CRITERION-VII
INSTITUTIONAL VALUES AND BEST PRACTICES

***QlM: 7.1.3** Quality Audits on Environment and Energy Regularly Undertaken by The Institution (10).*

Content:

Shri Shivaji Education Society, Amravati's

SHRI SHIVAJI SCIENCE & ARTS COLLEGE

CHIKHLI DIST. BULDANA

www.shivajichk.ac.in email : shivajichk@rediff.com ☎ (07264) 242088

Re-accredited by NAAC with B++ Grade [CGPA - 2.82]

Shri Harshawardhan P. Deshmukh
President
Shri Shivaji Education Society, Amravati

Dr. Omraj S. Deshmukh
Principal
M.Sc., Ph.D.

Ref.No. SSSASC/IQAC/2022. **Date: 31/8/2022**

Self Declaration

This is to certify that, the information, reports, true copies of the supporting documents, numerical data, and weblinks furnished in this file are verified by IQAC and the head of the institution and found correct.

Hence this certificate is issued.

Pochhi
Dr. V. U. Pochhi
Coordinator
IQAC,Shri Shivaji Sci.& Arts College,Chikhli Dist.Buldana

Shri Shivaji Sci. & Arts College Chikhli, Dist. Buldana

Dspeshmukh
Dr. Omraj S. Deshmukh
PRINCIPAL
Shri Shivaji Science & Arts College, Chikhli, Dist.Buldana

1) Green Audit/Environment Audit/Report

Organisation	*Environmental management consultant, Environment & Forest Education Center & Environment Consultancy, Akola (M.S.)*
Name of External Expert	*Uday Vaze*

Shri Shivaji Education Society's

Shivaji Arts & Science College

Chikhli, District : Buldhana, 443201, India

INTERNAL GREEN & ENVIRONMENT AUDIT REPORT

2019 - 2020

Prepared by:

Internal Green & Environment Audit Committee

Shivaji Arts & Science College

Chikhali, District Buldhana

Internal Green and Environment Audit Committee, Shivaji Arts & Science College, Chikhali

Acknowledgement

Internal Green and Environment Audit Committee would like to thank the management of Shri Shivaji Education Society's Shivaji College of Arts & Science College, teaching & non-teaching staff, students, parents and adjoining community for extending their co-operation and valuable inputs in collection of various facts and figures. This is a significant step taken by the college and their efforts towards their contribution in conservation of resources, a worth mentioning here.

Internal Green and Environment Audit Committee also wish to thank EFEC for helping Internal Green and Environment Audit Committee in organizing 'Workshop on understanding Environment Management System' and appreciate their cooperation for extending their knowledge through out the process of Internal Green and Environment Audit program. Internal Green & Environment Audit Committee express gratitude towards valuable guidance & contribution made by various NGOs, individuals and Chikhali Nagar Palika in contributing their knowledge and expertise in compiling technical data required in preparation of audit. Our special thanks are due to the Principal, Dr. O. S. Deshmukh of Shivaji Arts & Science College, Chikhali for giving us valuable guidance.

About Shivaji Arts & Science College

Shivaji Arts & Science College, Chikhali was established in 1967 to serve ever growing educational needs of the society. Dr. Panjabrao Deshmukh and Dalitmitra Pandharinath Patil came together under the banner of Shri Shivaji Education Society, Amravati. Adv. R. D. Bhonde 'Sarkar' and Dalitmitra Santoshrao Patil along with other socio-political leader helped a lot to establish this institution. The farmers also contributed in this holy and sacred task. It has upgraded itself with the introduction of Arts Faculty at UG level in 1971, Commerce at UG level in 1989 and PG in Commerce in 2009, PG in Science and Arts in 2010. English medium UG commerce has started in 2011. College added research degrees program such as M.Phil. and Ph.D. in Science and Commerce. YCMOU centre is also established in 2012. Also new subjects like Music, Home Economics and Bioinformatics are added at degree level. At Junior level fresh water fish and music are added. UGC sponsored career Oriented Program like, Biotechnology, finance Management and Aquaculture, Communication skills in English, Instrumentation and Fashion Designing also opened to develop skills at 3 tier level. Human Right Education and Duties Course have been started for holistic development. The discipline and dedication of management, co-operation and help extended by teaching and Non-teaching staff and local people have played instrumental role in bringing the institution to it's present status and structure. With the values, transparency, honesty and integrity the college promises to be one of the most exemplary institution in the region.

Google map satellite photo of Shivaji Arts & Science College, Chikhali
Latitude : 20°21'02.4"N - Longitude : 76°15'53.4"E

Shri Shivaji Education Society's

Shivaji Arts & Science College

Chikhali, District Buldhana, Maharashtra

IGEAC : Internal Green and Environment Audit Committee

Sr. No.	Name	Designation	Sign
01	Dr. O. S. Deshmukh	Principal / Chairman	
02	Dr. V. U. Pochhi	IQAC Co-ordinator IGEAC	
03	Dr. J. J. Jadhav	Political Science, Member, IGEAC	
04	Dr. M. T. Nikam	Zoology, Member, IGEAC	
05	Prof. S. N. Mendhe	Microbiology, Member, IGEAC	
06	Prof. S. L. Kumbhare	Chemistry, Member, IGEAC	
07	Prof. N. B. Thakre	Physics, Member, IGEAC	
08	Prof. S. A. Salve	Mathematics, Member, IGEAC	
09	Dr. A. B. Kadam	Comp Science, Member, IGEAC	
10	Dr. S. I. Jukkalkar	English, Member, IGEAC	
11	Dr. G. G. Malte	Marathi. Member, IGEAC	
12	Mr. Devendra Telkar	External Member, IGEAC NGO : Srushti Vaibhav	Telkar
13	Mr. Uday Vaze	External Member, IGEAC Director : EFEC	Uday P. Vaze.
14	Dr. R. P. Gawai	Community Member, IGEAC	
15	Mr. Ajay jadhao	Member, IGEAC Student's Representative	
16.	Ku. Janhavi Joshi	Member, IGEAC, Student's Representative	

The Internal Green & Environment Audit Committee authenticate observations, records and recommendations in this report.

Internal Green & Environment Audit Key Steps:

Pre Audit Training Workshop : June 2019 (Online)
Questionnaire Data Collection : July 2019 to March 2020
Draft report completed : May 2020 (Online)
Review Meeting : May 2020 (Online)
Final report completed : June 2020

Synthesis Document

Internal Green and Environment Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental factors of various establishments. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the ambience.

Thus it is imperative that the college evaluate its own contributions towards a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. Internal Green and Environmental Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council.

The Internal Green & Environment Audit Committee was formed. The committee decided to conduct Internal Green and Environmental Audit of the college in June, 2019. The motive of the internal audit was to make sure that the practices followed in the campus are environment friendly. Internal Green and Environment Audit is a systematic assessment of day to day activity with special focus on how resources are utilized with minimum impact on environment.

The questionnaire was obtained with the help of external member of the Internal Green & Environment Audit Committee. It was observed and evidence were brought together 'what degree to which the departments are in compliance with the applicable regulations, policies and standards and to ensure that the development of the college aims at sustainable development and at the same time keeping the college campus green and pollution free.

The methodology was simple and started right from collecting data, insight inspection, evaluation, computation, conducting physical survey and review of the relevant documentation.

Statement of Assertion

The Internal Green & Environment Audit Committee has adopted the audit procedure that meets the terms of International Standards of Internal Auditing Practices. The committee is cause to feel certain that adequate and relevant audit procedures were followed, concrete evidence were gathered and conclusion were drawn from facts. The Internal Green and Environment Audit committee believe that recommendations are for improving the effectiveness of environmental management efforts made by the college. Changes or additions in management practices should be systemic, must be done through series of small steps and every concerned individual must be well informed about changes and additions made in management practices. Recommendations are based on a evidence compiled in this report as they existed at the time of the audit.

Compendium

It was truly evident from the data collected in several visits to Shivaji Arts & Science College that teaching & non teaching staff , students of the college are aware about the importance of efforts to save and protect environment in the campus in everyday's work. The college staff follow best course of action such as reducing all types of waste, time to time garden maintenance, follow composting practices, follow ways and means to reduce energy consumption, conduct review meetings, organize environmental educational activities for staff as well as for students. Although, it was also observed that, many of the practices followed by the college are in nascent stage and needs further action to improvise environment management system.

Contents

Introduction

The expeditious urbanization and economic development at local, national and international level has led to several environmental and ecological emergencies. To prevent damages due to site specific activities, practices, processes and procedures followed by various institutions, businesses, organizations or factories, it becomes essential to adopt methods, process and procedures for making green campus for the institutions, businesses, organizations or factories which will lead for sustainable development.

Shivaji Arts & Science College has concentrated its focus to save environment at every possible way. The college made it clear from its environment policy that its a priority area to conserve environment and promote education & awareness about keeping campus green. The purpose of conducting the Internal Green and Environmental Audit is to understood and make continuous efforts to reduce adverse impact on environment. The college hires consultants and resource persons in environment education and protection. The methodology to conduct Internal Green Audit & Environmental Audit was designed with the help of consultants and NGOs with the teaching staff of the college. It includes draft of questionnaire, in-situ site inspection in the campus, scrutinize and evaluate documentation, monitor procedures, practices and processes carefully. The formation of Internal Green and Environment Audit Committee with involvement of external subject specialist has made report valuable. The Internal Green and Environment Audit Committee has made valuable recommendations. The committee proposed remedial procedures to reduce the carbon foot print of the college. It works for the betterment of environment in the college campus including air, water, noise, soil quality, waste management, care for flora & fauna in campus, importance of paperless working, future plans for adopting alternative energy creation by adopting solar powered energy generation.

Internal Green Audit

Internal Green Audit is a process of systematic verification of activities, identification of adverse impacts, evaluation of systems, documentation process, reporting and analysis of environmental diversity of various institutions, businesses, organizations or factories. It aims to analyze environmental practices and processes within and outside of the targeted institution, business, organization or factory, which will have an impact on the ecologically friendly environmentally-safe ambience.

Internal Environment Audit

An Internal Environmental Audit is an assessment performed to ensure that institutions, businesses, organizations or factories are complying with environmental regulations policies. It examines the amount of adverse impact on environment or risk of injury that may be posed by the assessed entity and determines the types of pollution being produced by looking at a broad range of site specific activities, practices, processes and procedures. The information compiled from these factors to determine what remedial procedures are required to be added for better good.

Scope

Internal Green and Environment Audit play a significant role in continuing operation of institutions, businesses, organizations or factories. It keeps institutions accountable by scrutinizing their site specific procedures and determining what remedial measures are required to be added or put in place to ensure institutions, businesses, organizations or factories are following the proper statute.

Objective

The key objectives of an internal environmental audit therefore are to: determine how well the environmental management systems and equipment are performing, verify compliance with the relevant national, local or other laws and regulations, minimize human exposure to risks from environmental, health and safety problems.

Methodology

Internal Green & Environment Audit Committee was formed and decided to call upon an open discussion on how to conduct Internal Green & Environment Audit. The committee came to a conclusion that external party will look into overall infrastructure, procedures, practices and operation of the collage and will draft detail questionnaire. Questionnaires provide a relatively rapid and efficient way of obtaining large amounts of information from a large number of people. Questionnaire are easy to respond. Specifically, answers obtained through closed-ended questions with multiple choice answer options are easy to obtain and less time consuming.

Answers obtained from open-ended questionnaire are analyzed using qualitative methods and they involve discussions and critical analyses without any difficulty. This was useful because the information lead to concrete conclusions. The methodology also included a physical inspection of the campus, observation, and review of the documentation, interviewing key persons and data analysis, measurements, and suggesting recommendations.

The efforts were taken to understand following focus areas and emphasis was given to know facts on the ground :

Overall area inspection to find out efforts taken by the college to promote greenery in campus.

Management & performance of water distribution and its conservation, be it a municipal supply or the water collected by rain water harvesting.

Drinking water and water consumption for other purposes such as construction, gardening etc and its management.

Use of electricity and other types of energy uses and management related to it.

Test air quality, noise level and water in the campus with the help of external service providers.

Observe solid and liquid waste management in the campus.

E-waste management.

Initiatives, projects and activities taken for conservation of flora, fauna and the measures taken to improve environment management systems in the college campus.

Tree plantation in the past.

Environment Policy

Shivaji Arts & Science College not only target to impart quality education but also understand responsibility towards protection of environment for the future generation. The college wish to create environmentally safe practices to ensure that the college campus is kept green by reducing its carbon foot print. The college monitors its operation and make it a economically successful & sustainable along with being socially responsible.Environment Policy compels each and every one of the college to follow practices, processes and operation supported by identified groups and individuals. Environment Policy also target to enroll external parties such as vendors and suppliers in achieving the environment conservation objective in their relevant fields too.

Environmental Policy Document

Shivaji Arts & Science College, Chikhli, is a quality conscious college. It protects its own environment and efforts are taken to keep it a pollution free green campus. Environment protection, conservation and education are key areas that are weaved together in education and in academia of the college. The management, teaching & non teaching staff, students and community members of the college look after the environment carefully. Every year, during rainy season, trees are planted and are carefully looked after. It's the responsibility of Shivaji Arts & Science College to preserve the greenery in the collage campus.

i. To create awareness regarding environmental policy of our college to management, teaching & non teaching staff, students and community members.

ii. To keep college campus free from pollution by avoiding open fire, managing garbage, prohibitting tobacco & pan masala spitting in the campus. Caution poster in regard to health, hygiene and environment protection are displayed in the campus.

iii. Segregate bio-degradable & non bio-degradable waste. Create composting facility for bio-degradable waste conversion to make manure and recycle non-biodegradable waste.

iv. To provide safe drinking water to students and staff by installing RO Water Filtration facility at the campus.

v. To install and maintain 'Rain Water Harvesting' in the campus. To collect every rain drop falling on the roof of the collage and to store the harvested water in water harvesting well constructed at the college.

vi. To observe 'No Vehicle Day' in persuit of reducing vehicular pollution.

vii. To communicate electronically in an effort to reduce consumption of paper.

viii. To place the dustbins and promote hygienic condition in the college campus.

ix. To evaluate the environmental performance of the college by conducting Internal Green and Environment Audit annually.

Trees plantation at various places in the college campus.

Location of the college

Shivaji Arts & Science College at Chikhali in Buldhana district of Maharashtra state is a prominent arts & science college in the Vidarbha region. It is strategically situated in the center of the Chikhali. It is well connected by state highway road, enabling students from adjoining district to reach the college comfortably.

Latitude : 20°21'02.4"N
Longitude : 76°15'53.4"E

Land use and land cover

Total area of the college campus: 18.5 Acres
Built up area: 3794.68 Sq. Ft.
Area reserved for green cover:
Annexure II : Schematic diagram of college

Population:

Students : 1043 Teaching Staff: 36 Non Teaching Staff: 31 Floating : 5 Approx

Internal Green and Environment Audit Training

Shivaji Arts & Science College has a well-defined decentralized and participatory organizational structure to coordinate and promote the academic and administrative function. The organizational structure has different units of statutory bodies. College has organized Pre Internal Green & Environment Audit Orientation Program and taken special efforts in enrolling teaching, non teaching staff, students and community representatives to attend the program. Environmentalist & subject specialist presented the various topics such as protecting the environment by preventing practices that creates wastage, enhancing environmental performance, introducing new ways to reduce pollution.

Audit Questionnaire & Audit Forms

Internal Green and Environment Audit Committee was given host of audit forms and questionnaire. The committee was well supported by teaching and non-teaching staff of the college to collect the data. The evidences were collected by referring Questionnaire and field visits to the college.

Water Quality

Access to safe drinking-water is essential to health, a basic human right and a component of effective policy for health protection. Water is essential to sustain life, and a satisfactory (adequate, safe and accessible) supply must be available to all. Improving access to safe drinking-water can result in tangible benefits to health.

Sound Pressure Level Testing

Several sound pressure level tests were carried out to measure noise pollution created by vehicle passing by college campus. The college is situated in the heart of the city. The road adjacent to the college campus is one of the busiest road in the city. The results of the tests (Annex No. XI) came out to be slightly above prescribed limit. To combat the noise pollution caused by vehicular noise the committee has recommended remedial measures (Annexure XIII).

Primary Air Quality

Several primary air quality tests were carried out. The results of the tests came out to be in prescribed limit. To stop air pollution caused by vehicular emission the committee has recommended remedial measures (Annexure XII).

Installations

The installation of solar panels, compost pits and rainwater harvesting system are noteworthy initiatives taken by Shivaji Arts & Science College. The campus is equipped with huge size of rain water collection network and has a well for collection and for charging water table. (Annexure : xvi)

Bio diversity in campus

Shivaji Arts & Science College campus is interspersed with trees strategically planted, makes it a picturesque landscape suitable for a wide spectrum of flora and fauna.

Flora

The college has been planting and conserving trees, climbers, creepers, herbs and shrubs since the inception in 1970. Wide variety of floral species can be seen in the campus. College has taken painstaking effort in maintaining green cover and a botanical garden nurture host of wide variety of medicinal species for educational purpose. (Annexure iii)

Fauna

The green cover in the campus helps in creating favorable condition for many living organisms such as butterflies and other friendly insects such as lady bird beetles, spiders, birds and mammals such as squirrels. (Annex No. vi).

Green initiatives

Shivaji Arts & Science College, Chikhali is a premier institute in Vidarbha and is aware about importance of educating students about environment and special efforts are taken by Environment Committee in initiating activities that reduces its adverse impacts on environment. Initiative such as Tree Plantations, Rain Water Harvesting, No Vehicle Day, Installation of Solar Panels, Plastic Waste Free Campus, Regular Maintenance Of Electrical Gadgets, Awareness Training Workshops, Waste Disposal, Solid Waste Management, Organic Waste Management are organized by the college. Internal Green & Environment Aaudit Committee has recommended few remedial measures. (Annexure x)

Recommendations

Short term and long term recommendations are given by Internal Green & Environment Audit Committee. The recommendations made by the committee will improve the environment and will make positive impact on environment performance of the college. (Annexure xiii)

Shivaji Arts & Science College, Chikhali has received many awards and recognition over the last few years. (Annexure xv)

Post Internal Green & Environment Audit Commitments

Review meeting was organized to discuss about recommendations made by committee after the Green & Environment Audit process was completed. The internal Green & Environment Audit committee has given special attention to train each and every member of the college about PDCA model. PDCA i.e. Plan Do, Check and Act model surely helps in bringing continuous improvement in every working of the college.

Green & Environment Audit Document Storage

Documents related to Internal Green and Environment Audit are stored at IQAC chamber.

Annexure I

Environment Committee

To impart environment education and to educate, enroll students about environment protection and conservation of flora & fauna. Exhibitions, competitions, initiatives and study tours are organized on time to time basis..

Environmental Committee

Sr. No.	Name	Department	Designation
1.	Dr. O. S. Deshmukh	Botany	Principal
2.	Dr. V. U. Pochhi	Botany	IQAC Coordinator
3.	Dr. J. J. Jadhao	Political Science	(NAAC Coordinator) Member
4.	Prof. S. A. Katole	Electronics	Member
5.	Dr. M. T. Nikam	Zoology	Member
6.	Prof. S. N. Mendhe	Microbiology	Member
7.	Prof. S. L. Kumbhare	Chemistry	Member
8.	Prof. N. B. Thakre	Physics	Member
9.	Prof. S. A. Salve	Mathematics	Member
10.	Dr. A. B. Kadam	Computer Science	Member
11.	Dr. S. I. Jukkalkar	English	Member
12.	Dr. G. G. Malte	Marathi	Member
13.	Dr. V. R. Padwal	History	Member
14.	Dr. S. M. Kalakhe	Economics	Member
15.	Dr. R. P. Gawai	Commerce	Community Member
16.	Mr. Ganesh Sonone		Student Representative
17.	Ku. Kalyani Bhutekar		Student Representative

Eco-friendly Colour Preparation Workshop organized by Environment Committee

Tree Plantation organized by NSS

Tree Plantation organized by Environment Committee

Annexure II

Schematic diagram of Shivaji Arts & Science College

Annexure III

Bio-diversity in campus : Flora I

Since the formation of the College, immense efforts are taken to plant trees every year. On clebration of World Forest Day, Environment Day every year college planted trees and tried to increase green cover. Wide variety of floral species can be seen thriving in the college campus and variety of life forms such as birds, mammals, butterflies can be seen at all periods of the day.

Students and botany head of the department record observations of floral and faunal species seen in the campus. Exhaustive list of species found in the campus are presented in following table.

