

Green, Energy, & Environment Audit Report

Institute of Excellence
in Management
Science,
Hubballi

PREPARED BY

NISARGA



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Green, Energy, and Environment Audit Report

**Institute of Excellence in
Management Science,
Hubballi**

By,

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 **eco CONSULTANTS**

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GREEN AUDIT CERTIFICATE

This Certificate is Presented To :

Institute of Excellence in
Management Science,
Hubballi

Our team of Environmental Engineers have analyzed Green practices followed by the Institution during the period of 2021 to 2022.



PRADEEP NAGAMALLI
B.E., M.TECH. (ENV. ENGG.)
NISARGA ECO CONSULTANTS
ISSUED ON: 18-08-2022



ENERGY AUDIT CERTIFICATE

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PRADEEP NV

Environmental Engineer

ISSUED ON: 17-08-2024



ISO 9001:2015 CERTIFICATE NO. E20240510204
ISO 14001:2015 CERTIFICATE NO. E20240510205
ISO 17020:2012 CERTIFICATE NO. UQ-2024050701

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Acknowledgement

We express our gratitude for calling upon us for this audit, mainly the Institute of Excellence in Management Science Management, Professor and Director Dr. Veeranna D.K., who was the driving force behind this work. Green Audit Committee members, Green Audit Committee and all the team members, who were ever helpful and supported us with all the inputs needed for this audit. We thank all the teaching, non-teaching and students for helping us in conducting this audit.

Green Audit Team

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Audit Associate

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Project Associate

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Draftsman

About the Institute

Institute of Excellence in Management Science is a distinguished institution within the Kaizen Eduplus Society. It is located in Tarihal, Hubballi and stands as a premier business school committed to nurturing excellence in management education and professional development. Founded in 2006, IEMS offers MBA programme in General Management, Finance, Marketing and Human Resource. It is affiliated to Karnataka University, Dharwad and is approved by All India Council for Technical Education. (AICTE), Govt. of India, New Delhi. The institute is also ISO EOMS 21001:2018 certified.

Vision:

- Be a Centre for Continuous Learning that Excels in Management Education and Professional Development.

Mission:

- Develop competent professionals to lead business by providing a learner- centric environment to the student community.
- Offer contemporary, technology-driven value-added courses to develop an entrepreneurial mindset.
- Enhance employability skills by facilitating strong networking with alumni, professionals, industry, and the community.
- Promote training and motivate faculty and staff to address the expectations of society in North Karnataka.
- Nurture a research culture, spirit of the dignity of the individual, and a commitment to growth.

Introduction to Green, Energy and Environment Audit

Certainly, conducting a Green, Energy, and Environment audit within educational campuses is a proactive step towards fostering sustainability and responsible environmental practices. The audit process typically involves several key components:

1. **Identification of Environmental Elements:** This stage involves identifying various aspects of the environment within the educational premises that could impact sustainability, such as energy consumption, waste management, water usage, transportation methods, and the use of environmentally friendly materials.
2. **Quantification and Measurement:** Once the environmental elements are identified, the audit assesses and quantifies them. For example, measuring energy consumption through utility bills, quantifying waste production, evaluating water usage through metering, and assessing transportation emissions.
3. **Recording and Documentation:** All data collected during the audit process needs to be recorded and documented systematically. This documentation provides a baseline for current environmental performance and helps in tracking progress over time.
4. **Reporting and Analysis:** After gathering and organizing the data, the audit report should provide a comprehensive analysis of the environmental conditions within the educational campuses. This analysis can include identifying areas of inefficiency, opportunities for improvement, and potential cost-saving measures.
5. **Recommendations for Improvement:** Based on the findings of the audit, recommendations for improving environmental practices and achieving sustainable goals should be outlined. These recommendations may include

implementing energy-efficient technologies, adopting recycling programs, promoting alternative transportation methods, and integrating sustainability into the curriculum.

6. Implementation and Monitoring: Once the recommendations are made, it's essential to implement them effectively. This may involve collaboration among various stakeholders, including administrators, faculty, staff, and students. Regular monitoring and evaluation help ensure that the proposed initiatives are achieving the desired outcomes and making progress towards sustainability goals.

By conducting a Green, Energy, and Environment audit, educational institutions can not only reduce their environmental footprint but also serve as models for sustainable practices within their communities. Moreover, integrating sustainability principles into campus operations and curriculum can help educate future generations about the importance of environmental stewardship.

Need for Green, Energy and Environment Auditing

Critical role of green, energy, and environment auditing in assessing and improving the sustainability of institutions, including educational campuses.

1. Assessing Resource Consumption: Green, energy, and environment auditing helps institutions evaluate whether their day-to-day activities are consuming resources efficiently. This assessment involves examining energy usage, water consumption, waste generation, and other resource-intensive processes.

2. Promoting Resource Conservation: By identifying areas where resources are being used excessively or inefficiently, audits encourage institutions to adopt more sustainable practices. This can include implementing energy-saving measures, water conservation initiatives, waste reduction strategies, and promoting the use of renewable resources.

3. Continuous Monitoring and Regulation: Through ongoing monitoring and regulation of processes, institutions can ensure that they are effectively managing their environmental impact. Regular audits help identify areas for improvement and track progress towards sustainability goals over time.

4. Addressing Environmental Concerns: With concerns such as climate change and resource depletion becoming increasingly urgent, green audits provide a framework for addressing these issues at the institutional level. By examining and modifying processes to be more environmentally friendly, institutions can contribute to broader efforts to mitigate environmental degradation.

5. Increasing Environmental Consciousness: Green auditing fosters a culture of environmental awareness and responsibility within institutions. By engaging stakeholders in the audit process and promoting sustainable practices, institutions can inspire individuals to adopt greener habits both at work and in their personal lives.

In summary, green, energy, and environment auditing serve as valuable tools for promoting sustainability and responsible resource management within educational institutions and beyond. By evaluating and improving environmental practices, institutions can help pave the way for a more sustainable future for generations to come.

