

7.1.3 Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following

- 1. Green audit / Environment audit**
- 2. Energy audit**
- 3. Clean and green campus initiatives**
- 4. Beyond the campus environmental promotion activities**

Clarification Asked: - "HEI to pl submit 1. Policy document on environment and energy usage 2. Action taken reports and achievement report as clear and Green campus initiatives. 3. Reports of the Audits. 4. Certificate from the external accredited auditing agency (preferably government, concern department of affiliating university). covering all years 5. Certificates of the awards received from the recognized agency if any. 6. Action taken reports and achievement report as clear and Green campus initiatives. "

Response: -

1. Policy document on environment and energy usage is attached. (Appendix-I)
2. Report and Certificate from the external accredited auditing agency is attached. (Appendix-II)
3. Reports of Clean and green campus initiatives and beyond the campus environmental promotion activities are attached. (Appendix-III)

Appendix-I



An Education Empowered by Industry...

FABTECH TECHNICAL CAMPUS

COLLEGE OF ENGINEERING & RESEARCH

(Approved by AICTE, New Delhi; DTE., (M.S.), Mumbai &

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Dist.- Raigad)

NAAC Accredited

ISO 9001 : 2015 Certified Institute

Pandharpur Road, Gat No. 565/1, Sangola, Taluka :- Sangola, District :- Solapur - 413307 P.O.Box No.04

Contact No. 8408888657

Website : www.ftccoe.ac.in

E-mail : fabtech@ftccoe.ac.in

Date:- 01/07/2019

POLICY DOCUMENT ON THE GREEN CAMPUS

Fabtech Technical Campus, College of Engineering and Research, Sangola is a quality conscious college. It protects its own environment with its green campus initiative and keeps pollution free campus. Environment development is its basic work with the educational policies implemented on the campus. The green atmosphere of the college is largely due to tree plantation. There are different types of trees and plants in the campus. Trees have nearly covered the fencing area. They help to maintain the ecosystem. Planting of saplings by the Management, Principal, Teachers, Students and Staff at various functions inbuilt an eco consciousness in the college practices. Planting a large number of trees in the villages is one of the regular features of the NSS Camps. The trees are planted in the villages by the NSS volunteers and also at the places from where the fetches the admission is a remarkable to the college.

Our environmental policy:

- To create awareness regarding environmental policy amongst the students, management and nearby villagers.
- As per the govt. rules and regulations regarding the instructions of tobacco free campus signboards are displayed at various places on the campus. Pollution free campus is maintained by avoiding tobacco, pan-masala, chewing on the campus.
- To sensitize the students and staff regarding the use of drinking water properly for which, we have provided purified (RO aqua-guard) drinking water facilities on the campus.
- To bring in use the 'Rain Water Harvesting' on the campus. We have collected the rain water from the college roof and it is percolated in the land through bore well.
- Circular by Principal every year regarding use of public transport or carpooling or use of bicycle. It helps to save the fuel, avoids the environmental pollution.
- To maximize the use of ICT and minimize the use of paper. It will help to go towards 'Paperless Office'.
- To use the solid waste through vermin-compost on the campus and use it as a fertilizer.
- To reduce the 'sound pollution in the campus, we have built the seating arrangements in the shade of trees in our campus.
- To use 'Use me' Dry and Wet dust bins in the college campus so as to keep college campus clean.

PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA

Appendix-II



GREEN AUDIT REPORT

(2022-23)

To
Fabtech Technical Campus,
College of Engineering and Research,
Sangola, Dist: Solapur-413307.
Maharashtra, India.

Prepared by

Ashwamedh **Engineers & Consultants**

Survey No.102, Plot No.26, Wadala Pathardi Road, Indira Nagar, Nashik-422009
(Near Guru Gobind Singh School, Near Pandav Nagari, Samrat Sweet Turning)

sales@ashwamedh.net T/F:+91-253-2392225

Table of Contents

Executive Summary	
1. Introduction	
1.1 About the College	
2. Objectives of the Study	
3. Methodology	
4. Observations and Recommendations.....	
4.1. Environment.....	
a) Observations	
b) Recommendations	
4.2. Water Management.....	
a) Observations	
b) Recommendations	
4.3. Energy Use and Conservation	
a) Observations	
b) Recommendations	
4.4. Waste Generation.....	
a) Observations	
b) Recommendations	
4.5. E-Waste Generation	
a) Observations	
b) Recommendations	
4.6. Green Area:	
a) Observations	
b) Recommendations	
5. Conclusions	
6. Acknowledgement.....	

College Gate Entry



Executive Summary

The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development. The **Fabtech Technical Campus, College of Engineering and Research, Sangola, Dist: Solapur-413307, Maharashtra, India** and unconditionally believes that there is an urgent need to address these fundamental problems and reverse the trends. Being a premier institution of higher learning, the college has initiated 'The Green Campus' program that actively promote the various projects for the environment protection and sustainability.

The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. The methodology include: preparation and filling up of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons, data analysis, measurements and recommendations. It works on the several facets of 'Green Campus' including Water Conservation, Tree Plantation, Waste Management, Waste water management, Rain water harvesting, Paperless Work, Alternative Energy and Mapping of Biodiversity. With this in mind, the specific objectives of the audit are to evaluate the adequacy of the management control framework of environment sustainability as well as the degree to which the departments are in compliance with the applicable regulations, policies and standards. It can make a tremendous impact on student's health and learning college operational costs and the environment. The criteria, methods and recommendations used in the audit are based on the identified risks.