S.NO	BOTANICAL NAME	FAMILY	HABIT	NUMBER
1.	*Abutilon indicum* Linn.	Acanthaceae	Herb	08
2.	*Accacia nilotica* Linn.	Fabaceae	Tree	05
3.	*Accacia leucophloea* Linn.	Fabaceae	Tree	02
4.	*Achyranthus aspera* Linn.	Amaranthaceae	Herb	01
5.	*Adhatoda vasica* Linn.	Acanthaceae	Shrub	03
6.	*Aegle marmelos* Linn.	Rutaceae	Tree	2
7.	*Ageratum conyzoides* Linn.	Asteraceae	Herb	2
8.	*Ailantus excels* Roxb.	Simaroubaceae	Tree	1
9.	*Aloe barbadensis* Linn.	Liliaceae	Herb	10
10.	*Aloe vera*	Liliaceae	Herb	37
11.	*Amarantus caudtus* Linn.	Amaranthaceae	Herb	04
12.	*Annona squamosal* Linn.	Annonaceae	Tree	07
13.	*Argemone maxicana* Linn.	Papaveraceae	Herb	293
14.	*Araucaria heterophylla*	Araucariaceae	Tree	02
15.	*Azadirachta indica* A. Juss.	Meliaceae	Tree	234
16.	*Bambusa vulgaris*	Poaceae	Tree	08
17.	*Barleria prionitis* Linn.	Acanthaceae	Herb	2
18.	*Bauhinia racemosa* Linn.	Fabaceae	Tree	4
19.	*Bauhinia variegate* Linn.	Fabaceae	Tree	8
20.	*Bignonia capreolata* Linn.	Bignoniaceae	Shrub	10
21.	*Boerhaavia diffusa* Linn.	Nyctaginaceae	Herb	17
22.	*Bougainvillaea spectabilis.*	Nyctaginaceae	Tree	5
23.	*Butea monosperma* (Lamk.) Taub.	Fabaceae	Tree	15
24.	*Caesalpinia ferrea*	Fabaceae	Trees	18
25.	*Caesalpinia pulcherrima*	Fabaceae	Tree	16
26.	*Callistemon citrinus* Stapf.	Myrtaceae	Tree	09
27.	*Calotropis procera* Ait.	Asclepidaceae	Shrub	20
28.	*Canna indica* Linn.	Zinziberaceae	Herb	4
29.	*Caryota urens*	Arecaceae	Tree	10
30.	*Cassia fistula* Linn.	Fabaceae	Tree	20
31.	*Cassia tora* Linn.	Fabaceae	Herb	25
32.	*Ceiba pentandra*	Malvaceae	Tree	20
33.	*Chenopodium album* Linn.	Chenopodiaceae	Herb	30
34.	*Clitoria ternatea*	Fabaceae	Herb	20
35.	*Coleus forskohlii* Auct.	Lamiaceae	Herb	10
36.	*Croton bonplandianum* Baill.	Euphorbiaceae	Herb	21
37.	*Cynodon dactylon* Linn.	Poaceae	Herb	
38.	*Cyperus rotundus* Linn.	Cyperaceae	Herb	
39.	*Citrus lemon*	Rutaceae	Tree	04
40.	*Dalbergia sissoo* (Roxb.) DC.	Fabaceae	Tree	10

Annexure IV

Bio-diversity in campus : Flora II

41.	*Datura innoxia* Linn.	Solanaceae	Herb	
42.	*Delonix regia*	Fabaceae	Tree	17
43.	*Dicanthium annulatum*	Poaceae	Herb	
44.	*Duranta erecta*	Verbenaceae	Shrub	25
45.	*Eclipta alba* (Linn.)	Asteraceae	Herb	
46.	*Emblica officinalis* Gaertn.	Euphorbiaceae	Tree	03
47.	*Erythrina variegate*	Fabaceae	Tree	2
48.	*Eucalyptus citriodora* Hook.	Myrtaceae	Tree	07
49.	*Euphorbia hirta* Linn.	Euphorbiaceae	Herb	
50.	*Ficus benghalensis* Linn.	Moraceae	Tree	04
51.	*Ficus benjamina* Linn.	Moraceae	Tree	02
52.	*Ficus carica* Linn.	Moraceae	Tree	02
53.	*Ficus religiosa* Linn.	Moraceae	Tree	05
54.	*Heteropogon contortus* Linn	Poaceae	Herb	
55.	*Hibiscus rosa -sinensis* Linn.	Malvaceae	Shrub	12
56.	*Ixora coccinea* Linn.	Rubiaceae	Shrub	
57.	*Kigelia pinnata* (Jack.) DC.	Bignoniaceae	Tree	4
58.	*Lantana camara*	Verbenaceae	Shrub	47
59.	*Lathyrus odoratus* Linn.	Fabaceae	Herb	
60.	*Launaea asplenifolia* Hook. F.	Asteraceae	Herb	
61.	*Malvastrum coromandelianum* Linn.	Malvaceae	Herb	
62.	*Mangifera indica* Linn.	Anacardiaceae	Tree	05
63.	*Melia azedarach* Linn.	Meliaceae	Tree	15
64.	*Mimusops elengi*	Sapotaceae	Tree	07
65.	*Musa ensetesuperber*	Musaceae	Tree	02
66.	*Nelumbo nucifera*	Nymphaeaceae	Shrub	20
67.	*Nerium indicum* Mill.	Apocynaceae	Shrub	18
68.	*Nyctanthes arbor-tristis* Linn.	Oleaceae	Tree	15
69.	*Ocimum sanctum*	Lamiaceae	Herb	37
70.	*Oreodoxa regia* Kunth Syn. *Roystonea regia*	Arecaceae	Tree	8
71.	*Oxalis corniculata* Linn.	Oxalidaceae	Herb	2
72.	*Parthenium hysterophorus* Linn.	Asteraceae	Herb	
73.	*Phoenix sylvestris* Linn.	Arecaceae	Tree	2
74.	*Phyllanthus niruri* Hook. f.	Euphorbiaceae	Herb	03
75.	*Plumeria pudica*	Apocynaceae	Tree	2
76.	*Polyalthia longifolia* Sonn.	Annonaceae	Tree	26
77.	*Prosopis cineraria* Linn.	Fabaceae	Tree	10
78.	*Psidium guajava* Linn.	Myrtaceae	Tree	03
79.	*Prunus amygdalus*, Sny. *Prunus dulcis*	Rosaceae	Tree	07
80.	*Ranunculus sceleratus* Linn.	Ranunculaceae	Herb	2
81.	*Rosa indica* Linn.	Rosaceae	Shrub	50

Annexure V

Bio-diversity in campus : Flora III

82.	*Scirpus litoralis* Schrad Syn.	Cyperaceae	Herb	
83.	*Setaria glauca* Linn.	Poaceae	Herb	
84.	*Sida acuta* Linn.	Malvaceae	Herb	
85.	*Sisymbrium irio* Linn.	Brassicaceae	Herb	
86.	*Solanum nigrum* Linn.	Solanaceae	Herb	
87.	*Solanum Xanthocarpum* Linn.	Solanaceae	Herb	
88.	*Syzginum cumini*	Myrtaceae	Tree	03
89.	*Tagetes erecta* Linn.	Asteraceae	Herb	
90.	*Tectona grandis*	Lamiaceae	Tree	93
91.	*Thespesia populnea*	Malvaceae	Tree	4
92.	*Thuja orientalis* Linn.	Cupressaceae	Tree	10
93.	*Tribulus terrestris* Linn.	Zygophyllaceae	Herb	5
94.	*Tridax procumbens* Linn.	Asteraceae	Herb	
95.	*Vinca rosea* Linn.	Apocynaceae	Herb	50
96.	*Vitex negundo*	Lamiaceae	Shrub	7
97.	*Withania somnifera* Linn.	Solanaceae	Herb	15
98.	*Xanthium strumarium* Linn.	Asteraceae	Herb	
99.	*Zizyphus jujuba* Mill.	Rhamnaceae	Tree	13

Annexure VI

Bio-diversity in campus : Fauna : Birds

Sr. No.	Common Name	Scientific Name	मराठी नाव	Number
1	Indian grey hornbill	*Ocyceros birostris*	राखी धनेश	9
2	Spotted owlet	*Athene brama*	पिंगळा	13
3	Shikra	*Accipiter badius*	शिक्रा	5
4	Greater coucal	*Centropus sinensis*	भारद्वाज	12
5	Green bee eater	*Merops orientalis*	वेडा राघू	22
6	Little swift	*Apus affinis*	पाकोळी	27
7	Red vented bulbul	*Pycnonotus cafer*	बुलबुल	13
8	Common iora	*Aegithina tiphia*	सुभग	9
9	Cinereous tit	*Parus major*	कवडी रामगंगा	7
10	Asian koel	*Eudynamys scolopaceus*	कोकिळा	5
11	Ashy prinia	*Prinia socialis*	वटवट्या	31
12	Purple sunbird	*Cinnyris asiaticus*	शिंजीर	10
13	Indian silverbill	*Euodice malabarica*	माळमुनिया	5
14	Oriental white eye	*Zosterops palpebrosus*	चष्मेवाला	15
15	House crow	*Corvus splendens*	कावळा	47
16	Indian Jungle crow	*Corvus culminatus*	डोमकावळा	37
17	Common myna	*Acridotheres tristis*	माळुंकी	53
18	Common hoopoe	*Upupa epops*	हुदहुद	07
19	Blue rock pigeon	*Columba livia*	कबुतर	21
20	Common tailor bird	*Orthotomus sutorius*	शिंपी	27
21	Rose ringed parakeet	*Psittacula krameri*	कंठवाला पोपट	13

Annexure VII

Bio-diversity in campus : Fauna : Birds

22	Alexandrine parakeet	*Psittacula eupatria*	करण पोपट	15
23	Common hawk cuckoo	*Hierococcyx varius*	पावश्या	04
24	Pond heron	*Ardeola grayii*	ढोकरी	7
25	Red -naped ibis	*Pseudibis papillosa*	शराटी	5
26	House sparrow	*Passer domesticus*	चिमणी	70
27	Spotted dove	*Stigmatopelia chinensis*	ठिपकेदार होला	15
28	Cattle egret	*Bubulcus ibis*	गायबगळा	21
29	White throated kingfisher	*Halcyon smyrnensis*	खंड्या	17
30	Indian golden oriole	*Oriolus kundoo*	हळद्या	27
31	Scaly breasted munia	*Lonchura punctata*	ठिपकेदार मुनिया	5
32	Yellow wattled lapwing	*Vanellus malabaricus*	टिटवी	13

Annexure VIII

Bio-diversity in campus : Fauna : Animals

Sr.No.	Family/Scientific name	Common name	Number
	Sciuridae		
1	*Sciurus carolinensis* Gmelin. 1788	Squirrel	40
	Canidae		
2	*Canis lupus familiaris* Linnaeus. 1758	Dog	7
	Suidae		
3	*Sus scrofa* Linnaeus. 1758	Pig	5
	Muridae		
4	*Mus musculus* Linnaeus. 1758	Mouse	100
	Cercopithecidae		
5	*Nasalis larvatus* (van Wurmb. 1787)	Monkey	20
	Microchiroptera		
6	*Chiroptera* Blumenbach. 1779	Bats	7
	Chamaeleonidae		
7	*Chamaeleo calyptratus* A. M. C. Duméril and A. H. A. Duméril. 1851	Chameleon	11
	Agamidae		
8	*Calotes versicolor* (Daudin. 1802)	Common garden Calotes	17
	Lacertidae		
9	*Podarcis muralis* (Laurenti. 1768)	Wall Lizard	40
	Scorpionoidea		
10	*Scorpiones*	Scorpions	27

11	*Serpentes Linnaeus, 1758*	Snake	8
	Ranidae		
12	*Lithobates sylvaticus* (LeConte. 1825)	Frog	36

Annexure IX

Bio-diversity in campus : Fauna : Animals

	Araneidae		
13	*Araneae*	Spider	40
	Nymphalidae		
14	*Danaus plexippus* (Linnaeus. 1758)	Monarch Butterfly	70
	--		
15	*Chilopoda*	Centipdes	30
	Spirobolida		
16	*Narceus americanus* (Palisot de Beauvois. 1817)	Millipedes	20
	Aeshnidae		
17	*Anisoptera Selys, 1854*	Dragonflies	200
	Erebidae		
18	*Lymantria dispar* (Linnaeus. 1758)	Gypsy moth	60
	Acrididae		
19	*Schistocerca americana* (Drury. 1773)	Grasshopper	40
	Mantidae		
20	*Mantis religiosa* (Linnaeus. 1758)	Mantis	31
	Vespidae		
21	*Polistes fuscatus*	Wasp	34
	Apidae		
22	*Apis mellifera* Linnaeus. 1758	Honey bee	5000
	Formicidae		
23	*Formicidae*	Ants	
24	Culicidae *Aedes aegypti* (Linnaeus. 1762)	Mosquito	
	Rhinotermitidae		
25	*Isoptera*	Termite	
	Blattidae		
26	*Periplaneta americana* (Linnaeus. 1758)	Cockroach	45
	Carabidae		
27	*Coleoptera Linnaeus, 1758*	Beetles	65

	Subulinidae		
28	*Rumina decollata* (Linnaeus. 1758)	Snail	

	Lumbricidae		
29	*Lumbricus terrestris* Linnaeus. 1758	Night crawler	

AnnexureX

Green initiatives by Shivaji Arts & Science College

Shivaji Arts & Science College, Chokhali made special efforts to work with Chikhali Nagar Palika regarding solid waste recycling. The waste is regularly collected by Nagarpalika and helps collage to keep campus clean & green.

Making of Eco-friendly Color for Holi / Rang Panchami celebrations.

Raksha Bandhan was celebrated in an innovative way i.e. tying rakhi to dozen of trees in the college campus. It spread a message to take care of trees planted at the campus and it created an emotional bond between students, teachers and trees.

Installation of vermi-compost pit. As students n staff tend to dispose waste food in the compost pit, manure is available and is utilized in the garden of the college.

No Vehicle Day is observed once in week. This surely is an activity that reduce vehicular pollution. It also educates student and staff to follow minimalization approach. This is a significant step taken by Shivaji Arts & Science College, Chikhali.

Quit Zone is identified at certain spots in the college that enables to maintain certain calmness for promoting concentration level of the students and staff. This surely is an activity that support in imparting quality education in the campus.

Display of Plastic Free Campus signs and posters sensitize students and staff to keep college campus clean and green. The messages are displayed at important locations and reminds passing by students and staff to be part of solution and refrain from using single use plastic which is harmful to the environment.

Swatch Bharat Abhiyan initiative was launched to keep campus clean n green and to promote hygienic conditions.

Save Paper Save Tree initiative was organized by Environment Cell. An event to enroll students to minimize their use of papers which leads saving few trees from cutting.

Save energy, save electricity signs are fixed at many electrical switch boards. The signs promoting students and staff to switch off electrical gadgets such as fans, lights when they are not in use. This helps to minimize consumption of electrical energy.

NSS activities are organized such as tree plantation and swachata initiatives on time to time basis. Cleaning drive was organized by the college and also involved teaching, non teaching staff and students to participate in it.

Old unused furniture was refurbished and brought into everyday use.

To manage waste generated by classrooms, the dust bins are kept outside the classroom and it made safe waste disposable on everyday basis.

New energy conversant lights were installed where ever possible to reduce the energy consumption. Old electrical cables were replaced with new ones.

Annexure XI

Sound Pressure Level Testing Report

Sound Pressure Level Testing

Sound waves are vibrations of air molecules carried from a noise source to the ear. Sound is typically described in terms of the loudness (amplitude) and the pitch (frequency) of the wave. Loudness (also called sound pressure level, or SPL) is measured in logarithmic units called decibels (dB). The normal human ear can detect sounds that range between 0 dB (hearing threshold) and about 140 dB, with sounds between 120dB and 140 dB causing pain (pain threshold). The ambient SPL in a library is about 35 dB, while that inside a moving bus or subway train is roughly 85 dB; building construction activities can generate SPLs as high as 105 dB at the source. SPLs decrease with distance from the source.

Standards of sound:

To control the generation of noise by various sources in the environment, the **Central Pollution Control Board**, under the **Ministry of Environment and Forests, Government of India**, has set standards of sound for different categories of areas (residential, commercial, industrial and silence zones), separately for day-time and at night [Table 1].

[Table 1]

Catagory of Area/Zone	Limits in dB(A)	
	Day Time	Night Time
Industrial Area	75	70
Commercial Area	65	55
Residential Area	55	45
Silence Zone	50	40

Date/Time	Location	Remarks	dB(A)	Date	Location	Remarks	dB(A)
11.54	CLASSROOM I		73				
11.59	STAFFROOM COMP DEPT SCPG CSCIENCE		71				
12.30	C LAB ROOM I		80				
12.40	ELECTRONICS PRACTICLE LAB		49				
12.48	CH LAB		52				
12.52	ZOOLOGY LAB		59				

Reducing noise pollution can be achieved through regulation, improved building methods, better product design, noise barriers and better planning. Growing populations, urbanization and modern technologies all contribute to increased noise pollution. It may sound extreme, but it qualifies as a practical way to reduce noise pollution. Noise is produced by strong sound waves or vibrations, which can be significantly reduced by barriers. By installing a live fence, you'll be creating a barrier that absorbs the strong sound waves or vibrations, thereby reducing noise pollution around your office or institution. Vegetation reduces noise pollution through a phenomenon called sound attenuation, which is the reduction of sound intensity. Leaves, twigs, and branches on trees, shrubs absorb and deflect sound energy. Declare a "No Horn Zone" in Hospital, Educational institutes, and Residential Areas : Horns from trucks, buses, and cars produce a considerable degree of noise pollution and as such, the introduction of no horn zone can help reduce noise pollution. Governing and city authorities hold the power to introduce policies that can help reduce noise pollution. The laws should limit the amount of noise in public and private places to cut noise pollution. Do regular checking of noise levels: Keeping the noise level within the limit requires frequent verification of noise level. Therefore see to it that regular checking of noise level is done.

Name of the institute: Shri Shivaji Science & Arts College, Chikhali
Place:
Date: 15/09/20
Seal:

Environment & Forest Education Center
EFEC

The human ear distorts its sensitivity to lower and higher frequency sounds. Sound meters try to mimic this process by weighting the readings. This scale is known as the **A scale** and readings taken using this scale will be denoted as **dB(A).**

World Health Organization

The World Health Organization (WHO) suggests that the optimal sound level in a classroom should be **at or below 35 dB. Noise pollution is an invisible danger.** The most common health problem it causes is Noise Induced Hearing Loss (NIHL). Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. **The Central Pollution Control Board (CPCB)** has proposed a new set of fines between Rs 1,000 and Rs 1 lakh for those who violate norms restricting noise pollution under the Noise Pollution (Regulation and Control) Rules, 2000.

Annexure XII

Primary Air Quality Report

Primary Air Quality Testing

Time/In or Out	PM 2.5	PM1	PM10	TVOC	CH2O	Humidity	Temp
11.56 CLASSROOM 1	18	20	10	0.006/.170	0.0000	77%	24.0°C
Staffroom	13	17	8	0.000/0.104	0.000	71 %	24.4°C
12.32 CLAB - COMP DEPT SC-PG-CSC (AC) Non	16	21	10	0.008	0.000	82%	21.90°
12.35 COMP SC PG LAB (NON AC)	16	21	10	0.169	0.000	75%	23°C
12.40 ELECTRONIC PRACTICLE LAB NON AC	18	22	10	0.678	0.000	69%	24°C
12.46 CHEMISTRY PR LAB NON AC	14	9	18	0.052	0.000	68%	25.0°C
12.52 ZOOLOGY PR LAB NON AC	14	18	8	0.013	0.000	67%	25°C

emf 0. 0.00

Air Quality Grade	PM 2.5 Average Value (ug/m³)
Excellent	0-35
Good	35-75
Slight Pollution	75-115
Moderate Pollution	115-150
Severe Pollution	150-250
Serious Pollution	> 500

TVOCs: Total Volatile Organic Compounds (TVOCs) are a group of compounds with high vapor pressure and low water solubility. In other words, these substances won't easily bind to themselves (volatile) or dissolve in water (organic). Inside your home or in an institution, volatile organic compounds are harmful, carcinogenic air pollutants that evaporate at normal indoor atmospheric conditions. TVOCs affect your sense off wellbeing. Some VOC's are even bad for health.

CH2O: Formaldehyde is a colorless poisonous gas synthesized by the oxidation of methanol and used as an antiseptic, disinfectant, histologic fixative, and general-purpose chemical reagent for laboratory applications. Formaldehyde is readily soluble in water and is commonly distributed as a 37% solution in water; formalin, a 10% solution of formaldehyde in water, is used as a disinfectant and to preserve biological specimens. Environmentally, formaldehyde may be found in the atmosphere, smoke from fires, automobile exhaust and cigarette smoke. Small amounts are produced during normal metabolic processes in most organisms, including humans.

Particulate Matter measurement with laser scattering method. Particulate matter is a mixture of liquid droplets and solid particles found in the atmosphere. The particle sizes are classified by size for the purpose of measurement, emission control, effects, and mitigation strategies. Historically, particles with diameters less than 10 microns (PM-10) have been the major concern, because they can easily pass into the lung. However more recently scientist have labeled particle sizes measuring 2.5 micron (PM-2.5) in diameter and smaller as the most damaging to human health because they penetrate and remain in the deepest passages of the lungs. Particulate matter contains toxic chemicals, some of which are known to cause cancer. They can irritate the respiratory system, accumulate in the lungs to cause silicosis, asbestosis, and aggravate conditions such as asthma and other respiratory disease. PM-10 also interferes with plant photosynthesis. The main sources of PM-10 include carbon used in industrial and domestic combustion gasoline, diesel, industrial processes, and fires, and includes dust, soot, metallic particles, cement, pollen, and organic compounds. The Indian NAAQS for PM-2.5 is 40 µg/m³

Humidity: Most people find that a relative humidity between 30 to 60 percent is the most comfortable, with indoor humidity ideally between 30 to 50 percent.Low levels of humidity lead to very dry air which increases the prospect of catching airborne viruses like the flu, possibly due to both their ability to survive longer in dry cool conditions and irritated nasal passages making it easier to catch them. Eczema can be exacerbated and dry skin can also be uncomfortable.Higher humidity in the home creates an environment for two of the most common and undesirable triggers for asthma and allergy – dust mites and mold.

Name of the institute: Shri Shivaji Science & Arts College
Place: Chikhali
Date: 15/09/20
Seal:

EFEC ENVIRONMENT & FOREST EDUCATION CENTER

Annexure XIII

Recommendations / Analysis

Internal Green & Environment Audit Committee surveyed and scrutinized the overall environmental performance of Shivaji Arts & Science College and recommendations are made as per the following:

i) Review trees planted in the college campus, designate each every tree with numbers. Assign scientific and vernacular names to the trees.

ii) Provide sufficient, accessible and well-displayed dustbins at mostly seen areas in the college campus for collection of recyclable waste. Every care is to be taken by caretaker to empty these dustbins and waste collected must be regularly dispatched to safe disposal center designated by municipality.

iii) Automated sensors must be installed to prevent the overflow from water tanks. Install a water meter and assign a specific person to record water consumption in the college campus.

iv) The committee also recommends to appoint a specific person who will monitor the consumption of water and create a mechanism to use all electrical gadgets sensibly.

v) The Internal Green and Environment Audit Committee found no evidence that may show how many papers are used in the academical year. Though there are no numbers available, the measure to reduce use of paper in the college can not be initialized. Committee strongly recommends to monitor the paper consumption on monthly basis. Proper records must be maintained and mechanism must be placed to reduce the consumption of paper. Documents after their validity must be sent for pulping.

vi) The Internal Green and Environment Audit Committee recommends to initiate measure that may reduce pollutants in the campus. The Primary Air Quality Testing results show slight increase in TVOC range which itself suggest to add barriers in between adjacent road and the campus. Committee recommends to consult subject specialist to bring down pollutant numbers to some extent.

vii)The Internal Green and Environment Audit Committee recommends college to focus on bringing down sound pollution by putting sound barrier in between adjacent road and the college campus. The sound pressure levels detected inside classrooms in the college are slightly above prescribed limits. The committee recommends to consult subject specialist and reduce noise coming from vehicles passing by adjacent road.

viii) The Internal Green and Environment Audit Committee appreciate the way Botanical Garden and trees are maintained, but the committee recommends to add more trees, shrubs in pots at every possible place in the campus. A gardner must display maintenance schedule of the garden and involve students in it.

ix) The Internal Green and Environment Audit Committee recommends to strengthen the present sewage and monitor it on regular basis.

x) Safe disposal of chemicals, liquid waste and e-waste is mandatory and special care to be taken to maintain it.

xi) More sensible electrical consumption approach is required at the college campus. The electrical gadget maintenance schedule is required to be displayed at certain spot and care is to be taken to follow it. Even particular person must be designate with the responsibility to do this.

xii) College must take initiative in reducing its dependance on MSED power distribution network and support renewable and carbon-neutral electricity generation options such as generation of electricity by solar energy. College must make long term plans to generate 100% green energy generated at college itself from solar panels.

xiii) Old fans that makes clicking, grinding, rattling, and ticking noise, must be repaired immediately or be replaced with new one. The disturbing sound from old fans create noise pollution and it is not permissible in classroom. The students may loose important study lessons due to lack of concentration in the studies. Cleaning of tube-lights and fans to be done periodically, to remove dust over it. The college must display maintenance schedule publicly.

xiv) Occurrence of dense weed growth is noticeable and measures are to be taken for its eradication.

xv) Roadside avenue trees lack attention and to be painted with specific color for protecting it.