Goals of Green, Energy and Environment Audit

The goals of a Green, Energy, and Environment Audit typically revolve around assessing, improving, and promoting sustainable practices within an organization or institution. Here are some specific goals associated with such audits:

1. **Identifying Environmental Impact:** The audit aims to identify the environmental impact of the organization's operations, including energy consumption, waste generation, water usage, and emissions.
2. **Assessing Compliance:** The audit evaluates the organization's compliance with environmental regulations, standards, and best practices, ensuring that it meets legal requirements and industry guidelines.
3. **Promoting Resource Efficiency:** One of the primary goals is to promote resource efficiency by identifying areas where resources are being used inefficiently or excessively and recommending strategies for improvement.
4. **Reducing Environmental Footprint:** The audit seeks to reduce the organization's environmental footprint by identifying opportunities to minimize waste, conserve energy and water, and mitigate pollution.
5. **Identifying Cost-Saving Opportunities:** By improving resource efficiency and reducing waste, the audit can help identify cost-saving opportunities for the organization, such as reducing utility bills and operational expenses.
6. **Fostering Environmental Awareness:** The audit aims to raise awareness among employees, stakeholders, and the broader community about the importance of environmental sustainability and the role they can play in promoting it.
7. **Setting Sustainability Goals:** Based on the findings of the audit, the organization can establish specific sustainability goals and targets to guide its environmental management efforts.

8. Improving Environmental Performance: Ultimately, the goal of the audit is to improve the organization's environmental performance by implementing recommended strategies and initiatives to enhance sustainability practices.

Overall, a Green, Energy, and Environment Audit serves as a comprehensive tool for organizations to assess their environmental impact, identify areas for improvement, and take proactive steps towards achieving sustainability goals.

Objectives of Green, Energy and Environment Audit

- To inspect the current practices, which can impact the environment.
- To recognize and analyze significant environmental issues.
- Establish and implement Environment Management in various departments.
- Continuous evaluation for betterment of performance in this regard.

Benefits of Green, Energy, Environment Audit to Educational Institutions

Green, Energy, and Environment Audits offer numerous benefits to educational institutions, helping them enhance sustainability, reduce environmental impact, and promote responsible resource management. Here are some key benefits:

1. Conducting a green audit can help educational institutions identify inefficiencies in resource use, such as energy and water consumption. By implementing recommendations from the audit, institutions can reduce utility costs and operating expenses, leading to significant cost savings over time.
2. Green audits enable institutions to assess their environmental footprint and identify opportunities for improvement. By implementing measures to reduce energy consumption, waste generation, and greenhouse gas emissions, educational institutions can contribute to environmental conservation and help mitigate climate change.
3. Green audits foster a culture of sustainability within educational institutions. By raising awareness about environmental issues and promoting

sustainable practices among students, faculty, staff, and administrators, institutions can inspire positive behavior change and empower individuals to adopt eco-friendly habits both on campus and in their personal lives.

4. Demonstrating a commitment to sustainability through green audits can enhance the reputation and brand image of educational institutions. By publicly showcasing their environmental initiatives and achievements, institutions can attract environmentally conscious students, faculty, staff, donors, and partners who value sustainability and social responsibility.

Executive Summary

A Green Campus or an Eco-friendly Campus is a place where environmentally friendly practices and education combine to promote sustainable and eco-friendly practices in the campus. It is a campus which is sustainable because of its resource utilization and minimum waste discharge into the environment. Green, Energy and Environmental Audit is an assessment of the extent to which an organization is observing practices which minimize harm to the environment. It assesses the campus performance in complying with applicable environmental laws and regulations. This audit report comprises of observations and recommendations for improvement of environmental conditions in the campus. It mainly focuses on the environmental management plan in the campus with environmental factors like quality of water, ventilation, vegetation, waste management practices, consumption of energy, harmful radiations of the campus, etc.,

For this purpose, to assess the quality of the different environmental factors, samples were analyzed at different places in the campus, viz., water quality, light intensity, air quality, noise pollution and electro-magnetic radiation. The data which was collected were assorted, scrutinized, analyzed and documented. Campus related preliminary interviews with the concerned staff were conducted. Student interaction also was carried out for this purpose. A report based on all these studies with regards to an environmental management plan at the campus with recommendations for further improvement is prepared.

Objectives and Scope

The purpose of this audit was to note that the campus follows environmentally friendly approaches in its regular routine. The implementation of these methods is done in the campus, across all departments, administrative bodies and students and were analyzed.

Following issues were noted during our visit:

- Present conditions at the campus.
- Environmental education through systematic environmental management approach.
- Improving environmental standards.
- Benchmarking for environmental protection initiatives.
- Sustainable use of natural resource in the campus.

Based on the available data, sampling and information provided by the college staff and officials, this report has been prepared and recommendations for betterment of campus environment are provided.

Summary of Findings

The main findings of the audit show that, all the students are aware about the need for environmental protection at a general level. It was also observed that a number of best practices such as water conservation, sewage treatment in sewage treatment plant, waste management, cleanliness, waste segregation, plantation, etc., are followed in the campus.

However, on detailed review, it was observed that, the college is following green practices at various levels. But certain processes could benefit from further review in order to improve their efficiency, and consistency.

Infrastructure and college details

- The college has sufficient infrastructure for curricular and co-curricular activities.
- Rooms - Classrooms, auditorium, library, department rooms, staffrooms, all labs, ladies' room etc.
- Sufficient reading materials for students.
- Administrative office, principal chamber, office room and department rooms are well located and ventilated.
- Borewell, Underground and overhead water tanks.
- Computers: 46 desktops with internet facilities in office, principal chamber, department rooms and library with high-speed internet connectivity (100 MBPS).
- The institution is in area of 44649 sq. ft (1 acre and 2 gunthas) and has a built-up area of 24662 sq. ft.
- Classrooms and staff rooms in the institute are 7 and 12 respectively.
- There are 01 lab with all the facilities and are well ventilated.
- There is a seminar hall with sufficient facilities.
- The campus has sports room.

Eco-club/Green club Team

An Eco-club or Green Club in college is a student-led group focused on promoting environmental awareness, sustainability, and eco-friendly practices within the campus and the broader community. The institution has made objectives, activities and projects for the same has been mentioned below:

Objectives

1. **Environmental Awareness:** Educate students and staff about environmental issues and the importance of sustainable living.
2. **Sustainability Initiatives:** Implement and promote eco-friendly practices on campus.
3. **Community Engagement:** Involve the college community in activities that support environmental protection and sustainability.
4. **Advocacy and Policy:** Advocate for environmentally responsible policies and practices at the college and local level.

Activities and Projects

1. **Recycling Programs:** Set up and manage recycling bins, organize recycling drives, and educate the community about proper waste segregation. E-waste collection drive and sending the same to the certified recycler has been channelized.
2. **Energy Conservation:** Promote energy-saving measures such as switching off lights, using energy-efficient appliances, and encouraging walking or cycling.
3. **Green Campus Initiatives:** Advocate for green building practices, installation of solar panels, and creation of green spaces like gardens.

