Green Audit Report

JSS College for Women

Saraswathipuram, Mysuru - 570 009, Karnataka, India

http://jsscw.in/

Prepared by

Department of Environmental Engineering
Sri Jayachamarajendra College of Engineering
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Preface

Institutional self-inquiry is a natural and necessary outgrowth of quality of higher education. Concern about environmental degradation and realization of values of the environment are logical consequences of research, teaching and learning process. In its pursuit for improving environmental quality and to maintain a pristine environment for the future generation of students, JSS College for Women, Saraswathipuram, Mysuru has made a self-inquiry on environmental quality of the campus with the following objectives:

- To establish a baseline of existing environmental conditions with focus on natural and physical environment in the institution
- To understand the current practices of sustainability in the institution with regards to - the use of water and energy – green environment – water and waste management – solid waste management, etc
- To promote environmental awareness in the institution through participatory auditing process
- To create a report that documents baseline data of good practices and provide future strategies and action plans towards improving environmental quality in the institution
- To encourage pro-active participation of students and staff of the institution in environmental awareness and sustainable development

This report is prepared by the green audit assessment team of the Department of Environmental Engineering, Sri Jayachamarajendra College of Engineering, JSS Science and Technology University, Mysuru. As there was no standard model for such an environment/green audit for colleges/institutes, the green audit team brainstormed and evolved a questionnaire survey to be filled by the institution (i.e. JSS College for Women, Saraswathipuram, Mysuru) that will help in understanding the activities/initiatives taken up in the institution towards environmental conservation and sustainability. The audit team has made short term and long term suggestions to take environment protection to higher levels and it is hoped that this will receive due attention of the Institution authorities as well as all the stake-holders of the institution.

Green Audit Assessment Team

Dr. B. Manoj Kumar, Professor & Head
Dr. Pushpa Tuppad, Associate Professor
Mr. Chandrashekar B., Assistant Professor
Mrs. Thanushree M. S., Assistant Professor
Dr.Vishishtta Nagaraj, Assistant Professor

Department of Environmental Engineering, SJCE, JSS Science and Technology University, Mysuru – 570 006

Coordinating team of JSS College for Women, Saraswathipuram

Dr. Dr. K. V. Suresha, Principal
Dr. Girish M., Assistant Professor and Head, Department of Microbiology
Dr. Lokeshwari D. M., Assistant Professor and Head, Department of Chemistry
Dr. E. Vijaya Shekhar, Assistant Professor and Head, PG - Chemistry

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CHAPTER- 1

1. INTRODUCTION

1.1 GENERAL

Green audit is the process of assessing the environmental impact of an organization, process, project, product, etc. It involves systematic identification, quantification, recording, analysis and reporting of components of environmental diversity of various establishments. Green audit can be a useful tool for an institution to determine how and where they are using water, energy or other natural resources, how much wastewater and solid waste is being generated; the institution can then consider how to implement changes and make savings by protecting the environment. Green audit can create health consciousness and promote environmental awareness besides enhancing values and ethics in the educational institutions. It provides staff and students a better understanding of Green impact on and off campus. If self-assessment is a natural and necessary for quality education, it could also be stated that institutional assessment is a natural and necessary outgrowth of quality educational institution. Thus, it is imperative that the institutes become proactive in evaluating their own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. It is also necessary to conduct green audit in college campus because staff and students become aware of the green audit process and its advantages, understanding of which will certainly lead to actions and initiatives to save the planet. Nurturing our environment is one of the key characteristics of good citizens of our country. The aim of green audit is to help the institution to set environmental examples for the community and to educate the young learners.

The National Assessment and Accreditation Council (NAAC), New Delhi, which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit report. Without NAAC accreditation, universities and colleges are not eligible for UGC grants, RUSA grants, financial aid, etc. Institutes with top NAAC grades such as 'A++', 'A+' and 'A' are most sought-after

institutes by students and employers alike, as they offer high-quality education. Green Audit is assigned to the Criteria 7 of NAAC.

1.2 STAGES OF GREEN AUDIT

Pre-Audit:

- Plan the audit
- Select the audit team
- Acquire the background information.
- Visit the site

During Audit Process on Site:

- Understand the scope of audit
- Verify/evaluate, both acquired information through questionnaire survey and onsite observations
- Prepare a report of the observations and recommendations

Report Preparation:

- Produce a draft report of the data collected and potential recommendations
- Produce a final report of the observations and the inference with accuracy
- Prepare an action plan to overcome the limitations/challenges
- Distribute the final report to the management
- Keep an internal watch on the action plan

1.3 BENEFITS OF GREEN AUDIT

There are many advantages of effective enforcement of green audit in the institutions/colleges. Green audit

- Helps to shield the environment with more efficient resource management.
- Recognizes the cost saving methods through waste minimization and proper management strategies.
- Points out prevailing and forthcoming complications.

- Authenticates conformity with the implemented laws.
- Empowers the organizations to frame better environmental performance.
- Enhances the alertness for environmental guidelines and duties.
- Imparts environmental education through systematic environmental management approach and improves environmental standards.
- Provides benchmarking for environmental protection initiatives.
- Assures financial savings through a reduction in resource use, development of ownership, personal and social responsibility for the College and its environment
- Results in enhancement of college profile.
- Develops environmental ethics and value systems in youngsters.

On this background it becomes essential to adopt Green Campus initiatives in the institutes leading to the overall sustainable development. Eco-campus focuses on the reduction of contribution to emissions, procure a cost effective and secure supply of energy, encourage and enhance energy use and conservation, promote personal action, reduce the institute's water consumption, reduce wastes to landfill, and integrate environmental considerations into all contracts and services considered to have significant environmental impacts. Target areas included in this green auditing are water, energy, waste, green cover and carbon footprint.

1.4 ABOUT THE INSTITUTE:

JSS College for Women is established in 1970 in the city of Mysuru. The college is situated on a sprawling 7.78 acres (31,484.54 m^2; Table 1) and has excellent infrastructure facilities with well-equipped and spacious classrooms, multimedia facilities, a library, an indoor stadium, canteen and hostels for girls. It has been given permanent affiliation by the University of Mysore in the year 1995-96 and recognised by UGC under Section 12B and 2(F). It has been imparting need-based education in the field of Commerce, Humanities and Science. Campus is wi-fi enabled. College is renowned for the outstanding holistic education with a strong focus on student academic progress and achievements.

Vision:

Empowering Women through Academic Excellence.

Mission:

- To Achieve Social Equality as A Prerequisite for Women's Emancipation.
- To Promote More Cultural Space for Women to Foster a Distinctive Identity of Their Own.
- To Sensitize Women Towards Our Rich Cultural Inheritance.
- To Make Women Globally Competent by Acquiring Good Communication Skill.
- To Develop the College into One of The Top Ten Institutions of Learning in India.

Internal Quality Assurance Cell (IQAC)

JSS College has established IQAC in 2015 as a quality enhancement and sustenance measure in pursuance of NAAC action plan. Primary objective of IQAC is to develop a system which will consciously and consistently work towards catalytic improvement in the overall performance through internalization and institutionalization of quality improvement initiatives.

