

CERTIFICATE OF COMPLETION

This is to certify that

Sri Chintalapati Varaprasada Murthy Raju
Government Degree College

has successfully completed
ENVIRONMENTAL AUDIT
(WATER & WASTE MANAGEMENT)

The study was completed by Rekhapalli Environmental Solutions &
Technologies Pvt Ltd



Dr Rekhapalli Srinivasa Rao

Green, Eco & Energy Lead Auditor
Certified ISO-14001 Auditor



Issued by

Rekhapalli Environmental Solutions & Technologies Pvt Ltd

Aug 2021



Environmental Audit (Water & Waste Management)

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Acknowledgements

REST Pvt Ltd

Dr Rekhapalli Srinivasa Rao
Green, Eco & Energy Lead Auditor
Certified ISO-14001 Auditor

31 August 2021

Environmental Audit (Water & Waste Management)

The REST Pvt Ltd acknowledges with thanks the cooperation extended to our team for completing the study at Sri Chintalapati Varapasada Murthy Raju Government Degree College (SCHVPMR).

The interactions and deliberations with SCHVPMR team were exemplary and the whole exercise was thoroughly a rewarding experience for us. We deeply appreciate the interest, enthusiasm, and commitment of SCHVPMR team towards environmental sustainability.

We are sure that the recommendations presented in this report will be implemented and the SCHVPMR team will be further improve their environmental performance.

Kind regards

Your sincerely



Dr Rekhapalli Srinivasa Rao
Green, Eco & Energy Lead Auditor
Certified ISO-14001 Auditor
REST Pvt Ltd

Executive Summary

The growth of countries across the world is leading to increased consumption of natural resources. There is an urgent need to establish environmental sustainability in every activity we do. In a modern economy, environmental sustainability will play a critical role in the very existence of an organization.

An educational institution is no different. Built environment, especially an educational institution, has a considerable footprint on the environment. Impact on the environment due to energy Consumption, water usage and waste generation in an educational institute is prominent. Therefore, there is an imminent need to reduce the overall environmental footprint of the institution.

As an Institution of higher learning, Sri Chintalapati Varapasada Murthy Raju Government Degree College (SCHVPMR) firmly believes that there is an urgent need to address the environmental challenges and improve their environmental footprint.

True to its belief, SCHVPMR has implemented rainwater harvesting in the campus. Continuing with rainwater harvesting, the college can also investigate the following recommendations:

- **Attain water positive status:** SCHVPMR should focus on capturing the harvested rainwater to substitute freshwater consumption, work on sustainable groundwater beyond the fence and create a framework towards attaining water positive status over a period. Presently, SCHVPMR is consuming nearly 1500 L of fresh water per day. Since metering is not available, the water consumption is calculated rather than measure value. The first step is to increase the water conservation activities in the campus to reduce water consumption at source. The next step is to increase the rainwater harvesting capacity to completely offset the freshwater requirements of the plant. Sri Chintalapati Varapasada Murthy Raju Government Degree College can also explore adopting lakes, desilting of ponds and restoration of water bodies in localities surrounding the campus. Water getting harvested in those structures can offset the freshwater consumption of the college.
- **Install water efficient fixtures:** The best way to conserve water is at the source. Therefore, SCHVPMR will have to install water efficient fixtures to reduce water consumption. Some of the water efficient fixtures are:
 - Waterless urinals
 - Electronic taps (e-taps)
 - Electronic flush urinals (e-flush)
 - Foam taps
 - Spring loaded push taps
 - Low flush cistern
- **Install water flow meters:** Water flow meters are vital in understating the water consumption patterns of the campus. Presently, the water consumption is calculated rather than being

measured. Water flow meters gives an accurate status if water consumption in the campus and from the water consumption values, the roadmap for water conservation activities can be prepared.

- **Segregate waste at source:** SCHVPMR has provided bins for waste collection. SCHVPMR must embark on awareness creation methods to increase the effectiveness of collection and provide more bins for proper waste segregation.

Environmental Audit

SCHVPMR and REST are working together to identify opportunities for improvement in water management, and waste management. This report highlights all the potential proposals for improvement through the audit and analysis of the data provided by SCHVPMR for water consumption and waste management. The report details the process conducted for the analysis such as on ground surveys performed for listing the type of water consumers with consumption per year, types of waste generated and disposal mechanisms.

Submission of Documents

Environmental audit at SCHVPMR was carried out with the help data submitted by SCHVPMR team. SCHVPMR team was responsible for collecting all the necessary data and submitting the relevant documents to REST Pvt Ltd for the study.

Preliminary Study

After the receipt of documents, a desktop review of the data for quality check, followed by preliminary study was carried out by Sustainable Living Inc. In case of discrepancy/inadequacy/non-clarity of data, REST Pvt Ltd team got in touch with the SCHVPMR team for clarification/additional information.

Environmental Audit

Data submitted and collected during the visit was used to assess the water and waste management practices of the campus and finally provide necessary recommendation for environmental improvement.

