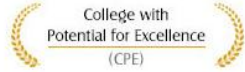




Chhatrapati Shahu Institute of Business Education and Research

AN AUTONOMOUS INSTITUTE UNDER UGC & SHIVAJI UNIVERSITY



GREEN AUDIT REPORT

(2016-2019)



Certified By

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2019





CSIBER Trusts

**CHHATRAPATI SHAHU INSTITUTE OF BUSINESS EDUCATION
AND RESEARCH (CSIBER), KOLHAPUR.**

An Autonomous Institute under UGC, New Delhi and Shivaji University,
College with Potential for Excellence (CPE) III Phase,
Reaccredited by NAAC with 'A+' Grade (CGPA 3.55)

CERTIFICATE

This is to certify that, the Green Initiative Report - Environmental Audit, Energy Audit and Green Audit (2016-19) of **Chhatrapati Shahu Institute of Business Education and Research (CSIBER), Kolhapur** has been prepared and certified by the Department of Environment Management based on the documents produced by the Institute.

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**CHHATRAPATI SHAHU INSTITUTE OF BUSINESS
EDUCATION AND RESEARCH (CSIBER),
[AN AUTONOMOUS INSTITUTE]**

GREEN INITIATIVE REPORT



Certified by

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2016-19

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CHAPTER-1: INTRODUCTION**1.1 About Institute:**

Education plays a very important role in the shaping and growth of a nation. Imparting knowledge to young citizens of a country having potential to become a superpower is indeed a very rewarding experience. Chhatrapati Shahu Institute of Business Education and Research has a proud record of successfully educating a large number of students in various fields. In fact, in the history of management education, Chhatrapati Shahu Institute of Business Education and Research (popularly known as **CSIBER** or Shahu Institute), Kolhapur, occupies a prominent position, not only in Maharashtra but also in the country as a whole. This is for three reasons; first, it is way back in 1976, the Institute came into existence when not many had visualized that management education would assume such an important place in the society, in the years to come, as one finds today. Second the Institute is fully devoted to the cause of education in management and allied areas, which speaks of its commitment to management education. Third, it has been conferred with the status of an Autonomous Institute by Shivaji University, Kolhapur, with the concurrence of the Government of Maharashtra and the University Grants Commission, New Delhi - a status that is conferred only upon reaching high levels of achievement.

Chhatrapati Shahu Maharaj of Kolhapur, after whom the Institute has been named, was a ruler known for his vision to promote education in the area under his rule. In fact, most of what independent India today strives for, he had conceived and implemented in the early twentieth century.

The idea of establishing an independent Institute for Management Education under the Shivaji University area was rooted by Late. Dr. A. D. Shinde, a renowned Chartered Accountant, Tax Consultant and the then Dean of Commerce faculty of Shivaji University. Late. Dr. Shinde' s efforts and dedication, with missionary zeal, coupled with the blessings and active support of the then Chief Minister of Maharashtra, Hon'ble Late Vasantodada Patil and also of the Hon'ble Sripatrao Bondre, former Minister, resulted in the present Institute being set up. The Institute is a duly registered body under the Bombay Public Trust Act. It also has recognition from the University Grants Commission, New Delhi, under Section 2 (f) and Section 12B.

The pragmatic policies adopted by the Institute's Management have found reflection in the performance of the students, both in the academic field and in extra-curricular and co-curricular activities. The Institute can proudly take credit of developing students to such an extent that, the

last twenty one years, prior to Autonomous status, the University toppers have almost invariably been from CSIBER in all the courses.

They also brought laurels to the Institute by way of winning trophies and prizes at debating, elocution, management games and other competitions. The Institute has built up an enviable reputation which finally. Culminated in its decision to opt for an Autonomous Status. Collective efforts finally led to the Shivaji University conferring upon the Institute, in concurrence with the University Grants Commission, New Delhi and the Government of Maharashtra, **Autonomous Institute status** from June, 1995. University Grants Commission, New Delhi has honored CSIBER as “College with Potential for Excellence” with financial assistance. National Assessment and Accreditation Council (NAAC), Bangalore in its reaccreditation has awarded A+ Grade.

INSTITUTIONS RUN BY THE CSIBER TRUST:

The Chhatrapati Shahu Institute of Business Education and Research Trust runs the following Institutions.

- Chhatrapati Shahu Institute of Business Education and Research, Kolhapur.
- Vasantraodada Patil Institute of Management Studies and Research, Sangli.
- College of Non- Conventional Vocational Courses for Women’s (CNCVCW), Kolhapur
- D. K. Shinde School of Social Work, Kolhapur.
- Radhabai Shinde English Medium School, Kolhapur
- Dinkarrao K. Shinde College of Education, Gadhinglaj
- Gijavane High-School, Gijavane

PROGRAMMES OFFERED BY CSIBER:

1	M.Sc.(Environment and Safety) under faculty of Science	Since 2013
2	Master of Business Administration (MBA- Environment Management with dual specialization)	Since 2010
3	Master of Business Administration (MBA)	Since 1976
4	Master of Social Work (MSW)	Since 1976
5	Master of Computer Applications (MCA)	Since 1985
6	Master of Computer Science (M.Sc. CS)	Since 2018
7	Master of Quantitative Economics (M.Sc. QE)	Since 2016
8	Master of Philosophy (M.Phil.) in Commerce and Management, Economics, Sociology and Social Work (M.Phil.)	Since 1981
9	Diploma in Business Management (DBM)	Since 1976
10	Post Graduate Diploma in Computer Application (PGDCA)	Since 2002

1.2 Vision of the Institute:

- To be an Institute of first choice of the Students.

1.3 Missions of the Institute:

- To provide professional education and training to students in general and particularly those from and around Southern Maharashtra which is predominantly rural.
- To provide facilities and training to teaching and research community in higher and professional education.
- To promote confidence and motivate faculty and staff to efficiently address the expectations of the student community and society at large.
- To equip the student community, through academic autonomy to face future challenges.
- To inculcate the spirit of dignity of the individual, excellence and service.

1.4 Environmental Policy of the Institute:

As one of the pioneer Institute in western Maharashtra in the subject Commerce and Management, Computer studies and of Environment Management we believe in managing our own environment scientifically with the help of advanced technology. We at CSIBER cares about our environment and always tries to minimize our ecological footprint.

1.5 Environmental Mission:

1. Plastic free campus
2. Energy conservation
3. Use of renewable energy
4. Rain water harvesting
5. Environmental and social outreach programs

1.6 Logo of the Institute:



Table No. 01: Name and Address of the Institution:

Name	Chhatrapati Shahu Institute of Business Education and Research (CSIBER)
Address	University Road, Kolhapur, Maharashtra 416004
City	Kolhapur
E. Mail	director@siberindia.edu.in
Website	http://www.siberindia.edu.in
Phone	0231 2535706

Location:

Location	Urban
Campus area	12 Acre

Coordinates: 16°41'14" N, 74°15'08" E

Elevation: 590 Mt MSL

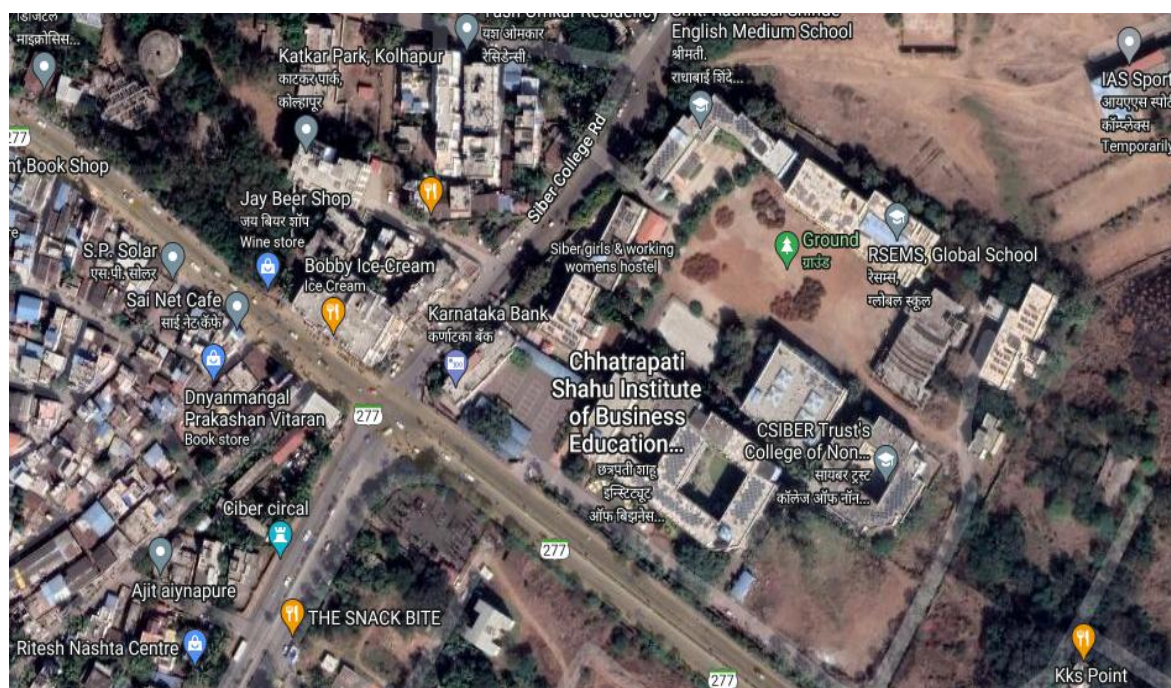


Plate No.01: The Google Earth Image of the CSIBER Institute, Kolhapur.