1. Introduction

Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth by carrying out Green Audit.

1.1 About the College

Fabtech Technical Campus, College of Engineering and Research, Sangola, was established in the year 2011 with various under graduate courses like Civil, Mechanical, Electrical, E & TC, Artificial Intelligence & Data Science and Computer Science & Engineering. It is recognized by the Government of Maharashtra, AICTE and is affiliated to the Dr. Babasaheb Ambedkar Technological University, Lonere. It has been accredited by the National Assessment and Accreditation Council (NAAC) with 'B' grade in the UGC). The campus is located on Pandharpur road, Sangola Dist:-Solapur, provides the most conducive atmosphere for learning to be enjoyable and interesting. The college is popularly known as FTC, COER, Fabtech Technical Campus among the students. College of Engineering and Research (FTC-COER), Sangola takes a holistic view of education and focuses on both, academic as well as personality development of the students. The qualified and experienced faculty at FTC-COER, Fabtech Technical Campus along with the carefully designed and updated curriculum ensure that the students receive

the best education and skills which can help them emerge as qualified professionals. In order to provide students with quality academic environment, the college has developed all the necessary infrastructural facilities. The key among them are Hostel for boys and girls, Library, Laboratory, Playground, Canteen, Gym, Medical Help, Education loan, Auditorium, Scholarship.

Today, Fabtech Technical Campus, College of Engineering and Research, Sangola , college complex is one of the ideal educational complexes in the Maharashtra. Near about 3000 students are seeking education in different disciplines. The institute has competitive examination cell and training for girls for entrepreneurship development.

At present institute has total 83 teaching faculties. Out of these, there are 66 males and 17 females. There are 34 non-teaching faculties which includes 31 males and 4 females. Total students are 908 which includes 671 males and 237 females. The college has total 79020 Sq. Meters area.

The green audit report has been discussed with environmental experts of Pollution Control department, Nashik and District Forest Officer, Nashik, with suggestions to increase greenery in campus. Extra efforts have been taken by the college to create environment consciousness amongst students. Green audit is the self-evaluation of any institute. Our initiative takes the initiative to evaluate ourselves, how much we are environmentally fit?8 What kind of changes should bring among us, an institute. We must flow the rule of nature for the maintenance of environment clan and healthy. In the present audit most of the environmental aspects have been covered. Trees, plants, shrubs, climbers, crop plants, ornamental plants, medicinal plants of the campus counted and conserved. They are classified following Bentham and Hookers system of classification. Their ecological and economic importance is also studied. Along with it the fungal biodiversity of the campus also studied. The campus is a habitat Butterflies, beetles, of the campus were studied.

Topography of the campus was studied by taking measurements by scientific methods. While studying the health index of the trees and plants it was found that most of the plants are healthy and free from diseases. Environmental awareness programmes and outside the campus such as tree plantation are also discussed in the audit. Lastly the findings and recommendations regarding audit are also given. The present audit report finds out areas of strengths and weaknesses in environmental management within the institute. Finding of green audit report showed that institute should take care of local environment for the betterment of future. College has already taken some steps like plantation of local and medicinal plants, arranges special programmes by inviting the eminent personalities for environmental consciousness of staff as well as students. Under the guidance of our Principal, **Dr. R.B.Shendage Ph.D. (Civil)**, this is the third attempt to conduct green audit of our college campus. Very truly, the well-known scientist Albert Einstein said that, "Look deep into nature, and then you will understand everything better" This is very little attempt to look into nature around us, I hope the present audit report will be helpful for evaluating yourself.

VISION:

To be the prime institute of professional education and research in the benefits of the society.

MISSION:

1. Provide opportunities to deserve students of all communities in particular for quality professional education.
2. Design and deliver prospectuses to meet the national and global changing needs through student-centric learning methodologies.
3. Nature and retain the best faculty and technical manpower.
4. Amalgamate the state-of-art infrastructure and equipment for teaching and research activates.

5.Promote all round personality development of the students through interaction with professionals, alumni, academic and industry.

6.Strengthen the Educational Social Responsibilities (ESR) of the institution.

2. Objectives of the Study

The main objective of the green audit is to promote the Environment Management and Conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

- To introduce and make students aware of real concerns of environment and its sustainability.
- To secure the environment and cut down the threats posed to human health by analysing the pattern and extent of resource use on the campus.
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections require high cost.
- To bring out a status report on environmental compliance.

3. Methodology

In order to perform green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarise the present status of environment management in the campus:

- Green Area
- Water management
- Energy conservation
- Waste management
- E-waste management

4. Observations and Recommendations

4.1 Green Area

This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. This also helps in ensuring that the Environmental Policy is enacted, enforced, and reviewed using various environmental awareness programmes.

Totally eleven green spots are found in the maintained by various plant species. Botanical garden is prepared very scientific manner, educationally important all plants are grown there. Different buildings developed their own greenery to maintain eco-friendly environment in the campus.

Green Area of College Campus

A. Observations

In the category of tree 885 plants are found in the campus those having 06 different species. Which are having medicinal, religious, educational and environmental importance, which making the campus rich heritage.

Tree plantation was done under various schemes near the main entry gate the new area developed is of approximately 1200 Sq.m area. The college has planted variety of plants in that area regular nursing and care taking activities were routinely performed such as regular irrigation facility, fertilizers, pesticides spraying, tree grading and regular cutting etc.

