

7.1.3 Institutions Environment and Energy usage policy, action taken and achieving related in “Green Campus” institutions a long with audit reports and certificate for governor external accredited agency.

## **A. Environmental Green Campus Policy**

### **SR**

### **Particulars**

- 1 Objective of the green campus policy**
- 2 Certificate of Green Audit**
- 3 Green Audit Report**
- 4 Activities green campus intuition action taken in the campus**
  - I Garden
  - ii Compost Project
  - iii Awareness Global Warming + Save Earth Program
  - iv Cleanliness Program in the campus time to time
- 5 Environmental Green campus**
  - i Cleanliness program in the campus
  - ii Cleanness program NSS and NCC out of the college campus
  - iii Plastic free Awareness program NSS and NCC

## **B. Energy Policy**

- 1 Objective of the energy policy**
- 2 Certificate of the energy audit**
- 3 Energy audit report**



Phondaghat Education Society's,  
**ARTS AND COMMERCE COLLEGE, PHONDAGHAT.**

Tal. Kankavli, Dist. Sindhudurg Pin - 416601

(महाराष्ट्र शासन मा.क्र. एनजीसी -३५९५/ नमवि/(१३७/९५)/मशि- ३ दिनांक ४ ऑगस्ट १९९५ )

Recognised Under Section 2 f and 12 b of the UGC.

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■ Affiliated to University of Mumbai

Ref. No.

Date : 22/08/2022

## Environment - Green Campus Policy

(Internal Quality Assurance Cell)


### Introduction: -

The institution has a green and environmental friendly campus. The NSS, NCC and DLLE units have taken efforts to promote sustainable and eco-friendly campus through various activities for every year. Tree plantation program organized in the campus through extension activity. Institution also arranged tree plantation activity out of the campus and it is benefited for the community. The following are the major policies to sustain green campus every year.

### Objectives of the Environment - Green Campus Policy:

- To avoid use of plastic in the campus.
- To implement environment friendly activities.
- To sensitize the staff and students and lecture given on environmental issues.
- To maintain eco-friendly ambience Measures:
- To organize awareness activities to sustain nature.
- Ban of Plastic placards to be displayed in the campus.
- To organize eco-friendly Environmental activities through extension activities.
- To conduct Green audit every year.

  
**COORDINATOR**  
Internal Quality Assurance Cell  
Arts & Commerce College, Phondaghat.

  
**PRINCIPAL**  
Arts & Commerce College  
Phondaghat, Tal. Kankavli, Dist. Sindhudurg

# GREEN AUDIT CERTIFICATE

2023-24

*This certificate has been awarded to*

**Arts and Commerce College**

Phondaghat Dist Sindhudurg 416601

*in recognition of the organizations efforts for  
sustainable development.*

Empanelled with

**महाराजा**

महाराष्ट्र ऊर्जा विकास अभिकरण  
(Govt. of Maharashtra Institution)  
Reg no. MEDA/ECN/CR-14/2022-23/EA-07



*Kedar*

**Kedar Khamitkar**  
Energy Auditor CEA-8287

Certified by Bureau of Energy Efficiency,  
Ministry of Power, Govt. of India



**Kedar Khamitkar & Associates, Latur**  
Empanelled with Mahaurja, Govt of Maharashtra Institution



**ISO 9001-2015 Certified**

Date of Audit : 30/09/2024



**ऊर्जा** धन...  
संवर्धन इंधन...  
परावरण... !

Note : Certificate is based on organisation compliance on green audit  
recommendations and continual maintenance of the system & conduction of surveillance audit

# Green Audit Report

(2023-24)



Phondaghat Education Society's

## Arts and Commerce College Phondaghat

Pondaghat Dist Sindhudurg 416601 Maharashtra



Energy Audit Conducted by

**Kedar Khamitkar & Associates**

Energy Auditor

(Empanelled Mahaurja, Govt. of Maharashtra)

M: 9850244701 Email. . : [urjabachat@gmail.com](mailto:urjabachat@gmail.com)

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## ACKNOWLEDGEMENT

We express our sincere gratitude to the Dr. Purandhar D. Nare Sir and the management of Arts & Commerce College, Phondaghat for awarding us the assignment of Green Audit of their Campus.



**Kedar Khamitkar**  
Energy Auditor

Certified by Bureau of Energy Efficiency, Ministry of Power, Gov. of India  
Empanelled Consultant MAHAURJA (Govt. of Maharashtra Institution)

Date : 30.09.24

## Examples of Environmental Sustainability

1. Using renewable energy
2. Limiting waste and pollution
3. Conserving water
4. Using energy-efficient office equipment
5. Reducing travel and travel emissions
6. Creating products that are easy to recycle
7. Constructing and maintaining sustainable buildings



**EXECUTIVE SUMMARY:**

Objective	Observation	Recommendation
<b>Green Cover - Plantation of Trees</b>	Plantation of trees is started in the campus and the green cover is extended every year in the campus. At Present <b>14 %</b> area campus is having the Green cover.	<b>Good Initiative.</b>
<b>Use of Renewable Energy</b>	All students & Staff using maximum natural daylight in the institute.	<b>Recommended to install rooftop solar power plant of 5 KWp</b>
<b>Rain Water harvesting</b>	Constructed check dam which is built across a waterway, drainage ditch, swale (Attached Photo)	<b>Good Initiative</b>
<b>Avoid Misuse/ wastage of water</b>	RO water providing safe drinking water.	Recommended for waste water treatment plant.
<b>Bio Waste Management</b>	<b>The Bio Waste – Food Waste generated in the campus is proposed to be feed stock for Bio Gas plant</b>	<b>Recommended for Bio gas plant.</b>
<b>Non Bio Waste</b>	Non Bio Waste – Plastic Bottles / Paper Waste Metals waste is being collected in the dust bins placed across the campus. (Attached Photo)	It is proposed to install plastic bottle crusher, which can be sold as a Feed stock for the Plastic industry.
<b>E Waste</b>	E Waste – All Electronic Junk is generated in the campus in the form of Used Computer key boards/ Mouse/ CPU's/ Damaged Printers etc.	An agreement is in place with local Company to pick up the E waste every six month
<b>Carbon Foot Print</b>	<b>Transportation :</b> Mostly Students commute in the City Bus from City / rural Areas	<b>Good Awareness found in Staff and Students</b>

## Chapter No.1 Scope of Work & Green Audit Methodology

Arts & Commerce College, Phondaghat entrusted the work of conducting a detailed Green Audit of campus with the main objectives are as bellows:

### Objectives of Green Audit:

1. To examine the current practices, which can impact on environment such as of resource utilization, waste management etc.
2. To identify and analyze significant environmental issues.
3. Setup goal, vision, and mission for Green practices in campus.
4. Establish and implement Environment Management in various departments.
5. Continuous assessment for betterment in performance in green

### Need of Green Audit:

Green auditing is the process of identifying and determining whether institutions practices are eco-friendly and sustainable. Green audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

### Methodology of Green Audit:

Arts & Commerce College, Phondaghat Campus has been conducted with specific methodology as follows:





## Goals of Green Audit:

Conducted a green audit of Arts & Commerce College, Phondaghat Campus with specific goals as:

1. Identification and documentation of green practices followed by the Institute.
2. Identify strength and weakness in green practices.
3. Analyze and suggest solution for problems identified.
4. Assess facility of different types of waste management.
5. Increase environmental awareness throughout campus
6. Identify and assess environmental risk.
7. Motivates staff for optimized sustainable use of available resources.
8. The long-term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental Issue before they become problem.



## Chapter No.2 Introduction about the Institute

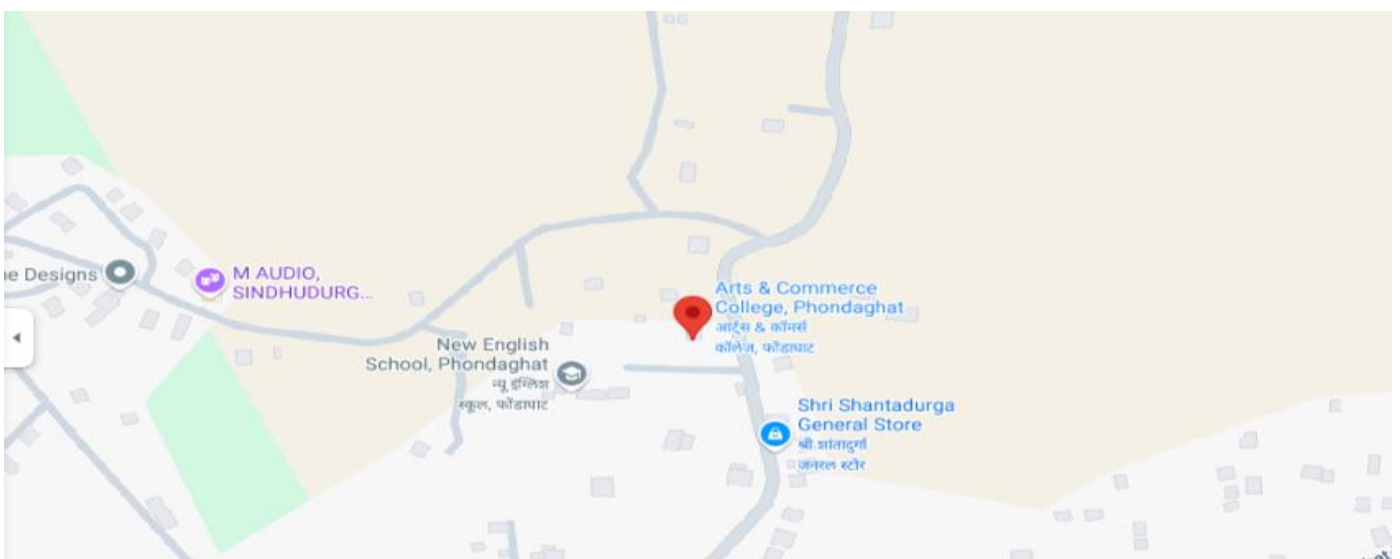
Shri Phondaghat Education Society has started Arts and Commerce College, in 1995, Phondaghat to fulfill the need of higher education in the vicinity. The college is permanently affiliated to the University of Mumbai. The college provides undergraduate courses of Arts and Commerce to the students. The college has a heritage of the excellent results in examinations.

The college has got District and University level awards in 'Jagar Janivancha Abhiyan' for emancipation of women, declared by the State Government.

The college has given opportunity of Personality Development to the students through participating in various departments such as, NSS, DLLE, Sports, Cultural, Competitive Exam, Employment cell, Women Development cell, Maharashtra Vivekvahini, etc. Majority of teachers in the college have been awarded Ph. D. from various universities.



Address : 9QGW+W4H, Vidyangar, Phondaghat, Lore, Maharashtra 416601



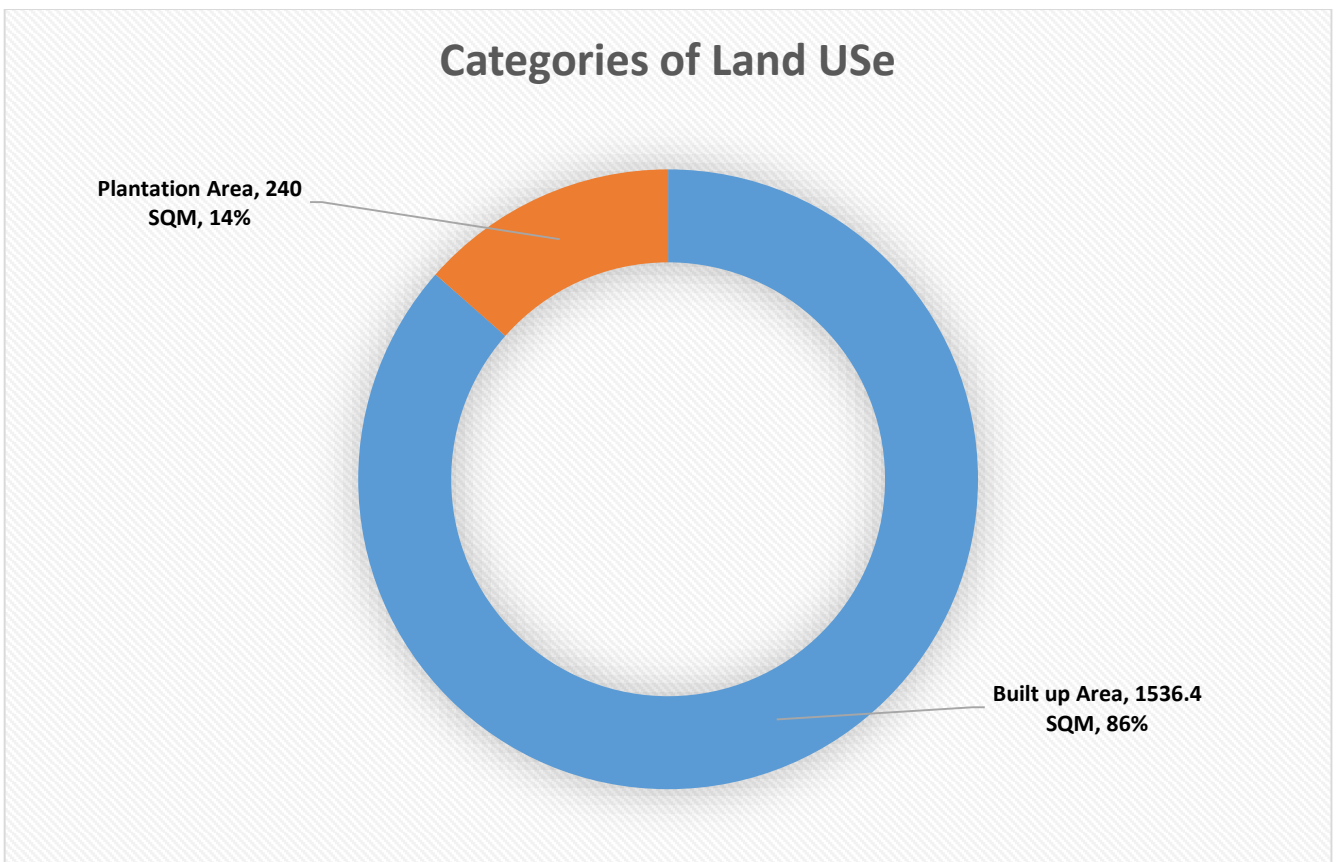
ARIAL VIEW OF COLLEGE CAMPUS (SOURCE GOOGLE EARTH)

### Chapter No.3 Categories of Land Use

Green Landscaping with Trees and Plants – the campus is beautifully landscaped.