1.7 Infrastructure:

- **Computing facilities:**

CSIBER boasts of **8 State-of-the-Art Computer Labs. equipped with 500 plus computers** with latest configuration. All Labs have structured network and feature DLP (projector) to enhance teaching-learning experience.

Our Computer Labs facilitate learning and are an asset to the Institute as they enable students to complete their projects and research assignments with the using technology. These labs are used to deliver knowledge and provide **‘hands-on’ exposure** to students in courses on MS Office, Digital Marketing, Marketing Analytics, HR Analytics, Operational Analytics, Financial Analytics, SPSS, Operating Systems, RDBMS, Big Data Analytics, Web designing, R, Python and other programming languages.

The Institute provides 24*7 internet connectivity through a **200 mbps leased line**.

The Institute has a **data center** for centralized data storage (using SAN), backup and recovery, data management and networking. Virtualization, using VMware is implemented for optimal data management in the Institute.

- **Classrooms at the Institute:**

The campus hosts about **30 classrooms/ lecture halls, syndicate room, seminar hall and Management Lab**.

Our institute ensures that all students have access to high quality learning options. As we feel that technology can help us get there faster and bridge the divide that too many students still face, we have equipped all our classrooms with latest audio-visual aids to facilitate teaching-learning. Each classroom has **DLP, sound system and interactive panel with robust internet connectivity** to provide enriching classroom experience to students.

The **use of technology** allows educators to reconfigure the traditional classroom and create learning solutions consisting of innovative pedagogies that better serve all students. Suitable **acoustical design** has been used in classrooms to enhance speech clarity of both students and faculty and limit background noise.

- **Prof. Dr. A. D. Shinde Memorial Central Library:**

CSIBER library is named Prof. Dr. A. D. Shinde Memorial Central Library after our founder Dr. A. D. Shinde, who was a book lover. It is designed to suit resource needs of master's level students of professional programmes, teachers and researchers.

Presently housed in a spacious new building with a collection of 91,678 books and 158 periodicals; has a student book ratio 1: 91. In different subscribed data bases we have more than 3 Lakh e-books and more than 6,000 e-Journals in addition to a number of magazines and other resources. Presently library has plenty of books and journals on Environmental Science and Management.

The library include facilities like periodicals section, study halls, research cubicles, computer lab, syndicate room, stock section, and archival section constructed as per the green building concept. It has good learning environment, created with the proper use of natural light and ventilation through windows through proper natural air circulation.

Print Resources:

Our collection of books covers all the five major streams we have at CSIBER, namely Commerce and Management, Computer Studies, Environmental Science, Social Work and Economics. We have a good collection of books in associated areas like quantitative techniques, research methodology, communications, general books etc. This include books by international publishers like Sage, Oxford University Press, Prentice Hall, McGraw Hill, Cambridge University Press, Wiley, Macmillan, O'reily, Pearson, Academic Press, Springer and Penguin. Project reports, dissertations in the field of environmental management area submitted by students of Environment Department are also part of our precious resources for referencing.

Digital Resources:

The library has subscribed to a number of research and statistical data bases. Also it has DelNet membership, a network of libraries. Through this we can also get resources from other member libraries in India.

Table. No. 02: Digital Resources of Institute:

Sr. No	Data Base	Subject Area
1	EBSCO	Management Collection
2	IEEE CSDL	Computer Science
3	INFLIBNET-NLIST	Science and Social Sciences
4	ProwessIQ	Financial Data

Across these data bases we have a variety of resources.

Resources	Data Base
Full Text Academic Journals	EBSCO, NLIST, CSDL
Full Text Magazines	EBSCO, CSDL
Full Text Case Study and Business Basics	EBSCO
Full Text Company Profiles	EBSCO
Full Text Conference Proceedings Collection	EBSCO, CSDL
Full Text Reports (Market Research, Industry, country)	EBSCO
Full Text Newspaper and Newswire	EBSCO
Full Text TV, and Radio News Transcript	EBSCO
Full Text SWOT Analysis	EBSCO
Full Text Working Papers	EBSCO
Videos	EBSCO
Financial Data of companies	Prowess IQ

All these resources are accessible on all the computers on campus. Some of the data bases have off-campus access facilities. Wi-Fi access is also available in the library and campus.

The library has a large collection of CDs which contains power point presentations, e-books etc.

This arrangement ensures that the library has the potential to provide all the needed resources for teaching learning and research.

Library Management System:

The library has an online public access catalog OPAC, which is accessible all across the campus. Presently we use LibSys to manage the library. It is a semi-automated system. Soon we will shift over to Kolhapur.

OPAC Link: <http://192.168.1.111:8080/opac>

1.8 Details of CSIBER Location:

Table. No. 03: Details of Location:

City	Taluka	District	City Survey No.	Area (Ha)	Ownership
Kolhapur	Karveer	Kolhapur	369	0.83	CSIBER Trust, Kolhapur
			372	4.52	
			373	0.08	
			Road	(-0.75)	
			Total	4.68	

1.9 Land Use Pattern at CSIBER:

Table. No.04. Land Use Pattern at CSIBER:

Sr. No.	Particulars	Area (Sq. Mt)	Area (%)
1	Main Building	2894	21.84
2	RSEM School	876	
3	CBSE School	1522	
4	CNCVCW	1425	
5	Central Library	1176	
6	Canteen and Bank	473	
7	Ladies Hostel	1011	
8	Boys Hostel	719	
9	Staff Quarters	124	
10	Play Ground, Road, Open Space and Parking	36580	78.16
	Total	46800	100

- Four Computer Labs having 500 computers
- Separate Ladies room
- Two separate hostel buildings for girls - Intake capacity 200 girls
- Boys Hostel Intake capacity – 150 boys
- Staff Quarters – 04 nos
- Separate Canteen, health care centre

CHAPTER-2: GREEN AUDIT

2.1 Conceptual Framework:

Green audit is a tool to assess general practices implemented by organization in term of its impact on environment. Green audit shows strength and weakness of organization towards conservation of environment. It also pinpoints the adverse practices of natural resources utilization. It shows the path to build, implement and test new innovative system for better utilization of natural resource and minimization of waste generation. It helps to achieve the goal of college to become a role model in higher education of sustainable campus in environmental views. Green audits are useful to ensure that their environmental performance is in compliance with applicable laws and regulations, to identify potential liabilities, to align with environmental performance with their stated goals and strategy, to identify opportunities to reduce costs or increase revenue, to improve process and materials efficiency, and in response to stakeholder's requests for increased disclosure.

Green Audit is the process of assessing the environmental impact of an organization, process, project, product, etc. Green means eco-friendly environment. Schools and Colleges are playing a key role in development of human resources worldwide. Higher education institutes run various activities with aim to percolate the knowledge along with practical dimension among the society. Likewise, higher education institutes/colleges are also try to give different technological solution for issues related to environment. Types of evolutionary methods used to assess the problem concerning environment, includes Environmental Impact Assessment (EIA), Social Impact Assessment (SIA), Carbon Footprint Mapping, Green Audit, etc.

Environmental audits are the tools that organizations use to identify their full range of environmental aspects and impacts. It also serves as a means to identify opportunities to save money, enhance work quality, improve employee health and safety, reduce liabilities, and achieve other forms of business value.