4. Workshops and Seminars: Organize events on topics like sustainable living, climate change, and biodiversity conservation.
5. Clean-Up Drives: Conduct regular campus and community clean-up activities to remove litter and promote cleanliness.
6. Tree Planting: Organize tree-planting events to increase greenery and promote reforestation.
7. Sustainable Transportation: Promote the use of bicycles, public transport, and carpooling among students and staff.
8. Water Conservation: Initiate projects to reduce water waste, such as fixing leaks, promoting water-saving fixtures, and raising awareness about water conservation.
9. Eco-Friendly Products: Encourage the use of eco-friendly products like reusable water bottles, cloth bags, and biodegradable materials.
10. Collaboration with Other Organizations: Partner with local environmental groups, government agencies, and NGOs for larger environmental projects and campaigns.

Details of Green Club team and its members

Sl. No.	Name	Designation
1	Dr. Veeranna D.K.	Principal (President of Eco-club/green club Team)
2	Prof. Vishal Patil	Staff
3	Prof. Jayaraj Gaddihalli	Staff
4	Prof. Bharatesh Dhupadal	Staff
5	Prof. Preeti Goudar	Staff
6	Ulhas Doni	Student Representative
7	Savita Pujari	Student Representative
8	Soumya	Student Representative
9	Muzamil	Student Representative

Green Cover Details

Green Cover

Plants and trees are essential for any educational institution. Green cover makes the campus aesthetically pleasing and also helps in providing good environment for the students. Planting saplings and maintaining the same has to be done periodically.

Observations:

This campus has a green area with various plants and trees of different species. The Green club/Eco club unit of the college have been moving a step towards creating a greener campus with different programs and plantation activities. The campus is rich in biodiversity.

Landscaping of the college is worth seeing and reflects aesthetic sense. The campus has huge collection of trees, shrubs and herbs, decorative potted plants, climbers, nursery plants, medicinal and green house plants to make the environment pollution free to safeguard the health of all the inmates. The lawns and the trees provide shade and beautiful ambience. Utmost care has been taken to develop and maintain green landscaping by trained gardeners and supervisor. The construction, maintenance and beautification committee constituted in the college looks after the development and maintenance of the greenery in the campus.

Plantation drives are conducted every year.

Institution conducts annual plantation drives in college. These drives have numerous environmental, social, and educational benefits. Here are some key aspects:

Objectives

Enhance Green Cover: Increase the number of trees on campus to improve air quality, provide shade, and enhance the aesthetic appeal.

Promote Biodiversity: Support local wildlife by planting native species that provide habitats and food sources.

Raise Environmental Awareness: Educate the college community about the importance of trees and encourage sustainable practices.

Combat Climate Change: Trees absorb carbon dioxide, helping to mitigate the effects of climate change.

Benefits

Environmental Impact, Educational Value, Community Building, Aesthetic Improvement, Health Benefits.

TREE PLANTATION ON THE OCCASION OF WORLD ENVIRONMENT DAY 2020



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The Joy of Learning
IEMS B-SCHOOL

Kaizen Eduplus Society's
IEMS B-SCHOOL
-Inspiring Excellence

Affiliated to Karnataka University, Dharwad & Approved by AICTE, New Delhi
(ISO - EOMS - 21001 - 2018 Certified & Internationally Accredited Institute)

TUV SUD
ISO : EOMS : 21001 :2018

World Environment Day 5th JUNE
A Little Effort Towards Saving The Environment
Is Better Than No Effort



Students, Staff & IEMS Family

Dr. Veeranna D.K
Professor & Director
IEMS B-School, Hubli

CA. Dr. N.A. Charantimath
Hon. Chairman
KES & IEMS B-School, Hubli

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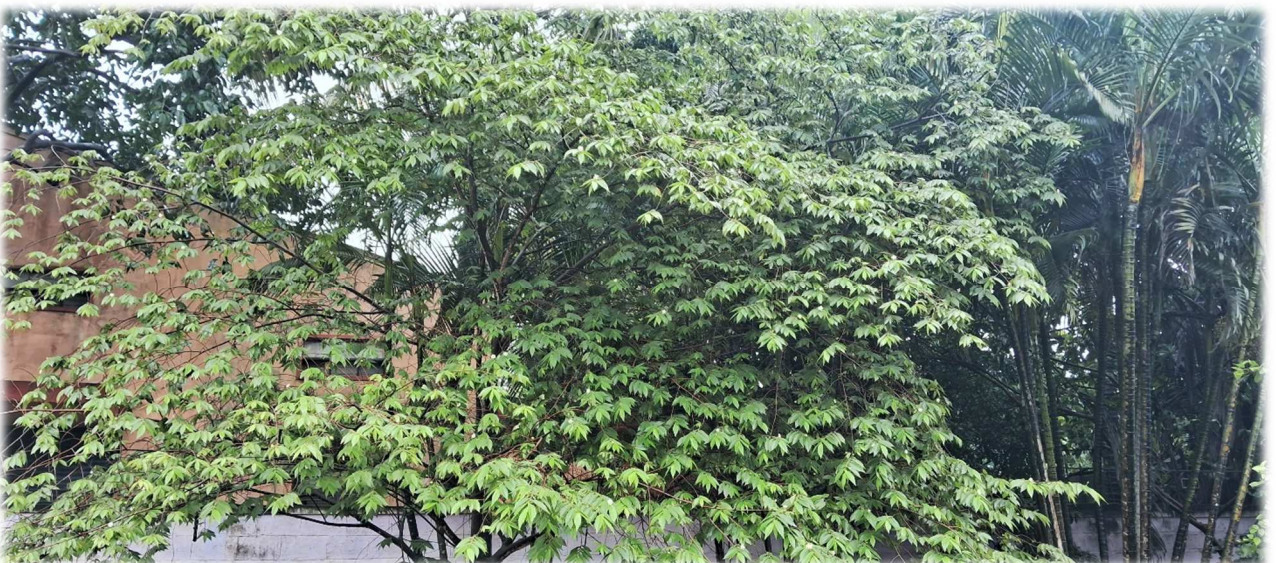
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Green Cover Details

Sl. No.	Scientific Name	Common Name
1.	<i>Azadirachta indica</i>	Neem Tree
2.	<i>Tectona grandis</i>	Teak
3.	<i>Cocos nucifera</i>	Coconut
4.	<i>Mangifera indica</i>	Mango
5.	<i>Manilkara zapota</i>	Chico
6.	<i>Pyrus communis</i>	Pear fruit
7.	<i>Nerium oleander</i>	Kanagalu
8.	<i>Jasminum officinale</i>	Jasmine
9.	<i>Magnolia champaca</i>	Champa
10.	<i>Dyopsis lutescens</i>	Areca palm
11.	<i>Saraca asoca</i>	Ashoka tree
12.	<i>Hibiscus rosa</i>	Hibiscus
13.	<i>Aloe barbadensis</i>	Aloevera
14.	<i>Ficus racemosa</i>	
15.	<i>Muntingia calabura</i>	<i>Jamaican cherry</i>
16.	<i>Acalypha wilesiana</i>	
17.	<i>Curcuma aeruginosa</i>	
18.	<i>Musa basjoo</i>	<i>Banana</i>
19.	<i>Howea forsteriana</i>	
<i>Many more ornamental plants are present in the campus</i>		