Annexure XIV

Post Internal Green and Environment Audit Review Meeting

Internal Green & Environment Audit Committee review meeting was attended by all teaching and non teaching staff. The detail discussion was carried out and recommendation made by Internal Green and Environment Audit Committee were shared with everyone in the meeting. Unanimously every one present in the meeting agreed to be vigilant enough to take measure and meet the demands of audit reports.

Annexure XV

Awards and recognition received by the college.

Swachh Bharat Abhiyan

To support and involve actively with Swachh Bharat Abhiyaan, Shivaji Arts & Science College, Chikhali has made honest efforts to contribute to this campaign. The college has organized various activities and initiatives viz. cleaning of campus, tree plantation, lectures on swchh Bharat Abhiyan drives about spreading awareness about health, hygiene and sanitation.

Initiatives undertaken by Environment Committee

Annexure XVI

Rain water Collection Well & Vermi-composting Unit

Rain Water Collection Well at Shivaji Arts & Science College, Chikhali

Vermicomposting Unit at Shivaji Arts & Science College, Chikhali

Annexure XVII

Memorandum of Understanding with Garden Club of Amravati

Amravati Garden Club,
Amravati
Vivekanand Colony
Amravati – 444603 (MS), India

Shri Shivaji Education Society Amravati's
Shri Shivaji Science and Arts College,Chikhli,
Near pandharinath patil squre,BDCC
Bank,Shivaji Nagar Chikhli 443201

Article 1

WHEREAS, the **Shri Shivaji Science and Arts College,Chikhli** (hereafter 'SSSAC') is entering into anacademic collaboration with **Amravati Garden Club, Amravati**(hereafter 'Garden Club') to provide assistance and supportto the Graduates and Research Students of this **Shri Shivaji Science and Arts College,Chikhli**.

Article 2

WHEREAS, the association between both partieswill be focused on Student Centric Activities. It must provide access for students to the programs organized by Garden Club.

Article 3

It is binding for both the parties that

i. Activities should be planned in mutual coordination
ii. Students' involvement should be there in every activity
iii. Free access should be there for the exhibitions and shows organized by Garden Club
iv. Shri Shivaji Science and Arts College,Chikhli should provide the venue fororganizing different events
v. The expenditure incurred on the event's organization should be borne by Shri Shivaji Science and Arts College,Chikhli, with prior discussion and approval of principal and benefit will be transferred to Amravati Garden Club
vi. Being a social organization Garden Club requires fund generation out of its associations and collaborations. Therefore, the financial benefit out of an activity under this MoUshould be transferred to Amravati Garden Club with mutual agreement.
vii. Income - Expenditure statement of the activity organized under this Memorandum of Understanding should be prepared, signed by respective authorities, and shared with the Garden Club in a maximum of one month after the activity.
viii. The resource persons from both institutions should contribute without remuneration.

Annexure XVIII

Memorandum of Understanding with Garden Club of Amravati

Article 1

WHEREAS, the **Shri Shivaji Science and Arts College,Chikhli** (hereafter 'SSSAC') is entering into anacademic collaboration with **Amravati Garden Club, Amravati**(hereafter 'Garden Club') to provide assistance and supportto the Graduates and Research Students of this **Shri Shivaji Science and Arts College,Chikhli**

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v. The expenditure incurred on the event's organization should be borne by Shri Shivaji Science and Arts College,Chikhli, with prior discussion and approval of principal and benefit will be transferred to Amravati Garden Club
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viii. The resource persons from both institutions should contribute without remuneration

Page 2 of 3

Annexure XIX

Memorandum of Understanding with Garden Club of Amravati

Article 4

The grantee institution should explore various financial agencies to support the activities mentioned in article 2 from national, international or private organizations. The financial accounts have to be settled in coordination with both the authorities.

Article 5

This memorandum of understanding shall be effective from the date of its signing by representatives of both institutions and shall remain in effect until termination of this agreement at any point of time by either of the institutions. The termination of this understanding will require notice in six (6) months advance to the other institution.

In witness of whom, these present have been executed on behalf of the Obligors pursuant to the memorandum dated 31st July , 2021 passed by Member of the Obligors, on the year herein above-written.

Obligors in the presence of whom MoU Signed (Name and Address)

Signature of the Authorities of Amravati Garden Club

Dr. R. C. Maggirwar
Secretary
Amravati Garden Club,
Amravati

Signature of the Authorities of the Grantee Department and Institution

Dr. V. U. Pachbhi
Prof and Head,
Dept. of Botany
Shri Shivaji Science and Arts College,Chikhli

(For office use only)

Accepted for and on behalf of the Principal, Shivaji Science and Arts College Chikhli and Amravati Garden Club, Amravati.

Dr. D. D. Khedkar
Amravati Garden Club
Amravati

Dr. O. S. Deshmukh
Principal
Shri Shivaji Science and Arts College,Chikhli

Principal
Shri Shivaji Science & Arts College
CHIKHLI, (Dist. Buldana)

Date : 31st July, 2021
Place : Chikhli

Annexure XX

Memorandum of Understanding with Borgaon Vasu, Social Forestry, Chikhali

Shri Shivaji Education Society, Amravati's

SHRI SHIVAJI SCIENCE & ARTS COLLEGE,

CHIKHLI, DIST. BULDANA (M.S.) 443 201

NAAC 'B' GRADE

DR. A. M. GARODE
PRINCIPAL

SHRI HARSHAVARDHAN DESHMUKH
PRESIDENT

SS/[illegible]/35

Memorandum of Understanding (MoU) 17 JUL 2020

BETWEEN

DEPARTMENT OF BOTANY, SHRI SHIVAJI SCIENCE AND ARTS COLLEGE CHIKHLI DISTRICT, BULDANA (M.S.) 443201

AND

SOCIAL FOREST DEPARTMENT, BORGAON VASU DIST.BULDANA

Program entitled: - Certificate Course in Plant Propagation and Nursery Management

We hereby enter into the understanding to share the academic resource/physical infrastructure for the betterment of the institution/college and students through mutual cooperation and support toward establishing center of skill based certificate courses for enhancing the student's employment prospects.

This will be broadly including the following activities

1. Extending Talent search and promotion of rural youths to undertake specialized higher studies with a focus on occupational/professional/vocational skills so as to provide work ready human resource to the local/regional industries.
2. Extending placement assistance to prospective /potential employers.
3. Conducting in house-training, on job training, workshop, seminars and technical sessions by inviting experts from the relevant fields.
4. Any other activities to strengthen the following ambience for the students.

In mutual endeavors thereof, this memorandum of understanding is signed.

Social Forest Department, Borgaon Vasu Dist. Buldana

Head, Department of Botany
Department of Botany
Shri Shivaji Science & Arts College
CHIKHLI, Dist. Buldana

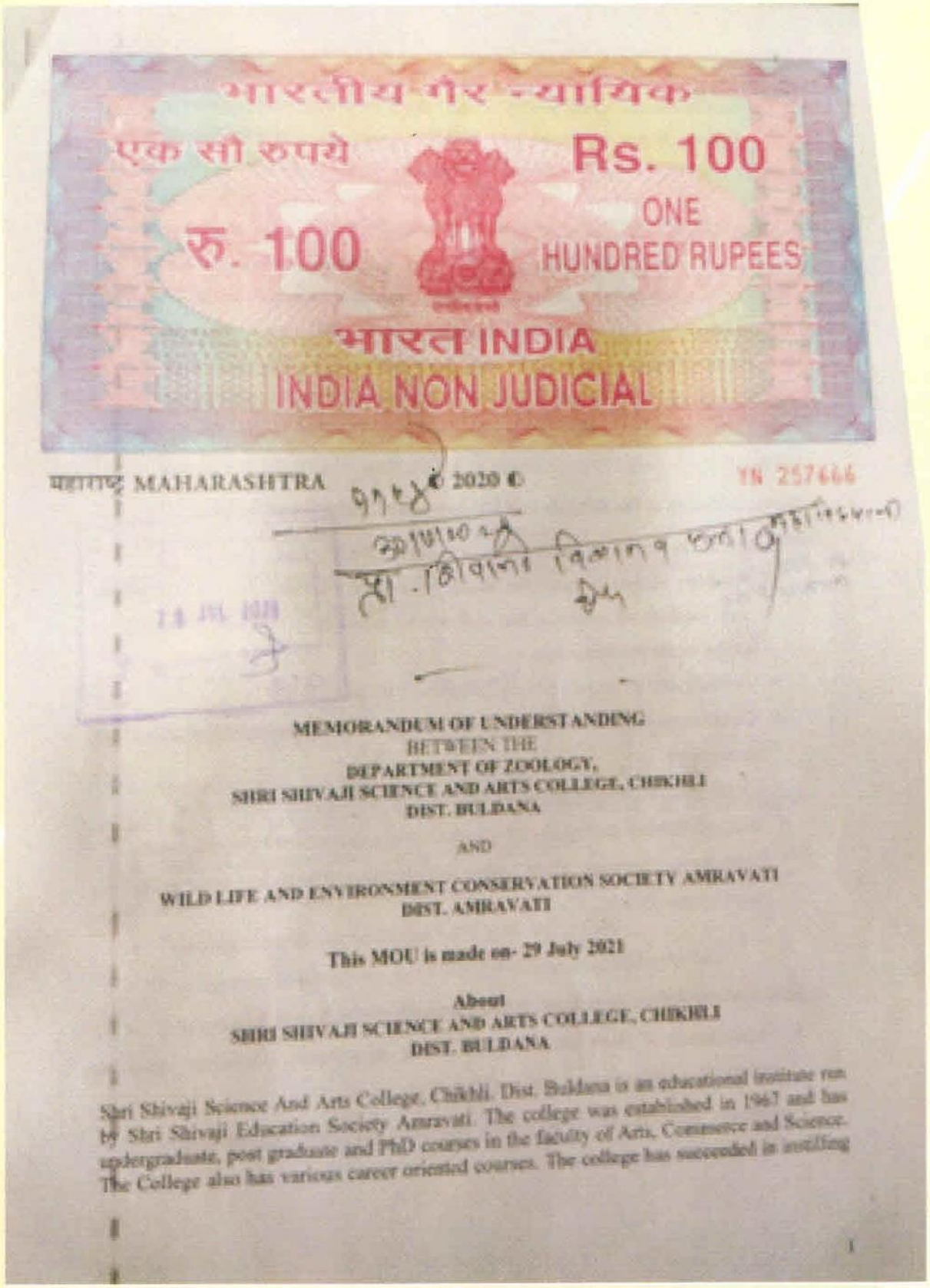
Principal
Shri Shivaji Sci. & Arts College, Chikhli Dist. Buldana (M.S.) 443201

www.sssas.org/www.ssschk.org
E-mail: shivajichk@rediff.com/Phone: (07264) 242088(O)

We Educate, Inspire and Empower...

Annexure XXI

Memorandum of Understanding with Wild life and Environment Conservation Society, Amravati



भारतीय गैर न्यायिक

एक सौ रुपये

Rs. 100

रु. 100

ONE HUNDRED RUPEES

भारत INDIA

INDIA NON JUDICIAL

महाराष्ट्र MAHARASHTRA

YN 257666

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
DEPARTMENT OF ZOOLOGY,
SHRI SHIVAJI SCIENCE AND ARTS COLLEGE, CHIKHLI
DIST. BULDANA

AND

WILD LIFE AND ENVIRONMENT CONSERVATION SOCIETY AMRAVATI
DIST. AMRAVATI

This MOU is made on- 29 July 2021

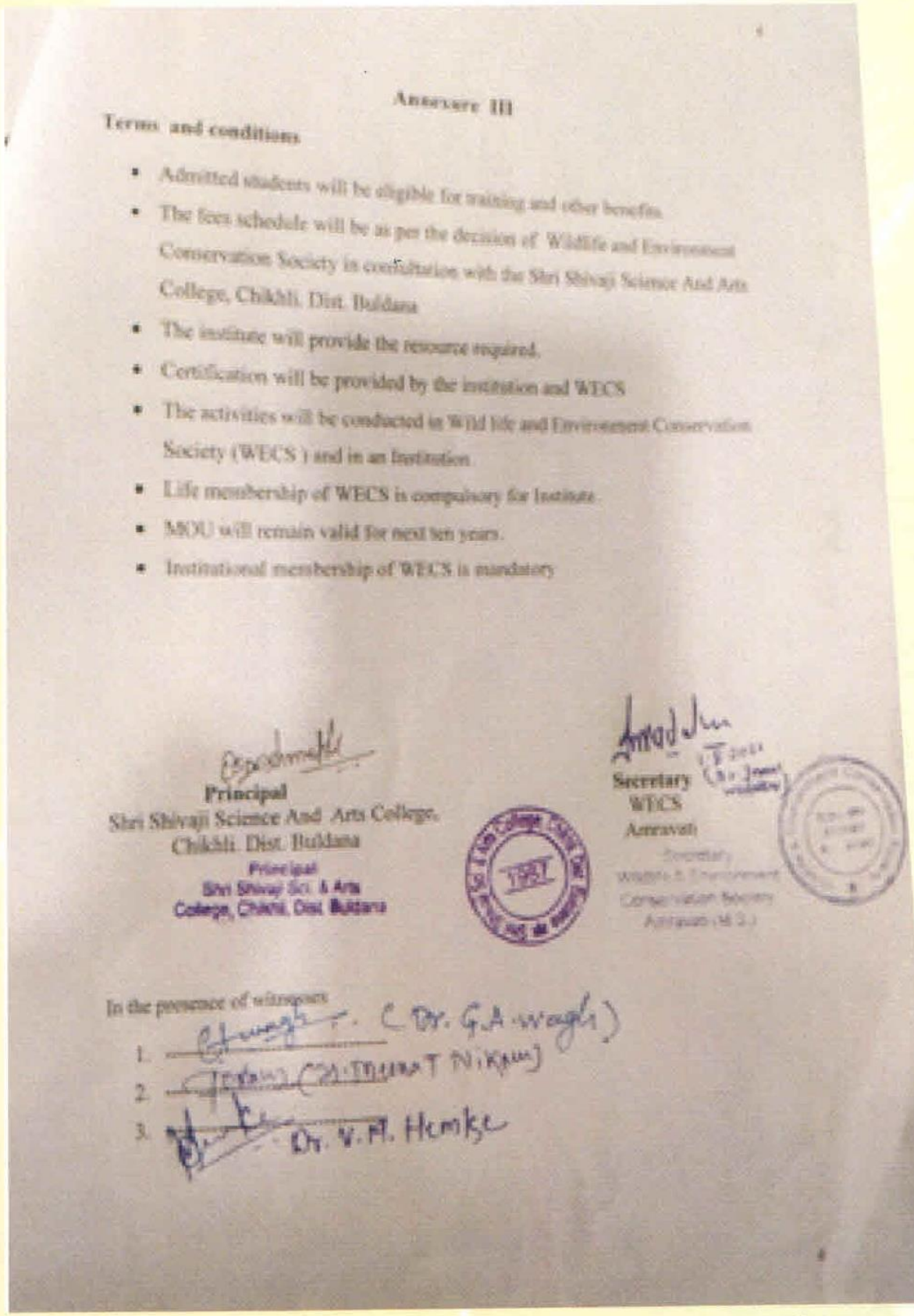
About
SHRI SHIVAJI SCIENCE AND ARTS COLLEGE, CHIKHLI
DIST. BULDANA

Shri Shivaji Science And Arts College, Chikhli, Dist. Buldana is an educational institute run by Shri Shivaji Education Society Amravati. The college was established in 1967 and has undergraduate, post graduate and PhD courses in the faculty of Arts, Commerce and Science. The College also has various career oriented courses. The college has succeeded in instilling

1

Annexure XXII

Memorandum of Understanding with Wild life and Environment Conservation Society, Amravati



Annexure III

Terms and conditions

- Admitted students will be eligible for training and other benefits
- The fees schedule will be as per the decision of Wildlife and Environment Conservation Society in consultation with the Shri Shivaji Science And Arts College, Chikhli, Dist. Buldana
- The institute will provide the resource required.
- Certification will be provided by the institution and WECS
- The activities will be conducted in Wild life and Environment Conservation Society (WECS) and in an Institution
- Life membership of WECS is compulsory for Institute
- MOU will remain valid for next ten years.
- Institutional membership of WECS is mandatory

Principal
Shri Shivaji Science And Arts College,
Chikhli Dist. Buldana

Secretary
WECS
Amravati

In the presence of witnesses

1. (Dr. G.A. Wagh)
2.
3. Dr. V.M. Hemke

Saving our planet,
lifting people out of poverty,
advancing economic growth
these are one and the same fight.
We must connect the dots
between climate change,
water scarcity, energy shortages,
global health, food security and
women's empowerment.
Solutions to one problem
must be solutions for all.

– Ban Ki-moon

Thank you!

Prepared by:

Internal Green & Environment Audit Committee

Shivaji Arts & Science College, Chikhali, District Buldhana

Internal Green and Environment Audit Committee, Shivaji Arts & Science College, Chikhali

2) Energy Audit Report:2019

Organisation	*PPS Energy Solution Pvt. Ltd. Pune*
Name of External Expert	*Er. Prashant Darade, Energy manager & Lead Auditor*

DETAILED ENERGY AUDIT REPORT

Shri Shivaji Science & Art College, Chikhali

Address:
DL/755, Chikhali, Maharashtra- 443201.

ESTD. :

May 2019

Conducted By:

PPS Energy Solutions Pvt. Ltd.

Engineering Consultants

Plot No-18, Girish Housing Society
Warje, Pune – 411058, Maharashtra, India.

TABLE OF CONTENTS

ACKNOWLEDGEMENT

We express our sincere gratitude to the authorities of Shri Shivaji Science & Art College, Chikhali for the trust given to us and offering the opportunity to conduct energy assessment. We appreciate the initiative taken by the management.

- Dr. A. M. Garode (Principal)
- Mr. N.B. Thakare (Department of Physics)

We are grateful to Department of Physics of Shri Shivaji Science & Art College, Chikhali for their initiative to undertake Energy Audit and continuous help and support before and during the audit also we are thankful for their positive support in undertaking the task of system mapping and energy efficiency assessment of all electrical system, air-conditioners, utilities and other equipment.

ENERGY AUDIT TEAM

The company offers services pertaining to Energy and Engineering to clients across the globe. Our team is based in Pune, a city known for its software and engineering talent in India. We are a rapidly growing company field of power saving solution and we believe in "POWER SAVED IS POWER PRODUCED" which includes highly trained and experienced techno-managers, analysts, and engineers & detailers.

We are presently working in India (Maharashtra, Madhya Pradesh, Gujarat, Andhra Pradesh, Delhi, Orissa, Chhattisgarh, Bihar, Andhra Pradesh, Telangana, Assam, Rajasthan and Jharkhand) and Abroad (Bahrain, Stanford and Laos).

We serve in majorly four areas,

- Energy Audit, Management and System Evaluations.
- Power Distribution System Design, Evaluations and Monitoring.
- MEP Design and Project management.
- Research and Training.

Name	Role	Field of expertise
Mr. Prashant Darade	Energy Manager and Lead Auditor	Certified Energy Manager with 8 years of experience in Energy efficiency assessment, Industrial engineering sector
Mr. Nilesh Saraf	Project Co-Ordinator, Verification of Electrical safety, Field Study	Graduate Engineer, Sr. Consultant, experience in Renewable Energy projects, energy efficiency assessment
Mr. Sagar Sarage	Field study, data tabulation and analysis	Electrical engineer, 2 years of experience in Energy Efficiency Assessment
Miss. Utkarsha Bharate	SLD preparation, report preparation,	Graduate in Electrical &Power Engineering, 2 years of experience in Energy Efficiency Assessment

1. EXECUTIVE SUMMARY

The Energy Efficiency Assessment was undertaken in order to evaluate energy performance and identify potential energy conservation measures. The assessment was undertaken in three steps, i.e. document review of data and information initially provided by facility, on site activity and preparation of this report.

The on-site activity was conducted by assessment team between 2-May-2019 consist of interviews with staff, electricians, collection/review of further data and a field inspection of the facilities and equipment's.

The facility has executed a number of energy conservation measures at the time of audit itself.

This brief report has therefore sought to provide a high-level overview of the status of energy efficiency at Shri Shivaji Science & Art College, Chikhali, combined with an illustration of areas where further, previously unidentified savings opportunities may exist.

Our survey has identified further potential opportunities, ranging from "no & low cost" measures, through to those that will require significant capital expenditure.

