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“ ज्ञान, विज्ञान आणि सुसंस्कार यांचाच शिक्षण प्रसार ”  
श्री. विवेकानंदजींनी सांगुली सांगुले

१५४ १००१-१९६८



**Shri Swami Vivekanand Shikshan Sanstha's**  
**VIVEKANAND COLLEGE, KOLHAPUR [Autonomous]**

(Affiliated to Shri Chhatrapati Shivaji Maharaj University, Kolhapur)

NAAC Reaccredited 'A' with CGPA 3.24

College With Potential For Excellence

ISO 9001:2015



# GREEN AUDIT REPORT

## (2015-2020)



**Prepared and Certified By**

**Department of Environment Management**  
**CHHATRAPATI SHAHU INSTITUTE OF BUSINESS**  
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**2021**

## GREEN INITIATIVE REPORT

(ENVIRONMENT AUDIT, ENERGY AUDIT AND GREEN AUDIT)

SHRI SWAMI VIVEKANAND SHIKSHAN SANSHTHA'S

VIVEKANAND COLLEGE, KOLHAPUR

(AUTONOMOUS)

(Affiliated to Shivaji University, Kolhapur)

NAAC Accredited with „A“ Grade, with CGPA 2.34,

College With Potential For Excellence (CPE), ISO 9001: 2015



DEPARTMENT OF ENVIRONMENT MANAGEMENT  
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An Autonomous Institute under UGC, New Delhi and Shivaji University,  
College with Potential for Excellence (CPE) III<sup>rd</sup> Phase  
Reaccredited by NAAC with 'A+' Grade (CGPA 3.55)

**CERTIFICATE**

This is to certify that, the Green Initiative Report (Green Audit, Energy Audit and Environment Audit) of Vivekanand College Kolhapur has been prepared and certified by the Department of Environment Management based on the documents produced by the College.



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

Vivekanand College, Kolhapur which was established in 1964 is known as one of the best quality colleges in Maharashtra. The U.G.C. granted autonomy to this college from the academic year 2018-19. About 8000 students are enrolled every year for various programmes. Besides the conventional programmes like B.A., B.Com. and B.Sc., the college offers the professional programmes like B.B.A., B.C.A., B.C.S., B.Sc. (Biotechnology), B.Sc. Microbiology, B.Voc. , Community College and M. B. A. The college also provides opportunity to undertake degrees like B.A., B.Com., B. Sc., B. Lib., M. Lib. and M.B.A. of YCMOU, Nashik.

Dr. Bapuji Salunkhe alias Govindrao Dnyanojirao Salunkhe, the great visionary educationalist founded Shri Swami Vivekanand Shikshan Sanstha, Kolhapur in 1954 which is catering the education needs of students belonging to 11 districts of the State of Maharashtra.

The college has also acquired reputation in the fields of dance, drama, music, other arts and sports, besides academics. The college has been securing the first place for last twenty years by winning maximum number of Shivaji University Merit Scholarships. The faculties of the college are not only excellent in teaching but also in research. Till date in all 27 minor and major research projects are undertaken by the faculties.

The college has won the „Meghnath Nageshkar Trophy“ of Shivaji University for the Best College in the field of Sports for eleven years continuously. Sandip Tarate and Snehankita Varute are the recipients of the “Chhatrapati Shivaji Award”. Rahi Sarnobat is the winner of the Asian Games held in Indonesia in August 2018. Rahi Sarnobat and Veerdhaval Khade represented India in „London Olympics-2012, which is a historic record as both belong to the same college. Till date the college has produced more than 250 national and 10 international sports persons.

The college has also proved its talent in the field of cultural activities by winning General Championship in the Central Youth Festival of the university for seven consecutive years. Our student Usha Jadhav, a film actress, is the winner of „The Best Actress National Award-2013“ for her performance in Marathi film „Dhag“. Presently, our three girl students are heroines in the five different Marathi films.

Placement Cell is very active as during last five years 537 students are placed in the various organizations like Wipro, Infosys, TCS, Patni Computers, Eton, Reliance Insurance, Federal Bank and South Indian Bank. The students are also guided for State Civil Services examinations at our Competitive Examination Guidance Centre which has produced more than 100 officers during the last five years.

Considering the strengths of the college, the NAAC, Bangalore has reaccredited the college with „A“ Grade. The college is identified twice as the “College with Potential for Excellence” by the UGC, and included in “The Star College Scheme” by the DBT, Govt. of India.

### **UG & PG Programmes run by Vivekanand College Kolhapur:**

**Table. No. 01: UG & PG Programmes run by Vivekanand College, Kolhapur:**

Arts & Commerce	Science	Self Supporting	P.G. Courses
Marathi	Physics	B.B.A.	M.Sc.(Org.Chem)
Hindi	Chemistry	B.C.A.	M.Sc.(Mathematics)
English	Mathematics	B.C.S.	M.Sc.(Physics)
History	Statistics	Library Science	M.Com.
Geography	Electronics	B.Voc.	M.B.A.(S.U.)
Sociology	Comp.Science		M.B.A.(Y.C.M.O.U.)
Economics	Botony		M.Lib.&Inf.Sci.
Pol.Science	Zoology		
Home Science	Microbiology		
Commerce	Biotechnology		

The college has always focused on co-curricular activities along with academic programmes. Students and faculty members participated in various social and environmental awareness programmes like Tree plantation, No Vehicle Day, Cleanliness Activities and other cultural activities.

**Table No.2: Students enrollment for academic year-2020-21**

Junior College	Senior College	Total
3388	4295	7683

**Table No.3: Teaching/Non-teaching Staff**

Teaching	Non-Teaching	Total
215	131	346

### 1.2 Vision of the College:

Vivekanand College will be an educational center devoted to the dissemination of “**Education for Knowledge, Science and Culture.**”

### 1.3 Mission of the College:

Mission of the college is to strive hard to realize the vision of our founder Dr. Bapuji Salunkhe i.e. to make education accessible to the masses, and to mold responsible citizens by inculcating noble values and a thirst for knowledge.

### 1.4 Goals and Objectives of the College:

1. To provide equal opportunity of quality education to all by means of sheer hard work, dedication and devotion.
2. To promote scientific attitude and inculcate cultural values into the students.
3. To enhance the commitment of faculty, staff and students towards diversity, social justice, truth, honesty, character and democratic citizenship.
4. To aim at overall personality development through various activities.
5. To provide a platform to develop skills necessary to grab new opportunities and face challenges in the ever-changing society.
6. To provide a substantive, supportive, safe, affordable and accessible teaching-learning environment.
7. To motivate the teachers and students to attain community and social development through various activities.

The vision and mission statements of the college are clearly indicative of the objectives of the National Policy on Education demanding that centers of higher education should perform multiple roles like creating new knowledge, acquiring new capabilities and producing an intelligent human resource pool, through teaching, research and extension activities. The college plans and executes its curricular, co-curricular and extracurricular activities to translate the vision and mission statements into reality.

### 1.5 Environmental Policy:

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

### 1.6 Motto of the Vivekanand College, Kolhapur:

“Dnyan Vidnyan ani Susanskar Yasathi Shikshan Praser” (The spread of education is with a view to diffusing knowledge, science and bud breeding) is the motto of the sanstha. Bapuji defines “dnyan as the knowledge of truth, character, integrity, demolition of the exploitative tendencies, service and dedication. “vidyan consists in the application of the aforesaid principles to life which, in turn will lead to good breeding.

