

St. Xavier's College for Women, Aluva



Green Audit 2017-18

An initiative of Department of Botany under the auspices of IQAC

Compiled by: Dr. Nisha P

Supported by: Members of Biodiversity Club

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St. Xavier's College for Women, Aluva

St. Xavier's College for Women envisions the empowerment of women through academic excellence and spiritual enlightenment for their educational, social and cultural enhancement

Materialisation of the vision of women empowerment of Mother Eliswa - St. Xavier's College for Women, Aluva, situated on the banks of the river Periyar, is a government-aided college functioning under the management of the Congregation of Teresian Carmelites (C.T.C.), and is affiliated to Mahatma Gandhi University. Currently offering 14 Degree and 6 Post-graduate courses, the college has been re-accredited at A grade.

St. Xavier's College aims at the full-fledged development of young women to enable them to live a richer and more purposeful life. Women empowerment being the key focus, the entire spectrum of the activities centre around this main objective. The college actively encourages and promotes co-curricular and extra-curricular activities to supplement the overall development of our students, in addition to their academic pursuits. The students are encouraged to become socially responsible citizens. They are equipped with the importance and necessity of the conservation of nature through various activities. As part of academic extension programmes every department is encouraged to take up projects in this direction.

The campus of the college is eco-friendly and promotes planting of saplings of trees and other vegetables in the available space. The nature club and Biodiversity club functioning under the department of Botany is active to see this goal materialised. In addition to the activities implemented in the college the NSS unit is converting many bare lands in Aluva to Green. Greenauditing in the college is an initiative to audit the environmental performance of the college as well as to improve the activities towards green.

ABOUT THE TEAM

Green auditing in the college started as a case study by Dr.Nisha P, Assistant Professor in the Department of Botany. A paper presentation on the same was done in 2012 March after collecting the necessary details. In 2013, Principal Sr.Reethamma initiated a thorough Green Auditing for the college under the banner of IQAC. The faculty in the Department of Botany, Dr. Nisha P was assigned with the task. The faculty with the help of the members of Biodiversity Club started a survey. Faculty from each department helped us in this venture. Student volunteers were selected from each stream for the smooth implementation of the audit.

Once the preliminary report was prepared it was submitted to The Principal for finalization. After discussion with members of IQAC, the report has been prepared.

ABOUT GREEN AUDITING

Definition

Green auditing is a means of assessing environmental performance (Welford, 2002). It is a systematic, documented, periodic, and objective review by regulated entities of facility operations and practices related to meeting environmental requirements (EPA, 2003). It is otherwise the systematic examination of the interactions between any operation and its surroundings. This includes all emissions to air, land and water; legal constraints; the effects on the neighbouring community; landscape and ecology and the public's perception of the operating company in the local area. Green audit does not stop all compliance with legislation. Nor is it a 'green-washing' public relations exercise. Rather it is a total strategic approach to the organisation's activities (CBI, 1990).

1. Audit is a systematic approach.
2. Audit is conducted objectively.
3. The auditor obtains and evaluates evidence.
4. Evidence obtained and evaluated by the auditor concerns assertions about economic actions and events.
5. The auditor ascertains the degree of correspondence between assertions and established criteria.
6. The goal, or objective, of the audit is to communicate the results to interested users.

ACKNOWLEDGEMENT

We would like to thank our Principal, Dr. Sr. Reethama for her consent to conduct this audit. We are grateful to the IQAC of college for entrusting us with this task. We would like to thank all the Departments, students, teaching and non-teaching staff for their kind cooperation with us during this survey. We would also like to specially thank the office staff and Laboratory Assistants who helped us a lot in furnishing the information.

Objectives of this green audit

1. **Verifying compliance:** Verifying compliance with standards or best available techniques.
2. **Identifying problems:** Detecting any leakage, spills or other such problems with the operations and processes.
3. **Formulating environmental policy:** Formulating the organisation's environmental policy if there is no existing policy.
4. **Measuring environmental impact:** Measuring the environmental impact of each and every process and operation on the air, water, soil, worker health and safety and society at large.
5. **Measuring performance:** Measuring the environmental performance of an organisation against best practices.
7. **Confirming environmental management system effectiveness:** Giving an indication of the effectiveness of the system and suggestions for improvement.
8. **Providing a database:** Providing a database for corrective action and future plans.
9. **Developing the organization's environmental strategy:** Enabling management to develop its environmental strategy for moving towards a greener corporate and performance culture.
10. **Communication:** Communicating its environmental performance to its stakeholders though reporting will enhance the image of the company.