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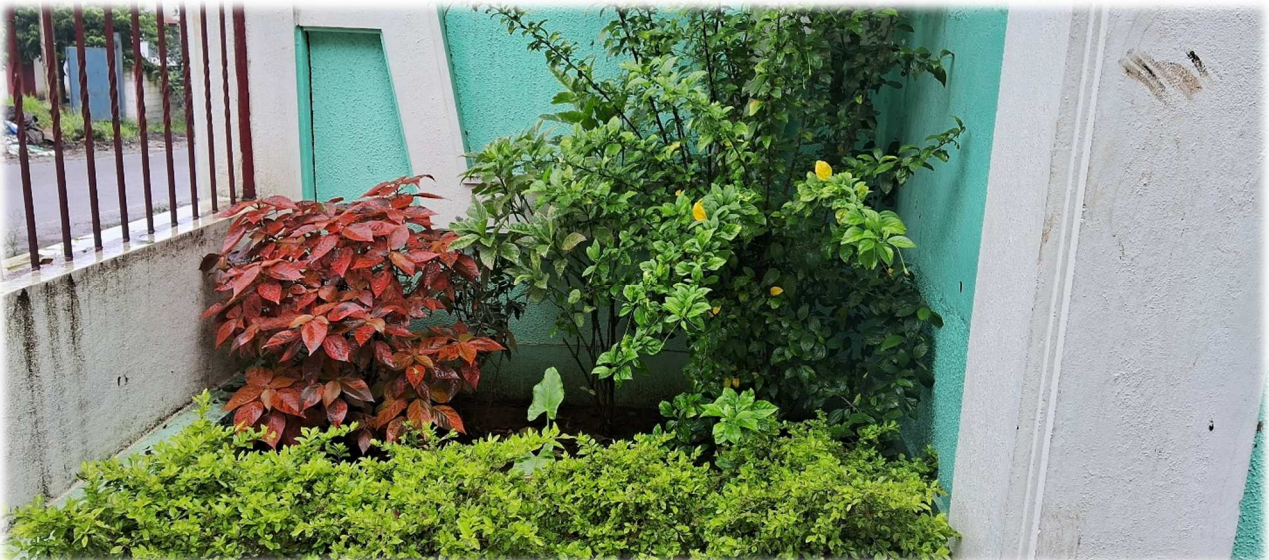
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Institution has received 'TREE HUGGER AWARD'



Biodiversity in the campus:

Biodiversity is the natural world around us, and the variety of all of the different kinds of organisms - the plants, animals, insects and microorganisms that live on our planet.

Observations:

The institute has maintained a sufficient green cover in the campus. This helps in maintaining the biodiversity balance around. Many bird species can be spotted in the campus. Bees play an important role in pollination, flowers in the campus attract many species of bees.



Energy Management Details

Energy Management:

Energy management is an important aspect in institutions. Saving of electric power is a major part to minimize the greenhouse gas emissions to the environment. This can be achieved by using 5-star electrical appliances. Renewable energy can be harvested and be used in the campus.

Observations:

- Solar rooftop harvesting is being implemented in the campus. This is greater step towards clean and green energy for the campus.
- Solar panel has been installed on roof top and solar powered high intensity LED lights have been installed. Energy generated from solar panels is used in college campus. Excess energy from solar panels is stored in the batteries and used.
- LED bulbs have been used extensively in the campus. Migration to LED tube lights and bulbs has been done in order to save electrical energy.
- Day light (Natural light) is the main source in the classrooms, staffrooms, and library and so on. Infrastructure is very well planned to harness maximum natural light in all the places.

Recommendations:

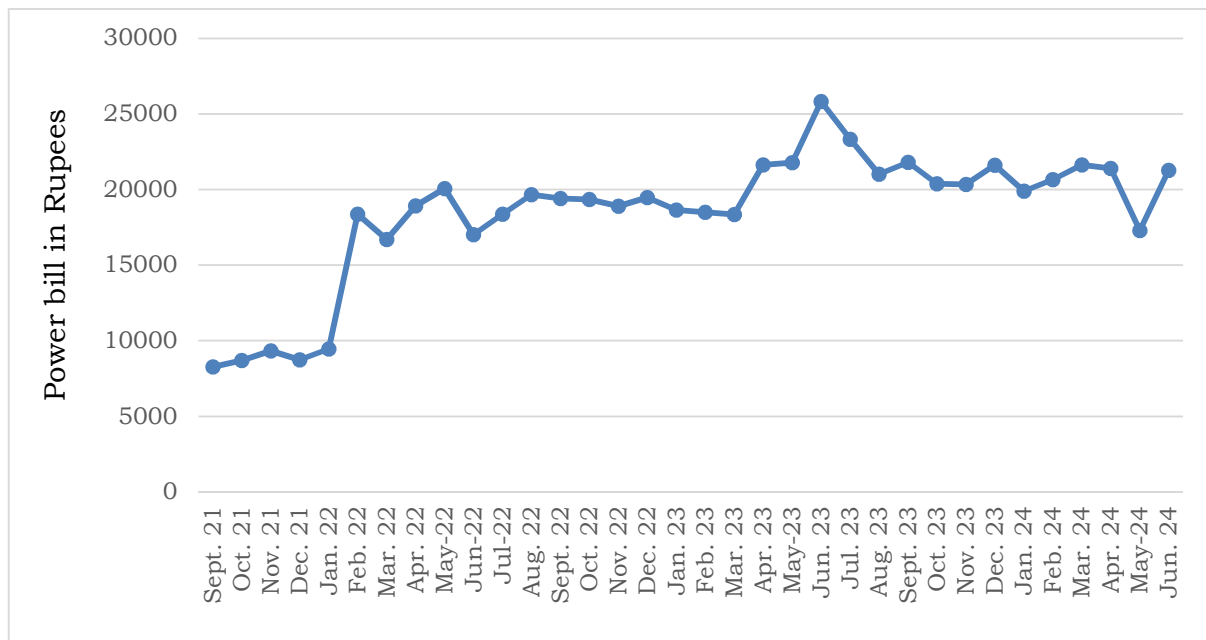
- Best practices have already been implemented in the institution for optimum use of energy.
- More Labels, poster regarding energy saving can be put in the classrooms.