Built up Area	1536.4	SQM
Plantation Area	240	SQM



#### Audit Framework and detailed findings of the Audit:

**Observations :** At Present **14%** area campus is having the Green cover

## Chapter No. 4: Study of Waste Management

### Environmental consciousness and sustainability friendly initiatives

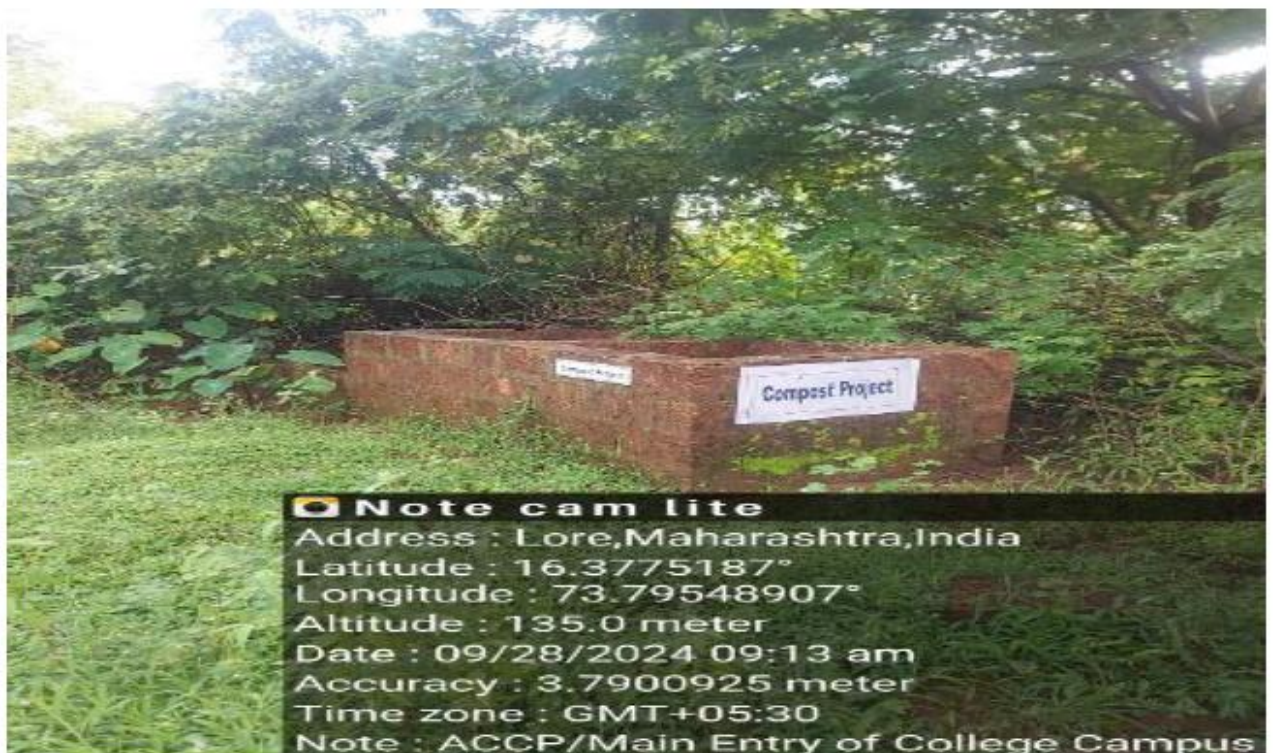
#### Water Management: Construction of Check dam

Check dams are water management tools that can be used to control water flow, reduce erosion, and recharge groundwater:



#### Sustainability Project : Compost Prepared in College Campus

**Observations:** The leaves, all non-toxic and biodegradable Waste, are collected and used to make compost through the microbial composting process, for which pits was made in the campus. Vermicomposting is the process of turning organic debris into worm castings. The content of the earthworm castings, along with the natural tillage by the worms burrowing action, enhances the permeability of water in the soil. Worm castings can hold close to nine times their weight in water “Vermiconversion,” or using earthworms to convert waste into soil additives.



E- Waste management



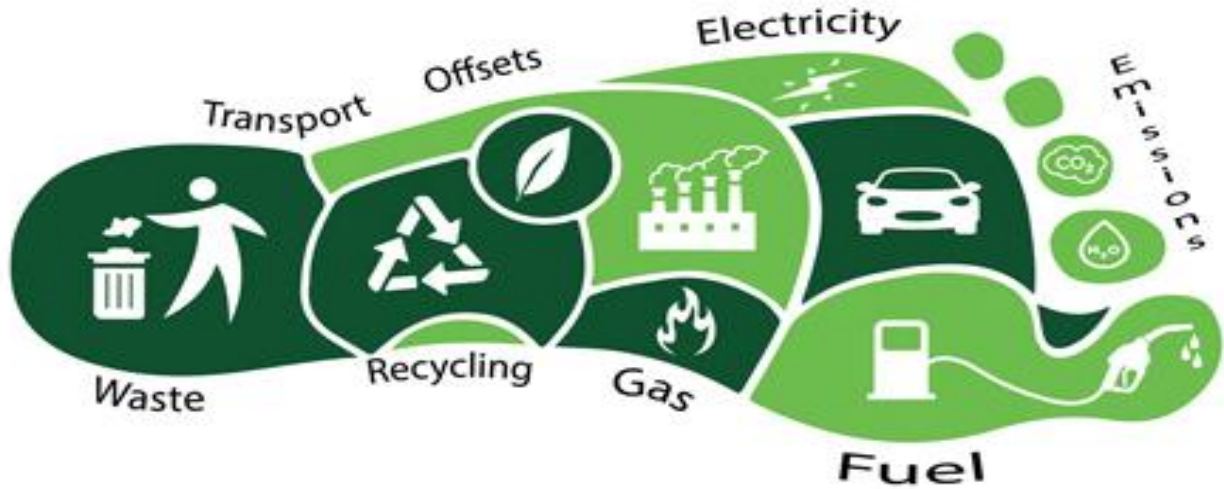
Observations:

An agreement is in place with local Company to pick up the E waste every six month.



## Chapter No. 5 : Study of Carbon Footprint

A **Carbon Foot print** is defined as the Total Greenhouse Gas emissions, emitted due to various activities. In this we compute the emissions of Carbon-Di-Oxide, by usage of the various forms of Energy used by the College for performing its day to day activities. The College Imports Electrical Energy during Night for various Electrical gadgets.



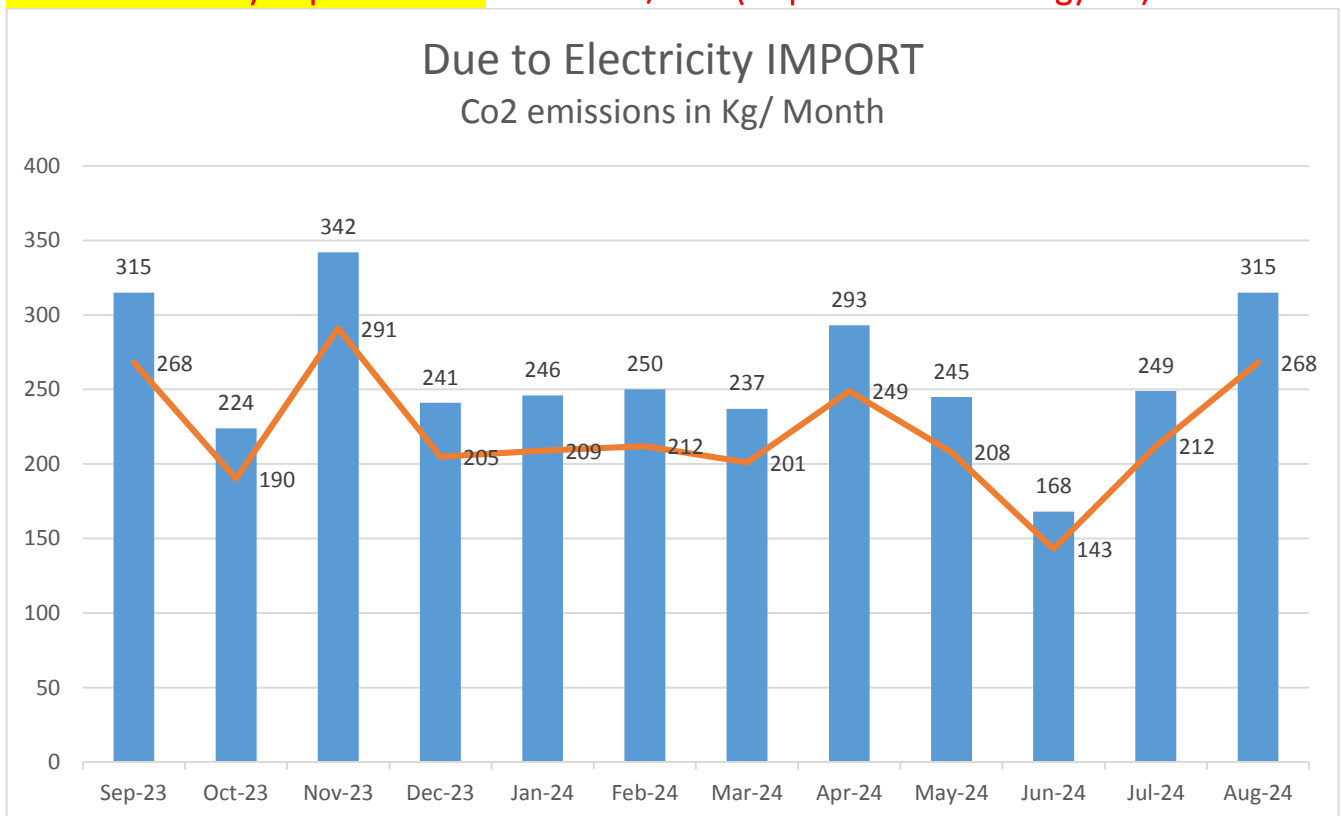
### Basis for computation of CO2 Emissions:

The basis of Calculation for CO2 emissions due to Electrical Energy are as under

**1 Unit (kWh) of Electrical Energy releases 0.8 Kg of CO2 into atmosphere**

Based on the above Data we compute the CO2 emissions which are being released in to the atmosphere by the College due to its Day to Day operations

**Annual Electricity Import details: 3125 KWh/Year (As per record in Energy Bill)**



**Observations:** The College Imports Electrical Energy during Night for various Electrical gadgets. Average Monthly Carbon Emission due to Electricity IMPORT = 2656 Kg of CO2 into atmosphere.

**Chapter No. 6 : Best Practices & Activities**

Institute has been declared their Environment Policy

**Policy Document On Environment and Energy Usage**

- To install LED bulbs in the complete campus to save energy
- To operate institute building in most efficient energy manner.
- Maximum use of Renewable Energy.
- Encourage a culture of Energy conservation on campus.
- To take additional measures to continuously improve our energy consumption.
- To develop and maintain Energy Management System based on ISO: 50001.
- To encourage use of advanced technology to minimize energy consumption.
- To engage in dialogue with the government agencies, and actively work with the local organizations in the areas of environment, energy efficiency and sustainable development.
- To strengthen our employees' and students' environmental knowledge and skills in order to improve our own environmental performance.
- To provide information and training opportunities on energy saving measures.
- To train our employees and students through our Enviro Club to make them 'Go Green Specialists' and partners to plant trees each year.

**Principal**



### Best Practices & Activities

Several significant and fruitful awareness programs both students and staff of the Campus are arranged every year in the campus. Reflections from students are Evident how effective such awareness programs conducted in the campus. Major programs conducted in the campus during the last Five years.

#### Campaigns: NSS National Service Scheme Cleanliness Drive



#### Maximum use of Sunlight

Students and Staff both are using Maximum Sunlight in the Campus.





## Plantation Green Club Activitie

*Nature camps, field trips and some of these activities are year round programs and others are regular year wiser semester wise or any other stipulated time bound programs.*

## Cleanliness Drive Media report



Environmental education through systematic environmental management approach.



# **GREEN AUDIT REPORT 2022-2023**

Submitted by  
**Vivekanand Environment Awareness Brigade  
(VEAB)**

Submitted to  
**Arts And Commerce College PondaGhat**

Date: 30-01-2023

30-01-2023

# Vivekanand Environment Awareness Brigade



(An initiative of Swami Vivekanand Smruti Sangh Keri)

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Reg. No. 169/Goa/2001

Website: [www.veabgoa.org](http://www.veabgoa.org)



Ref: VEAB/GREENAUDIT/2024/04



## Green Audit Arts And Commerce College PondaGhat 2022-2023

Chandrakant Shinde  
President, VEAB, Goa

## GREEN AUDIT REPORT 2022-2023

As stewards of our planet, it is imperative that institutions of education take proactive steps to ensure environmental sustainability and cultivate a culture of environmental stewardship among their students, faculty, and staff. Phondaghat Education Society's Arts and Commerce College, nestled amidst the serene landscapes of Maharashtra, recognizes the importance of this responsibility and is committed to integrating sustainable practices into its operations.