Note: Investment figures mentioned in are only indicative, further detailed study is recommended

1.1 Summary of Recommended Energy Conservation Measures:

Sr.No.	Equipment Name	ECM Details	Investment (Rs. In Lacs)	Savings (kWh/year)	Saving (Rs. In Lacs / Year)	Payback (Years)
1	Lights	Replacement of conventional lights (TFL, CFL) of 40 W with suitable LED tubes.	0.45	7128	0.4986	0.9
2	Fan	Replacement of Old Fan with Energy Efficient Super Fan	3.9	10998	0.77	5
3	Refrigerators	Replacement of refrigerators below 2* rating with 5* rated AC	1	2000	0.15	6
4	AC	Optimize the AC temperature setting	0	70	Rs.500	0
Total						

Note:
Estimated savings alterations are on operating conditions and considering 10 hours per day operation and 180 days working per annum

1.2 Prioritization of Energy Conservation Measures

On energy saving basis:

Sr. No.	Equipment Name	ECM Details	Investment (Rs. In Lacs)	Savings (kWh/year)	Saving (Rs. In Lacs /Year)	Payback (Years)
1	Fan	Replacement of Old Fan with Energy Efficient Super Fan	3.9	10998	77000	5
2	Lights	Replacement of conventional lights (TFL, CFL) of 40 W with suitable LED tubes.	0.45	7128	0.4986	0.9
3	Refrigerators	Replacement of refrigerators below 2* rating with 5* rated AC	1	2000	.15	6
4	AC	Optimize the AC temperature setting	0	70	Rs. 500	0

Note: Investment figures mentioned in are only indicative, further detailed study is recommended.

1.3 General audit review

Shri Shivaji Science & Art College, Chikhali can implement faster payback energy conservation measures (ECMs) which have already been considered and for which the ECMs are fully developed.

Other general points:

1. Awareness amongst students and staff is very essential step to reduce wastage of electricity
2. Energy conservation awareness programs can be conducted once a year. Increasing energy awareness of employees and students motivates them to work as a team can lead to reductions in energy consumption and save the money.
3. Savings estimates range in the order of 25 to 30%. When implemented effectively these savings can be realized quickly and cost effectively.

It is believed that with a revised approach and organization of energy management, energy losses can be reduced in a systematic, cost effective manner. We hope that this report will help Shri Shivaji Science & Art College, Chikhali to implement these changes and provide direction to the Energy Management Team.

2. About Shri Shivaji Science & Art College, Chikhali.

The Shri Shivaji Science & Art College, Chikhali is Shri Shivaji Science & Arts College Chikhali is a co-ed college offering Science, Arts, Commerce streams at PU, UG and PG level founded in 1967. It is located at MH SH 176, Gandhi Nagar, Chikhli, Maharashtra 443201.

Objective

The overall objective of the assignment is to quantify energy savings in existing system and achieve reduction in energy consumption pattern.

Hence the detail objectives are as under,

1. To carry out the energy consumption.
2. To find out the energy saving opportunities.
3. To quantify the total energy savings.
4. To find out the ways to achieve energy efficiency.

2.1 Scope of work

Following is the scope of work envisaged for this assignment,

Data collection

To collect the details of various electrical and mechanical system and their ratings, the available drawings and details shall be studied. Detail load list shall be prepared and checked.

A, B, C analysis

With the details available from load list, analysis shall be carried out depending on the present usage trends. All the power consuming equipments shall be classified in three categories depending on their ratings, condition and operating time. The area for larger potentials for savings shall be identified.

Field Study

The detail field study on site shall include the following as well as all other measures required for energy audit study,

a. Lay out the system and study of Electrical distribution.
b. Study of area wise power distribution and Measurement of power consumption.
c. Study of instrumentation provided.
d. Measurement of motor currents, voltages, power etc. parameters by energy analyzer and measurement of water flow, pressures etc. parameters of pumps simultaneously and other measurements as needed to characterize the system and required for calculating efficiency at various combinations.
e. Study of air conditioner operations and system requirements.

f. Analysis of readings obtained from field with the standard consumption.

2.2 Approach and Methodology

1. Understanding the Scope of Work and Resource Planning.
2. Identification of Key Personnel for the assignment/ project.
3. Structured Organization Matrix.
4. Steps in preparing and implementing energy audit assignment.

   a) Discussions with key facility personnel.
   b) Site visits and conducting "walk-through audit".
   c) Preliminary Data Collection through questionnaire before audit team's site visit.
   d) Steps for conducting the detailed audit.
      - Plan the activities of site data collection in coordination with the facility in-charge.
      - Study the existing operations involving energy consumption.
      - Collect and collate the energy consumption data with respect to electricity consumption.
      - Conduct performance tests to assess the efficiency of the system equipment/ electricity distribution, lighting, and identify energy losses.
      - Discuss with facility operation / maintenance personnel about identified energy losses.

5. List proposed efficiency measures.
   - Develop a set of potential efficiency improvement proposals.
   - Baseline parameters.
   - Data presentation.
   - System mapping.
   - List of potential Energy Savings proposals with cost benefit analysis.
   - Review of current operation & maintenance practices.

6. Preparation of the Draft Energy Audit Report.

7. Preparation and submission of final Energy Audit Report after discussion with concerned persons.

2.3 About PPS Energy Solutions Pvt. Ltd.

M/s. PPS Energy Solutions Pvt. Ltd (PPSES) is an ambitious company, established by enterprising engineering professionals in the year 2004. The company offers services pertaining to Energy and Engineering to clients across the globe. Our team is based in Pune, a city known for its Software and Engineering talent in India. We are a rapidly growing company with a team of about 100 people which includes highly trained and experienced Techno-Managers, Analysts, and Engineers & Detailers.

We are presently working in India (Maharashtra, Madhya Pradesh, Gujarat, Andhra Pradesh, Delhi, Orissa, Chhattisgarh, Bihar, Andhra Pradesh, Telangana, Assam, Rajasthan and Jharkhand) and Abroad (Bahrain, Stanford, Laos). We provide services for,

- Energy Audit, Management and System Evaluations.
- Power Distribution System Design, Evaluations and Monitoring.
- MEP Design and Project management.
- Research and Training.
- Services for Solar Installation.

3. Energy details

The energy efficiency assessment was conducted for the load connected to the mains supply used. Mainly energy is used on this facility for the following purposes:

1) Lighting.
2) Ceiling fans.
3) Refrigerators
4) Ovens and Lab Equipments
5) Computer Systems
6) Workshop Utilities
7) Air Conditioner.

Based on above it is clear that followings buildings have highest potential for energy savings

Sr. No.	Name of the Building
1	Class Rooms
2	Administration Department
3	Zoology, Boilogy, Chemistry, Physics, Micorbiology, Commerce
4	Workshop
5	Hostel, Playground

Table Name of Shri Shivaji Science & Art College, Chikhali

3.1 Analysis of Electricity Bills.

The energy consumption of last 12 months is tabulated as follows.

Summary of Energy Bill for Last Twelve Months			
Sr. No	Month & Year Electricity	Consumer No. 300331050761/711/880/614 Bill Amount (in Rs.)	Total (in Rs.)
1	May-18	12942.6	1114855.4
2	Jun-18	12972.2	
3	Jul-18	9916	
4	Aug-18	11588.4	
5	Sep-18	13542	
6	Oct-18	15140.4	
7	Nov-18	13616	
8	Dec-18	10596.8	
9	Jan-19	10115.8	
10	Feb-19	1983.2	
11	Mar-19	1642.8	
12	Apr-19	799.2	

3.2 Connected Load of Shri Shivaji Science & Art College, Chikhali

Sr No.	Name of Department	Name of Block of department	Appliance	Quantity	Wattage (KW)	No of working Hours	Total KWh Aprox Consumption per year
1	Zoology	Staff Room	FANS	2	0.07	10	252
			TFL	2	0.04	10	144
		LAB	FANS	8	0.07	10	1008
			TFL	6	0.04	10	432
			COMP SYSTEM	1	0.08	10	144
			OVEN	2	1.7	10	6120
			REF	1	0.3	10	540
2	Micro-Biology	Staff Room	LED	2	0.018	10	64.8
			FANS	1	0.08	10	144
		Lab	CFL	5	0.02	10	180
			FANS	5	0.08	10	720
			TFL	3	0.04	10	216
			REF	1	0.3	10	540
			DEEP FREEZER	1		10	0
			INCUBATORS	3		10	0
			HOT AIR OVEN	1		10	0
			AUTOCLAVE	2		10	0
			COMP SYSTEM	1		10	0
		RESEARCH LAB	FANS	3	0.08	10	432
			COMP SYSTEM	1	0.08	10	144
			TFL	4	0.04	10	288
			CFL	1	0.025	10	45
			FL	1	0.04	10	72
			INCUBATORS	1		10	0
			HOT AIR OVEN	1		10	0
			REF	5	0.3	10	2700
			CENTRIFUGE	1	0.09	10	162
3	BOTANY	Staff Room	FANS	2	0.08	10	288
			TFL	1	0.04	10	72
		LAB-I	FANS	2	0.08	10	288
			TFL	2	0.04	10	144
			CFL	2	0.04	10	144
			COMP SYSTEM	1	0.08	10	144
		LAB-II	REF	1	0.3	10	540
			INCUBATORS	1		10	0
			OVEN	1		10	0
4	CHEMISTRY	Staff Room	FANS	3	0.08	10	432

			TFL	2	0.04	10	144
			COMP SYSTEM	1	0.08	10	144
			PRINTER	1	0.08	10	144
		STORE ROOM	FRIDGE	1	0.3	10	540
			FANS	1	0.08	10	144
			TFL	1	0.04	10	72
			OVEN	1		10	0
		LAB	TFL	7	0.04	10	504
			EXHAUST	2	0.075	10	270
5	ELECTRONICS	Staff Room	FANS	5	0.08	10	720
			TFL	4	0.04	10	288
			COMP SYSTEM	1	0.08	10	144
			TELEVISION	1	0.06	10	108
		LAB	FANS	4	0.08	10	576
			TFL	6	0.04	10	432
6	COMPUTER	Staff Room	FANS	2	0.08	10	288
			TFL	3	0.04	10	216
			COMP SYSTEM	1	0.08	10	144
			PRINTER	1	0.08	10	144
		LAB	COMP SYSTEM	18	0.08	10	2592
			FANS	5	0.08	10	720
			TFL	3	0.04	10	216
			CFL	2	0.025	10	90
			WINDOW AC	3		10	0
			PRINTER	2	0.08	10	288
			EXHAUST	3	0.06	10	324
			SCANNER	1	0.06	10	108
		PG LAB	FANS	3	0.08	10	432
			TFL	5	0.04	10	360
7	COMMERCE	Staff Room	FANS	1	0.08	10	144
			TFL	1	0.04	10	72
		LAB	TFL	5	0.04	10	360
			FANS	2	0.08	10	288
			COMP SYSTEM	16	0.08	10	2304
			PRINTER	1	0.08	10	144
8	PHYSICAL EDUCATION	GYM	FANS	3	0.08	10	432
			TFL	2	0.04	10	144
			CFL	1	0.025	10	45
		STORE ROOM	TFL	1	0.04	10	72
		Main Ground	LED	5	0.02	10	180
			CFL	1	0.025	10	45
		OUTER GROUND	CFL	2	0.02	10	72
9	MCVC DEPT	CLASS 01	TFL	1	0.04	10	72
			FANS	1	0.08	10	144
		CLASS 02	TFL	1	0.04	10	72

			FANS	1	0.08	10	144
		WORKSHOP	WELDING M/C	1		10	0
			DRILLING M/C	1		10	0
			GRINDING	1		10	0
			COMPRESSOR	1		10	0
			FL	2	0.04	10	144
			TFL	5	0.04	10	360
			FANS	2	0.08	10	288
			MOTORS	6		10	0
10	MARATHI	Room	TFL	2	0.04	10	144
			FANS	2	0.08	10	288
11	CLASSROOMS	1	FANS	4	0.08	10	576
			TFL	3	0.04	10	216
		2	TFL	3	0.04	10	216
			FANS	3	0.08	10	432
		3	TFL	2	0.04	10	144
			FANS	3	0.08	10	432
		7	FANS	1	0.08	10	144
			TFL	3	0.04	10	216
		8	TFL	3	0.04	10	216
			FANS	2	0.08	10	288
		9	FANS	3	0.08	10	432
			TFL	2	0.04	10	144
			FL	1	0.04	10	72
12	CENTRAL LIBRARY	MAIN LIBRARY	FANS	15	0.08	10	2160
			CFL	14	0.04	10	1008
			TV	1	0.065	10	117
			COMP SYSTEM	8	0.08	10	1152
			PRINTER	1	0.08	10	144
13	GROUND FLOOR	Staff Room	FANS	1	0.08	10	144
			TFL	1	0.04	10	72
			FANS	1	0.08	10	144
			CFL	1	0.02	10	36
		PASSAGE UPPER	CFL	4	0.02	10	144
		PASSAGE GROUND	FL	2	0.04	10	144
14	ADMIN DEPT	PRINCIPAL CABIN	AC	2		10	0
			TV	1		10	0
			COMP SYSTEM	1	0.08	10	144
			LED	5	0.12	10	1080
			CCTV			10	0
			FANS	1	0.08	10	144
		OFFICE	TFL	7	0.04	10	504
			FANS	6	0.08	10	864
			XEROX	1	0.25	10	450

			COMP SYSTEM	10	0.08	10	1440
			PRINTER	3	0.08	10	432
			FILTER	1	0.1	10	180
			COMP SYSTEM	2	0.08	10	288
			PRINTER	1	8	10	14400
			TFL	2	0.04	10	144
15	YCMU		FANS	1	0.08	10	144
	HOSTEL		FANS	2	0.08	10	288
16	BUILDING		TFL	12	0.04	10	864
			FANS	2	0.08	10	288
			TFL	2	0.04	10	144
	LANGUAGE		COMP SYSTEM				
17	LAB			10	0.08	10	1440
			FANS	1	0.08	10	144
18	STORE ROOM		TFL	1	0.04	10	72
			FANS	1	0.08	10	144
			TFL	2	0.04	10	144
	HOME		OVEN	1		10	0
19	ECONOMICS		FRIDGE	1	0.3	10	540
			TFL	1	0.04	10	72
			FANS	1	0.08	10	144
			COMP SYSTEM				
20	ENGLISH DEPT			1	0.04	10	72
			TFL	1	0.04	10	72
			FANS	1	0.08	10	144
			COMP SYSTEM				
21	NCC OFFICE			1	0.08	10	144
			TFL	3	0.04	10	216
	GUEST ROOM		FANS	1	0.08	10	144
			AC	1	0.04	10	72
			FRIDGE	1	0.3	10	540
			TFL	4	0.04	10	288
23	KALPATARU		COOLER	2		10	0
			FANS	3	0.08	10	432
			COMP SYSTEM	1	0.08	10	144
		Staff Room	FANS	1	0.08	10	144
			TFL	1	0.04	10	72
			FL	1	0.04	10	72
24	PHYSICS	LAB-I	FANS	2	0.08	10	288
			TFL	4	0.04	10	288
		LAB-II	FANS	2	0.08	10	288
			TFL	4	0.04	10	288
		DARK ROOM	TFL	1	0.04	10	72
			FL	1	0.04	10	72
25	SEMINAR HALL		FANS	10	0.08	10	1440
			TFL	7	0.04	10	504
26			FANS	2	0.08	10	288

	HISTORY AND POLITICAL SCIENCE		TFL	2	0.04	10	144
27	IQAC		FANS	2	0.08	10	288
			TFL	2	0.04	10	144

Table: Connected Load of Shri Shivaji Science & Art College, Chikhali

3.3 Total Quantity of Fixture in Shri Shivaji Science & Art College, Chikhali

Following are the Shri Shivaji Science & Art College, Chikhali fixture list,

Sr. No.	Appliances	Wattage	Quantity
1	Ceiling Fan	70	130
2	Table Fan/ wall Fan	55	2
3	Cooler	150	2
4	CFL Bulb	25 and 20	33
5	TFL Bulb	40	140
6	Xerox Machine	500	2
7	FL	50	8
8	Exhaust Fan	125	5
9	Computer	80	75
10	Water Cooler	250	2
11	Printer	800	5
12	AC	1500	3

Table: Total quantity of Fixture in Shri Shivaji Science & Art College, Chikhali

3.4 Current data of Shri Shivaji Science & Art College, Chikhali

Sr. No.	Consumer No	Meter No	Voltage			Current			
			RN	YN	BN	R	Y	B	N
1	300331041711		237	-	-	3.2	-	-	-
2	300331050761		239	-	-	2.6	-	-	-
3	3003300004880		242	232	243	7.2	2.2	7.5	5.2
4	300331041614		245	254	238	1.2	2.7	5.3	5.2

4. Energy Conservation Measures

ECM 1: Replacement of conventional lights (TL, FL and CFL) with more efficient LED lamps

There are around 180 Nos. of lights. It is recommended to replace 180 nos. of tube lights, FL and CFL, which are having working hours 10-12 hrs/day.

ECM No.	Energy efficiency improvement measures	Investment Rs.	Estimated savings	Estimated Savings Rs.	Estimated Payback Years
			Electricity kWh		
1	Replacement of conventional lights (TFL, CFL and FL) of 40,50 W with suitable 18W LEDs	45000	7128	49896	.9

Observation:

At many places fitting of TFL, FL and CFL with wattage of 20W,30W, 40W are in use.

Recommendations:

The 40-Watt Fluorescent tubular lights could be replaced with 18 Watt LEDs and CFL will replace with 18 W LEDs. LEDs have better efficacy per watt as well as they have much larger lifespan than TFLs.

During energy audit it is observed that facility has installed T8/T12 tubes, CFL and FL lights at some of the places in the building. The operating hours for these lightings are around 10-12 hours. T8 tube and other lightings can be replaced with the LED lightings thereby achieving significant energy consumption reduction. The LEDs could be replaced in such a manner that it has same fixture so there will not be retrofitting cost attached to the replacement. The replacement could be done in a phased manner. LED lightings have better efficacy as well as better lifetime than T8 lightings.

Energy Saving Calculations		
Particular	Unit	Value
Power consumption of TFL, CFL lamps	KW	0.04
Average power saving after replacement with LED Street light	KW	0.022
Total no. of fixtures (TFL, CFL) of 40 W to be replaced with suitable LED fittings	Nos	180
Average working hour per day	hrs	10
No. of working days in a year	Days	180
Cost Benefit Calculation		
Annual Energy Saving potential	kWh	7128
Electricity tariff	Rs/unit	7
Annual Cost Saving	Rs. Lakh	49896

Total investment cost	Rs. Lakh	45000
Simple Payback Period	Years	0.9018759
Note- Electricity tariff rate is based on Total Bill in Rs. / Billing unit Kwh.		

Simple Payback period: 9months

Saving achieved after project implementation = Rs. 50000/-.

ECM 2: Replacement of Old Fan with Energy Efficient Super Fan

There are around 130 Nos. of fans. It is recommended to replace all Ceiling fans with super-efficient fans. Which are having working hours 10 hrs/day.

ECM No.	Energy efficiency improvement measures	Investment Rs. In Lakh	Estimated saving	Estimated Savings Rs.	Estimated Payback Years
			Electricity kWh		
2	Replacement of Old Fan with Energy Efficient Super Fan	3.9	10998	77000	5

Observation:

All fans are old condition and older technology. During survey it is observed that facility has above 70- and 110-watt fans.

Recommendations:

During energy audit it is observed that facility has installed non star rated fan of above 70 watts so we recommend to replace energy consuming fan with energy efficient super fan

Energy Saving Calculations:

Particular	Unit	value
Current Fan Wattage	KW	0.075
Number of fans	Qty	130
Existing energy consumption of Fan	kWh/year	17550
Total Cost per annum	Rs./year	122850
Proposed Fan Wattage	Watt	0.028
Energy consumption after replacing with Energy Efficient Super Fan	kWh/year	6552

Operating hrs/year	Hrs./year	45864
Diversity factor	%	70%
Annual Saving	Rs/year	76986
Cost Benefit Calculation		
Annual Energy Saving potential	kWh	10998
Electricity tariff	Rs/unit	7
Annual Cost Saving	Rs. Lakh	76986
Total investment cost	Rs. Lakh	390000
Simple Payback Period	Years	5.06585613

Simple Payback period: 5 year

Saving achieved after project implementation = Rs. 39000/-

Capital Investment required for the proposed Project is given in the following table,

Sr. No	Item	C.S.R No.	Rate	Unit
1	Ceiling Fan 5 Star 1200 mm.	2/13/22	3000	Each
2	Dismantling of old C. Fans	2/14/4	31	Each
3	Electronic regulator 2 module	1/8/23.	0	Each
	GST		18%	
	Unit cost inclusive of GST Approx		3540	

ECM 3: Replacement of old refrigerators

ECM No.	Energy efficiency improvement measures	Investment Rs. In Lakh	Estimated saving Electricity kWh	Estimated Savings Rs.	Estimated Payback Years
3	Replacement of refrigerators	1	2000	.15	6

Observation:

Most of the refrigerators are old in condition and non-star rated with older technology.

Recommendations:

It is recommended to replace 5 star rated and inverter technology based refrigerators which are less energy consuming as well performs better.

ECM 4: Optimize the AC temperature setting

ECM No.	Energy efficiency improvement measures	Investment Rs. In Lakh	Estimated saving Electricity kWh	Estimated Savings Rs.	Estimated Payback Years
4	Optimize the AC temperature setting	0	70	500/-	0

Recommendations:

Having the optimum / minimum driving force (temperature difference) can help to achieve highest possible suction pressure at the compressor, thereby leading to less energy requirement. This requires proper sizing of heat transfer areas of process heat exchangers and evaporators as well as rationalizing the temperature requirement to highest possible value. A 1°C raise in evaporator temperature can help to save almost 3 % on power consumption. The TR capacity of the same machine will also increase with the evaporator temperature, as given in Table.

Effect of variation in Evaporator Temperature on Compressor Power Consumption			
Evaporator temperature(°C)	Refrigeration Capacity* (tons)	Specific Power Consumption	Increase in kW/ton (%)
5.0	67.58	0.81	-
0.0	56.07	0.94	16.0
-5.0	45.98	1.08	33.0
-10.0	37.20	1.25	54.0
-20.0	23.12	1.67	106.0

Condenser temperature 40°C

Hence it is recommended to change the AC temperature setting to 27 °C.

Other Recommendations:

A. Regular cleaning and maintenance of equipment's is important to reduce energy losses.
B. Use of start rates equipment's is also strongly recommended specially in case of refrigerators.
C. Use less papers and minimization of paper work is also strongly recommended to avoid loss of paper.
D. Cleaning of ceiling fan and exhaust fan blades will reduce the drag on the fan and inturn will reduce energy loss.

