GREEN AUDIT REPORT

ANJUMAN KAIRUL ISLAM'S

1970-2020

POONA COLLEGE OF ARTS, SCIENCE AND COMMERCE, PUNE

HIDAYATULLA RD, KATAD KHANA,

PUNE, MAHARASHTRA 411002

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Conducted and Submitted by

ENERFUTURE

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ENERFUTURE

CERTIFICATE

ENERFUTURE TECHNOLOGY PRIVATE LIMITED

Verified and Certified that

1970-2020

POONA COLLEGE OF ARTS, SCIENCE AND COMMERCE

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has carried out

Green/Environment Audit

as per guidelines laid down in the
Indian Standards and Codes
in 2019-20.

ENERFUTURE TECHNOLOGY PRIVATE LIMITED ★ PUNE ★

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ACKNOWLEDGEMENT AND CONCEPT

Enerfuture thanks the management of Poona college of arts, science and commerce, Pune for assigning this important work of Green Audit of Poona college of arts, science and commerce, Pune

Green audit is defined as a formal examination of practices adopted and their effects on the environment, by an organization. It is also widely known as Environmental Audit.

The aim of the Green Audit is to review the overall environment management systems. Depending on the types of standards and the focus of the audit, there are different types of environmental audits.

Organizations now recognize the importance of environmental matters and accepts that their environment performance should be scrutinized to understand its impact and to take remedial measures to lessen it.

Environmental auditing is used to:

1. Investigate
2. Understand and
3. Identify

These are then used to help in improving existing human activities, with the aim of reducing the adverse effects of these activities on the environment.

An environment auditor studies an organization's environment effects in a systematic and documented manner and produces an environmental audit report.

Green audit for an educational institution mainly examines the following systems

1. Renewable/ green energy usage
2. Water management
3. Biodiversity
4. Health and safety management
5. Sanitation management
6. Adopted Green practices

Contribution of college's team is equally important in this venture. Team of technical experts from Enrfuture Technology Pvt Ltd is grateful to all the following personnel of Poona college of arts, science and commerce, Pune for their kind cooperation, furnishing required data, analysis report and support offered during our visit.

Name	Designation
Prof. (Dr.) Aftab Anwar Shaikh	Principal
Prof. Mr. Iqbal N. Shaikh	Vice-Principal (Science) & Head Department of Chemistry
Prof Dr. Mohammed Banekhan Pathan	Head Department of Statistics
Prof Dr. Jahir Abbas Ahmed	Assistant Professor
Prof Mr. Mohammed Umer	Assistant Professor

We are also thankful to the other staff members who were actively involved while taking measurements and conducting field study.

STUDY TEAM

Sr No	Name	Qualification
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2	Mr Vinay Mulay	M.Tech (Energy Studies), ISO 50001 Lead Auditor, BEE Accredited Energy Auditor
3	Mr YogeshKuwar	M.Tech (Energy Studies), IGBC IGBC Accredited Professional, Post Graduate Diploma in Environmental law and Policy (PGDELP), BEE Certified Energy Manager
4	Mr Prasad Kalal	B.E Electrical, BE (Electrical), Electrical Supervisor(51242), Electrical Contractor(37364)
5	Mr Prashant Shinde	B.E Mechanical, IGBC Accredited Professional, Certified Energy Auditor

LIST OF INSTRUMENTS USED

1. Lux meter (Meco)
2. TDS meter
3. CO2 meter
4. Air quality measure meter
5. Sound dB meter

CONTENTS

EXCECUTIVE SUMMARY

Sr No	Location	Area	Objective/Purpose	Recommendation/Status
1	Main college building	Solar Photovoltaic System- 30Wp	To generate electrical energy by renewable sources and reduce the CO2 emissions	**Can be Implemented**
2	Computer science building	Solar Photovoltaic System- 12kWp	To generate electrical energy by renewable sources and reduce the CO2 emissions	**Can be Implemented**
5	College canteen	Bio-Gas generation plant- 10kg/day	Utilised organic food generated in the hostel mess to generate bio-gas for cooking purpose. This saves conventional fuel LPG and ultimately reduce the CO2 and Greenhouse gases emissions	**Can be Implemented**
6	College campus	Composting	Reduces the landfill pollution and green-house gases reduction. Also produce bio-fertiliser compost to trees in the college campus	**Implemented**
7	All buildings of college	Tap water reducers	To save the water	**Implemented at laboratories, Increase the number at other places**

		Hands free water tap system	This saves the water and also good for personal health protection to avoid frequent hand touching to water taps.	**Can be Implemented**
8	Main college building Computer science building	Rain water harvesting	Save water. Increases the groundwater recharge.	**Can be Implemented**
9	College buildings/campus	Air Comfort/ Quality	Air quality for human being comfort	**Aspirational**
10	College buildings/campus	Sound Comfort/ Quality	Sound quality or comfort for human being comfort	**Within permissible limits**
11	College buildings/campus	Daylight Comfort/Illumination	Daylight illumination for human being comfort	**Within permissible limits**
12	College buildings/campus	Health and Safety Management	Health facility	**Ok**
			Electrical safety- electrical wiring, its loose connections etc , unwanted materials are placed in electrical panel rooms	**Need to be remove**
			Fire safety- number of fire extinguishers are placed in college campus	**Less number**
			Fire safety- Maintenance validity of fire extinguishers are expired	**Need to renew immediately after due date**
			Unwanted material placed in college campus	**Need to place properly**

13	College buildings/campus	No vehicle day	Save the conventional fuel and reduces the CO2 emissions.	**Conducted on every 3rd Saturday of month**
14	College buildings/campus	Waste management- E-waste	Reduce the CO2 emissions by recycling of solid waste. Also Save environment from hazardous materials.	**Regularly implemented every year**
15	College buildings/campus	Waste management- Solid waste	Reduce the CO2 emissions by recycling of solid waste	**Regularly implemented and maintained every month.**
16	College buildings/campus/other city area	Tree plantation/ Green belt cover	To increase the forest cover. Reduce the Air, Noise pollution, reduce CO2 emissions etc	**Regularly conducted by college**
17	College buildings/campus/other city area	Cleanliness drive and awareness campaign or poster competitions etc	Swatch Bharat Mission (SBM), Swatch Bharat Abhiyan (SBA), or Clean India Mission etc initiative by college	**Regularly conducted by college**
18	College buildings/campus	Plastic free campaign	Save environment from non-recycling and hazardous materials.	**Regularly conducted by college**

COLLEGE INTRODUCTION

INTRODUCTION

The Poona College of Arts, Science & Commerce was established in the year 1970 by 'Anjuman Khairul Islam', Mumbai, a Philanthropic Charitable Trust dedicated to the noble cause of the orphans and the deprived. Situated prominently in the heart of Pune Camp, it has brought about a revolutionary change in the region's educational scenario, diversified in leaps and bounds and has carved a niche for itself as a celebrated seat of learning. This was humbly acknowledged by the National Assessment and Accreditation Council (NAAC) Bangalore in the year 2004 which awarded it by the Prestigious 'A' grade. On the path of continued excellence, the college once again obtained endorsement by NAAC when it got reaccredited in September 2015. The College is also having ISO 9001:2015 Certification.
The College is a recognized Research Centre of the Savitribai Phule Pune University in Chemistry, Commerce, and Economics and with full-fledged degree courses and Postgraduate Centres in Computer Science, Electronics, Organic Chemistry, Zoology, Economics, English, Urdu and Commerce. Apart from this, it also offers professional courses of B.B.A, B.C.A, B.Sc.(Computer Science) and M.Sc. (Computer Science). Poona College is also having four Bachelor of Vocation (B.Voc.) courses recognized by University Grants Commission in Software Development, Medical Laboratory Technology, Banking Finance and Insurance, Travel, Tourism and Hospitality Management. Gradually it has expanded on a national as well as global scale with student enrolment exceeding 6000 every year, and has become a favoured destination for education seekers from all Indian States particularly the North-East and from over 15 countries abroad.