Basic information regarding power supply and its management

Sl. No.	Parameters	Response
1.	Source of electricity. HESCOM/Solar panels	HESCOM
2.	If Solar, Type of Solar system (On Grid/Off Grid/Hybrid)	N/A
3.	No. of Solar Panels	1 PANEL +5 LIGHTS A MORE PANEL ON ROOF
4.	Type of Solar Panels	

Details of electricity consumed from Sept. 2021 to June 2024.

The power consumption patterns from Sept. 2021 to June 2024 has been depicted in the following graph.

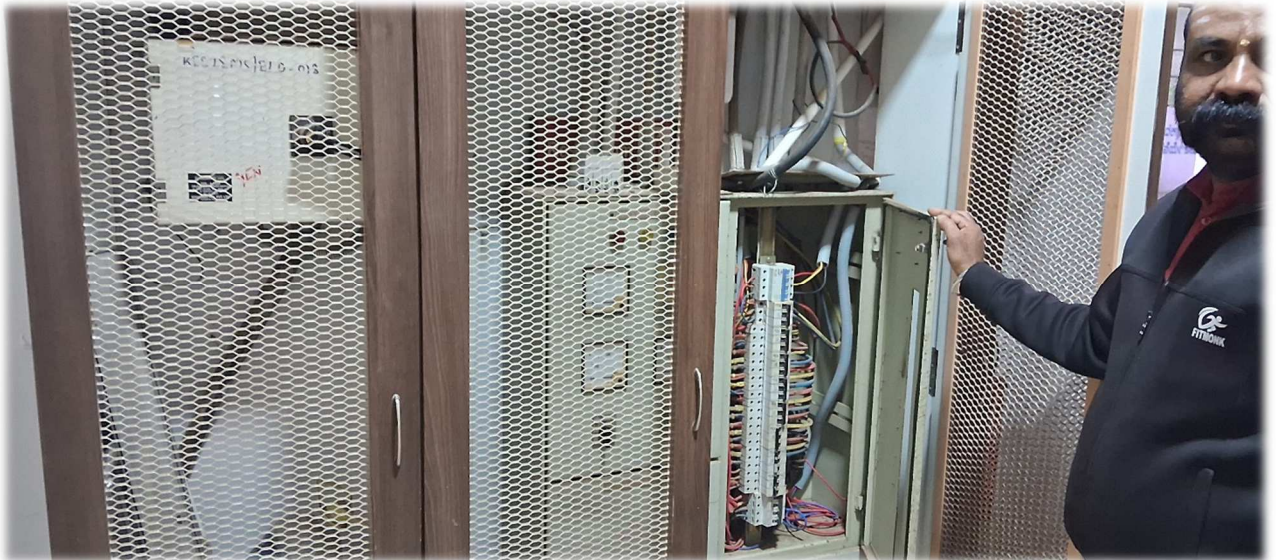


Electrical and Electronic appliances

Following are the electrical and electronic appliances in the campus. Most of these appliances are energy efficient.

Sl. No.	Appliance	Numbers
1.	Computers (Desktops)	46
2.	Laptops	1
3.	Printers	3
4.	Copying machines	1
5.	Scanners	1
6.	Projectors	5
7.	Refrigerators	1
8.	Hot air oven	
9.	Weighing Balance	
10.	TV	1
11.	Digital Display	1
12.	Mics, Sound Box Movable	1

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Power panels have been enclosed



Diesel Generator (alternate source) during power cut

STUDENTS USING INSTITUTION BUS

The institution offers bus service to the students from Hubli. Buses are shuttled around the city and students are picked from various points in the city. The institution has two buses and is committed to provide better service to the students and also decrease the load on the Environment.

During our visit it was observed that very few students get bikes (5 – 8 students) to the campus. Students are encouraged to travel in college buses.



Students using an institution's bus service can offer numerous environmental benefits:

1. **Reduced Carbon Footprint:** By using a shared transportation service, the carbon emissions per person decrease compared to each student using individual cars. Fewer vehicles on the road mean reduced greenhouse gas emissions, which contribute to global warming.
2. **Decreased Air Pollution:** Fewer individual vehicles lead to lower levels of air pollutants like nitrogen oxides, carbon monoxide, and particulate matter. This can improve air quality, especially in urban areas.
3. **Lower Fuel Consumption:** Buses are more fuel-efficient on a per-passenger basis compared to cars. Reduced fuel consumption helps conserve natural resources and decrease reliance on fossil fuels.
4. **Reduced Traffic Congestion:** With more students using buses, there are fewer cars on the road, which can help alleviate traffic congestion. This can lead to shorter travel times and less idling, further reducing emissions.
5. **Minimized Urban Sprawl:** By providing efficient transportation options, institutions can discourage the spread of urban sprawl. This leads to more sustainable land use and preservation of green spaces.
6. **Enhanced Use of Public Transportation Infrastructure:** Encouraging bus use can lead to better utilization and support of existing public transportation infrastructure, promoting a culture of public transit use and potentially leading to improvements and expansions in the system.
7. **Promotion of Sustainable Practices:** When students regularly use institution-provided buses, it fosters an awareness of and commitment to sustainable transportation practices. This can have a lasting impact on their choices and behaviors beyond their time at the institution.

Overall, the use of institution buses by students plays a significant role in promoting environmental sustainability and mitigating the negative impacts of transportation on the environment.

World Bicycle Day

To reduce carbon foot print and to increase awareness on being carbon neutral, the institution organizes program on 'World bicycle Day' on 3rd of June every year.

World Bicycle Day has a significant global impact by raising awareness about the benefits of cycling and promoting its adoption as a sustainable and healthy mode of transportation. It helps to create a culture of cycling that can lead to better public health, reduced environmental impact, and more liveable cities.

By celebrating World Bicycle Day, students and staff come together to support and advocate for cycling, contributing to a more sustainable and healthier future.

The poster for World Bicycle Day 2018 features a central illustration of a blue, smiling Earth character wearing a red and white cap, riding a green bicycle. The background is light blue with white clouds. Text on the poster includes the school's name, accreditation details, the event date (3rd June), and the slogan 'Turn Wheels For The World, For a Healthy Life'. Contact information for the school is provided at the bottom.

