. Flex for Environmental conservation

* झाडांचे महत्व * • झाडे हवेतील कार्बनडाय ऑक्साइड(CO)) शोषुन घेऊन ऑक्सिजन(०) म्हणज शध्द हवा वातावरणात सोहतात. • एका व्यक्तीला पूर्ण आयुष्यात लागणारा ऑक्सिजन मिळविण्यासाठी कमीत कमी १८ झाडांची आवश्यकता असते. • एक पूर्ण वाढलेले झाड पन्नास वर्षापर्यंत समारे ६ लाग्ब्र रूपयाचा आंक्सिजन प्रवते. • वनांमळे दर्मिळ प्राणी, वनऔषधी वनस्पती यांचे जतन होते. • हवेत थंडावा राख्यला जाता. तापमान वाढ रोख्वली जाते. • पावसाचे प्रमाण वाढते. • भूगर्भातील पाण्याच्या साठ्यात वाढु होते. • जिमनीची धूप थांबते, मुपिकता कायम राहते. • हवेतील प्रद्षण कमी होण्यास मदत होते. • पश्-पक्षी यांना आश्रयस्थान व निवारा मिळता. • ध्वनी प्रदेषणाची तिव्रता कमी होण्यास मदत होते. • झाडे आपणास औषधी,फळे, फुले पुरवतात, "झाडे लावा,झाडे जगवा, पर्यावरण आणि जीवन संदर बनवा....!" चला सर्वजण एक शपथ घेऊ पर्यावरण संवर्धनासाठी आपण सर्व योगदान देउ.

Fig. Importance of Tree

* रासायनिक खतांचे/किटकनाशकांचे दृष्परिणाम *

- पोटाचे विविध विकार बळावणे.
- हार्मीन्समध्ये बदल होणे.
- मंदची कार्यक्षमता कमी होणे.
- अवेळी केस पांढरे होणे.
- किडणी व लिव्हर यांच्या कार्यामध्ये व्यत्यय येणे.
- जन्कांमधील बदलामुळे कॅन्सरचा प्रादर्भाव होणे.
- मळमळणं, थकवा येणं, जड्द येणे.
- अवंळी विविध आजार निर्माण होणे.
- आगंग्यावरील खर्चात वाढ होण.
- जिमनीचा पात ग्यालावन जिमन नापिक होणे.
- मित्र किडींचा नाश होणे.
- जिसनीतील संदीय कर्वाचे प्रमाण कमी होणे.
- जिसनीची धुप होऊन जिसनीतील अन्नदृष्याचा उहास होणे
- ग्व्रतांच्या अधिक वापरामुळे रोगांचा व किडींचा प्रादभांव वाढणे.
- पीक उत्पादनाच्या मानाने पीक रवर्चात वाढ होणे.

''रासायनिक पध्वतीने उत्पादीत केलेले अन्त-धान्य फळे, भाजीपाला यांचे सेवन टाळुया निरोगी जीवन जगु या....!''

चला सर्वजण एक शपथ घेऊ सेंद्रीय शेतीसाठी आपण सर्व योगदान देऊ.

* सेंद्रीय शेतीचे फायदे *

- जिम्मनीची नैसर्गिक व जैवीक सुपिकता टिक्रन राहते.
- पर्वावरणाचा समतोल राखला जातो.
- शेती उत्पादनाची प्रत उंचावते व उत्पादन वाढते.
- मित्र किडी व उपयुक्त जीव-जंतु यांची भरप्र प्रमाणात वाढ होते.
- सेंद्रीय शेती नुसार उत्पादीत केलेली फळे,
 भाजीपाला व अन्न-धान्य यात रासायनिक खतांचे व किटकनाशकांचे अवशेष नसतात.
 त्यामुळे ते खाण्यासाठी आरोन्यदायी असतात.
- नैसर्गिक व स्थानिक संसाधनांची जोपासना व वापर होतो.
- विषमुक्त अन्नाची शाश्वती व आर्थिक सुरक्षितता मिळते.
- जिमनीचा पोत सुधारुन पाणी धारण करण्याची क्षमता वाढते.
- शेती खर्चात बचत होऊन उत्पन्न वाढते.
- मानवाची रोगप्रतिकार क्षमता वाढते.
- मानवास आरोग्यदायी जिवन जगण्यास मदत होते,

"सेंद्रीय अन्न-धान्य, फळे, भाजीपाला पिकव्या, निरोगी जीवन जगु या....!"

चला सर्वजण एक शपथ घेऊ सेंद्रीय शेतीसाठी आपण सर्व योगदान देऊ...!

Fig.: Side Effects of Chemical Fertilizers /Pesticides

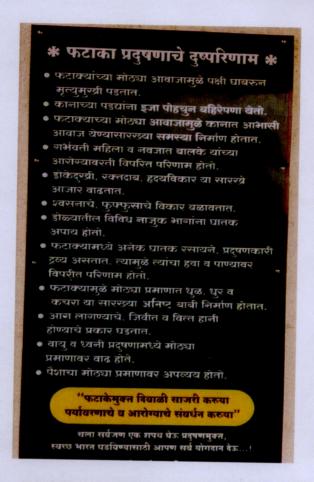


Fig.: Side Effects of Pollution Due To Fire Crackers.

OVERALL RECOMMENDATIONS

- 1. Drinking water analysis shall be done on regular basis.
- 2. Water flow meter should be provided for water distribution pipe line.
- 3. Water usage reduction techniques to be used.
- 4. Lab liquid waste water quantity should be measured and drained to municipal drainage system.
- 5. Segregation of Solid waste and lab waste should be done before final disposal.







Fig.: Environmental initiative taken by college

ANNEXURE

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