The College prides itself by possessing a rare distinction of having a highly qualified, dedicated and enthusiastic staff with doctorates constituting a half while a quarter as M.Phil. Qualified. In addition

to conventional teaching, more stress is laid on imbibing moral and ethical characters, career planning and guidance, sports and co-curricular activities such as NCC, NSS and Sports

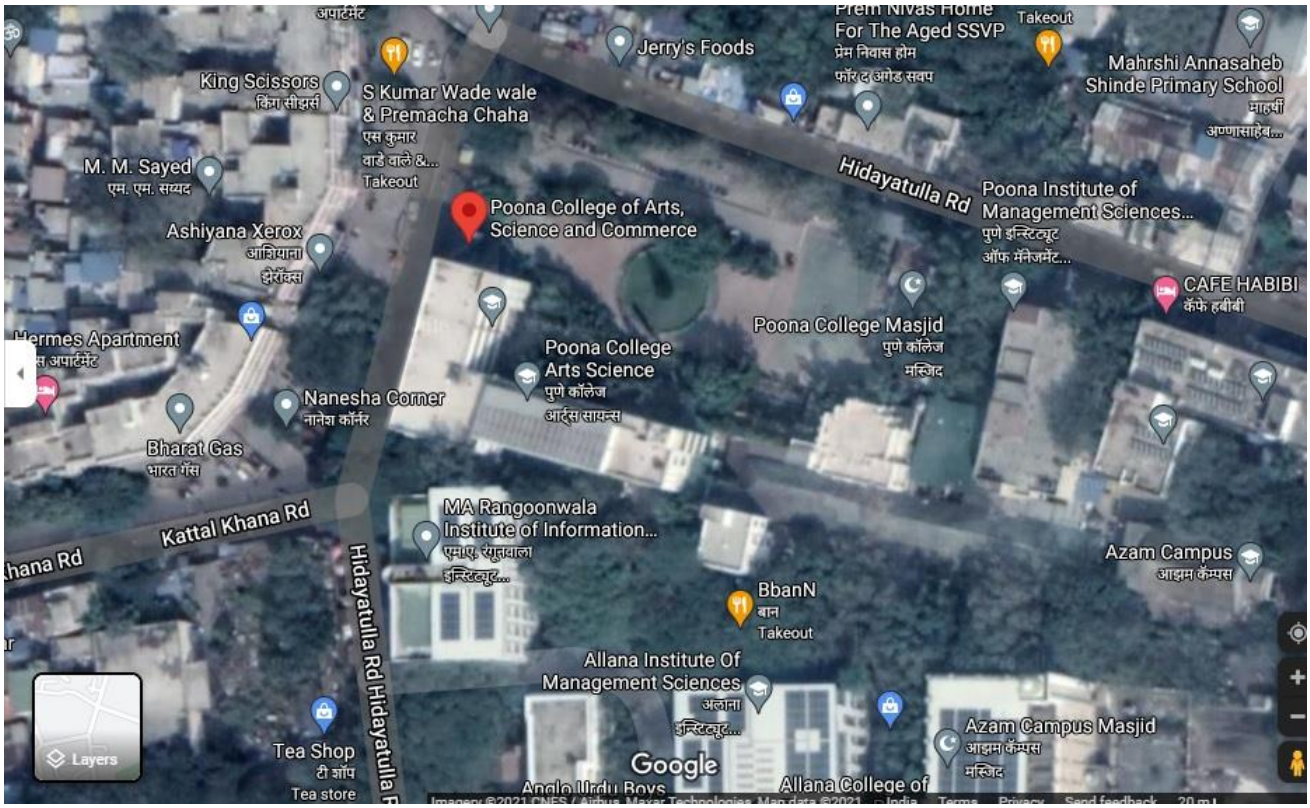
VISSION

Pursuit of Knowledge in the Service of Humanity.

MISSION

- To serve as a light house amidst all shortcomings and setbacks by defying complacency, we endeavour.
- To impart education to students belonging to all strata of society irrespective of caste, gender, colour, creed & religion.
- To uplift the deprived and academically weak students by empowering them with knowledge.
- To develop moral, ethical, social and aesthetic values amongst the students.
- To help equip and develop essential qualities to face the challenges posed by the turbulent currents of change.
- To inculcate respect for humanity and to fortify the ideals of perseverance, dedication, quality consciousness and excellence.
- To prepare citizens who could grow to be competent and significant contributors for the betterment of mankind through their profession

LOCATION


Jerry's Foods
Prem Nivas Home For The Aged SSVP
प्रेम निवास होम फॉर द अगेड सवप
Takeout
Mahrshi Annasaheb Shinde Primary School
King Scissors
S Kumar Wade wale & Premacha Chaha
एस कुमार वाडे वाले &...
Takeout
M. M. Sayed
एम. एम. सय्यद
Hidayatulla Rd
Poona College of Arts, Science and Commerce
Poona Institute of Management Sciences...
पुणे इन्स्टिट्यूट ऑफ मॅनेजमेंट...
Ashiyana Xerox
आशियाना झेरॉक्स
CAFE HABIBI
कॅफे हबीबी
Poona College Masjid
पुणे कॉलेज मस्जिद
Poona College Arts Science
पुणे कॉलेज आर्ट्स सायन्स
Nanesha Corner
नानेश कॉर्नर
Bharat Gas
भारत गॅस
Kattal Khana Rd
MA Rangoonwala Institute of Information...
एम.ए. रंगूनवाला इन्स्टिट्यूट...
Azam Campus
आझम कॅम्पस
BbanN
बान
Takeout
Allana Institute Of Management Sciences
अलाना इन्स्टिट्यूट...
Azam Campus Masjid
आझम कॅम्पस मस्जिद
Tea Shop
टी शॉप
Tea store
Layers
Google

RENEWABLE ENERGY SYSTEMS

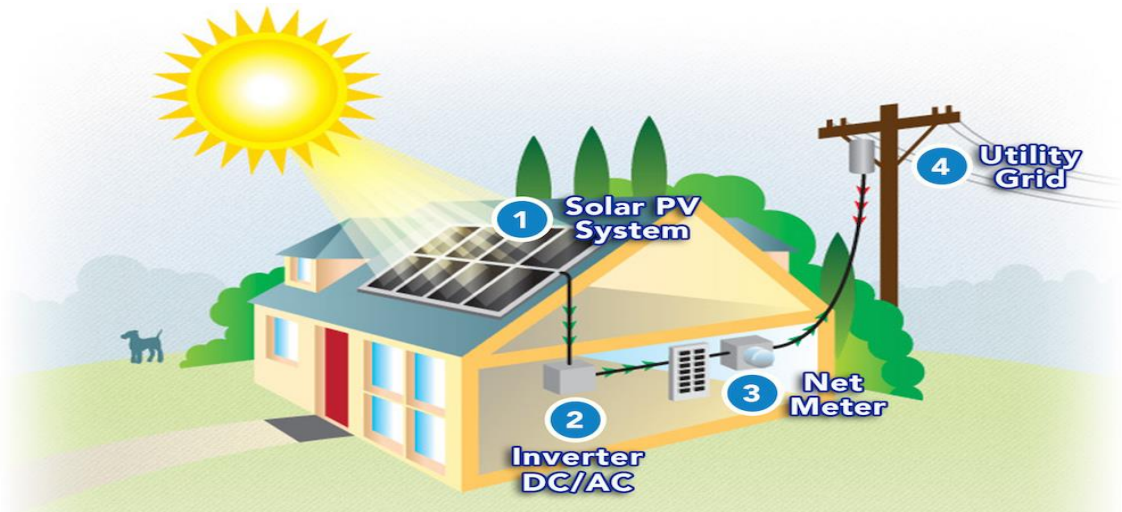
1. SOLAR PHOTOVOLTAIC SYSTEM- ELECTRICAL ENERGY GENERATION

INTRODUCATION

Solar photovoltaic system- with Net meter

Maharashtra Government has new solar energy policy name as “Rooftop Solar with Net Meter system”. Maharashtra government encourages to install rooftop solar PV system with net meters at available roof top of consumers. This helps to reduce the burden on existing conventional fuel fired power plants in the country.