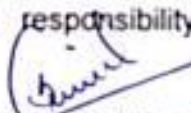
The Vivekanand Environment Awareness Brigade (VEAB), an esteemed environmental organization based in Keri Sattari Goa has been engaged to conduct a green audit of Phondaghat Education Society's Arts and Commerce College through desktop review of findings of internal green & environmental audits conducted by College, review of documents/ records and virtual tour of the College and Google form questionnaire interviews of faculty, non-teaching staff and students. Prior to the audit, questionnaires and checklists were prepared. Virtual tour of the campus included College building and infrastructure facilities such as solar PV system, Rainwater Harvesting System (RWH), gardens etc. Green Audit Report addresses green initiatives taken/ under implementation by management, the outreach of the College, suggestions & recommendations to improve overall environmental sustainability of the campus.

### Through this audit, we endure to:

- Evaluate the college's current environmental practices and identify areas for improvement.
- Provide recommendations for implementing sustainable initiatives that align with the college's mission and values.
- Foster a culture of environmental awareness and responsibility within the college community.
- Strengthen the college's commitment to environmental stewardship and sustainability leadership in the region.

By embarking on this green audit journey, Phondaghat Education Society's Arts and Commerce College reaffirms its dedication to creating a greener, more sustainable future for generations to come. Together, let us embrace the challenge of sustainability and work collaboratively towards building a healthier planet for all.

The college is relentlessly striving in pursuance of academic excellence and encouraging learners to participate spontaneously in various co-curricular and extracurricular activities. It has well qualified and research-oriented teaching staff as well as supportive and efficient non-teaching staff which constantly endeavor for the betterment of the students and ultimately of the institution. Besides academic education, the college finds its responsibility towards community, women's

  
Chandrakant Shinde  
President, VEAB, Goa

30-01-2023

empowerment, socio-economically backward class, environment consciousness, national harmony etc. and constantly addresses them through several co-curricular and extracurricular activities. We are persistently trying to kindle young minds with sublime ideas, accountability, virtuousness, curiosity, and social as well as ethical values.



Fig.1 Aerial View of Arts And Commerce College PondaGhat from Google Maps

### About College:

Phondaghat Education Society's Arts and Commerce College is nestled in the tranquil surroundings of Vidyanagari, situated along Ghonsari Road in the picturesque locale of Phondaghat, within the Kankavli Taluka of Sindhudurg district. Enveloped by the serene beauty of the Western Ghats, or Sahyadri range, the college enjoys close proximity to the renowned Dajipur Wildlife Sanctuary. Occupying a sprawling expanse of 4.5 acres, the college campus boasts a well-designed infrastructure, encompassing a total built-up area of 1536.04 square meters spread across two floors and two blocks. The college building accommodates classrooms, a library, and an auditorium, providing conducive spaces for academic pursuits and cultural activities. Additionally, the college sports ground offers playing facilities, catering to the holistic development and recreational needs of its students.

A handwritten signature in blue ink, appearing to read 'Chandrakant Shinde', written over a horizontal line.

Chandrakant Shinde  
President, VEAB, Goa

The area details of the College building is presented in following Table.

Sr.No	Designation	Area of the room (carpet) sq.mt.	The Purpose for which it is used proposed to be used
1.	Administration Office G	20.92	Admin. works
2.	Staff room G-2	23.68	For Teachers
3.	Principal Cabin G-3	20.92	For Principal
4.	Computer room	08.01	For computer teaching
5.	Class room-1	43.98	Lectures
6.	Class room- 2	43.98	Lectures
7.	Class room- 3- G1	43.98	Lectures
8.	Class room- 4- G1	43.98	Lectures
9.	Class room- 5- G1	43.98	Lectures
10.	Class room- 6- G1	43.98	Lectures
11.	Class room- 7- G1	43.98	Lectures
12.	Class room- 8- Building 2	23.68	Lectures
13.	Class room- 9- Building 2	23.68	Lectures
14.	Class room- 10- Building 2	23.68	Lectures
15.	Class room- 11- Building 2	23.68	Lectures
16.	Library	41.06	Reference purpose
17.	Seminar Hall	90.10	Guest Lectures, College events, etc
18.	Toilet Gents		For Boys
19.	Toilet Ladies		For Girls
20.	Store Room	43.98	Storage purpose
21.	Balcony		Access to classes
22.	Ramp	1.90 sq.mt.	For physically challenged person
23.	Parking Shed		For Parking

  
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President, VEAB, Goa



Fig 2: Classroom



Fig 3: Classroom



Fig 4: Balcony



Fig 5: Library



Fig 6: Principal Cabin



Fig 7: Staff room

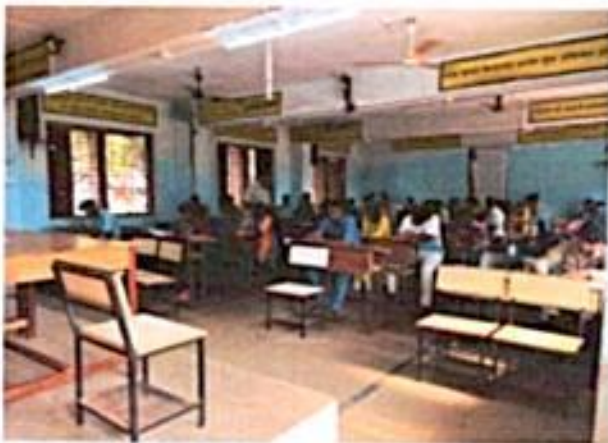
Chandrakant Shinde  
President, VEAB, Goa

## 2. Green Audit Findings and Analysis

During the green audit of Phondaghat Education Society's Arts and Commerce College, various key areas were assessed to evaluate the institution's environmental practices and suggest improvements. The audit covered the following major areas and their respective subsections, along with compliance verification, initiatives assessment, and recommendations for enhancement.

### 2.1 Good Daylight Design and Ventilation

- a) The infrastructure of classrooms, offices, and the library showcases favorable characteristics for good daylight design and ventilation, including high ceilings, wide doors, and large windows.
- b) The building layout maximizes natural light exposure, with corridors and classrooms receiving ample sunlight. Curtains are provided in classrooms to mitigate glare, and natural light levels range between 70-85 lux.
- c) Ventilation is facilitated by windows and fans, with some classrooms benefiting from cross ventilation due to large windows on both sides.



*Fig 8: Good Daylight Design and Ventilation in classroom*

### 2.2 Water Efficiency and Wastewater Management

- a) The college primarily relies on a borewell and PWD water tap as major water sources, with a 2000-liter capacity storage tank utilized for drinking and gardening purposes. The borewell yields water with a safe pH level of 7.5, ensuring suitability for consumption and domestic use.



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President, VEAB, Goa





Fig 9: Borewell

### ● Recommendation:

- Given the region's ample rainfall, the college is advised to implement low-cost rainwater harvesting and drift irrigation projects to enhance water conservation efforts. Furthermore, expanding water storage capacity to accommodate sanitation needs, based on staff and student numbers, is recommended.

### 2.3 Indoor Air Quality

The college's location amidst the Western Ghats, coupled with minimal industrial activity and vehicle emissions in the vicinity, ensures excellent indoor air quality. Adequate tree cover contributes to a healthy and comfortable environment for building occupants.

### ● 2.4 Energy Efficiency

Electricity consumption, supplied by the Maharashtra State Electricity Board Pvt. Ltd., averages between 230 to 330 units per month. The college demonstrates a commendable effort in minimizing electricity usage, leveraging natural lighting and ventilation through well-designed classrooms and broader windows.

Given Maharashtra's electricity scarcity, many regions, including college premises, endure frequent power outages, or load shedding, resulting in restricted electricity supply during the day. While the state government has urged stakeholders to conserve electricity, adherence to this plea varies. Notably, Phondaghat Education Society's Arts and Commerce College is steadfast in its commitment to minimizing power consumption. With spacious classrooms, laboratories, staff rooms, and a multi-purpose hall adorned with expansive

30-01-2023

windows, ample natural light floods the premises during daylight hours. This design not only illuminates the spaces but also facilitates ventilation, consequently reducing reliance on electric fans.

### Recommendation:

- To further reduce reliance on conventional electricity sources, the college is encouraged to explore solar power adoption by installing solar-powered appliances, such as bulbs and heaters, contributing to sustainable energy practices.

## 2.5 Solid Waste Management

Educational institutions play a pivotal role in promoting sustainability within our society, with waste management being a key challenge in achieving sustainability goals. Proper waste segregation serves as the initial step in effective waste management practices. At Phondaghat Education Society's Arts and Commerce College, solid waste predominantly consists of dry waste. Waste bins are strategically placed in classrooms, staff rooms, the library, washrooms, and across the campus for convenient disposal. The collected waste is regularly picked up by the local Panchayat. However, there is a concerning practice of burning paper waste within the campus premises. As the college concludes its activities by 11:00 in the morning and does not operate a canteen, wet waste generation is minimal.



Fig 10: Dry Dustbin Provided by Gram Panchayat



Fig 11: Single use plastic collection center

A handwritten signature in blue ink, which appears to read "Chandrakant Shinde".

Chandrakant Shinde  
President, VEAB, Goa

### **Recommendation:**

- To address the issue of paper waste burning, the college should cease this practice and instead encourage alternative disposal methods. Additionally, to reduce paper usage and wastage, the college should explore and promote the adoption of e-services and digital documentation systems wherever feasible. This shift towards electronic mediums will not only minimize paper consumption but also align with the college's commitment to environmental sustainability.

### **2.6 Transportation**

Situated in an advantageous location, the College enjoys convenient access to public transportation options, significantly minimizing reliance on individual vehicles. The majority of both staff and students opt for state-owned public transport buses for their commute, demonstrating a conscious effort to reduce carbon emissions. Private car usage is notably negligible. Additionally, some members of the college community utilize bicycles for their daily commute, further contributing to pollution reduction efforts.

### **2.7 Awareness Initiatives:**

With the environment and sustainability receiving inadequate attention, the world grapples with pressing issues like ozone depletion, climate change, water scarcity, and unsustainable resource management. In response to these challenges, the College is proactive in raising awareness and fostering environmental consciousness among its community. Each year, the college organizes a series of guest lectures focusing on diverse environmental topics, including sustainable practices, eco-friendly products, and biodiversity conservation. Furthermore, the college hosts various activities such as field trips to ecological and historical sites, commemoration of World River Day, regular cleanliness drives, and campaigns to raise awareness about the hazards of single-use plastics. Notably, the college has undertaken tangible initiatives, including the construction of a small check dam along a local stream, demonstrating its commitment to environmental conservation. Lecture series dedicated to biodiversity conservation further enrich the educational experience, ensuring that students are well-equipped to contribute positively to environmental sustainability efforts.



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President, VEAB, Goa



Fig 12: Construction of a small check dam



Fig 13: Construction of a small check dam



Fig 14: Cleanliness drive



Fig 15: Newspaper cutting of awareness about the hazards of single-use plastics



Fig 16: 1000 Vruksha Lagwad



Fig 17: Cleanliness drive

*Chandrakant Shinde*

Chandrakant Shinde  
President, VEAB, Goa

## **Comprehensive Suggestions:**

### **1. Develop Campus Gardens:**

- Establish green spaces and gardens on campus to promote biodiversity, provide habitat for local wildlife, and create outdoor learning environments for students.
- Incorporate native plant species to support local ecosystems and reduce water consumption.
- Encourage student involvement in garden maintenance and cultivation as part of experiential learning opportunities.

### **2. Emphasize Outdoor Teaching:**

- Integrate outdoor classrooms and learning spaces into the curriculum to connect students with nature and foster environmental appreciation.
- Utilize the college's natural surroundings, such as gardens, green spaces, and nearby trails, for hands-on learning experiences across various subjects.
- Organize field trips and nature walks to explore local ecosystems, conduct scientific observations, and engage in environmental studies.

### **3. Expand E-Services and Digitalization:**

- Increase the use of electronic services and digital platforms for administrative tasks, communication, and documentation to reduce paper usage and environmental footprint.
- Implement online learning platforms and virtual classrooms to enhance accessibility, flexibility, and sustainability in education delivery.
- Encourage the adoption of e-books, digital libraries, and online resources to minimize the need for printed materials and promote resource efficiency.

### **4. Establish Eco Clubs and Students Organizations:**

- Form eco clubs or environmental student organizations to empower students to take active roles in promoting sustainability and initiating green initiatives on campus.
- Facilitate eco club activities, such as tree planting events, recycling drives, waste audits, and environmental awareness campaigns, to foster environmental leadership and engagement.
- Provide opportunities for collaboration with local environmental groups, NGOs, and community partners to amplify impact and address broader environmental challenges.



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President, VEAB, Goa


**5. Support Community Based Conservation Initiatives:**

- Engage with local communities and stakeholders to identify environmental issues and develop collaborative conservation initiatives that benefit both the college and surrounding areas.
- Establish partnerships with community organizations, government agencies, and indigenous groups to implement conservation projects, such as habitat restoration, watershed protection, and wildlife conservation.
- Organise community outreach events, workshops, and educational programs to raise awareness about environmental issues and promote sustainable practices within the broader community.

**6. Transition to LED lighting**




- Replace traditional incandescent and fluorescent lighting fixtures with energy-efficient LED bulbs to reduce energy consumption, lower utility costs, and minimize carbon emissions
- Conduct an energy audit to identify areas for LED retrofitting and prioritize lighting upgrades based on energy savings potential and return on investment.

**Table: Improvement in Existing infrastructure**

Picture	Suggestions
	It is imperative to improve ventilation or provide emergency electricity provisions to prevent disruptions during teaching, particularly during the monsoon season when electrical fluctuations occur.