### 1.7 Logo of the Vivekanand College, Kolhapur:



**Table No. 4 Name and Address of the Institution:**

Name	<p><b>Shri Swami Vivekanand Shikshan Sanshtha“s</b>  <b>Vivekanand College, Kolhapur</b>                  Affiliated to Shivaji University Kolhapur, Autonomous, NAAC Accredited with „A“ Grade, with CGPA 2.34,  <b>College With Potential For Excellence (CPE), ISO 9001- 2015</b></p>
Address	2130, E Ward, Tarabai Park, Kolhapur, Maharashtra 416003
City	Kolhapur
E. Mail	info@Vivekanandcollege.org
Website	http://www.Vivekanandcollege.org

**Location:**

Location	Urban
Campus area	7.0 Acre
Built up area in sq. mts.	4775.63

**Coordinates:** 160 42`17” N 740 13“44.9” E



**Plate No.01: The Google Earth Image of the Vivekanand College, Kolhapur**

## 1.8 Infrastructure:

### 1. Buildings:

- a. Senior College: 37 Classrooms
  - b. Junior College: 13 Classrooms
  - c. Biotech, B. Voc. & B.C.S. Building: New Building 4 Classrooms
  - d. Separate Library: 3 storied building with 8800 sq. feet area
  - e. Auditorium: One Auditorium having 1500 seating capacity, one auditorium/Seminar hall in the library.
- 2) Number of Classrooms: 50
  - 3) Library having multi-storeyed building:
    - No. of Books - 1,08,542
    - Periodicals - 107
    - Reprographic Centre
    - Internet Facility for students
  - 4) Drinking Water Facility: Four water coolers with aqua guard
  - 5) Four separate washrooms for girls and boys
  - 6) Playground
    - Area - Playground: Length - 85.60 meter X width - 32.00 meter
    - Indoor Facility - Table Tennis, Badminton, Carom, Chess, Wrestling, Judo, Yoga, etc.
    - Outdoor Facility - Volley Ball, Basketball, Kabaddi and Kho-Kho ground
  - 7) Separate Gymnasium hall for boys and girls
  - 8) Labs for Science Departments – 20 numbers
  - 9) Four Computer Labs having 255 computers
  - 10) Separate Ladies room
  - 11) Two separate hostel buildings for girls - Intake capacity 200 girls
  - 12) Separate Canteen, health centre
  - 13) Separate Auditorium having 1500 intake, Mini theatre



**CHAPTER-2: GREEN AUDIT****2.1 Conceptual Framework:**

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

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

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

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

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



### 2.2 Objectives of Green Audit:

- To implement *Go green* policy for Environment Management in the campus.
- To identify opportunities to save and conserve energy.
- To see that proper steps have been taken to maintain sustainability and to prevent adverse effects of Air, Water, Noise and Solid Waste pollution on environment.
- To reduce, recycle, reuse waste and dispose waste scientifically under 5 R principles of Solid Waste Management.
- To see that proper steps have been taken for maintaining health and welfare of the students and staff of the Vivekanand College, Kolhapur.

### 2.3 Implementation of the Environmental Policy:

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

### 2.4 Environment Awareness Activities:

#### 2.4.1. Tree Plantation in the college campus:

Trees give us clean air to breathe, shade and food to humans, animals and plants. They provide habitats for numerous species of fauna and flora, firewood for cooking and heat, materials for buildings and places of spiritual, cultural and recreational importance. They increase aesthetic value and scenery of an area. To make people aware about importance of tree in the economy of the nature and human lives, students and staff of Vivekanand College, Kolhapur takes efforts for plantation of trees.

Thus trees gives us host of their productive functions, protective functions and regulatory functions. As green plants are autotrophs and primary producers, they maintain biodiversity of flora and fauna of a particular area. They have great place in the economy of nature.



Plate No.02: Plantation in the college campus



Plate No. 03: Plastic free Campaign and Cleanliness drive by NCC students of Vivekanand College, Kolhapur.



**Plate No.04: Plastic free Campaign and Cleanliness drive at Jayanti Nala Kolhapur by staff of Vivekanand College, Kolhapur.**

#### **2.4.2 Workshop on Plastic Eradication and Cleanliness drive:**

Plastics are synthetic polymers of carbon and other elements with high molecular mass. Polymers are long chains of monomers. Plastics are malleable and can be converted into solid objects also. It is used in boxes, packaging, carry bags, switches, utensils, electrical wires, fire resistant fabric etc. Numerous advantages and uses of plastic is responsible for spread of plastic waste every where.

#### **( Annexure-I)**

It is everybody's responsibility and one should keep themselves and their surroundings clean and hygienic. It also brings good and positive thoughts in the mind which slows down the occurrence of diseases. In relation to this plastic eradication and cleanliness drives are frequently organized by college. **(Annexure-II)**





**Plate No. 05: Plastic free Campaign and Cleanliness drive near Khanvilkar petrol pump, Dasara Chowk, Kolhapur**



**Plate No. 06: Distribution of Cloth bags under Plastic-Free India Campaign, 16.1.2019**

Disadvantages of plastic bags are well known, this is the reason behind restricted use of plastic bags in most of the countries. Plastic free campaign was, organized on Jan.16, 2019. Under this activity cotton bags were distributed.

Cotton bags are made from renewable natural fibers which are strong in nature as compared to those plastic bags which are made from polyethylene which are derived from natural gas and petroleum. If we look into the process of making the plastic bags, it releases many harmful and polluted by-products into the atmosphere, which itself takes thousand years to decompose and hence is harmful for the environment. But, these cotton bags are woven from thread procured from the plants and since cotton is a plant product, it is ultimately biodegradable.

Cotton bags are thicker and can be used repeatedly as compared to the single-use plastic or paper bags. In general, cotton bags are larger than any other plastic bags, so they are capable of holding more items. Plastic grocery store bags can also be reused but only once or twice because those bags can easily damage due to overloading and cannot be reused further. Same with the paper bags, they won't get damaged or will take time to tear out but it loses its integrity if they become wet.

Nowadays, these cotton bags are in the race with other bag material alternatives to make a style statement. Shapes and sizes in cotton bags that can easily match your personal style and preferences. Cotton bags are not only used for shopping purposes, they make an attractive tote for carrying a variety of everyday items as well. People carry them in their day to day life, to classes, to their workplace or to outings. Designer cotton bags with some motivational quotes or peppy slogans can be bought from retailers or online stores, whereas some consumers sew their own personalized bags.

#### **2.4.3 Workshop on Apiculture:**

Apiculture is important and provides products such as honey and wax that are used commercially. Honeybees are responsible for pollination and thus help in increasing the yield of the several plants. Many domestic and imported fruits and vegetables and flowering food crop require pollination which is reliant on bees in total. Even if a crop is not directly pollinated by a honey bee, the crop still benefits indirectly from being in an environment in which honey bees are working, due to the increased biodiversity in the area which stimulates the crop. So honey bees are key factor for maintenance of biodiversity and for sustainability of ecosystems.

Honey has its importance in healthy foods. In addition to the honey produced by the honey bee there are also a number of valuable non-food apiary products, such as pollen, queen substance, and beeswax, many of them are used in cleaning and beauty products.



**Plate No. 07: One day workshop on Apiculture - Business Opportunities on 18<sup>th</sup> August, 2018**

**2.4.4 Weather Monitoring Station:**



**Plate No. 08: Weather monitoring station at Geography Department**



Weather Monitoring Station are facilities with instrumentation and equipment intended to measure and record different meteorological elements, such as ambient temperature, atmospheric pressure, rainfall, relative humidity and wind direction, among others, for different usages, including weather forecasting and climate study.