Solar Rooftop Net meter system helps consumers to reduce the electricity consumption in the electricity bill due to net meter.



OBSERVATION

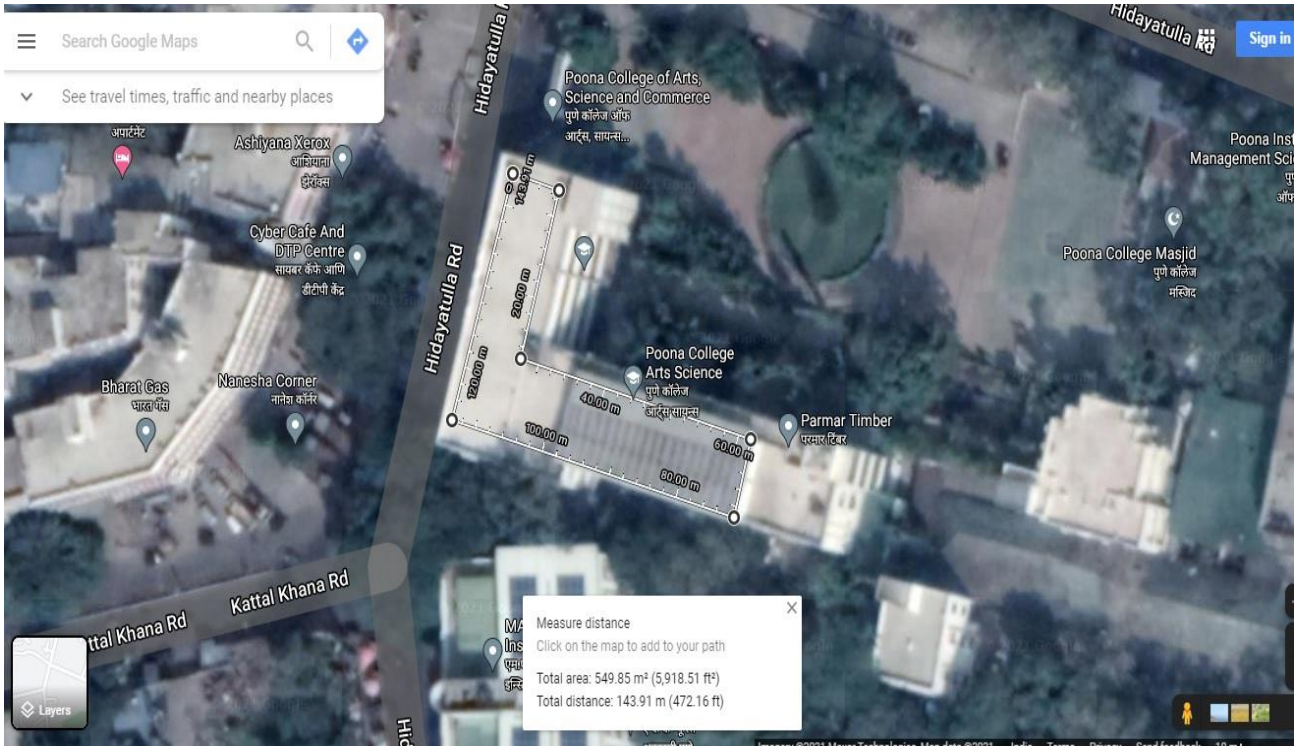
1. It is observed that in the college Solar PV system is not installed for solar energy generation.
2. Both the main building and computer science building of college has large amount of rooftop space available for Solar PV system installation.

RECOMMENDATION

1. College has two rooftops available on two building with two separate MSEDCL electricity connections.
2. College can installed two different sizes of Solar PV system on rooftops as per energy consumption and rooftop space available.

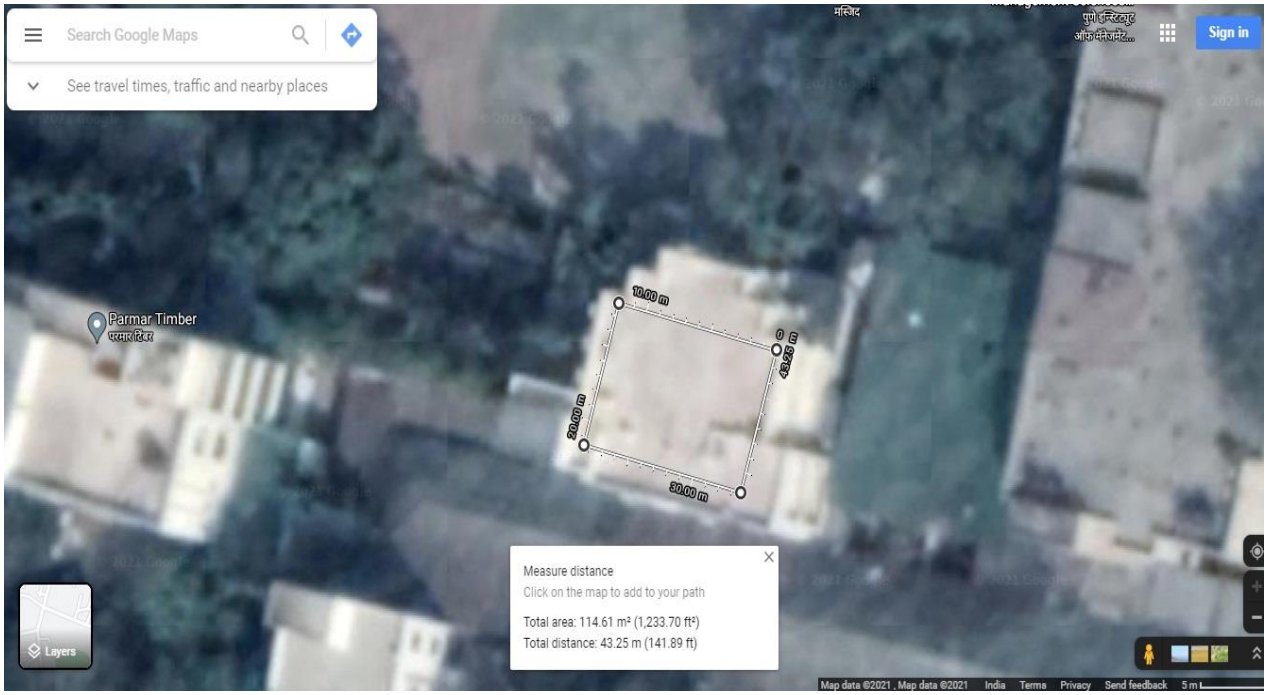
SAVINGS MEASURES

SAVINGS DUE TO SOLAR PV SYSTEM INSTALLATION- MAIN COLLEGE BUILDING



Savings due to Solar PV system installation-Main college building		
Rooftop space available on main college building	5900	sqfoot
Average energy consumption of main college building	4200	kWh/month
Total capacity of Solar PV system can be installed	30	kWp
Total solar unit generation	3375	kWh/month
Average electricity unit rate	15	INR/kWh
Total cost of Solar PV system	1950000	INR
Total saving	50625	INR/month
Payback period	38.52	months
Payback period	**3.21**	**year**
CO2 emission reduction/year	**40.16**	**tonnes of CO2e**

SAVINGS DUE TO SOLAR PV SYSTEM INSTALLATION- COMPUTER SCIENCE BUILDING



Savings due to Solar PV system installation-Computer science building		
Rooftop space available on Computer science building	1200	sqfoot
Average energy consumption of Computer science building	1500	kWh/month
Total capacity of Solar PV system can be installed	12	kWp
Total solar unit generation	1350	kWh/month
Average electricity unit rate	15	INR/kWh
Total cost of Solar PV system	780000	INR
Total saving	20250	INR/month
Payback period	38.52	months
Payback period	**3.21**	**year**
CO2 emission reduction/year	**13.77**	**tonnes of CO2e**

WASTE MANAGEMENT SYSTEMS

1. BIO-GAS GENERATION

OBSERVATION

1. In the college canteen approximately 10kg kitchen waste is generated daily.
2. Currently there is no any bio gas plant for generation of bio gas in the college.

