Bharath

INSTITUTE OF HIGHER EDUCATION AND RESEARCH

Declared as **Deemed-to-be-University** u/s 3 of the UGC Act, 1956

Green Campus, Environment Energy Policy

Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed - to - be - University under section 3 of UGC Act 1956)

GREEN CAMPUS, ENVIRONMENT & ENERGY POLICY

(Strategies & Initiatives)

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GREEN CAMPUS, ENVIRONMENT & ENERGY POLICY
(Strategies & Initiatives)

Preamble

A Green Campus is a place where environment-friendly practices and education combine to promote sustainable and eco-friendly practices in the campus. The green campus concept offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of mankind.

Bharath Institute of Higher Education and Research (BIHER) endeavours to promote community welfare, environmental protection and efficient energy use to a level of performance that moves"beyond compliance". Striving to set a benchmark on a National and International level for education, healthcare, environment and energy management, BIHER is committed to cleaner and greener campuses. To realize this vision, the University commits to:

- Institutionalize best practices, comply with applicable laws, regulations, and other recognized requirements related to environment and energy use and where practicable exceed them.
- Preventing pollution by continually monitoring and improving its environmental and energy performance by provision of resources to achieve set objectives and targets.
- Establish and maintain management systems to improve energy performance and to minimize harmful effects on environment, human health and safety.
- Promote use of clean, safe and energy efficient technologies in order to utilize natural resources efficiently.
- Encourage transparency and communication of its commitment to sustainable development, simultaneously increasing awareness amongst its stakeholders as well as the community at large.
- Foster education, research and information exchange on energy and environmental development to move toward global sustainability.

Statement of the Policy

This Environmental and Energy Policy shall be binding on Bharath Institute of Higher Education and Research (BIHER), which includes all constituent institutes and all other functional units performing secondary or tertiary functions under Bharath Institute of Higher Education and Research (BIHER). The policy is to include environment conservation in decision making at all levels by stakeholders and to ensure awareness among all about conservation environment and natural resources. It is the policy to encourage projects and initiatives on plantation, landscape and ecosystem restoration, soil and water conservation, water quality maintenance, waste management, clean energy resources and climate change mitigation. It will help us to increase efficiency and spread environmental awareness into our every-day activities, thus helping us in realizing the expectations of the stakeholders and society.

The Policy aims at suitable adoption of AICTE Environment policy.

This policy is to conserve natural environment, develop sustainable solutions, innovations and startups, promote rural technologies and control energy consumption in order:

- To build awareness among students about conservation of natural resources and development of sustainable environments for national prosperity.
- To facilitate development of technologies in rural India for inclusive growth.
- To adopt fair, ethical and environment-friendly approach, this incorporates everything from implementation to training of students through institutions.
- To evolve futuristic technologies and develop engineering designs that could be pivotal for the sustainable utilization of the augmented natural resources.
- To help building up a society that has conservation• oriented attitude and exists in harmony with nature.

Policy Objectives

To give impetus to Go-Green initiatives, more clarity and authenticity, BIHER rolls out this policy document spelling out the strategies, plans to make this program functionalofficially. We believe that greening the campus is all about sweeping away wasteful inefficiencies and using conventional sources of energies for its daily power needs, correct disposal handling, purchase of environment friendly supplies and effective recycling program. The administration of the Institute believes that

Everyone has towork out the time bound strategies to implement green campus initiatives. These strategies need to be incorporated into the institutional planning and budgetingprocesses with the aim of developing a clean and green campus. Every individual of BIHER Campus will work, may he/she be a student, faculty and support staff to foster a culture of self-sustainability and make the entire campus environment friendly. The green campus initiatives enable the institution to develop the campus as a living laboratory for innovation.