College has 3160.58 sq. meters of play ground around this playground a greenbelt is developed number of tree plants were planted there

Fabtech Technical Campus, College of Engineering and Research, Sangola, was prepared carbon credit report as per Kyoto protocol 2002.

The college has developed separate green policy

Policy Document on the Green Campus:

Green Campus: A Green Campus is a place where environmental friendly practices and education combine to promote sustainable and eco-friendly practices in the campus. The green campus concept offers an institution the opportunity to take the lead in redefining its environmental culture and

developing new paradigms by creating sustainable solutions to environmental, social and economic needs of mankind.

Role of the Go- Green Campus Programme:

1. Seek views of all the Stakeholders to make the Go Green Campus initiative functional throughout the year.
2. Conduct the Campus' environmental impacts to identify the targets for improvements.
3. Establish a Green Campus Environmental Ethic Awareness campaigns.
4. Organize Awareness Programs for the students, faculty and society.
5. Develop a strategic plan and create student teams to carry out specific tasks of the strategic plan. For instance, a plan to save energy at the institute level with time bound plan to install Solar Power Station mandatorily either at the top of Institute building or in open field. This will enable the institute to have 24x7 power supply.
6. Conventional light source such as bulbs and tube lights, halogen and mercury street/campus lights and get them replace by the LEDs.
7. Conduct an Annual Green, Environment and Energy Audit.

1 Plant = 20kg CO₂ absorbed per year

Total plant in College Campus=885

885*20=17700 kg CO₂ absorbed/year

For 4 years the CO₂ absorbed= 17700*4

=70800 kg CO₂ /4 Year





- Appreciate that the college campus has well maintained trees, shrubs, climbers, herbs, crop plants etc. These all plants have their own economic importance as well as environmental importance also. Most of the trees of the campus are medicinal plants and they have their economic importance also.
- Appreciate that college established Green Cell in college for the enactment, enforcement and review of the Environmental Policy.

Recommendations:

- Review periodically the list of trees planted in the garden, allot numbers to the trees and keep records.
- Promote environmental awareness as a part of course work in various curricular areas, independent research projects and community service.

Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings

4.2.Environment:

Air is one of the essential elements for sustainability of life on this planet. This is often most polluted by humans along with water. It is required monitor its quality frequently to establish its goodness. Physically due to greenery and absence of polluting industries are processes in the vicinity the air quality appears to be very good. In addition, the parking area and bus bay are maintained clean by paving and regular cleaning giving no scope for dust rise. Also, the road sides are all covered with plants and trees aiding for good air quality.



High Volume Sampler for Ambient Air Monitoring

Test Report: Ambient Air monitoring Near Main Gate

Meteorological Data / Environmental Conditions				
Average Wind Velocity: 3.0 km/h	Wind Direction: E	Relative Humidity (Max./Min.): 73/85 %	Temperature (Max./Min.): 36/20°C	Duration of Survey: 24 h
Parameter	Results		NAAQS 2009	Unit
Sulphur Dioxide (SO ₂)	19		80	µg/m ³
Nitrogen Dioxide (NO ₂)	18		80	µg/m ³
Particulate Matter (size less than 10 µm) or PM ₁₀	48		100	µg/m ³
Particulate Matter (size less than 2.5µm) or PM _{2.5}	18		60	µg/m ³
Ozone (O ₃)	<19.6		180	µg/m ³
Lead (Pb)	<0.02		1	µg/m ³
Carbon Monoxide (CO)	0.50		4	mg/m ³
Ammonia (NH ₃)	<4		400	µg/m ³
Benzene (C ₆ H ₆)	<1		5	µg/m ³

Test Report: Ambient Air monitoring Garden

Meteorological Data / Environmental Conditions				
Average Wind Velocity: 3.0 km/h	Wind Direction: E	Relative Humidity (Max./Min.): 83/90 %	Temperature (Max./Min.): 30/20°C	Duration of Survey: 24 h
Parameter	Results	NAAQS 2009	Unit	
Sulphur Dioxide (SO ₂)	20	80	µg/m ³	
Nitrogen Dioxide (NO ₂)	21	80	µg/m ³	
Particulate Matter (size less than 10 µm) or PM ₁₀	50	100	µg/m ³	
Particulate Matter (size less than 2.5µm) or PM _{2.5}	18	60	µg/m ³	
Ozone (O ₃)	<19.6	180	µg/m ³	
Lead (Pb)	<0.02	1	µg/m ³	
Carbon Monoxide (CO)	0.50	4	mg/m ³	
Ammonia (NH ₃)	<4	400	µg/m ³	
Benzene (C ₆ H ₆)	<1	5	µg/m ³	

Observation: All results of Ambient Air monitoring Near Main Gate& Near Garden found within limits as per National Ambient Air Quality Standards, 2009.

C) Noise Environment: The noise levels measurements were carried out using Noise level meter. The Noise level survey was carried out at two locations, at outside as well inside the study area campus. The major source of noise identified in the study area has been predominantly the vehicular movement and the transportation activities.