E. Awareness amongst students and staff is very essential step to reduce wastage of electricity
F. Energy conservation awareness programs can be conducted once a year. Increasing energy awareness of employees and students motivates them to work as a team can lead to reductions in energy consumption and save the money.

5. List of Instruments

Power analyser

Picture 1 Fluke Power analyzer

Specification of the 434 Fluke power analyzer:

Electrical	
Single Phase	YES
Three Phase	YES
USER INTERFACE	
LCD-Type	Graphic LCD
LCD-Dimension	127 x 88 mm
Traditional energy analysis	V, I, P, Q, S, F, PF, cos φ, peak, minimum, maximum, demand etc.
Voltage	1V to 1000 V phase to neutral
Current	Up to 6000 A
Frequency	42.50 to 57.50 Hz
Precision Voltage, Current, Power	±0.1 %

Fluke 434 power analyzer was used to meter the mains supply voltage and current inputs to the Ginger hotel Andheri Mumbai. The mains supply recordings were taken on the day 6th June – 7th June.

Luxmeter

Picture 2 Luxmeter

Indi 6171 Luxmeter was used to measure the lux levels in the ground floor as well as the first floor. The lux levels at the workplaces were found to be adequate.

Digital Clamp Meter

Picture 3 Mastech M266 clamp meter

Mastech M266C Digital AC Clamp Meter is used to measure the instantaneous current. The temporary measurements were recorded for the Main feeder, Lightings panel, ducted air conditioners. Following are the specification for this clamp meter:

Specification	Range	Accuracy
DC Voltage	200mV	-1.005
	2V/20V/200V	-3.005

	1000V	-3.008
AC Voltage	200V	-5.01
	750V	-5.012
AC Current	20A	-5.04
	200A	-5.025
	1000A	-10.03
Resistance	200Ω	-5.01
	2KΩ/20KΩ/200KΩ/2MΩ	-8.01
Temperature	0°C~400°C(32°F~752°F)	-3.01
	401°C~750°C(752°F~1382°F)	-3.02
Insulation Test	20MΩ	-2.02
	2000MΩ(Note<500Ω)	-2.04
	2000MΩ(Note>500Ω)	-2.05

Infrared thermometer

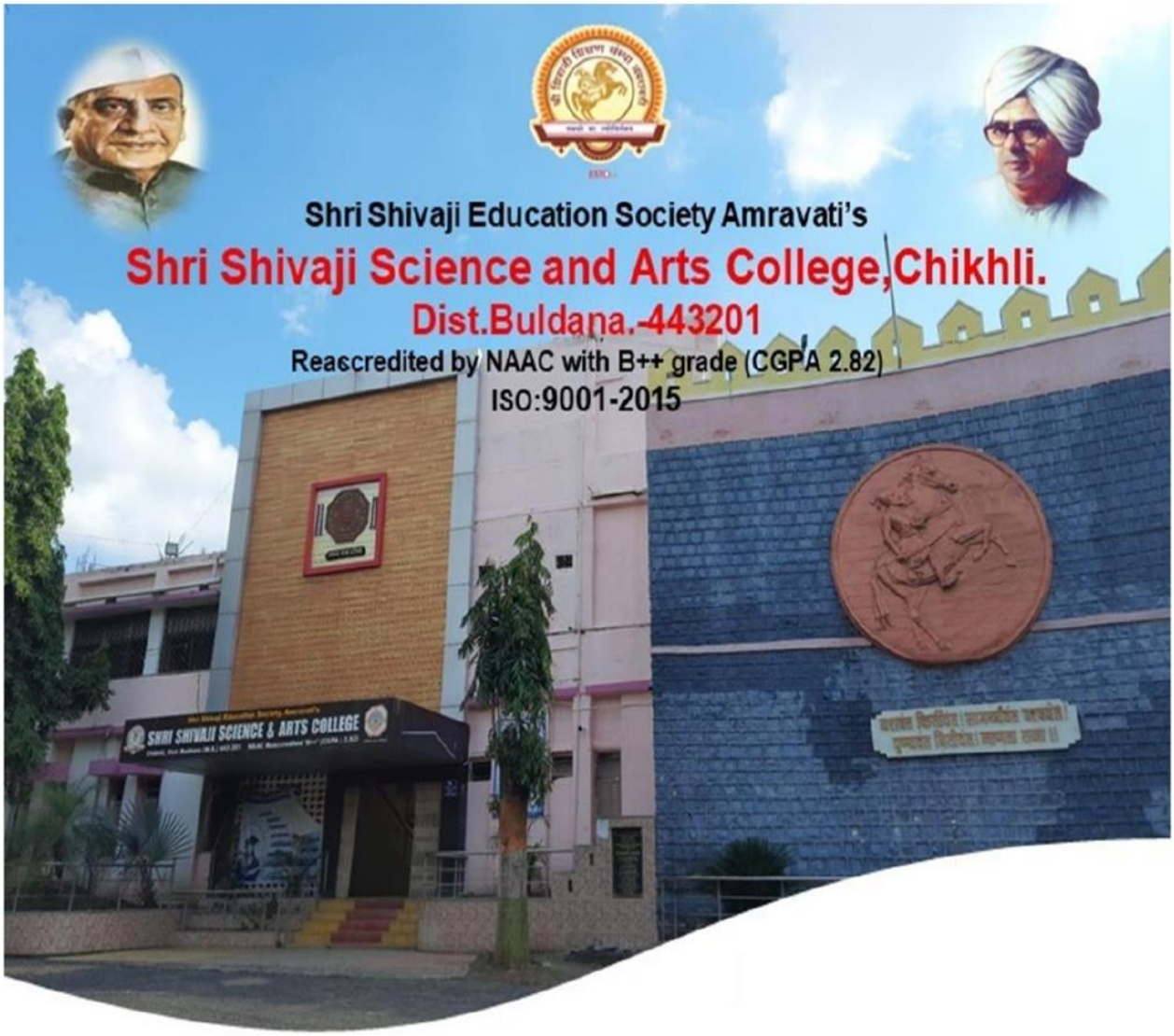
Picture 4 HTC IRX 64 Infrared thermometer

HTC IRX 64 infrared thermometer was used in order to record the temperature of the insulations. The following are the specifications:

Specification	Range
IR	-50 °C~1050 °C
Contact	-50 °C~1370 °C
IR Temp. Resolution	0.1 °C
Basic Accuracy	+/- 1.5% of reading
Emissivity	Adjustable 0.10 ~ 1.0
Optical resolution	30 : 1

3) Energy Audit Report:2021

Organisation	*Maharashtra State Electricity Distribution Company Limited, Chikhli, Dist. Buldhana*
Name of External Expert	*Er. Arun B. Bhusari, Asst. Engineer MSEDCL, Chikhli*



Shri Shivaji Science & Art College, Chikhli, Dist. Buldhana

Address:

DL/755, Chikhli, Maharashtra- 443201.

February 2021

Conducted By:

Maharashtra State Electricity Distribution Company Limited

Chikhli, Dist. Buldhana

Content:

ACKNOWLEDGEMENT

We express our sincere gratitude to the authorities of Shri Shivaji Science & Art College, Chikhli, Dist. Buldhana for the trust given to us and offering the opportunity to conduct energy assessment. We appreciate the initiative taken by the management of institute, O.S. Deshmukh (Principal) and Prof. N.B. Thakare (Department of Physics).

We are grateful to Department of Physics of Shri Shivaji Science & Art College, Chikhli, Dist. Buldhana for their initiative to undertake Energy Audit and continuous help and support before and during the audit also we are thankful for their positive support in undertaking the task of system mapping and energy efficiency assessment of all electrical system, air-conditioners, utilities and other equipment.

We are pleased to submit this Detailed Energy Audit Report to Hon. Principal Dr. O.S. Deshmukh, Shri Shivaji Science and Arts College, Chikhli, Dist. Buldhana representing on behalf of management of Shri Shivaji Education Society, Amravati and wish him all the best for implementation of identified Energy Conservation Opportunity as well as recommendations after sincere study & observations.

Er. Arun B. Bhusari

Assistant Engineer
M.S. Elect. Dist Co. Ltd
Chikhli Urban D/c

Energy Audit Study Team:

Sr. No	Name	Designation	Experience
1	Mr. Arun Bhagwan Bhusari	Engineer (MSEB)	25 Yrs.
2	Miss Pooja Waghmare	Assistant	10 Yrs.
3	Mr. Arun Muley	Electrician	15 Yrs.

1) Executive Summary

The Energy Efficiency Assessment was undertaken in order to evaluate energy performance and identify potential energy conservation measures. The assessment was undertaken in three steps, i.e., document review of data and information initially provided by facility, on site activity and preparation of this report.

The on-site activity was conducted by assessment team on 2-May-2019 consist of interviews with staff, electricians, collection/review of further data and a field inspection of the facilities and equipment's. The facility has executed a number of energy conservation measures at the time of audit itself. This brief report has therefore sought to provide a high-level overview of the status of energy efficiency at Shri Shivaji Science & Art College, Chikhali, combined with an illustration of areas where further, previously unidentified savings opportunities may exist.

Our survey has identified further potential opportunities, ranging from "no & low cost" measures, through to those that will require significant capital expenditure.

Note: Investment figures mentioned in are only indicative, further detailed study is recommended

Summary of Recommended Energy Conservation Measures:

S.N.	Equipment Name	ECM Details	Investment (Rs. In Lacs)	Savings (kWh/year)	Saving (Rs. In Lacs / Year)	Payback (Years)
1	Lights	Replacement of conventional lights (TFL, CFL) of 40 W with suitable LED tubes.	0.33	6380	0.42	0.7
2	Fan	Replacement of Old Fan with Energy Efficient Super Fan	3.9	10998	0.77	5
3	Refrigerators	Replacement of refrigerators below 2* rating with 5* rated AC	1	2000	0.15	6
4	AC	Optimize the AC temperature setting	0	70	Rs.500	0
Total						

Note: Estimated savings alterations are on operating conditions and considering 10 hours per day operation and 180 days working per annum.

Prioritization of Energy Conservation Measures:

On energy saving basis:

Sr. No.	Equipment Name	ECM Details	Investment (Rs. In Lacs)	Savings (kWh/year)	Saving (Rs. In Lacs /Year)	Payback (Years)
1	Fan	Replacement of Old Fan with Energy Efficient Super Fan	3.9	10998	0.77	5
2	Lights	Replacement of conventional lights (TFL, CFL) of 40 W with suitable LED tubes.	0.45	7128	0.4986	0.9
3	Refrigerators	Replacement of refrigerators below 2* rating with 5* rated AC	1	2000	.15	6
4	AC	Optimize the AC temperature setting	0	70	Rs. 500	0

Note: Investment figures mentioned in are only indicative, further detailed study is recommended.

General audit review:

Shri Shivaji Science & Art College, Chikhli can implement faster payback energy conservation measures (ECMs) which have already been considered and for which the ECMs are fully developed.

Other general points:

Awareness amongst students and staff is very essential step to reduce wastage of electricity Energy conservation awareness programs can be conducted once a year. Increasing energy awareness of employees and students motivates them to work as a team can lead to reductions in energy consumption and save the money. Savings estimates range in the order of 25 to 30%. When implemented effectively these savings can be realized quickly and cost effectively.

It is believed that with a revised approach and organization of energy management, energy losses can be reduced in a systematic, cost-effective manner. We hope that this report will help Shri Shivaji Science & Art College, Chikhli to implement these changes and provide direction to the Energy Management Team.

2) About Shri Shivaji Science & Art College, Chikhli.

The Shri Shivaji Science & Art College, Chikhli is Shri Shivaji Science & Arts College Chikhli is a co-ed college offering Science, Arts, Commerce streams at PU, UG and PG level founded in 1967. It is located at MH SH 176, Gandhi Nagar, Chikhli, Maharashtra 443201.

Objective

The overall objective of the assignment is to quantify energy savings in existing system and achieve reduction in energy consumption pattern.

Hence the detail objectives are as under,

i) To carry out the energy consumption.
ii) To find out the energy saving opportunities.
iii) To quantify the total energy savings.
iv) 4To find out the ways to achieve energy efficiency.

2.1 Scope of work

Following is the scope of work envisaged for this assignment,

Data collection

To collect the details of various electrical and mechanical system and their ratings, the available drawings and details shall be studied. Detail load list shall be prepared and checked.

A, B, C Analysis

With the details available from load list, analysis shall be carried out depending on the present usage trends. All the power consuming equipments shall be classified in three categories depending on their ratings, condition and operating time. The area for larger potentials for savings shall be identified.

Field Study

The detail field study on site shall include the following as well as all other measures required for energy audit study,

a) Lay out the system and study of Electrical distribution.
b) Study of area wise power distribution and Measurement of power consumption.
c) Study of instrumentation provided.
d) Measurement of motor currents, voltages, power etc. parameters by energy analyzer and measurement of water flow, pressures etc. parameters of pumps simultaneously and other measurements as needed to characterize the system and required for calculating efficiency at various combinations.
e) Study of air conditioner operations and system requirements.
f) Analysis of readings obtained from field with the standard consumption.

2.2 Approach and Methodology

i) Understanding the Scope of Work and Resource Planning.

ii) Identification of Key Personnel for the assignment/ project.

iii) Structured Organization Matrix.

iv) Steps in preparing and implementing energy audit assignment.

a) Discussions with key facility personnel.

b) Site visits and conducting "walk-through audit".

c) Preliminary Data Collection through questionnaire before audit team's site visit.

d) Steps for conducting the detailed audit.

- Plan the activities of site data collection in coordination with the facility in-charge.
- Study the existing operations involving energy consumption.
- Collect and collate the energy consumption data with respect to electricity consumption.
- Conduct performance tests to assess the efficiency of the system equipment/ electricity distribution, lighting, and identify energy losses.
- Discuss with facility operation / maintenance personnel about identified energy losses.

v) List proposed efficiency measures.

- Develop a set of potential efficiency improvement proposals.
- Baseline parameters.
- Data presentation.
- System mapping.
- List of potential Energy Savings proposals with cost benefit analysis.
- Review of current operation & maintenance practices.

vi) Preparation of the Draft Energy Audit Report.

vii) Preparation and submission of final Energy Audit Report after discussion with concerned persons.

3) Energy Details:

The energy efficiency assessment was conducted for the load connected to the mains supply used. Mainly energy is used on this facility for the following purposes:

i) Lighting.

ii) Ceiling fans.

iii) Refrigerators

iv) Ovens and Lab Equipments

v) Computer Systems

vi) Workshop Utilities

vii) Air Conditioner.

Based on above it is clear that followings buildings have highest potential for energy savings

Sr. No.	Name of the Building	Particulars
1	Wing-A	Class Rooms
2	Wing-B	Administration Department
3	Wing-C	Zoology, Botany, Chemistry, Physics, Microbiology, Commerce
4	Wing-D	Workshop
5	Wing-E	Hostel, Playground

3.1 Analysis of Electricity Bills.

The energy consumption of last 12 months is tabulated as follows.

Summary of Energy Bill for Last Twelve Months			
Sr. No	**Month & Year Electricity**	**Consumer No. 300331050761/711/880/614 Bill Amount (in Rs.)**	**Total (in Rs.)**
1	Mar-20	4517.68	54450.45
2	April-20	6436.22	
3	May-20	6448.44	
4	June-20	6448.44	
5	July-20	5220.33	
6	Aug-20	3216.25	
7	Sept-20	3564.52	
8	Oct-20	3626.62	
9	Nov-20	6246.81	
10	Dec-20	2717.46	
11	Jan-21	2837.43	
12	Feb.21	3271.24	

3.2 Connected Load of Shri Shivaji Science & Art College, Chikhli

Sr No.	Name of Department	Name of Block of department	Appliance	Quantity	Wattage (KW)	No of working Hours	Total KWh Aprox. Consumption per year
1	Zoology	Staff Room	FANS	2	0.07	10	252
			LED	2	0.04	10	144
		LAB	FANS	8	0.07	10	1008
			LED	6	0.04	10	432
			COMP SYSTEM	1	0.08	10	144
			OVEN	2	1.7	10	6120
			REF	1	0.3	10	540
2	Micro-Biology	Staff Room	LED	2	0.018	10	64.8
			FANS	1	0.08	10	144
		Lab	LED	5	0.02	10	180
			FANS	5	0.08	10	720
			LED	3	0.04	10	216
			REF	1	0.3	10	540
			DEEP FREEZER	1		10	0
			INCUBATORS	3		10	0
			HOT AIR OVEN	1		10	0
			AUTOCLAVE	2		10	0
			COMP SYSTEM	1		10	0
		RESEARCH LAB	FANS	3	0.08	10	432
			COMP SYSTEM	1	0.08	10	144
			LED	4	0.04	10	288
			LED	1	0.025	10	45
			FL	1	0.04	10	72
			INCUBATORS	1		10	0
			HOT AIR OVEN	1		10	0
			REF	5	0.3	10	2700
			CENTRIFUGE	1	0.09	10	162
3	BOTANY	Staff Room	FANS	2	0.08	10	288
			LED	1	0.04	10	72
		LAB-I	FANS	2	0.08	10	288
			LED	2	0.04	10	144
			LED	2	0.04	10	144
			COMP SYSTEM	1	0.08	10	144
		LAB-II	REF	1	0.3	10	540
			INCUBATORS	1		10	0
			OVEN	1		10	0
4	CHEMISTRY	Staff Room	FANS	3	0.08	10	432
			LED	2	0.04	10	144
			COMP SYSTEM	1	0.08	10	144
			PRINTER	1	0.08	10	144
			FRIDGE	1	0.3	10	540
			FANS	1	0.08	10	144

		STORE ROOM	TFL	1	0.04	10	72
			OVEN	1		10	0
		LAB	LED	7	0.04	10	504
			EXHAUST	2	0.075	10	270
5	ELECTRONICS	Staff Room	FANS	5	0.08	10	720
			LED	4	0.04	10	288
			COMP SYSTEM	1	0.08	10	144
			TELEVISION	1	0.06	10	108
		LAB	FANS	4	0.08	10	576
			TFL	6	0.04	10	432
6	COMPUTER	Staff Room	FANS	2	0.08	10	288
			TFL	3	0.04	10	216
			COMP SYSTEM	1	0.08	10	144
			PRINTER	1	0.08	10	144
		LAB	COMP SYSTEM	18	0.08	10	2592
			FANS	5	0.08	10	720
			TFL	3	0.04	10	216
			CFL	2	0.025	10	90
			WINDOW AC	3		10	0
			PRINTER	2	0.08	10	288
			EXHAUST	3	0.06	10	324
			SCANNER	1	0.06	10	108
		PG LAB	FANS	3	0.08	10	432
			TFL	5	0.04	10	360
7	COMMERCE	Staff Room	FANS	1	0.08	10	144
			TFL	1	0.04	10	72
		LAB	TFL	5	0.04	10	360
			FANS	2	0.08	10	288
			COMP SYSTEM	16	0.08	10	2304
			PRINTER	1	0.08	10	144
8	PHYSICAL EDUCATION	GYM	FANS	3	0.08	10	432
			TFL	2	0.04	10	144
			CFL	1	0.025	10	45
		STORE ROOM	TFL	1	0.04	10	72
		Main Ground	LED	5	0.02	10	180
			CFL	1	0.025	10	45
		OUTER GROUND	CFL	2	0.02	10	72
9	MCVC DEPT	CLASS 01	TFL	1	0.04	10	72
			FANS	1	0.08	10	144
		CLASS 02	TFL	1	0.04	10	72
			FANS	1	0.08	10	144
		WORKSHOP	WELDING M/C	1		10	0
			DRILLING M/C	1		10	0
			GRINDING	1		10	0
			COMPRESSOR	1		10	0
			FL	2	0.04	10	144

			TFL	5	0.04	10	360
			FANS	2	0.08	10	288
			MOTORS	6		10	0
10	MARATHI	Room	TFL	2	0.04	10	144
			FANS	2	0.08	10	288
11	CLASSROOMS	1	FANS	4	0.08	10	576
			TFL	3	0.04	10	216
		2	TFL	3	0.04	10	216
			FANS	3	0.08	10	432
		3	TFL	2	0.04	10	144
			FANS	3	0.08	10	432
		7	FANS	1	0.08	10	144
			TFL	3	0.04	10	216
		8	TFL	3	0.04	10	216
			FANS	2	0.08	10	288
		9	FANS	3	0.08	10	432
			TFL	2	0.04	10	144
			FL	1	0.04	10	72
12	CENTRAL LIBRARY	MAIN LIBRARY	FANS	15	0.08	10	2160
			CFL	14	0.04	10	1008
			TV	1	0.065	10	117
			COMP SYSTEM	8	0.08	10	1152
			PRINTER	1	0.08	10	144
13	GROUND FLOOR	Staff Room	FANS	1	0.08	10	144
			TFL	1	0.04	10	72
			FANS	1	0.08	10	144
			CFL	1	0.02	10	36
		PASSAGE UPPER	CFL	4	0.02	10	144
		PASSAGE GROUND	FL	2	0.04	10	144
14	ADMIN DEPT	PRINCIPAL CABIN	AC	2		10	0
			TV	1		10	0
			COMP SYSTEM	1	0.08	10	144
			LED	5	0.12	10	1080
			CCTV			10	0
			FANS	1	0.08	10	144
		OFFICE	TFL	7	0.04	10	504
			FANS	6	0.08	10	864
			XEROX	1	0.25	10	450
			COMP SYSTEM	10	0.08	10	1440
			PRINTER	3	0.08	10	432
			FILTER	1	0.1	10	180
15	YCMU		COMP SYSTEM	2	0.08	10	288
			PRINTER	1	8	10	14400
			TFL	2	0.04	10	144
			FANS	1	0.08	10	144
16	HOSTEL BUILDING		FANS	2	0.08	10	288
			TFL	12	0.04	10	864
17	LANGUAGE LAB		FANS	2	0.08	10	288
			TFL	2	0.04	10	144
			COMP SYSTEM	10	0.08	10	1440

18	STORE ROOM		FANS	1	0.08	10	144
			TFL	1	0.04	10	72
19	HOME ECONOMICS		FANS	1	0.08	10	144
			TFL	2	0.04	10	144
			OVEN	1		10	0
			FRIDGE	1	0.3	10	540
20	ENGLISH DEPT		TFL	1	0.04	10	72
			FANS	1	0.08	10	144
			COMP SYSTEM	1	0.04	10	72
21	NCC OFFICE		TFL	1	0.04	10	72
			FANS	1	0.08	10	144
			COMP SYSTEM	1	0.08	10	144
22	GUEST ROOM		TFL	3	0.04	10	216
			FANS	1	0.08	10	144
			AC	1	0.04	10	72
			FRIDGE	1	0.3	10	540
23	KALPATARU		TFL	4	0.04	10	288
			COOLER	2		10	0
			FANS	3	0.08	10	432
24	PHYSICS	Staff Room	COMP SYSTEM	1	0.08	10	144
			FANS	1	0.08	10	144
			TFL	1	0.04	10	72
			FL	1	0.04	10	72
		LAB-I	FANS	2	0.08	10	288
			LE	4	0.04	10	288
		LAB-II	FANS	2	0.08	10	288
			LED	4	0.04	10	288
		DARK ROOM	TFL	1	0.04	10	72
			FL	1	0.04	10	72
25	SEMINAR HALL		FANS	10	0.08	10	1440
			LED	7	0.04	10	504
26			FANS	2	0.08	10	288
	HISTORY AND POLITICAL SCIENCE		TFL	2	0.04	10	144
27	IQAC		FANS	2	0.08	10	288
			TFL	2	0.04	10	144

3.3 Total Quantity of Fixture in Shri Shivaji Science & Art College, Chikhli

Following is the Shri Shivaji Science & Art College, Chikhli fixture list,

Sr. No.	Appliances	Wattage	Quantity
1	Ceiling Fan	70	130
2	Table Fan/ wall Fan	55	2
3	Cooler	150	2
4	CFL Bulb	25 and 20	33
5	TFL Bulb	40	140
6	Xerox Machine	500	2
7	FL	50	8
8	Exhaust Fan	125	5
9	Computer	80	75
10	Water Cooler	250	2
11	Printer	800	5
12	AC	1500	3

3.4 Current data of Shri Shivaji Science & Art College, Chikhli

Sr. No.	Consumer No	Meter No	Voltage			Current			
			RN	YN	BN	R	Y	B	N
1	300331041711		237	-	-	3.2	-	-	-
2	300331050761		239	-	-	2.6	-	-	-
3	3003300004880		242	232	243	7.2	2.2	7.5	5.2
4	300331041614		245	254	238	1.2	2.7	5.3	5.2

4) Energy Conservation Measures

ECM 1: Replacement of conventional lights (TL, FL and CFL) with more efficient LED lamps

There are around 120 Nos. of lights. It is recommended to replace 120 nos. of tube lights, FL and CFL, which are having working hours 10-12 hrs./day.