Accreditation:

The college is reaccredited by NAAC under third cycle at A+ Grade with CGPA of 3.51. It has Gold College Rating awarded by QS- IGUAGE. College has bagged 3rd rank at state level and 21st at National Level among private Autonomous colleges conferred by Education World Magazine, in April 2021. It has ISO9001:2015 award. Further MGNCRE of GoI has recognized this college for social entrepreneurship, Swacchatha and Rural Engagement. This college is a mentor college under UGC Paramarsh scheme and also it is empanelled under UBA.

Table 1: Area coverage of the college

Type	Area, acres (m^2)
Campus area	7.8 (31484.5)
Total plinth area of buildings	4.3 (17401.5)
Total paved area	0.6 (2509.1)
Green tree cover	2.3 (9307.8)

1.5 NAAC GRADING IN ASSESSMENTS

With the privatization, widespread expansion, increased autonomy and introduction of Programmes in new and emerging areas have improved access to higher education in several institutes and colleges. This has also led to widespread concern on the quality and relevance of the higher education. To address these concerns, the National Policy on Education (NPE, 1986) and the Programme of Action (PoA, 1992) spelt out strategic plans for the policies, advocated the establishment of NAAC. The mandate of NAAC as reflected in its vision statement is in making quality assurance an integral part of the functioning of Higher Education Institutions (HEIs).

1.6 CAMPUS INFRASTRUCTURE

Library

The library at JSS College for Women serves the information needs of faculty and students. The library is automated with new genlib software. There is subscription to E-Journals through Inflibnet with N-list memberships for students and staff. Library also has subscription to 117 subject journals and 35 general magazines.

Athletics & Fitness

The campus has multi-gym and both Indoor and Outdoor sport facilities for fitness.

Arts and Culture

The college proudly promotes cultural space for women to foster a distinctive identity of their own and to sensitize women towards our rich cultural inheritance.

Placement

JSS College for Women has a dedicated 'Career Guidance and Placement Cell'. This cell organizes workshops, seminars, and group discussions on relevant topics including but not limited to Career and Personality Development Programs, Campus Interviews, Interview technique program, among others. It acts as an interface between Industries-Institute interactions and co-ordinates industrial/educational visits, training camps arranged by various depts. It helps in the preparation of database of final year students.

NSS and REDCROSS

NSS - Two units of NSS are actively involved in Extension Activities along with moulding the characters of young students. The social development that happens among the NSS volunteers at weekend and annual camp activities is highly appreciable. NSS volunteers actively take part in servicing the general public with particular focus on rural populace. Myriad of activities involving Shramadan, creation of awareness about illiteracy, ill effects of child marriage, ill effects of addiction to liquor and smoking, female foeticide, health and hygiene, gender sensitization, voting rights, Government schemes are effectively carried out off the campus. Besides, free health camps and blood donation camps are also conducted. During the last five years, four annual camps have been conducted at Hadinaru Mole, Bhugathagalli, Lakshmipura-Madegowdana Hundi and Varakodu near Mysuru.

Red Cross - Youth Red Cross (YRC) is actively involved in organizing blood donation camps, visits to old-age homes, distribution of free school bags to primary school students and conducting rallies on health and hygiene. The role of YRC during pandemic has been counselling the students and instilling confidence in students.

CHAPTER -2

2.1 METHODOLOGY OF GREEN AUDITING:

Green audit is a management system tool used methodologically for the protection and conservation of environment and sustainable development. It can be adopted by any industry, organization, and institute and even by housing complex. The green audit is useful to detect and monitor sources of environment pollution and it emphasizes on management of all types of wastes, monitoring of energy consumption, monitoring of quality and quantity of water, monitoring of hazards, safety of stakeholders and the management of disasters (Patil et al., 2019).

The methodology includes three stages: pre-audit, audit and post audit. Pre-audit mainly included obtaining response to the questionnaire survey. Audit stage included review of the responses received through physical inspection of the campus, observations, discussion with the concerned authorities of the Institution. Post audit stage included data analysis and interpretation and proposing recommendations.

2.2 PRE-AUDIT STAGE:

A pre-audit meeting is important to establish the scope and objectives of the audit and the practicalities associated with the audit. As a first step of audit process, preliminary information with respect to initiatives/activities concerning green audit was collected through a questionnaire survey. This questionnaire was categorized into various sections including general information, water management, wastewater management, energy management, solid waste management, green initiatives, carbon footprint, and occupational health and safety.

2.3 AUDIT STAGE

After the response was received for the questionnaire from the college (also referred to as auditee), a visit to the auditee's campus was scheduled. In this regard, the green audit assessment team (referred to as auditing team: Dr. Pushpa Tuppad, Mr. Chandrashekar B., Mrs. Thanushree M. S., and Dr. Vishistta Nagaraj, Department of Environmental Engineering, Sri

Jayachamarajendra College of Engineering, JSS Science and Technology University) visited the campus of JSS College for Women at Saraswathipuram, Mysuru on 22nd December 2021.

The team met the Principal, Dr. Suresha K. V. at 4:00 pm. Actual planning of audit processes and all pertinent sectors were discussed with the Principal and staff-in-charge. Necessary records/documents were collected and verified to clarify the data received through survey and discussions. After the preliminary discussion, the audit team visited the departments, laboratories, solar panels on the roof top, garden/landscape areas, amphi theatre, composting units, hostels, etc for visual observations and verification. Clarifications were sought over phone to collect additional information, wherever applicable. The information on student involvement with respect to green campus activities was collected from the staff in-charge.

Exit Meeting

Discussions were made with the Principal regarding their policies and future plans on environmental management. Green audit assessment team members suggested several measures which will further improve the institution in terms of green campus strategies.

2.4 POST AUDIT STAGE:

Information collected was analysed and interpreted. A comprehensive green audit report was prepared and submitted to the college. On the basis of results of data analysis and observations, measures towards water conservation, wastewater management, solid waste management, energy conservation and health and safety concerns were recommended.

2.5 COMMITMENT OF THE COLLEGE MANAGEMENT

The management of the college has been pro-active in their commitment towards green auditing. They have been encouraging all green activities and willing to support more of such activities towards safeguarding Mother Nature, including awareness programs on the environmental conservation, planting trees on and off the campus, comprehensive rainwater harvesting system, effective wastewater management, solid waste management, etc. The college looks into minutes problems related solid waste by providing separate facilities for leaf litter, kitchen waste and food waste management.

CHAPTER- 3

3.1 STAFF INVOLVED IN GREEN AUDITING:

Following staff of JSS College for Women (Autonomous), Saraswathipuram, Mysuru were involved in Green Auditing under the general supervision of Dr. K.V. Suresha, Principal of the college.