Noise Metre



Location	Time	1	2	3	4	5	Noise Level Readings dB (A)
Outside	11.00	58	59	60	56	57	54.6
	11.30	57	55	54	59	55	53.8
Inside	12.30	50	51	51	50	48	50.6
	13.30	48	50	50	52	50	50.6
As per The Noise Pollution (Regulation & Control) Rules, 2000 (Rules 3(1) and 4(1))							
Area Code	Area Type	Limits in dB (A) weighted scale					
		Day (6 a.m. to 10 p.m.)			Night (10 p.m. to 6 a.m.)		
C	Residential	52.4			45		

Observation: All results of Noise level monitoring (Inside & Outside) found within limits as per the Noise Pollution (Regulation & Control) Rules, 2000

C) Illumination Study: The Illumination Study were carried out using Lux meter. The Illumination Study was carried out at two locations, in Classroom & Laboratory.

Sr. No.	Location	Time	Lux Level Reading (LUX)				Average LUX
			1	2	3	4	
1.	Classroom	12:00	570	578	590	570	577
2.	Laboratory	12:30	580	550	520	528	544.5

Observation: All results of Illumination Study (Classroom & Laboratory) found within limits as per MF Rules-Section-35, Schedule B

D) Ventilation Study: The ventilation study was carried out by using anemometer. The ventilation study was carried out at two locations, in classroom and in laboratory.



Anemometer



Low Volume Sampler

Sr. No.	Name of Location	Temperature (°C)	Relative Humidity (%)	Air velocity (m/s)
1.	Classroom	28.6	54.4	0.7
2.	Laboratory	29	52	0.9

E) Workplace Monitoring: The Workplace Monitoring study was carried out by using Low Volume sampler. The Workplace Monitoring study was carried out at classroom.

Observations: The Workplace Monitoring study was carried out in Classroom. It was observed that all parameters are within limits.

Parameters	Result	Limits as Per OSHA	Unit
Suspended Particulate Matter (SPM)	0.42	15	mg/m ³
Sulphur Dioxide (SO ₂)	0.11	13	mg/m ³
Nitrogen Dioxide (NO ₂)	0.09	9	mg/m ³

4.3. Water Use

This indicator addresses water consumption, water sources, irrigation, storm water, appliances and fixtures. A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use.

a) Observations

The study observed that Sangola Municipal Corporation is the main source of water for the campus. If any shortage of water they used Borewell water. RO treated water is used for drinking purpose and another water is used for canteen, toilets, laboratory and gardening, basketball ground from underground tank. During the survey, no loss of water is observed, neither by any leakages nor by over flow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 150000 L/day, which include 85,000 L/day for domestic purposes and 65,000 L/day for different laboratories & other purpose.

The College has rain water harvesting facility in a campus having capacity 100000 lit. And the water from the tank is used for gardening and basketball court washing

purpose. So, the College has saved 250 M³ water per year. The total amount of water consumption is reduced by this facility.

The College has Reverse Osmosis process for drinking water in a campus having capacity of 2500 liters/hr. and the rejected water from this Reverse Osmosis is used for the sanitary purpose. From the Canteen, water used for drinking purpose analyzed as per IS 10500:2005 drinking water specification and observed it was potable.

The College has Sewage Treatment Plant having capacity 100M³/day followed by Grit chamber, Aeration, Sand filter, Carbon filter & Collection tank. The final treated water is used for gardening purpose.

Test Report

Sr. No.	Parameters	Results	Acceptable Limit as per IS 10500: 2012	Units
1.	Colour	1	Max. 5	Hazen Units
2.	Odour	Agreeable	Agreeable	-
3.	pH	7.64	6.5-8.5	-
4.	Turbidity	0.8	Max. 1	N.T.U.
5.	Total Dissolved Solids	98	Max. 500	mg/L
6.	Calcium (as Ca)	10	Max. 75	mg/L
7.	Chloride (as Cl)	22	Max. 250	mg/L
8.	Fluoride (as F)	<0.05	Max. 1	mg/L
9.	Iron (as Fe)	<0.06	Max. 0.3	mg/L
10.	Magnesium (as Mg)	5.2	Max. 30	mg/L
11.	Nitrate (as NO ₃)	14.60	Max. 45	mg/L
12.	Sulphate (as SO ₄)	12.50	Max. 200	mg/L
13.	Alkalinity (as CaCO ₃)	66	Max. 200	mg/L
14.	Total Hardness (as CaCO ₃)	52	Max. 200	mg/L
15.	<i>E. coli</i>	Absent	Not Detectable	/100 ml
16.	Total Coliforms	Absent	Not Detectable	/100 ml

RO Unit



Solapur, Maharashtra, India
F676+G98, Solapur, Maharashtra 413307, India
Lat 17.462432°
Long 75.210894°
24/07/23 11:46 AM GMT +05:30

GPS Map Camera

Sewage Treatment Plant



Solapur, Maharashtra, India
Fabtech B(Bule) Boys Rd, F686+P6V, Maharashtra 413307, India
Lat 17.46793°
Long 75.210666°
24/07/23 10:49 AM GMT +05:30

GPS Map Camera



b) Appreciations:

- Water is properly used in the campus and water reusing strategy is followed by the college like Sewage Treatment Plant reusing for Gardening purpose & R.O. rejected water for sanitary purpose.

c) Recommendations:

- Appreciate that Need of monitoring, controlling overflow is essential and periodically supervision drills should be arranged. In campus small scale/medium scale/ large scale reuse and recycle of water system is necessary.
- Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.
- Ensure Rain harvesting is 100% efficient because some water was going to Sewage treatment plant.
- Year wise water consumption report.

4.4. Energy Use and Conservation

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

a) Observations

Energy source utilized by all the departments and common facility center is electricity only. Total energy consumption is determined as 3094 KVA/Year by major energy consuming equipment.