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	<p>The provision of drinking water sources must be augmented considering the number of students and staff in the college to mitigate inconvenience. Additionally, more water filters need to be installed.</p>
	<p>Immediate action is required to install proper partitions in the girls' latrine to ensure hygiene and privacy.</p>
	<p>Immediate action is required to organize and maintain the storeroom, as the current arrangement appears disorderly. It must be promptly segregated and kept clean at all times.</p>



Chandrakant Shinde  
President, VEAB, Goa



It is strongly advised to remove materials stored in the veranda/corridor and ensure the area is kept clean at all times. It is unbecoming of any institution to maintain a dirty corridor.



The fire extinguishers must be refilled and readily available at all times for emergency use.

A handwritten signature in blue ink, appearing to read "Chandrakant Shinde". The signature is written in a cursive style.



**Table: List of Birds seen during the Green Audit Visit**

Sr No	Name
1	White-throated Kingfisher
2	Asian Green Bee-eater
3	White-browed Fantail
4	Rufous Treepie
5	House crow
6	Common Iora
7	Brahminy Kite
8	Cattle Egret
9	Spotted Dove
10	Southern Coucal
11	Coppersmith Barbet
12	Black Drongo
13	Black-hooded oriole
14	Red-whiskered Bulbul
15	Red-vented bulbul
16	Thick-billed flowerpecker
17	Purple Sunbird

*Fig 18: White-browed Fantail**Fig 19: Asian Green Bee-eater*

*Chandrakant*

Chandrakant Shinde  
President, VEAB, Goa



**Fig 20: White-throated Kingfisher**



**Fig 21: Red-whiskered Bulbul**

A handwritten signature in blue ink, appearing to read 'Chandrakant Shinde'.

Chandrakant Shinde  
President, VEAB, Goa

**Table: List of Trees seen during the Green Audit Visit**

Sr No	Name
1	Emblica officinalis - Amla
2	Terminalia chebula - Hoddo
3	Mangifera indica - Mango
4	Careya Arborea - kumyo
5	Tamarindus Indica - chinch ( tamrind)
6	Cocos nucifera - coconut
7	Syzygium cumini - Jambhul
8	Colotropis gigantea - Rui
9	Artocarpus heterophyllus - Jackfruit
10	Bombax ceiba - Silk cotton tree
11	Manilkara zapota - Sapodilla (chiku)
12	Acacia auriculiformis
13	Casuarina - She-oak
14	Eucalyptus -Nilgiri

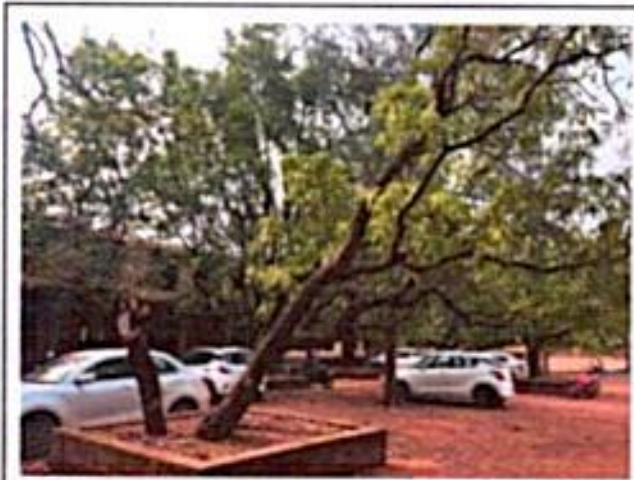


Fig 22: Mangifera indica - Mango



Fig 23: Mangifera indica - Mango

*Chandrakant Shinde*

Chandrakant Shinde  
President, VEAB, Goa

#### **4 Activities green campus intuition action taken in the campus**

- I Garden
- ii Compost Project
- iii Awareness Global Warming + Save Earth Program
- iv Cleanliness Program in the campus time to time

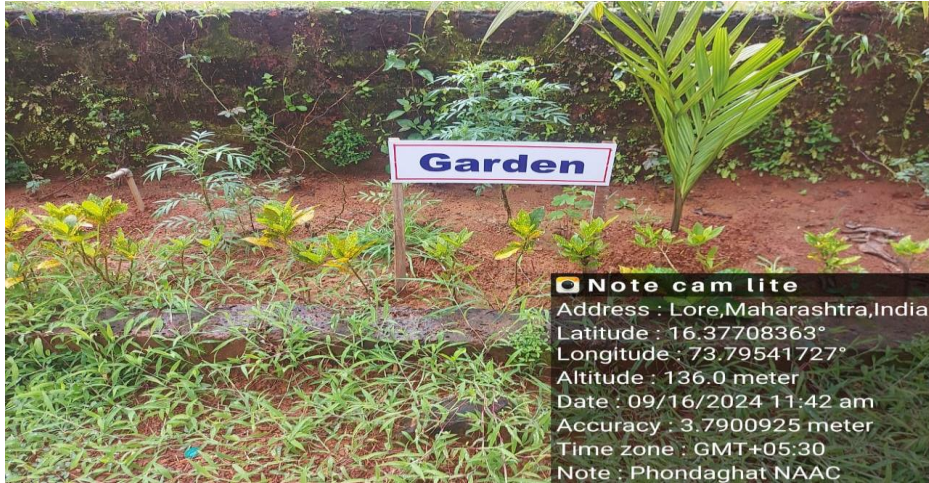


Note cam lite  
Latitude : 16.37713011°  
Longitude : 73.79551801°  
Altitude : 72.70404 meters  
Date : 07/01/2022 10:54 am  
Note : ACCP/ NSS/NCC/Tree Plantation

## Green Campus



## Green Campus



**Garden**



## Compost Project

### लोकमत

## नूतनीकरण योग्य संसाधने नैसर्गिकरित्या भरली जाऊ शकतात

मोहम्मद अझीझ ; फोंडाघाट महाविद्यालयात सेमिनारमध्ये प्रतिपादन

लोकमत न्यूज नेटवर्क  
कणकवली : सूर्यप्रकाश, वातावरण, पाणी, जमीन, खनिजे तसेच सर्व वनस्पती आणि प्राण्यांचा समावेश नैसर्गिक संसाधनांमध्ये होतो. मात्र, ती मानवजातीच्या कोणत्याही कुतीशिवाय अस्तिवात आहेत. त्यामुळे नूतनीकरण योग्य ही संसाधने नैसर्गिकरित्या पुन्हा भरली जाऊ शकतात. असे मत इजिप्त गलाला विद्यापीठाचे भू माहिती शाखाचे प्राध्यापक मोहम्मद अझीझ यांनी व्यक्त केले.



फोंडाघाट महाविद्यालयात आयोजित आंतरराष्ट्रीय सेमिनारच्या उदघाटन प्रसंगी मनिष गांधी यांनी मनोगत व्यक्त केले.

फोंडाघाट महाविद्यालयातील भूगोल विभाग, अंतर्गत गुणवत्ता मूल्यमापन कक्ष आणि कोकण जिओग्राफर्स असोसिएशन ऑफ इंडिया यांच्या संयुक्त विद्यमाने आंतरराष्ट्रीय सेमिनार झाले. नैसर्गिक साधन संपत्तीचे संवर्धन आणि व्यवस्थापन या विषयावर हे सेमिनार होते. यावेळी ते बोलत होते.

ते पुढे म्हणाले, नैसर्गिक संसाधनांचे वर्गीकरण करण्याच्या विविध पद्धती आहेत. यामध्ये मूळ स्त्रोत, विकासाचा टप्पा आणि त्यांच्या नूतनीकरणक्षमतेचा समावेश आहे. नॉन-रिन्यूएबल रिसोर्सेस एकतर हळूहळू तयार होतात किंवा नैसर्गिकरित्या वातावरणात तयार होत

नाहीत. खनिजे हे या वर्गात समाविष्ट केलेले सर्वात सामान्य स्त्रोत आहेत. काही संसाधने मानवी हस्तक्षेपाशिवाय नैसर्गिकरित्या कमी होतात, यातील सर्वात उल्लेखनीय म्हणजे युरेनियमसारखे रेडिओ-सक्रिय घटक. जे नैसर्गिकरित्या जड धातूंमध्ये विघटित होतात. यापैकी धातूच्या खनिजांचा पुनर्वापर करून पुन्हा वापर केला जाऊ शकतो. परंतु, कोळसा आणि पेट्रोलियमचा पुनर्वापर करता येत नाही. एकदा ते पूर्णपणे वापरले की ते पुन्हा भरण्यासाठी लाखो वर्षे लागतात.

या सेमिनारमध्ये भारताच्या विविध राज्यातील तसेच भारताच्या बाहेरील इजिप्त, बहरीन, नेपाळ, नायजेरिया,

तैवान, ऑस्ट्रेलिया या देशांमधील भूगोल तज्ञ आणि संशोधक सहभागी झाले होते.

सेमिनारचे सचिव प्रा. डॉ. राजाराम पाटील यांनी कार्यक्रमाची रूपरेखा सांगितली. यावेळी सिड्ने-ऑस्ट्रेलिया येथील भूगोल तज्ञ डॉ. अभय देशवंडीकर, त्रिभुवन विद्यापीठ काठमांडू, नेपाळ येथील डॉ. खाहीया सकपोता, बहरीन इन्स्टिट्यूटचे प्रोफेसर प्रशांत यानीही आपले विचार व्यक्त केले. या सेमिनारच्या अध्यक्षस्थानी फोंडाघाट एज्युकेशन सोसायटीचे सचिव मनिष गांधी हे होते. सूत्रसंचालन प्रा. विनोदसिंह पाटील यांनी तर आभार प्रा. डॉ. संतोष रायबोले यांनी मानले.



फोंडाघाट : लोरे येथील हवामान केंद्रास फोंडाघाट महाविद्यालयास विद्यार्थ्यांनी भेट दिली.

## हवामानविषयक उपकरणे जीवनाचे सोबती : प्रा. पाटील लोरे हवामान केंद्रास विद्यार्थ्यांची भेट

फोंडाघाट, ता. २ : हवामान विषयक उपकरणे ही दैनंदिन जीवनाचे सोबती असतात असे प्रा. डॉ. राजाराम पाटील यांनी केले.

विद्यार्थ्यांना प्रात्यक्षिक ज्ञान व्हावे यासाठी क्षेत्र पाहणी भेटीचे आयोजन नुकतेच फोंडाघाट महाविद्यालयातील भूगोल विभागप्रमुख डॉ. राजाराम पाटील यांनी लोरे येथील हवामान केंद्रामध्ये केले होते. प्रॅक्टिकल व अनुभव यासाठी फील्डवर जाऊन प्रत्यक्ष पाहणी करावी लागते. तसेच भूगोल हा विषय भौगोलिक विविधता जपणारा व माहिती देणारा आहे. हवामान प्रत्यक्ष विभागानुसार तसेच प्रदेशानुसार

बदलत असते. हवामानाच्या कार्याची नोंद विविध प्रकारच्या उपकरणांच्या साहाय्याने केली जाते. दिवसाचे २४ तास हवामानविषयक बदलांची नोंद करणारी स्वयंचलित उपकरणे या लोरे नंबर एक हवामान केंद्रामध्ये आहे. पर्जन्य किती झाले याची दररोज नोंद करावी लागते. त्याचबरोबर तापमान, हवेचा वायुभार, आद्रता, वाऱ्याचा वेग आणि दिशा अशा हवेच्या विविध विविध अंगांचा अभ्यास करण्यासाठी त्याचबरोबर उपकरणांच्या कार्याची नोंद कशी ठेवली. विद्यार्थ्यांना या केंद्राला भेट देऊन विविध विषयांची माहिती घेतली.

# Awareness Global Warming & Save Earth Program Resource Person Prof. Mohammad Azij and Dr. Abhay Deshwandikar

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Date: 20/08/2021

## पृथ्वी वाचविण्यासाठी केवळ चर्चा नको कृती हवी : डॉ. शिवराम ठाकूर

फोंडाघाट महाविद्यालयात भूगोलाची राष्ट्रीय कार्यशाळा संपन्न

▶ फोंडाघाट

‘पृथ्वी वाचविण्यासाठी केवळ चर्चा नको कृती हवी’ यासाठी फोंडाघाट येथील काहीही होणार नाही. त्यासाठी प्रत्येकाने चुकी केली पाहिजे. आतापर्यंतचील बदलाचे वेळ पर्याय शेतकरीवर्गावर होतो. परिणामी त्याचे अधिक नुकसान होई. यासाठी आपण सजज राहिले पाहिजे.’ असे प्रतिपादन भूगोल अभ्यास मंडळचे चेअरमन डॉ. शिवराम ठाकूर यांनी केले.

विश्वील कला आणि शांतिज्ज महाविद्यालय फोंडाघाट येथे भूगोलाची ‘हवामान बदलाचा प्रत्यक्ष अनुभव, या विषयावर एक दिवसीय राष्ट्रीय कार्यशाळा संपन्न झाली. शहरची कार्यशाळा आणि,क.पु.सी. या शांतिज्ज विद्यालय आणि कोकण ज्युनिअर अकादमीच्या संयुक्त सहकाराने संपन्न झाली. कार्यशाळेचे उद्घाटन मान्यवरद्वारे असे दिवस संपन्न करून झाले. असेच पृथ्वीचे प्रतिरक्षणक पुनर्जन्म करून सर्वोत्तम संपन्नना अनेकज्ज मदत देण्यात आले. आतापर्यंत



फोंडाघाट येथे भूगोलाची ‘हवामान बदलाचा प्रत्यक्ष अनुभव, या विषयावर एक दिवसीय राष्ट्रीय कार्यशाळा संपन्न झाली.