World BICYCLE DAY
3rd JUNE
Turn Wheels For The World,
For a Healthy Life

Kaizen Eduplus Society's
IEMS B-SCHOOL
-Inspiring Excellence
Affiliated to Karnataka University, Dharwad & Approved by AICTE, New Delhi
(ISO : EOMS : 21001 : 2018 Certified & Internationally Accredited Institute)

TUV SUD
ISO : EOMS : 21001 : 2018

Students, Staff & IEMS Family

Dr. Veeranna D.K
Professor & Director
IEMS B-School, Hubli

CA. Dr. N.A. Charantimath
Hon. Chairman
KES & IEMS B-School, Hubli

Plot No.129-132, Tarihal Industrial Area, Airport Road, Hubli - 580026, Karnataka, India
www.iemsbschool.org

This poster features a central illustration of a globe surrounded by icons for different modes of transport: a car, a bus, a bicycle, a motorcycle, and an airplane. The text is similar to the first poster, promoting the event on June 3rd and encouraging sustainable transportation. It includes the school's name, accreditation, and contact details.

World BICYCLE DAY!
Let's Give our Planet the Gift of Sustainable Transportation.
IEMS B-School Wishes Everyone

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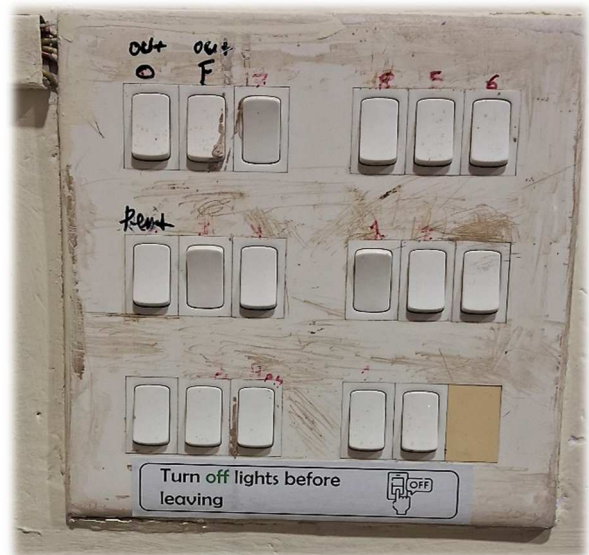
Plot No.129-132, Tarihal Industrial Area, Airport Road, Hubli - 580026, Karnataka, India
www.iemsbschool.org

Energy saving labels:

Applying energy-saving labels to switchboards (or switch panels) is an innovative approach and is primarily aimed at enhancing awareness and encouraging energy-efficient behaviors in both educational institutions.

Labels can remind users to turn off lights and appliances when not in use, promoting conscious energy consumption. They can provide information about the energy consumption of connected devices, helping users understand their energy usage better.

Posters/labels have been put up in the campus to create awareness.



Environment Management Details

Water Management

Quality and Quantity of water is one of the most important parameters in a Green Campus. Water Quality and Quantity differs from place to place depending on the condition of the water source from which it is drawn. Presence of contaminants in the water can lead to health issues of the consumers. Basic monitoring of the quality of water is necessary from the health point of view of the campus occupants. Meticulous Water Management plan of the water available is also imperative for sustainable resource utilization.

Observation:

1. The main source of water for the campus are bore well with sufficient water for the college throughout the year. The water from the borewell and underground water tanks are pumped to the overhead tank situated on the top floor of the building and then supplied.
2. Rainwater harvesting has be implemented in the campus and rain water is allowed to seep into the ground, recharge borewells, stored in underground water tanks.
3. Rainwater harvesting system has been installed around the existing borewell. A pit of 10 feet X 10 feet was dug and filter media in layers have been placed. This allows the water to seep into the ground and recharge the groundwater table.

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Sl. No.	Parameter	Response
1.	Source of water for campus	Rain water and Municipal corporation
2.	No. of open Wells/Borewells	1
3.	Capacity of underground water tank	20000
4.	Number of water tanks (Overhead tank)	6
5.	Capacity of water tank (Overhead tank)	2000 LTRS
6.	Quantity of water pumped every day	15000 litres
7.	Waste water sources	
8.	Use of waste water	Gardening
9.	No. of drinking water filters/water coolers	
10.	Rain water harvest available?	Yes
11.	No. of units and amount of Rain water harvested	
12.	Any water saving techniques followed?	Rainwater harvesting
13.	Are there any signs/posters reminding peoples to turn off the water?	Yes
14.	Drinking water testing done? (if yes, kindly attach the report)	No



Drinking water facility



Overhead tanks

Rainwater harvesting

Rainwater harvesting can be an effective way to replenish groundwater levels and support borewell usage, especially in areas facing water scarcity. Rainwater harvesting for borewells is a sustainable technique that captures and stores rainwater for later use, helping to recharge groundwater levels and improve the efficiency of borewells.

Rainwater harvesting pit has been installed around the borewell. A pit of 10 feet X 10 feet was dug open, this activity was done in presence of students. Students were educated about the importance and need of Rainwater harvesting.

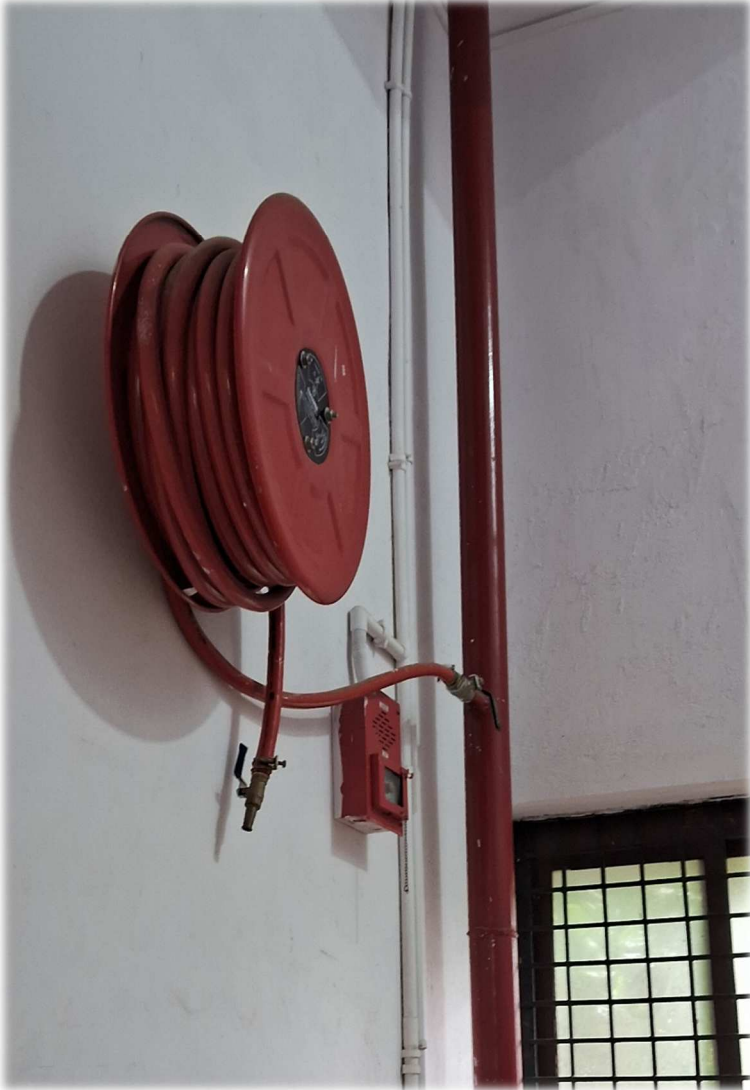
Boulder were put at the bottom of the pit, followed by pebbles and gravel, activated charcoal was added to the pit. A layer of fine sand was added to the top of the pit.