ECM No.	Energy efficiency improvement measures	Investment Rs.	Estimated savings Electricity kWh	Estimated Savings Lac.	Estimated Payback Years
1	Replacement of conventional lights (TFL, CFL and FL) of 40,50 W with suitable 18W LEDs	32000	6380	0.42	0.7

Note: Estimated savings alterations are on operating conditions and considering 10 hours per day operation and 180 days working per annum.

Observation:

As per energy audit done in 2019 there were 180 of nos. of TFL, FL and CFL with wattage of 20W,30W, 40W are in use, which are having working hours 10-12 hrs./day. Now there were now reduced to 120 nos but needs to be replaced by suitable LED lights.

Recommendations:

The 40-Watt Fluorescent tubular lights could be replaced with 18 Watt LEDs and CFL will replace with 18 W LEDs. LEDs have better efficacy per watt as well as they have much larger lifespan than TFLs.

During energy audit it is observed that facility has installed T8/T12 tubes, CFL and FL lights at some of the places in the building. The operating hours for these lightings are around 10-12 hours. T8 tube and other lightings can be replaced with the LED lightings thereby achieving significant energy consumption reduction. The LEDs could be replaced in such a manner that it has same fixture so there will not be retrofitting cost attached to the replacement. The replacement could be done in a phased manner. LED lightings have better efficacy as well as better lifetime than T8 lightings.

Energy Saving Calculations		
Particular	Unit	Value
Power consumption of TFL, CFL lamps	KW	0.04
Average power saving after replacement with LED Street light	KW	0.022
Total no. of fixtures (TFL, CFL) of 40 W to be replaced with suitable LED fittings	Nos	180
Average working hour per day	hrs	10
No. of working days in a year	Days	180
Cost Benefit Calculation		
Annual Energy Saving potential	kWh	7128
Electricity tariff	Rs/unit	7
Annual Cost Saving	Rs. Lakh	49896

Total investment cost	Rs. Lakh	45000
Simple Payback Period	Years	0.9018759
Note- Electricity tariff rate is based on Total Bill in Rs. / Billing unit Kwh.		

Simple Payback period: 9months

Saving achieved after project implementation = Rs. 50000/-.

ECM 2: Replacement of Old Fan with Energy Efficient Super Fan

There are around 130 Nos. of fans. It is recommended to replace all Ceiling fans with super- efficient fans. Which are having working hours 10 hrs./day.

ECM No.	Energy efficiency improvement measures	Investment Rs. In Lakh	Estimated saving Electricity kWh	Estimated Savings Rs.	Estimated Payback Years
2	Replacement of Old Fan with Energy Efficient Super Fan	3.9	10998	77000	5

Observation:

All fans are old condition and older technology. During survey it is observed that facility has above 70- and 110-watt fans.

Recommendations:

During energy audit it is observed that facility has installed non star rated fan of above 70 watts so we recommend to replace energy consuming fan with energy efficient super fan.

Energy Saving Calculations:

Particular	Unit	Value
Current Fan Wattage	KW	0.075
Number of fans	Qty	130
Existing energy consumption of Fan	kWh/year	17550
Total Cost per annum	Rs. /Year	122850
Proposed Fan Wattage	Watt	0.028
Energy consumption after replacing with Energy Efficient Super Fan	kWh/year	6552
Operating hrs/year	Hrs./year	45864
Diversity factor	%	70%
Annual Saving	Rs/year	76986
Cost Benefit Calculation		
Annual Energy Saving potential	kWh	10998
Electricity tariff	Rs/unit	7
Annual Cost Saving	Rs. Lakh	76986
Total investment cost	Rs. Lakh	390000
Simple Payback Period	Years	5.06585613

Simple Payback period: 5 years, Saving achieved after project implementation = Rs. 39000/-
Capital Investment required for the proposed Project is given in the following table,

Sr. No	Item	C.S.R No.	Rate	Unit
1	Ceiling Fan 5 Star 1200 mm.	2/13/22	3000	Each
2	Dismantling of old C. Fans	2/14/4	31	Each
3	Electronic regulator 2 module	1/8/23.	0	Each
	GST		18%	
	Unit cost inclusive of GST Approx.		3540	

ECM3: Replacement of old refrigerators:

ECM No.	Energy efficiency improvement measures	Investment Rs. In Lakh	Estimated saving Electricity kWh	Estimated Savings Rs.	Estimated Payback Years
3	Replacement of refrigerators	1	2000	.15	6

Observation:

Most of the refrigerators are old in condition and non-star rated with older technology.

Recommendations:

It is recommended to replace 5 stars rated and inverter technology-based refrigerators which are less energy consuming as well performs better.

ECM 4: Optimize the AC temperature setting

ECM No.	Energy efficiency improvement measures	Investment Rs. In Lakh	Estimated saving Electricity kWh	Estimated Savings Rs.	Estimated Payback Years
4	Optimize the AC temperature setting	0	70	500/-	0

Recommendations:

Having the optimum / minimum driving force (temperature difference) can help to achieve highest possible suction pressure at the compressor, thereby leading to less energy requirement. This requires proper sizing of heat transfer areas of process heat exchangers and evaporators as well as rationalizing the temperature requirement to highest possible value. A 1°C raise in evaporator temperature can help to save almost 3 % on power consumption. The TR capacity of the same machine will also increase with the evaporator temperature, as given in Table.

Effect of variation in Evaporator Temperature on Compressor Power Consumption			
Evaporator temperature(°C)	Refrigeration Capacity* (tons)	Specific Power Consumption	Increase in kW/ton (%)
5.0	67.58	0.81	-
0.0	56.07	0.94	16.0
-5.0	45.98	1.08	33.0
-10.0	37.20	1.25	54.0
-20.0	23.12	1.67	106.0

Condenser temperature 40°C. Hence it is recommended to change the AC temperature setting to 27 °C.

Other Recommendations:

i) Recommended to install at least 10 kW in campus as measure non-conventional energy source.

ii) Regular cleaning and maintenance of equipment's is important to reduce energy losses.

iii) Use of start rates equipment's is also strongly recommended specially in case of refrigerators.

iv) Use less papers and minimization of paper work is also strongly recommended to avoid loss of paper.

v) Cleaning of ceiling fan and exhaust fan blades will reduce the drag on the fan and inturn will reduce energy loss.

vi) Awareness amongst students and staff is very essential step to reduce wastage of electricity

vii) Energy conservation awareness programs can be conducted once a year. Increasing energy awareness of employees and students motivates them to work as a team can lead to reductions in energy consumption and save the money.

5) List of Instruments used:

i) Power analyzer

Picture 1 Fluke Power Analyzer

Specification of the 434 Fluke power analyzer:

Electrical	
Single Phase	YES
Three Phase	YES
USER INTERFACE	
LCD-Type	Graphic LCD
LCD-Dimension	127 x 88 mm
Traditional energy analysis	V, I, P, Q, S, F, PF, cos ϕ, peak, minimum, maximum, demand etc.
Voltage	1V to 1000 V phase to neutral
Current	Up to 6000 A
Frequency	42.50 to 57.50 Hz
Precision Voltage, Current, Power	±0.1 %

ii) Luxmeter:

Indi 6171 Luxmeter was used to measure the lux levels in the ground floor as well as the first floor. The lux levels at the workplaces were found to be adequate.

Picture 2 Luxmeter

iii) Digital Clamp Meter:

Mastech M266C Digital AC Clamp Meter is used to measure the instantaneous current. The temporary measurements were recorded for the Main feeder, Lightings panel, ducted air conditioners. Following is the specification for this clamp meter:

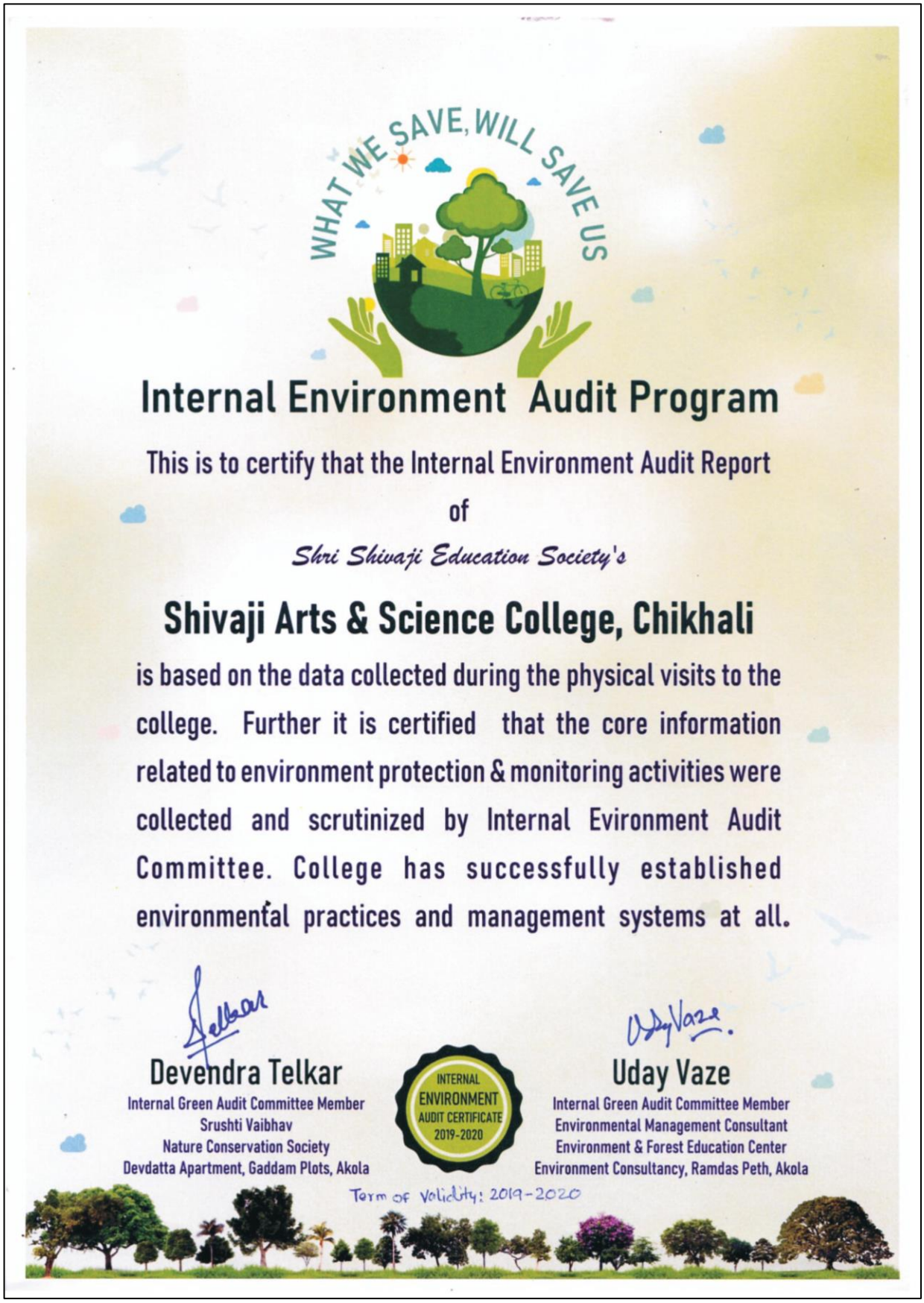
Picture 3 Mastech M266 clamp meter

Specification	Range	Accuracy
DC Voltage	200mV	-1.005
	2V/20V/200V	-3.005
	1000V	-3.008
AC Voltage	200V	-5.01
	750V	-5.012
AC Current	20A	-5.04
	200A	-5.025
	1000A	-10.03
Resistance	200Ω	-5.01
	2KΩ/20KΩ/200KΩ/2MΩ	-8.01
Temperature	0°C~400°C(32°F~752°F)	-3.01
	401°C~750°C(752°F~1382°F)	-3.02
Insulation Test	20MΩ	-2.02
	2000MΩ(Note<500Ω)	-2.04
	2000MΩ(Note>500Ω)	-2.05

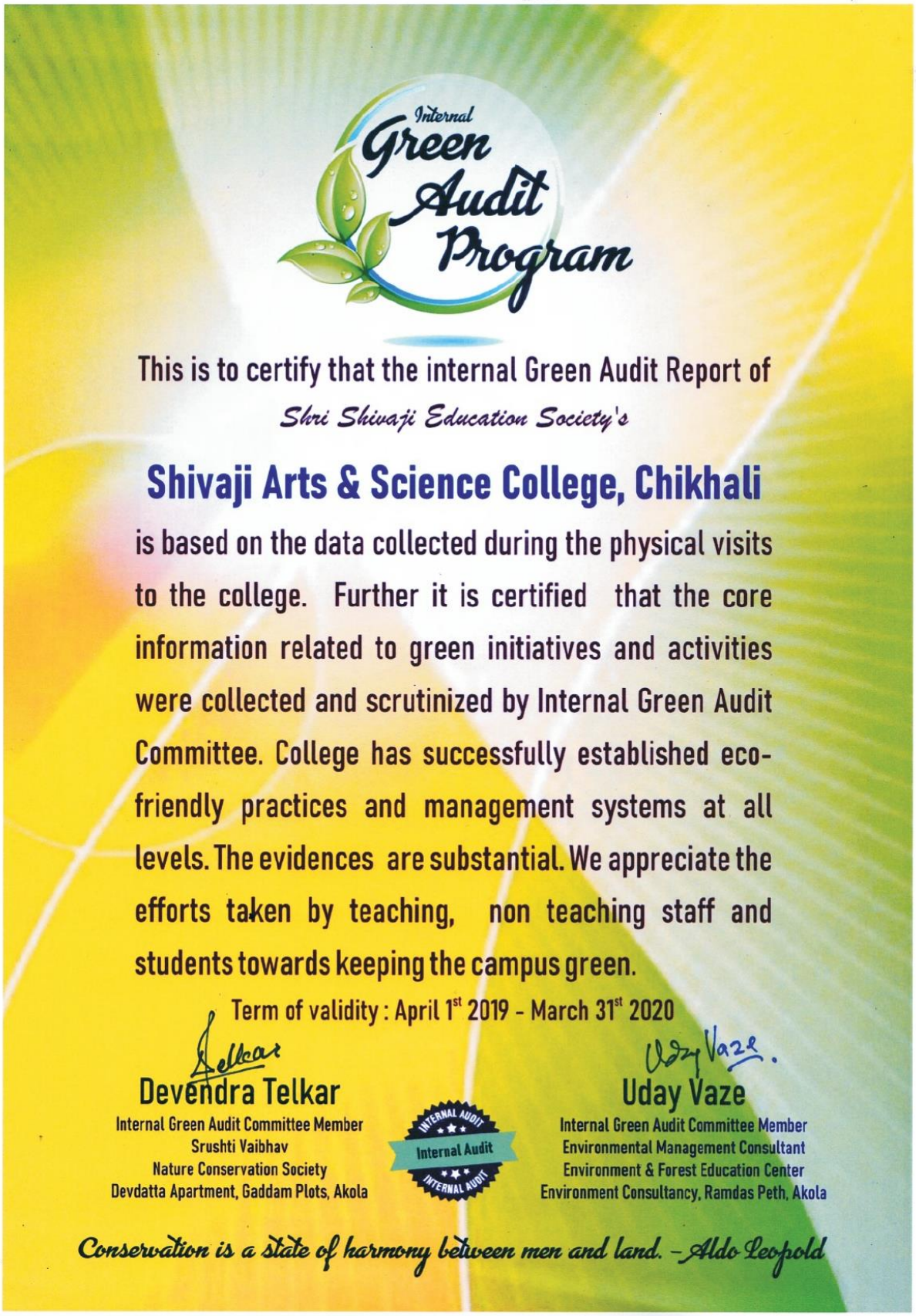
Er. Arun B. Bhusari
Assistant Engineer
M.S. Elect. Dist Co. Ltd
Chikhli Urban D/c

4) Certificate From Auditing Agency:

i) Certificate of Environment Audit:



ii) Certificate of Green Audit:



Internal Green Audit Program

This is to certify that the internal Green Audit Report of

Shri Shivaji Education Society's

Shivaji Arts & Science College, Chikhali

is based on the data collected during the physical visits to the college. Further it is certified that the core information related to green initiatives and activities were collected and scrutinized by Internal Green Audit Committee. College has successfully established eco-friendly practices and management systems at all levels. The evidences are substantial. We appreciate the efforts taken by teaching, non teaching staff and students towards keeping the campus green.

Term of validity : April 1st 2019 - March 31st 2020

Devendra Telkar
Internal Green Audit Committee Member
Srushti Vaibhav
Nature Conservation Society
Devdatta Apartment, Gaddam Plots, Akola

Internal Audit

Uday Vaze
Internal Green Audit Committee Member
Environmental Management Consultant
Environment & Forest Education Center
Environment Consultancy, Ramdas Peth, Akola

Conservation is a state of harmony between men and land. - Aldo Leopold

iii) Certificate of Energy Audit: 2019

PPS Energy Solutions

PPS Energy Solutions Pvt. Ltd.
Regd. Off: B-403, Bharti Vihar, S.No-78, Bharti Vidyapith Campus, Katraj, Pune – 411046 Ph:+91-20-2523 2858, 6400 0643

Date: 20/05/2019

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that, we M/s. **PPS Energy Solutions Pvt. Ltd.** has successfully completed **Energy Audit at Shri Shivaji Senior College, Chikhli** and submitted report.

For PPS Energy Solutions Pvt. Ltd, Pune

Dr. Ravi. G. Deshmukh
Director

Maharashtra State Electricity Board, Chikhli.

This is to certify that,

SHRI SHIVAJI EDUCATION SOCIETY AMRAVATI'S

SHRI SHIVAJI SCIENCE AND ARTS COLLEGE, CHIKHLI. DIST BULDANA.

Energy Audit

Originally Registered: 15 March 2019

Validity of this certificate is subject to annual surveillance audit to be done successfully on or before of 14 Feb 2019 &14 Feb 2021 respectively. In Case if surveillance audit is not allowed to conduct; this certificate shall be suspended/withdrawn.

Asstt Engineer
M S E D C.Ltd.
Sub-Divn Chikhli

iv) Energy Audit Report-2021:

Maharashtra State Electricity Distribution Company Limited

Date: 12/02/2021

CERTIFICATE

TO WHOMSOEVER IT MAY CONCERN

This is to certify that we, Maharashtra State Electricity Distribution Company Limited, Chikhli, Dist. Buldhana, has successfully completed Energy audit at Shri Shivaji Science and Arts College, Chikhli, and submitted the report. It is found that the institute has made improvements in installing energy efficient equipments in its campus.

Assistant Engineer
Chikhli Urban D/c

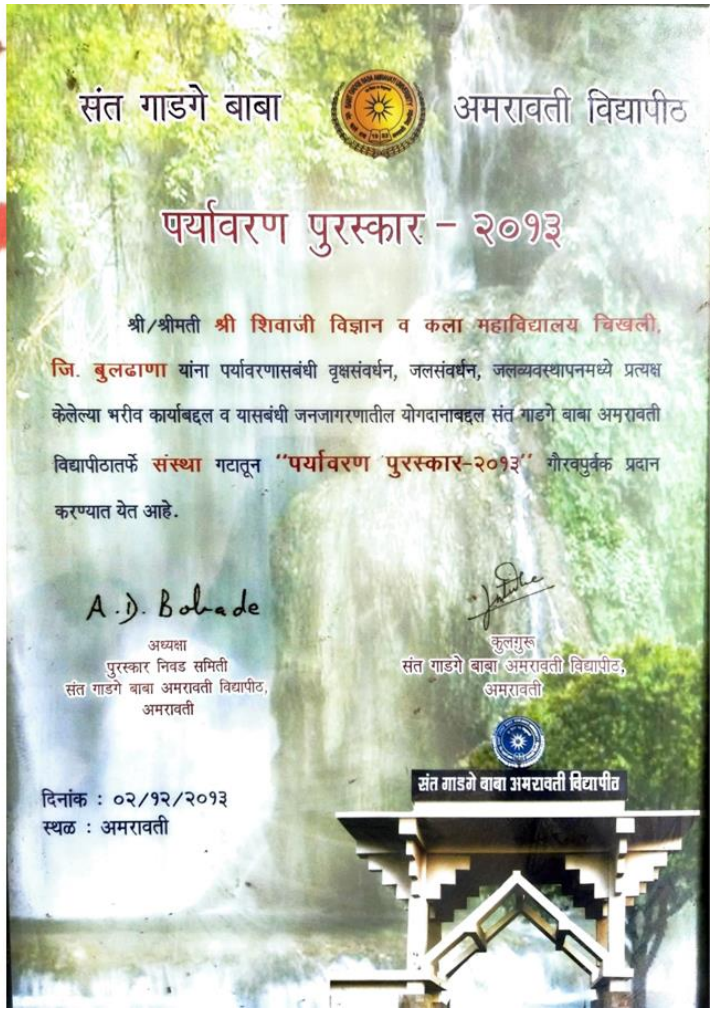
Er. Arun B. Bhusari

5) Certificates of the Award Received from Recognised Agency:

The Maharashtra State Vanashree Award was launched in 2008 to recognize individuals and organizations who have excelled in plantation and conservation in the non-forestry sector of social forestry. Now the name of this award has been changed as Chhatrapati Shivaji Maharaj Vanashree Award.