Teaching Staff:

Dr. Dr. K. V. Suresha, Principal
Dr. Girish M., Assistant Professor and Head, Department of Microbiology
Dr. Lokeshwari D. M., Assistant Professor and Head, Department of Chemistry
Dr. E. Vijaya Shekhar, Assistant Professor and Head, PG - Chemistry

Non -Teaching Staff:

Mr. Shivashnakarppa S., Office Superintendent
Mr. K.S. Mohan Kumar, Office Superintendent
Mrs. T.V. Jyothi, SDA
Mrs. Bharathi K.S., SDA
Mr. M Lokesh, Attender
Mr. Veerabhadraswamy, Attender

3.2 KEY FINDINGS AND OBSERVATIONS

3.2.1 WATER

- Main uses of water in the campus: Drinking, Laboratory, Canteen, Garden, Cleaning, Toilets, Bathrooms, Hostel, Washing, Office uses.
- Sources of water: Borewell (95% of total usage) and corporation
- Number of borewells: 03
- Borewell: 150 ft deep, 2.5 inches; yield reduced with time
- No. of motors used for pumping: 05
- Water storage: Overhead tank and underground sump
- Groundwater recharge pits: 3 mini-pits of dimension 1.5m x 1.5m x 1.5m , each

- Number of water taps in staff rooms, common areas and hostels: 55
- Number of water taps and usage in canteen: 10 with 1500 L/d
- Number of water taps in laboratories: 90 with 400 L/d
- Number of water coolers: 02
- Number of RO units: 10
- Number of toilets in staff rooms, common areas and hostels: 25
- Water used for gardening/landscape: ≈ 1,000 L/d
- Water used for cleaning the vehicles of the Institute: ≈ 20 L/d
- Quantity of water used to water the playground: ≈ 5000 L/d
- Total quantity of water used in hostel: 90,000 L/d

Water storage tanks are cleaned once every month. Water distribution system is regularly monitored and maintained. No persistent water leakage has been reported. The staffs are aware that leaking taps should be immediately replaced to avoid wastage of water. Minor leakages are sorted out immediately by the plumber, called for on the need basis.

Rain water:

Scattered mini-rainwater pits (of dimensions 1.5 m x 1.5 m 1.5 m) are implemented at several locations in front yard of the campus premises within well-manicured landscape with lawn. It is ensured that rainwater falling over these lawns gets infiltrated into the ground. Wherever possible, runoff from streets is diverted to these mini-rainwater pits. A mini amphitheatre has a well maintained lawn to soak in falling rainwater.

RO units serve water for drinking purposes. It is suggested to regularly test the RO water quality to ensure its potability. Reject water from RO unit in the garden area is used to water plants and lawn. Sign boards are placed in prominent locations creating awareness on water conservation and its importance. Drip/sprinkler irrigation is adopted to water the garden/landscape. There are water level controllers for overhead tanks, borewells and sumps. The college regularly conducts activities to spread awareness and educate the staff and students on water conservation activities.

Green chemistry initiatives in laboratories

Green chemistry is the design of chemical products and processes that reduce or eliminate the generation of hazardous substances.

Measures taken to avoid the hazardous chemicals in laboratories in the college

- Avoiding the wastage of organic solvents by recovery via distillation and reuse.
- Synthesis of less hazardous chemical.
- Release of excess hydrogen sulphide (H_2S) gas is avoided by bubbling it into distilled water and used again as H_2S water.
- Most of the inorganic concentrated acids are stored in fuming chamber.
- In some of the experiments, dilute form of mineral acids are used instead of concentrated acids.
- Monitoring the chemical reactions in real time as they occur to prevent the formation and release of any potentially hazardous polluting substances.
- Choosing and developing chemicals and procedures which are safer and inherently minimize the chemical accidents.
- Choice of least energy intensive chemical route.
- Preference is given to use of safest solvent for experiments.

3.2.2 WASTEWATER MANAGEMENT

Major sources of wastewater are toilets in academic areas, laboratories, canteen and hostels and laboratory wash basins. There is a provision of toilets for students and staff with special needs. Wastewater generated in the campus is let into underground sewage network system of Mysore City Corporation. No pre-treatment is provided for the wastewater generated in the laboratories. No leakages are reported in the wastewater collection pipelines.

3.2.3 SOLID WASTE MANAGEMENT

- Types of solid waste generated in campus: Paper waste, Laboratory waste, e-waste, Garden waste, Bio-degradable waste.
- Number of collection bins: 27

Campus is plastic free. Approximately, 40 kg of solid waste, excluding food waste, is generated per day. Solid waste generated in campus is segregated at source. A functional compost unit

exists to treat leaf litter and a functional vermi-compost unit exists to treat kitchen waste. Food waste generated, about 80 kg/day, is given away on a daily basis to piggery, free of cost. For the present quantity of food waste generated feasibility of a biogas plant should be worked out. Paper and other non-biodegradable waste is taken off by Mysore City Corporation.

Collection and disposal of e-waste is outsourced to a third party. Students are instructed to follow the guidelines of waste management. Placards on waste management are displayed in the campus. Students are involved continuously in taking up projects and participating in awareness camps for segregating solid wastes across campus under NSS wing.

It is to be noted that as per Central Pollution Control Board (CPCB) Implementation Guidelines for E-Waste (Management) Rules, 2011 and 2016, the college coming under educational institution category, has to maintain records on e-waste generated and should be channelized to registered/authorized collection centres/recycler/dismantler. It is been recommended that the e-waste generated on campus must be collected and outsourced to the Karnataka State Pollution Control Board (KSPCB) authorised collectors. Any hazardous/medical waste generated in campus has to be disposed off as per the Bio-medical Waste Management Rules, 2016 of Central Pollution Control Board.

3.2.4 GREEN INITIATIVES

- Garden area inside the college: 2.334 acres
- The trees and plants species present in the campus include Ashoka, Teak, Palm, Bamboo, Silver oak, Sandal wood, bilva patra tree, rudraksha tree, and many other fruit yielding trees including Mango, Gauva, Coconut, etc.

Scientific names of the plants and trees are displayed for the purpose of education and awareness. Compost produced in-house is used for the garden/landscape. Special lecture programmes are organised by the college to create awareness about the nature. NSS and NCC Students are involved in Swachh Bharat Abhiyaan. Students are involved in sapling plantations, cleaning and watering the gardens. Several nature awareness programs have been conducted. There is an active ‘nature club’ in campus. Connecting with nature is key to understand human

dependence on nature and the need to preserve that precious resource. Environmental day is celebrated with active participation from students and staff.

3.2.5 CARBON FOOTPRINT

- Number of persons using cycles: 80
- Number of persons using four wheelers: Students: 02 Faculty: 10, Visitors: 05
- Number of persons using public transport for commuting to Institute: Students: 550, Faculty: 55, Visitors: 20
- Number of persons using institutional transport facility: Students: Nil, Faculty: Nil, Visitors: Nil

3.2.6 OCCUPATIONAL HEALTH AND SAFETY

It is noted that the institution gives prime importance to health and safety of their students and staff. In order to improve health and safety, the students are advised by the college to follow the following instructions.