Recently, increased attention has been paid towards environmental auditing by companies, government agencies and academic organizations. The recent growth of environmental auditing fits with a variety of business and social trends.

In keeping with the need of the National interest of Swachta and Swastha Bharat, CSIBER Institute is well aware about environmental issues and has gone through its environmental audit for better understanding of environmental aspects and impacts of the activities carried out in the Institute campus on the environment.

2.2 Objectives of Green Audit:

- To implement 'Go green' policy for Environment Management in the campus.
- To identify opportunities to save and conserve energy.
- To see that proper steps have been taken to maintain sustainability and to prevent adverse effects of Air, Water, Noise and Solid Waste pollution on environment.
- To reduce, recycle, reuse waste and dispose waste scientifically.
- To see that proper steps have been taken for maintaining health and welfare of the Students and staff of the CSIBER Institute, Kolhapur.

2.3 Implementation of the Environmental Policy:

CSIBER Institute is aimed at balancing environmental protection and the conservation of natural resources with other policy goals, such as affordable energy, air and drinking water quality monitoring, rainwater harvesting. Green Campus Committee of the college has established clean and green campus with awareness and protection and in fulfilling environmental goals and sustainable development goals set forth to implement environmental policies given by government from time to time. Students and staff members are supporting the implementation of the environmental policy.

2.4 Environment Awareness Activities:

2.4.1. Tree Plantation in the Institute campus:

Trees give us clean water to drink, air to breathe, shade and food to humans, animals and plants. They provide habitats for numerous species of fauna and flora, firewood for cooking and heat, materials for buildings and places of spiritual, cultural and recreational importance. To make people aware about importance of tree in the economy of the nature and human lives, students and staff of CSIBER Institute takes efforts.



Plate No.02: Tree Plantation programme is organized on 16/07/2016 on occasion of Vanmahotsav at CSIBER Campus.



Plate No.03: Tree Plantation programme is organized on 05/07/2017at CSIBER Campus.



Plate No.03 A: Tree Plantation programme is organized on 05/07/2017at CSIBER Campus.

2.4.2. Awareness Rally:

To create awareness about the environmental concerns Department of Environment management Organizes awareness rally during celebration of festivals like “General awareness about Celebration of Ganapati festival by making Moorti with Shadu (clay), Small Moorti, generate less Nirmalya and proper disposal to minimize water pollution & Dolby free. Such rallies are organized on 03/09/2016, 23/08/2017 in areas of Rajampuri, Pratibhanagar, Samrat Nagar, Shastri Nagar of Kolhapur by Staff and Students of Environment Department before Ganesh Festival.



Plate No. 04: Awareness Rally to celebrate Ganesh festival Ecofriendly, organized on 03/09/2016.



Plate No. 04A: Awareness Rally to celebrate Ganesh festival Ecofriendly, organized on 03/09/2016.



Plate No. 05: Awareness Rally to celebrate Ganesh festival Ecofriendly organized on 23/08/2017.



Plate No. 05A: Awareness Rally to celebrate Ganesh festival Ecofriendly, organized on 23/08/2017.

2.4.3: Awareness Rally and collection of Ganesh Idol and Nirmalya on Ganesh Visarjan:

During the celebration Gouri- Ganesh festival Idols and Nirmalya are immersed in nearby water resources like well, river and lake. This result in the deterioration of water quality. Material used for idols including colours contain harmful chemicals. There are chances of entry of these persistent chemicals in the ecosystem. To avoid these threats collection of Ganesh Idol and nirmalya is done by students of CSIBER Institute every year.

Students of Environment Department Organises awareness rally every year, on “Ganesh Moorti and Nirmalya Daan to reduce the water pollution”. Such rallies were organized on 10/09/2016, 31/08/2017& 17/08/2018 in areas of Rajaram Lake, Kothiteerth & Panchaganga Ghat of Kolhapur where Ganesh Visarjan is done during Ganesh Immersion.



Plate No. 06: Awareness Rally and collection of Ganesh Idol and Nirmalya during Ganesh Visarjan, 10/09/2016.



Plate No. 06A: Awareness Rally and Collection of Ganesh Idol and Nirmalya During Ganesh Visarjan, 10/09/2016.



Plate No. 07: Awareness Rally and Collection of Ganesh Idol and Nirmalya During Visarjan, 31/08/2017



Plate No.07A: Awareness Rally and Collection of Ganesh Idol and Nirmalya During Ganesh Visarjan, 31/08/2017



Plate No. 08: Awareness Rally and Collection of Ganesh Idol and Nirmalya During Ganesh Visarjan, 17/08/2018



Plate No. 08A: Awareness Rally and collection of Ganesh Idol and Nirmalya on Ganesh Visarjan on 17/08/2018



Plate No. 08B: Awareness Rally and collection of Ganesh Idol and Nirmalya on Ganesh Visarjan, 17/08/2018

2.4.4: Awareness through Street Play:

As a part of extension activity students of M.Sc-I and II performed street play on creating awareness amongst the people for donation of Ganesh Idol rather than immersion into river Panchaganga. The street play was performed at CSIBER campus, CSIBER Chowk and Panchaganga Ghat. This street play is appreciated by Ms. Hasina Faras. The street play was performed under guidance of Dr. A. R.

Kulkarni, Head, Department of Environment Management. Collection and Donation of Ganesh Idol was carried out in collaboration with Panchaganga Ghat Sanvardhan Samitee, Kolhapur on 31/08/2017. 35 students of MSW and about 20 students of M.Sc. participated in this event.



Plate No.09: Awareness Rally through Street Play for collection of Ganesh Idol and Nirmalya, During Ganesh Visarjan.



Plate No.09A: Awareness Rally through Street Play for collection of Ganesh Idol and Nirmalya on Ganesh Visarjan.

2.4.5 Training Programme on Eco –Friendly Ganesh Idol Making:

The Training programme on Eco friendly God Ganesha Idol Making from clay is organized by Department of Environment Management for all students of the Institute every year before Ganesh Festival. Such programmes were organized on 03/09/2016, 21/08/2017 and 10/08/2018 by the Department of Environment Management. Students and Staffs from all the Department of CSIBER participate in the event.



Plate No.10 : Training Programme On Eco –Friendly Ganesh Idol Making for students on 03/09/2016



Plate No.10 A : Training Programme On Eco –Friendly Ganesh Idol Making for students on 03/09/2016



Plate No.11: Training Programme On Eco –Friendly Ganesh Idol Making for students on 21/08/2017



Plate No.11A: Training Programme on Eco –Friendly Ganesh Idol Making for students on 21/08/2017



Plate No. 12: Training Programme on Eco –Friendly Ganesh Idol Making for students on 10/08/2018



Plate No. 12A: Training Programme on Eco –Friendly Ganesh Idol Making for students on 10/08/2018

2.4.6 Swachhata Abhiyan Programme :

Department of Environment Management was organized CSIBER Swachhata Abhiyan Programme on 02 October, 2018. Programme is organized successfully with the help of students of MBA (Envt.) - I and II & M.Sc. (Envt and Safety) I and II. All staff members of the department are also involved in this event.



Plate No.13: Swachhata Abhiyan Programme organized on 02/10/2018



Plate No. 13 A: Swachhata Abhiyan Programme organized on 02/10/2018



Plate No.13 B: Swachhata Abhiyan Programme organized on 02/10/2018

2.4.7: Workshop Organised For Environment Awareness:

1. One day workshop was organized to create environmental awareness among school students, on “Environmental Awareness programme” for Schools of Zilla Parishad in Collaboration with Zilla parishad Kolhapur, Vidnayan Prabhosdini & Department of Environment Management CSIBER, Kolahpur on 19/07/2017 at Radhabai Shinde Hall.



Plate No.14: One day Environmental Awareness programme organized for Schools of Zilla Parishad in collaboration with Vidnayan Prabhodini, Kolhapur



Plate No. 14A: Mr. Subhash Chougule, District Educational Officer, Kolhapur briefing about One day Environmental Awareness programme.

2. Department of Environment Management Organized National Conference on the theme “Solid & Hazardous waste Management for Sustainable Development” on 9th November, 2017 in CSIBER (Radhabai Shinde Memorial Hall) in Collaboration with Maharashtra Pollution Control Board (MPCB), Mumbai.

