CSIBER

(An Autonomous Institute)

CPE (College with Potential for Excellence – Phase III) Status

Environmental Audit

(2020-21)

Chhatrapati Shahu Institute of Business

Education and Research, (CSIBER), Kolhapur

December, 2021

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

CERTIFICATE

This is to certify that, the Environmental Audit Report 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.

Prepared by

Dr. V. B. Patil

Ms. R. C. Padalkar | **Dr. Ms. P. M. Patil** | **Dr. Ms. R. R. Ingavale**

Certified by

Er. D. S. Mali
Head,
Department of Environment Management

Date: 29/12/2021

Place: Kolhapur

CONTENTS

LIST OF TABLES

LIST OF PLATES

ENVIRONMENTAL AUDIT

1. 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.

2. Environmental Mission

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

3. Details of the Institution

3.1. Name and Address of the Institute:

Table No. 1 : Name and Address of the Institute:

Name	Chhatrapati Shahu Institute of Business Education and Research, (CSIBER) Kolhapur
Address	Shivaji University Road, Kolhapur 416004
City	Kolhapur
State	Maharashtra
Website	www.siberindia.edu.in

3.2. Coordinates:

16°41’14” N, 74°15’08” E

Elevation: 590 Mt MSL

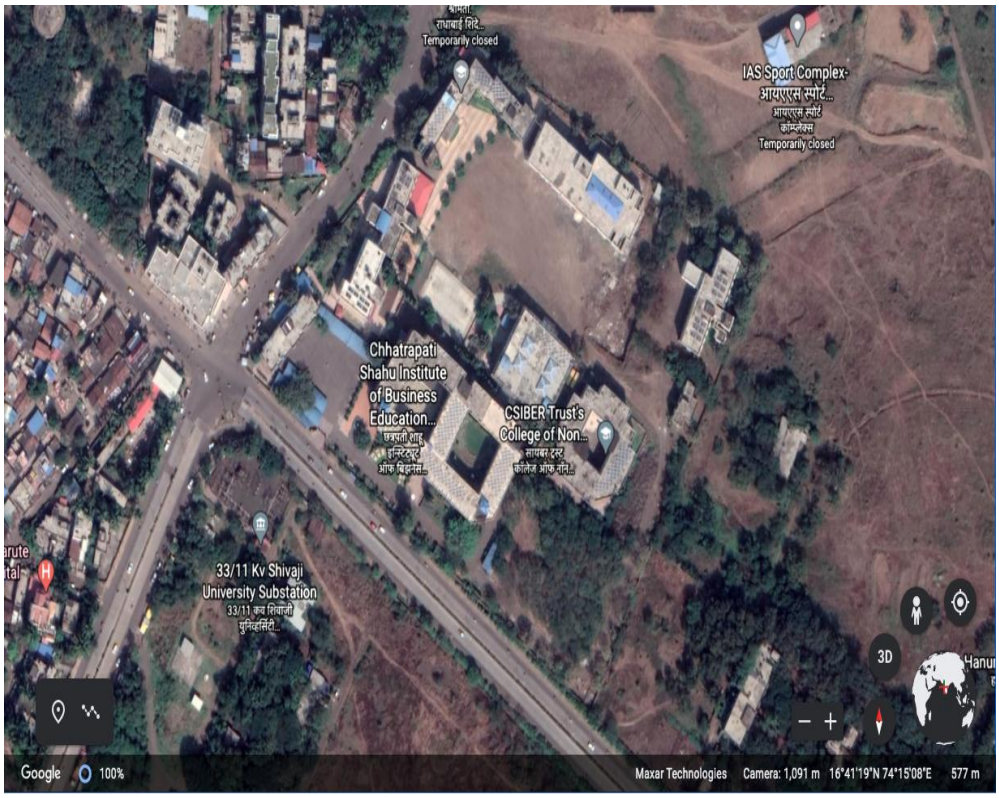

Plate No.01: Google Earth Image of CSIBER, Kolhapur

3.3. Details of CSIBER Location:

Table No. 02: 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**	

3.4. Land Use Pattern:

Table No. 03 : Land Use Pattern

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**

Note : Land use patterns as per Google map

4.0 Environmental Aspects:

4.1. Water Management

One of the important aspect of environment management is water management. The Institute has both, ground water and surface water supply. The maximum consumption of water is in girls, boys and working women hostel. The use of water in canteen is also considerable. The Institute has taken initiative for conservation of water by installing rain water harvesting system. Along with that, quality of drinking has maintained by installing water purifiers and been tested periodically. The quantitative details of the water management are as follows.