General Laboratory Protocols and Basic Rules/Safety Measures/Fire Safety

a. Dos and Don'ts information is displayed at prominent places in each laboratory
b. The laboratory manual includes general safety instructions
c. Safety drills and first aid protocols to be followed in case of emergency are provided to students and staff
d. Fire safety drill is conducted for all faculty and staff
e. Handouts are displayed in each floor and in laboratories
f. Safety drills are conducted for students explaining the measures, precautions and responsibility to be exercised during fire hazards

3.2.7 ENVIRONMENTAL MANAGEMENT PLAN

a. Time management to accommodate environmental management initiatives under NSS programs
b. Convincing the parents about the technical aspects and long run advantages for the students being involved in campus environmental management program
c. Annual expenditure incurred for Environmental Management Plan for the institution is Rs. 61 lakhs.

3.3 BEST PRACTICES

Green audit assessment team takes this opportunity to appreciate the efforts/initiatives taken by JSS College for Women, Saraswathipuram, Mysuru towards environmental conservation and protection. The college has a thoughtfully crafted Clean and Green Campus policy in place. In addition, the college has an exclusive Swachhata Policy (cleanliness Policy) emphasizing on Cleanliness and Hygiene for a Healthy Life. The college has undertaken many significant initiatives and has reaped successful outcomes as far as water conservation, solid waste management, harnessing of solar energy, maintenance of green cover in campus, and active involvement of the students and staff with the able support by the management in spreading awareness of environmental conservation and the message that it is the prime responsibility of every citizen of our country to safeguard our environment. The college is a recognized as 'Social Entrepreneurship, Swachhta & Rural Engagement Cell' Institution. Documents in support of operation and maintenance of facilities/utilities and the picture gallery of various initiatives can be found in Appendices (Appendix 1 to 9) of this report.

3.4 CONCLUSION AND RECOMMENDATIONS

Keeping in view the aims and objectives of green audit in academic institutions, the green audit assessment team conducted the green audit for JSS College for Women, Saraswathipuram, Mysuru, Karnataka, India. The green audit efforts assist the process of identifying the activities taken up by the institute as well as in developing future strategies towards a sustainable environment. The results presented in the green auditing report will serve as a guide for educating the college community on the existing environment related practices and resource usage on campus as well as generate action plan for new activities and innovative practices. A few recommendations are proposed to better manage water and waste using eco-friendly and sound scientific techniques. This may lead to the prosperous future in context of Green Campus and thus sustainable environment and community development.

The green audit report is a very powerful and valuable communication tool to use when working with various stakeholders who need to be convinced that things are running smoothly and systems and procedures are coping with natural changes and modifications that occur. Selected photographs of the team visit are presented in Appendix-9.

Rainwater Harvesting - The college is planning for a comprehensive rainwater harvesting system for the campus. Currently, there are saucer drains existing for all the paved areas but the runoff water carried through these drains are currently being let into storm water drains and further into city storm water drains outside the campus. Based on the existing terrain, available roof tops, and land use, decentralized facilities to store/reuse/recharge harvested rainwater looks to be feasible. Existing defunct underground sump (of dimensions 3.6 m x 5.4 m x 3 m) can be used to store the harvested water. However, this sump needs to be restored with proper masonry work. Keeping all these in view, a comprehensive rainwater harvesting system needs to be worked out.

Suggestion for a Wastewater Treatment Plant in campus - Installing waterless toilets/urinals will certainly reduce the amount of wastewater generated.

In the campus of 5000 people (students and staff) including 1000 hostel inmates, approximately 2.75 lakhs litres of wastewater per day is generated. At present, the wastewater is let into Mysore City Corporation sewer line. The same can be diverted and let into a sewage treatment plant (STP) within the campus and the treated wastewater can be used for secondary purposes such as toilet flushing, gardening/landscaping, vehicle washing, cleaning of common areas, etc. With this, the fresh water used for the above purposes can be saved. Considering the energy and area constraints for erecting the STP, a packaged unit with Sequencing Batch Reactor (SBR) technology followed by tertiary treatment is a good option for the campus.

Common Recommendations

- Establish a purchase policy for environmental friendly materials.
- Conduct more seminars and group discussions for students to enhance environmental education.
- Students and staff should be encouraged to identify and address local environmental problems.
- Establish water, waste and energy management systems.
- Celebrate World Environment Day, World Water Day, World Earth Day, Ozone day and others in an effective way.
- Increase the number of display boards highlighting water and energy conservation.

- Faculty members and senior students could educate the freshers about the location of and how to use all safety and emergency equipment (e.g. eyewash, first-aid kit, fire extinguishers) during orientation/induction program.
- Adopt terrace gardens/vertical gardens to increase the green cover proportion with respect to built-up area and student strength.

3.5 CRITERIA WISE RECOMMENDATIONS

3.5.1 WATER

- At the time of replacement, replace the existing taps with water saving taps.
- Complete the installation of rain water harvesting system and ensure its smooth operation. Use of recharge pits will surely recharge the ground water aquifer.
- Conduct more programs on water conservation at regular interval and ensure active participation of students and staff.
- Install display boards to control over exploitation of water and save water.
- Water the garden judiciously.

3.5.2 ENERGY

- Consider more number of solar street lights and other renewable energy sources.
- Conduct more programs on energy conservation at regular interval and ensure active participation of students and staff.
- Replace computers and TVs with LED monitors.
- Observe a power saving day every year.
- Automatic power switch off systems may be introduced.
- Purchase of energy saving equipment with high energy efficiency star ratings

3.5.3 WASTE

- Ensure total plastic free practice in campus.
- Avoid single use plastics for all functions/ events in the institution.

3.5.4 GREEN CAMPUS

- The motto behind celebrating environment must be a routine practice
- Beautify the college building with indoor plants

- Strengthen the registry of flora on campus
- Provide funds to nature club for making campus more green
- Conduct competitions among departments for making students more interested in taking active part and making the campus green
- Undertake more events to spread awareness of cleanliness and nature conservation in schools nearby as part of the institutional social responsibility
- Conduct awareness activities on environmental conservation for the citizens and school/college children in and around Mysuru
- Sustain the existing herbal/medicinal garden to improve awareness of Indian traditional house remedies for common ailments.

3.5.5 CARBON FOOTPRINT

- Encourage a system of car-pooling among the staff to reduce the number of four wheelers coming to the college.
- Encourage students and staff to use cycles.
- Establish a more efficient cooking system to save gas.
- Discourage the students using two wheelers for their commutation.
- More use of generators every day should be discouraged.

3.6 EXIT MEETING

Site visit by the audit team was concluded by the exit meeting. A general and some specific feedback was given based on the observations made during the day. The initiatives already taken by the institution towards various aspects of environmental management was appreciated. Scope for improvement was identified and discussed with the authorities of the institution.

Acknowledgements

The Audit team from the Department of Environmental Engineering, Sri Jayachamarajendra College of Engineering, JSS Science and Technology University, Mysuru is thankful to the Principal and his team at JSS College for Women, Saraswathipuram, Mysuru for entrusting Green audit services with us. The audit team acknowledges the hospitality, coordination and cooperation provided by the authorities and support staff of JSS College for Women, Saraswathipuram, Mysuru.