RECOMMENDATION

1. It is recommended that installed the small capacity of bio gas plant at college canteen for production of bio gas from kitchen waste generated daily.
2. Produced bio gas can be used for small purposes in the canteen instead of LPG which saves monthly approximate one cylinder of INR1,000/-

Bio-Gas Generation Plant - 10g/day- At canteen

SAVINGS MEASURES

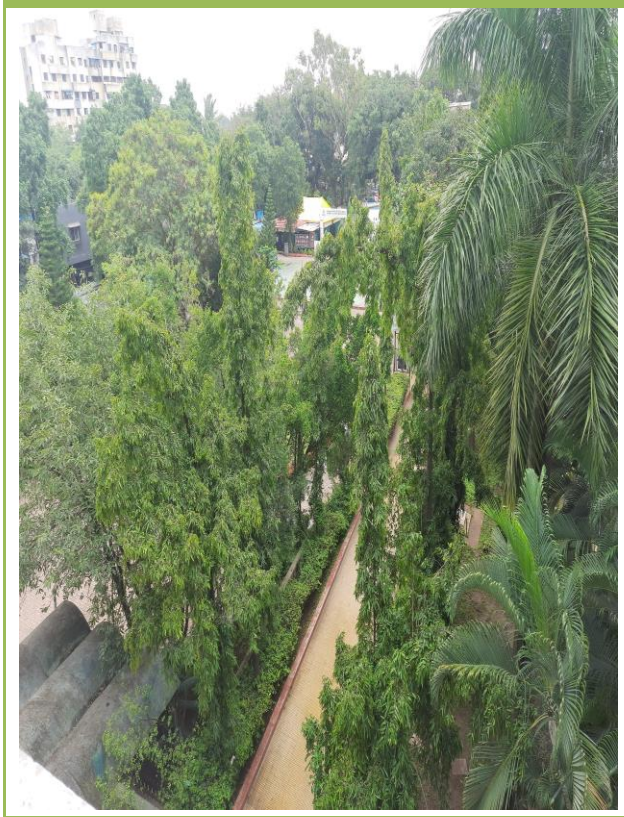
SAVINGS DUE TO BIO GAS PLANT

Saving due to Bio gas plant		
Capacity of bio gas plant	10	kg/day
Waste generated	10	kg/day
Approximate bio gas generation	1	m3/day
Approximate bio gas generation	30	m3/month
Equivalent LPG gas saved	12	kg/month
Approximate LPG cylinder saved	1.0	nos
Cost saved	**1000.00**	**INR/month**

2. COMPOSTING

OBSERVATION

1. In college premises there are number of trees are planted by college management.
2. College also developed its own horticultural garden as well as nursery.
3. There is substantial amount of waste of tree leaves, shrubs are generated in the college premises.
4. College has initiates the composting plant in the college premises.

Number of Trees	Horticultural Garden
	
Number of trees in the college premises	**Composting pits in the college**

Composting plant	Composting plant
	

WATER QUALITY AND MANAGEMENT SYSTEMS

1. TDS LEVEL OF WATER

INTRODUCTION

The water we drink contains essential salts and minerals like calcium, potassium and magnesium, besides hydrogen and oxygen.

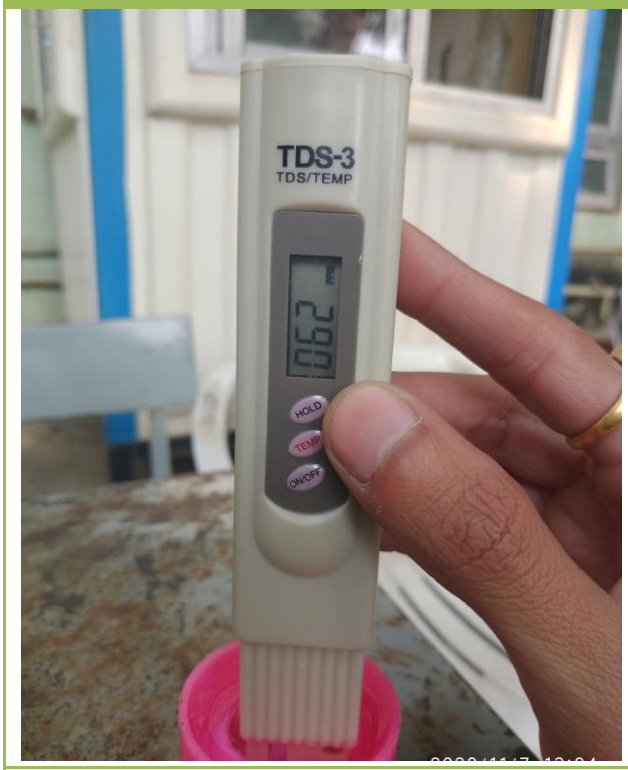
These minerals make up the acceptable levels of TDS (Total Dissolved Solids). Besides, these minerals, the source water contains heavy impurities like arsenic, antimony, lead, iron, etc. It also includes carbonates, fluorides, sulphides and other salts picked along the way. These contaminates enhance the TDS levels to unacceptable levels.

BIS (Bureau of Indian Standards) determines the TDS acceptability levels in drinking water. In India, drinking water can contain TDS up to 500 ppm. BIS has constituted the following table that could clarify the matters further.

TDS level (PPM)	Reasons for acceptability or non-acceptance	
less than 50	Unacceptable	The water with these TDS level does not contain the minerals required for healthy growth
50 - 150	Acceptable	Such TDS levels are usually due to minor industrial contamination
150 - 250	Acceptable	BIS considers water with this TDS levels as the healthiest of all because it is excellent for cardiovascular health
250 - 350	Acceptable	Many areas in India depends on groundwater or bore wells for their water requirements. This water contains essential minerals hence is in acceptance range
350 - 500	Fair	The maximum TDS levels acceptable for human consumption is 500
above 500 - 1200	Not Acceptable	BIS does not recommend ant TS level above 500 as fit for human consumption. However, water with TDS levels up to 1200 can be subjected to purification using Reverse Osmosis(RO) technology to eliminate TDS and bring it down to acceptable levels

OBSERVATION

1. Drinking water requirement of college fulfil by bore well water as well as PMC water
2. Domestic water requirement of college is fulfil by bore well.
3. For drinking water, in college aqua guard systems are installed to reduce the TDS level of water
4. TDS level of drinking water and domestic water as

TDS level of water	
	
Drinking water	**Domestic water**
√- Acceptable	**√- Acceptable**

	TDS	Acceptability
	ppm	
Drinking water	62	Acceptable
Domestic water	255	Acceptable

OBSERVATION

1. TDS level of drinking water is 41ppm which less than acceptable level.

2. RAIN WATER HARVESTING- COLLEGE PREMISES (SCIENCE BUILDING)

OBSERVATION

1. College has not implemented rain water harvesting in any of the buildings.
2. College has large rooftop space more than 6,000 sq foot where large amount of rain water can be saved during rainy season.
3. Using rain water harvesting either recharging the bore ware or collecting at underground water tank. This water tank can be used for garden purposes or domestic purposes.