The different objectives of the policy are:

- To protect and conserve ecological systems and resources within the campus.
- To ensure judicious & sustainable use of environmental resources to meet the needs and aspirations of the present and future generations.
- To integrate environmental concerns into policies, plans and programmes for social development and outreach activities.
- To educate and engage students and employees on environmental concerns and sustainability
- To recognize and appreciate the efforts of students and institutions towards environment conservation and sustainable development
- To promote innovation and startup for sustainable development
- To take into account environment, occupational health and safety aspects in planning and decision-making.
- To encourage rural development programs and provide rural India with professional resource support.
- To develop collaborations with key government flagship programs and foster collaborations between governance, knowledge institutions and local communities.
- To encourage projects and initiatives on plantation, landscape and ecosystem restoration, soil and water conservation, water quality maintenance, waste management, clean energy resources and climate change mitigation.
- To help and encourage the institutes to adopt working styles and evolve R&D programs that could turn them into carbon negative.
- To work with all stakeholders and the local community to raise awareness and seek the adoption of environmental good practice and the reduction of any adverse effects on the environment.
- To continuously improve our contribution to climate protection and adaptation to climate change and to the conservation of global resources.

- To continuously improve the efficient use of all resources, including energy and water, and to reduce consumption and the amount of waste produced, recovering and recycling waste where possible.
- To minimize the use of paper in administration through having policy for e-governance.
- To maintain a pollution free campus.
- To conduct environmental and energy audits from time to time.
- To include environmental policy in all related activities.

It is understood that ecological sustainability is a key component of its social responsibility and therefore, strives to make an impact on environment conservation by inspiring environment-friendly, professional and safe operations in students of institutions. This includes conserving scarce resources such as raw materials, energy and water, as well as avoiding and reducing CO2 emissions and waste. BIHER has adopted a fair, ethical and environment-friendly approach that incorporates everything from the production to management and training of students in institutions.

Scope of the Policy

BIHER works within the framework of this policy and considers the environment as a 'living' entity that we sustain and protect even as we go about our daily activities. This policy will develop exciting practices that encourage students to take the lead in creating positive change. These initiatives call for a thorough review of all infrastructural, administrative functions from the standpoints of energy efficiency, sustainability andthe environment protection.

1. Inclusion of the Environmental Policy in institutional policies and strategies.
2. All the activities and initiatives undertaken under environment policy are to be incorporated in the Annual Report and ensure effective publication of the same.

Inclusion in Curriculum

1. Curriculum to include subjects that enhance Environment Management and Conservation awareness and knowledge.
2. Student Induction Program to include awareness on Environment and activities like visit to nearby villages.
3. Approved courses to include engineering in Environment, marine, water technologies, carbon engineering etc. that can help develop technologies for

enhancing or safeguarding the environment.

4. Facilitate development of research areas such as drinking water, agricultural and rural industries etc. which have development aspect.
5. Activity points to be made a part of Curriculum.

It includes the following:

a. Prepare and implement plan to create local job opportunities
b. Prepare and implement plan to improve education quality in village.
c. Developing Sustainable Water Management system.
d. Prepare and improve a plan to improve health parameters of villagers.
e. Developing and implementing of Low-Cost Sanitation facilities.
f. Prepare and implement plan to promote Local Tourism through Innovative Approaches.
g. Implement/Develop Technology solutions which will improve quality of life.
h. Prepare and implement solution for energy conservation.
i. Prepare and implement plans to inculcate skill in village youth.
j. Prepare and implement plan of sustainable growth of village.
k. Setting of Information imparting club for women leading to contribution in social and economic issues.
l. Developing and managing efficient garbage disposable system.
m. Contribution to any national level initiative of Government of India. For example. Digital India/ Skill India/ Swachh Bharat Internship etc.
n. Inclusion of Universal Human Values as a credit course which include Harmony with Nature, about environmental conservation and sustainable development.

Environmental Awards

1. Awards for Rural development initiatives, environment development initiatives, sustainable development initiatives etc.
2. Institutional awards of clean and green campus.
3. Encourage and award innovations and startups that are based on environmental issues, rural development, and sustainable solutions.
4. Promote and initiate other awards for enhancing awareness and implementation of environment management and Sustainable Development.