References

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- www.naac.gov.in
- cpcb.nic.in
- kspcb.gov.in

Appendix – 1

(a) Water Tank maintenance (sample invoice)

Water Tank cleaning

Narthana Tank Purifiers
#2832, Shree Shankara Narayana Swamy Temple Trust Building,
N.S Road, Chamundipurm, Mysuru - 570004
Ph: 9036686461, GSTIN: 29AJNPP7882M1ZZ

16-17

2/2/21

Tax Invoice

Invoice No:	15					
Invoice date:	30/1/2021					
State: KARNATAKA					Code: 29	

Bill to Party

Name: The Principal, JSS Womens Collage
Address: Saraswathipurm, Mysuru
GSTIN:
State: Karnataka — Code

Cleaning Of Tanks:- Collage Building

Sl. No.	Product Description	HSN code	Capacity in liters	Qty	Total Capacity in liters	Price per Liter in INR	Total
1	OH Tanks Cement	998533		2		800	1,600
2	OH Tanks Plastic	998533		2		450	900
Total				4			2,500
						Add CGST 9%	225
						Add SGST 9%	225
						Total Tax Amount	450
						Grand Total	2,950

Amount In Words

Rupees Two Thousand Nine Hundred and Fifty Only

Account Details :
Name: Narthana Tank Purifiers,
Bank Details: STATE BANK OF INDIA, Chamindipuram Branch.
Account No: 00000039381480040, Type: CA
IFSC Code:SBIN0007346

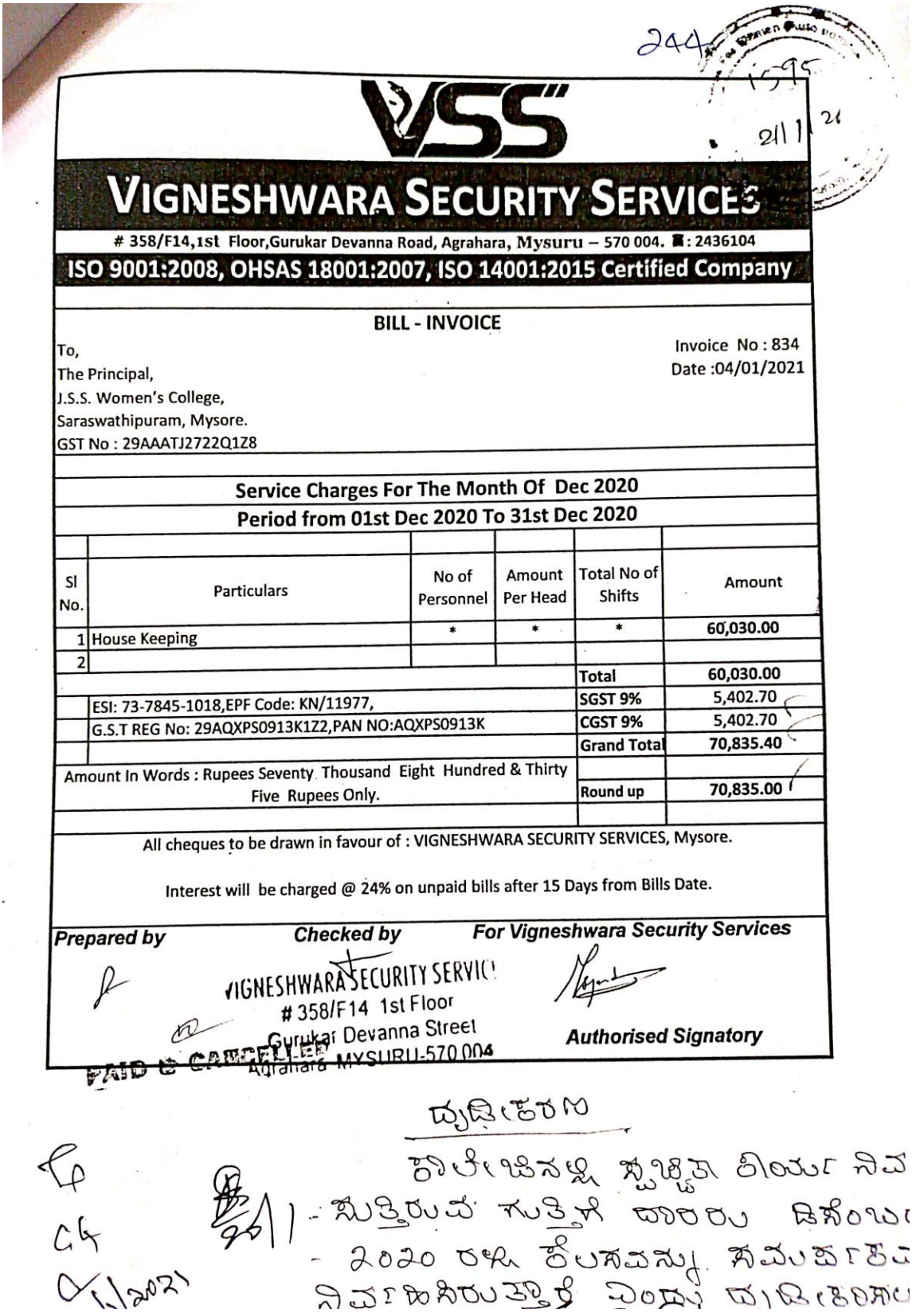
For NARTHANA TANK PURIFIERS
PROPRIETOR
FOR NARTHANA TANK PURIFIERS

ದೃಢೀಕರಣ
ಈ ಬಿಲ್ಲಿನಲ್ಲಿರುವ ಮೊತ್ತವು ಕಾಲೇಜಿನವು
-ರುವ ಬ್ಯಾಂಕಿನಲ್ಲಿನ ಖಾತೆಯಿಂದ ಪಾವತಿಸಿರುವ ಬಗ್ಗೆ
ಎಂದು ದೃಢೀಕರಿಸಲಾಗಿದೆ.

04/2/2021

PRINCIPAL
JSS COLLEGE FOR WOMEN

(b) House keeping (sample invoice)



VSS

VIGNESHWARA SECURITY SERVICES

358/F14,1st Floor,Gurukar Devanna Road, Agrahara, Mysuru – 570 004. ☎: 2436104

ISO 9001:2008, OHSAS 18001:2007, ISO 14001:2015 Certified Company

BILL - INVOICE

To,
The Principal,
J.S.S. Women's College,
Saraswathipuram, Mysore.
GST No : 29AAATJ2722Q1Z8

Invoice No : 834
Date :04/01/2021

Service Charges For The Month Of Dec 2020

Period from 01st Dec 2020 To 31st Dec 2020

Sl No.	Particulars	No of Personnel	Amount Per Head	Total No of Shifts	Amount
1	House Keeping	*	*	*	60,030.00
2					
				Total	60,030.00
	ESI: 73-7845-1018,EPF Code: KN/11977,			SGST 9%	5,402.70
	G.S.T REG No: 29AQXPS0913K1Z2,PAN NO:AQXPS0913K			CGST 9%	5,402.70
				Grand Total	70,835.40
Amount In Words : Rupees Seventy Thousand Eight Hundred & Thirty Five Rupees Only.				Round up	70,835.00

All cheques to be drawn in favour of : VIGNESHWARA SECURITY SERVICES, Mysore.