RECOMMENDATION

1. It is recommended that to implement rainwater harvesting at college buildings to harvest maximum amount of water either collecting in underground water tank or recharge the bore wells.

Main college building	Computer science building
	

3. WATER TAP REDUCER

OBSERVATION

1. College has conventional water tap system in the area like bathrooms, toilets, laboratories etc.
2. Conventional water tap system consumes or requires more water for the purpose of washings, cleanings etc.

Conventional Tap water system	Tap water system with Reducer
	
College have installed tap water system at laboratories except other places like bathrooms, kitchen etc	**Used reducer to tap water for purpose of washing of utensils, hands etc which reduces flow of water and ultimately saves the water.**
√	√

RECOMMENDATION

It is recommended that increased the number of water reducers for water taping for save the water in other places like bathrooms, kitchen etc.

AIR QUALITY

INTRODUCTION

Indoor air is considered to be healthy when the air does not contains contamination in harmful concentrations and is acceptable when the majority of people feel satisfied. A human being breathes about 12,000 litres of air every day and is vital for our health. Exposure to hazardous airborne agents present in indoor space causes adverse effects such as respiratory and cardiovascular diseases, allergy and irritation of the respiratory tract and possibly leads to cancer.

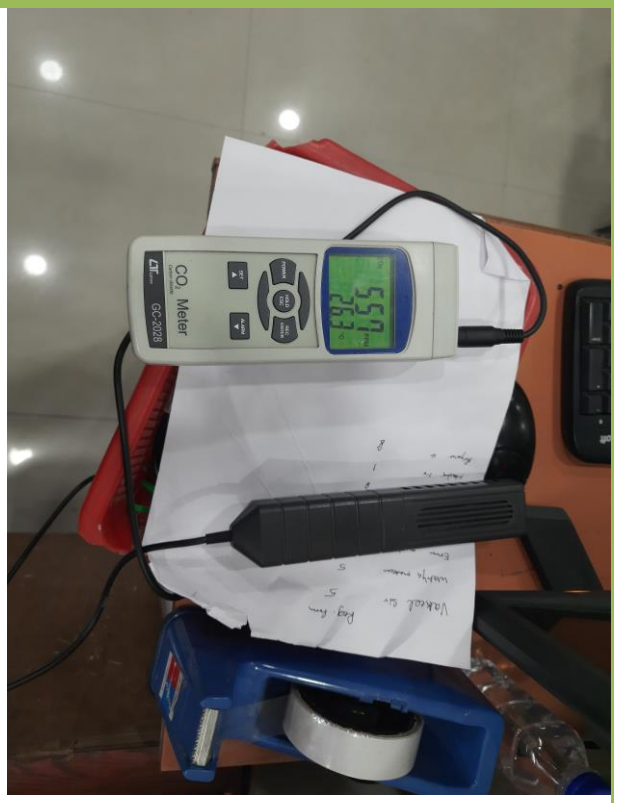
Main source of indoor air pollutants are from outdoor air, household cooking (especially cooking with biomass or frying), tobacco smoking, polluted ambient air, cleaning agents, resuspension of dust during the cleaning activities, construction materials and paints, copy machines and printers as well as other human activities. Ambient air pollutant sources are vehicle emissions, thermal power plants, biomass burnings, construction work, unattended debris, open sewage pipes, fossil fuel based power generation and various industrial processes etc.

Threshold values for indoor air quality parameters				
Parameters	**Classification**			
	Class A	**Class B**	**Class C**	
Level	**Aspirational**	**Acceptable**	**Marginally acceptable**	
CO2	Ambient+350	Ambient+500	Ambient+700	ppm
PM2.5	<15	<25	<25	ppm
PM10	<50	<100	<100	ppm
HCHO	30			µg/m3
TVOC	<200	<400	<500	µg/m3
Occupational satisfaction	**90**	**80**	**-**	**%**

OBSERVATION

1. In college air quality is at good/ aspirational level.
2. Only the place where construction of building is going on, air quality is at not acceptable level.

Chemistry Laboratory	Commerce Department
	
√-Aspirational	√-Acceptable

Chemistry Laboratory	Commerce Department
	
√-Aspirational	√-Aspirational

Location	Chemistry Lab	Zoology Lab	Computer Lab	Electronic Lab	
CO2	457	390	506	513	ppm
PM2.5	9	9	7	8	ppm
PM10	10	10	8	9	ppm
HCHO	0	4	2	8	µg/m3
TVOC	0	2	3	1	µg/m3
Level	**Aspirational**	**Aspirational**	**Aspirational**	**Aspirational**	

Location	Staff Room	Commerce dept.	Conference Hall	Office	
CO2	413	557	523	746	ppm
PM2.5	8	9	12	10	ppm
PM10	9	10	13	10	ppm
HCHO	3	32	0	6	µg/m3
TVOC	0	77.4	35	1	µg/m3
Level	**Aspirational**	**Acceptable**	**Aspirational**	**Aspirational**	

Location	Canteen	Library	Gymkhana	Class Room	
CO2	417	423	454	418	ppm
PM2.5	9	9	7	10	ppm
PM10	10	10	8	11	ppm
HCHO	2	3	5	1	µg/m3
TVOC	3	2	3	2	µg/m3
Level	**Aspirational**	**Aspirational**	**Aspirational**	**Aspirational**	

SOUND COMFORT/QUALITY

INTRODUCTION

Noise is unwanted sound. Ambient noise is all encompassing noise associated with any given environment and is usually a composite of sounds from many sources near and far. Any abnormal sound which irritates human being is called as noise pollution.

Noise is one of the undesirable products of technological civilization. Admits this civilization wherever we go, noise surrounds us. The roar of traffic, the passage of trains and aeroplanes, the bustle of crowds and the working of industry and the public utilities deafens our ears. Even home is invaded by noise. The noise from whatever source it comes from is undoubtedly, physiologically as well as psychologically harmful. Invading environment in dangerous proportions, it is an invisible but insidious form of pollutant Noise as a potentially harmful pollutant is being recognised as a great nuisance these days affecting the quality of the particularly, in urban areas.

The Environment (Protection) Act, 1986, under Sec. 6 has mentioned “Rules to regulate environment (Protection) Act, 1986, under Sec. 6 has mentioned “Rules to regulate environmental pollution”. This section has explained the maximum allowable limits of concentrations of various environmental pollutants (including noise) for different areas.

Air quality standards in respect of Noise			
Area code	**Category of Area/ Zone**	**Limits/Levels**	
		Day Time	**Night Time**
A	Industrial area	75	70
B	Commercial area	65	55
C	Residential area	55	45
D	Silence zone	50	40

.

OBSERVATION

Location	Limits	Limits/Levels
	dB	
Class Room	60	within permissible limits
Zoology lab	66	within permissible limits
Chemistry lab	57	within permissible limits
Computer lab	59.9	within permissible limits
Electronic lab	58.8	within permissible limits
Staff room	56	within permissible limits
Commerce department	51.5	within permissible limits
Conference hall	48	within permissible limits
Library	57.6	within permissible limits
Office	60.9	within permissible limits
Canteen	70.8	within permissible limits
Gymkhana	60.8	within permissible limits

Chemistry laboratory	Commerce Department
	
√-within permissible limits	√-within permissible limits

DAY LIGHT ILLUMINATION/COMFORT

INTRODUCTION

Light has significant impact on many body functions, including the nervous system, circadian rhythms, pituitary gland, endocrine system, pineal gland and alertness as these are affected by different wavelengths of light.