कार्यशाळेत वाचविण्या वेळाना जैववैविध्यध्याच्या पुनर्जन्म प्रकल्पात आले. फोंडाघाट, पणजीकरून सोसायटीचे डॉ.शिवराम ठाकूर यांनी वेगवेगळ्या सज्जतून आलेल्या सज्जतून स्वागत केले. ‘आतापर्यंतचील बदल फक्त चर्चेपुरते मर्यादित न राहता त्यांची चळवळ झाली पाहिजे. कारण चळवळीची सज्ज सज्जत पैलू आणणे हा असा इतिहास आहे.’ असे सज्जत

कार्यशाळेचे पुनर्जन्म दिवसा, ये अमन श्रीकांत आढटे यांनीही यावेळी मार्गदर्शन केले. कार्यशाळेच्या संपन्नने प्रात्यक्षिक भूगोल विषयात प्रत्यक्ष डॉ. राजाराम पाटील यांनी तर सज्जतून स्वागत डॉ. शशिपुत्र रावजीले यांनी तर आभार प्रस्तावेंत डॉ. सतीश कामत यांनी याले. दुसऱ्या सज्जत राष्ट्रीय चर्चासभेचे आयोजन यांचेच प्रात्यक्षिक डॉ.राजाराम पाटील यांनी

कार्यशाळेचे प्रात्यक्षिक सरेच कमीतक केवळ व महाराष्ट्र राज्यातून आलेल्या सर्व पाहण्याचे पाहण्याची ओळख करून दिली. या सज्जतने प्रमुख सज्जत डॉ. शिवराम ठाकूर यांनी प्रात्यक्षिक करून दाखवली. तापमान, ओर, धर्मात्मिकी, सांस्कृतिक, सामाजिकत या क्रिना खातावरणामने कसा चालतात याची प्रात्यक्षिके खेळण्या माध्यमातून दाखवली. आतापर्यंतचील होणारे बदल विद्याथ्यीना, समाजातील

लोकांना उर प्रात्यक्षिकताही सांगिले तर हवामान बदलाची जाणीव सर्व स्तरातून होईल. पर्यावरण व मानवाचा संबंध केवळ नैसर्गिक आहे. पर्यावरणाचा प्रत्यक्ष पर्याय मानवावर होतो.आतापर्यंत होणारे बदल २५ करोडपक्षांनी पर्यावरण व मानव यांचा तार सज्जतून तसेच मानवी जीवनावर होणारे परिणाम यांचेही संपन्ननेचाचे साधन केले. त्यावेळी विविधप्रकार कक्षी उद्घाटन करण्यात आले.

Save Nature Program Resource person Dr. Shivram Thakur and Dr. Hemant Pednekar



## प्लास्टिकमुक्ती अभियानाला चांगला प्रतिसाद

लोकमत न्यूज नेटवर्क  
कणकवली : फोंडाघाट येथील कला आणि वाणिज्य महाविद्यालयामध्ये राष्ट्रीय छात्र सेना विभागामार्फत प्लास्टिक मुक्ती अभियान राबवण्यात आले. या अभियानाला विद्यार्थ्यांचा उत्स्फूर्त प्रतिसाद लाभला. या वेळी महाविद्यालयाच्या परिसरातील प्लास्टिक गोळा करण्यात आले. आजच्या कळात प्लास्टिक वापराचा झालेला अतिरेक व त्यामुळे होणारी पर्यावरणाची हानी याविषयी प्रबोधन करण्यात आले. प्लास्टिकचा वापर पूर्णपणे बंद करणे शक्य नसले तरी किमान वापर केला

तर प्लास्टिकपासून पर्यावरणावर होणाऱ्या परिणामापासून आपण वाचू शकतो. प्लास्टिक निर्माण करणे सोपे आहे,परंतु ते नाहीसे करणे कठीण आहे. त्याचे विघटन होत असताना पर्यावरण विषारी होत असते. त्यामुळे प्लास्टिक वापरावर आळा हाच उपाय असल्याचे प्रबोधन विद्यार्थ्यांकडून करण्यात आले. या उपक्रमाला छात्र सेनेचे विद्यार्थी, महाविद्यालयाचे प्राचार्य डॉ. विष्णू फुलझेले, असोसिएट एन.सी.सी ऑफिसर लेफ्टनंट डॉ. राज ताडेराम व सहायक डॉ. संतोष रायबोले उपस्थित होते.



फोंडाघाट महाविद्यालयाच्यावतीने प्लास्टिकमुक्ती अभियान राबविण्यात आले. यावेळी मुलांसह प्राध्यापक उपस्थित होते.

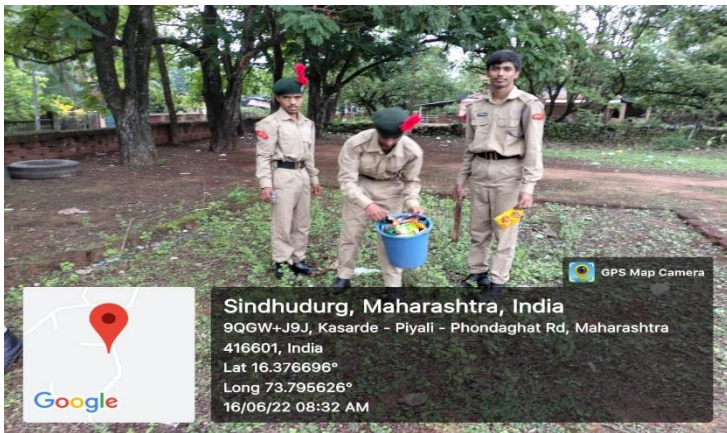
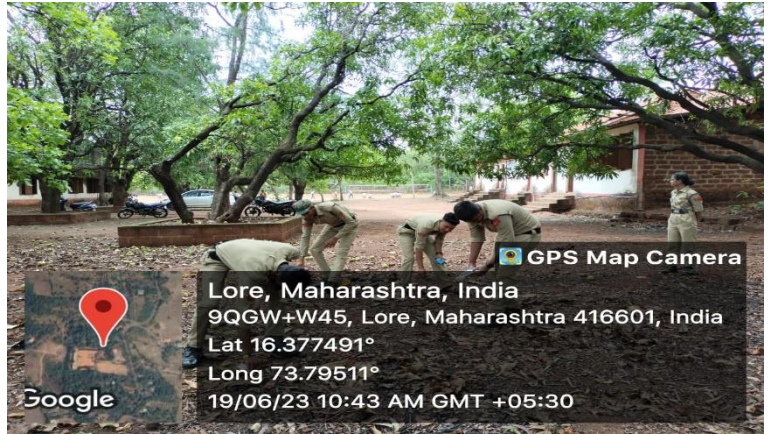
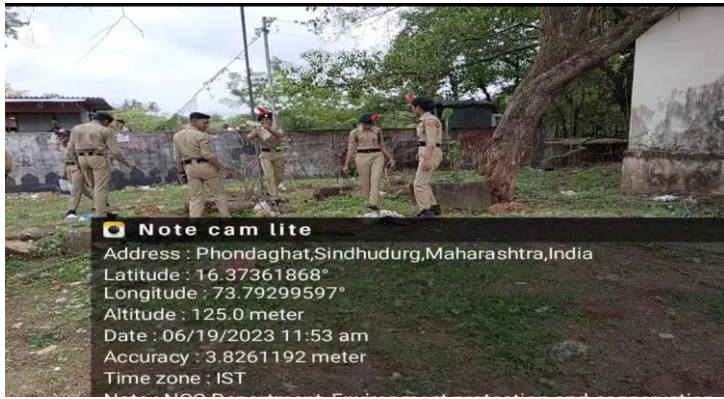
### Plastic Free Campaign organized by NCC

### News Published in Regional News Paper 'Lokmat'

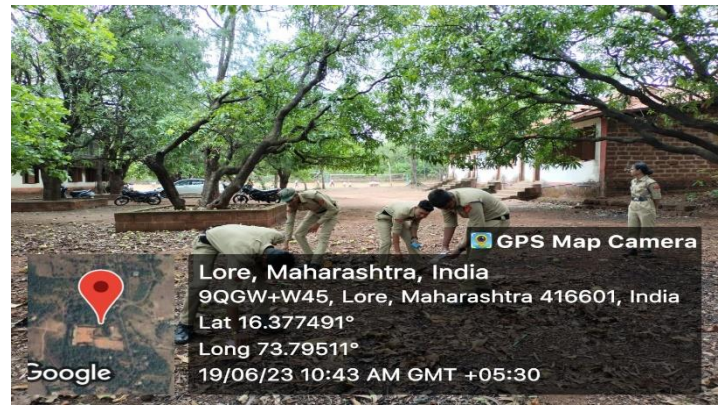
Date: 17/01/2022

#### 5 Environmental Green campus

- i Cleanliness program in the campus
- ii Cleanness program NSS and NCC out of the college campus
- iii Plastic free Awareness program NSS and NCC



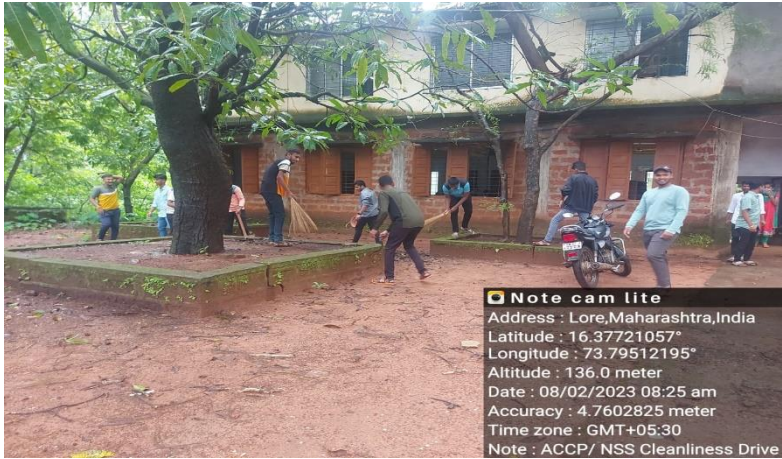
## Cleanliness in College Campus NCC



**Cleanliness in College Campus NCC**



## Cleanliness in College Campus NSS



## Cleanliness in College Campus NSS



**Cleanness out of the College campus**



## Plastic free Awareness Program out of Campus

## फोंडाघाट येथे आंतरराष्ट्रीय नदी दिवस साजरा

लोकमत न्यूज नेटवर्क  
कणकवली : फोंडाघाट कला आणि वाणिज्य महाविद्यालयाच्या एनसीसी विभागाच्यावतीने आंतरराष्ट्रीय नदी दिवस साजरा करण्यात आला. यावेळी महाविद्यालयातील एनसीसी कॅडेटनी उगवाई नदीतील प्लास्टिक जमा करून आंतरराष्ट्रीय नदी दिवस साजरा केला. या उपक्रमप्रसंगी महाविद्यालयाचे प्राचार्य डॉ. विष्णू फुलझेले यांनी कॅडेटना शुभेच्छा देऊन आपल्या गावातील नद्या सतत स्वच्छ ठेवणे हे प्रत्येक एनसीसी कॅडेटनी आपले कर्तव्य मानून समाजात जनजागृती केली पाहिजे, कारण नद्यांमुळेच मानवाचे अस्तित्व जिवंत आहे. त्यामुळे नद्या सतत स्वच्छ असल्या पाहिजेत. अशा उपक्रमाच्या माध्यमातूनच जनतेत जाणीव जागृती होणार आहे. त्यामुळे असे दिवस साजरे झाले पाहिजेत, असे



फोंडाघाट महाविद्यालयाच्यावतीने आंतरराष्ट्रीय नदी दिवस साजरा करण्यात आला. यावेळी प्राचार्य डॉ. विष्णू फुलझेले, डॉ.राज ताडेरार यांच्यासह एनसीसीचे छात्र उपस्थित होते.

सांगितले. तर एनसीसी असोसिएट ऑफिसर लेफ्ट. डॉ. राज ताडेरार यांनी एनसीसी कॅडेटना मार्गदर्शन करताना सांगितले की, आज देशभरातील विविध नद्यात प्लास्टिक मोठ्या प्रमाणात दिसून येत आहे. नद्यातील

प्लास्टिकमुळे पाण्यातील विविध जलचर प्राण्यांप्रमाणेच मानवाचेही अस्तित्व धोक्यात येत आहे. त्यामुळे नद्यांच्या स्वच्छतेविषयी सर्वांनी जागरूक असणे गरजेचे असल्याचे सांगितले.

## Cleanliness Event

News Published in Regional News Paper 'Lokmat'

Date: 25/09/2022



## Water Conservation Program

News Published in Regional News Paper 'Lokmat'

Date: 18/08/2019



फोंडाघाट-ब्रह्मनगरीतील ग्रामस्थांचा 'प्लास्टिक मुक्ती'चा संकल्प
फोंडाघाट महाविद्यालयाच्या एनएसएस विभागाचा उपक्रम

कायबस्ताने 'वर्षा'
अनेक वर्षांचा वेळापत्रकीत
पाहिलेला स्या संप वारी
प्लास्टिकचे संपदे उपक्रम हेच
सिद्धे तसात प्लास्टिकचे विनाश
हेच उद्देशाने फोंडाघाट महाविद्यालयाच्या एनएसएस विभागाच्या उपक्रम
२०११ सालातच हा
उपक्रम चालवण्याचा निर्णय घ्यायचा
अनेक वर्षांचा वेळापत्रकीत
पाहिलेला स्या संप वारी
प्लास्टिकचे संपदे उपक्रम हेच
सिद्धे तसात प्लास्टिकचे विनाश
हेच उद्देशाने फोंडाघाट महाविद्यालयाच्या एनएसएस विभागाच्या उपक्रम
२०११ सालातच हा
उपक्रम चालवण्याचा निर्णय घ्यायचा



फोंडाघाट महाविद्यालयाच्या एनएसएस विभागाच्या उपक्रमाने 'प्लास्टिक मुक्ती'चा संकल्प राबविताना सहभागी झालेले विद्यार्थी व शिक्षक.