Interest will be charged @ 24% on unpaid bills after 15 Days from Bills Date.

Prepared by *Checked by* *For Vigneshwara Security Services*

VIGNESHWARA SECURITY SERVICES
358/F14 1st Floor
Gurukar Devanna Street
Agrahara MYSURU-570 004

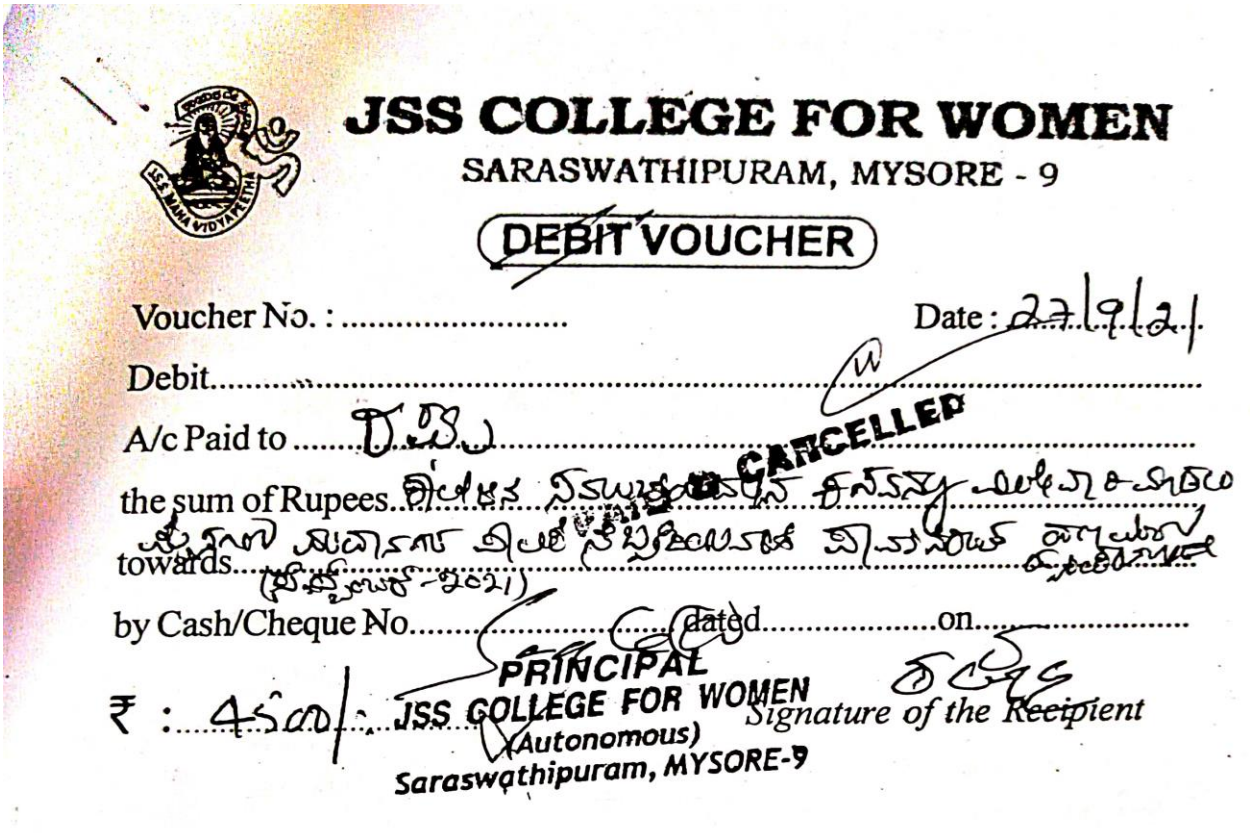
Authorised Signatory

PAID & CANCELLED

ಪ್ರತಿಕ್ರಿಯೆ

ಕಾಲೇಜಿನಲ್ಲಿ ಸ್ವಚ್ಛತೆ ಕಾಯ್ದು ಕೊಳ್ಳುವ ಗುತ್ತಿಗೆ ದಾರರು ಪ್ರತಿ ತಿಂಗಳು
- 2020 ರಲ್ಲಿ ಲೆಕ್ಕಪತ್ರವನ್ನು ಸಮರ್ಪಕವಾಗಿ ನಿರ್ವಹಿಸಿರುತ್ತಾರೆ ಎಂದು ದೃಢೀಕರಿಸಲಾಗಿದೆ

(d) Non-biodegradable dry waste disposal (sample voucher)



JSS COLLEGE FOR WOMEN
SARASWATHIPURAM, MYSORE - 9

DEBIT VOUCHER

Voucher No. : ..... Date : 27/9/21

Debit.....

A/c Paid to .....

CANCELLED

the sum of Rupees.....

towards.....

by Cash/Cheque No.....dated.....on.....