Note

Environmental audit is based on the data provided by SCHVPMR team. The scope of the study does not include the exclusive verification of various regulatory requirements related to environmental sustainability.

REST Pvt Ltd has the right to recall the study, if it finds (a) major violation in meeting the environmental regulatory requirements by the location and (b) occurrence of major accidents, leading to significant damage to ecology and environment.

Water Conservation

To achieve a water positive status by continuous reduction of freshwater consumption should be the ultimate focus of SCHVPMR. Increased and focused attention should be given to attain water sustainability in future by inculcating the discipline of water conservation.

Fresh water consumption of SCHVPMR college : 1500 L per day

Rainwater harvesting : Carried out for roof area

According to the report, 'Water in India: Situation & Prospects', India is the largest consumer of groundwater in the world with an estimated usage of 230 km³ per year. Approximately 60 per cent of the demand from agriculture and irrigation, and about 80 per cent of the domestic water demand, is met through groundwater. As per the Department of Drinking Water and Sanitation nearly 90 per cent of the rural water supply is from groundwater sources. This has led to an increased pressure on aquifers and the resulting hydrological imbalance.

Recommendations for water conservation

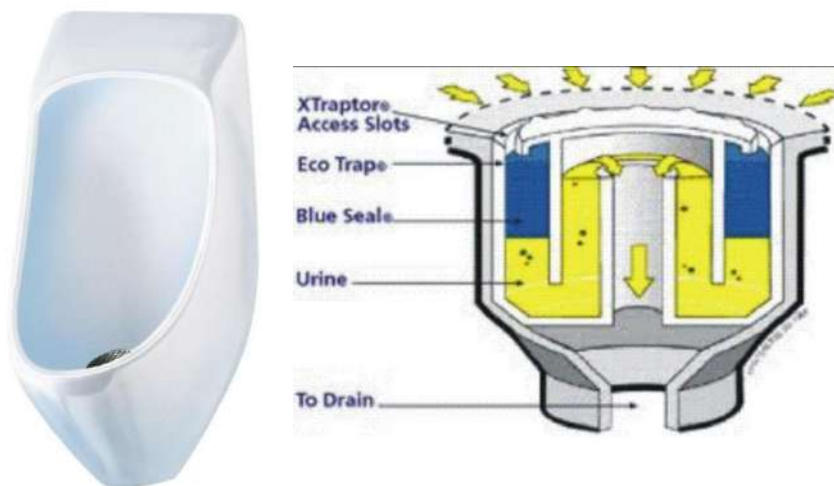
1) Waterless urinals: Waterless urinals look like regular urinals without a pipe for water intake. Men use them normally, but the urinals don't flush. Instead, they drain by gravity. Their outflow pipes conduits to a building's conventional plumbing system. In other words, unlike a composting toilet, which leaves you to deal with your waste, these urinals send the urine to a water treatment plant.

a. Urine flows into the drain insert of the EcoTrap.

b. Inside of the EcoTrap the urine moves through a floating layer of proprietary immiscible Blue Seal liquid, which creates a barrier, preventing sewer gases and urine odours from entering the restroom area.

c. The urine below the Blue Seal barrier overflows into the central tube and travels down into the drain line.

Waterless Urinal



d. Approximately 1500 sanitary uses are possible with just 3 ounces of BlueSeal. When the BlueSeal liquid is gone, it is simply replenished. This only takes about 20 seconds to perform and the EcoTrap is not touched.

e. Urine sediments are retained within the EcoTrap. Replacement is easy and need only be done 2 to 4 times per year depending on traffic to the urinal. As tool called the X-Traptor must be used to remove the EcoTrap. The use of the special tool helps to minimize vandalism. The entire process of replacement only takes 3 to 4 minutes.



Waterless urinals are available for women. Indian manufacturers are supplying waterless urinals technology. Ekameco is one such company providing solution for women waterless urinals. You may visit www.ekameco.com and mail info@ekameco.com for more details on waterless urinals for women.

2) Volume reduction in flush tanks: One simple method is to add a one-liter equivalent water bottle in the flush tank thereby reducing its consumption majorly. One-liter savings in the tank will help to save approximately by 20% and doesn't require any investment.



3) Rainwater harvesting: Water harvesting or more precisely rainwater harvesting is the technique of collection and storage of rainwater at surface or in subsurface aquifer, before it is lost as surface run off. In artificial recharge, the ground water reservoirs are recharged at a rate higher than natural conditions of replenishment. According to a report by the Central Groundwater Board published in 2007, the selection of a suitable technique for artificial recharge of ground water depends on various factors. They include:

- a) Quantum of non-committed surface runoff available
- b) Rainfall pattern
- c) Land use and vegetation
- c) Topography and terrain profile
- d) Soil type and soil depth
- e) Thickness of weathered / granular zones
- f) Hydrological and hydrogeological characteristics
- g) Socio-economic conditions and infrastructural facilities available
- h) Environmental and ecological impacts of artificial recharge scheme proposed

Rainwater Harvesting Techniques in Urban Area

In urban areas rainwater is available from roof tops of buildings, paved and unpaved areas. This water could be stored and used to replace freshwater as well as used for recharging the aquifer.