व्यवस्थापन 'जिथे' गांवात
हेतू, स्वच्छतेचे सिद्धे' तसा
आपडित असा हे अशाही करण
देनाबाबते पुरव घेते, स्वच्छते
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न
सिद्धे स्वच्छतेचा प्रयत्न

अवतीभवती



फोंडाघाट : ब्रह्मनगरी गाव प्लास्टिकमुक्त झाल्याचे पत्र फोंडाघाट सरपंच संतोष आम्रे यांनी फोंडाघाट महाविद्यालयाचे प्रा. बालाजी सुर्वसे यांना प्रदान केले.

फोंडाघाट-ब्रह्मनगरी झाली विद्यार्थ्यांमुळे प्लास्टिकमुक्त

फोंडाघाट : फोंडाघाट-ब्रह्मनगरी हे गाव प्लास्टिकमुक्त करण्यात फोंडाघाट महाविद्यालयातील एनएसएस विभागाच्या विद्यार्थ्यांनी यश आले आहे. ब्रह्मनगरी गाव प्लास्टिकमुक्त झाल्याचे पत्र फोंडाघाट सरपंच संतोष आम्रे यांच्या हस्ते महाविद्यालयाला प्रदान करण्यात आले. ब्रह्मनगरी येथे एनएसएस विभागाच्या विद्यार्थ्यांनी ब्रह्मनगरी गाव प्लास्टिकमुक्त होण्यासाठी गेले वर्षभर जनजागृती अभियान सुरू केले होते. त्याला प्रामुख्यानेही सहकार्य केल्याने ब्रह्मनगरी हे गाव स्वच्छ, सुंदर आणि प्लास्टिकमुक्त होण्यास मदत झाली. फोंडाघाट महाविद्यालयाच्या एनएसएस विभागाचे केलेल्या या कार्याची दखल घेऊन फोंडाघाट ग्रामपंचायतीने ब्रह्मनगरी गाव प्लास्टिक मुक्त झाल्याचे पत्र महाविद्यालयाला पत्र दिले. या उपक्रमात एनएसएस विभागाचे प्रमुख प्रा. डॉ. बालाजी सुर्वसे सहाय्यक संतोष आढाडे, प्रा. रूपाली माने तसेच एनएसएसचे स्वयंसेवक यांनी परिश्रम घेतले. तसेच प्राचार्य डॉ. वसंत शेकडे यांचेही मार्गदर्शन लाभले.

फोंडाघाट येथे 'स्वच्छ भारत पंधरवडा' महाविद्यालयाचे आयोजन । एनएसएस विभागाने उपक्रमांद्वारे केली जनजागृती
स्वच्छतेची जागृती
स्वच्छतेची जागृती
स्वच्छतेची जागृती
स्वच्छतेची जागृती
स्वच्छतेची जागृती
स्वच्छतेची जागृती
स्वच्छतेची जागृती
स्वच्छतेची जागृती
स्वच्छतेची जागृती

Plastic Free Campaign
Date: 06/08/2021

News Published in Regional News Paper 'Sakal'

**Childnet** संपुर्ण, संपन्नता, वि. ज्ञान ही सत्य

## राष्ट्रीय सेवा योजना : फोंडाघाट महाविद्यालयाच्या स्वच्छताविषयक प्रबोधनास यश

# ब्रह्मनगरीत स्वच्छतेसाठी महाश्रमदान

**शेवकाम मुक्त येवई**

फोंडाघाट : शेवकाम मुक्त येवई या राष्ट्रीय सेवा योजनेच्या अंतर्गत अर्थव्यवस्थेच्या अंशाने यशस्वीपणे संपन्नता आणि विज्ञान ही सत्य हे उद्देश्य साकारण्यासाठी फोंडाघाट महाविद्यालयाने स्वच्छताविषयक प्रबोधनास यश मिळविले आहे. यशस्वीपणे संपन्नता आणि विज्ञान ही सत्य हे उद्देश्य साकारण्यासाठी फोंडाघाट महाविद्यालयाने स्वच्छताविषयक प्रबोधनास यश मिळविले आहे.



**स्वच्छता मोहिमत सातत्य हवे**

शुद्धतेचा प्रश्न उभा असतानाच स्वच्छता ही सत्य ही संपन्नता आणि विज्ञान ही सत्य हे उद्देश्य साकारण्यासाठी फोंडाघाट महाविद्यालयाने स्वच्छताविषयक प्रबोधनास यश मिळविले आहे.

फोंडाघाट : शेवकाम मुक्त येवई या राष्ट्रीय सेवा योजनेच्या अंतर्गत अर्थव्यवस्थेच्या अंशाने यशस्वीपणे संपन्नता आणि विज्ञान ही सत्य हे उद्देश्य साकारण्यासाठी फोंडाघाट महाविद्यालयाने स्वच्छताविषयक प्रबोधनास यश मिळविले आहे.

**पुढारी**

## फोंडाघाट महाविद्यालयाच्या स्वच्छताविषयक प्रबोधनास यश

ब्रह्मनगरीत स्वच्छतेसाठी महाश्रमदान



**शेवकाम मुक्त येवई**

फोंडाघाट : शेवकाम मुक्त येवई या राष्ट्रीय सेवा योजनेच्या अंतर्गत अर्थव्यवस्थेच्या अंशाने यशस्वीपणे संपन्नता आणि विज्ञान ही सत्य हे उद्देश्य साकारण्यासाठी फोंडाघाट महाविद्यालयाने स्वच्छताविषयक प्रबोधनास यश मिळविले आहे.

फोंडाघाट : शेवकाम मुक्त येवई या राष्ट्रीय सेवा योजनेच्या अंतर्गत अर्थव्यवस्थेच्या अंशाने यशस्वीपणे संपन्नता आणि विज्ञान ही सत्य हे उद्देश्य साकारण्यासाठी फोंडाघाट महाविद्यालयाने स्वच्छताविषयक प्रबोधनास यश मिळविले आहे.

**पुढारी**

## फोंडाघाट महाविद्यालयाच्या ब्रह्मनगरीत श्रमदान स्वच्छता मोहिमा

ग्रामस्थांच्या सहभागाने स्वच्छताविषयक प्रबोधनास यश



**शेवकाम मुक्त येवई**

फोंडाघाट : शेवकाम मुक्त येवई या राष्ट्रीय सेवा योजनेच्या अंतर्गत अर्थव्यवस्थेच्या अंशाने यशस्वीपणे संपन्नता आणि विज्ञान ही सत्य हे उद्देश्य साकारण्यासाठी फोंडाघाट महाविद्यालयाने स्वच्छताविषयक प्रबोधनास यश मिळविले आहे.

फोंडाघाट : शेवकाम मुक्त येवई या राष्ट्रीय सेवा योजनेच्या अंतर्गत अर्थव्यवस्थेच्या अंशाने यशस्वीपणे संपन्नता आणि विज्ञान ही सत्य हे उद्देश्य साकारण्यासाठी फोंडाघाट महाविद्यालयाने स्वच्छताविषयक प्रबोधनास यश मिळविले आहे.

**Cleanliness out of Campus at Brahmngari**

**News Published in Regional News Paper 'Pudhari'**

**Date: 06/08/2021**

**Before**



**After**



**Plastic free Awareness Program out of Campus at Ugavai River**

7.1.3 Institutions Environment and Energy usage policy, action taken and achieving related in “Green Campus” institutions a long with audit reports and certificate for governor external accredited agency.

## **A. Environmental Green Campus Policy**

### **SR**

### **Particulars**

- 1 Objective of the green campus policy**
- 2 Certificate of Green Audit**
- 3 Green Audit Report**
- 4 Activities green campus intuition action taken in the campus**
  - I Garden
  - ii Compost Project
  - iii Awareness Global Warming + Save Earth Program
  - iv Cleanliness Program in the campus time to time
- 5 Environmental Green campus**
  - i Cleanliness program in the campus
  - ii Cleanness program NSS and NCC out of the college campus
  - iii Plastic free Awareness program NSS and NCC

## **B. Energy Policy**

- 1 Objective of the energy policy**
- 2 Certificate of the energy audit**
- 3 Energy audit report**



Phondaghat Education Society's,  
**ARTS AND COMMERCE COLLEGE, PHONDAGHAT.**

Tal. Kankavli, Dist. Sindhudurg Pin - 416601  
(महाराष्ट्र शासन मा.क्र. एनजीसी - ३५९५/ नमवि/(१३७/९५)/मशि- ३ दिनांक ४ ऑगस्ट १९९५ )  
Recognised Under Section 2 f and 12 b of the UGC.  
E-mail : accphondaghat1995@gmail.com / accp1995@yahoo.com

■ Affiliated to University of Mumbai

Ref. No.

**Energy Policy**  
(Internal Quality Assurance Cell)

Date : 22/08/2022

**Introduction:**

Energy is essential for all kinds of need in Institute premises. Various types of equipment's are available in the Institute. Institute organizes lecture on same energy which is benefitted to the students. Our Institute established in free pollution free area and natural environment. Hence there is no maximum need of power in the classrooms. The following are the major policies to sustain energy for every year.

**Objectives of the Energy Policy:**

- To create awareness about energy save in campus.
- To display save energy signage plates at the bottom of switch boards at every classes.
- To organize lectures on Energy conservation.
- To remove old Tube lights and replace new LED tube lights and bulbs.
- To prevent energy wastage.
- To take care of maintenance and management of power.
- To do energy audit every year from external agency.

  
COORDINATOR  
Internal Quality Assurance Cell  
Arts & Commerce College, Phondaghat.

  
PRINCIPAL  
Arts & Commerce College  
Phondaghat, Tal. Kankavli, Dist. Sindhudurg

# ❖ Energy Audit Certificate ❖

Year - 2023-24

**This is to certify that following utility has carried out  
College building Energy Audit  
in recognition of the organizations efforts for  
sustainable development.**

Name of the Institute	: <b>Arts and Commerce College</b> Phondaghat Dist Sindhudurg 416601
Date of Energy Audit	: 30/09/2024
Name of Energy Auditor	: <b>KEDAR KHAMITKAR</b> Certified by BEE (Bureau of Energy Efficiency) Ministry of Power, Govt. of India
EA Certificate No . EA/30/2024/09/ACCP	: 

Empaneled Energy Auditor & Planner

Reg no. MEDA/ECN/CR-14/2022-23/EA-07

महाराष्ट्र ऊर्जा विकास अभिकरण  
(Govt. of Maharashtra Institution)



*Kedar*  
**Kedar Khamitkar**  
Energy Auditor CEA-8287  
Certified by BEE,  
Ministry of Power, Govt. of India



**Kedar Khamitkar & Associates, Latur**  
Empanelled with Mahaurja, Govt of Maharashtra Institution



**ISO 9001-2015 Certified**



Note : Certificate is based on organisation compliance on energy audit  
recommendations and continual maintenance of the system & conduction of surveillance audit

# Energy Audit Report

(2023-24)



Phondaghat Education Society's

## Arts and Commerce College Phondaghat

Pondaghat Dist Sindhudurg 416601 Maharashtra



Energy Audit Conducted by

**Kedar Khamitkar & Associates**

Energy Auditor

(Empanelled Mahaurja, Govt. of Maharashtra)

M: 9850244701 Email. :: [urjabachat@gmail.com](mailto:urjabachat@gmail.com)



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## ENERGY EFFICIENCY IN BUILDINGS

### EE Measures for Buildings





## Preface

An energy audit is a study of a Building or facility to determine how and where energy is used and to identify methods for energy savings. There is now a universal recognition of the fact that new technologies and much greater use of some that already exist provide the most hopeful prospects for the future.

Data collection for energy audit of the Arts and Commerce College Phondaghat building was conceded by EA Team on [30th Sept 24](#).

This audit was over sighted to inquire about convenience to progress the energy competence of the campus.

All data collected from each classroom, Library, every room. The work is completed by considering how many Tubes, Fan, Electronic instruments, etc. in each room. How much was participation of each component in total electricity consumption.



# ENERGY AUDIT

## Acknowledgement

We express our sincere gratitude to the authorities of Phondaghat Education Society's Arts and Commerce College Phondaghat for entrusting and offering the opportunity of energy performance assessment assignment.

We are thankful to Principal Dr. Purandhar D. Nare Sir and other office Staff for their positive support in undertaking the task of system mapping and energy efficiency assessment of all electrical system.

The field studies would not have been completed on time without their interaction and guidance. We are grateful to their cooperation during field studies and providing necessary data for the study.