Variations over time in lighting conditions, in terms of intensity, illumination levels, distribution, ambient lighting and colour temperature, can stimulate alertness and well-being of people.

Threshold IL luminance level		
Building type	**Type of space**	**IL luminance**
		Lux
Schools	Classrooms	500
	Corridors	100
	Teachers rooms	300
	Libraries	500
	Offices	300

OBSERVATION

Chemistry laboratory	Commerce Department
	
√-within permissible limits	√-within permissible limits

Location	IL luminance	Limits/Levels
	Lux	
Class Room	*126	within permissible limits
Zoology lab	*279	within permissible limits
Chemistry lab	*89	within permissible limits
Computer lab	*81	within permissible limits
Electronic lab	176	within permissible limits
Staff room	*243	within permissible limits
Commerce department	*270	within permissible limits
Conference hall	*51	within permissible limits
Library	*178	within permissible limits
Office	*109	within permissible limits
Canteen	*40	within permissible limits
Gymkhana	*83	within permissible limits

* values are measured in daylights and given standard values of lux are with lightings

HEALTH AND SAFETY MANAGEMENT AND INFRASTRUCTURE

1. COLLEGE INFRASTRUCTURE

INTRODUCTION

College campus comprises of mainly two buildings as main college building and computer science building.

Apart from this two in college separate college canteen, gymkhana, vehicle parking area, horticultural garden etc are in the premises.

OBSERVATION

Sr. No.	Locations	Space
1	Main college building	Spacious
2	Computer science building	Spacious
3	Conference hall	Spacious
4	Library & Reading hall	Spacious
5	Toilet Blocks	Spacious
6	Parking Area	Spacious
7	Passage	Spacious
8	Class rooms	Spacious
9	Laboratories	Spacious
10	Canteen	Spacious
11	Gymkhana	Spacious
12	College premises	Spacious

ASSESSMENT OF COLLGE CAMPUS BUILDING INFRASTRUCTURE

Sr No	Locations	Space	Ventilation	Natural Light	Cleanliness	Remark
1	Main college building	Spacious	Good	Good	Good	
2	Computer science building	Spacious	Good	Good	Good	
3	Conference hall	Spacious	Good	Good	Good	
4	Library & Reading hall	Spacious	Good	Average	Good	
5	Toilet Blocks	Spacious	Good	Good	Good	
6	Parking Area	Spacious	Good	Good	Good	
7	Passage	Spacious	Good	Good	Good	
8	Class rooms	Spacious	Good	Partially good	Good	
9	Laboratories	Spacious	Good	Good	Good	
10	Canteen	Spacious	Good	Good	Good	
11	Gymkhana	Spacious	Good	Good	Good	
12	College premises	Spacious	Good	Good	Good	

2. HEALTH AND SAFETY MANAGEMENT

OBSERVATION

1. Regular cleaning of college campus and toilets is done by the cleaning staff. This involves dusting, floor cleaning and toilets cleanings.
2. Garden and parking area is also kept clean by staffs.
3. Cleaning equipment and washing liquids are provided to the cleaning staff.

RECOMMENDATION

1. In college premises and buildings area, during audit team found the unwanted materials. It is recommended that removed the unwanted material in the premises
2. College have its medical health facility in the college but due existing pandemic situation it is not well maintained. It is recommended that restore the facility once the college begins at its regular schedule as per government norms with the students class rooms in the college.
3. There are very few number fire extinguishers and sand bucket are placed in college campus building for fire safety purpose. But it is very important and necessary to renew the maintenance of fire extinguishers on right time. Currently they are out dated.
4. Open wiring, loose connections and not properly addressed cable wiring have been observed in college, that may lead to short circuits as well as from electrical safety it is dangerous. Also panel doors are not closed properly. So it is an urgent repair and corrected.

Electrical safety	
Electrical panels	**Electrical Cables**
	
Electrical panel doors are open. Need to be close properly.	**Electrical cable is not properly and cables are hanging.**
⃠- Dangerous	**⃠- Dangerous**

Fire safety	
Fire Extinguishers/ Sand bucket	**Validity of Fire extinguishers**
	
College has placed very few number of fire extinguishers at various places in the college campus	**Maintenance validity of fire extinguishers are expired**
√- Ok	**⃠- Need to renew immediately after due date**

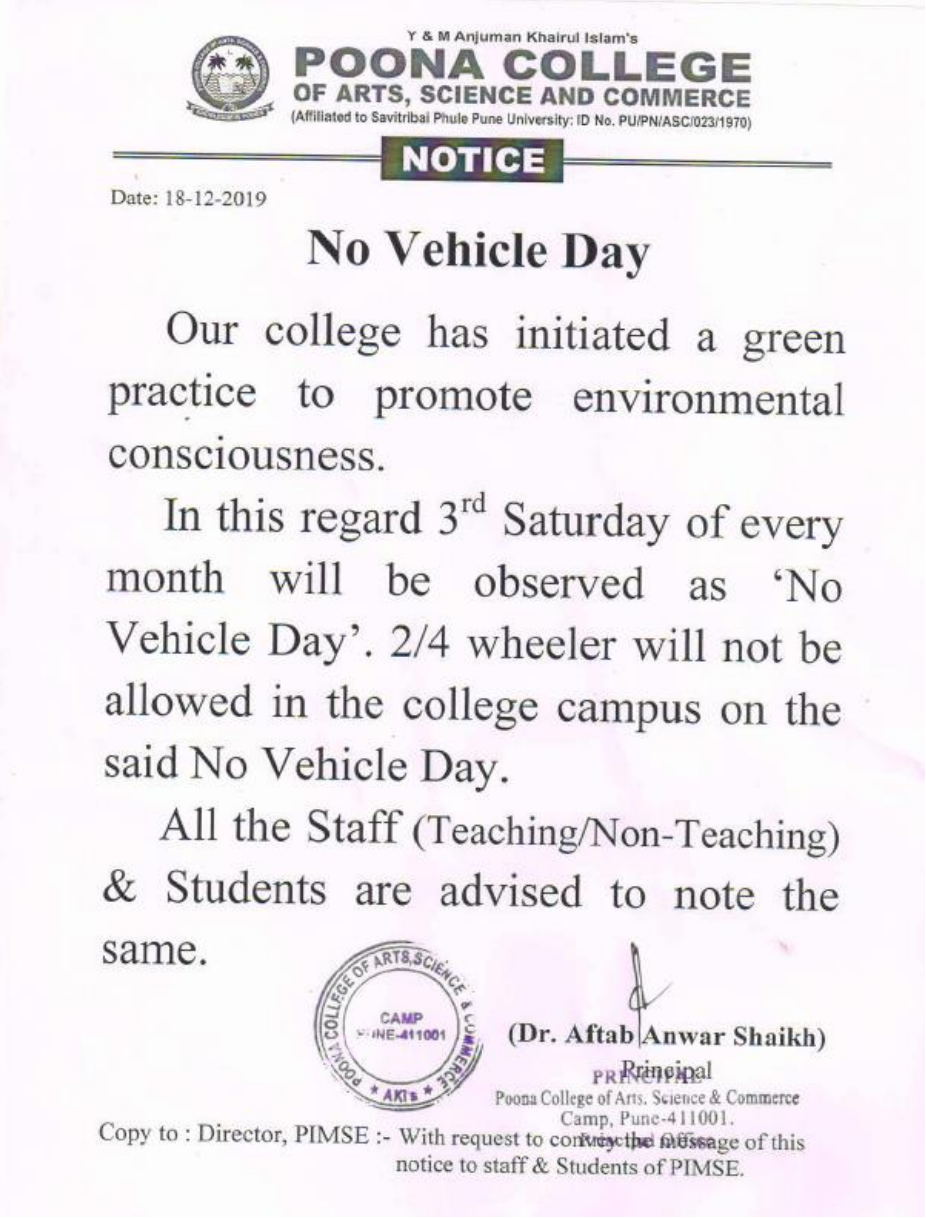
Health safety	
Conventional water taping system	**Hands free water taping system**
	
College have currently conventional water taping system	**College can adopts hands free water taping system. This saves the water and also good for personal health protection to avoid frequent hand touching to water taps.**

NO VEHICLE DAY INITIATIVE

OBSERVATION

1. Many of the college students and staff use the private or own vehicle to come college.
2. It contributes the CO2 emission due to burning of petrol or diesel in the vehicles.
3. College has implemented the policy of "No Vehicle Day" on "Every 3rd Saturday of the month" in the college.