4) Display water balance/conservation status at entrance of all blocks for overall involvement of all students & staff.

It is suggested to display specific water consumption numbers in terms of domestic use at the entrance of each blocks to create awareness among all students and stakeholders visiting the facility. This daily/continuous awareness creation will ultimately help in reduction of water consumption by students.

Water Saving Gadgets

It is suggested to display specific water consumption numbers in terms of domestic use at the entrance of each block to create awareness among all students and stakeholders visiting the facility. This

Electronic Taps (e-taps)

The latest trend in industries is to install electronic taps (e-taps). The advantages of using e-taps are as mentioned below:

- Unlike conventional taps, there is no twisting or turning in e-taps. They have a sensor, which cuts off water supply completely when not in use. This helps in saving up to 70% water during hand wash.

E-taps enable hands free operation. No fear of cross contamination or contact with germs. E taps score very high on hygiene. It is the most ideal choice for multipurpose and multi-user washrooms.

- E-taps can work efficiently up to raw water TDS of 1,800 ppm.

The touch free electronic taps, available in AC and DC models consume minimal power only. The AC model has an efficient battery back-up, while the DC model runs on just 4 alkaline batteries.



Hand wash

Foam taps

Conventional taps are used in the hand wash areas which results in wastage of large quantities of fresh water. Foam taps are a better fit in these high consumption areas. They consume 25-30% less water than conventional taps.

Foam taps



Spring loaded Push taps

Spring loaded push type tap is an alternate device for minimizing hand wash water. The spring-loaded push taps operate with the simple mechanism of pressing the knob for water. The knob is automatically released back to close position in 5-7 seconds. This saves about 30-40% of water compared to the conventional taps.

Spring loaded push taps



Low flush cistern

The latest model closets are water efficient and operate in dual mode, with a single flush releasing 2 litres of water and the dual flush releasing 4 litres per flush. This results in excellent water savings.

Low flush cisterns



Install water flow meter:

Water flow meters are vital in understating the water consumption patterns of the campus. Presently, the water consumption is calculated rather than being measured. Water flow meters gives an accurate status if water consumption in the campus and from the water consumption values, the roadmap for water conservation activities can be prepared.

Water Meters would have many advantages:

- Encourage water conservation - important given strain on water resources
- Encourage allocatively efficient distribution. People would consume to where the marginal cost = marginal utility
- In long term lower overall water consumption would reduce leading to even lower water bills.



Waste Management

India has drawn world's attention with its high paced urbanization and industrialization. Over the last decade, India has emerged as the fastest growing country with rapid economic growth. A renewed focus on sustainable growth and development is imperative as India strives to maintain its high GDP growth rate in its pursuit of achieving developed country status by the year 2022. However, the flip side of higher economic growth has resulted in increased consumption of the natural resources, increased waste generation and hence ecological degradation.

Present status: has initiated waste management activities inside its facility. Separate bins have been provided for different types of wastes. Waste bins are provided throughout the campus and students are being urged to use the bins effectively.

Recommendation: The waste management yard must be maintained in a similar fashion as that of a raw material storage room. Therefore, a total revamp of the waste storage yard is to be carried out. By doing so, the quality of the materials stored in the yard will not deteriorate and can be used as a raw material for a subsequent process.

Enhance awareness creation, training and capacity building

SCHVPMR should focus on implementing sustainable waste management practices. SCHVPMR should regularly interact with Pollution Control Board and TSDF operators to enhance knowledge on waste management. The team should also take efforts to communicate the waste management and other policies and activities to all students in the college.

Achieve zero liquid discharge status

SCHVPMR may install a STP to treat and recycle water. The treated water from STP can be used to substitute freshwater by utilizing the treated water in both high end and low-end applications.

Conclusion

Environmental sustainability is a continuous process and there is always a scope for improvement. SCHVPMR has displayed itself as an advocate of environmental sustainability by getting environmental audit carried out. The organization has implemented several initiatives and measures to enhance efficiency and to optimize resource intensity. The journey ahead in the path towards environmental excellence has immense scope for improvement as brought out by this report.

SCHVPMR college needs to focus and work on areas efficiency levels needs to be enhanced. For example: waste management. The observations and suggestions put forth by the report would help the facility in improving its environmental performance and pave way for ecologically sustainable growth.

This report may be taken as a guide and roadmap for achieving higher performance rating in environmental stewardship. As one of the pioneers and leaders SCHVPMR degree college shoulder the task of further 'learning-teaching-learning' to improve, excel, and continue the innovative efforts for success of their students and associates.