The conference was inaugurated by the Dr. Abhijeet Chaudhari (IAS), Hon’ble Commissioner, Kolhapur Municipal Corporation and other dignitaries present for inaugural function were Shri. Nandkumar Gurav, R.O, (HQ), MPCB, Mumbai, Shri. Dilip Khedkar, SRO, MPCB, Kolhapur, Dr. V. M. Hilage (Trustee Member), Dr. M. M. Ali, Director and Dr. A. R. Kulkarni, Convener, Dr. S. D. Kadam, Organizing Secretary were present.



Plate No. 15: National Conference on the theme “Solid & Hazardous waste Management for Sustainable Development” on 9th November, 2017



Plate No. 15A: National Conference on the theme “Solid & Hazardous waste Management for Sustainable Development” on 9th November, 2017



Plate No.15B: National Conference on the theme “Solid & Hazardous waste Management for Sustainable Development” on 9th November, 2017

2.4.8 : Fire Crackers Testing during Diwali Festival :

Testing Noise intensity produced due to fire crackers of different companies during Diwali Festival is done every year in CSIBER campus. This testing of Noise levels was organised by the Department of Environment Management at CSIBER play ground in collaboration with Maharashtra Pollution Control Board (MPCB), Kolhapur on 13/10/2016, 10/10/2017 and 24/10/2018 at evening hours-4.00 pm.



Maharashtra pollution Control



Department of Environment and Management, CSIBER, Kolhapur



Plate No. 16: Fire Crackers Testing during Diwali Festival in collaboration with Maharashtra Pollution Control Board on 13thOctober, 2016



Plate No.17: Fire Crackers Testing during Diwali Festival in collaboration with Maharashtra Pollution Control Board on 10thOctober, 2017

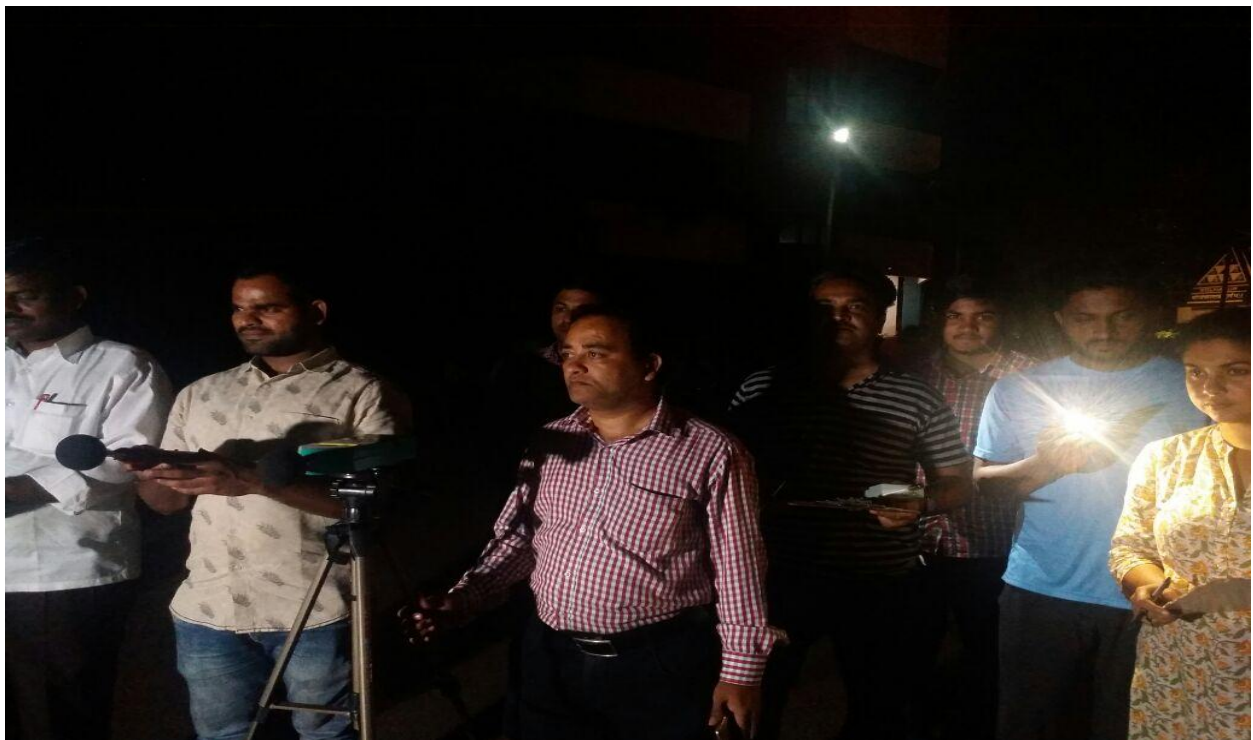


Plate No.18: Fire Crackers Testing during Diwali Festival in collaboration with Maharashtra Pollution Control Board on 24thOctober, 2018

CHAPTER-3: ENVIRONMENTAL AUDIT**3.1 Energy Audit:**

Energy management includes planning and operation of energy production and energy consumption units as well as energy distribution and storage. Objectives are resource conservation, climate protection and cost savings, while the users have permanent access to the energy they need. Energy management is the process of tracking and optimizing energy consumption to conserve usage in a building. The process of energy management include, collecting and analyzing continuous data, Identifying optimizations in equipment schedules, set ting points and flow rates to improve energy efficiency, Calculating return on investment. Units of energy saved can be metered and calculated just like units of energy delivered. Execute energy optimization as a solutions, to continue energy efficiency.

Energy management is the means to controlling and reducing a building's energy consumption, which enables owners and operators to, Reduce costs – energy represents 25% of all operating costs in an office building, Reduce carbon emissions in order to meet internal sustainability goals and regulatory requirements, Reduce risk – the more energy you consume, the greater the risk that energy price increases or supply shortages could seriously affect your profitability. With energy management solutions you can reduce this risk by reducing your demand for energy and by controlling it so as to make it more predictable.

Energy is an important parameter has to be study while going through green audit. We use different forms of energy such as electricity, LPG, petrol, diesel, wood etc. to carry out our day to day activities. On the background of climate change and Paris Agreement, India has intended to reduce its carbon emission by various ways. Reject, Reduce and Replace are the three R's for efficient use of energy. Electricity and LPG are the forms of energy majorly used in higher education institutes. Use of LED lights instead of incandescent lamp and tube lights is one of the important green practices followed by college. Along with use of LED lamps use of natural ventilation, natural light are useful practices to carry out in the college to reduce the use of electricity. Following is the data related to energy consumption and conservation practices analyzed under audit process of CSIBER Institute, Kolhapur.

3.1.1 Energy Consumption:

Table. 05: Electricity consumption by Meter No. 01, 266510578244

Month	Consumption (in units) 2016	Consumption (in units) 2017	Consumption (in units) 2018
January	1300	982	564
February	802	852	785
March	750	745	654
April	1330	1400	1500
May	1,400	1500	1600
June	785	800	940
July	1,222	1300	1400
August	700	1245	1563
September	1,002	1120	1200
October	1,140	1200	1100
November	1500	1355	1220
December	650	750	1100
Average	1048.4	1104.083	1135.5
		1095.99	