Focus Areas of this Policy are:

- Go Green Policy
- Clean & Green Campus Initiatives
    - Landscaping Initiatives
    - Clean Air Initiatives
        - Tobacco free & No Smoking Campus
        - Reducing Vehicular Emissions
        - Minimizing the use of diesel generators
    - Plastic Free Campus
- Environment and Energy Usage Principles
- Save Energy Initiatives
    - Alternative Energy Systems
    - Energy Efficiency Equipment
    - Adopting conservative austerity measures
- Water Conservation Measures & Rainwater Harvesting System
- Waste Management
    - Solid Waste Management
    - Liquid Waste Management
    - Biomedical Waste management
    - E-Waste Management
- Green, Energy & Environmental Audit
- Awareness Initiatives

Policy reference points

1. United Nations Sustainable Development Goals 2030 to remain as thrust areas with special focus on Clean Water and Sanitation, Quality Education, Affordable and Clean Energy, Sustainable Cities and Communities, Climate Action, Life Below Water and Life on Land.
2. Environment conservation, rural development, sustainable development etc. to become a part of all policies of BIHER
3. Ensuring Rainwater Harvesting within their premises, provide Waste Management and environment improvement measures to ensure a sustainable Green Campus, strive to have a plastic free environment, Installation of grid connected solar rooftops/ Power Systems, wherever feasible.

4. Suitably implement Unnat Bharat Abhiyan. Under the Unnat Bharat Abhiyan, the objective is to build institutional capacity in institutes of Higher Education in research and training, relevant to national needs, especially those of rural India, which includes inter alia the following objectives:
    a. Encourage to engage with problems of rural India and to provide solutions for them.
    b. Develop an academic framework for working on societal problems, their solution, delivery, reporting and assessment.
    c. Re-visit where necessary the curriculum to incorporate inclusive technologies for rural India.
    d. Promote inter-disciplinary approach in education guided by live contexts.
    e. Develop over time, research areas which have developmental significance, such as drinking water, education, health, agricultural practices, electrification, agricultural and rural industries cooking energy, watershed analysis.
    f. Develop collaborations of academic institutions with key government flagship programs and develop formal course-ware for supporting the knowledge needs for the same.
    g. Promote networking and coordination among various science and technology based voluntary organizations and developmental agencies.
    h. Foster collaborations between governance, knowledge institutions and local communities.
    i. Provide rural India with professional resource support in the field of science, engineering and technology, and management.To identify the basic developmental and productive needs of a village and find ways and means to meet these needs.
    j. Strengthen the technical design of interventions in key sectoral areas of natural resource management such as water and soil, economic activities such as agriculture and related production, or related to crafts and artisans,

k. Identifying efficient, cost effective and sustainable development practices in these fields. Helping grassroots organizations in innovating new products, and support rural entrepreneurs to develop neighborhood solutions.

5. Empower communities to engage with BIHER in order to evolve technically sound and locally feasible development strategies that promote self- reliance Apply for funding schemes for activities such as Unnat Bharat Abhiyan, Jal Shakti Abhiyan etc. to encourage the environmental initiatives
6. Promote schemes by MHRD on environment in institutions such as one student, one tree etc.
7. Encourage internal policies such as making premises plastic free, replacing mementoes with plants, building applications on environmental conservation, sustainable development etc.
8. Facilitate recognition and protection of rights of owners of traditional knowledge and intellectual property, while promoting research
9. Promote collaboration and networking among various Science and Technology organizations, Educational Institutions and Manufacturing organizations/ Development Agencies, with focused discussions on Environment Management.
10. Design technical interventions for natural resource management and economic activities like agriculture and related activities, infrastructure like housing, roads, energy, which affect the environment

a. Facilitate convergence of development schemes, resources, various planning and implementation initiatives, and coordination of agencies for successful interventions and measurable outcomes.