सत्यमेव जयते

Certificate



*This is to certify that **S Ch V P M R Government Degree College, Ganapavaram , AP** is now a **Recognized Swachhta Action Plan Institution**. The Institution has successfully formed the Swachhta Action Plan Committee and constituted the working groups Post COVID-19 for **Sanitation & Hygiene, Waste Management, Water Management, Energy Management and Greenery** along with the observation of two environment related days to inculcate in faculty, students and community, the practices of Swachhta and Reduction, Reuse and Recycling of Resources.*

Dr. W G Prasanna Kumar
Chairman

Mahatma Gandhi National Council of Rural Education
Department of Higher Education, Ministry of Human Resource Development
Government of India

5BXMZ4-CE000019

GREEN AUDIT REPORT

(2017-2018)

SCHVPMR GOVERNMENT DEGREE COLLEGE

GANAPAVARAM

v



Acknowledgement

Green Audit Assessment Team thanks the SCHVPMR GOVERNMENT DEGREE COLLEGE for assigning this important work of Green Audit. We appreciate the cooperation extended to our team during the entire process. Our special thanks are due to the Principal and Team of colleagues for giving us necessary inputs to carry out this very vital exercise of Green Audit.

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1. Introduction

The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development. We at SCHVPMR GOVERNMENT DEGREE COLLEGE have taken the initiative to make significant contributions in creating a sustainable eco friendly environment. Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. Green Audit helps us to identify and mitigate the ill effects through a sustained and seamless application of remedial measures identified during the audit, to replenish the environment and make the surrounding conducive for a healthy living. An interdisciplinary board of SCHVPMR GOVERNMENT DEGREE COLLEGE is formed with specific goals towards environmental sustenance in the campus. The total area of the campus is 3.5 acres. SCHVPMR GOVERNMENT DEGREE COLLEGE from its time of establishment to date maintains a well developed play ground with flora and fauna to maintain the ecological balance and also an eye feast to stakeholders.

As a major step towards controlling greenhouse gasses, the Principal of SCHVPMR GOVERNMENT DEGREE COLLEGE encourages NSS students to conduct awareness campaigns on plantation under the "JanmaBhoomi" program, a plantation drive initiated by the Govt. of Andhra Pradesh State. Under the audit process the II&III B.Sc. Life Sciences group students and Botany faculty members participated in surveying the plant species in the campus.

2. Objectives of the Study

1. To introduce and aware students to real concerns of the environment and its Sustainability.
2. To identify, verify and assess the available resources and their management at the college.
3. To share the findings of the audit among the student, staff and Management

fraternity to increase the awareness of ecological imbalances and their ill effects.

4. To identify avenues to save energy, water resources and effective waste management to reduce losses due to the usage of these resources

GREEN AUDIT COMMITTEE:

NAME	DESIGNATION
Sri. P. Madhu Raju	Convenor, Principal (FAC), SCHVPMR GDC Ganapavaram
Dr. Ramudu Machavarapu	Assistant Professor of Physics (Ad Hoc) NIT AP, Tadepalligudem
Dr.Ch.CHaitanya	Assistant Professor of Botany, GDC(M) Adilabad
Sri. NVNB Srinivas Rao	Lecturer in Chemistry, DRG GDC Tadepalligudem
Dr. V. Sandhya	Lecturer in Zoology, SCHVPMR GDC Ganapavaram

3. Methodology

In order to perform green audit, the methodology included collection of information related to College Building, laboratories, office- based environmental impacts like built-up area, utility bills, energy-saving devices and IT equipment etc. Hence, physical inspection of the campus, observation and review of the documentation, interviewing key persons were carried out. This information needs to be documented and tabulated for arriving at a clear picture of the Institution's annual greenhouse gas emissions and impact of the reduction measures to be undertaken.

Green Audit Process:

- ❖ Teams were formulated with clear instructions and scope of the Audit to collect the data.
- ❖ Documentation of physical evidence based on the verification and valuation of the resources and assets.
- ❖ Analysis of the data to identify the areas of improvement
- ❖ Discussion with subject matter experts and relaying the information to the stakeholders for further analysis and its implementations with action plans to meet

the desired standards.

4. Observations

4.1 Physical Structure

The college campus is spread across 3.6 acres of land on Tadepalligudem road. With a built-up area of 1476 square meters, the college is functioning in its own pucca building with two floors (G+1) and RUSA-supported 2nd floor is under construction. Slab work for the entire floor is completed and three computer labs are already arranged there. There are 9 classrooms for conventional teaching and 2 ICT-enabled classrooms, including one smart room, one Virtual Class room on the 1st floor.

Classrooms	9
Staff rooms	1
Laboratories	6
Seminar Hall	1
Library	1
Administrative Office	1
Principal's Office	1
Washrooms	10

4.2 Water Use and Management

The study observed that Municipal connection is the major source of water in college. Water is used for drinking purposes, toilets and gardening. There is one RO plant on the premises that caters to the drinking water requirements. The waste water from the RO plants is redirected for cleaning purposes, watering plants and sometimes the open ground to prevent dust from infiltrating into the air. During the survey, no loss of water is observed, neither by any leakages, or by over flow of water from overhead tanks. On an average the total use of water in the college is 1500 L/day, which include domestic, gardening and drinking purposes. One rain water harvesting unit is also functional for recharging ground water level.