Kedar Khamitkar  
Energy Auditor

## प्रतिज्ञा

हम सत्यनिष्ठा से प्रतिज्ञा करते हैं कि अपने सभी कार्यों में पेट्रोलियम उत्पादों के संरक्षण हेतु सतत प्रयासरत रहेंगे, ताकि देश की प्रगति के लिए आवश्यक इन सीमित संसाधनों की आपूर्ति अधिक समय तक सम्भव हो सके। आदर्श नागरिक होने के नाते हम लोगों को पेट्रोलियम पदार्थों के व्यर्थ उपयोग से बचने तथा पर्यावरण संरक्षण हेतु स्वच्छ ईंधन का प्रयोग करने के लिए जागरूक करेंगे।

## Introduction about the Institute:

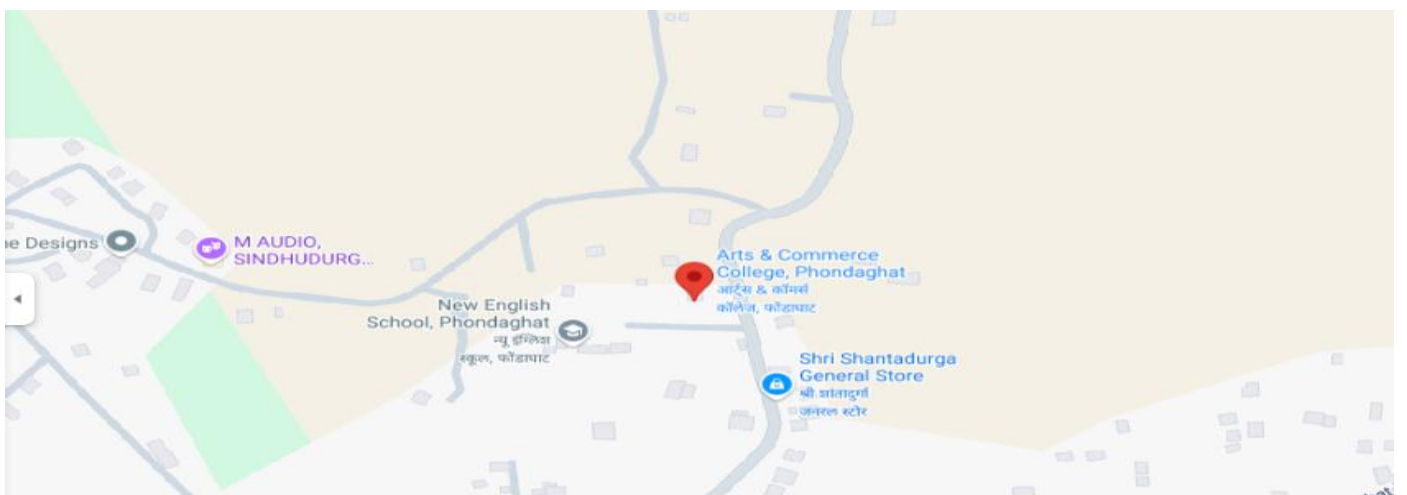
Shri Phondaghat Education Society has started Arts and Commerce College, in 1995, Phondaghat to fulfill the need of higher education in the vicinity. The college is permanently affiliated to the University of Mumbai. The college provides undergraduate courses of Arts and Commerce to the students. The college has a heritage of the excellent results in examinations.

The college has got District and University level awards in 'Jagar Janivancha Abhiyan' for emancipation of women, declared by the State Government.

The college has given opportunity of Personality Development to the students through participating in various departments such as, NSS, DLLE, Sports, Cultural, Competitive Exam, Employment cell, Women Development cell, Maharashtra Vivekvahini, etc. Majority of teachers in the college have been awarded Ph. D. from various universities.



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**ARIAL VIEW OF COLLEGE CAMPUS (SOURCE GOOGLE EARTH)**

## ☐ Scope of Work, Methodology and Approach:

Arts and Commerce College Phondaghat entrusted the work of conducting a detailed Energy Audit of campus with the main objectives are as bellows:

- ☐ To study the present pattern of energy consumption
- ☐ To identify potential areas for energy optimization
- ☐ To recommend energy conservation proposals with cost benefit analysis.

Scope of work and methodology were as per the proposal. While undertaking data Collection, field trials and their analysis, due care was always taken to avoid abnormal situations so as to generate normal/representative pattern of energy consumption at the facility.

## ☐ Approach to Energy Audit:

We focused our attention on energy management and optimization of energy efficiency of the systems, sub systems and equipment's. The key to such performance evaluation lies in the Sound knowledge of performance of equipment's and system as a whole.

## ☐ Energy Audit:

The objective of Energy Audit is to balance the total energy inputs with its use and to identify the energy conservation opportunities in the stream. Energy Audit also gives focused Attention to energy cost and cost involved in achieving higher performance with technical and financial analysis. The best alternative is selected on financial analysis basis.



## Chapter: 1 Executive Summary

Sr.	Recommendation	Saving	Investment	Payback
1	Replacing inefficient Fan (70W) Qty. 38 with 5 star energy saving BLDC fan (28W)	2550 KWh/year	Rs. 0.68/- Lakh	2.6 Yrs.
2	Install motion sensor (Streetlight /Each Class room) switches prevent wastage of electricity	1000 KWh/Year	Rs.0.40/- Lakh	4.1 Yrs.
3	Install Rooftop Solar power plant of 5 KWp	4800 KWh/Year	Rs. 2.25/- Lakh	4.6 Yrs.
4	Awareness Project - Conduct Training Program	-	No Investment	Immediate



### Specific Energy Consumption (SEC):

Specific Energy Consumption (SEC) is defined as energy usage per Square meter of area. It is calculated total electrical kWh/total area of the campus. By calculating SEC, we can crudely target the factors of energy efficiency or inefficiency

Total Electricity Consumption 3125 KWh /Year

Total Built-up Area = 1536.4 Sq. Meter

### Energy Performance Index:

EPI calculated as under (for Electricity): 2.03 KWh/Sq. Meter/Year



## Chapter: 2 Energy Audit Methodology

Energy Audit Study is divided into following steps

### 1. Historical data analysis:

The historical data analysis involves establishment of energy consumption pattern to the established base line data on energy consumption and its variation with change in production volumes.

### 2. Actual measurement and data analysis:

This step involves actual site measurement and field trials using various portable Measurement instruments. It also involves input to output analysis to establish actual operating Equipment efficiency and finding out losses in the system.

### 3. Identification and evaluation of Energy Conservation Opportunities:

This step involves evaluation of energy conservation opportunities identified during the energy audit. It gives potential of energy saving and investment required to implement the Proposed modifications with payback period.



## Chapter: 3 Study of Electrical System

Source of Energy: - Mahavitrans LT Supply



Observations: **Electrical Safety measures need to review!**

-Install Safety Distribution Panel board.

-Install Sign Boards. Prohibition, Warning, Mandatory and Emergency.

These 4 important safety signs can be broken into categories:

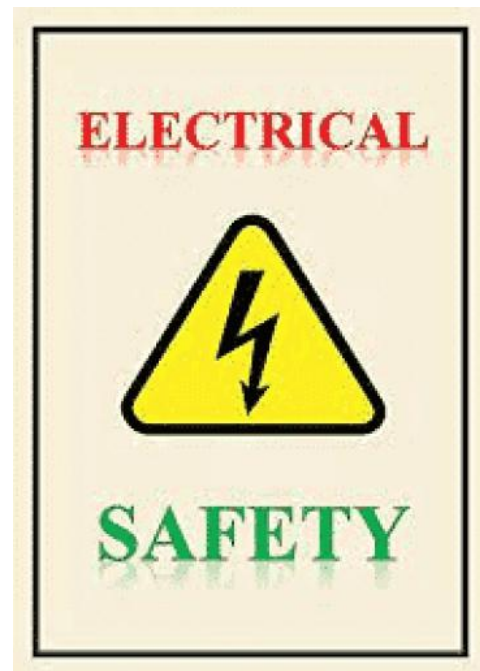
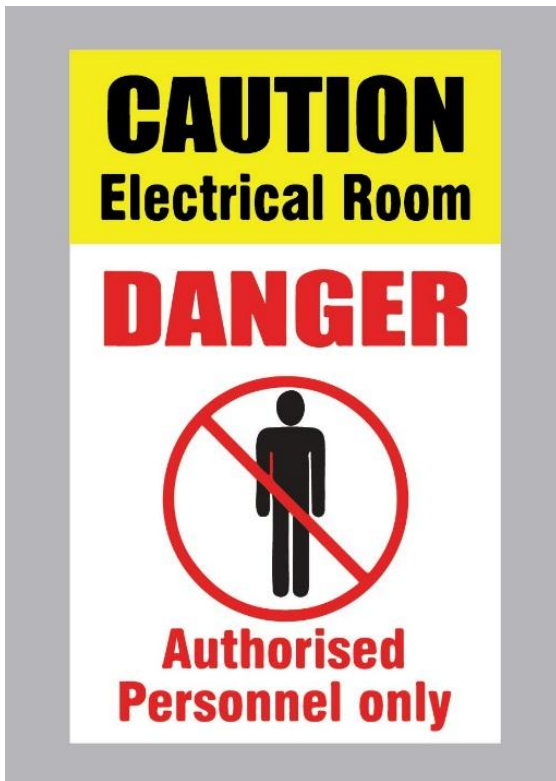
**Suggestions for the Electrical Safety:**





## INSTALL ELECTRICAL SAFETY SIGN BOARD

Electrical panels should also have secure covers to ensure no wires are exposed that could cause electrical shock. This also prevents the internal mechanisms from being exposed to dust, dirt, and moisture. Electrical panel boxes in commercial buildings should be secured and accessible by trained personnel only.



## Display the stickers of save electricity

Save nature everywhere in the campus. So that all stakeholders encouraged to save the electricity.

☐ Most of the time, all the tube lights in a class room are kept ON, even though, there is sufficient light level near the window opening. In such cases, the light row near the window may be kept OFF.

☐ All projectors to be kept OFF or in idle mode if there will be no presentation slides.

☐ All computers to have power saving settings to turn off monitors and hard discs, say after 10 minutes/30 minutes.

## Chapter: 4 Details of Connected Load:

Following are the major consumers of electricity in the facility:

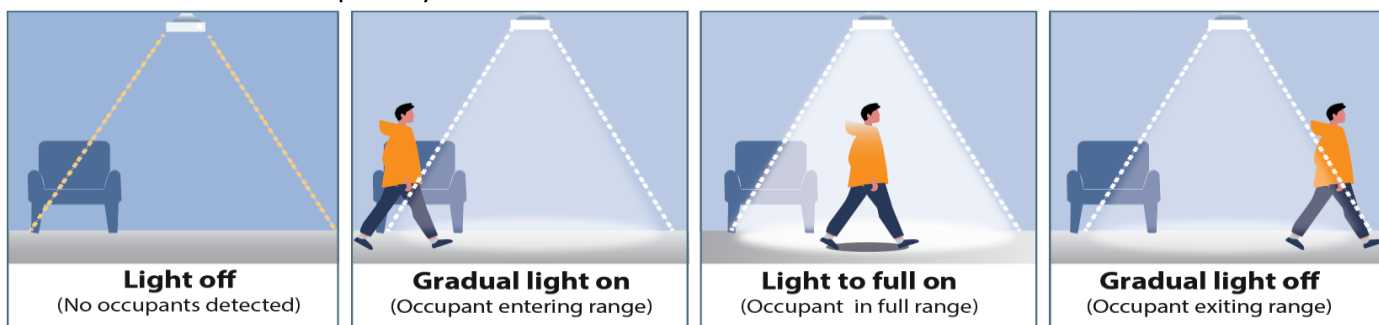
Sr.	Type of Appliance	Watt	Qty.	Total Wattage
1	LED Tube	20	36	720
2	Street Light LED Focus	75	03	225
3	Passage Light	30	5	150
4	Ceiling Fan	70	38	2660
5	Miscellaneous			1500
			Total	5255



**Observations:** Ceiling fan contributes 2.66 KW Maximum load

**Suggestions:**

1. Install BLDC Fan (28W) Electricity Consumption can be reduced Existing Fan consumes (70W)
2. Install occupancy sensors “Auto Switch off when not needed “



## Chapter: 5 Historical Energy Consumption Data Analysis

In this Chapter, we study the details of the 12 month Electricity Bills and their monthly total campus unit's consumption.

Month	KWh
Sep-23	315
Oct-23	224
Nov-23	342
Dec-23	241
Jan-24	246
Feb-24	250
Mar-24	237
Apr-24	293
May-24	245
Jun-24	168
Jul-24	249
Aug-24	315

### Total Electricity Consumption 3125 KWh/Year

**Observations:**

Annual IMPORT from Electricity distribution company 3125 KWh  
 Recommended to install rooftop Solar Power plant of 5 KWp

Let's not be the  
 cause of extinction of  
**RESOURCES**



## Chapter: 6 Performance Evaluation

### a) Existing Ceiling Fan system Found Inefficient

Total number of fans used in the campus = 38 Nos.

- Number of fans to be replace = 38 Nos. (Consider 6Hrs/day @200 days/year)
- The Total Current Consumption = 4250 KWh
- The Expected fan Consumption = 1700 KWh
- Total KWh saved per year = 2550 KWh

### Suggestions:

Replace existing Inefficient Fan System (70W) with Five Star BLDC (28W)



## b) Improve Power Quality :

**Unbalanced Voltage:** Voltage unbalances will cause **extra power loss, reduce system efficiency, reduce motor life cycle**, etc. Also some abnormal functioning and maintenance conditions also cause voltage imbalance and result in negative impacts on equipment and systems.

An unbalance of **1%** is acceptable as it doesn't affect the cable. But above 1% it increases linearly and at 4% the de-rating is 20%. This implies that- 20% of the current flowing in the cable will be unproductive and thus the copper losses in the cable will increase by 25% at 4% unbalance.

**Good power quality saves money and energy. Direct savings to consumers come from lower energy cost and reactive power tariffs. Indirect savings are gained by avoiding circumstances such as damage and premature aging of equipment.**

**Suggestion :** Install Voltage Stabilizer 20 KVA capacity to Improve Power Quality for energy conservation and reduction in Maintenance Cost.



Lux level in the Library in the reading Hall was found less. It is advisable to improve light intensity.