The administration has substantially increased the amount of this award with a view to more broadly encourage tree conservation on non-forest land. According to the National Forest Fund, the target is to cover 33 percent of the state's area under forest cover. Also, the government encourage to increase tree plantation on maximum waste land and to encourage individuals and organizations working for environmental balance and create public awareness through the 20-point program and other tree planting supplementary schemes.

In this context Dr. N. B. Bhusari, Principal Shri Shivaji Science & Arts College Chikhli, Dist. Buldana. Received "Chhatrapati Shivaji Maharaj Vanshree Puraskar State Award" 2nd Prize in individual category in 2014. Institute also received "Paryavaran Puraskar" from Sant gadge Baba Amravati University, Amravati in 2013.



Dr. N. B. Bhusari receiving "Chhatrapati Shivaji Maharaj Vanshree Puraskar State Award"

Dr. N. B. Bhusari receiving "Paryavarn Puraskar"

6) Action Taken Report on Beyond Campus Environment Promotional Activities:

i) Workshop on Seed Ball Preparation

Date: 6th June 2022, Number of Participants: 24

Seed Ball Preparation Workshop was organised by Department of Botany on the occasion of World Environment Day-2022 in Collaboration with Mahatma Gandhi National Council of Rural Education. The concept of workshop was put forward by Dr. V. U. Pochhi (Head of Department). Total 21 students and 3 faculties participated in this workshop. Prof. M. D. Kolte and Prof. D. L. Gavande Guided the students for making the seed ball. Principal Dr. O. S. Deshmukh encouraged to conduct this workshop.

Photos:

Workshop on Seed Ball Preparation in Collaboration with Mahatma Gandhi National Council of Rural Education

Action Taken Report: First all ingredients combine (clay compost and seed) together in large flat tray thoroughly mix seed of various medicinal plants and wild plants were collected from college campus. All participated student collected seeds and prepare seed ball with the help of above procedure seedball allowed to dry and then cast out in the field.

The Seed Balls were distributed to all the students and all were requested to plant the Seed Balls in their garden or convenient and favourable areas as a contribution towards a green and healthy environment.

Coordinator
IQAC,Shri Shivaji Sci.& Arts College,Chikhli Dist.Buldana

Shri Shivaji Sci. & Arts College Chikhli, Dist. Buldana

Principal
Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

Certificate of Appreciation:

MGNCRE | महात्मा गांधी राष्ट्रीय ग्रामीण शिक्षा परिषद
Mahatma Gandhi National Council of Rural Education
Department of Higher Education,Ministry of Education,Government of India

Certificate of Appreciation

*DR.VANITA UTTAMRAO POCHHI, PROFESSOR AND HEAD OF THE DEPARTMENT, SHRI SHIVAJI SCIENCE AND ARTS COLLEGE CHIKHLI DIST BULDANA, BULDANA, MAHARASHTRA has contributed to the World Environment Day Celebrations June 2022 as a **faculty coordinator** by conducting and completing the Green activities on campus. The initiatives taken up under Swachhta Activities were building outdoor classrooms, reinforcing greenery and showcasing the green decisions of the Institution. Mahatma Gandhi National Council of Rural Education appreciates the team work during the activities.*

Date: 20.06.2022
Certi: MG/SAP/WED/FC/323

B S C Naveen Kumar
MGNCRE World Environment Day 2022
Monitoring Officer

महात्मा गांधी राष्ट्रीय ग्रामीण शिक्षा परिषद
Mahatma Gandhi National Council of Rural Education
(formerly National Council of Rural Institutes)
Department of Higher Education, Ministry of Education, Government of India

MGNCRE - World Environment Day 2022

Send to mgncre2023@gmail.com

S. No.	Reporting items	Details
1	Name of the Activity	**Workshop on Seed Ball Preparation**
2	Name of the College	Shri Shivaji Science and Arts College, Chikhli. Dist. Buldana (MH)
3	District and State	Dist. Buldana State- Maharashtra
4	No. of students participated in the Activity	**21**
5	No. of Faculty Members Participated	**03**
6	Name of the Head of the Institution	**Dr. Omraj S. Deshmukh**
7	Email of the Head of the institution	os_deshmukh@rediffmail.com
8	Date	**05/06/2022**

Name of the Teachers participated in Activity:

S.No	Name	Designation	Email	Mobile
1	Prof.Dr.Vanita U.Pochhi	Professor	vanitapochhi@gmail.com	9890964215
2	Mr.Mukund D.Kolte	Assistant Professor	mukundakolte@gmail.com	8888154009
3	Mr.Dilip L.Gavande	Assistant Professor	dilipgavande92@gmail.com	9011138879

Coordinator
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Shri Shivaji Sci. & Arts College Chikhli, Dist. Buldana

Principal
Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

ii) Our Green Decisions- Showcase Your Campus Video (World Environment Day):

Date: 28th May 2022, Number of Participants: 28

YouTube Link: https://www.youtube.com/channel/UC5bL9wXeBa50xLKvkcVGXQA

Department of Botany took an initiative to participate in Our Green Decisions- Showcase your Campus Video practice conducted by Mahatma Gandhi National Council of Rural Education. Student prepared the college campus video along with faculty members of Botany Department.

Students Participation in Our Green Decisions- Showcase Your Campus Video

Action taken Report:

In this campus video What, Why and how aspects of green initiative of college campus are explained. Student explain the procedure and process involved in making the campus green and eco-friendly.25 students and 3 faculty members participated in this activity.

Coordinator
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Shri Shivaji Sci. & Arts College Chikhli Dist. Buldana

Principal
Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

iii) Tree Plantation Drive Under One Student One Tree:

Date: 22nd September-2022, Number of Participants: 70

One Student One Tree is special plantation drive program which was initiated by Sant Gadge Baba Amravati University, Amravati for B. Sc.-I students. The objective of One Student: One Tree programme is that each student should plant one tree in college campus, residential area, residential village and in the land made available by Maharashtra Forest Department and also nurture that tree during his degree programme.

Tree Plantation Drive Under One Student One Tree

Action Taken Report: Responding to the appeal made by Parent University, our college in collaboration with Sant Nirankari Mandal, Shelud, Dist. Buldana organised tree plantation drive in nearby vicinity under the guidance of Prof. Sandip Dautpure on dated 22nd September-2022. Nearly 1500 trees were planted under this activity. It provides staff and students better understanding of green impact on campus. A clean and healthy environment aids effective learning and provides a conducive learning environment.

Coordinator
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Shri Shivaji Sci. & Arts College Chikhli. Dist. Buldana

Principal
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iv) Eco-friendly Holi Colour Preparation Workshop:

Date: 15th March 2022, Number of Participants: 52

The Joyous festival of Holi is meant to celebrate the arrival of spring while the colours used in Holi are used to reflect the various hues of spring season. But unfortunately, in modern times Holi does not stands for all beautiful things.

To create awareness among students and staff "***Eco-friendly Holi Colors Preparation Workshop***" was organized on 15th March 2022. Principal of our college Dr. O. S. Deshmukh inaugurates this workshop. The idea of this workshop was proposed by Dr. V. U. Pochhi, Head, Dept. of Botany. Natural colours were prepared from flowers of *Butea monosperma*, Leaves of Spinach, and Beet root. Prof. M. D. Kolte and Prof. D. L Gavande guided to the students. For this workshop Dr. J. J. Jadhao, Dr. S. M. Kalakhe, Dr. R. B. Gade, Dr. P. B. Nalle, Dr. G. T. Thorat and Miss. P. G. Chavan were also present. In this workshop 52 students were participated.

Photos:

Eco-friendly Holi Colours Preparation Workshop: Inauguration & Students Participation

Action taken Report:

"Eco-friendly Holi Colors Preparation Workshop" was organized on 15th March 2022. Natural colours were prepared from flowers of Butea monosperma, Leaves of Spinach, and Beet root. An eco-friendly colour preparation gives students full freedom to have unlimited fun as well pleasure of protecting nature. Such activities also allows students to save money on harmful colours and other irrelevant products. In this workshop 52 students were participated.

Coordinator
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Principal
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v) Eco-friendly Rakhi Preparation Competition

Date: 8th July 2022, Number of Participants: 14

To celebrate the spirit of Raksha Bandhan, the Department of Botany, Shri Shivaji Science and Arts College Chikhli, organized an Ecofriendly Rakhi making competition in the college campus on 8th August 2022 under the supervision and guidance of Dr. Omraj S. Deshmukh (Convener) Principal of the College and Prof. Dr. Vanita U.Pochhi (Co-Convener) HOD, Botany & IQAC coordinator. The Convener along with the Members tied Rakhi on the tree and committed them to protect trees. Total 14 students are participated in this activity.

Eco-friendly Rakhi Preparation Competition

Eco-friendly Rakhi Preparation Competition

Action Taken Report:

Eco-friendly Rakhi making competition was organised in the college campus on 8th August 2022. Eco-Friendly Rakhi using biodegradable materials such as cotton, leaves, paper, Seeds of plants etc. The event witnessed the full support and participation from students, faculty members, and nonteaching staff demonstrating their commitment towards environmental sustainability. Total 14 students are participated in this activity.

Coordinator
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Shri Shivaji Sci. & Arts College Chikhli. Dist. Buldana

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Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

vi) Bird Week Celebration:

Date: 5th to 12th November 2021, Number of Participants: 130

Department of Zoology, Shri Shivaji Science and Arts College, Chikhli, Dist. Buldana and Shri Vyanktesh College, Deulgaon Raja, Dist. Buldana jointly organised 'Birds' Week Celebration' from 5th Nov to 12th November 2021 on the occasion of birth anniversary of naturalist Maruti Chitampalli and ornithologist Dr. Salim Ali.

Total 131 students participated in the competition. The activity was organised under guidance of Principal O.S. Deshmukh.

Bird Celebration Week: Sample Photographs

Shri Shivaji Education Society Amravati's

SHRI SHIVAJI SCIENCE AND ARTS COLLEGE

Chikhli, Dist. Buldana- 443201.

And

Shri Vyanktesh Arts, Commerce & Science College,

Deulgaon Raja

This is to certify that Mr./Ms. **Hina Kausar Khan** has won **First Prize** in an Online Photography Competition organized by Zoology Department of Zoology of this college and Department of Zoology, Shri Vyanktesh ACS college, Deulgaon Raja on the occasion of Birds Week celebrated during 05 th Nov.to 12 th Nov.

Dr. Meena Nikam, Co-ordinator, SSSAC | Dr. Vijayshree Hemke, Organizing Secretary, SSSAC | Dr. Rahul Khawal, Organizing Secretary, SVACS | Shri. Dnyaneshwar Shimbre, Co-ordinator, SVACS

Bird Celebration Week: E-Certificate

Action Taken Report:

Online Photography Competition was organised on the occasion of 'Birds' Week Celebration' from 5th Nov to 12th November 2021. On this occasion an Online Photography Competition was organized for students of both the colleges. The activity was conducted to create awareness about role of birds and its importance in ecosystem. Hina Kausar Khan BSc-II, Kartik Sanjay Kharat BSc-I and Akshay Dhande recived first second and third prize in this competition.

Coordinator
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Shri Shivaji Sci. & Arts College Chikhli, Dist. Buldana

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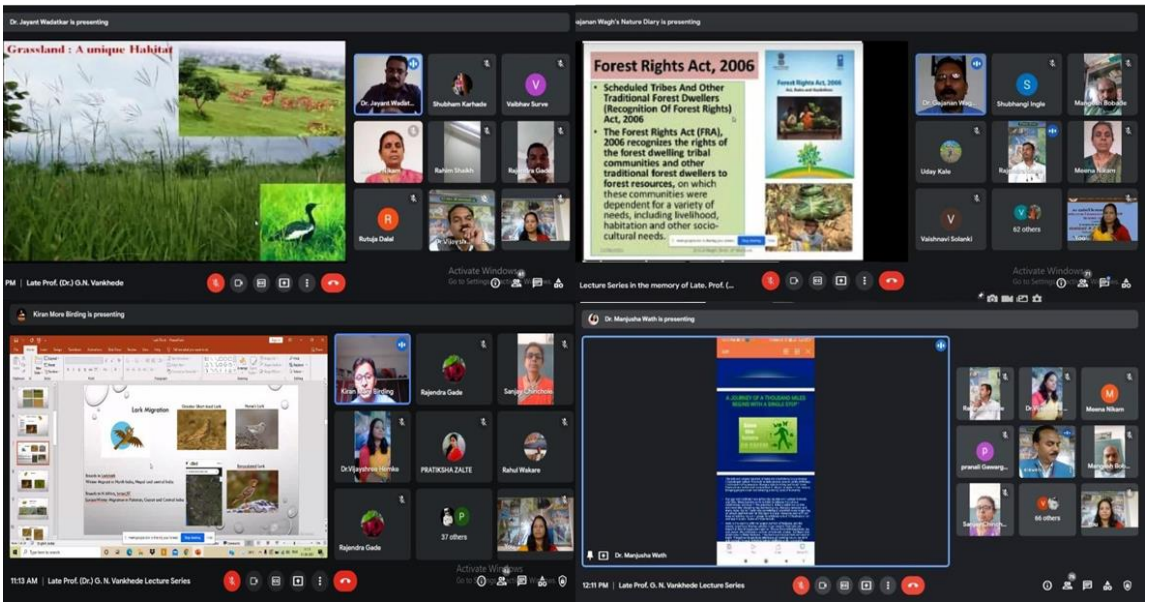
Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

vii) A lecture series in the memory of Late Prof. (Dr.) G. N. Vankhede on Environment Education

Date: 12th August 2021 to 21st September 2021, Number of Participants: 294

Department of Zoology conducted a lecture series on theme," Environment Education" for UG, PG, Research Students (Faculty of Science, Humanities and Commerce), Naturalist and Faculties as an activity of MoU with Wildlife and Environment Conservation Society (WECS), Amravati.

Total five plenary lectures were delivered on the topics namely; ***Green Education- Need of The Hour, All About Owls, Let's Take Green Route to Celebrate Festivals, Environment Degradation and Human Health*** and ***Lark- The Shadow of Grassland*** by famous naturalist and faculties in the region.



Screenshots of Online lecture series on Environment Education in the memory of Late Prof. (Dr.) G. N. Vankhede


जनमाध्यम

अमरावती,बुधवार २१ सप्टेंबर २०२१

स्व. प्रा. डॉ. गणेश वानखेडे व्याख्यानमाला


गुड इव्हनिंग City

२७ ऑगस्ट २०२१, शुक्रवार

श्री शिवाजी महाविद्यालयात स्व.प्रा.डॉ.गणेश वानखेडे व्याख्यान मालेचे तृतीय पुष्प संपन्न

Action taken Report:

Total 295 participants participated lecture series in the memory of Late Prof. (Dr.) G. N. Vankhede on Environment Education conducted between 12th August 2021 to 21st September 2021. This lecture series creates awareness and consciousness about environment and its conservation, impact of environment degradation and human health, importance of grassland in our ecosystem and role of green routes to celebrate festivals.

Coordinator
IQAC,Shri Shivaji Sci.& Arts College,Chikhli Dist.Buldana

Shri Shivaji Sci. & Arts College Chikhli, Dist. Buldana

Principal
Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

viii) World Ozone Day

Date: 16th September 2021, Number of Participants:10

The world ozone Day was celebrated by the Department of Zoology on 16th September. Every year to aware the students about climate change, importance of ozone and its depletion. This day is celebrated throughout the world to know the measures for protection of ozone layer. Department of Zoology organized tree plantation program in the college campus on the occasion of World Ozone Day. Principal Dr. Omraj Deshmukh planted Peepal Tree and Neem Trees were planted by Dr.Vanita Pochhi (IQAC Co- ordinator) and Dr. Meena Nikam(Head of Department). Dr. R.B. Gade, and Mr. Swapnil Kale NSS program officer also took part in the tree plantation program. Non-teaching staff Mr. V. D. Sawle and Mr. R.A. Shaikh also participated in this programme.

World Ozone Day: Tree Plantation by Principal Dr. O. S. Deshmukh and Staff Members

Action taken Report:

The world ozone Day was celebrated by the Department of Zoology on 16th September. . Department of Zoology organized tree plantation program in the college campus on the occasion of World Ozone Day. Principal Dr. Omraj Deshmukh planted Peepal Tree and Neem Trees were planted by Dr.Vanita Pochhi (IQAC Co- ordinator) and Dr. Meena Nikam(Head of Department). Dr. R.B. Gade, and Mr. Swapnil Kale NSS program officer also took part in the tree plantation program.

Coordinator
IQAC,Shri Shivaji Sci.& Arts College,Chikhli Dist.Buldana

Shri Shivaji Sci. & Arts College Chikhli, Dist. Buldana

Principal
Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

ix) Visit to Ambabarwa Wildlife Sanctuary:

Date: 4th January 2020, Number of Participants: 44

The department of Zoology organized a study tour of BSc-II students at Ambabarwa Wildlife Sanctuary situated on Maharashtra-Madhya Pradesh border in Satpuda Mountain Range on 04th January 2020. Dr. Meena Nikam (Head of Department), Dr. Vijayshree Hemke, Dr. R. B. Gade, V. D. Sawle and BSc-II students were visited to Ambabarwa Wildlife Sanctuary. Range Forest Officer Mr. Suhas Kamble along with three jungle guides accompanied during this visit.

The aim of the tour was to observe living wild life fauna the grass land ecosystem & animal biodiversity. Total 40 students along with 4 staff members participated in this activity.

Visit to Ambabarwa Wildlife Sanctuary: Students and Faculty Members Range Forest Officer Mr. Suhas Kamble

Action Taken Report:

The department of Zoology organized a study tour of BSc-II students at Ambabarwa Wildlife Sanctuary on 04 Jan 2020. Dr. Meena Nikam, Head of Department, Dr. Vijayshree Hemke, Dr. R. B. Gade and V. D. Sawle and BSc-II students were visited to Ambabarwa Wildlife Sanctury. Students observed living wild life fauna & their movement at specific habitat.

Range Forest Officer Mr. Suhas Kamble and his staff and three jungle guided students. He showed us Artificial Water Arrangement in summer for wildlife. Different measures to protect wildlife. New scheme of Government for forest conservation. He explained how to study in forest to students. Total 40 students along with 4 staff members participated in this activity.

Coordinator
IQAC,Shri Shivaji Sci.& Arts College,Chikhli Dist.Buldana

Shri Shivaji Sci. & Arts College Chikhli, Dist. Buldana

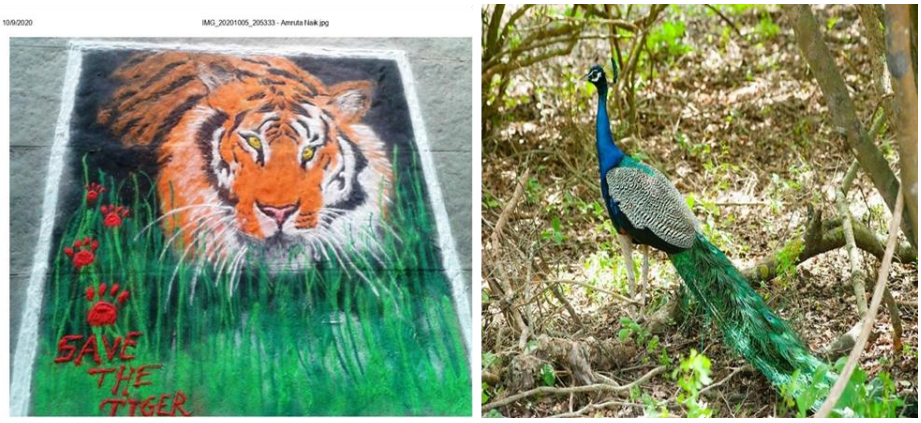
Principal
Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

x) Celebration of Wildlife Week:

Date: 1st October – 7th October 2020, Number of Participants: 160

National level Rangoli Competition (open to all) e - Quiz Competition (open to all) &Wildlife Photography competition (for UG and PG students) organized by Zoology Department on dated 01/10/2020 to 07/10/2020. Due to pandemic all these competitions were organised through online mode. Registration links were provided in broacher.

The competitions were for awareness of wildlife conservation and protection. Aftersolving quiz participant automatically got certificate on their respective E-mails. For national level rangoli competition theme was "Any Wild Animal" and forphotography competition theme was "Protection of Wild Animals".



Celebration of Wildlife Week: Sample Photos- Any Wild Animal & Protection of Wild Animals

Celebration of Wildlife Week: Sample Certificate

Action Taken Report:

Wildlife Week was celebrated organized by Zoology Department on dated 01/10/2020 to 07/10/2020. National level Rangoli Competition (open to all) e - Quiz Competition (open to all) were organised to create awareness about wildlife conservation and protection. Aftersolving quiz participant automatically got certificate on their respective E-mails.