Water Conservation Strategies:

- Water consumption in laboratories is minimized by closing the main valves to avoid any kind of leakage.
- Used organic solvents after physical experimentation are not let into the drains; they are recovered and reused for cleaning.
- Organic compounds prepared in the chemistry lab by BSC students are bottled and issued during the subsequent semester for organic compound analysis.

4.3 Energy Use and Conservation

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

Energy source utilized by the campus is electricity only. Total average energy consumption is determined as 1063 KWH/month. The entire campus including common facility centers are equipped with tube lights and bulbs. Campus administration runs a switch-off drill on a regular basis.

Annexure: 1

S.No	ITEMS/ Equipments	Numbers
1	Tubes & Bulbs	65
2	Fan	104
3	LED Bulbs	nil
4	Air Conditioners	3

5	Projector	1
6	Computers	94
7	Printers	9
8	Other Electrical equipments/ gadgets	
	i. Fridge	3
	ii. Oven	nil
	iii. Freezer	nil
	iv. Amplifier	nil
	v. Microwave	0
	vi. Geyser	0
	vii. LCD/Television	6
	viii. Ice cube maker	0
	ix. Ro plant	1
	x. Water cooler	2
	xi. Cyclostyling Machine	0
	xii. UPS	1
	xiii. CC TV SYSTEM	1
	Total: Other Electrical equipments/ gadgets	8

Transportation is a necessary evil in our society. The institute does not have any self owned buses. The teaching staff, students and members of the office and support staff use their own or public transport for commuting to the college from their respective places of residence. Students staying close by are encouraged to walk or cycle to the institute. Approximately 60% students avail the Government provided bus services to commute to the college at a concessional rate. The office and the staff and students observe no vehicle day on every second Tuesday to promote a clean and green environment.

4.4 Waste Generation and disposal

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass, dust etc. and recycling. Waste generation

from tree droppings is a major solid waste generated in the campus. These dried leaves were collected and placed in compost pits for compost preparation. The waste is segregated at the source by providing separate dustbins for Biodegradable and Plastic waste.

Single sided used papers reused for writing and printing in all departments and recently both side printing is carried out as per requirements. Very less plastic waste is generated by the department, office, garden etc. Metal waste and wooden waste is stored and given to authorized scrap agents for further processing.

The solid waste is collected by the municipal corporation and disposed of by their methods. E-waste generated in the campus is very less in quantity. Administration conducts the awareness programs regarding E-waste Management with the help of various departments. The E-waste and defective item from the computer laboratory is being stored properly. The institution has decided to contact approved E-waste management and disposal facilities in order to dispose of E-waste in a scientific manner.

4.5 Green Area

This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. Various tree plantation programs are being organized at the college campus with the help of NSS (National Service Scheme) unit, Department of Botany and the Eco Club. This program helps in encouraging an eco-friendly environment which provides pure oxygen within the institute and awareness among villagers.

Annexure: 2 FLORA

Plants type	Total Nos
Trees	40
Shrubs	20
Climbers	nil
Total	100

Annexure: 3 Water Management in the College

Sources of Water in the College:	Municipal, Tank water Supply
Storage Facility	Sump facility

Annexure:4 Transportation management

Particulars	Own Transport	Public Transport	By walk	Total
Number of students	15	220	100	335
Number of Teaching & non teaching staff	18	3	3	24
Total	33	223	103	359

Annexure:5 Waste management

Type of Waste	
Dry Waste	2-3 kgs
Wet Waste	1-2 kgs per day
Plastic Waste	1.5kgs per day
E waste	>1kg per day
Total	≤ 8 kgs per day

5.Recommendations

- To dig one more compost pit in the campus
- To encourage eco-friendly dustbins.
- To grow herbs that are medicinally important and also purify the air
- To establish a solar panel on the campus

6. Conclusions

Considering the fact that the institution is located in the mandal headquarters, there is significant environmental awareness for both faculty and students. The environmental awareness initiatives are substantial. Besides, environmental awareness programmes initiated by the administration shows how the campus is going green. Few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. Also installation of a Solar Panel (renewable energy source) would minimize the energy consumption, this may lead to the prosperous future in the context of Green Campus & thus

sustainable environment and community development.

Annexure 6: List of plants growing in College premises.

Name of the Tree	Scientific Name of the Tree	Family
Jackfruit	<i>Artocarpus heterophyllus</i>	Moraceae
Neem tree	<i>Azadirachta indica</i>	Meliaceae
Palmyra palm	<i>Borassus flabellifer</i>	Arecaceae
Garden red sandal	<i>pterocarpus santalinus</i>	Santalaceae
Carrot grass	<i>Parthenium hysterophorus</i>	Asteraceae
Areca plam	<i>Dypsis lutescens</i>	Arecaceae
Ice cream bean	<i>Inga edulis</i>	Fabaceae
Tamarind pulp	<i>Dialium indum</i>	Fabaceae
White goose foot	<i>Chenopodium album</i>	Amaranthaceae
Blackboard tree	<i>Alstonia scholaris</i>	Apocynaceae
Red wisteria	<i>Sesbania grandiflora</i>	Fabaceae
French broom	<i>Genista monspessulara</i>	Fabaceae
Jurema preta	<i>Mimosa tenuiflora</i>	Fabaceae
Monkey bread	<i>piliostigma thonnigii</i>	Fabaceae
River red gum	<i>Eucalyptus camaldulensis</i>	Myrtaceae
Black Siris	<i>Albizia odoratissima</i>	Fabaceae
Perfume tree	<i>Cananga odorata</i>	Annonaceae
Argentina mosquito tree	<i>Proposis alba thornless</i>	Fabaceae
Syrian oregano	<i>Origanum syriacum</i>	Lamiaceae