4.1.1. Water Consumption

The institute has one bore well and 2 Kolhapur Municipal Corporation water connections. 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.4 : 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

4.1.2. 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 m^2

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 m^2 X 0.014 m = 35.7 m^3.

On the basis of above assumption rain water harvested in l Day is 35.7 m^3 X 1000 = 35,700 Liters.

Plate No.2: Rain Water Harvesting at CSIBER Premises

4.1.3. 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 m^3/day of sewage. The STP installed near Central Library having design capacity of 10 m^3/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. **(Annexure- II)**

a. Capacity of STP 1: 25 MLD

b. Capacity of STP 2: 10 MLD

Plate No.3: STP near Library (10 MLD)

Plate No.4 : STP near Girl's hostel 25 (MLD)

4.1.4.Water Quality

The Department of Environment Management has a well established water testing laboratory. The water from each water filter is tested periodically and corrective action is taken on that. **(Annexure-I)**

4.2. Waste management

Along with water, waste management is another important aspect in environment management. Various types of wastes generated in the campus are handled carefully and managed scientifically. The details of waste management are as follows.

4.2.1. Solid Waste Management

The Institute aims for an eco friendly campus and to bring this in reality; institute has taken various initiatives in which the campus of the institute has already declared as plastic free zone. Plastics, paper and food waste has been segregated at the initial level only and it has collected in Bins which are placed in different parts of the campus. Apart from this reusable steel plates and glasses are used in the canteen. Kolhapur Municipal Corporation (KMC) collects solid waste from the campus regularly through its solid waste collection vehicle for the further process. Institute always encourage and motivate its staff and students to use of eco friendly bags and files and have taken the initiative to take up campus cleaning programme through extension activities.

- The biodegradable waste generated from the garden is collected in composting bins. Burning of the waste is strictly avoided. Composting is done by turning the waste intermediately to avoid Methane production could which be generated from anaerobic process. Prepared compost is used for the garden.
- Other waste generated in the institute like, garbage is collected and transferred to municipal corporation for further treatment.
- Large amount of paper waste is generated in the institute especially from exam department. The answer sheets are stored for five years after that they get chopped and sold to the vender for recycling purpose.
- In every department use of one side papers for printing and rough work is encouraged and made compulsory. This practice saves large number of new papers and ultimately reduces the ecological footprint.
- In ladies hostels, installation of incinerator is proposed for disposal of used sanitary napkins.

4.2.2. Hazardous Waste Management

- Generation of hazardous waste is very less in the institute. The only source of generation of hazardous waste is laboratory chemicals and inverter batteries.
- In laboratory, use of hazardous waste is controlled for only essential purpose and that is also under the supervision of expert.
- The inverter batteries when need to be replaced it is being given to the same vender for final disposal.

4.2.3. E-waste Management

In the consideration of waste management, Institute has also given priority for e-waste management in the campus. With respect to e-waste, Institute has unused computers and their peripherals are the only source of electronic waste on the campus. In the Institute as on date more than 500 computers under use for practical and office work. Institute follows the policy for e-waste management in which reuse of old computers by donating them to other schools under the trust and old ones replaced with new under the buyback scheme. As well as every effort is made to repair and use electronic and electrical devices. Piling up of e-waste is discouraged in the campus.

4.3. Air Quality Monitoring :

Air quality is important aspect for the health of the students and staff members. Institute has facility to check the ambient air quality with the help of RDS and PM 2.5 for the parameters, RSPM, SO_2 and NO_x. Along with that the noise monitoring has also been done periodically with calibrated Sound Level Meters. The details of air and noise qualities are enclosed. **(Annexure-III)**

4.4 : Noise Level Monitoring :

Noise level at CSIBER campus is continuously monitored by using Noise level meter. Noise Level Measurements are done at different locations in the premises. **(Annexure-IV)**

Every year testing of fire cracker for their noise levels is done by Department of Environment Management, CSIBER in collaboration with Maharashtra Pollution Control Board. Before Diwali festival this activity is done by MPCB to permit fire crackers use in Kolhapur city & to ban the fire crackers creating noise above the limit.

PlateNo.5 : Testing of fire crackers at CSIBER campus

5.0 Suggestions:

Water Management :

- Timely maintenance of plumbing system will reduce the leakage losses.
- More frequent analysis of drinking water quality especially in rainy season will increase the assurance of safe drinking water.