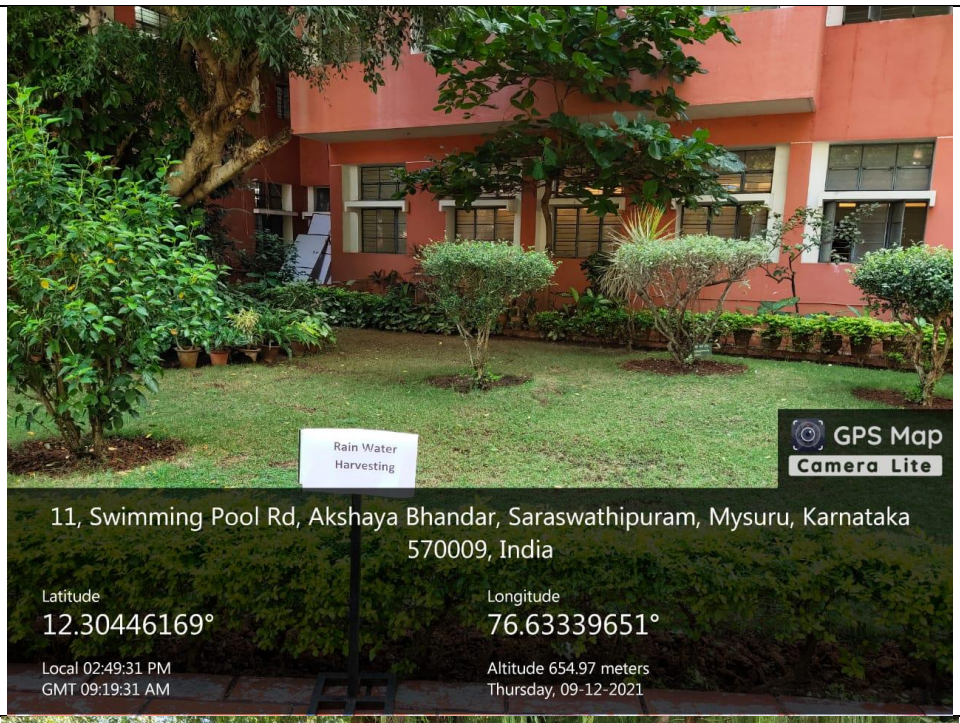
₹ : 4500/-

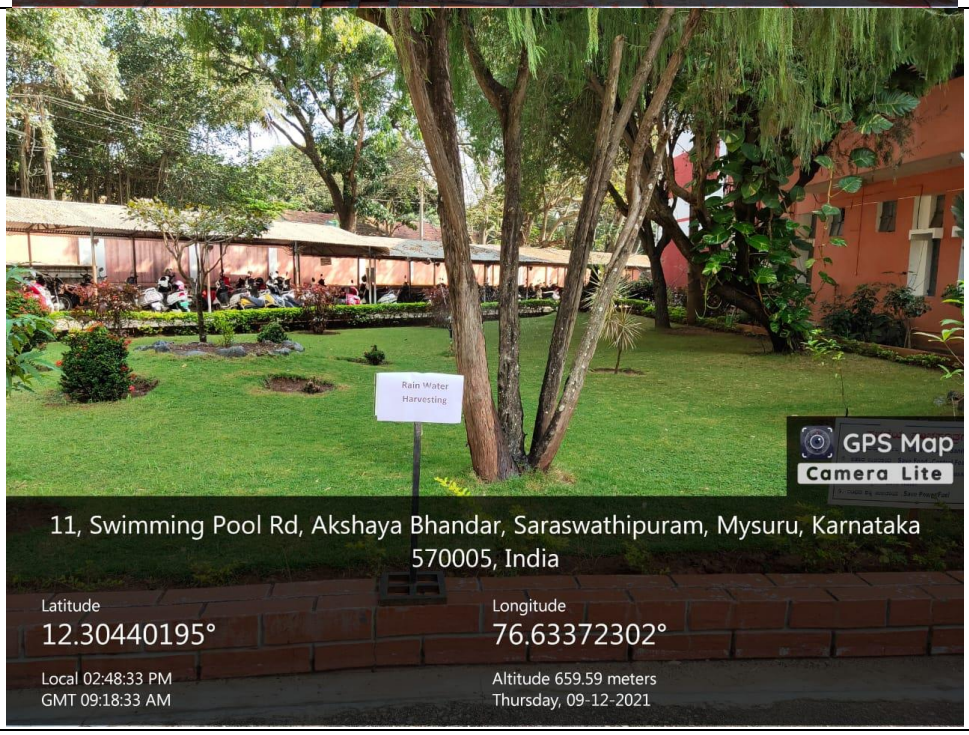
PRINCIPAL
JSS COLLEGE FOR WOMEN
(Autonomous)
Saraswathipuram, MYSORE-9

Signature of the Recipient

Appendix – 2

Photographs of the general observations regarding water conservation initiatives at JSS college for Women, Saraswathipuram, Mysuru.






GPS Map
Camera Lite
11/A, 11/A, Swimming Pool Rd, Marg, Saraswathipuram, Mysuru, Karnataka 570009, India
Latitude
12.30446943°
Longitude
76.63357971°
Local 03:31:55 PM
GMT 10:01:55 AM
Altitude 659.1 meters
Thursday, 09-12-2021

Appendix – 3

Use of the reject water from water purifier

Appendix – 4

Photographs of the solid waste management at JSS College for Women, Saraswathipuram, Mysuru.

Vermicompost pits for kitchen waste

Biomedical waste disposal

Non-biodegradable waste transport


GPS Map
Camera Lite
Saraswathipuram, Mysuru, 570009, KA, India
Latitude
12.303024 N
Longitude
76.632831 E
Local 10:41:29 AM
GMT 05:11:29 AM
Altitude 750.79 meters
Saturday, 12/04/2021


Saraswathipuram, Mysuru, 570009, KA, India
Latitude
12.303017 N
Longitude
76.632885 E
Local 10:40:01 AM
GMT 05:10:01 AM
Altitude 750.94 meters
Saturday, 12/04/2021


GPS Map
Camera Lite
38, 2nd Cross Road, Mandi Mohalla, Akshaya Bhandar,
Saraswathipuram, Mysuru, Karnataka 570009, India
Latitude
12.30317356°
Longitude
76.6328507°
Local 10:54:07 AM
GMT 05:24:07 AM
Altitude 654.74 meters
Tuesday, 23-11-2021


GPS Map
Camera Lite
37, 2nd Cross Road, Mandi Mohalla, Akshaya Bhandar,
Saraswathipuram, Mysuru, Karnataka 570009, India
Latitude
12.3031982°
Longitude
76.63278139°
Local 10:51:43 AM
GMT 05:21:43 AM
Altitude 669.91 meters
Tuesday, 23-11-2021

Appendix – 5

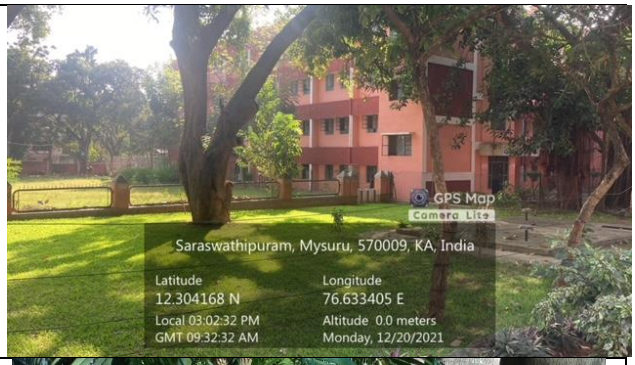
Photographs of the energy conservation and harnessing of solar energy initiatives at JSS College for Women, Saraswathipuram, Mysuru.