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GREEN AUDIT REPORT

(2018-2019)

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Laboratories	6
Seminar Hall	1
Library	1
Administrative Office	1
Principal's Office	1
Washrooms	10

4.2 Water Use and Management

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Water Conservation Strategies:

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Energy source utilized by the campus is electricity only. Total average energy consumption is determined as 6735 KWH/month. The entire campus including common facility centers are equipped with tube lights and bulbs. Campus administration runs a switch-off drill on a regular basis.

Annexure: 1

S.No	ITEMS/ Equipments	Numbers
1	Tubes & Bulbs	65
2	Fan	104
3	LED Bulbs	nil
4	Air Conditioners	3

5	Projector	1
6	Computers	94
7	Printers	9
8	Other Electrical equipments/ gadgets	
	i. Fridge	3
	ii. Oven	nil
	iii. Freezer	nil
	iv. Amplifier	nil
	v. Microwave	0
	vi. Geyser	0
	vii. LCD/Television	6
	viii. Ice cube maker	0
	ix. Ro plant	1
	x. Water cooler	2
	xi. Cyclostyling Machine	0
	xii. UPS	1
	xiii. CCTV SYSTEM	1
	Total: Other Electrical equipments/ gadgets	8

Transportation is a necessary evil in our society. The institute does not have any self owned buses. The teaching staff, students and members of the office and support staff use their own or public transport for commuting to the college from their respective places of residence. Students staying close by are encouraged to walk or cycle to the institute. Approximately 60% students avail the Government provided bus services to commute to the college at a concessional rate. The office and the staff and students observe no vehicle day on every second Tuesday to promote a clean and green environment.

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Single sided used papers reused for writing and printing in all departments and recently both side printing is carried out as per requirements. Very less plastic waste is generated by the department, office, garden etc. Metal waste and wooden waste is stored and given to authorized scrap agents for further processing.

The solid waste is collected by the municipal corporation and disposed of by their methods. E-waste generated in the campus is very less in quantity. Administration conducts the awareness programs regarding E-waste Management with the help of various departments. The E-waste and defective item from the computer laboratory is being stored properly. The institution has decided to contact approved E-waste management and disposal facilities in order to dispose of E-waste in a scientific manner.

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This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards. Various tree plantation programs are being organized at the college campus with the help of NSS (National Service Scheme) unit, Department of Botany and the Eco Club. This program helps in encouraging an eco-friendly environment which provides pure oxygen within the institute and awareness among villagers.

Annexure: 2 FLORA

Plants type	Total Nos
Tree	40
Shrubs	30
Climbers	nil
Total	70

Annexure: 3 Water Management in the College

Sources of Water in the College:	Municipal, Tank water Supply
Storage Facility	Sump facility

Annexure:4 Transportation management

Particulars	Own Transport	Public Transport	By walk	Total
Number of students	15	220	80	315
Number of Teaching & non teaching staff	18	3	3	24
Total	33	223	103	359

Annexure:5 Waste management

Type of Waste	
Dry Waste	2-3 kgs
Wet Waste	1-2 kgs per day
Plastic Waste	1.5kgs per day
E waste	>1kg per day
Total	≤ 8 kgs per day

5.Recommendations

- To dig one more compost pit in the campus
- To encourage eco-friendly dustbins.
- To grow herbs that are medicinally important and also purify the air
- To establish a solar panel on the campus

6. Conclusions

Considering the fact that the institution is located in the mandal headquarters, there is significant environmental awareness for both faculty and students. The environmental awareness initiatives are substantial. Besides, environmental awareness programmes initiated by the administration shows how the campus is going green. Few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. Also installation of a Solar Panel (renewable energy source) would minimize the energy consumption, this may lead to a prosperous future in the context of Green Campus & thus

sustainable environment and community development.

Annexure 6: List of plants growing in College premises.