No Vehicle Day Initiative- Every 3rd Saturday of the month



Y & M Anjuman Khairul Islam's
POONA COLLEGE
OF ARTS, SCIENCE AND COMMERCE
(Affiliated to Savitribai Phule Pune University: ID No. PU/PN/ASC/023/1970)

NOTICE

Date: 18-12-2019

No Vehicle Day

Our college has initiated a green practice to promote environmental consciousness.

In this regard 3rd Saturday of every month will be observed as 'No Vehicle Day'. 2/4 wheeler will not be allowed in the college campus on the said No Vehicle Day.

All the Staff (Teaching/Non-Teaching) & Students are advised to note the same.

(Dr. Aftab Anwar Shaikh)
Principal
Poona College of Arts, Science & Commerce
Camp, Pune-411001.

Copy to : Director, PIMSE :- With request to convey the message of this notice to staff & Students of PIMSE.

RECOMMENDATION

It is recommended that college can increase the frequency of “No Vehicle Day” once every week to reduce the CO2 emission reduction due fuel burning.

CO2 EMISSION REDUCTION DUE TO NO VEHICLE DAY

Particulars		
Number of vehicles in college premises	250	nos
Average running of vehicle	2	km/vehicle
Average fuel required	250	litres/day
Average cost of fuel	25000	INR/day
Number of days in months	4	nos
Average fuel save	1000	litres/month
Average cost save	100000	INR/month
Average CO2 emission reduction per month	0.67	tonnes of CO2e
Average CO2 emission reduction per year	**8.04**	**tonnes of CO2e**

OTHER ENERGY EFFICIENT, GREEN, HEALTH, WASTE PRACTICES BY THE COLLEGE MANAGEMENT

1. LIQUID WASTE MANAGEMENT/ SLUDGE TREATMENT PLANT/ WASTE WATER TREATMENT PLANT

INTRODUCTION

Sewage treatment is the process of removing contaminants from municipal wastewater, containing mainly household sewage plus some industrial wastewater. Physical, chemical, and biological processes are used to remove contaminants and produce treated wastewater (or treated effluent) that is safe enough for release into the environment. A by-product of sewage treatment is a semi-solid waste or slurry, called sewage sludge. The sludge has to undergo further treatment before being suitable for disposal or application to land.

Sewage treatment may also be referred to as wastewater treatment. However, the latter is a broader term that can also refer to industrial wastewater. For most cities, the sewer system will also carry a proportion of industrial effluent to the sewage treatment plant that has usually received pre-treatment at the factories to reduce the pollutant load. If the sewer system is a combined sewer, then it will also carry urban runoff (storm water) to the sewage treatment plant. Sewage water can travel towards treatment plants via piping and in a flow aided by gravity and pumps. The first part of the filtration of sewage typically includes a bar screen to filter solids and large objects that are then collected in dumpsters and disposed of in landfills. Fat and grease are also removed before the primary treatment of sewage.

OBSERVATION

College has not implemented Sludge Treatment Plant (STP)/ Waste Water Treatment Plant in the college to treat the waste water generated at College and labs or canteen.

RECOMMENDATION

College can implemented naturally treated STP/WTP at the college premises which does not requires the electricity to operate.

2. SOLID WASTE MANAGEMENT (SCRAPS LIKE PLASTIC, PAPER ETC)/ E-WASTE MANAGEMENT

INTRODUCTION

College have good policy and maintained the record for solid waste generated in the college like old newspapers, books, scrap boxes, etc.

E-WASTE MANAGEMNT

Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution.

Electronic scrap components, such as CPUs, contain potentially harmful components such as lead, cadmium, beryllium, or brominates flame retardants. Recycling and disposal of e-waste may involve significant risk to health of workers and communities in developed countries and great care must be taken to avoid unsafe exposure in recycling operations and leaking of materials such as heavy metals from landfills and incinerator ashes.

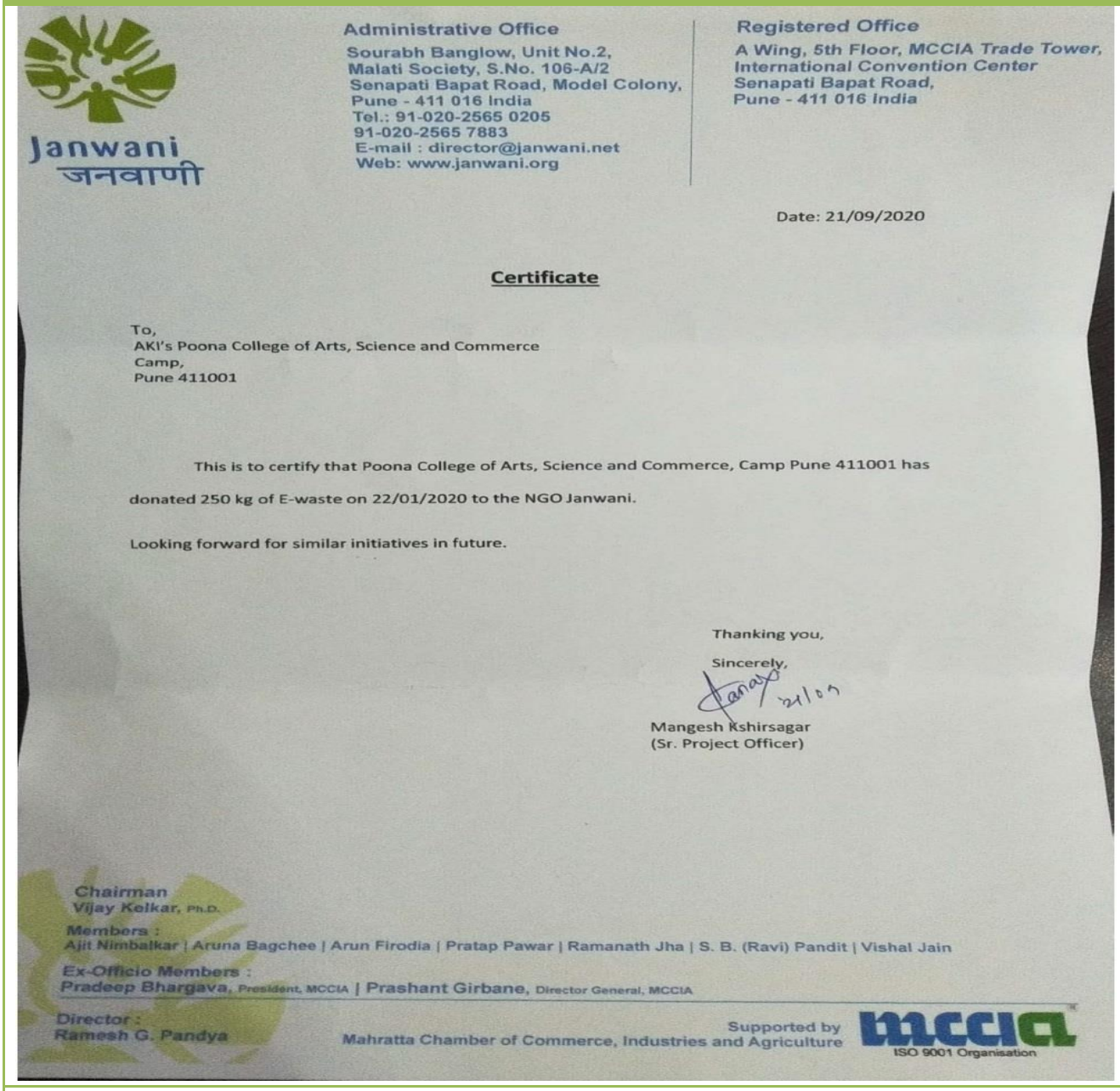
The environmental impact of the processing of different electronic waste components