General steps adopted

1. Systematic and comprehensive data collection
2. Documentation with physical evidences
3. Independent periodic evaluation with regulatory requirements and appropriate standards.
4. Systematic and comprehensive improvement and management of existing system

The audit process: :

The present audit is a Pre-audit to take necessary steps for rectifying the drawbacks in the campus towards nature conservation. After this work another audit shall be carried out to collect the details required for external auditing.

Pre-audit activities

The pre-audit activities include the following:

1. The sites / area /division to be audited were determined and selected.
2. The auditee were informed of the date of the audit enabling them to adjust and become used to the concept.
3. The scope of the audit was identified. The auditee were consulted for establishing the scope.
4. The audit plan was designed to accommodate changes based on information gathered during the audit and effective use of resources.
5. Audit team and assignment of responsibility were established.
6. The chosen working papers were collected. This facilitated the auditors' investigations on the sites.
7. The background information on the facility including the facility' organisation, layout and processes, and the relevant regulations and standards, were collected.
8. The background information on the site's historical uses, and the location of soil and groundwater contamination were collected.
9. The pre-audit questionnaire was informed to the auditee (Humphrey and Hadley, (2000)).

On-site audit activities

The on-site audit includes:

1. The opening meeting is the first step between the audit team and auditee. In this meeting the purpose of the audit, the procedure and the time schedule were discussed.
2. Site inspection is the second step for on-site activity. In this step the audit team discovered matters which are important to the audit but which were not identified at the planning stage.
3. On-site phase of the audit developed a working understanding of how the facility manages the activities that influence the environment and how any EMS, if there is one, works.
4. Assessed strengths and weaknesses of the auditee's management controls and risks associated with their failure were established.
5. Gathering audit evidence i.e., collecting data and information using audit protocol were communicated with the staff of the auditee to obtain maximum information.
6. Evaluated the audit evidence against the objectives established for the audit.
7. An exit meeting to explain the audit findings. (Humphrey and Hadley, 2000).

PROCEDURE FOLLOWED

The students were divided into four groups, and under the guidance of the audit team, each group collected data on the assigned topics. The assigned topics were as follows :

1. Analysis of Air Quality
2. Preparation of Biodiversity register
2. Analysis of Water quality and usage
3. Analysis of Energy consumption and costs
4. Analysis of waste generation and disposal

All the data were pooled and based on these, a report was formulated.

REPORT

St.Xavier's College for women, Aluva was constructed with least distortion to the original topography of the site. The buildings are four storied with enough ventilation and sunlight. The area details of the college are as follows.

Area of Land	-	7.46 Acres
Area of Permanent Buildings	-	9114 Sq. mts
Area of Administration Block-		298.90 Sq. mts
Conference Hall (I)	-	38.88 Sq. mts
Conference Hall (II)	-	38.35 Sq. mts
Area of Auditorium	-	1120 Sq. mts
Area of Library	-	667.4 Sq. mts
Area of Hostel Building	-	2924 Sq. mts
Mother Teresa Seminar Hall	-	155.90 Sq. mts
Mathematics Seminar Hall	-	56.40 Sq. mts
Malayalam Seminar Hall	-	115.40 Sq. mts
Economics Seminar Hall	-	138.20 Sq. mts
Physics Seminar Hall	-	84.63 Sq. mts
Sr.Redempta Seminar Hall	-	142.45 Sq. mts
Commerce Smart Room	-	54.65 Sq. mts
Micro Biology Lab (I)	-	39.26 Sq. mts
Micro Biology Lab (II)	-	57.50 Sq. mts
Commerce Research Lab	-	39.26 Sq. mts
Zoology Lab	-	259.64 Sq. mts
Botany Lab	-	259.64 Sq. mts
Chemistry Lab	-	259.64 Sq. mts