Name of the Tree	Scientific Name of the Tree	Family
Jackfruit	<i>Artocarpus heterophyllus</i>	Moraceae
Neem tree	<i>Azadirachta indica</i>	Meliaceae
Palmyra palm	<i>Borassus flabellifer</i>	Arecaceae
Garden red sandal	<i>pterocarpus santalinus</i>	Santalaceae
Carrot grass	<i>Parthenium hysterophorus</i>	Asteraceae
Areca plam	<i>Dypsis lutescens</i>	Arecaceae
Ice cream bean	<i>Inga edulis</i>	Fabaceae
Tamarind pulp	<i>Dialium indum</i>	Fabaceae
White goose foot	<i>Chenopodium album</i>	Amaranthaceae
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Argentina mosquito tree	<i>Proposis alba thornless</i>	Fabaceae
Syrian oregano	<i>Origanum syriacum</i>	Lamiaceae

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GREEN AUDIT REPORT

(2019-2020)

SCHVPMR GOVERNMENT DEGREE COLLEGE

GANAPAVARAM

v



Acknowledgement

Green Audit Assessment Team thanks the SCHVPMR GOVERNMENT DEGREE COLLEGE for assigning this important work of Green Audit. We appreciate the cooperation extended to our team during the entire process. Our special thanks are due to the Principal and Team of colleagues for giving us necessary inputs to carry out this very vital exercise of Green Audit.

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1. Introduction

The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green Campus for the institute which will lead for sustainable development. We at SCHVPMR GOVERNMENT DEGREE COLLEGE have taken the initiative to make significant contributions in creating a sustainable eco friendly environment. Green Audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of environmental diversity. The 'Green Audit' aims to analyze environmental practices within and outside the college campus, which will have an impact on the eco-friendly ambience. Green Audit helps us to identify and mitigate the ill effects through a sustained and seamless application of remedial measures identified during the audit, to replenish the environment and make the surrounding conducive for a healthy living. An interdisciplinary board of SCHVPMR GOVERNMENT DEGREE COLLEGE is formed with specific goals towards environmental sustenance in the campus. The total area of the campus is 3.5 acres. SCHVPMR GOVERNMENT DEGREE COLLEGE from its time of establishment to date maintains a well developed play ground with flora and fauna to maintain the ecological balance and also an eye feast to stakeholders.

As a major step towards controlling greenhouse gasses, the Principal of SCHVPMR GOVERNMENT DEGREE COLLEGE encourages NSS students to conduct awareness campaigns on plantation under the "JanmaBhoomi" program, a plantation drive initiated by the Govt. of Andhra Pradesh State. Under the audit process the II&III B.Sc. Life Sciences group students and Botany faculty members actively participated in surveying the plant species in the campus.

2. Objectives of the Study

1. To introduce and aware students to real concerns of the environment and its Sustainability.
2. To identify, verify and assess the available resources and their management at the college.
3. To share the findings of the audit among the student, staff and Management

fraternity to increase the awareness of ecological imbalances and their ill effects.

- To identify avenues to save energy, water resources and effective waste management to reduce losses due to the usage of these resources

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NAME	DESIGNATION
Dr. M. Syambab	Convenor, Principal, SCHVPMR GDC Ganapavaram
Dr. Ramudu Machavarapu	Assistant Professor of Physics (Ad Hoc) NIT AP, Tadepalligudem
Dr.Ch.CHaitanya	Assistant Professor of Botany, SRBGNR(A)Khammam, Telangana
Sri. NVNB Srinivas Rao	Lecturer in Chemistry, DRG GDC Tadepalligudem
Dr. V. Sandhya	Lecturer in Zoology, SCHVPMR GDC Ganapavaram

3. Methodology

In order to perform green audits, the methodology included collection of information related to College Building, laboratories, office- based environmental impacts like built-up area, utility bills, energy-saving devices and IT equipment etc. Hence, physical inspection of the campus, observation and review of the documentation, interviewing key persons were carried out. This information needs to be documented and tabulated for arriving at a clear picture of the Institution's annual greenhouse gas emissions and impact of the reduction measures to be undertaken.

Green Audit Process:

- ❖ Teams were formulated with clear instructions and scope of the Audit to collect the data.
- ❖ Documentation of physical evidence based on the verification and valuation of the resources and assets.
- ❖ Analysis of the data to identify the areas of improvement
- ❖ Discussion with subject matter experts and relaying the information to the stakeholders for further analysis and its implementations with action plans to meet the desired standards.

4. Observations

4.1 Physical Structure

The college campus is spread across 3.6 acres of land on Tadepalligudem road. With a built-up area of 1476 square meters, the college is functioning in its own pucca building with two floors (G+1) and RUSA-supported 2nd floor is under construction. Slab work for the entire floor is completed and three computer labs are already arranged there. There are 9 classrooms for conventional teaching and 2 ICT-enabled classrooms, including one smart room, one Virtual Class room on the 1st floor.

Classrooms	9
Staff rooms	1
Laboratories	6
Seminar Hall	1
Library	1
Administrative Office	1
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4.2 Water Use and Management

The study observed that Municipal connection is the major source of water in college. Water is used for drinking purposes, toilets and gardening. There is one RO plant on the premises that caters to the drinking water requirements. The waste water from the RO plants is redirected for cleaning purposes, watering plants and sometimes the open ground to prevent dust from infiltrating into the air. During the survey, no loss of water is observed, neither by any leakages, or by over flow of water from overhead tanks. On an average the total use of water in the college is 1700 L/day, which include domestic, gardening and drinking purposes. One rain water harvesting unit is also functional for recharging ground water level.