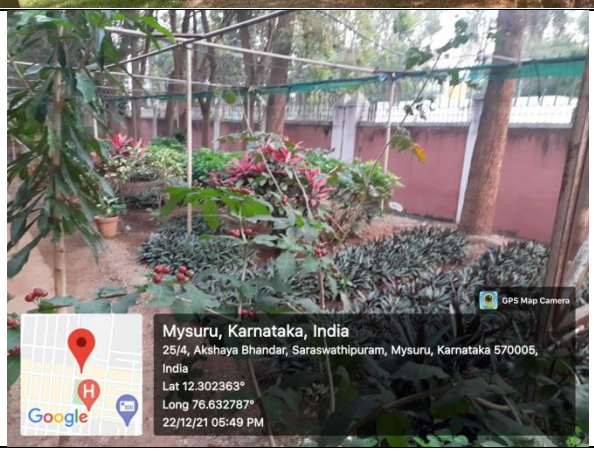

GPS Map
Camera Lite
Saraswathipuram, Mysuru, 570009, KA, India
Latitude
12.304168 N
Longitude
76.633405 E
Local 04:55:32 PM
GMT 11:25:32 AM
Altitude 0.0 meters
Wednesday, 12/22/2021


Saraswathipuram, Mysuru, 570009, KA, India
Latitude
12.304168 N
Longitude
76.633405 E
Local 04:40:55 PM
GMT 11:10:55 AM
Altitude 0.0 meters
Wednesday, 12/22/2021

Appendix – 6

Photographs of the green cover at JSS College for Women, Saraswathipuram, Mysuru





सत्यमेव जयते

Certificate

Where there is Rural Wellbeing there is Universal Prosperity

This is to certify that JSS College for Women (Autonomous), Mysore, Karnataka is now a Recognized Social Entrepreneurship, Swachhta & Rural Engagement Cell (SES REC) Institution. The Institution has successfully framed the SES REC Action Plan and constituted ten working groups for improving facilities in the Campus and the Community/Adopted Villages in the areas of Sanitation & Hygiene, Waste Management, Water Management, Energy Conservation and Greenery post COVID-19, along with the observation of three environment, entrepreneurship and community engagement related days to inculcate in faculty, students and community, the practices of Mentoring, Social Responsibility, Swachhta and Care for Environment and Resources.

Date of Issue:
08-08-2020

Dr. W G Prasanna Kumar
Chairman

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

Certificate No.: MoE/SESREC/KA/MYS/N/58

Appendix – 7

Activities related to Swachhta Abhiyan at JSS College for Women, Saraswathipuram, Mysuru

Appendix – 8

Photographs related to Nature club and NSS activities at JSS College for Women, Saraswathipuram, Mysuru

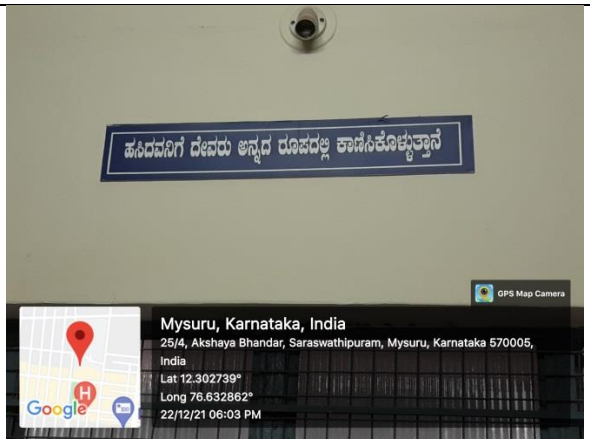

ರಾಷ್ಟ್ರೀಯ ಸೇವಾ ಯೋಜನೆ

Appendix – 9

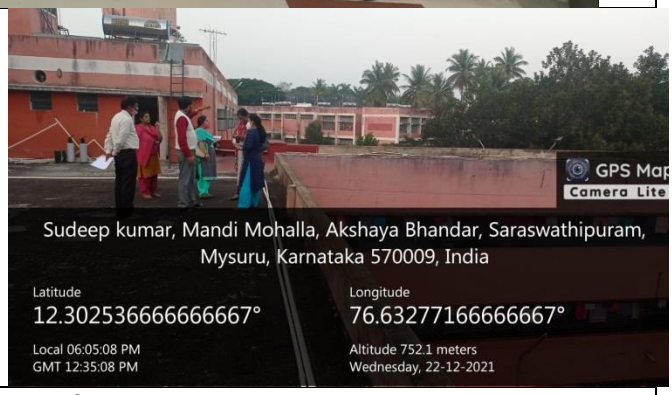
Photographs of the safety measures (laboratories and on campus, in general), conservation awareness placards on campus and the Audit team visit to the campus of JSS College for Women, Saraswathipuram, Mysuru


FIRE


ಸ್ವಚ್ಛತೆಯ ಪಂಚಸೂತ್ರಗಳು
1. ಸ್ವಚ್ಛತೆ ಮತ್ತು ನೈರ್ಮಲ್ಯ : Cleanliness & Sanitation
2. ಆಹಾರ ಉಳಿತಾಯ : Save Food -Control Food Waste
3. ಪ್ಲಾಸ್ಟಿಕ್ ವಸ್ತುಗಳನ್ನು ಬಳಸದಿರುವುದು: Ban on usage of Plastic
4. ಜಲ ಸಂರಕ್ಷಣೆ : Save Water
5. ಇಂಧನ ಶಕ್ತಿ ಉಳಿತಾಯ :Save Power/Fuel


ಹಸಿದವನಿಗೆ ದೇವರು ಅನ್ನದ ರೂಪದಲ್ಲಿ ಕಾಣಿಸಿಕೊಳ್ಳುತ್ತಾನೆ
GPS Map Camera
Mysuru, Karnataka, India
25/4, Akshaya Bhandar, Saraswathipuram, Mysuru, Karnataka 570005, India
Lat 12.302739°
Long 76.632862°
22/12/21 06:03 PM
Google


ನಿಲಯಾರ್ಥಿಗಳ ಗಮನಕ್ಕೆ
1) ಅವಶ್ಯಕಗಳಾದ ಊಟ, ತಿಂಡಿ, ನೀರು ವಿದ್ಯುತ್ ಇತ್ಯಾದಿಗಳನ್ನು ಸದುಪಯೋಗ ಪಡಿಸಿಕೊಳಬೇಕು. ಅನಾವಶ್ಯಕವಾಗಿ ಕೋಲು ಮಾಡಬಾರದು
2) ನಿಲಯದ ಯಾವುದೇ ಸ್ವತ್ತು /ಉಪಕರಣಗಳಿಗೆ ಹಾನಿಯಾಗದಂತೆ ನೋಡಿ ಕೊಳ್ಳಬೇಕು ಹಾನಿಯಾದಲ್ಲಿ ಸಂಬಂಧಪಟ್ಟವರು ಆ ನಷ್ಟವನ್ನು ಭರಿಸಿಕೊಡಬೇಕಾಗುತ್ತದೆ.
3) ವಸತಿ ನಿಲಯದ ಶಿಸ್ತನ್ನು ಕಾಪಾಡಿಕೊಳ್ಳುವ ದೃಷ್ಟಿಯಿಂದ ಕಾಲಕಾಲಕ್ಕೆ ಮೌಖಿಕವಾಗಿ ತಿಳಿಸುವ/ವಿಧಿಸುವ ಎಲ್ಲಾ ನಿಯಮಗಳಿಗೆ ನಿಲಯಾರ್ಥಿಗಳು ಬದ್ಧರಾಗಿ ನಡೆದುಕೊಳ್ಳಬೇಕು
GPS Map Camera
Mysuru, Karnataka, India
Srikanth, Ch 31, 4th Main Road, Mandi Mohalla, Akshaya Bhandar, Saraswathipuram, Mysuru, Karnataka 570009, India
Lat 12.302697°
Long 76.632461°
22/12/21 05:55 PM
Google



Audit team with the authorities of JSS College for Women, Saraswathipuram, Mysuru