Meteorological stations are spread along a particular area in order to set up a network, they are placed in strategic locations for the sake of data collection, according to the ultimate objective for which the network is specifically designed.

Geography Department of Vivekanand College has Weather Monitoring Station which works on the use of solar energy through photovoltaic cells. Students of Geography Department take advantage of it for studying meteorological conditions of our area. Day to day meteorological data is displayed on Departmental board.

**2.4.5 One day seminar on cleanliness, 01-08-2018 Organized by Mr. H. P. Patil**

Cleanliness means that there is no dirt, no dust, no stains and no bad smells. The goals of cleanliness are health, beauty, absence of offensive odour and to avoid the spreading of contaminants. With the help of cleanliness, we can keep our physical and mental health clean, which will make us feel good. Cleanliness gives rise to a good character by keeping body, mind, and soul clean and peaceful. Maintaining cleanliness is the essential part of healthy living because it is the cleanliness only which helps to improve our personality by keeping clean externally and internally. With these objectives one day seminar on cleanliness was organized by Vivekanand College on August 01, 2018.



**Plate No. 09: View of Instruction board about cleanliness**



Cheap production, mould ability, light weight, resistance to corrosion and appearance and easy availability make plastic very useful, but it has many shortfalls and its harmful effects are cause of huge concern for us to save our earth and ourselves.

Disadvantages include persistence of plastic, from 400-1000 years and few types are non-degradable as well. Plastic materials clog waterways, oceans, seas, lakes etc. 1 in 3 species of marine mammals have been found entangled in marine litter. Many animals eat plastic materials and die. Over 90% of all seabirds have plastic pieces in their stomachs. Plastic is widely used in packaging. Eating food out of plastic containers may cause cancer. Both creation and recycling of plastic produce toxic gases and residues which causes air and water and land pollution. Few additives such as phthalates etc. which are added in plastics to prevent its structure may cause serious hormonal imbalance in males and females. Plastic causes many fire hazards. Its cost of recycling is also very high. So awareness about this is created in college campus with oral instructions and sign boards.

#### **2.4.6. Campus Cleanliness on 02, 03, 04 Aug, 2018**

Sanitation and neatness play an important role in our day to day routine. It is important as it prevents dangerous diseases like dengue, typhoid, hepatitis, and other diseases caused by mosquito bite, etc. Diseases like Jaundice, Cholera, Leptospirosis, Ringworm, Scabies, etc. can be spread due to eating contaminated food, drinking contaminated water or living in an unhygienic conditions. Trash also spread bad odour which is difficult to tolerate. There will also be an accumulation of trash and dirt if clean measures are not taken. So campus cleanliness drive was organized by Vivekanand College on 02- 04 August, 2018.

#### **2.4.7 Environmental Awareness: 17-09-2018**

Sustainable management of our life supporting natural resources is a need of time. Degradation of natural resources has serious environmental consequences. It may result in upset ecological cycles and ecosystem interactions. To avoid this damage to the environment Vivekanand College is continuously creating the awareness among the students and public through NSS, NCC and other various activities.

#### **2.4.8. Starting of Pollution free Panchaganga River, 22-07-2018 at Panchaganga Ghat**

Cleanliness programme was organized at Panchaganga Ghat on 22 July, 2018 by staff and students of Vivekanand College, Kolhapur.

**2.4.9. Collection of Ganesh Idol & Nirmalya**

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

**2.4.10. AIDS awareness Rally, 01-12-2018, Chhatrapati Pramila Raje (CPR) Hospital**

To avoid spread of AIDS like contagious diseases awareness rally was organized by Vivekanand College on 01<sup>st</sup> December, 2018 on the occasion of World AIDS Day.

**2.4.11. Plastic Free Awareness, January, 2019**

Disadvantages of plastic bags are well known. Plastic is responsible for environmental degradation. Human being animals and plants are affected by plastic contamination of natural resources. To avoid this campaign was organized in January, 2019 under the heading Plastic Free Awareness.

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

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

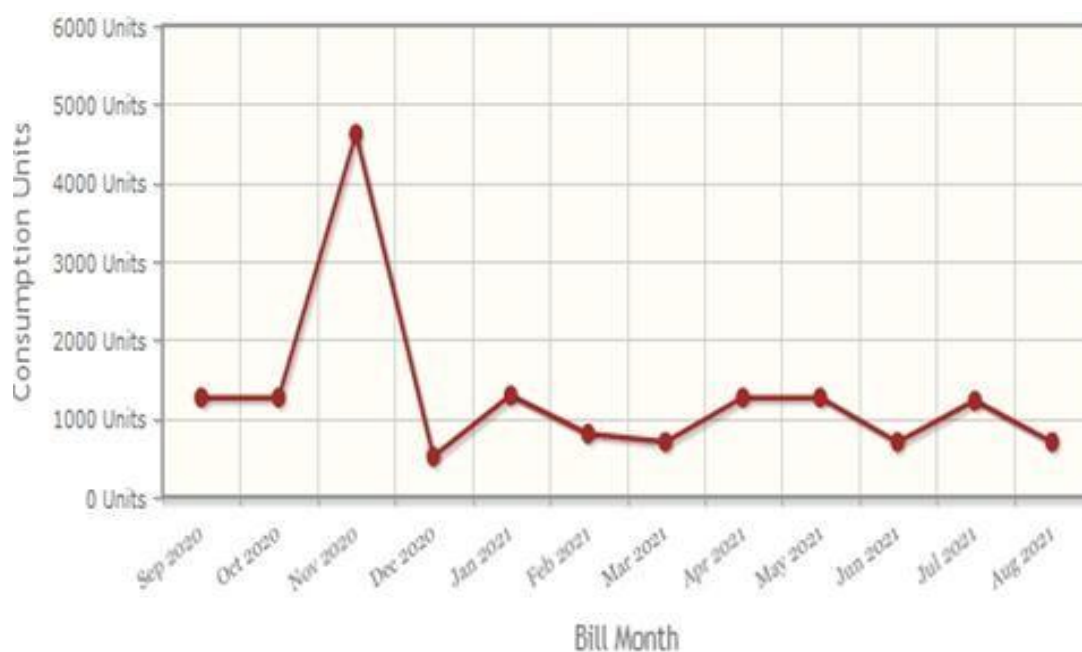
Energy management is the means to controlling and reducing a building's energy consumption, which enables owners and operators to, Reduce costs – energy represents 25% of all operating costs in an office building, Reduce carbon emissions in order to meet internal sustainability goals and regulatory requirements,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