Physics Lab - 259.64 Sq. mts

Physics Computer Lab - 60.60 Sq. mts

Physics Research Lab - 51.80 Sq. mts

Play Grounds

Badminton Court - 364.80 Sq. mts

Volleyball Court - 543.40 Sq. mts (306.24 Sq.mts)

Basketball Court - 535.40 Sq. mts

Cricket net Practice Court - 55.20 Sq. mts (32.18 Sq.mts)

1. Analysis of Air quality

Air quality was measured by the following steps.

Strategy: Air quality should be checked by using suitable equipment at selected open air/ outlets or air outlet points (Canteen kitchen vents / Chemistry lab if fume hood is utilized / biological specimen processing lab if fume hood is utilized / any other air outlets) and sampling points in the open space and class rooms.

Data Collection: Data on air components in ppm levels can be obtained. Common urban air pollutants such as Carbon monoxide, CO₂, SO₂, NO₂, and *Suspended Particulate Matter (SPM)* should be measured.

Analysis of Data: Data can be compared with standard permissible limit of emissions and data should be presented in graphical form.

Details of CO₂ and CO emitters: Being situated in the heart of the city, our college is exposed to various atmospheric pollutants from vehicles as well as by other external means. Based on our calculation, the different sources of carbon dioxide and Carbon monoxide emitters in our college are:

Sl.No	Item	Total Numbers
1	Vehicles	37
2	Refrigerator	4
3	Air conditioners	9
4	Burning	2 unit
5	Water coolers	12

On the days of data collection, there were 8 cars, 7 bikes and 22 scooters in our campus, in addition to the vehicles for pick up and drop of visitors and to deliver commodities to the canteen, which in turn proves that these vehicles may contribute to high carbon emission. There are 4 refrigerators, 9 air conditioners and 12 working water coolers in our campus. The students, teaching and non-teaching staff and the visitors also contribute to carbon dioxide emission. There is a ring near the dog kennel where all the wastes collected from the classes which were not suitable for recycling are burnt. Plastic wastes with food particles from the canteen are also burned as it cannot be decomposed.

2.Preparation of Biodiversity register

Xaverian flora: The campus flora work is intended to document all plant species inhabiting the campus as a biodiversity register and create a photographic flora/field guide for the public. The intensive exploration in different seasons in the campus exhibited a wide variety of flowering and non-flowering species and they are enumerated and classified based on the advanced APG III system. We applied this recent system of classification which was found to be more reliable on phylogenetic relationships. In total, based on the data collected, there are about 1135 plants in the college campus. In this, 24 plants are trees, 98 are plants are shrubs and the rest are herbs. There are 120 plants in the college Botanical Garden. These plants contribute towards oxygen supply. A detailed report is attached as annexure.

Consolidated checklist of plants observed during 2017 - 2018

Habit of plants	2017-2018
	Number of Species
Herbs	64
Shrubs	98
Climbers	2
Parasites	NIL
Epiphytes	NIL
Trees	24
Total	188

Xaverian fauna

Common Name	Scientific Name	Family
Butterflies		
Common rose	<i>Pachliopta aristolochiae</i>	Papilionidae
Common Blue bottle	<i>Graphium sarpedon</i>	Papilionidae
Common Emigrant	<i>Catopsilia Pomona</i>	Pieridae
Comon mormon	<i>Papilio polytes</i>	Papilionidae
Dragonflies		
Spine Tufted Skimmer	<i>Orthetrum Chrysis</i>	Libellulidae
Wandering Glider	<i>Pantala flavescens</i>	Libellulidae
Common Picture Wing	<i>Rhyothemis variegata</i>	Libellulidae
Slender Skimmer	<i>Orthetrum sabina</i>	Libellulidae
Frogs		
Indian Green frog	<i>Euphlyctis hexadactylus</i>	Dicroglossidae

The bird fauna of St Xavier's campus include the following members.

Sl No	Common name	2017-18
1	Rock pigeon	Present
2	Greater Coucal	Present
3	Asian Koel	Present
4	White breasted waterhen	Present
5	Whiskered Tern	Present
6	Indian Cormorant	Present
7	Indian Pond Heron	Present
8	Black headed Ibis	Present
9	Brahminy Kite	Present
10	Common Kingfisher	Present
11	Stork billed Kingfisher	Present
12	White throated Kingfisher	Present
13	Blue tailed Bee eater	Present
14	White Cheeked Barbet	Present
15	Black rumped Flameback	Present
16	Black Drongo	Present
17	Ashy Drongo	Present
18	Rufous Treepie	Present
19	House Crow	Present
20	Common Tailorbird	Present
21	Clamorous Reed Warbler	Present
22	Barn Swallow	Present
23	Red whiskered Bulbul	Present
24	Oriental Magpie Robin	Present
25	Purple Sunbird	Present
26	Loten's Sunbird	Present

3. Analysis of Water quality and usage

Strategy: The water quality was assessed using suitable methods to ensure the quality.

Water quality monitoring: Water quality parameters:

Parameter	Method
pH	Electrometric method
Turbidity	Neflometric method
Total dissolved solids	Galvimetric method
Acidity	Titrimetric method
Conductivity	Instrumental method
Total hardness	EDTA Titrimetric method
Alkalinity	Titrimetric method
BOD	Incubation method

Water quality could be analysed in departmental labs / consultancy with research organization

a. **Water usage is measured using a water auditing process**

Activities

1. Locating the Water meter / Source tank
2. Record Initial reading / Initial quantity of water (Make sure that the tank has fully loaded/)
3. Assess the hp of Pump or energy/electricity consumption
4. Take total number of tapes
5. Check for leakages – in taps /water flushes etc
6. Calculate total usage of water per day or water usage per person
7. Repair leakages
8. Installing thimbles / filters
9. Reassess the water usage per day
10. Calculate the amount of water saved or conserved
11. Prepare water conservation tips

Day 1: Survey Source tank and endpoints of water circuit, Note initial reading (Full capacity of the tank) and calculate how much time is required to empty the tank (approximately 1 day), note down leakage taps, pipes and toilets, per day usage of water in litres is calculated.

Day 2: Install thimbles / filters, again measurement of water usage as in the Day 1

Calculate the difference between the two days, average usage of water per day / percentage / per students /staff etc.

Day 3: Calculate how much water saved / conserved, Prepare water conservation tips as brochure / notice / calendar / bookmark / timetable etc

Day 5 & 6: Conduct water auditing as the procedure of day 1 & 2 by volunteers / students / teachers

Prepare water conservation tips as brochure /notice/calendar/bookmark/timetable etc for students and staff

The college campus possesses many water outlets. Our students have counted the total number of taps, Rain Water Harvesting Units, coolers and wells. We have found that in total, there are 198 taps, 17 coolers, 3 rain water harvesting plants worth 20,000 litres and a well. The department of Microbiology assessed the quality of the water and it is certified that the pipe water from the municipality can be used for drinking purposes after boiling. The water from the well was not suitable for drinking.

Out of these, 4 taps are not working and 16 taps do not have the cap to rotate.

Water consumption (m³ per day)

Sl.No	Water Used for	Time June 2017- March 2018
1	Domestic purpose including canteen	1600L/day
2	Agricultural /Gardening	1500L/day
3	Laboratory Purpose Chemistry	300L/day

	Botany	180L/day
	Zoology	300L/day
	Physics	150L/day
	Microbiology	350L/day
4	Other departments	500L/day

Total water consumption/day = 4880L/day

Water lost due to Leakage/day = 280L/day

Water purifying systems installed in different buildings

Sl. No.	Department name	Type of water purification system	Number of outlets
1	Chemistry	Reverse Osmosis Plant -1	3
2	Botany	RO Cooler system - 1	3
3	Zoology	RO Cooler system - 1	3
4	Physics	RO Cooler system - 3	3
5	English	RO Cooler system - 1	3
6	Malayalam	RO Cooler system - 1	3
7	Economics	RO Cooler system - 1	3
8	Commerce	RO Cooler system - 1	3
9	Commerce(self)	RO Cooler system - 1	3



The water quality analysis indicated that most of the parameters are in the permissible limits of the Indian / international standards. However, the MPN values were above the limits in some of the samples and timely bleaching was done with the wells in the respective buildings to maintain the quality.

Water quality parameters analyzed for different buildings of the college.

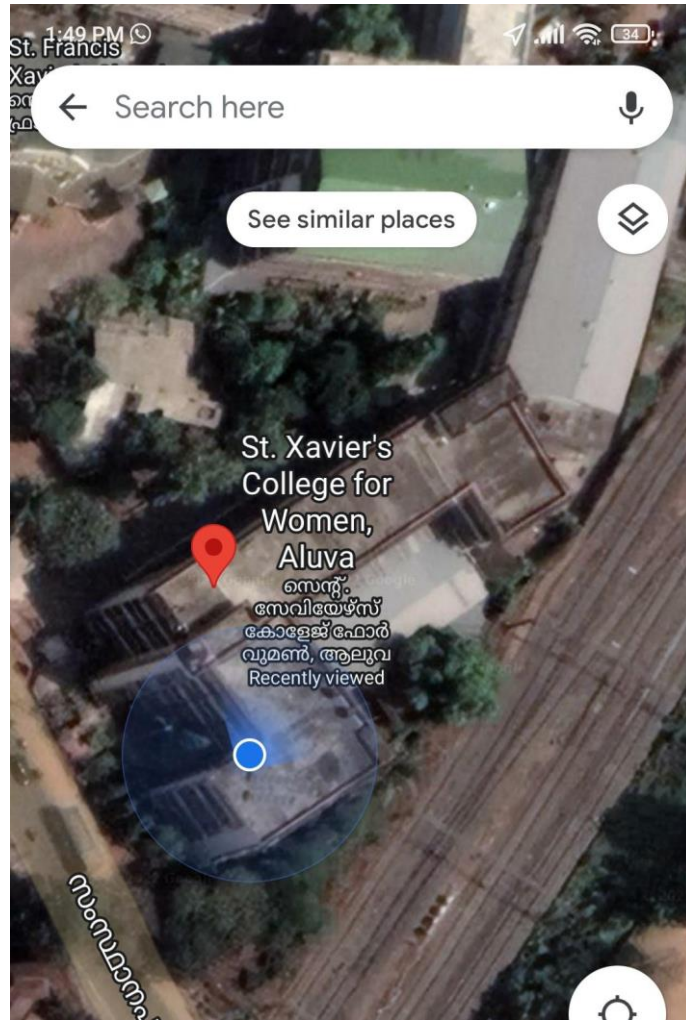
2017-2018 Parameters	Buildings				WHO Standard
	Jesus Block	mount carmel Block	St. Josephs' Block	Hostel	
PH	6.2	6.2	6.2	6.5	6.5-8.5
Turbidity	Nil	Nil	Nil	Nil	5
Total dissolved solids	282	171	158	172	500
Acidity	30	27	28	30	-
Conductivity	513	502	513	502	-
Total hardness	90	90	90	90	300
Alkalinity	100	100	105	100	200
MPN	21	23	21	23	10
BOD	Nil	Nil	Nil	Nil	-

The entire water requirement met from the campus itself which is achieved by adopting various rain water harvesting methods, well and municipality water supply. All these activities help augment ground water resources and facilitate more recharge and also to prolong recharge period beyond monsoon season. The College employs various water harvesting techniques such as, rooftop water harvesting structure in all the buildings having been utilized for rainwater harvesting.

Building wise area of rooftop rainwater harvesting structures

Sl. No.	Building	Rooftop area [sq.mts.]*
1	St Joseph's block	464
2	Jesus block	386
3	Mount carmel Block	572.76
Total area		1422.76

Rooftop area for rainwater harvesting (google map image)



4. Analysis of Energy consumption and costs

The college is well equipped with electricity supply. Unfortunately, there was no alternate mechanism for natural energy resources. The generator used in the college is running on diesel adding to pollution. Each department has computers, printers, fans, plug points, tube lights, bulbs, etc. The list follows. The light requirements of each class rooms, labs, corridors, auditoriums and seminar halls are analysed.

Department	Fan	Tube light	Plug points	Speaker	Refrigerator	Computer
Commerce	83	51	50	11		11
Physics	46	23	305	7		30
Malayalam	26	7	44	7	-	4
Chemistry	19	20	25	4		4
Microbiology	14	28	43	3	3	3
Mathematics	14	14	17	6		2
Economics	22	20	33	2		2
Botany	29	37	38	6	1	1
Zoology	33	33	43	6	1	1
English	29	21	14			11
Commerce (Self financing)	43	20		11		2
Office	20	20	61	-	-	12
Computer Centre	4	10	31			31

In addition to these equipment, our college also has

1. Exhaust fans – Three nos.
2. A hot plate
3. A table fan
4. A U.V. tube
5. 26 telephones
6. An induction
7. 13 mike
8. A bell
9. Photocopier – 10 nos
10. Printer – 29 nos
11. Projector – 21 nos
12. Refrigerator – 8 nos
13. Spectrometer – 10 nos
14. A Laser
15. Table lamps – 2 nos
16. A Photodiode
17. A Distilled water coil
18. Spectroscopy- 3 nos
19. CRO – 6 nos
20. Distillation unit – 3 nos
21. A pH meter
22. An Electronic balance
23. A water bath
24. Power plugs – 3 nos

25. Spotlight (Auditorium) – 4 nos

26. Television – 4 nos

27. Camera – 48 nos

The details of equipment in the departments are attached as annexure.

4. Analysis of Waste generation and disposal

Wastes cannot be avoided in any environment. Waste management is a major problem faced by the present society. Wastes can be classified as Biodegradable and Non-biodegradable wastes. Biodegradable wastes include food wastes; which can be easily decomposed by the bacteria in soil. Non-biodegradable wastes are those which cannot be degraded by any organism and remain as such for many years. Much waste is generated from the college campus. At the time of audit there was a proper mechanism for the disposal of biodegradable wastes. The non-biodegradable wastes were either burned or were dumped in a common pit.

1. CANTEEN – The food waste generated from the canteen is collected and given to pigs. Plastic waste is generally less generated from the canteen. The plastic waste generated was burned inside the ring near the dog kennel. Some organic waste was transferred to the biogas plant at the convent.
2. LIBRARY – The library was remarkable for its waste disposal mechanism. The most generated waste is paper waste. It is taken for recycling.
3. STORE- Not much waste is generated in store. The paper wastes and plastic covers were collected and sent for recycling.
4. OFFICE- Paper waste was more generated when any machine is on damage. The paper wastes and plastic covers were collected and sent for recycling.

5. GARDEN-Plastic and paper waste is comparatively less. Dry leaves are mixed with soil and served as compost.
6. AUDITORIUM-The wastes are collected after each programme and are burned in the ring.
7. BATHROOM-The wastes including sanitary napkins are collected and burned in the incinerator.
8. CLASSROOMS- Wastes are collected in the wastebasket and burned daily in the ring. Paper waste and plastic wastes are collected in the departments and are recycled.
9. LABORATORY-The broken glass wastes and the useless instruments are collected for recycling after thorough cleaning. Chemicals are neutralised in the laboratories itself. The department of Microbiology disposes of waste after thorough disinfection measures.
10. VERMICOMPOST UNIT: Vermicompost unit is managed by the department of Zoology and Microbiology. This unit has to improve its functioning since it is not operational throughout the year.
11. COLLEGE PREMISES-Plastic waste generated is usually less. But paper waste is generated in a larger amount. Waste bins are not enough for its disposal. Moreover common waste bins are not available for paper disposal.

Details of solid waste is as follow

Solid Wastes

Sl. No.	Source of waste	Total quantity
1.	a) Canteen waste b)Solid waste from tree, droppings and lawn	40kg/day 10kg/day
2.	Plastic waste	2kg/day
3.	Solid waste from Chemistry, Botany, Microbiology and Zoology lab	2Kg/day
4	Chemical waste	50gms/week

5. Analysis of Sound Pollution

Situated in the heart of Aluva town, the college has high problems from sound pollution. The railway station and Bus stand are much closer to the college. The Municipality Town Hall is flanking one side of the college. The National Highway is along the front side of the college. So the sound pollution was too high. It even affected teaching in the college. Continuous exposure to such a high volume can even create health issues.

OBSERVATIONS

The college, bound to create environmental awareness, has taken measures to implement a lot of programs for the students, teachers and other staff members. The NSS unit of the college is playing a crucial role in this regard. This is supported by activities of Biodiversity club & Nature Club of department of Botany and Bhoomithrasena club. In spite of their activities the college has to adopt certain measures to control and avoid pollution. The major findings of the Green Auditing team is as follows.

1. On analyzing the air quality, we could assess that there are many pollutants in our environment (either in micro quantities or macro quantities), from the vehicles of the road. The burning of wastes, especially plastic waste, also causes emission of poisonous gases into the atmosphere. But, there are many plants in our campus that purify the polluted air and supply enough oxygen for us.
2. Likewise, there are sufficient water outlets for the students and water coolers for the departments. Also it is essential to check whether all these are working or not and repairing the leaking taps can save much water.
3. Energy consumption is yet another component that is to be taken care of. A few fans and tube lights are not working. The lights used are mainly incandescent bulbs or ordinary tubes which are to be replaced by LED bulbs and LED tubes. An autoclave and a cooler are also not working.
4. Waste generated is mostly burned inside the ring near dog kennel. An alternate mechanism is to be adopted for separate disposal of plastic and paper. Organic waste is sometimes put in biogas plant and sometimes fed to pigs.

SUGGESTIONS

a. **Air Quality**

The air was filled with dust and smoke most of the time. More plants need to be planted in the campus to avoid this pollution. Moreover, the sound pollution was too high. More shade trees to be planted inside the college campus.

b. **Water Quality-**

Repairing leaking taps and introduction of sprinklers can reduce water loss. The water coolers which are not working need to be repaired immediately. Some boards highlighting the importance of water conservation and workshops on water auditing may be introduced. Creating awareness among the students on the necessity of water conservation is most important.

c. **Energy Consumption-**

Energy consumption could be reduced mainly by switching off unnecessary lights and fans. During daylight, lights can be switched off. Energy conserving methods like usage of LED bulbs and tubes can be appreciated. As far as possible CFL may be avoided since the disposal of the same is difficult. Introduction of natural energy resources like solar panels can be considered as an alternative.

d. **Waste generation and disposal-**

Toilets should be clean and maintain hygiene. Separate clean baskets should be kept for disposal of sanitary napkins. Separate baskets should be there for biodegradable and non-biodegradable wastes.

Vermicomposting plants and biogas plant should be actively working. Agencies or individuals should be available to transport wastes from the college premises.

e. A committee shall be formed including the teachers and students to monitor and successfully implement the above said suggestions.

CONCLUSION

We, the audit team, believe that we have successfully completed the analysis of various environmental components. The survey was an eye opening to us regarding different aspects of interaction with nature. This survey personally helped us to think towards green. It also helped us to realise that knowingly or unknowingly we are polluting our surroundings. We hope that the suggestions put forward by us would be considered positively by the college and would be implemented as early as possible.

Post-audit activities (to be conducted)

Post-audit activities begin with the preparation of a draft report. The draft report should be reviewed by the facility personnel directly involved in the audit. The final report should be derived from it and it should then be distributed to all interested parties within the organisation. Humphrey and Hadley (2000) confirm that it is important for management to follow-up the report and develop an action plan to implement those audit findings.

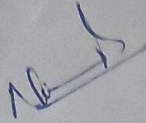
With this we are submitting this initial report for suggestions, recommendations and external auditing.

AUDIT TEAM

1. Dr. Nisha P (Coordinator)

Assistant Professor

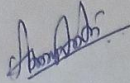
Department of Botany



2. Smt. Asmy Antony

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3. Dr. Annie Feby

Assistant Professor

Department of Botany



4. Dr. Vimala George

Assistant Professor

Department of Botany