Solid waste Management:

- Vermicomposting instead of regular composting will increase the efficiency and reduce the time of composting. Prepared vermin-compost can be used for campus garden.
- Towards paperless office: Cutting into paper usages by shifting from hard office communication to soft communication by using emails, whatsapp groups etc. It will reduce the single use paper use.
- Submission of soft assignments from students can also reduce the use of paper.

Maintenance of Air Quality:

- Plantation of indoor plants in corridors, staircases will decrease the indoor air pollution and also increase the aesthetic value of premises.
- Plantation of dust and noise screening tree will help to reduce the particulate matter pollution and reduce the noise intensity.
- More frequent analysis of ambient air quality will help to monitor the air pollution intensity in the campus.

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Annexure- I

WATER ANALYSIS REPORT

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

Sample collected by : Our Staff

Nature of sample : Drinking Water

Sample collected on : 24/11/2021

Sample received on : 24/11/2021

Sr. No.	Parameter	Value	Indian Standards For Drinking Water (IS:10500:2012)	
			Requirement (Acceptable Limits)	Permissible Limits (in the absence of Alternative Sources)
1	pH	7.71	6.5-8.5	No relaxation
2	Total Hardness	48.00	200.00	600.00
3	Calcium	10.43	75.00	200.00
4	Magnesium	5.36	30.00	100.00
5	Chlorides	19.88	250.00	1000.00
6	MPN/100ml	00	00	00

NOTE: All values unless otherwise stated are in mg/l; except pH.
MPN: Most Probable Number of Coliform Bacteria.

Analysed by
(Mr. V. B. Kadam)
(Lab. Assistant)

CHHATRAPATI SHAHU INSTITUTE OF BUSINESS EDUCATION AND RESEARCH TRUST ★ REG. NO E/935 EST. 1976 योजकस्तत्र दुर्लभः

Checked by
(Mr. S. S. Gaddi)
(Lab. Assistant)

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Annexure- II

WASTEWATER ANALYSIS REPORT

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

Sample collected by : Our Staff

Nature of sample : STP Water (Outlet)

Sample collected on : 24/11/2021

Sample received on : 24/11/2021

Sr. No.	Parameter	Values
1	pH	7.56
2	Total Dissolved Solids	186.00
3	Oil and Grease	03.00
4	Chlorides	42.48
5	Chemical Oxygen Demand	24.00
6	Biological Oxygen Demand, 3day @27^{0}C	6.50

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

Analyzed by
(Mr. V. B. Kadam)
(Lab. Assistant)

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Checked by
(Mr. S. S. Gaddi)
(Lab. Assistant)

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Annexure - III

AIR MONITORING REPORT

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

Monitoring Station : CIBER Campus

Monitoring Period : 8.00 am to 8.0 am (24 hrs)

Instrument Used : Respirable Dust Sampler (Envirotech APM 460BL)

Monitoring Type : Ambient Air Monitoring

Sr. No.	Parameter	Values November 24/11/2021	CPCB Standards (24 hrs)
1	Suspended Particulate Matter (SPM)	34.49	100
2	Respirable Particulate Matter (RSPM)	22.26	50
3	Oxides of Nitrogen (NO_x)	12.66	30
4	Sulphur Dioxide (SO_2)	2.21	30

NOTE: All values are in ug/m^3

Monitoring carried out by

(Mr. R.B. Hunashal)
(Lab. Assistant)

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Checked by

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Annexure- IV

NOISE MONITORING REPORT

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

Monitoring Station : CSIBER Campus

Instrument Used : Sound Level Meter (SLM 100)

Monitoring Type : Ambient Noise Monitoring

Monitoring Date : 24/11/2021

Sr. No	Location	(Leq) Values in dB(A)
1	Director Cabin	42.00
2	Staff Room	46.80
3	Administrative Office	50.60
4	Meeting Hall	40.00
5	Corridors	51.20
6	Class Room (outside)	48.80
7	Class Room (in side)	46.50
8	Library	42.70
9	IQAC Cell	41.20
10	Environment Lab	51.40
11	Computer Lab	44.50
12	Late Radhbai Shinde Memorial Hall	41.00
13	Canteen	50.20
14	Ladies Common Room	42.00
15	Play Ground	41.10

Monitoring carried out by

(Mr. R.B. Hunashal)
(Lab. Assistant)

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Checked by

(Mr. S.S.Gaddi)
(Lab. Assistant)