Rainwater harvesting
pit around bore well



Rainwater seeping into ground



Fire extinguisher have been placed at every floor

Waste Management:

Anthropogenic activities generate waste, and it is the way these wastes are managed and disposed of, which can cause risks to the nature and to health. Waste generated causes pollution which is displeasing and results in large amounts of litter which in turn cause environmental problems. Solid waste is generally classified into three categories: bio-degradable, non-biodegradable and hazardous waste.

Bio-degradable wastes include food wastes, canteen waste, wastes from toilets, etc. Non-biodegradable wastes include what is usually thrown away in homes and schools such as plastic, tins and glass bottles, etc.,

Hazardous waste is waste that is likely to be a threat to health or the environment like chemicals from research labs, batteries, etc.,

Improper handling of these wastes such as dumping in pits or burning them, may cause harmful discharge of contaminants into soil and water supplies.

Special attention should be given to the handling and management of such waste generated in the institutions.

Observations:

In this campus, the waste generated is managed as mentioned below:

Bio-degradable Waste:

- Bio-degradable waste (sewage) from toilets is connected to septic tank.
- Dry leaves and other waste is sent to vermin compost bins.
- Paper is sent to recycling,

Non-Bio-degradable Waste:

- The campus is a 'single use plastic free zone'. Plastics (if any) generated by the campus is collected by the waste collection vehicle.
- Educational posters related to water conservation, waste minimization, waste segregation have been put in the campus to create awareness.
- Single use plastic is not allowed in the campus.
- E-waste collection drives and awareness programs regarding the same is done in the campus regular. E-Waste collected during the collection drives is sent to recycler.



Plastic Free Zone posters have
been placed



Dustbins placed in every floor

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Kaizen Eduplus Society's
**Institute of Excellence
in Management Science,
Hubballi**



An **Entrepreneurship Development Cell** / Institute Innovation Council Initiative
In association with



Awareness Program on
E-Waste Management
& E-Waste collection Drive

Date: 26.07.2024, Time: 12.15 pm, Venue: CR-1



Er. Pradeep N.V. B.E, M.Tech(Erw Engg),
Proprietor,
Nisarga Eco Consultants, Belagavi

Cordially invites You

Prof. Vishal Patil
Staff Coordinator

Dr. Veeranna D.K
Director

CA. Dr. N.A. Charantimath
Hon. Chairman

E-waste, or electronic waste, refers to discarded electronic devices and components such as computers, smartphones, televisions, and other electronic appliances. The rapid pace of technological advancement and the short lifespan of many electronic products have contributed to the growing problem of e-waste.

Session on E-waste management and E-waste collection drive was conducted. Awareness was given to students regarding E-waste, E-waste collected was sent to certified recycler.



Electronic waste collection bin

Vermicomposting

Vermicomposting is a method of composting that uses various species of worms, typically red wigglers, white worms, and earthworms, to decompose organic waste into nutrient-rich compost. This process is highly efficient and produces high-quality compost that can be used to enrich soil in gardens, farms, and landscaping projects.

Organic waste generated in the institution, garden waste, dry leaves and canteen waste is fed into these pits. Earth worms convert these organic waste into compost. Earth worms were procured from Agricultural University, Dharwad and have been added into these pits



Vermicomposting pits

Septic tank for sewage

Waste water from bathrooms, urinals, toilets, kitchen generally termed as sewage can be treated and be reused. Treated sewage can be used for gardening, flushing and so on. This helps in minimizing the use of fresh water for flushing and gardening.

Observations:

Septic tank has been installed in the camps. Septic tank treats the waste water generated in the campus.

Sl. No.	Details	Remarks
1	Wastewater Source	Toilets, canteen
2	Use of waste water	NA
3	Fate of waste water from labs	NA
4	Whether waste water from labs is mixed with other wastewater sources	NA
5	Any treatment for lab waste?	NA
6	Disposal of wastewater	Septic tank
7	Use of treated wastewater from STP/septic tank	NA

Air Quality

Air quality plays a major role in day-to-day life. People spend more time indoors. Indoor air quality is the air quality within and around buildings and structures. Indoor air quality is known to affect the health, comfort, and well-being of building occupants. Poor indoor air quality has been linked to sick building syndrome, reduced productivity, and impaired learning in schools and colleges.

Observations:

Particulate matter was measured in all the classrooms, staff rooms and library. It was observed that the concentrations of PM 1, PM 2.5 and PM 10 were found to be negligible at that instant.

The readings mentioned are measured at that instant.

Sl. No.	Room				HCOH	TVOC
		PM 1	PM 2.5	PM 10		
1	Reception	10	14	18	<0.1 ppm	0.3 mg/m ³ to 0.5 mg/m ³
2	Admin and Visitors Lounge	11	15	20		
3	Director Cabin	10	16	21		
4	Computer Lab	11	15	22		
5	Restroom	8	14	21		
6	Tutorial Hall	11	13	25		
7	CR-1 C K Prahllad	11	13	18		
8	CR-2 Philip Kotler	9	14	20		
9	CR-3 Peter Drucker	10	15	18		
10	Library	10	16	19		
11	HOD Cabin	8	15	21		
12	Conference Hall	9	14	22		
13	Sports Room	11	15	21		
14	CR-4 Chanakya	12	16	18		

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15	CR-5 Henry Fayol	11	14	20		
16	CR-6 Douglar Mcgegor	9	15	18		
17	Faculty Room-4	10	18	19		

Light

The main part of the learning process is visual. The classroom is an arena for many activities, such as reading and writing, student or teacher presentations, tests, etc., hence, light plays a major role in classrooms. Well-lit classrooms are utmost essential in colleges. Working desks of the students require a minimum of light of 200 lux. Further, there may be certain zones that require specialized lighting. For example, the area in front of the board should have proper and separately switched presentation lighting.