Energy today has become a key factor in deciding the product cost at micro level as well as in dictating the inflation and the debt burden at the macro level. Energy cost is a significant factor in economic activity at par with factors of production like capital, land and labor. The imperatives of an energy shortage situation call for energy conservation measure, which essentially mean using less energy for the same level of activity. Energy Audit attempts to balance the total energy inputs with its use and serves to identify all the energy streams in the systems and quantifies energy usages according to its discrete function. Energy Audit helps in energy cost optimization, pollution control, safety aspects and suggests the

methods to improve the operating & maintenance practices of the system. It is instrumental in coping with the situation of variation in energy cost availability, reliability of energy supply, decision on appropriate energy mix, decision on using improved energy conservation equipment's instrumentation's and technology.

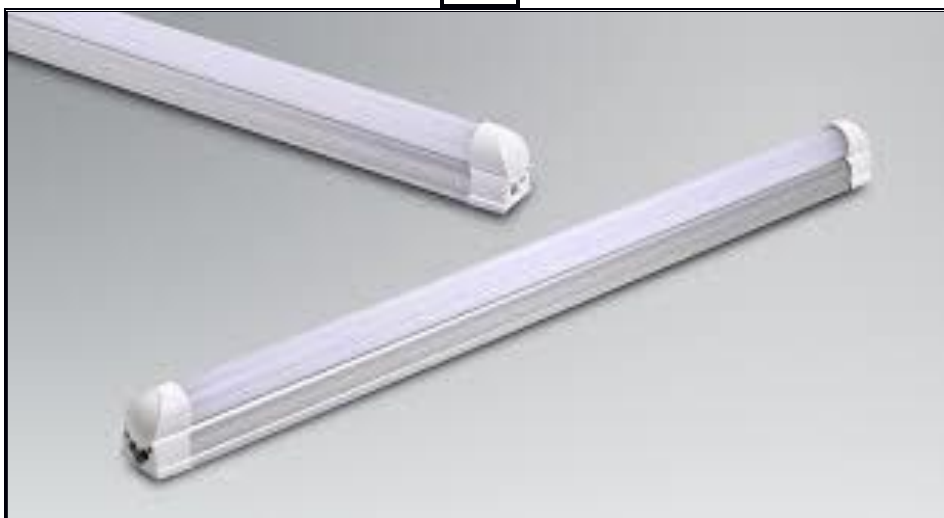
The total number of FTL is 175 each one having wattage of 40W. By simply replacing These FTL's with light emitting diodes (LEDs) each one of 12W power consumption can be reduced. **Total Power consumption saved 5880 KWHr per month.**

Total number of FAN is 155 each one of 80W. By simply replacing all these FAN's with energy efficient FAN's of 40W power consumption can be reduced. **Total power consumption saved 9738 KWHr per month**

Before



After



Existing 80 W Fan



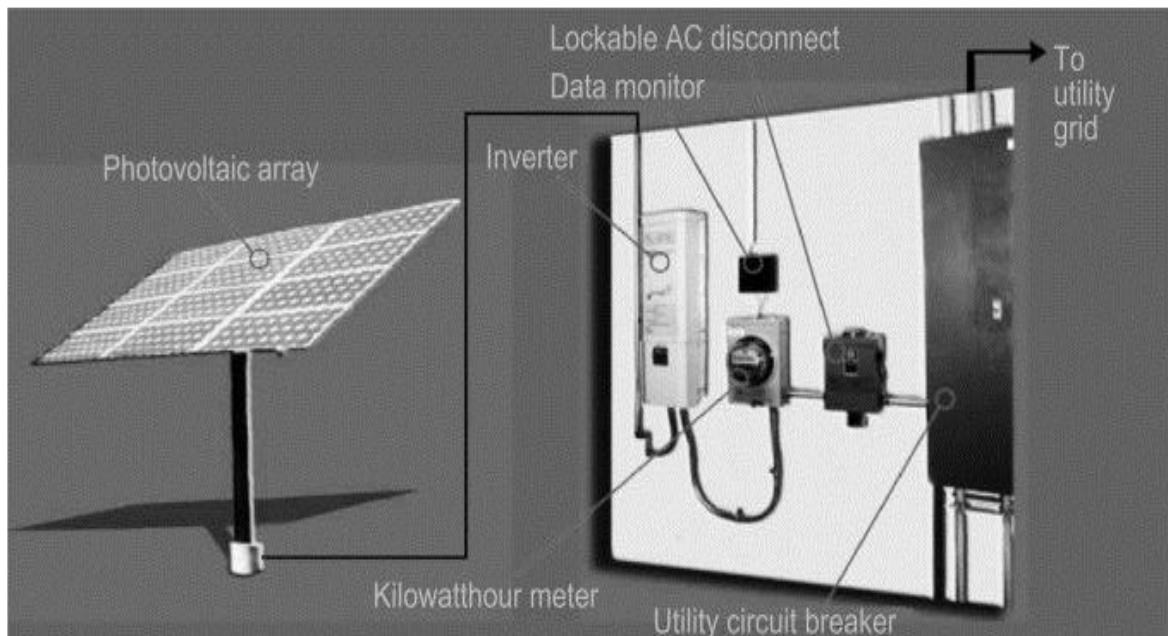
Proposed 28 W energy efficient fan





Solar PV hot water System in hostel

Solar PV hot water System: It has been observed that campus has installed Solar PV hot water system in hostel buildings which contributes substantially to reduce power consumption from Grid.