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

**3.1.1 Energy Consumption:**

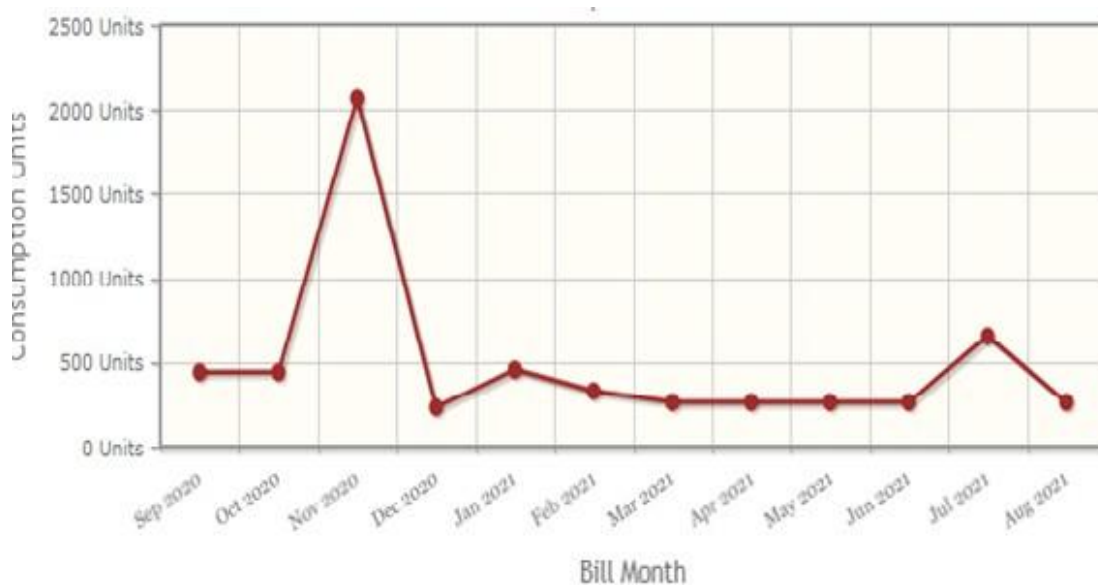
**Table - 05: Electricity consumption by Meter No. 01, 266511811601**

Month	Consumption (in units)	Bill amount(Rs.)	Payment Date
Sep-20	1,263	10,300.00	15-Dec-20
Oct-20	1,263	10,320.00	16-Oct-20
Nov-20	4,616	-48,740.00	17-Nov-20
Dec-20	512	-44,290.00	16-Dec-20
Jan-21	1,290	-37,800.00	18-Jan-21
Feb-21	802	-31,130.00	16-Feb-21
Mar-21	697	-25,290.00	16-Mar-21
Apr-21	1,263	-15,080.00	16-Apr-21
May-21	1,263	-5,930.00	17-May-21
Jun-21	697	-310	16-Jun-21
Jul-21	1,222	9,290.00	15-Jul-21
Aug-21	697	15,100.00	20-Aug-21
<b>Average</b>	1298.75		



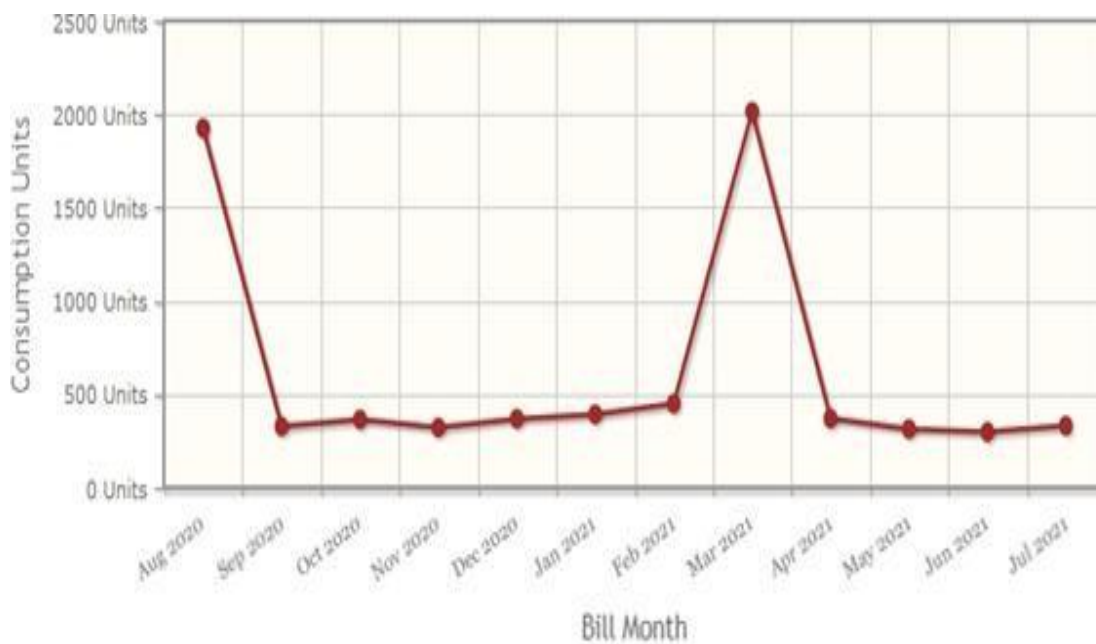
**Table - 06: Electricity consumption by Meter No. 02, 266511811597**

Month	Consumption ( in units)	Bill amount(Rs.)	Payment Date
Sep-20	439	5,810.00	19-Sep-20
Oct-20	439	5,770.00	19-Oct-20
Nov-20	2,067	-1,230.00	19-Nov-20
Dec-20	229	1,750.00	19-Dec-20
Jan-21	454	2,930.00	20-Jan-21
Feb-21	327	4,020.00	20-Feb-21
Mar-21	260	-720	19-Mar-21
Apr-21	260	2,550.00	19-Apr-21
May-21	260	2,910.00	19-May-21
Jun-21	260	6,190.00	19-Jun-21
Jul-21	654	7,400.00	19-Jul-21
Aug-21	260	10,740.00	23-Aug-21
<b>Average</b>	492.4167		



**Table - 07: Electricity Consumption by Meter No. 03, 266511546168**

Month	Consumption (in units)	Bill amount(Rs.)	Payment Date
Aug-20	1,925	26,870.00	21-Sep-20
Sep-20	327	12,580.00	23-Oct-20
Oct-20	364	13,060.00	18-Nov-20
Nov-20	321	12,550.00	18-Dec-20
Dec-20	368	26,880.00	18-Jan-21
Jan-21	392	13,290.00	15-Feb-21
Feb-21	449	800	17-Mar-21
Mar-21	2,013	31,070.00	15-Apr-21
Apr-21	369	13,440.00	17-May-21
May-21	313	-36,940.00	19-Jun-21
Jun-21	297	-23,580.00	22-Jul-21
Jul-21	331	-12,720.00	26-Aug-21
<b>Average</b>	622.4167		



Electricity supplied from the Maharashtra State Electricity Board (Mahavitaran) is the main source of energy for the activities on the campus like illuminating rooms, operating fans computers, instruments, motor and for water coolers. It is depicted from above tables and graphs that the average electricity consumption by college is 804.5 unit per month. Diesel operated Green power Kirloskar generator is used as an alternating source of Energy during emergency conditions.



**Plate No. 10: Green Power Generator operated on Diesel at college campus.**

### 3.1.2 Energy Conservation:

#### 3.1.2.1 Use of LED bulbs:

Effective energy conservation measures are taken up by Vivekanand College, Kolhapur and these are.

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

In Vivekanand College Carbon footprints for indoor lighting in office building and in other rooms is taken into account. Use of LED and LCD lights reduces carbon footprints. Energy conversion



efficiency of normal incandescent lamp is very low. LED lamps consume low power and are efficient in conversion electrical energy into light energy.

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



**Plate No. 11 & 12: Replacement of incandescent bulbs by LED tubes.**

- Replacement of old incandescent bulb and tube lights by LED lamps has been followed and will be continued in the phase manner by college as a response towards green practices of energy conservation ( **Annexure- III**)
- Workshop on Assembling of LED bulbs was organized by Electronics Department of Vivekanand College Kolhapur, to create awareness regarding importance of LED bulbs over ordinary bulbs and assembling of LED bulbs. Resource person was Mr. D. M. Panhalkar sir guided the participants regarding assembling of LED bulbs.