Observations:

It was observed that all the classrooms are well lit. The light intensity was observed to be ranging from 200 lux to 400 lux.

Day light (Natural light) is the main source in the classrooms, staffrooms, and library and so on. Infrastructure is very well planned to harness maximum natural light in all the places.

LED bulbs have been used extensively in the campus. Migration to LED tube lights and bulbs has been done in order to save electrical energy.

The readings mentioned are measured at that instant.

Sl. No.	Room	Light intensity in lux
1	Reception	350
2	Admin and Visitors Lounge	260
3	Director Cabin	350
4	Computer Lab	250
5	Restroom	280
6	Tutorial Hall	290
7	CR-1 C K Prahlad	320
8	CR-2 Philip Kotler	350
9	CR-3 Peter Drucker	350
10	Library	250
11	HOD Cabin	300

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12	Conference Hall	320
13	Sports Room	330
14	CR-4 Chanakya	300
15	CR-5 Henry Fayol	310
16	CR-6 Douglar Mcgegor	350
17	Faculty Room-4	330

Noise

Noise is unwanted sound considered unpleasant, loud or disruptive to hearing. Unwanted sound is not preferred in any classroom. The Noise levels in the class room should be below 35 dB in an unoccupied classroom. Higher levels of noise in the classroom may distract the students.

Observations:

Noise levels were measured in the classrooms and were found to be in the range of 25 dB to 70 dB in an unoccupied classrooms and classrooms with students.

The readings mentioned are measured at that instant.

Sl. No.	Room	Noise in decibel	
		Minimum	Maximum
1	Reception	45	50
2	Admin and Visitors Lounge	40	60
3	Director Cabin	35	40
4	Computer Lab	50	70
5	Restroom	45	65
6	Tutorial Hall	45	50
7	CR-1 C K Prahlad	40	45
8	CR-2 Philip Kotler	30	45
9	CR-3 Peter Drucker	35	45
10	Library	30	50
11	HOD Cabin	35	55
12	Conference Hall	50	55
13	Sports Room	45	50
14	CR-4 Chanakya	40	45
15	CR-5 Henry Fayol	40	45
16	CR-6 Douglar Mcgegor	30	50
17	Faculty Room-4	35	55

Electro Magnetic Radiations

Electromagnetic radiation (EMR) consists of waves of the electromagnetic (EM) field, propagating through space, carrying electromagnetic radiant energy. EMR is generated by electronic devices and constant exposure to EM radiations is not advisable.

Observations:

Electromagnetic radiations were measured in all the classrooms, staff rooms, and library. It was observed that the Electromagnetic radiations were zero in all these places.

H-Field and E-Field were found in server room however the room is isolated and is always closed.

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Measurement of PM 1, PM 2.5, PM 10, Light intensity, Noise, EMR, HCOH, TVOC

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Measurement of PM 1, PM 2.5, PM 10, Light intensity, Noise, EMR, HCOH, TVOC

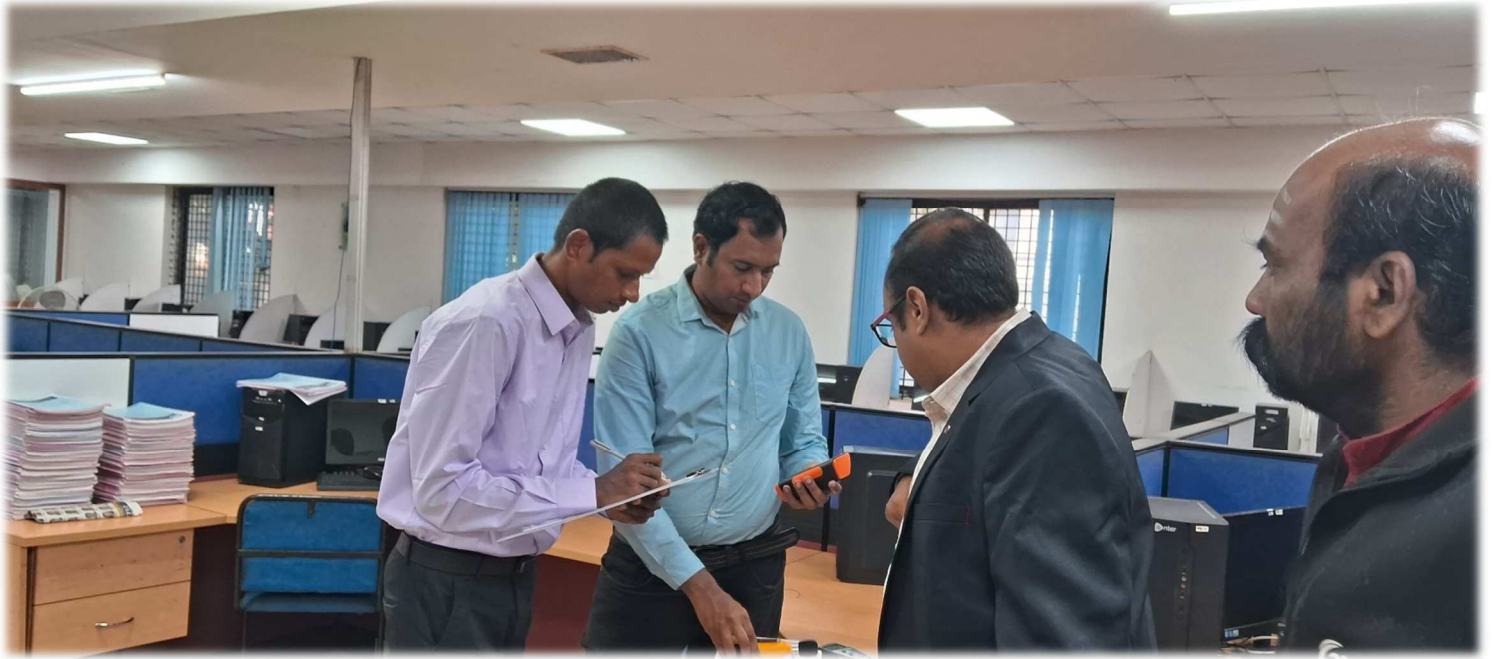
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Measurement of PM 1, PM 2.5, PM 10, Light intensity, Noise, EMR, HCOH, TVOC



Interaction with students during our visit

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