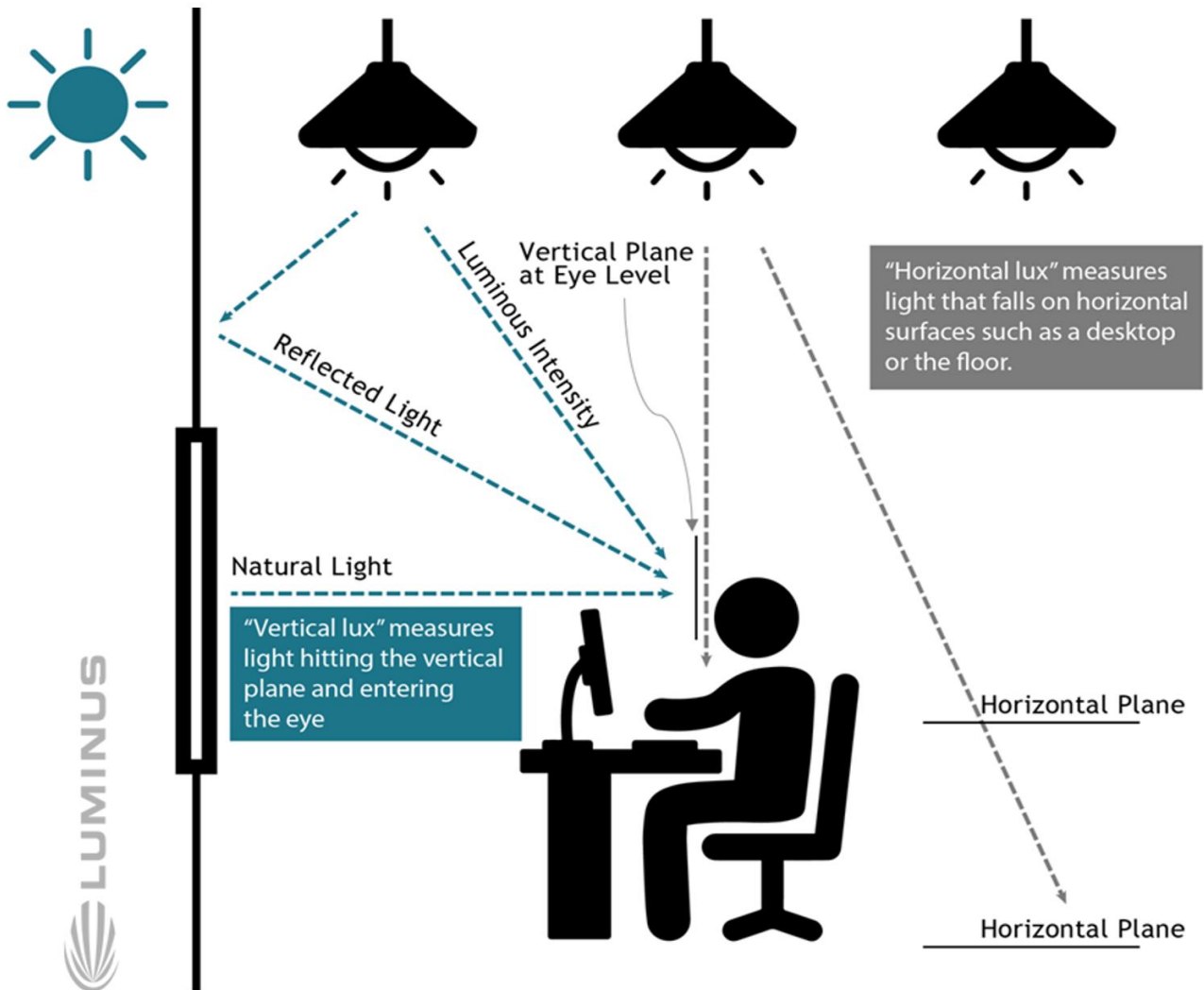


**Observations:**

Existing LED Tube are installed without reflectors.

**Suggestions:**

Improve effectiveness of Lighting System use reflectors



## Chapter : 7 General Recommendations

### Create Awareness:

☑ All Class Rooms and labs to have Display Messages regarding optimum use of electrical appliances in the room like, lights, fans, computers and projectors. Save electricity.

1. There has to be Institute level student community that keeps track of the energy consumption Parameters of the various departments, class rooms, halls, areas, meters, etc.

2. Energy auditing inside the campus has to be done on a regular basis and report should be made public to generate awareness.

3. Need to create energy efficiency/ renewable energy awareness among the college campus i.e. solar, wind, Biogas energy. College should take initiative to arrange seminars, lectures, paper presentation competition among students and staff for general awareness.



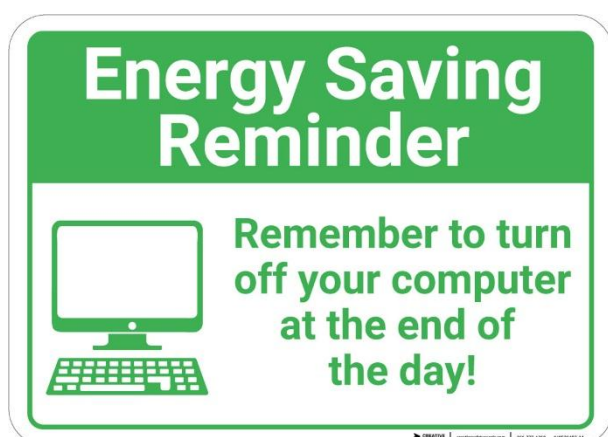
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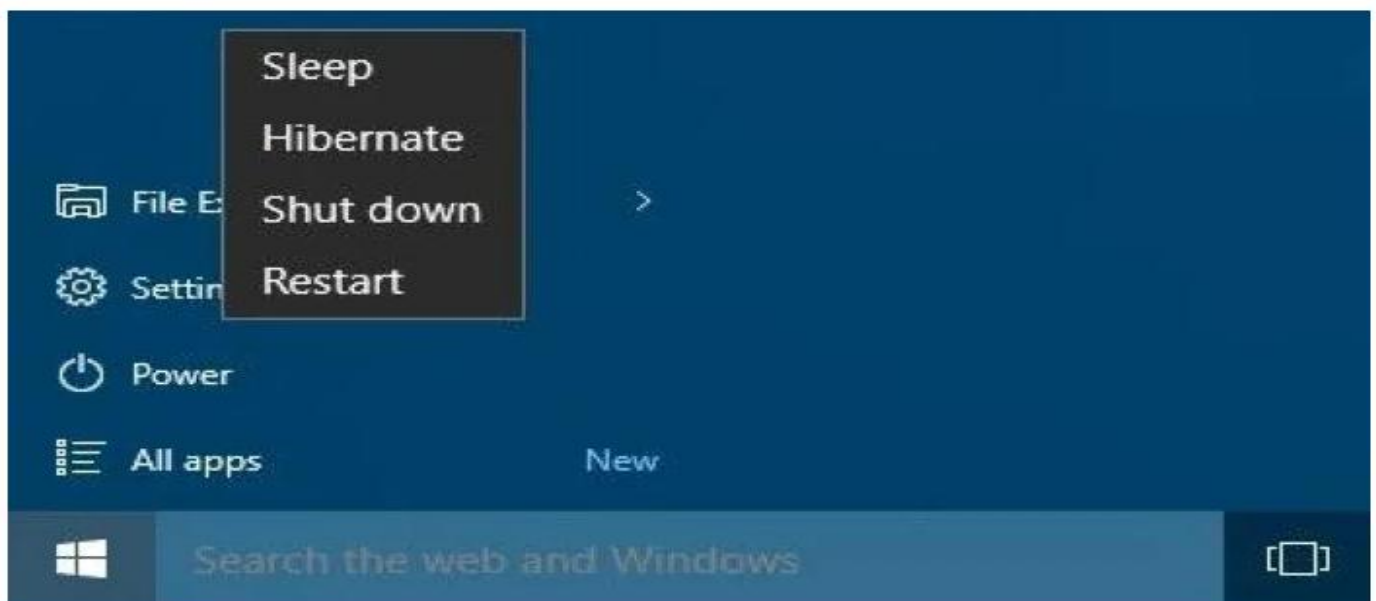
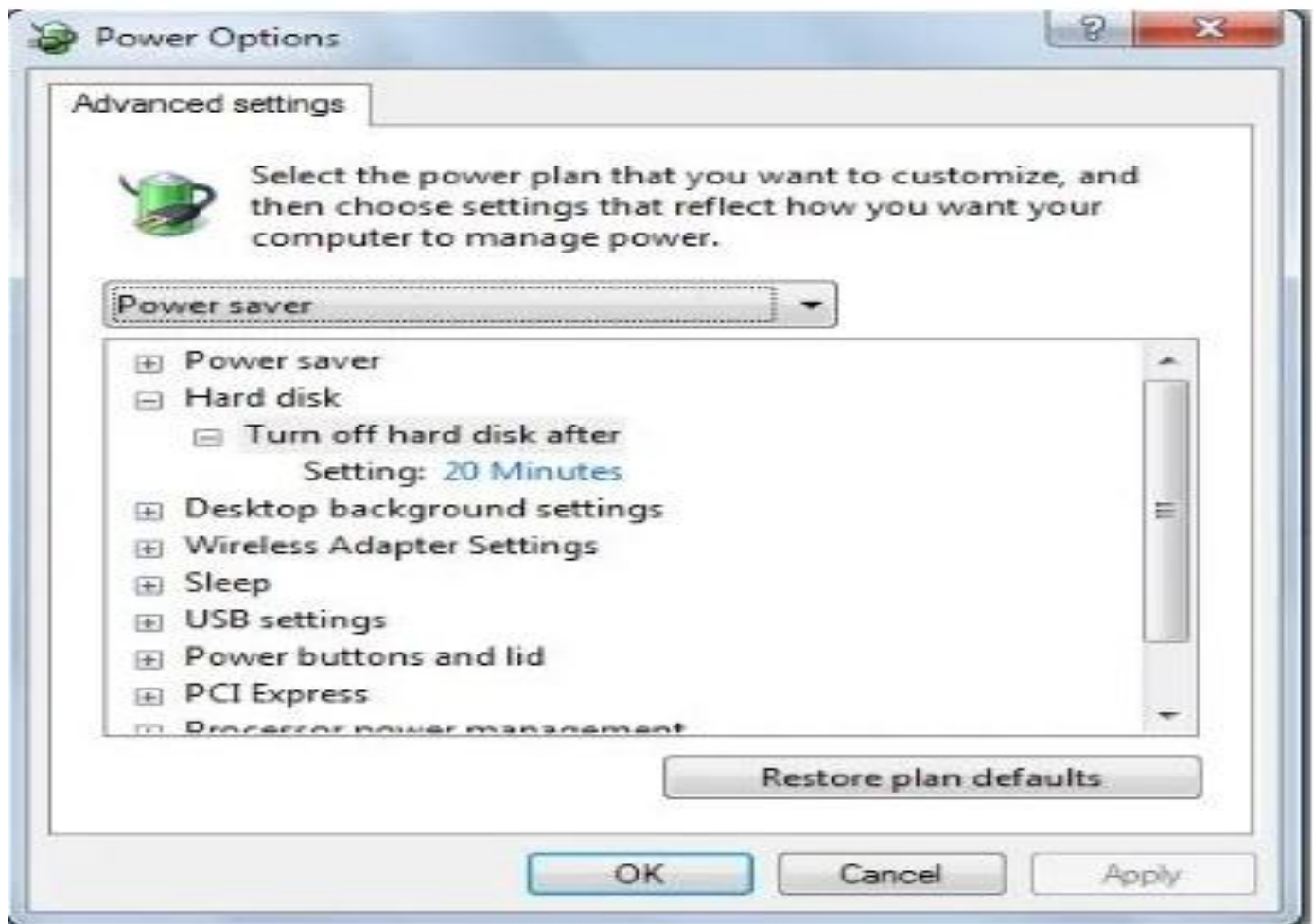
☐ All computers to have power saving settings to turn off monitors and hard discs, say after 10 minutes/30 minutes.





## Make your Monitor use less Power

Decrease brightness of the monitor. 100% brightness isn't required all the time. All external monitors have buttons to adjust the brightness.



## Chapter 8: Conclusion

A total Investment of Rs. 3.33/- Lakhs (Approx. Three Lakhs & Thirty Three Thousand) amount is estimated for the energy efficiency improvement projects.

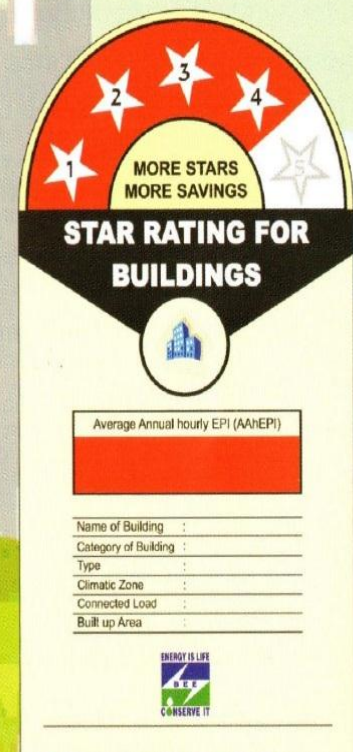
**Energy Savings expected around 8350 KWh/year.**

# Energy Efficiency in Buildings

Checking Energy Efficiency at the Designing Stage by following  
Energy Conservation Building Code (ECBC)

BEE, Ministry of Power, Govt. of India launched Energy Conservation Building Code (ECBC) in 2007. The main features of ECBC are:

- To provide minimum requirements for the energy efficient design and construction of buildings.
- It considers five climatic zones in India, sets minimum energy performance standards for large commercial buildings or building complexes that have a connected load of 500 kW or greater.
- The code is also applicable to all buildings with a conditioned floor area of 1,000 m<sup>2</sup> (10,000 ft<sup>2</sup>) or greater, and is recommended for all other buildings also.
- The provisions of this code apply to:
  - (a) Building envelopes, except for unconditioned storage spaces or warehouses
  - (b) Mechanical systems and equipment, including heating, ventilating, and air conditioning
  - (c) Service hot water heating
  - (d) Interior and exterior lighting
  - (e) Electrical power and motors.





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