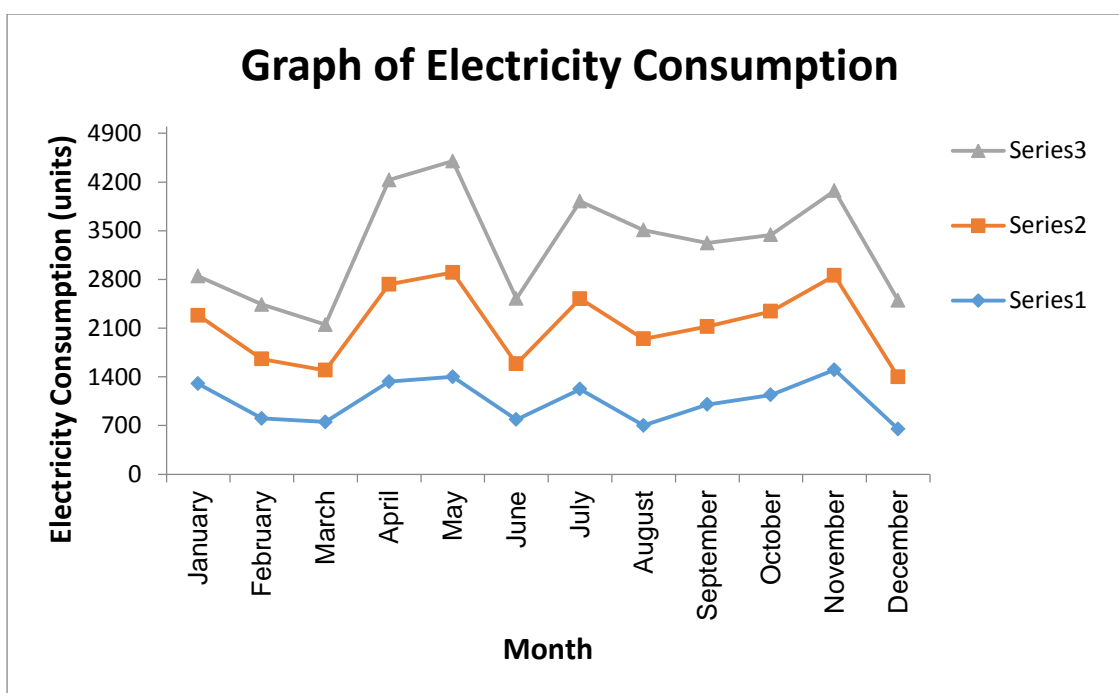


Fig. 01: Graph of Electricity Consumption of meter No. 266510578244

Table - 06: Electricity consumption by Meter No. 02, 266510577647

Month	Consumption (in units) 2016	Consumption (in units) 2017	Consumption (in units) 2018
January	1200	1120	1245
February	900	1100	1250
March	850	900	920
April	1210	1300	1250
May	1,200	1300	1350
June	900	1200	1350
July	1,110	1200	1310
August	800	960	1100
September	988	1150	1250
October	1200	1350	1420
November	1300	1258	1245
December	700	805	960
Average	1029.83	1136.917	1220.833
1129.19			

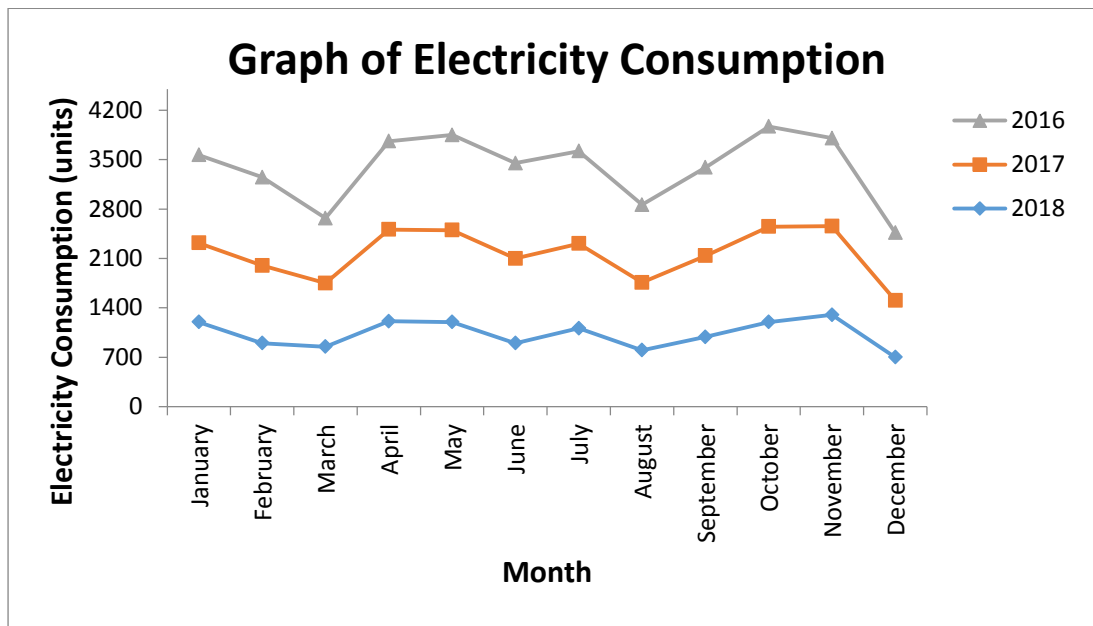


Fig. 02: Graph of Electricity Consumption of meter No. 266510577647

Electricity supplied from the Maharashtra State Electricity Board (Mahavitaran) is the main source of energy for the activities on the campus like illuminating rooms, operating fans computers, instruments, motor and for water coolers. It is depicted from above tables and graphs that the average electricity consumption by college is 1112.59 units per month. Diesel operated Green power Kirloskar generator is used as an alternating source of Energy during emergency conditions.



Plate No. 19: Green Power Generator operated on Diesel at Institute campus.

3.1.2 Energy Conservation:

Effective energy conservation measures are taken up by CSIBER Institute, Kolhapur these are.

1. Increased use of LED bulbs which consume less electrical energy against incandescent lamps.
2. Use of renewable energy like solar energy through Solar Photovoltaic Systems which converts light energy into electricity, solar street lamps and solar water heaters at hostels..
3. Creating awareness among students and staffs regarding power saving (Avoiding unnecessary use)

In CSIBER Institute Carbon footprints for indoor lighting in office building and in other rooms is taken into account. Use of LED and LCD lights reduces carbon footprints. Energy conversion efficiency of normal incandescent lamp is very low. LED lamps consume low power and are efficient in conversion electrical energy into light energy.

LED lamps does not contain mercury like chemicals and hazardous gases, they does not generate hazardous waste. Thus LED lamps emerge as the best option to reduce carbon footprints.



Plate No. 20: Replacement of incandescent bulbs by LED bulbs.



Plate No. 20A: Replacement of incandescent bulbs by LED bulbs.

3.1.3: Harnessing Solar Energy:

Solar Photovoltaic Applications (PVC):

CSIBER Institute has installed solar Photovoltaic panel for harnessing solar energy. Electricity Generated by solar panels is used in college premises.



Plate No. 21: Solar Photovoltaic Application at CSIBER Institute, Kolhapur.



Plate No. 21 A: Solar Photovoltaic Application at CSIBER Institute, Kolhapur.

Photovoltaics (PV) are the conversion of light into electricity using the photovoltaic effect is commercially utilized for electricity generation.

It to help to mitigate the global warming by CO₂ Solar PV has specific advantages as an energy source- once installed, its operation generates no pollution and no greenhouse gas emissions, it shows simple scalability in respect of power needs and silicon has large availability in the Earth's crust, although other materials required in PV system manufacture such as silver will eventually

constrain further growth in the technology. The use of PV as a main source requires energy storage systems or distribution.

Solar power is pollution-free during use, which enables it to cut down on pollution when it is substituted for other energy sources. PV installations could ideally operate for 100 years or even more, with little maintenance or intervention after their initial set-up, so after the initial capital cost of building any solar power plant, operating costs are extremely low compared to existing power technologies. Grid-connected solar electricity can be used locally thus reducing transmission/distribution losses.

Compared to fossil and nuclear energy sources, very little research money has been invested in the development of solar cells, so there is considerable room for improvement. Nevertheless, experimental high efficiency solar cells are already have efficiencies of over 40% in case of concentrating photovoltaic cells and efficiencies are rapidly rising while mass-production costs are rapidly falling.

3.1.4. Solar Water Heating Systems- *Converting Light Energy to Heat Energy:*

All three hostels of CSIBER are having the facility of solar water heater. Boy's hostel is having solar water heating system of about 5000 liters and girls hostel is having capacity of 3000 liters. Working women hostel situated in the campus is also having the 2000 liters' solar water heating capacity.



Plate No. 21B: Solar Water Heating Systems



Plate No.21 C: Solar Street lamp installed at CSIBER, Premises

3.1.5. Awareness through Sign Boards:

Sign boards regarding turning of lights, when not required are displayed near the electricity switch board at different locations in CSIBER premises. This activity will continuously create awareness and encourage to conserve electricity when it is not required.



Plate No. 22: Sign Boards display for Electricity Conservation

3.2 Water Audit:

Water plays a key role in every environmental system. Water is an amazing material with unique properties that affect life on earth. The earth holds the same water in the same quantity as it did when it was formed. The earth's water continuously circulates from the ocean to the atmosphere, then to the land and back. The atmospheric water cycle helps us to get a regular supply of fresh water every year. Thus fortunately the world's freshwater supply is continually collected, purified, recycled and distributed in the earth's hydrological cycle.