(PV Grid Interactive Net Metering System Configuration)

b) Recommendations :

- It has been observed that the load on the campus is not constant as well as time of energy consumption also varies significantly
- This includes evaluation of procurement practices with ISO 50001. This does not exactly mean that you need to buy the most efficient, but you need to buy the most efficient which is financially viable. Example AC with efficiency star ratings, Transformer etc.
- Centralized controls of lighting, auditorium etc. to avoid any mis-use of electricity.
- Shift to paperless regime wherever not required, example attendance muster replaced by biometrics, DG logbook replaced by computerised logbook, daily reports converted from paper to paper less, HOD meetings converted to paperless formats, and all such examples.
- Switch off the computers during idle time. Instructions to be given to faculty members and all students.
- Switch off the lights/fans when it is not in use.
- **It is Strongly recommended that at least 50KW Solar PV roof top net metering system has to install in the campus**

Waste Generation

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass, dust etc. and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current management practice of solid waste generated in the campus. The different solid wastes collected as mentioned above.

a) Observations

The College have various facilities and techniques for the management of degradable and non-degradable waste. The primary focus is to reduce, reuse and recycle the waste. The institute has constituted a committee that deal with the minimization of waste. Every day the waste is collected in bins and sent to waste management of city

The College has followed the Following principles for waste management:

1. Principles- Refuse, Reduce, Reuse and Recycle

2. Segregation of Waste at Source
3. Different treatment for different type of waste
4. Disposal at nearest possible point.
5. Rain Water Harvesting

4.5.Solid Waste Management:

The college has well organized many activities for disposing the waste. In the college campus solid types of wastes consist of waste papers, fallen leaves, food waste generated in college Botanical Garden and Main Building, canteen and hostel mess. The waste is separated at source only and according to type of waste is disposed. The college have a waste food material dumping machine in this machine waste food material is dumped. After several week waste material started to decompose to form a manure, then it is used for the plantation in college campus.

b) Appreciations:

- Appreciate that college campus is well equipped with dry and wet waste collection system having colour coding blue and green. Among that green coloured dustbin is used for wet waste and blue colour is used for dry waste.

c) Recommendations

- Reduce the absolute amount of waste that produces from college staff offices.
- Make full use of all recycling facilities provided by City Municipality and private suppliers, including glass, cans, white coloured and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture.
- Provide sufficient, accessible and well-publicized collection points for recyclable waste with responsibility for recycling clearly allocated.
- Important and confidential papers after their validity to be sent for pulping.

Use of Dustbins: In the college campus, we have placed dustbin at various department. Where dry and wet waste is collected in the separate dustbin. Dry waste sent to waste management of the city



Dust Bins

Vermicomposting Units: The organic waste produced in the college is subjected to vermicomposting. There are about 1 units of vermicomposting. The organic manure so produced is utilized for the fertilizing the trees and plantation in the college campus.



Vermicompost Unit



4.6.E-Waste Generation

E-waste can be described as consumer and business electronic equipment that is near or at the end of its useful life. This makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronic components contain cadmium, lead, mercury and Polychlorinated biphenyls (PCBs) that can damage human health and the environment.

a) Observations:

The College has following E-waste created from last five years.

Sr.No	Name of instrument	Number
1.	Computer CPU	10
2.	Keyboard	15
3.	Monitor	20
4.	Mouse	18
5.	Printer	06
6.	Xerox Machine	02

The E-waste generally includes the tube lights, CFL, LED are stored into the scrap yard of college and stored. E-waste generated in the campus is very less in quantity. The college has total of 86 computers and 15 printers in working condition. The cartridges of laser printers are refilled outside the college campus. Administration conducts the awareness programmes regarding E-waste

Management with the help of various departments. The E- waste and defective item from computer laboratory is being stored properly. The institution has decided to contact approved E-waste management and disposal facility in order to dispose E-waste in scientific manner.

b) Recommendations:

- Recycle or safely dispose of white goods, computers and electrical appliances.
- Use reusable resources and containers and avoid unnecessary packaging where possible.
- Always purchase recycled resources where these are both suitable and available.

Certificates No	03	Date: 11/01/2022
Date of Receipt	07/12/2022	
Weight	40Kgs	
Customer	By Email Communications	
Reference No		



CERTIFICATE OF E-WASTE RECYCLING

This is to certify that e-waste received for recycling
From
FTC College of Engineering & Research, Sangola
located at **Gat No.565/1, Pandharpur Road , Sangola Dist.: Solapur**
Pin Code : 413307. Maharashtra state
has been safely disposed at our registered facility in an environment friendly manner.


Mr. Suryakant Ramchandra Jagtap
(Director)

M/S. Green Tech Solution Industries
Gat No.83/1,A/P. Wakhari, Tal. Pandharpur, Dist. Solapur 413304.Maharashtra.
Registration No.and Issue Date:-MPCB/RO(HQ)/HSMD/Autor/18/11&OW-409dt:22/01/2018
Validity of Registration:-31/12/2024

M/S. Green Tech Solution Industries, Pandharpur



Photo Gallery



5. Conclusions

Considering the fact that the institution is predominantly **Fabtech Technical Campus, College of Engineering and Research, Sangola, Dist: Solapur-413307.Maharashtra, India**, there is significant environmental awareness both by faculty and students and initiatives taken by them are substantial. The installation of solar panels, rain water harvesting management, Sewage treatment plant, reuse of R.O. water, paperless work system and anaerobic composting practices are noteworthy. Besides, environmental awareness programmes initiated by the administration shows how the campus is going to be a green. Few recommendations are added to curb the menace of waste management using ecofriendly and scientific techniques.