E-Waste Component	Process Used	Potential Environmental Hazard
Cathode ray tubes (used in TVs, computer monitors, ATM, video cameras, and more)	Breaking and removal of yoke, then dumping	Lead, barium and other heavy metals leaching into the ground water and release of toxic phosphor
Printed circuit board (image behind table – a thin plate on which chips and other electronic components are placed)	De-soldering and removal of computer chips; open burning and acid baths to remove metals after chips are removed.	Air emissions and discharge into rivers of glass dust, tin, lead, brominated dioxin, beryllium cadmium, and mercury
Chips and other gold plated components	Chemical stripping using nitric and hydrochloric acid and burning of chips	PAHs, heavy metals, brominated flame retardants discharged directly into rivers acidifying fish and flora. Tin and lead contamination of surface and groundwater. Air emissions of brominated dioxins, heavy metals, and PAHs
Plastics from printers, keyboards, monitors, etc.	Shredding and low temp melting to be reused	Emissions of brominated dioxins, heavy metals, and hydrocarbons
Computer wires	Open burning and stripping to remove copper	PAHs released into air, water, and soil.

OBSERVATION

1. College has given solid waste generated like papers, metal scrap etc to the authorised recycle for proper channelling the solid waste.
2. This helps to reduce the CO2 emission reduction due to recycling of the solid waste.
3. Currently college also given E-waste to the NGO viz. Janawani in pune.

E-waste activity certificate



Janwani
जनवाणी

Administrative Office
Sourabh Banglow, Unit No.2,
Malati Society, S.No. 106-A/2
Senapati Bapat Road, Model Colony,
Pune - 411 016 India
Tel.: 91-020-2565 0205
91-020-2565 7883
E-mail : director@janwani.net
Web: www.janwani.org

Registered Office
A Wing, 5th Floor, MCCIA Trade Tower,
International Convention Center
Senapati Bapat Road,
Pune - 411 016 India

Date: 21/09/2020

Certificate

To,
AKI's Poona College of Arts, Science and Commerce
Camp,
Pune 411001

This is to certify that Poona College of Arts, Science and Commerce, Camp Pune 411001 has donated 250 kg of E-waste on 22/01/2020 to the NGO Janwani.

Looking forward for similar initiatives in future.

Thanking you,

Sincerely,

Mangesh Kshirsagar
(Sr. Project Officer)

Chairman
Vijay Kelkar, Ph.D.
Members :
Ajit Nimbalkar | Aruna Bagchee | Arun Firodia | Pratap Pawar | Ramanath Jha | S. B. (Ravi) Pandit | Vishal Jain
Ex-Officio Members :
Pradeep Bhargava, President, MCCIA | Prashant Girbane, Director General, MCCIA
Director :
Ramesh G. Pandya
Supported by
Mahratta Chamber of Commerce, Industries and Agriculture
mccia
ISO 9001 Organisation

√- Good Initiative

3. TREE PLANTATION, SOIL CONSERVATION ETC

INTRODUCTION

Tree-planting is the process of transplanting tree seedlings, generally for forestry, land reclamation, or landscaping purpose

In silviculture the activity is known as reforestation, or afforestation, depending on whether the area being planted has or has not recently been forested. It involves planting seedlings over an area of land where the forest has been harvested or damaged by fire, disease or human activity. Tree planting is carried out in many different parts of the world, and strategies may differ widely across nations and regions and among individual reforestation companies. Tree planting is grounded in forest science, and if performed properly can result in the successful regeneration of a deforested area. Reforestation is the commercial logging industry's answer to the large-scale destruction of old growth forests, but a planted forest rarely replicates the biodiversity and complexity of a natural forest.[citation needed]

Because trees remove carbon dioxide from the air as they grow, tree planting can be used as a geoengineering technique to remove CO
2 from the atmosphere. Desert greening projects are also motivated by improved biodiversity and reclamation of natural water systems, but also improved economic and social welfare due to an increased number of jobs in farming and forestry.

Canopies in tropical and temperate forests can be important habitats for many animals and plants. A dense canopy cover will let little light reach the ground and will lower temperatures.
The canopy protects the ground from the force of rainfall and makes wind force more moderate

OSERVATION

1. In the college premises there are number of trees which are maintained by the college.
2. College also have its Horticultural garden where number of various trees are planted.
3. College also took initiative of tree plantation with the help of students in the city area.

Tree Plantation Programme

4. PLASTIC AND PAPER FREE CAMPAIGN

INTRODUCTION

As single used plastic is hazardous to the environment as it is once used cannot be recycled. Also paper is used in college for various purposes like student assignments, official works etc.

RECOMMENDATION

1. It is recommended that college should take plastic free campaign in the college.
2. It also recommended that college take initiative to lower the usage of paper in the college and possible make system digitalised.

Example of Plastic free campaign initiative

5. CLEANLINESS CAMPAIGN/ OTHER ENVIRONMENTAL, HEALTH SAFETY ACTIVITIES ETC


Y & M Anjuman Khairul Islam's
POONA COLLEGE
OF ARTS, SCIENCE & COMMERCE
In Collaboration with
INDIA GREEN & WILD (IGW)
Awareness Rally on
NEED TO PROTECT OUR FOREST, WILDLIFE AND ENVIRONMENT
19th January 2019


BEFORE YOU LEAVE TAKE A MINUTE TO CLEAN
POONA COLLEGE
OF ARTS, SCIENCE & COMMERCE
INDIA GREEN & WILD (IGW)
Awareness Rally on
NEED TO PROTECT OUR FOREST, WILDLIFE AND ENVIRONMENT
19th January 2019


POONA COLLEGE
OF ARTS, SCIENCE & COMMERCE, CAMP, PUNE
साफ सुथरी बकरी ईद
POONA COLLEGE
OF ARTS, SCIENCE & COMMERCE CAMP PUNE
साफ सुथरी बकरी
POONA COLLEGE
OF ARTS, SCIENCE & COMMERCE, CAMP, PUNE
साफ सुथरी बकरी ईद


WASTE COLLECTION MEGA DRIVE
POONA COLLEGE
OF ARTS, SCIENCE & COMMERCE
Golden Jubilee Year Celebrations
Department of Electronic Science
E-Waste Management
Awareness Program
On 15th January 2020
Time: 11.00pm
@ PIMSE Conference Hall
DISHES
STORAGE CONTAINERS
BOTTLES TOYS
PLASTIC
SPOONS POLYTHENE BAGS
PACKAGING WRAPPERS CHAIRS
CANS BAGS EQUIPMENTS
E-WASTE
FREE
COLLECTION
E-Waste
Latitude: 18.505954
Longitude: 73.875172
Elevation: 570.16m
Accuracy: 3.8m
Time: 01-20-2020 11:42
Note: E waste program


Waste liquids
oona College
Arts Science
Google
Pune, Maharashtra, India
Poona College, Pune, Maharashtra 411001, India
Lat N 18° 30' 26.7948"
Long E 73° 52' 23.3544"
17/12/20 12:13 PM

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3. Indian Green Building Council (IGBC), India
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9. Plastic Waste (Management and Handling) Rules, 2016, Government of India
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13. Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE)