Maratha Vidya Prasarak Samaj's

Institute of Management Research & Technology

[I.M.R.T.]

MVP Campus, Shivaji Nagar, Gangapur Road, Nashik-422002, Maharashtra, India

GREEN AUDIT REPORT

2021-2022

INDEX

1. INTRODUCTION

Colleges can assess their use of many sorts of environmental resources, such as water and electricity, with the help of Green Audit. Additionally, it aids in evaluating how college affects various environmental elements. The use of green auditing increases both environmental and health awareness. The green audit aims to promote resource sustainability and better awareness of how being green affects college campuses. If self-evaluation is a natural and important component of a good education, then institutional self-evaluation may be viewed as a natural and important component of a successful educational institution. The college must thus assess its individual contributions to a sustainable future. The importance of higher education institutions in regard to environmentally friendly sustainability is on growing as it becomes a national issue that affects the entire country. Recent observations show that people are not particularly worried about the environment. Considering that human activities have a negative direct or indirect impact on the environment, there are various environmental problems. The expanding world population, significant scientific and technological advancement, and globalization are all contributing elements to the altering eco system. Climate change, the depletion of the ozone layer, air pollution, and water contamination are a few issues that result from this. An "Environmental Audit" is another name for a "Green Audit." It is the method for managing environmental issues that is most environmentally friendly.

In addition, a healthy and clean atmosphere is one of the ideal prerequisites for any educational establishment. Our institution strongly emphasizes putting green practices into place and raising awareness of environmental issues among all of its stakeholders in order to accomplish this. Stakeholder involvement in the process of making the campus eco-friendly facilitates it. In order to make the campus ecologically friendly, many tactics are used, including the adoption of energy-saving techniques, efficient disposal of waste, treatment of waste water, and the planting of trees. Green practices include things like recycling liquid and solid waste, collecting rainwater, greening the campus, and participating in no-vehicle days. The institution also has a vibrant Eco club that plans a variety of events, such awareness rallies and contests, to increase student understanding. Additional intellectual pursuits like study trips or visits. According to the green strategy, several occasions and programs for cleaning the campus and the adjacent communities are also planned.

2. ABOUT THE INSTITUTE

The 108-year-old Maratha Vidya Prasarak (MVP) Samaj in Nashik is a well-known educational institution in Maharashtra. MVP Samaj's great thinkers correctly laid the "Bahujan Hitay, Bahujan Sukhay" foundation. The institute aspires to offer the horizons of education to the impoverished sectors of society, as its slogan states, "well-being and happiness of the masses." Discipline, Quality, and Transparency are the three guiding principles of the institute.

The Institute began as a boarding school in 1914, with 5 students and a grant of Rs. 1000/- from Rajarshi Shahu Maharaj, the then Chatrapati of Kolhapur. This 100 years old renowned educational institute is in the jurisdiction of University of Pune. At present, the total number of students in its 350 educational and professional institutions is 1,81,683, with a total of 7,478 staff. The budget for the year is Rs. 275 crores. The spectrum of educational institution encompasses Primary Schools, Secondary Schools, Graduate & Postgraduate Colleges, Professional & Vocational Colleges. It was one of the greatest milestones in the pre-independence history of Nashik. The wellbeing in general and education in particular were considered the sole of human being.

The founders of the samaj were inspired and driven by the great work of Mahatma Jyotiba Phule and Chhatrapati Rajarshi Shahu Maharaj of Kolhapur. The pioneers, devoted and dedicated team of MVP Samaj includes the names of great social workers and educationalists as–Karmaveer Raosaheb Thorat, Bahusaheb Hiray, Kakasaheb Wagh, Annasaheb Murkute, Ganpatdada More, Kirtiwanrao Nimbalkar, D.R.Bhosale, Vithoba Patil Jadhav. The students & professionals produced by the institutions of NDMVP Samaj forum the real backbone of modern society.

Table No. 1.1 List of Branches in Higher Education

Sr.No.	Institution Type	Number
2	Agriculture College	01
3	Arts, Science & Commerce Colleges	17
4	College of Architecture	01
5	College of Education (B.Ed)	01
6	College of Engineering	01
7	College of Pharmacy	01
8	D.Ed. College	01
9	Institute of Management & Research	05
10	Institute of Pharmaceutical Sciences	01
11	Law College	01

3. ABOUT THE COLLEGE

The Institute was established under the guardian wing of NDMVP Samaj in year 1986 with the motto of imparting Training & Education in field of Management & Computer. This Institute is affiliated to Savitribai Phule Pune University (SPPU) formerly Pune University and recognized by Government of Maharashtra, AICTE New Delhi and DTE Mumbai. IMRT is accredited by NAAC with B+ grade for the period of 2017-18 to 2021-22. In the year 1986 Institute started MPM (presently known as MBA-HRD), PGDBM and PGDCM Courses under the faculty of Management and affiliated to Pune University. In year 1989 institute started MCM Course (presently known as MBA-IT) under the faculty of Management and affiliated to Pune University. In the year 1992 institute started PGDHM Course. In the year 1994 institute has got AICTE approval to run MBA Course under the jurisdiction of Pune University (Presently known as Savitribai

Phule Pune University). Under the strong visionary leadership of Late Dr.Vasant Pawar(Sarchitnis MVP Samaj) institute has emerged with competent faculty, infrastructural facility and other resources to enhance management education in society. Since inception Dr.B.B.Pagar, Dr.B.B.Rayate and many other Faculties boost the institute to become strong knowledge hub to enhance management education.

- Key Features of IMRT:

NAAC Accredited Institute

· Renowned Research Centre
· Effective Training & Placement Cell
· Wi-Fi Campus with separate Internet Lab
· Well-equipped library
· Located in Heart of Nashik city
· Industry Institute interaction & exposure
· Experienced, Highly Qualified & Dedicated Faculty from both Academics & Industry
· ICT Classroom, Spacious Seminar Hall & Auditorium
· Medical & Hospital facility managed by Medical College of MVP Samaj
· Free-ship/Scholarship/EBC/Minority Facilities are available for all eligible candidates as per the State & Central Governments norms.

- Total courses offered:

✓ 03 Full Time Master Degree Courses

MBA
MBA-IT
MBA-HRD
Research Center:
Ph.D.

✓ 02 Part Time Diploma Courses offered by Institute.

PGDCM
PGDHM

4. OBJECTIVE OF STUDY

The green audit's major goal is to encourage environmental management and conservation on the college campus. The audit's goal is to identify, measure, explain, and prioritise a framework for environmental sustainability that adheres to all applicable legislation, policies, and standards. The following are the major goals of a Green Audit:

- ✓ 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 analyzing 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.

ENVIRONMENTAL CONSERVATION COMMITTEE

Academic year 2020-2021			
Sr. No.	Name of Member	Designation	Title in Committee
1.	Dr.D. K.Mukhedkar	I/C Director	Chairman
2.	Dr V N Bhabad	Asst Professor	Coordinator
3.	Dr. S A Gaikwad	Asso. Professor	IQAC Coordinator
4	Prof R.L.Pagar	Asst Professor	Member

FUNCTIONS OF ENVIRONMENTAL CONSERVATION COMMITTEE

The college has established an Environmental Cell to educate student teachers about environmental issues and challenges, as well as to motivate them to spread information and educate schoolchildren and the general public about these issues.

• To raise awareness among student teachers about the Institute and environmental issues.

• To instill a sense of responsibility for the development of planet Earth, as well as an appreciation for its beauty, by giving chances to gain knowledge, skills, attitudes, and dedication to environmental preservation.

• To teach students about the interconnectedness of economic, social, and environmental concerns.

• To prepare student teachers to teach environmental education to students in the classroom through curricular and extracurricular activities.

• To improve the college campus's environment.

• To raise student awareness of the importance of environmental preservation in society.

• To handle the college's solid trash, liquid waste, and e-waste.

5. METHODOLOGY

The approach for doing a green audit comprised several instruments such as questionnaire development, physical inspection of the campus, observation and study of paperwork, interviewing key people, data analysis, measurements, and suggestions.

a. SCOPE OF WORK

The following Environmental Issues were studied for the above mentioned campus area.

- Water Environment including rain water harvesting potential of the campus.
- Plant diversity.
- Noise Environment.
- Solid Waste Management Practices.
- Air Environment.

This study has been created based on the available data, samples, and information supplied by the Institute of Management Research and Technology, Nashik and recommendations for improving the campus environment have been made by college officials.

b. BACKGROUND DATA

The Institute was established under the guardian wing of NDMVP Samaj in year 1986 with the motto of imparting Training & Education in field of Management & Computer. This Institute is affiliated to Savitribai Phule Pune University (SPPU) formerly Pune University and recognized by Government of Maharashtra, AICTE New Delhi and DTE Mumbai. IMRT is accredited by NAAC with B+ grade for the period of 2017-18 to 2021-22. In the year 1986 Institute started MPM (presently known as MBA-HRD), PGDBM

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COURSES OFFERED BY THE COLLEGE

Sr.NO.	Name of Faculty	Name of Program	Name of Subject
1.	Management (Full Time Courses)	MBA	General Management
		MBA-IT	Information Technology
		MBA-HRD	Human Resource Development
2.	Diploma Courses (Part time courses)	PGDCM	Post-Graduation diploma in computer management
		PGDHM	Post-Graduation diploma in hospital management
3.	Research Center	Ph.D.	Organization Management Marketing Management Finance Management Computer Management

TOTAL POPULATION OF THE CAMPUS

Sr. No.	Particulars	Total population of institute (incl. Students, Permanent, Temporary staff & visitors
1.	College Staff (Teaching and Non-Teaching	23
2.	College Students (Girls and Boys)	359
3.	Residential Students	00
4.	Residential Staff	00
5.	Floating Population	20
	Total	402

c. STEPS IN GREEN AUDIT

Pre-Audit

1. Make a plan for the audit.
2. Form an auditing team
3. Schedule for an audit.
4. Gather the necessary background information.
5. On Site Visit

On Site

1. Understand the scope of audit
2. Analyze the strengths and weaknesses of the internal controls
3. Conduct the audit
4. Evaluate the observations of audit program
5. Prepare a report of the observations side by side

Post-Audit

1. Produce a draft report of the data collected
2. Produce a final report of the observations and the inference with accuracy
3. Distribute the final report to the management
4. Prepare an action plan to overcome the flaws
5. Keep a watch on the action plan

6. WATER AUDIT

Biodiversity, agriculture, human population, and the economy all benefit from water. As a result of recent events in India and throughout the world, water scarcity and security are becoming increasingly crucial problems. Maharashtra has also been severely impacted by water shortage in recent years. As a result, water management has been incorporated in the Sustainable Development Goals as a vital component of attaining sustainable development (SDGs).

Unplanned urban growth and economic development have led in unprecedented pressures on natural resources, notably water. In regions like Nashik, the increased demand for water emphasizes the importance of overall water management. According to the National Water Mission's standard standards, metro cities should have a water

supply of 150 lpcd, smaller cities/towns with sewage systems should have 135 lpcd, and cities/towns without sewage systems should have 70 lpcd.

a. CALCULATION OF WATER REQUIREMENT

One Bore well and Municipal Corporation (1 tap) was identified as a key sources of water in the study. Water from the RO system is utilized for drinking. Borewell Water is utilized in the canteen, bathrooms, and for landscaping. During the survey, there were no leaks or overflows of water from above tanks, therefore there was no water loss. The information gathered from all departments is scrutinized and validated. On average, the college uses 16,515 L/day of water, including for staff 1035 L/day and for students 14670 L/day.

There are following water storage tanks within the campus:

Sr. no	Tank	Number	Storage Capacity (Liters)
1	Cement tank	2	10000
3	Plastic tank	1	5000


DRINKING
WATER


DRINKING
WATER

The total water required on the campus is shown below:

Sr. No.	Particulars	Total population	Required Water Supply (lpcd)	Water Requirement (lpcd)
1.	College Staff (Teaching and Non-Teaching	23	45	1035
2.	College Students (Girls and Boys)	359	45	16155
3.	Floating Population	20	45	900
	Total	402	-	18,090

Note: The water requirement is calculated as per Rule of World health Organisation (WHO)

b. QUALITY OF WATER IN CAMPUS

As the college has major one types of water sources ground (Borewell) and Municipal waste water (by tap). The water is used for toilets, gardening and drinking purpose. The water is treated with purifying system and then it is made available for drinking. Following table shows the potable water testing result.

Sr. No.	Parameters	Result for Borewell	Result for Municipal Waste water	Acceptable Limit as per IS 10500 : 2012	Units
1	Color	1.0	2.1	5	Hazen unit
2	Odour	Agreeable	Agreeable	Agreeable	-
3	pH	7.54	7.68	6.5-8.5	-
4	Turbidity	0.5	0.6	1	N.T.U
5	Total Dissolved Solids	289	153	500	mg/lit

6	Calcium	48	27	75	mg/lit
7	Chloride	189	191	250	mg/lit
9	Iron	< 0.05	< 0.05	0.3	mg/lit
10	Magnesium	19	14	30	mg/lit
11	Nitrate	26	30	45	mg/lit
12	Sulphate	96	72	200	mg/lit
13	Alkalinity	157	103	200	mg/lit
14	Total Hardness	289	191	200	mg/lit
15	E. Coli	Absent	Absent	Should be Absent	/ 100 ml
16	Total Coliform	Absent	Absent	Should be Absent	/ 100 ml

c. RAINWATER HARVESTING POTENTIAL

The campus buildings possess large terrace areas and non-paved. Currently, the buildings have Rain Water Harvesting (RWH) System implemented. The campus has a potential for RWH but due to moderate average rainfall the college needs to large storage capacity in the campus. Both underground reservoirs and municipal water source are the main source of water on the college campus. Rain water fall on the college campus buildings is harvested by using well injection system and can help during driest month of the year.

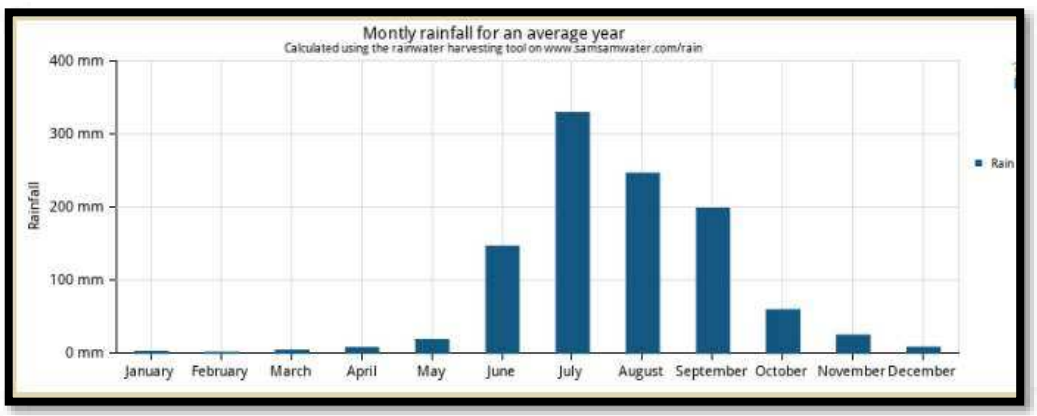


Fig. Rainfall of the city

Sr. No.	Building Name	Roof Top Area (Sq.m.)	Runoff Coefficient	Rain water Harvested Liters/day
1.	College Building	1052.1	0.7	2091

(Note : If the total annual rainfall is 1037mm)

The total amount of water that can be collected from this roof is not enough to fulfil the total water demand. However, it might still be worthwhile to construct a rainwater harvesting system. With a storage reservoir of **420600 litres** (420.6 m^2) a rainwater harvesting system could provide 2092 litres of water per day, which is 12% of the total demand. The water demand is 18090 litres per day, which equals to about 542700 litres per month. The total water demand is 6602900 litres (6602.85 m^2) per year. The amount of water that can be collected from the roof (763m^2) is less than the water demand (6602.85 m^2). Only a part of the water demand can be fulfilled using a rainwater.

d. WASTE WATER MANAGEMENT

Based on statistics on water usage and the fact that around 80% of the water provided is converted to waste water via washrooms, and other ways, the campus created approximately 14472 liters of waste water every day.

As the college has only Management department so there is no use of any chemicals in the laboratory. This reduces the generation of waste water containing high amount of chemicals. The waste water generated from the college is has the only source of toilets facilities, cleaning and canteen area. The drainage is directly connected to municipal sewers and the waste water is disposed directly.

7. SOLID WASTE QUANTIFICATION AND MANAGEMENT

Solid wastes could be garbage or discarded substances and objects gotten from industrial, commercial, mining, agricultural, general day to day activities, and a comprehensive list of such items can be found. Most of the commonly known discarded wastes which make up the day-to-day items being disposed by the general public are known as municipal solid wastes (MSWs), and it includes all substances or objects thrown away as products of packaging, lawn cuttings, furniture, clothing materials, bottles/glasses, food scraps, electric appliances, newspapers, paint, and batteries, etc

a. QUANTIFICATION OF WASTE GENERATED ON CAMPUS

This indicator considers the creation and disposal of a variety of wastes, including paper, food, plastic, biodegradables, construction, glass, dust, and other materials, as well as recycling. Furthermore, solid waste often contains wasted material resources that may be better utilized through recycling, repair, and reuse. Solid waste generation and management is a hot problem. Solid waste management that isn't based on science can put everyone in risk. The survey sought information on the volume, kind, and current management of solid waste generated on campus. Various solid wastes were collected, as previously stated.

b. AGGREGGATION OF WASTE

- For the collection of waste, separate dust bins are kept. Garbage is collected into dust bins and disposed to Municipal Corporation (Ghanta Gadi).

Fig. Type of Dustbins used

c. VERMICOMPOSTING

The college campus, has established one vermi compost units with a capacity of about up to 200 Kg of organic waste processing per batch. After two to three months vermi compost is removed and used for college campus plants

d. E-WASTE QUANTIFICATION AND MANAGEMENT

Consumer and corporate electronic equipment that is nearing or at the end of its useful life is referred to as e-waste. Electronic components contain cadmium, lead, mercury, and polychlorinated biphenyls (PCBs), which can harm human health and the environment.

They account for around 5% of all municipal solid trash globally, although they are far more harmful than other garbage.

Tubelights, CFLs, and LEDs are among the E-waste items that are kept at the college's scrap yard. Such E-waste generated is sepeartly handed to Ghanta Gadi . The amount of e-waste created on campus is quite little. The Electronic devices are frequently changed within few years and the old equipments are given to nearby schools within the institution.

8. ENVIRONMENTAL QUALITY AUDIT

Environmental auditing is a type of environmental management tool that assesses the environmental impact of various operations against a set of criteria or standards. There are several sorts of environmental audits depending on the types of criteria and the audit's emphasis. Environmental issues are increasingly recognized as important by all types of organizations, and they realize that their environmental performance will be scrutinized by a wide variety of interested parties.

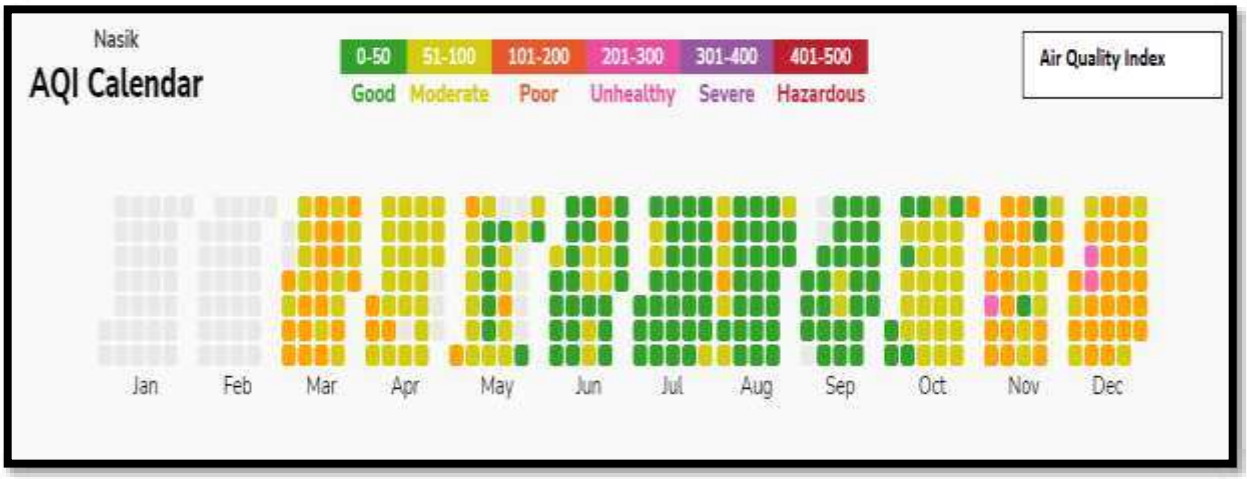
a. AIR QUALITY

The health of the students, instructors, and staff at the academic institute is dependent on the air quality. Windstorms, pollen grains, natural dust, traffic emissions, generators, fires, and laboratory smells, among other things, are all causes of air pollution on the college campus.

Following is the Meteorological data of Environmental Factors:

Sr. No.	Parameter	Result	NAAQS 2009	Unit
1	Average Wind	15	-	Km/h
2	Wind Direction	W-E	-	-
3	Relative Humidity	1014	-	mb
4	Temperature	33^{o}C	-	^{o}C
5	Sulphur Dioxide	2	80	µg/m^3
6	Nitrogen Dioxide	9	80	µg/m^3
7	Carbon Monoxide	1.7	4	mg/ m^3
8	Particulate matter < 10 µm	134	100	µg/m^3

9	Particulate matter < 2.5 µm	50	60	µg/m^3
10	Ozone	20	180	µg/m^3



b. NOISE LEVEL

Noise pollution is one of India's most serious environmental problems, yet most of us are ignorant of the dangers it poses. In India, we are all exposed to loud noises for long periods of time on a daily basis as well as during the year during festival seasons such as Ganesh Festival, Diwali, and others.

On a regular basis, unwelcome noises such as honking, other traffic noise, loudspeakers, and, of course, domestic noise such as television and music system sounds are unavoidable. In our nation, there is a widespread belief that happiness can only be communicated via making loud noises.

Sr. NO.	Location	Min Noise Level dB (A)	Max Noise Level dB (A)	Noise Standards dB (A)*
1.	Main Building	56	69	50
2.	Staff room	52	62	50
3.	College Canteen	69	82	50
4.	Lecture Hall Building ground floor	58	63	50
5.	Lecture Hall Building First floor	57	65	50

6.	Gate	86	89	50

As the location of College is near to one of the main road of Nasik city, also there is 4 way crossing at the main gate of college, the college has very much noise disturbance. The vehical honking is the major source of noise pollution near the college. The campus has been declared as Silent Zone and the students have been instructed with the help of boards of silence zone. An instruction has been given to students to operate mobile phones in silent mode, especially at the library and auditorium hall.

c. GREEN BELT ANALYSIS

Any area with grass, trees, or horticulture is considered a green area. Tree canopy analysis is effective for estimating the amount of green cover in a specific area. The covering generated by the branches and crown of plants or trees is known as canopy cover (green cover). The proportion of a specified area of the ground covered by tree crowns is referred to as green cover. According to the National Mission for Green India (GIM), one of eight missions under the National Action Plan on Climate Change (NAPCC), and previous national forest policy, 33 percent of total accessible land should be covered by vegetation. It will help in the reduction of greenhouse gas emissions because plants and trees are the best carbon sinks.

Trees are not only important, but they are also essential for survival. They produce oxygen, filter CO2, prevent soil erosion, and maintain ecological equilibrium, among other things. They also give us with food, housing, and a variety of other necessities. The tree selection is critical while plating trees on campus. Increased canopy coverage from trees helps to reduce the urban heat island effect. Pedestrians will benefit from the shade provided by trees, which will provide relief from the heat. They will also provide shade to surrounding buildings, decreasing the need for air conditioning.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Oleander
Nerium oleander

9. OTHER ACTIVITY

SEPARATE TOILET FACILITY:

SANITARY NAPKIN MACHINE :

Fire Extinguisher:

- **First Aid Box:**

6.0 Conclusion and Recommendations

The Green Audit of MVP's Institute of Managament Research and Technology, Nashik is conducted in Academic year 2020- 2021. The process of discovering and determining if an institution's operations are environmentally friendly and sustainable is known as green audits. The key objective of the college's green audit is to evaluate the college's green initiatives and execute a well-structured audit to determine at which we stand on a grade of environmental sanity.

6.1 Conclusion

During the process of green audit and from observations some of the conclusions are made as follows:

1. College building is under construction at this stage. College takes efforts to dispose majority waste by following recycling and reuse practices.
2. Sufficient Water supply to the college comes from the well or by corporation tap. Roof top rainwater harvesting technology will be used for water conservation.
3. Toilets and bathrooms are new and without any leakages.
4. Toilets and bathrooms wastewater is sent to corporation.
5. Air quality on the campus is found satisfactory.
6.. Plastic waste, paper waste as well as glass waste is disposed properly. Ghantagadi facility is being used when necessary.
8. No hazardous waste is generated in the college because it runs courses comes under Arts and Commerce stream. E waste is also insignificant as there are no major uses of the laboratories and equipments. E-waste segregation, handling and disposal are properly done.
9. Sufficient ventilation is available in the college building, in classrooms, in staffrooms, in library, in seminar hall and many more. Electricity is minimized by using LED lights and solar panel for campus and street lights. These practices help in energy conservation and functioning properly.

6.2 Recommendations

Following are some recommendations for improving environment friendly practices within the campus.
1. Using the criteria in the Green Audit document, the college should design environmental guidelines.
2. Drinking water quality is assessed and found that the water is not potable for direct use drinking purpose. College has to take immediate action and install water purification system.
3. Noise pollution control measures should be taken in the building and campus
4. Data on all measured environmental factors should be monitored and recorded on a regular basis, and information should be made available to management.
5. The college should adopt internal procedures to guarantee that it complies with environmental standards, and responsibility for implementing them into action should be appointed.