As part of green audit of campus, we carried out the environmental monitoring of campus includes Illumination, Noise level, Ventilation and Indoor Air quality of the class room. It was observed that Illumination and Ventilation is adequate considering natural light and air velocity present. Noise level in the campus well within the limit i.e., below 50 dB at day time. Canteen water also analyzed and found it was potable.

This may lead to the prosperous future in context of Green Campus and thus sustainable environment and community development.

6. Acknowledgement

We are grateful to the **Fabtech Technical Campus, College of Engineering and Research, Sangola, Dist: Solapur-413307, Maharashtra, India**, to award this prestigious project and allowed us to enter the new era of Green Audit in the College Campus.

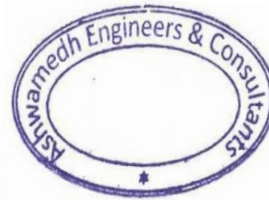
Further we sincerely thank the college staff for providing us necessary facilities and co-operation during the audit. This helped us in making the audit, a success.

Further we hope, this will boost the new generation to take care of Environment and propagate these views for many generations to come.

FOR ASHWAMEDH ENGINEERS & CONSULTANTS

Khandge

Authorized Signatory



GREEN AUDIT REPORT INCLUSIVE OF ENERGY CONSERVATIONS

**Fabtech Technical Campus, College of Engineering and Research,
Sangola, Dist: Solapur-413307. Maharashtra, India**

Conclusion and Summary of Findings

1. The College has 100 M3 Sewage Water Treatment Plant
Cleanliness Staff and E- Waste is disposed off systematically and in timely a manner.
2. College has provided wet waste, dry waste and semi dry waste bins for segregation and collection of solid waste. This has been done in entire campus in open space and inside the buildings. The system is working efficiently.
3. The College has created great awareness among the students and staff about the green practices.
4. The College is well landscaped, and the green cover is reasonably good, and they are found to be increasing the green cover on a continuous basis.
5. The College canteen waste is composted and used as manure for the green cover of the campus.
6. The water quality in the campus including that of canteen is tested and found potable.
7. The College has provided water filter and water cooler system for drinking to all students and staff.
8. Noise level in Classrooms and labs is found less than 50 db which is within the safe limits as per Noise Pollution Control rules, 2000.

Ashwamedh Engineers & Consultants
Survey No.102, Plot No.26, Wadala Pathardi Road,
Indira Nagar, Nashik-422009, Maharashtra, India
(Near Guru Gobind Singh School, Near Pandav Nagari,
Turn at Sai Mandir Chowk / Samrat Sweet Turning)
sales@ashwamedh.net +91-253-2392225



All results of Illumination studies (Classrooms and labs) found within
limit as per Factory rules Section 35 Schedule B.

10. Ventilation found satisfactory.

11. College organizes Energy Conservations Awareness Programs for
Students and Staff.

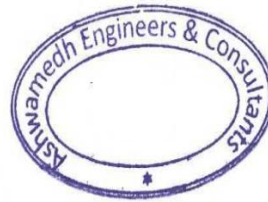
12. College actively Participate in cleanliness drive regularly.

13. College is proposed to install Solar system for renewable source of
energy in future.

For Ashwamedh Engineers & Consultants

A handwritten signature in blue ink that reads "Khandge".

Authorized Signatory



Appendix-III



FABTECH TECHNICAL CAMPUS COLLEGE OF ENGINEERING & RESEARCH

(Approved by AICTE, New Delhi; DTE., (M.S.), Mumbai & Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere, Dist.- Raigad)

NAAC Accredited ISO 9001 : 2015 Certified Institute

Pandharpur Road, Gat No. 565/1, Sangola, Taluka :- Sangola, District :- Solapur - 413307 P.O.Box No.04

Contact No. 840888657 Website : www.ftccoe.ac.in E-mail : fabtech@ftccoe.ac.in

Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Republic Day
Date	Every year on 26 th January
Beneficiaries	Students- All Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	Republic Day was celebrated in college. Students planned the event, invited guests, gave speeches, had performances of the students and sweets distributed after the function to all present.
Photographs 2018-19	
Photographs 2019-20	
Photographs 2020-21	
Photographs 2021-22	
Photographs 2022-23	

PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA

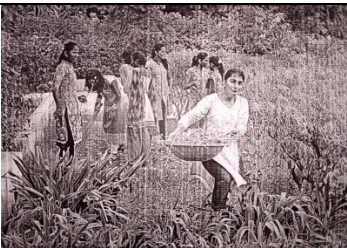






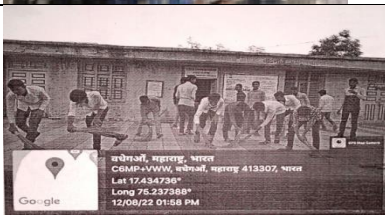




Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Tree Plantation
Date	Every year on 26 th January
Beneficiaries	Students- 50 Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	Students and teachers participated in planting trees and flowering plants around the campus. Its activity carried out every year for making the campus green.
Photographs 2018-19	
Photographs 2019-20	
Photographs 2020-21	
Photographs 2021-22	
Photographs 2022-23	