Water is so integral to life that we frequently take it for granted. Freshwater is an irreplaceable resource that we are managing poorly. Despite its importance, water is one of our most poorly managed resources. Even if the CSIBER Institute gets assured good amount of rainfall, the water is not retained in the ground due to the limitations like topographical features and seasonal rains. Hence regulation of water cycle by nature is proper. In the area covered by build structures and roads, the rainwater does not percolate into the ground. Hence water conservation measures should be adopted.

3.2.1: Water Consumption:

The institute has one bore well and two water connections of Kolhapur Municipal Corporation. The water from bore well is used for domestic consumption and KMC water connection is used for drinking purpose after filtration. The Institute have 5 tanks of 2000 liters capacity each for domestic consumption in laboratories and washrooms. Along with that, 1000 liters 1 tank and 500 liters 1 tank is there to fulfill the requirement of drinking water. For gardening purpose efficient irrigation systems are in use such as drip and sprinkler irrigation. These systems help to reduce the water consumption with proper growth of vegetation.

Table No. 07: Water Storage Facility at CSIBER

Sr. No.	Capacity	Number	Refill / day	Source	Purpose
1	2000 L	5	2 times	Ground water	Domestic use
2	1000 L	1	Once	KMC connection	Drinking purpose
3	500 L	1	Once	KMC connection	Drinking purpose



Plate No. 23: Water filter & Cooler at CSIBER Institute, Kolhapur.

3.2.2 Water Quality:

In Institute water is used for domestic and drinking purpose. The students which utilize water for drinking purpose must be monitored frequently to avoid the spread of waterborne diseases like Dysentery, Typhoid, Gastro etc. In the CSIBER Institute the water is supplied by corporation is treated in water filters and then filled in the water coolers for drinking purpose. Water quality of drinking water from cooler and mixed water is periodically monitored by staffs and routine water analysis is done from laboratory for necessary parameters. It is evident from the reports of water analysis for portability study that the required parameters are within the limits of BIS standards.

(Annexure-I)

3.2.3 Water Conservation:

Clean, fresh water is a limited resource. With all the severe droughts happening in the world, the limited supply of fresh water is becoming one of our most precious resources. Every person on earth needs water to survive. Without it, many of us would get sick and even result in death. While almost 70% of the Earth is made up of water, many parts of the world suffer from clean water shortage. Conserving water is important because it keeps water pure and clean while protecting the environment.

Conserving water means using our water supply wisely and be responsible. As every individual depends on water for livelihood, we must learn how to keep our limited supply of water pure and away from pollution. Keeping our water supply safe and pure will protect the water for the generations to come.

Many believe that our water supply is infinite. However, our supply is quite the opposite. It is important that we must not pollute your water as many do not realize just how important and scarce water is. Humans are not the only species on Earth that requires water for survival. In fact, every species on this planet needs water to live and survive. Without water, the aquatic life will stand no chance of survival. It is highly important that we save water that is essential to our sustainability.

3.2.3.1 Efficient use of water:

Enormous amounts of water is wasted, without reason, through leaking taps and open taps waste. In many cities, more than half the available supply is lost through these leakages and rotting of pipelines. In CSIBER Institute campus instruction boards are displayed at every washroom to avoid wastage of water. Students are instructed to close the taps when they are not in use. Taps and pipelines are regularly checked for leakages and repaired if needed. Leaking taps are immediately replaced by new handy taps.

3.2.3.2 Rain Water Harvesting:

Roof top rain water harvesting system has been installed for every establishment. The harvested water is collected in a tank and excess water is discharged in bore well for ground water recharge. As a result of this, the ground water availability for the institute is very good. Institute has possessed large terrace areas. About 63 % water requirement is met through our own source of bore well water and rainwater harvesting. Rain water harvesting is calculated based on the following figures and assumptions:

Total Roof Top Area: 2550 m²

Annual Average Precipitation: 1000 mm,

Effective Rainy Days: 69

Average Daily Precipitation: 14.49 mm / 0.014 m

Therefore, the volume of rainwater Harvested /Day : 2550 m² X 0.014 m = 35.7 m³.

On the basis of above assumption rain water harvested in 1 Day is 35.7 m³ X 1000 = 35,700

Liters.

Rain water harvesting is done by collecting and storing rain water. This is very effective method for collection of pure water for many cities. The rain water that falls on the roof can be collected, filtered and stored. As Kolhapur is getting assured rainfall surprisingly large amount of water can be collected in this way. Rain Water harvesting is also done at CSIBER Institute Kolhapur. Harvested rainwater is stored in tanks, and used in laboratories and whenever required.



Plate No. 24: Rain water collection and storage at CSIBER Institute.



Plate No. 24 A: Rain water collection and storage at CSIBER Institute.

Harvested roof top rainwater is also used is used in washrooms and for recharging of ground water in campus.

3.3 Air and Noise Quality :

Air and noise quality plays an important role in student's concentration and ability to learn. In noisy environment it is difficult to focus on the subject for students and also it is difficult to teaching faculty. Furthermore, noise pollution it can cause an increase in blood pressure, hypertension, and other stress-related health issues. In many cases, noise pollution can cause a disturbance in a

person's state of mind, which further causes disturbance in sleep pattern, stress, aggressiveness, and other related issues. In very noisy environment sometimes teacher has to talk very loudly that he or she may suffer from occupational hazards like pain in throat. As the location of college is in the in the city so there is such sources to create pollution of air and noise. Samples for air quality testing and noise level measurement are done. The values of air and noise pollution parameters are observed within the prescribed limits. **(Annexure- II & III)**

These parameters are slightly elevated in the campus but are under the prescribed limit of CPCB. Noise level inside the college is below the limit and in suitable range. The college has planted some trees and planning to plant some more to screen the noise and to filter the suspended particulate matters.

3.4 Green Cover :

The college has planted many trees in the campus by students and faculty members. Though the Institute has limitation of open space, the planting is done inside the pots and in available open space. Hostel campus is another space available for tree plantation where students has planted trees. Following is the list of plants with year of plantation. Total 45 plant species are planted in college, hostel campus. Many ornamental and medicinal plants are planted in campus.



Plate No.25: View of Green Campus



Plate No. 25A : View of Green Campus



Plate No. 25B : View of Green Campus



Plate No. 25C : View of Green Campus

Table No. 08 : List of Plant Diversity at CSIBER Institute, Kolhapur

Sr. No.	Common Name in English	Common Name in Marathi (Local Name)	Botanical Name	Uses	Total Number of Plants
1	Almond tree	Badam	<i>Terminaliacatappa</i>	Show	2
2	Ashoka Tree	Ashoka	<i>Saracaasoca</i>	Furniture	20
3	Australian pine tree	Suru	<i>Casuarinaequisetifolia</i>	Furniture, Fuel	1
4	Bakphul	Shewari	<i>Sesbaniagrandiflora</i>	Fuel, Animal Fodder	32
5	Banyan	Vad	<i>Banyan</i>	Cultural, Medicine	2
6	Bird Cherry	Bird Cherry	<i>Prunusalbus</i>	Show	1
7	Camachile tree	Vilayati Chinch	<i>Pithecellobiumdulce</i>	Medicine, Fruits	1
8	Caster Seed	Erand	<i>Ricinuscommunis Linn</i>	Medicine	17
9	Coconut tree	Naral	<i>Cocosnucifera</i>	Medicine, Fruits, Oil	5
10	Cup and Saucer Plant	KapBashi Plant	<i>Cobaeascandens</i>	Show	2
11	Curry Tree	Kadipatta	<i>Murrayakoenigii</i>	Vegetable	1
12	Custard Apple	Seetafal	<i>Annona reticulate</i>	Fruits	1
13	Drumstick tree	Shevga	<i>Moringaoleifera</i>	Vegetable	3
14	Golden trumpet Vine	Allamanda	<i>Allamandacathartica,</i>	Ornamental	1
15	Henna	Mehandi	<i>Lawsoniainermis</i>	Medicine	3
16	Holy Basil	Tulas	<i>Ocimumtenuiflorum</i>	Medicine	7
17	Indian fig tree	Umbar	<i>Ficusracemosa</i>	Medicine, Fruits	7
18	Jack fruit	Fanas	<i>Artocarpusheterophyllus</i>	Fruits	2
19	Lantana	Ghaneri	<i>Lantana camara</i>	Medicine	1
20	Lemon tree	Limbu	<i>Citrus limon</i>	Vegetable	1
21	Mango	Amba	<i>Mangiferaindica</i>	Fruits	2
22	Neem tree	Kadulimb	<i>Azadirachtaindica</i>	Furniture, Fuel	11
23	Nilgiri	Nilgiri	<i>Eucalyptus sp.</i>	Fuel	3
24	Palm	Taaddvrukssh	<i>Arecaceae</i>	Ornamental	2
25	Papaya	Papai	<i>Caricus papaya</i>	Fruits	1
26	Peepal Tree	Pimpal	<i>Ficusreligiosa</i>	Medicine, Cultural	2
27	Pomegranate	Dalimb	<i>Punicagranata</i>	Fruits	1
28	Rat Killer Plant	Undir Mari	<i>Gliricidiasepium</i>	Furniture, Medicine	16
29	Rubber	Rubber	<i>Heveabrasiliensis</i>	Ornamental	1
30	Teak tree	Sagwan	<i>Tectonagrandis</i>	Furniture	53
31	Kanchan	Kanchan	Bauhinia Variegata (Fabaceae)		10
				Total	202