Rangoli Competition:

1: First Prize- Ms. Amruta Ajay Naik
Yashwantrao Chavan College of Science, Karad

2. Second Prize- Ms. Sakshi K Wagh
Shri Vyanktesh Mahavidyalaya, Deulgaon Raj

3. Third Prize- Ms. Sunita Gajanan Kale
Shri Shivaji Science College, Amravati

Photography Competition

1. First Prize: Mr. Nilesh Vilas Ghate
Dharampeth Memorial Science College, Nagpur

2. Second Prize: Ku. Sanskruti Rajendra Atkari
Dharampeth Memorial Science College, Nagpur

Coordinator
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Shri Shivaji Sci. & Arts College Chikhli, Dist. Buldana

Principal
Shri Shivaji Sci. & Arts College, Chikhli, Dist. Buldana

xi) Bandhara Construction at Village Satgaon Bhusari Dist. Buldana:

Date: 28th December 2019 to 4rd January2020, Number of Participants: 100

The 7-day special camp of NSS unit Collge was was held from 28th December 2019 to 4th th December 2020. Volunteers created awareness through door-to-door campaign on importance of environment, water harvesting and importance of ground water. A bandhara is constructed in the stream of the river near adopted village Satgaon Bhusari Dist. Buldana. Members of Grampanchayat, villagers and our staff members visit to bandhara and encourage the students for this holistic work.

Bandhara Construction at Village Satgaon Bhusari Dist. Buldana: Students Contribution

Action Taken Report:

To create awareness about water conservation and its conservation measures, a bandhara is constructed in the stream of the river near adopted village Satgaon Bhusari Dist. Buldana during 7-day special camp of NSS unit Collge was was held from 28th December 2019 to 4th December 2020.

During the work the response of students was enthusiastic but initially the response of villagers was not as expected. But after completing the bandhara construction and villagers accepts the importance of water conservation for themselves and get inspired to construct it at places. Finally, we were success to create awareness about the conservation of water among villagers.

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xii) A state level poster competition on Energy Awareness and Environmental Conservation

Date: 12th March 2020 Number of Participants: 175

Department of Physics and Internal Quality Assurance Cell (IQAC) of Shri Shivaji Science College Chikhli, organized A State Level Poster Competition On, "Energy Awareness and Environmental Conservation" on 12th March 2020. About 175 undergraduate students from the various colleges are registered for this program.

Principal, Dr. A.M. Garode was the chairperson of the programme while Dr. P.S. Wayal, (Principal D.Ed. College Chikhli & Shri Shivaji D.Ed. College, Chikhli and Member Executive Council (Co-opted), Shri Shivaji Education Society, Amravati) was present as chief guest and inaugurator. President and chief guest also shared their experiences with students and focused on the energy awareness and environmental conservation issues.

Inauguration Function and Winners along with Dignitaries

Action Taken Report:

Total 175 undergraduate students from the various colleges are registered for this state level poster competition on Energy Awareness and Environmental Conservation. The main aim to organize the program was to aware the graduate student about the energy and environmental problem in present and future. Bharati Kare and Sanskruti Ghive, (D. M. Burungale College, Shegaon), Megha Wankhade and Aishwarya Deshpande (G.S. College Khamgaon), Vaishnavi Mapari and Pallavi Misal, (Shri Shivaji Science and Arts College, Chikhli), received first second and third prize Consolation Prize-Vaishnavi Ghirbhase, Jijamata College Buldana while Vaishnavi Ghirbhase, (Jijamata College Buldana) received Consolation Prize.

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xiii) World Sparrow Day:

Date: 20th March 2019, Number of Participants: 32

World Sparrow Day was celebrated by Zoology Department on 20th March 2019. A program was organized to sensitize students regarding birds and nature conservation. The theme of the program was to install clay water pots for sparrow and other unban birds.

The program was chaired by Principal, Dr. Anil Garode. In his presidential address, he emphasized the importance of birds in our life. He appealed to students to make every possible effort for conservation of birds. In in introductory speech Prof. Dr. Meena Nikam (Head of the Department) said that there is need to celebrate such programs for awareness and conservation of natural habitats. Dr. Vijayshree Hemke anchored the program. Shri Dashrath Sawle delivered vote of thanks.

World Sparrow Day: Inauguration by hands of Principal Dr. A. M. Garode

World Sparrow Day: Installation of Clay Water Pot in College Campus

Action Taken Report:

Celebration of World Sparrow Day was organized on the behalf of Zoology Department on 20th March 2019 at Shri Shivaji College here. Clay Water Pots were installed by the hands of Zoology students in 18 acres of college campus. A newspaper article is published to raise social awareness. Students were appealed to make possible efforts for conservation of birds.

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xiv) Shivarpheri at Dr. Panjabrao Deshmukh Agriculture University, Akola.

Date: 22nd October 2019, Number of Participants: 60

Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola celebrated Golden Jubilee of establishment. Every year university organises 'Shivarferi' which is open to all. Shivarferi was organised by Department of Zoology on 22nd October 2019 along with staff members Dr. Meena Nikam, Dr. Vijayshree Hemke, Prof. Shalini Katole, Prof. K. D. Pensionwar, Shri. Vishvnath Sawle and students of B.Sc. final year. Students and staff members visited Entomology Lab, Tissue Culture Unit, Biotech Lab, Library, Animal Husbandry Unit and Nagarjun Medicinal Garden at PDKV campus under the guidance of Dr. Mrs. Thorat (Associate Professor in Entomology).

Shivarpheri: Visit to Entomology Lab, Dr. PDKV, Akola

Shivarpheri: Visit to Nagarjun Medicinal Garden, Dr. PDKV, Akola

Action taken Report:

Department of Zoology organised Shivarpheri on 22nd October 2019 at Dr. Panjabrao Deshmukh Krishi Vidyapeeth, Akola. Students visited Entomology Lab, Tissue Culture Unit, Biotech Lab, Library, Animal Husbandry Unit and Nagarjun Medicinal Garden at PDKV campus with a healthy interaction with Dr. Mrs. Thorat-Associate Professor at PDKV Akola. Students learn fundamental concepts of life sciences and knowledge about environment conservation activities.

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xv) Medicinal Plant Exhibition:

Date: 28th February 2019, Number of Participants: 60

On the occasion of World Science Day, a medicinal plant exhibition competition was organized in the Shri Shivaji Science and Arts College, Chikhli on 28th February 2019. This competition was inaugurated by Dr. Chittaranjan Rinde while Prof. Gulabrao Khedekar was present as chief guest. 58 B.Sc. first year students participated in the competition and displayed nearly 15 types medicinal plants and their health benefits. Dr. Deepak Khedekar, (Vishwai Hospital), Dr. Jotsna Gulhane (Hedgewar Hospital) was jury member for this exhibition.

On this occasion Dr. Chittaranjan Rindhe and Dr. Deepak Khedekar while guiding and explained the properties and medicinal uses of the plant.

Action Taken Report:

In this activity organised by Department of Botany nearly 60 students were participated. It helps students This activity helps students to know the health benefits some medicinal plants. After then they use this knowledge for villagers and family as most of the students belongs to ruler area. It helps to conserve the traditional knowledge of wild vegetables and medicinal plants.

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xvi) Eco-friendly Ganesh Idol Preparation Workshop:

Date: 28th August 2018, Number of Participants: 150

It has been found that Plaster of Paris is used as a major material to mould the Ganesh idol which contains harmful chemicals such as magnesium, gypsum, sulphur, and phosphorus. The colours which are used to paint the idols also contain harmful chemicals and the decoration material made of pharmocol and plastic is not biodegradable. The immersion of these idols into the water kills the aquatic plants and animals. Even the water bodies like ponds and rivers which are source of potable water get contaminated resulting into health issues. Therefore, it is must to find out an alternative way to celebrate the festival and keep the environment safe.

To create awareness about water pollution and soil pollution 'Eco-friendly Ganesh Idol Preparation Workshop' was organized on 28th August 2018. About 150 students and some people from society participated and prepare Ganesh Idol from salu soil.

Eco-friendly Ganesh Idol Preparation Workshop: Ganesha Idols Made by Students

News:

लोकमत अकोला सोमवार, दि. ३ सप्टेंबर २०१८ ४

शिवाजी महाविद्यालयात पर्यावरणपूरक गणेशमूर्ती कार्यशाळा

◆ चिखली : स्थानिक श्री शिवाजी विज्ञान व कला महाविद्यालयात तालुकास्तरीय पर्यावरणपूरक गणेशमूर्ती प्रशिक्षण कार्यशाळा २८ ऑगस्ट रोजी पार पडली. कार्यशाळेच्या अध्यक्षस्थानी प्रा. डॉ.जे.जे. जाधव होते. उद्घाटन माजी प्राचार्य गुलाबराव खेडेकर यांच्या हस्ते पार पडले. यावेळी संजय गुरव व अॅड. सौरभ जयस्वाल यांनी शाडूच्या मातीपासून गणेशमूर्ती बनविण्याचे प्रशिक्षण दिले. या कार्यशाळेत १५० प्रशिक्षणार्थींनी शाडूच्या मातीपासून सुबक गणेशमूर्ती बनविल्या. यावेळी प्रभारी प्राचार्य डॉ. ए. एम. गारोडे, विभाग प्रमुख प्रा. डॉ. व्ही. यू. पोच्छी, प्रा. डॉ. निकम, प्रा. काटोले, प्रा. डॉ. मुळे, प्रा. डॉ. कलाखे, प्रा. डॉ. माल्दे, प्रा. पेन्सनवार यांची प्रमुख उपस्थित होती. संचालन डॉ. हेमके यांनी केले. यशस्वीतेसाठी प्रा. योगेश वायाळ, प्रा. गजानन बोराडे, प्रा. सोपान वाघोदे यांनी परिश्रम घेतले.

Action Taken Report:

'Eco-friendly Ganesh Idol Preparation Workshop' was organized by Departemnt of Botany on 28th August 2018. The method of preparing Ganesh idol from clay was demonstrated to the students.

Through this activity students were made aware about harmful impact of use of Plaster of Paris and chemicals on environment used during Ganesha Idols. Students are advised to prepare the idols from clay and for painting organic colours should be used. Biodegradable material like Wood, cloth and paper can be used for decoration. Students were appealed to convey this massage to society in order to protect our environment.

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xvii) Tree Plantation at Ancharwadi Forest Area:

Date: 23th July 2017, Number of Participants: 25

A tree plantation drive was organised by Department of Botany at Ancharwadi Forest Area on 23th July 2017. In this activity 25 students were particiapated in the guidance of Principal Dr. N. B. Bhusari and Dr. Vanita Pochhi, Head, Department of Botany with Prof. Yogoni Suradkar. 13 kinds of medicinal plants were planted by students.

पुण्य नगरी

मंगळवार, २५ जुलै २०१७

शिवाजी महाविद्यालयाचा उपक्रम

वृक्षदिंडी काढून अंचरवाडी वनपरिक्षेत्रात वृक्षारोपण

चिखली, दि. २४ (प्रतिनिधी)

जंगलातील वृक्षांची मोठ्या प्रमाणात तोड केली जात असल्याने निसर्गाचा समतोल ढासळत आहे. दरम्यान वनश्री पुरस्कारप्राप्त प्रचार्य डॉ. एन. बी. भुसारी यांनी शिवाजी वृक्ष लागवडीसाठी पुढाकार घेतला आहे. त्यांच्या मार्गदर्शनाखाली विद्यार्थ्यांनी महाविद्यालयाच्या विद्यार्थ्यांनी वृक्षदिंडी काढुन आंचरवाडी वनपरिक्षेत्रात वृक्षारोपण केले.

शिवाजी महाविद्यालयाच्या वतीने २३ जुलै रोजी वनसंवर्धन दिनाचे औचित्य आंचरवाडी वनपरिक्षेत्रात वृक्षारोपण करण्यात आले. वने जगली पाहिजे व त्यांचे संवर्धन झाले पाहिजे याबाबत महाविद्यालयीन विद्यार्थ्यांमध्ये सामाजिक बांधिलकी वाढावी यासाठी महाविद्यालयाच्या वतीने सदर उपक्रम राबविण्यात आला. वनस्पतीशास्त्र विभाग व वनविभाग यांच्या संयुक्त विद्यमाने दोनशे कडूनिंबाची लागवड या वनपरिक्षेत्रात करण्यात आली. वनविभागातील रोपवाटीकेमध्ये विविध प्रकारची रोपे तयार केली जातात. ती तयार करण्याची पद्धत तसेच बी रुजण्याचा कालावधी याबाबत वनरक्षक प्रकाश जाधव यांनी विद्यार्थ्यांना माहिती दिली. २५ विद्यार्थ्यांसह प्रा. डॉ. वनिता पोच्छी व प्रा. योगिनी सुरडकर यांनी या उपक्रमात सहभाग घेतला. विविध प्रकारची ३० वनऔषधीरोपे महाविद्यालयात आणून वृक्षदिंडी काढण्यात आली व त्या रोपट्यांची लागवड करण्यात आली. वनपरिक्षेत्र अधिकारी गणेश झोळ यांनी या उपक्रमासाठी सहकार्य केले.

Action taken Report:

A tree plantation drive was organised by Department of Botany at Ancharwadi Forest Area on 23th July 2017 on order to spread massage of green environment and measures to protect our environment. 13 kinds of medicinal plants were planted by students. Total 25 students participated in this activity.

Pochhi
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xviii) Cleanliness and Tree Plantation Drive at Village Satgaon Bhusari, Dist. Buldana

Date: 28th December 2018 to 3th January 2019, Number of Participants: 100

NSS volunteers carried out cleanliness drive in the adopted village Satgaon Bhusari during 7 days special camp. Various premises such as Grampanchayat, Society, Crematorium, Primary School, and sides of road were cleaned. The NSS voluntaries and teachers planted trees at many places in the village and the roadside in a well-organized way. The saplings were supplied by State Forest Department, Government of Maharashtra. NSS programme office Dr. V. R. Padwal and Dr. S. M. Kalakhe lead these activities.

Cleanliness and Tree Plantation Drive by Students at Village Satgaon Bhusari, Dist. Buldana

Action Taken Report:

Cleanliness and Tree Plantation Drive 28th December 2018 to 3th January 2019 by NSS volunteers the adopted village Satgaon Bhusari during 7 days special camp. This activity was conducted in order to create awareness about cleanliness, hygiene and importance of tress in our life and environment. Various premises such as Grampanchayat, Society, Crematorium, Primary School, and sides of road were cleaned. The NSS voluntaries and teachers planted trees at many places in the village and the roadside in a well-organized way.

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7) Report/Achievement on Clean and Green Campus:

a) Cleanliness Drive

Cleanliness drive was regularly done and whole of the college campus was covered. Students, faculty members, staff and sanitation workers were involved and actively participated in this activity. Whole campus was cleaned and the non-degradable waste like plastics/glass etc. were collected and removed from the campus premises. Hon. Principal of the college himself led the cleanliness drive to the success. Cleanliness drive were conducted under Bharat Swachchhata Abhiyaan, Clean India, Healthy India Campaign and on the occasion of Birth Anniversary of Late Sant Gadge Baba and Azadi ka Amrut Mohotsav. The NSS and NCC units of our institute actively participated in cleanliness drive.

Geotagged Photos:

Cleanliness Drive: Late Pandharinath Samadhi Sthal (2021)

Cleanliness Drive: Late Pandharinath Samadhi Sthal (2021-22)

Cleanliness Drive: College Campus (2021-22)

Cleanliness Drive: College Campus (2021-22)

Cleanliness Drive: College Campus (2019-20)

Cleanliness Drive: College Campus (2019-20)

Cleanliness Drive: College Campus (2019-20)

Cleanliness Drive: Congress Grass Eradication in College Campus (2019-20)

Cleanliness Drive: College Campus (2018-19)

Cleanliness Drive: College Campus (2018-19)

Cleanliness Drive: Rose Garden (2017-18)

Cleanliness Drive: Congress Grass Eradication in College Campus (2017-18)

Action Taken Report:

Cleanliness drive were regularly conducted under Bharat Swachchhata Abhiyaan, Clean India, Healthy India Campaign and on the occasion of Birth Anniversary of Late Sant Gadge Baba and Azadi ka Amrut Mohotsav. The NSS and NCC units, students and staff members of our institute actively participated in cleanliness drive. Whole campus was cleaned and the non-degradable waste like plastics/glass etc. were collected and removed from the campus premises. The degradable (organic waste) waste was collected and used for vermi-compost project to obtain organic manure for inhouse consumption.

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b) Tree Plantation:

Trees represent life, growth, peace and nature. They produce oxygen, clean soil, prevent drought, control flood related disasters, prevent soil erosion, improve physiological, mental and spiritual health, and also reduce carbon footprints. Keeping this in mind the campaign for

i) One Employee: One Tree Campaign

Date: 28th July to 26th August 2021, Number of Participants: 80

One Employee: One Tree Campaign was implemented in college campus by the appeal of Maharashtra State Government & Hon. Secretary, Shri Shivaji Education Society Amravati. Employees purchased and planted 132 trees including Pimpal, Kadulimb, Bel, Vad Bambu and several others.

Tree Plantation: One Employee: One Tree Campaign

Tree Plantation: One Employee: One Tree Campaign

ii) Tree Plantation Drive: Majhi Vasundhara

Date: 14th September 2021, Number of Participants: 200

iii) Tree Plantation: By Alumni of College and Students]
Date: 01/07/2020 & 15/07/2020, Number of participants: 80

Tree Plantation: 2021-22

Tree Plantation: 2021-22

Tree Plantation: 2021-22

Tree Plantation: 2020-21

Tree Plantation: 2020-21

Tree Plantation: 2020-21

Tree Plantation: By Hon. Shri Harshvardhan Deshmukh
(President, Shri Shivaji Education Society, Amravati)
Date: 2nd November 2018 Number of Participants: 50

Tree Plantation: 2018-19

Tree Plantation: 2018-19

Tree Plantation: By Faculty Members in Campus
Date: 27/12/2017 Number of participants: 46

Action Taken Report:

Tree plantation drives were regularly organised on various occasions such as One Employee one tree, Majhi Vasundhara and by Hands of Eminent personalities and alumni of the institute. The tree plantation drives help the maintain the green campus. It helps to create awareness among students about green environment.

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Principal
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8) Achievements/Awards as Clean and Green Campus Initiative:

The Swachh Bharat Abhiyan is the most significant cleanliness campaign by the Government of India. Swachh Bharat Abhiyan has become a 'Jan Andolan' receiving tremendous support from the people. Citizens too have turned out in large numbers and pledged for a neat and cleaner India. Taking the broom to sweep the streets, cleaning up the garbage, focussing on sanitation and maintaining a hygienic environment have become a practice after the launch of the Swachh Bharat Abhiyan. People have started to take part and are helping spread the message of 'Cleanliness is next to Godliness.'

Our institute received District Level Prize- Clean India Healthy India as an excellent college in Buldana district by National Social Service Department, Sant Gadge Baba Amravati, University, Amravati.

संत गाडगे बाबा अमरावती विद्यापीठ

राष्ट्रीय सेवा योजना

प्रमाणपत्र

श्री शिवाजी विज्ञान व कला महाविद्यालय, चिखली, जि. बुलढाणा

डॉ. विष्णु पडवाल
रा.से.यो. कार्यक्रम अधिकारी

डॉ. अनिल गारोडे
प्राचार्य

यांना संत गाडगे बाबा अमरावती विद्यापीठ, अमरावती, स्वच्छ भारत अभियान अंतर्गत शैक्षणिक सत्र २०१९-२० मध्ये शैक्षणिक कार्यासोबत उत्कृष्ट समाजिक कार्य केल्याबद्दल

'बुलढाणा जिल्हास्तरीय स्वच्छ भारत-स्वस्थ भारत अभियान उत्कृष्ट महाविद्यालय पुरस्कार'

प्रमाणपत्र देऊन सन्मानित करण्यात येत आहे.

दिनांक : १ मे २०२१

डॉ. राजेश बुरंगे
संचालक
राष्ट्रीय सेवा योजना,
संत गाडगे बाबा अमरावती विद्यापीठ

डॉ. मुरलीधर चांदेकर
कुलगुरु
संत गाडगे बाबा अमरावती विद्यापीठ,
अमरावती

संत गाडगे बाबा अमरावती विद्यापीठ

राष्ट्रीय सेवा योजना

सन्मानचिन्ह

'बुलढाणा जिल्हास्तरीय स्वच्छ भारत-स्वस्थ भारत अभियान उत्कृष्ट महाविद्यालय पुरस्कार'

श्री शिवाजी विज्ञान व कला महाविद्यालय, चिखली, जि. बुलढाणा

डॉ. विष्णु पडवाल — रा.से.यो. कार्यक्रम अधिकारी

डॉ. अनिल गारोडे — प्राचार्य

यांना संत गाडगे बाबा अमरावती विद्यापीठ, अमरावती, स्वच्छ भारत अभियान अंतर्गत शैक्षणिक सत्र २०१९-२० मध्ये शैक्षणिक कार्यासोबत उत्कृष्ट समाजिक कार्य केल्याबद्दल सन्मानचिन्ह देऊन सन्मानित करण्यात येत आहे.

दिनांक : शनिवार १ मे २०२१

डॉ. राजेश बुरंगे
संचालक
राष्ट्रीय सेवा योजना,
संत गाडगे बाबा अमरावती विद्यापीठ

डॉ. मुरलीधर चांदेकर
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संत गाडगे बाबा अमरावती विद्यापीठ,
अमरावती

संत गाडगे बाबा अमरावती विद्यापीठ

राष्ट्रीय सेवा योजना

सन्मानचिन्ह

'बुलढाणा जिल्हास्तरीय राष्ट्रीय सेवा योजना
उत्कृष्ट कार्यक्रम अधिकारी पुरस्कार' (पुरुष)

डॉ. विष्णु रायभान पडवाल

रा.से.यो. कार्यक्रम अधिकारी

श्री शिवाजी कला व वाणिज्य महाविद्यालय, चिखली

जि. बुलढाणा

यांना संत गाडगे बाबा अमरावती विद्यापीठ, अमरावती,
राष्ट्रीय सेवा योजना अंतर्गत शैक्षणिक सत्र २०२०-२१ मध्ये
शैक्षणिक कार्यासोबत उत्कृष्ट समाजिक कार्य केल्याबद्दल
सन्मानचिन्ह देऊन सन्मानित करण्यात येत आहे.

दिनांक : बुधवार २७ जुलै २०२२

डॉ. राजेश बुरंगे
सचालक
राष्ट्रीय सेवा योजना,
संत गाडगे बाबा अमरावती विद्यापीठ

डॉ. दिलीप मालखेडे
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Coordinator
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