**Plate 13:** Inaugural function of Assembling of LED bulbs organized by Electronics Department



**Plate 14 :** Presence of students for workshop



**Plate 15:** Guidance of how to assemble of LED by Mr. D. M. Panhalkar Sir



**Plate 16 :** Guidance of how to assemble of LED by Mr. N.P. Mote Sir



**3.1.2.2 Harnessing Solar Energy: Solar Photovoltaic Applications (PVC)**

Vivekanand College Kolhapur has installed solar Photovoltaic panel for harnessing solar energy. Electricity generated by solar panels is used in college premises.



**Plate No. 17: Solar Photovoltaic Application at Vivekanand College, Kolhapur**

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

Fixed PV installations rooftop-mounted systems are employed at Vivekanand College Library. Capacity of solar system is 35 KW. These solar panels are working in full capacity. It is depicted from Mahavitaran electricity bills of Vivekanand College that, there is reduction bills by 70%. Thus solar photovoltaic panels installed on rooftop of library building are efficient in harnessing solar energy throughout the year.

Such kind of installations for harnessing renewable energy resources has a potential to mitigate the global warming by CO<sub>2</sub>. Solar PV has specific advantages as an energy source- once installed, its operation generates no pollution and no greenhouse gas emissions, it shows simple scalability in respect of power needs and silicon has large availability in the Earth's crust, although other materials required in PV system manufacture such as silver will eventually constrain further growth in the technology. The use of PV as a main source requires energy storage systems or distribution.

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

Solar Photovoltaic street lamps are also installed at Vivekanand College campus. Compared to fossil and nuclear energy sources, very little research money has been invested in the development of solar cells, so there is considerable room for improvement.



**Plate No. 18: Solar Photovoltaic street lamps at Vivekanand College, Kolhapur**

Nevertheless, experimental high efficiency solar cells are already have efficiencies of over 40% in case of concentrating photovoltaic cells and efficiencies are rapidly rising while mass-production costs are rapidly falling.

**3.2 Water Audit:**

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

Water is so integral to life that we frequently take it for granted. Freshwater is an irreplaceable resource that we are managing poorly. Despite its importance, water is one of our most poorly managed resources. Even if the Vivekanand College gets assured good amount of rainfall, the water

is not retained in the ground due to the limitations like topographical features and seasonal rains. hence regulation of water cycle by nature is proper In the area covered by build structures and roads, the rainwater does not percolate into the ground. Hence water conservation measures should be adopted.

**3.2.1 : Water Consumption:**

Requirement of water for domestic purpose is calculated at the rate of 100 lit/person/day and for drinking purpose is calculated at the rate of 10 lit/person/day. At workplace the water requirement is 5lit/person/day, thus the water demand analysis of Vivekanand College shows that on an average requirements of water is 40145 lit/day (for Population of 8029 including students and staff for domestic and drinking purpose). Daily requirements are fulfilled through water supply from Kolhapur Municipality supply, borewell water and harvested rain water.

**3.2.2 Water Quality:**

In college water is used for domestic and drinking purpose. The students which utilize water for drinking purpose must be monitored frequently to avoid the spread of waterborne diseases like Dysentery, Typhoid, Gastro etc. In the Vivekanand college the water is supplied by corporation is treated in water filters and then filled in the water coolers for drinking purpose.

Water quality of drinking water from cooler and mixed water is periodically monitored by staffs and



**Plate No. 19: Water filter and Cooler at Vivekanand College, Kolhapur.**



routine water analysis is done from laboratory for necessary parameters. It is evident from the reports of water analysis for potability study that the required parameters are within the limits of BIS standards. (Annexure-IV)

### **3.2.3 Water Conservation:**

Clean, fresh water is a limited resource. With all the severe droughts happening in the world, the limited supply of fresh water is becoming one of our most precious resources. Every person on earth needs water to survive. Without it, many of us would get sick and even result in death.

While almost 70% of the Earth is made up of water, many parts of the world suffer from clean water shortage. Conserving water is important because it keeps water pure and clean while protecting the environment.

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

Many believe that our water supply infinite. However, our supply is quite the opposite. It is important that we must not pollute your water as many do not realize just how important and scarce water is.

Humans are not the only species on Earth that requires water for survival. In fact, every species on this planet needs water to live and survive. Without water, the aquatic life will stand no chance of survival. It is highly important that we save water that is essential to our sustainability.

#### **3.2.3.1 Efficient use of water:**

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

Sensor based Auto switch is used for bore well motor. When water reservoir is overflowing motor is automatically shut off and it saves water and electricity also.





Plate No. 20: Sensor based Auto switch is used for bore well motor

**3.2.3.2 Rain Water Harvesting:**

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



Type	Degree	DMS	Weather
Latitude	16.71286	16°42'46...	overcast clouds
Longitude	74.23902	74°14'20...	28.0 °C

Plate No. 21: Rain water collection and storage at Vivekanand College

### 3.3 Air and Noise Quality:

Air and noise quality plays an important role in student’s concentration and ability to learn. In noisy environment it is difficult to focus on the subject for students and also it is difficult to teaching faculty. Furthermore, noise pollution it can cause an increase in blood pressure, hypertension, and other stress-related health issues. In many cases, noise pollution can cause a disturbance in a person’s state of mind, which further causes disturbance in sleep pattern, stress, aggressiveness, and other related issues. In very noisy environment sometimes teacher has to talk very loudly that he or she may suffer from occupational hazards like pain in throat. As the location of college is in the in the city so there is such sources to create pollution of air and noise. Samples for air quality testing and noise level measurement are done. The values of air and noise pollution parameters are observed within the prescribed limits. (Annexure- V & VI)

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



**Plate No: 22: Air sample collection at College campus**

**3.4 Green Cover:**

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



Table No. 8 : List of Plant Diversity at Vivekanand College, Kolhapur

Sr. No	Common / Local Name	Botanical Name
1	Jestmadh	<i>Glycyrrhiza glabra</i>
2	Sarpagandha	<i>Pauwolfia Serpentina</i>
3	Aswhgandha	<i>Withania Somnifera</i>
4	Gulvel	<i>Tinospora Cordifolia</i>
5	Adulsa	<i>Adhatoda Vasaka</i>
6	Korpad	<i>Aloe vera</i>
7	Aavala	<i>Phyllanthus emblica</i>
8	Hirda	<i>Terminalia chebula</i>
9	Behada	<i>Terminalia bellirica</i>
10	Rui	<i>Calotropis gingantea</i>
11	Lavang	<i>Syzygium aromaticum</i>
12	Kapur	<i>Cinnamomum oliveri</i>
13	Bel	<i>Aegel mermelos</i>
14	Kawad	<i>Wood apple</i>
15	Kamal	<i>Sauaaurea obvallata</i>
16	Kapalfodi	<i>Cardiospermum halicacabum</i>
17	Vaghat	<i>Capparis Moonii</i>
18	Gholi	<i>Portulaca oleracea</i>
19	Nagkeshar	<i>Mesua ferrea</i>
20	Murudsheng	<i>Helicteres isora</i>
21	Satab	<i>Bauhinia racemosa</i>
22	Kadulimb	<i>Azadrachta indica</i>
23	Sevaga	<i>Moringa oleifere</i>
24	Papaya	<i>Carca papaya</i>
25	Bahawa	<i>Cassia fistula</i>
26	Chinch	<i>Temarindus Indica</i>
27	Panafoti	<i>Brayaphyllum calycinum</i>
28	Shingada	<i>Trapa natans</i>
29	Fashion Flower	<i>Passiflora</i>
30	Kadu Indrayan	<i>Citrallue colocynthis</i>
31	Kadamb	<i>Rubiaceae cadamba</i>
32	Baratond	<i>Morida citrifolia</i>
33	Pandra kuda	<i>Halarrhena pubescens</i>
34	Kala kuda	<i>Wrightia tinctoria</i>
35	Anantvel	<i>Hemidesmus indicus</i>
36	Tulus	<i>Ocimum gratissimum</i>
37	Manamula	<i>Coleus barbatus</i>
38	Aghada	<i>Achyranthes aspera</i>
39	Mayalu	<i>Malabar spinach</i>
40	Shatavari	<i>Asparagus racemosus</i>
41	Surat	<i>Ornamental Grass</i>
42	Nagarmota	<i>Caperus rotundus</i>
43	Gavati Chaha	<i>Cymbopogon citrtus</i>
44	Safed musuli	<i>Chlorophytum borivilianum</i>
45	Brahmi	<i>Hydrocotyle asiatica</i>