3.5 Solid Waste Management:

Proper solid waste management is an essential part of society's public and environmental health. Solid waste generation and its management is a burning issue in current days. The rate of generation of solid waste is very high and yet we do not have adequate system to manage the generated waste. Unscientific handling of solid waste can create threats to public health, unintended environmental safety issues. So, it is necessary to manage solid waste properly to reduce the load on waste management system. The purpose of this audit is to find out the quantity, volume, type and current management practices of solid waste generated in the CSIBER Institute campus. This will help for further solid waste management and to go for green campus development.

3.5.1 Biodegradable Waste :

The main source of biodegradable waste in educational institute is generally from student's tiffin and eatables. Garden waste generated from pruning of trees, fallen leaves, etc. is also important source of biodegradable waste in CSIBER Institute Campus. The Institute has taken good care of biodegradable waste by creating vermicomposting pit for garden waste. The garden waste is collected and kept for vermicomposting at a designed site. The prepared waste is then utilized for gardening purpose.

Vermicomposting reduces waste sent to our dump sites, reduces environmental pollution. When organic wastes decomposes at dump sites in the absence of oxygen, a hazardous liquid known as leachate (the liquid that runs from a dump) and odour are produced.

Vermicompost helps to improve soil structure, texture, porosity, water holding capacity, drainage, and aeration and reduce erosion in addition to plant nutrient supply. It improves plant growth by enabling the growth of new shoots and leaves, thereby increasing productivity. It helps to buffer the pH of the soil. In CSIBER the vermicompost formed at plant is applied to the college garden plants.

3.5.2 Paper Waste :

Major part of the solid waste generated at the college campus is a paper. Though paper is biodegradable material, it is having good potential of recycling thus will help in conserving the resources and trees indirectly. The CSIBER Institute Kolhapur follows the green practice by giving the paper waste to recycling purpose. The waste paper is sold to specific vender. Other green practices like use of one sided paper, paperless activities like e-mailing all notices instead of printing it of paper, putting the information on what's app groups are also practiced in the college to reduce the use of paper. Thus, Reduce, Reuse and Recycle, 3 R principles of solid waste management are followed in the CSIBER Institute for waste management.

3.5.3 Waste Water Treatment:

Institute has taken serious steps in liquid waste management in the campus. The liquid wastes generated in the campus include Sewage, Laboratory, hostel, wash rooms, urinals, basins and canteen effluent waste. For the effective treatment of liquid waste generated from all above sources, Institute has constructed two well-designed Sewage Treatment Plants (STP) which can treat 25 m³/day of sewage. The STP installed near Central Library having design capacity of 10 m³/day in which sewage from toilets is screened and collected in Aeration Tank which is equipped with Jet Aerator. In this process microbial activity will degrade the organic matter in the effluent in to minerals and water. Microbial activity will be enhanced by using organic culture in aeration tank. This will help in reduction of all the parameters like BOD, COD, Suspended Solids, etc. to enable reuse of this water selectively. We do not use any chemicals for wastewater treatment. Our campus is a chemical-free zone. The parameters of the treated water are far better than effluent parameters specified by Maharashtra Pollution Control Board (MPCB). While in another STP installed near Ladies Hostel to have eco-friendly and natural treatment, this plant is designed based on the biological treatment concept, this means naturally occurring microbes (which are present in influent water itself) removes or degrade the organic matter present in the effluent and at the end clean water is available for the non-potable usage or to dispose safely in the drainage or river bodies as per the norms.

- a. Capacity of STP 1: 25 MLD
- b. Capacity of STP 2: 10 MLD



Plate No. 26: STP near Library (10 MLD)



Plate No. 26A: STP near Girl's hostel 25 (MLD)

3.5.4 Other Waste:

Other kinds of waste like e-waste, plastic waste, metal waste generated in the campus has serious unintended environmental consequences. In CSIBER Institute it is collected, stored and properly disposed off. Plastic and metal waste is sent for the recycling and recovery practices. Management of E- waste is done by the outsourced agencies. The vender comes and purchases the waste at contract rate. It creates revenue for college along with scientific management of waste.

CHAPTER 4.0 : BEST ENVIRONMENTAL PRACTICES

CSIBER Institute follow all possible green practices to conserve the nature and reduce its ecological footprints. Some of the green practices are discussed below.

4.1. No Vehicle Day :

The college practices No Vehicle Day on last Saturday of every month to reduce carbon footprints. On this day the faculty and students try to come by walk, by bicycle or by public transport and keep the college campus clean and free from air and noise pollution.



Plate No. 27: View of No Vehicle Day on campus



Plate No. 27 A: View of No Vehicle Day on campus

4.2. Ganesh Moorti and Nirmalya Daan During Ganapati Visarjan:

During Gauri Ganesh festival, due to visarjan/emersion of Ganesh Moorti and Nirmalya in nearby water reservoirs is done by local people. This will add in the deterioration of water reservoirs. To avoid this Ganesh Moorti and Nirmalya Daan collection campaign is organized every year by College. Collected Moorti were given for recycling of material and Nirmalya is processed for composting.

4.3 Plantation:

Though the open campus is limited to college, college students and faculty follow plantation activity to nurture the affection towards nature among the students. Plantation has been done at empty places. Small plants like shrubs and herbs are planted in pots and kept inside the corridors of the college building.

CHAPTER- 5 : FINDINGS AND SUGGESTIONS:

After a thorough analysis of green practices and environmental aspects of CSIBER Institute the audit team has come with following findings and suggestions.

5.1 Findings :

- The Institute campus strictly follows green practices. All students, staff and faculty members participate actively in keeping campus clean and green.
- Though the campus is small the Institute has tried to keep it green by planting trees and landscaping in the premises.
- Solid waste segregation and management is followed in the premises.
- Vermicomposting is done for biodegradable waste.
- Drinking water quality is maintained as per the standards by frequent water quality analysis at Environment laboratory.
- Rain water harvesting has been done in the Institute campus, harvested rain water is used in Institute laboratories and other purpose.
- Energy conservation is done through the harnessing of solar energy and through the use of energy efficient appliances.

5.2 Suggestions :

- More frequent testing of drinking water is required to maintain drinking water quality.
- More paperless activities like E.mail/ whatsapp should be followed which are ecofriendly.
- Installation of Biogas plant and additional composting units should be done at ladies hostel.
- Whenever possible additional harvesting of rain water and recharging of ground water should be done to avoid runoff and wastage of rain water.

Overall the performance of CSIBER is good in green initiative front and can take some more green initiatives for sustainable future.



CSIBER Trust's
**CHHATRAPATI SHAHU INSTITUTE OF BUSINESS EDUCATION
AND RESEARCH (CSIBER), KOLHAPUR**

An Autonomous Institute under UGC, New Delhi and Shivaji University, Kolhapur
College with Potential for Excellence (CPE) IIIrd Phase
Reaccredited by NAAC with 'A+' Grade (CGPA: 3.55)



DEPARTMENT OF ENVIRONMENT MANAGEMENT

Dr. C. S. Dalvi
Director

Late Dr. A. D. Shinde
Founder, CSIBER Trust

Dr. R. A. Shinde
Secretary & Managing Trustee

Annexure-I

WATER ANALYSIS REPORT

Name of the party : Chhatrapati Shahu Institute of Business Education and
Research (CSIBER), University Road, Kolhapur.
Sample collected by : Staff
Nature of sample : Cooler Water
Sample collected on : 09/01/2016

Sr. No.	Parameter	Value	Highest Desirable Limit	Maximum Permissible Limit
1	pH	7.40	7.0-8.5	6.5-9.2
2	Total Hardness	60.00	100.00	500.00
3	Calcium	14.00	75.00	-
4	Magnesium	5.0	50.00	150.00
5	Chlorides	42.24	200.00	600.00
6	MPN/100ml	00	00	10

NOTE: All values unless otherwise stated are in mg/l ; except pH.