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

Energy source utilized by the campus is electricity only. Total average energy consumption is determined as 1538 KWH/month. The entire campus including common facility centers are equipped with tube lights and bulbs. Campus administration runs a switch-off drill on a regular basis.

Annexure: 1

S.No	ITEMS/ Equipments	Numbers
1	Tubes & Bulbs	65
2	Fan	104
3	LED Bulbs	nil
4	Air Conditioners	3

5	Projector	1
6	Computers	94
7	Printers	9
8	Other Electrical equipments/ gadgets	
	i. Fridge	3
	ii. Oven	nil
	iii. Freezer	nil
	iv. Amplifier	nil
	v. Microwave	0
	vi. Geyser	0
	vii. LCD/Television	6
	viii. Ice cube maker	0
	ix. Ro plant	1
	x. Water cooler	2
	xi. Cyclostyling Machine	0
	xii. UPS	1
	xiii. CCTV SYSTEM	1
	Total: Other Electrical equipments/ gadgets	8

Transportation is a necessary evil in our society. The institute does not have any self owned buses. The teaching staff, students and members of the office and support staff use their own or public transport for commuting to the college from their respective places of residence. Students staying close by are encouraged to walk or cycle to the institute. Approximately 60% students avail the Government provided bus services to commute to the college at a concessional rate. The office and the staff and students observe no vehicle day on every second Tuesday to promote a clean and green environment.

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Annexure: 2 FLORA

Plants type	Total Nos
Tree	40
Shrubs	30
Climbers	nil
Total	70

Annexure: 3 Water Management in the College

Sources of Water in the College:	Municipal, Tank water Supply
Storage Facility	Sump facility

Annexure:4 Transportation management

Particulars	Own Transport	Public Transport	By walk	Total
Number of students	35	240	120	395
Number of Teaching & non teaching staff	18	3	3	24
Total	33	223	103	359

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Type of Waste	
Dry Waste	2-3 kgs
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5.Recommendations

- To dig one more compost pit in the campus
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Considering the fact that the institution is located in the mandal headquarters, there is significant environmental awareness for both faculty and students. The environmental awareness initiatives are substantial. Besides, environmental awareness programmes initiated by the administration shows how the campus is going green. Few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. Also installation of a Solar Panel (renewable energy source) would minimize the energy consumption, this may lead to the prosperous future in the context of Green Campus & thus

**GREEN AUDIT REPORT
(2020-2021)**

**SCHVPMR GOVERNMENT DEGREE COLLEGE
GANAPAVARAM**

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Syrian oregano	<i>Origanum syriacum</i>	Lamiaceae



CERTIFICATE

(GREEN, ENERGY & ENVIRONMENT AUDIT)

This is to certify that Environmental, Energy and Green Audit has been conducted at SCHVPMR Government Degree College Ganapavaram by the Green Audit Committee constituted by the Principal of SCHVPMR Government Degree College Ganapavaram. The Committee has verified the Green initiatives carried out by the College and the College has successfully demonstrated knowledge on Energy Conservation, Water Conservation, Biodiversity, Waste Management and Carbon footprint. The Green Audit Committee is pleased to declare the below grades in the following categories for the satisfactory performance of the College, and this certification is valid for one year from August 2017 to July 2018.

Green Initiatives: A

Energy Conservation: B

Environmental Protection: A

Dr. Ramudu Machavarapu
School of Sciences
NIT AP, Tadepalligudem

Dr. Ch. Chaitanya
Dept. of Botany
Govt. Degree College(M),
Adilabad

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Dept. of Chemistry
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Ganapavaram



CERTIFICATE

(GREEN, ENERGY & ENVIRONMENT AUDIT)

This is to certify that Environmental, Energy and Green Audit has been conducted at SCHVPMR Government Degree College Ganapavaram by the Green Audit Committee constituted by the Principal of SCHVPMR Government Degree College Ganapavaram. The Committee has verified the Green initiatives carried out by the College and the College has successfully demonstrated knowledge on Energy Conservation, Water Conservation, Biodiversity, Waste Management and Carbon footprint. The Green Audit Committee is pleased to declare the below grades in the following categories for the satisfactory performance of the College, and this certification is valid for one year from August 2018 to July 2019.

Green Initiatives: A

Energy Conservation: B

Environmental Protection: A

M. Ramudu

Dr. Ramudu Machavarapu
School of Sciences
NIT AP, Tadepalligudem

Chaitanya

Dr. Ch. Chaitanya
Dept. of Botany
SR & BGNR Govt. Arts & Science
College(A), Khammam

NVNB Srinivas Rao

NVNB Srinivas Rao
Dept. of Chemistry
DRG Govt. Degree College,
Tadepalligudem

Sandhya

Dr. V. Sandhya
Dept. of Zoology
SCHVPMR Govt. Degree College,
Ganapavaram



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Green Initiatives: A


Energy Conservation: B

Environmental Protection: A


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