**3.5 Solid Waste Management:**

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

**3.5.1 Biodegradable Waste:**

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

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

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

**3.5.2 Paper Waste:**

Major part of the solid waste generated at the college campus is a paper. Though paper is biodegradable material, it is having good potential of recycling thus will help in conserving the





**Plate No. 23: Vermicomposting Unit at college campus**

resources and trees indirectly. The Vivekanand College Kolhapur follows the green practice by giving the paper waste to recycling purpose. The waste paper is sold to specific vender. Other green practices like use of one sided paper, paperless activities like e-mailing all notices instead of printing it of paper, putting the information on what’s app groups are also practiced in the college to reduce the use of paper. Thus, Reduce, Reuse and Recycle, 3 R principles of solid waste management are followed in the Vivekanand College Kolhapur for waste management.

**3.5.3 Other waste:**

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

**(Annexure - VII)**

## CHAPTER 4.0: BEST ENVIRONMENTAL PRACTICES

Vivekanand College, Kolhapur follows all possible green practices to conserve the nature and reduce its ecological footprints. Some of the green practices are discussed below.

**4.1. No Vehicle Day:**

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



Plate No. 24: No Vehicle Day (Use of Bicycles)

**4.2. Ganesh Moorti and Nirmalya Daan during Ganapati Visarjan:**

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

### **4.3 Plantation:**

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

**CHAPTER- 5: FINDINGS AND SUGGESTIONS**

After a thorough analysis of green practices and environmental aspects of Vivekanand College, Kolhapur the audit team has come with following findings and suggestions.

**5.1 Findings :**

- The college campus strictly follows green practices. All students, staff and faculty members participate actively in keeping campus clean and Green.
- Though the campus is small the college has tried to keep it green by planting trees in the premises.
- Solar photovoltaic systems installed in college campus are efficiently working in harnessing renewable solar energy into electric energy. They are reducing the carbon footprints.
- Solid waste segregation and management is followed in the premises. Vermicomposting is done for biodegradable waste.
- Drinking water quality is maintained as per the standards by frequent water quality analysis.
- Rain water harvesting has been done in the college campus, harvested rain water is used in college laboratories and other purpose.

**5.2 Suggestions :**

- More frequent testing of drinking water is required to maintain drinking water quality.
- More paperless activities like E.mail/ whats app should be followed which are ecofriendly.
- Installation of Biogas plant and composting units should be done at ladies hostel.
- Whenever possible harvesting of rain water and recharging of ground water should be done to avoid runoff and wastage of rain water.
- Recycling of water should be set, and may be used for irrigation of gardens in college campus.
- Display name of all the trees/ plants with their common name, scientific name and importance.
- Construct Sewage Treatment Plant in college premises.

**Overall the performance of College is good on Green Initiative Front  
and can take some more green initiatives for sustainable future**



## Annexure-I

“Dissemination of Education for Knowledge, Science & Culture”

-Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's

**VIVEKANAND COLLEGE (AUTONOMOUS),  
KOLHAPUR  
NATIONAL CADET CORPS  
5 &6 (SD/SW) MAH BN NCC, KOLHAPUR**



### PLASTIC FREE CAMPAIGN AND CLEANLINESS DRIVE

Plastic is the one of the greatest innovation by man himself . It is a boon to man. It having multipurpose uses , It has reduced the stress of minerals. But it has one limitation. It has a problem of disposal, which creates different problems. As a first citizen of the Kolhapur city the Dr. Mallinath Kalshetti , the CEO of Kolhapur Municipal Corporation has organized the Plastic Free drainages and cleanliness drive at Jayanti Nala ,one of the biggest drainage which carries the lots of sewage . Most of rhe time it get chocked by plastic though Kolhapur Municipal corporation has organized this drive. For this drive the principal Dr. S Y Hongekar has present . It organized under the guidance of the Commanding Officers of 05 and 06 Mah Bn NCC, Kolhapur. For this function 34 SD & 60 SW cadets present with Captain Sunita Bhosale And Lt. J.R.Bharamgonda .

ANO

Dr .S.Y.Hongekar



## Annexure-II

“Dissemination of Education for Knowledge, Science & Culture”

-Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha's



**VIVEKANAND COLLEGE (AUTONOMOUS),  
KOLHAPUR**

**NATIONAL CADET CORPS**

**5 &6 (SD/SW) MAH BN NCC, KOLHAPUR**



### NOTICE

**NCC 2019/20**

**Date : 29/07/2019**

It is informed to all NCC SD/SW cadets that NCC department is going to participate the PLASTIC ERADICATION AND CLEANLINESS DRIVE organized by the Dr. Mallinath Kalshetti , the CEO ,Kolhapur Muncipal Corporation.on Sunday 21 July 2019 near Khanvilkar Petrol Pump ,Dasara Chowk Kolhapur.(institutional/ Community Development And social welfare activity) .All should present at 08:30 AM /PM . without any fail.

**ANO**

**Dr. S.Y. Hongekar**

Shri Swami Vivekanand Shikshan Sanstha's,

**VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR.**

## Department of Electronics

### NOTICE

Date : 2/4/2019

All the students of B.Sc and B.Sc.Computer Science (Entire) are hereby informed that, Department of Electronics is going to organise one day workshop on "Assembling of LED bulbs" on 4<sup>th</sup> April 2019 at 11.30 am. So please attend the workshop.

**Place: Department of Electronics.**

(Mr.D.M.Panhalkar )

Head

Department of Electronics  
Vivekanand College, Kolhapur.  
Copy to:

( Dr.S.Y.Hongekar )  
PRINCIPAL  
Vivekanand College  
Kolhapur

- 1) Head, Dept. of Maths. *for [Signature]*
- 2) Head, Dept. of Chemistry *[Signature]*
- 3) Head, Dept. of Stat. *W. Pawar 02.4.19*
- 4) Head, Dept. of Physics *[Signature]*
- 5) Head, Dept. of Computer Science *self*
- 6) Head, Dept. of Botany *[Signature]*
- 7) Head, Dept. of Zoology *[Signature]*
- 8) Head, Dept. of Microbiology *for [Signature]*
- 9) Head, Dept. of B.C.S. *[Signature]*
- 10) Head, Dept. of B.B.A.
- 11) Head, Dept. of B.C.A.
- 12) Head, Dept. of Biotechnology *[Signature]*
- 13) Head, Dept. of Graphic Faculty *[Signature]*
- 14) Head, Dept. of B.Voc. *for [Signature]*

Shri Swami Vivekanand Shikashan Sanstha's,  
VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR

Department of Electronics  
Workshop on  
***“ Assembling of LED bulb ”***

Date: 04 April 2019

Time: 11.30 am

Venue: Department of Electronics

**Programme Schedule**

Welcome & Introduction

**Mr.D.M.Panhalkar**

Assistant Professor

HOD, Electronics Department

Vivekanand College,

Kolhapur

Chief guest

**:Dr.S.Y.Hongekar**

Principal

Vivekanand College, Kolhapur

Co-ordinator

**: Mr.D.M.Panhalkar**

Assistant Professor

HOD, Electronics Department

Vivekanand College, Kolhapur

Organizing Committee

:Mr.P.R.Bagade

Mr.N.P.Mote

Mr.S.D.Jadhav

Miss.S.B.Demanna

Miss.D.H.Kore

Shri Swami Vivekanand Shikashan Sanstha's

**VIVEKANAND COLLEGE (AUTONOMOUS), KOLHAPUR**

**Department of Electronics organized**

**Workshop on**

**“ Assembling of LED bulb”**

**4th April 2019**

**□ Workshop Schedule**

11:00 am to 11:30 am	: Inauguration
11:30 am to 12:00 am	: Technical Session-I
12:00 am to 01:00 pm	: Technical Session-II



Vivekanand College (Autonomous), Kolhapur  
Department of Electronics

Workshop on  
"Assembling of LED Bulbs"

Date:04.04.2019

Time:11.00 am

Sr.No	Name	Class	Sign
1	Satwik R. Gawas	Bsc-III	S.R.Gawas
2	Akash P. Nigavekar	BSC II	Akash
3	Sohan D. Apaeraj	B.Sc II	Sohan
4	Aasim Y. Jamaders	B.Sc - III	Aasim
5	Akanksha P. Patil	BCS - II	Akanksha
6	Akshata M Patil	BCS - II	Akshata
7	Swati G. mandavkar	BCS-II	Swati
8	Haresha H. Naik	BCS - II	Haresha
9	Srushti S. Desai	BCS - II	Srushti
10	Shiwani S. Ghevarri	BSC - II	Shiwani
11	Amruta P. Dorekar	BSC - II	Amruta
12	Sanal S. Patil	BSC - II	Sanal
13	Pranali R. Patil	BSC - II	Pranali
14	Harshada T. Mohite	BSC - II	Harshada
15	Vinita D. Jadhav	BSC - II	Vinita
16	Supnali S. More	BSC - II	Supnali
17	Saloni S. Vaedhamane	BSC - II	Saloni
18	Sumbesh G. Chavhan	B.Sc - III	Sumbesh
19	Arif. Desai	BSC III	Arif
20	Vedika Sanjay Kadam	Bsc - II	Vedika
21	Manasi Khanderao Jayadale	BSc II	Manasi
22	Shital A. Vhannure	Bcs-II	Shital
23	Neha M. Chavan	B. Sc II	Neha
24	Rohan Arjun Tibile	BSc.II	Rohan



Vivekanand College (Autonomous), Kolhapur  
Department of Electronics

Workshop on  
"Assembling of LED Bulbs"

Date:04.04.2019

Time:11.00 am

25	Priyanka S. Karande.	B.CS-II	Karande
26	Nishigantha Nivasoo Patil	B.Sc-II	<del>Patil</del>
27	Nishigantha Namdev Yathav	B.Sc-III	<del>Patil</del>
28	Vaate Samradnyi Dnyandev	B.Sc. III	Walle
29	Bagadi Asha kundlik	B.Sc. III	<del>Walle</del>
30	Kumbhar Gauri Eknath	B.Sc II	gsc
31	Pratiksha Prasad Mane	B.Sc II	Mane.
32	Moze Nilesh Tanaji	B.Sc III	<del>Patil</del>
33	Shelake Mahesh Bibhishan	BSC - III	<del>Patil</del>
34	Devane saurabh nivas	bsc - III	S.N.D.
35	Koli Abhijeet Sanjay	B.Sc III	<del>Patil</del>
36	Patil Santosh Rangao	B.Sc III	Patil Santosh
37	Padaval Tejaswini vitthal	B.Sc-II	Padaval.
38	kumbhar Gauri Eknath	B.Sc II	gsc
39			
40			
41			
42			
43			

# Report on “ Assembling of LED bulb”

(Held on: 4<sup>th</sup> April 2019)

- **Venue :Department of Electronics**
- **Time: 11.00 – 1.00 pm**
- **Objective:**
  1. To enhance the students’ understanding and technical skill of assembling and disassembling the hardware components of LED bulbs.
  2. To families with advantages of LED bulbs like energy efficiency, long life cycle and eco-friendly nature of LED.

“Assembling of LED bulb” workshop was organized by the Department of Electronics, on 04<sup>th</sup> April, 2019. B.Sc-III year students are actively involved in this workshop. Total 38 participants from all years and various streams attended this workshop.

The inaugural of the workshop witnessed the presence of Dr.S.Y.Hongekar, Principal, Vivekanand College(Autonomous), Kolhapur along with the faculty members Prof.D.M.Panhalkar (HOD), Prof.P. R.Bagade, Prof.N.P.Mote, Miss.D.H.Kore and Miss.S.B.Demanna of Department of Electronics. Mr.D.M.Panhalkar, Coordinator of this workshop, gives welcome and introduction of this workshop. Dr.S.Y.Hongekar Sir explains the important and need of LED bulb in our life. Mr.P.R.Bagade gives vote of thank of this inaugural session.

The first session of workshop began with Mr. N.P.Mote in detail the theory behind LED(Light Emitting diode) and connection of single LED with D.C.battery. The first session end at 12.00 pm with demonstration of battery operated LED. In Second session of workshop, Mr.P.R.Bagade gives theory of a.c. operated LED and explain each component of the LED bulb along with its function and role in the device and its effect on. The workshop ended with a complete understanding of the hardware requirements and assembling of LED bulb and a positive response from all participants involved.



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Kolhapur College with Potential for Excellence (CPE) III<sup>rd</sup> Phase

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**DEPARTMENT OF ENVIRONMENT MANAGEMENT**

**Dr. C. S. Dalvi**  
Director

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

**Dr. R. A. Shinde**  
Secretary & Managing Trustee

**Annexure-IV**

**WATER ANALYSIS REPORT**

Name of the party : Vivekanand College  
2130, 'E' ward, Tarabai park, Kolhapur

Sample collected by : Party

Nature of sample : Tap Water

Sample collected on : 09/08/2021

Sample received on : 09/08/2021

Sr. No.	Parameter	Value	Highest Desirable Limit	Maximum Permissible Limit
1	pH	7.67	7.0-8.5	6.5-9.2
2	Total Hardness	120.00	100.00	500.00
3	Calcium	32.06	75.00	-
4	Magnesium	9.75	50.00	150.00
5	Chlorides	31.24	200.00	600.00
6	MPN/100ml	00	00	10

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

**MPN:** Most Probable Number of Coliform Bacteria

Analysed by

Checked by

(Mr. V. B. Kadam)

(Mr. S. S. Gaddi)



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**Dr. R. A. Shinde**  
Secretary & Managing Trustee

**WATER ANALYSIS REPORT**

Name of the party : Vivekanand College  
2130, 'E' ward, Tarabai park, Kolhapur

Sample collected by : Party

Nature of sample : Borewell Water

Sample collected on : 09/08/2021

Sample received on : 09/08/2021

Sr. No.	Parameter	Value	Highest Desirable Limit	Maximum Permissible Limit
1	pH	7.33	7.0-8.5	6.5-9.2
2	Total Hardness	148.00	100.00	500.00
3	Calcium	44.80	75.00	-
4	Magnesium	8.77	50.00	150.00
5	Chlorides	39.73	200.00	600.00
6	MPN/100ml	540	00	10