MPN: Most Probable Number of Coliform Bacteria

Analysed by

(Mr. R. B. Hunashal)



Checked by

(Mr. S. S. Gaddi)



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WATER ANALYSIS REPORT

Name of the party : Chhatrapati Shahu Institute of Business Education
and Research (CSIBER), University Road, Kolhapur.
Sample collected by : Staff
Nature of sample : Cooler Water
Sample collected on : 11/01/2017

Sr. No.	Parameter	Value	Highest Desirable Limit	Maximum Permissible Limit
1	pH	7.11	7.0-8.5	6.5-9.2
2	Total Hardness	50.00	100.00	500.00
3	Calcium	13.06	75.00	-
4	Magnesium	4.56	50.00	150.00
5	Chlorides	50.45	200.00	600.00
6	MPN/100ml	00	00	10

NOTE: All values unless otherwise stated are in mg/l ; except pH.

MPN: Most Probable Number of Coliform Bacteria

Analysed by

(Mr. R. B. Hunashal)



Checked by

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WATER ANALYSIS REPORT

Name of the party : Chhatrapati Shahu Institute of Business Education
and Research (CSIBER), University Road, Kolhapur.
Sample collected by : Staff
Nature of sample : Cooler Water
Sample collected on : 12/01/2018

Sr. No.	Parameter	Value	Highest Desirable Limit	Maximum Permissible Limit
1	pH	7.06	7.0-8.5	6.5-9.2
2	Total Hardness	45.00	100.00	500.00
3	Calcium	12.06	75.00	-
4	Magnesium	4.16	50.00	150.00
5	Chlorides	43.24	200.00	600.00
6	MPN/100ml	00	00	10

NOTE: All values unless otherwise stated are in mg/l ; except pH.

MPN: Most Probable Number of Coliform Bacteria

Analysed by

(Mr. R. B. Hunashal)



Checked by

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Annexure-II

AIR MONITORING REPORT

Name of the Party : Chhatrapati Shahu Institute of Business Education
and Research (CSIBER), University Road, Kolhapur.

Monitoring Station : Institute Campus

Monitoring Period : 10.00 am to 6.00 pm (08 hrs)

Instrument Used : High Volume Sampler (NPM-HVS)

Monitoring Type : Ambient Air Monitoring

Monitoring Date : 09/01/2016

Sr. No.	Parameter	Values	CPCB Standards (24 hrs.)
		August 09/08/2021	
1	Suspended Particulate Matter (SPM)	26.00	100
2	Respirable Particulate Matter (RSPM)	15.50	50
3	Oxides of Nitrogen (NO _x)	13.60	30
4	Sulphur Dioxide (SO ₂)	2.53	30

NOTE: All values are in ug/m³

Monitoring carried out by


(Mr. R. B. Hunashal)



Checked by


(Mr. S.S. Gaddi)



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AIR MONITORING REPORT

Name of the Party : Chhatrapati Shahu Institute of Business Education
and Research (CSIBER), University Road, Kolhapur.

Monitoring Station : Institute Campus

Monitoring Period : 10.00 am to 6.00 pm (08 hrs.)

Instrument Used : High Volume Sampler (NPM-HVS)

Monitoring Type : Ambient Air Monitoring

Monitoring Date : 11/01/2017


Sr. No.	Parameter	Values	CPCB Standards (24 hrs.)
		August 09/08/2021	
1	Suspended Particulate Matter (SPM)	28.00	100
2	Respirable Particulate Matter (RSPM)	10.50	50
3	Oxides of Nitrogen (NO _x)	8.50	30
4	Sulphur Dioxide (SO ₂)	4.20	30

NOTE: All values are in ug/m³

Monitoring carried out by


(Mr. R. B. Hunashal)

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AIR MONITORING REPORT

Name of the Party : Chhatrapati Shahu Institute of Business Education
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Monitoring Station : Institute Campus

Monitoring Period : 10.00 am to 6.00 pm (08 hrs)

Instrument Used : High Volume Sampler (NPM-HVS)


Monitoring Type : Ambient Air Monitoring

Monitoring Date : 12/01/2018


Sr. No.	Parameter	Values	CPCB Standards (24 hrs.)
		August 09/08/2021	
1	Suspended Particulate Matter (SPM)	32.00	100
2	Respirable Particulate Matter (RSPM)	12.40	50
3	Oxides of Nitrogen (NO _x)	11.22	30
4	Sulphur Dioxide (SO ₂)	3.77	30

NOTE: All values are in ug/m³

Monitoring carried out by


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Annexure- III

NOISE MONITORING REPORT

Name of the Party : Chhatrapati Shahu Institute of Business Education
and Research (CSIBER), University Road, Kolhapur.
Monitoring Station : Institute Campus
Instrument Used : Sound Level Meter (SLM 100)
Monitoring Type : Ambient Noise Monitoring
Monitoring Date : 09/01/2016

Sr. No.	Location	(Leq) Values in dB(A)
1	Principal Cabin	54.80
2	Staff Room	64.10
3	Administrative Office	62.80
4	Meeting Hall	42.00
5	Corridors	60.20
6	Class Room (out side)	58.80
7	Class Room (in side)	56.60
8	Library	44.50
9	Reading Room	40.80
10	IQAC Cell	40.20
11	Computer Lab	48.00
12	Chemistry Lab	50.80
13	Multipurpose Hall	40.10
14	Ladies Common Room	46.60
15	Backside campus	51.30
16	Campus(Near main gate)	60.60

Monitoring carried out by


(Mr. R. B. Hunashal)



Checked by


(Mr. S. S. Gaddi)



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NOISE MONITORING REPORT

Name of the Party : Chhatrapati Shahu Institute of Business Education
and Research (CSIBER), University Road, Kolhapur.
Monitoring Station : Institute Campus
Instrument Used : Sound Level Meter (SLM 100)
Monitoring Type : Ambient Noise Monitoring
Monitoring Date : 11/01/2017

Sr. No.	Location	(Leq) Values in dB(A)
1	Principal Cabin	45.80
2	Staff Room	52.10
3	Administrative Office	52.80
4	Meeting Hall	42.00
5	Corridors	58.00
6	Class Room (out side)	51.50
7	Class Room (in side)	50.60
8	Library	42.40
9	Reading Room	40.20
10	IQAC Cell	41.40
11	Computer Lab	41.20
12	Chemistry Lab	46.60
13	Multipurpose Hall	43.60
14	Ladies Common Room	44.80
15	Backside campus	52.50
16	Campus(Near main gate)	64.20

Monitoring carried out by


(Mr. R. B. Hunashal)



Checked by


(Mr. S.S. Gaddi)



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NOISE MONITORING REPORT

Name of the party : Chhatrapati Shahu Institute of Business Education
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Monitoring Station : Institute Campus


Instrument Used : Sound Level Meter (SLM 100)

Monitoring Type : Ambient Noise Monitoring

Monitoring Date : 12/01/2018

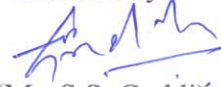
Sr. No.	Location	(Leq) Values in dB(A)
1	Principal Cabin	46.10
2	Staff Room	57.60
3	Administrative Office	58.60
4	Meeting Hall	41.56
5	Corridors	62.30
6	Class Room (out side)	54.50
7	Class Room (in side)	55.20
8	Library	45.40
9	Reading Room	42.60
10	IQAC Cell	42.70
11	Computer Lab	44.40
12	Chemistry Lab	48.50
13	Multipurpose Hall	42.50
14	Ladies Common Room	48.50
15	Backside campus	55.40
16	Campus(Near main gate)	62.40

Monitoring carried out by


(Mr. R. B. Hunashal)



Checked by


(Mr. S.S. Gaddi)