(Signature)

PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA



Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Swatch Bharat Abhiyan
Date	Every year on 2 nd October
Beneficiaries	Students- 50 Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	Students cleaned their campus to ensure their part in keeping nature clean. Students were also shown a presentation on the importance of not littering in public.
Photographs 2018-19	 
Photographs 2019-20	 
Photographs 2020-21	 
Photographs 2021-22	 
Photographs 2022-23	 

(Signature)

PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA








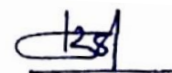
Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Teachers Day
Date	Every year on 5 th September
Beneficiaries	Students- All Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	Teachers Day celebrated in the every department to show gratitude towards teachers for doing teaching learning process so effective and guiding students in all phases of life. Gifts were given to teachers and extempore speeches are invited by the students.
Photographs 2018-19	
Photographs 2019-20	
Photographs 2020-21	
Photographs 2021-22	
Photographs 2022-23	

(Signature)

PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA












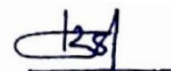
Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Gandhi Jayanti
Date	Every year on 2 nd October
Beneficiaries	Students- All Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	Gandhi Jayanti is one of the three national festivals. Mahatma Gandhi is known as the father of the nation because of the tireless efforts he put in to free the country from the British Raj. 2nd October is celebrated as Gandhi Jayanti every year to celebrate the birthday of the father of the nation.
Photographs 2018-19	
Photographs 2019-20	
Photographs 2020-21	
Photographs 2021-22	
Photographs 2022-23	



PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA








Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Rally on Human Rights
Date	Every year on 10 th December
Beneficiaries	Students- All Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	Human Rights Day is observed every year on 10 December – the day on which the United Nations General Assembly adopted, in 1948, the Universal Declaration of Human Rights. The Universal Declaration of Human Rights empowers us all. The principles enshrined in the Declaration are as relevant today as they were in 1948.
Photographs 2018-19	
Photographs 2019-20	 
Photographs 2020-21	 
Photographs 2021-22	 
Photographs 2022-23	 



PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA













Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Higher Education Awareness at Schools and Jr. Colleges
Date	Every year many times
Beneficiaries	Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	College education is a stepping stone in higher education for any person. Not only is it essential for knowledge gain, but also for the development and further honing of skills for meeting future career goals. Some of the prime reasons for considering going for higher education in colleges are addressed through visits of junior colleges.
Photographs 2018-19	
Photographs 2019-20	
Photographs 2020-21	
Photographs 2021-22	
Photographs 2022-23	

1381

PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA











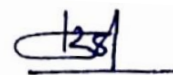
Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	College Foundation Day
Date	Every year on
Beneficiaries	Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	Foundation Day is a designated day on which celebrations mark the founding of an organization or institution. It is an opportunity for an organization to come together and celebrate the proud history with the community, employees and supporters. Every year we do that and express our gratitude towards employer.
Photographs 2018-19	 
Photographs 2019-20	 
Photographs 2020-21	 
Photographs 2021-22	 
Photographs 2022-23	 

[Signature]

PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA




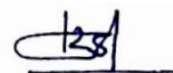
Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Reading Inspiration Day/ Wachan Prerna Din
Date	Every year on 15 th October
Beneficiaries	Students- All Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	As declared by Government of Maharashtra every educational institute celebrates 15th October as “Reading Inspiration Day” because Reading helps everyone to grow mentally, emotionally & psychologically & open the doors of new knowledge to enlighten the mind.
Photographs 2018-19	
Photographs 2019-20	 
Photographs 2020-21	
Photographs 2021-22	 
Photographs 2022-23	 



PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA












Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Blood Donation
Date	Every year on
Beneficiaries	Students- 25-30 Faculty- 10-15
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	Annual Blood Donation drive was conducted on campus. This was open for students, faculty and staff, alumni, as well as outsiders. Breakfast and tea was provided to those who donated blood.
Photographs 2018-19	 
Photographs 2019-20	 
Photographs 2020-21	 
Photographs 2021-22	 
Photographs 2022-23	 



PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA













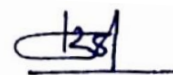
Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Youth Day
Date	Every year on 12 th January
Beneficiaries	Students- All Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	National Youth Day, also known as Vivekananda Jayanti, is celebrated on 12 January, being the birthday of a Hindu monk, Swami Vivekananda. In 1984, the Government of India declared this day as National Youth Day and since 1985 the event is celebrated in India every year.
Photographs 2018-19	 
Photographs 2019-20	 
Photographs 2020-21	 
Photographs 2021-22	 
Photographs 2022-23	

(Signature)

PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA



Activity Report	
Academic Year	2018-19 to 2022-23
Name of the Activity	Unity Day
Date	Every year on 31 st October
Beneficiaries	Students- All Faculty- All
Venue	Fabtech Technical Campus, College of Engineering and Research, Sangola
Brief Report	National Unity Day is celebrated in India on 31 October. It was introduced by the Government of India in 2014. The day is celebrated to mark the birth anniversary of Sardar Vallabhbhai Patel who had a major role in the political integration of India.
Photographs 2018-19	 
Photographs 2019-20	 
Photographs 2020-21	 
Photographs 2021-22	 
Photographs 2022-23	 



PRINCIPAL
FABTECH TECHNICAL CAMPUS
COLLEGE OF ENGINEERING
& RESEARCH, SANGOLA