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

**MPN:** Most Probable Number of Coliform Bacteria

Analysed by

Checked by

(Mr. V. B. Kadam)

(Mr. S. S. Gaddi)



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Secretary & Managing Trustee

**Annexure-V**

**NOISE MONITORING REPORT**

Name of the party : Vivekanand College  
2130, 'E' ward, Tarabai park, Kolhapur

Monitoring Station : College Campus

Instrument Used : Sound Level Meter(6010)

Monitoring Type : Ambient Noise Monitoring

Monitoring Date : 09/08/2021

Sr. No	Location	(Leq) Values in dB(A)
1	Principal Cabin	54.80
2	Staff Room	64.10
3	Administrative Office	62.80
4	Meeting Hall	42.00
5	Corridors	60.20
6	Class Room (out side)	58.80
7	Class Room (in side)	56.60
8	Library	44.50
9	Reading Room	40.80
10	IQAC Cell	40.20
11	Computer Lab	48.00
12	Chemistry Lab	50.80
13	Multipurpose Hall	40.10
14	Ladies Common Room	46.60
15	Backside campus	51.30
16	Campus(Near main gate)	70.60

Monitoring carried out by

Checked by

(Mr. V. B. Kadam)

(Mr. S.S. Gaddi)





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**DEPARTMENT OF ENVIRONMENT MANAGEMENT**

Dr. C. S. Dalvi  
Director

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

Dr. R. A. Shinde  
Secretary & Managing Trustee

**Annexure-VI**

**AIR MONITORING REPORT**

Name of the party : Vivekanand College  
2130, 'E' ward, Tarabai park, Kolhapur

Monitoring Station : College Campus

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

Instrument Used : High Volume Sampler (NPM-HVS)

Monitoring Type : Ambient Air Monitoring

Sr. No.	Parameter	Values	CPCB Standards (24 hrs)
		August 09/08/2021	
1	Suspended Particulate Matter (SPM)	52.00	100
2	Respirable Particulate Matter (RSPM)	25.20	50
3	Oxides of Nitrogen (NO <sub>x</sub> )	13.52	30
4	Sulphur Dioxide (SO <sub>2</sub> )	3.86	30

**NOTE:** All values are in ug/m<sup>3</sup>

Monitoring carried out by

Checked by

(Mr. V. B. Kadam)

( Mr. S. S. Gaddi)

**Memorandum of Understanding for E waste disposal**

This is a Memorandum of mutual understanding between **Mahalaxmi e Recyclers Pvt.Ltd. Kolhapur**, hereafter termed as ewaste dismantler and **Vivekanand college, Kolhapur** hereafter termed as client, made with an intention of environment friendly disposal of e waste collected by the client and to be disposed by the dismantler with following terms:

1. The client will inform the dismantler through mail or phone about such collection of e waste at their office and the dismantler will collect it from the said location after properly testing the same at mutually contracted rates.
2. The payment of the collected e waste will be made by the dismantler against delivery.
3. Once disposed to the dismantler, the client will not have right on any of the material disposed.
4. The dismantler will issue FORM13 of such disposal to the client for every delivery made by the client, in prescribed format and enter the same in the passbook issued by M.P.C.B.
5. All the legal issues will be dealt in the legal jurisdiction of Kolhapur District.

**Agreed & Signed Mutually**

  
f/Manoj Mehta

**Chairman & Managing Director,  
Mahalaxmi e Recyclers Pvt. Ltd.**



**Mahalaxmie-Recyclers Pvt. Ltd.**  
**Plot No. J-5(Part),MIDC, GokulShirgaon,**  
**Kolhapur 416234**  
**Mobile: +91-72764 11826**  
**Email : manoj@erecyclebin.com | [www.erecyclebin](http://www.erecyclebin)**

**MPCB REGN. NO. : MPCB/RO(HQ)/REG-15/EWASTE/HWMD-257/Date-9<sup>th</sup> Oct. 2015, Valid till 8<sup>th</sup> Oct. 2020**

## Report on " E-Waste Collection and Management" :

E-Waste management program conducted in college in two phase. In first phase we collect e-waste in our college from different departments. E-waste is collected in the forms of Computer monitor, CPU, Power supply, Various Electronics instruments like CRO, function generator ,Keyboard, Mouse, C.Ds etc. This collected e-waste is handed over to Mahalaxmi e-recycler Pvt.Ltd. Gokul Shirgaon MIDC, Kolhapur. In second phase we conduct e-waste awareness programmes and collect e-waste from students in the forms of mobile chargers, calculators, batteries, LED bulbs etc. and send to recycling process.

In academic year 2019-20, we hand over the following quantities to Mahalaxmi e-recycler Pvt.Ltd for recycling purpose on 10-01-2020

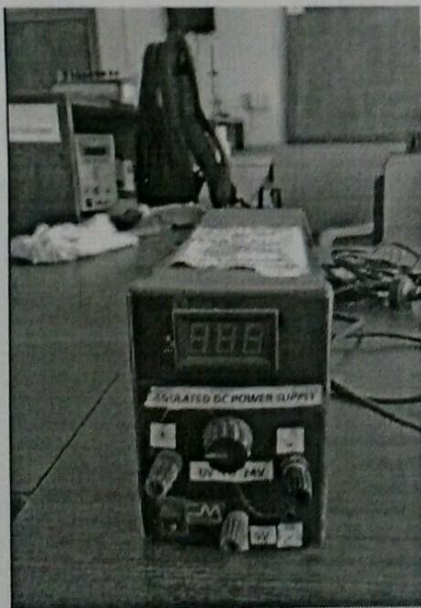
Sr. No	Component Name	Quantity
1	<b>BCA Dept.</b> Lenovo Computer : CPU Keyboard	1
2	<b>Chemistry Dept.</b> A) Weight Measurement instrument	1
3	<b>BBA/BCA Dept.</b> Inverter Batteries	5
4	<b>Karpe Sir Old CRT TV</b>	1
4	Other materials like CDs, mobile phones, mobile chargers, T.V. Remote Printer toner parts etc.	--







Apart from that, we also use the this collect E-waste for the development of student's project and departmental instruments like Power supply. In this current academic year, we developed the Dual power supply (+24 v and +5v ) for the practical purpose in our Electronics lab under the guidance of Prof. D. M. Panhalkar and Prof. N. P. Mote.



← Development of Dual Power Supply (+24v and +5v )

*y.p.s.*  
FOS, **Head**  
**Department of Electronics**  
**Vivekanand College, Kolhapur.**



Certificate No.	MERPL19-20/70	Date :	13/01/2020
Date of Material Receipt	10/01/2020		
Weight	20 Kgs		
Customer Reference No.	By Email Communications		



## CERTIFICATE OF E-WASTE RECYCLING

*This is to Certify that e-waste received for recycling  
from*

**Vivekanand College**

**2130, "E" Tarabal Park, Kolhapur-416003**

*has been safely disposed at our registered facility in an environment friendly manner.*

**For Mahalaxmi e Recyclers**



Authorized Signatory

MPCB Reg. No. : MPCB/RO(HQ)/REG/14/E-Waste/HWMD-182 | Date : 31st July 2014

Renewed Reg. No. : MPCB/RO(HQ)/REG-15/EWASTE/HWMD-257/Dt. 9th Oct. 2015 Valid till 8th Oct. 2020

Mahalaxmi e-Recyclers Pvt. Ltd. Plot no: J-5 (Part), Gokul Shirgoan MIDC, Tal : Karveer, Dist : Kolhapur | Website : [erecyclebin.com](http://erecyclebin.com)

10/1/2020