Go- Green Policy

The efforts for a successful Clean &Green Campus must begin at the top and emanate throughout the rest of the campus. In view of this, the university will plan and execute to:

1. Seek views of all the Stakeholders to make the Go Green Campus initiatives functional throughout the year.
2. Conduct the Campus environmental impacts to identify the targets for improvements.
3. Establish a Green Campus Environmental Ethic Awareness campaigns.
4. Set forth a Green Campus Mission and a Statement of Principles.
5. Link Green-Campus activities to Academics in the Institute.
6. Organize Awareness Programs for the students, faculty and society.
7. Develop a strategic plan and create student teams to carry out specific tasks of the strategic plan.
8. Phase out the CFL and conventional light source such as bulbs and tube lights, halogen and mercury street/campus lights and get them replaced by the LEDs.
9. Conduct an Annual Green, Environment and Energy Audits.
10. Purchase only Energy Efficient IT systems.
11. Evaluate the operations in terms of pollution prevention, waste stream management, and energy efficiency reducing, reusing, recycling, and repairing wherever possible.
12. Secure a commitment up front from the people in charge that well-founded recommendations will be acted upon once audits are completed.

Clean & Green Campus Initiatives

BIHER had pledged to actively coordinate cleanliness activities in the university and beyond the campus in accordance with the vision of Swachh Bharat Abhiyan. It commits to continue with this Programme. BIHER makes all the necessary efforts to involve the students, faculty and staff in "GreenCampus Initiatives" by designating the volunteers from the Student Clubs, NSS & NCC cadets etc.

The broad vision is as follows:

1. Generating mass awareness on cleanliness and hygiene amongst students and staff members by holding regular cleanliness drives. The idea is to motivate them to contribute in a proactive manner.
2. Activities under 'Swachh Bharat Abhiyan' will be a key component of all the community work being done by NSS, NCC and Green volunteers of the university.
3. Staff Members will be encouraged to participate in the cleanliness drive in the university campus.
4. Events such as poster and slogan competitions, essay writing, spoken word poetry, speeches, and skits on 'Swachh Bharat' will be organised.
5. Rallies on themes connected with 'Swachh Bharat Abhiyan' in and aroundthe university campus will be conducted to create mass awareness.
6. Remove all kinds of waste material like broken furniture, unusable equipment etc.
7. Administer of the pledge by students and staff members to maintain

cleanliness of the university campus and its surrounding areas on an annual basis.

8. Conduct workshops on the 3Rs: Reduce, reusing and recycling of waste.
9. Commit to manage waste and maintain clean campus especially during university events.

Other initiatives include:

- ISO Certification 14001:2015
- Installation of Solar Power Station
- Wastewater Management/ Rainwater harvesting
- Development of Sewage Water Treatment Plant
- Sensor based energy conservation
- Displayed poster on E-waste Management
- Maintenance of water bodies and distribution system in the campus
- MIS to make paperless administration
- Plastic free Campus
- Tree Plantation Drive
- Cleanliness Drive
- Landscaping and gardens
- Use of LEDs only
- Digital Library/ E-Learning Centre
- Organization of sensitization programmes for the stakeholders
- Green, Environment and Energy Audit conducted annually
- Restricted entry of automobiles
- Development of Pedestrian friendly Pathways
- Observation of No Vehicle Day, World Environment Day, Earth Day, No Smoke Day etc.

Landscaping Initiatives

The campus landscape, like its buildings, can be seen as the physical embodiment of a university's values. It is a vital part of the life of a campus, providing space for study, play, outdoor events, relaxation and aesthetic appreciation. Green campus landscapes also manage runoff, help recharge groundwater, and clean and cool the air on campus. The landscape serves as a visual representation of the campus community's commitment to sustainability. As campus landscapes are so visible and

accessible, landscaping initiatives are a great way to build awareness around the environment. The university commits to enriching this healthy habitat and maintaining the symbiotic relation of the institution with nature by Organizing annual tree plantation drives and encouraging student societies to hold tree planting events.

Clean Air Initiatives

We encourage our students and staff to use public transportation. We encourage carpooling to university, an activity that will control air pollution and strengthen social interaction. The entry of automobiles inside the campus is restricted to discourage the use of private vehicles. The university promotes the minimum use of diesel generators to meet the energy needs instead advocates the use alternative sources of energy. The abundant natural landscape not only cleans the air on campus but also becomes an extension of the green lungs of the city. The air we breathe in the campus is clear and that is the way we like it. We ensure the emissions from diesel generators are tested at regular intervals to ensure conformity to environmental limits, so as the vehicular emissions and to develop all available open spaces through arboriculture and greenery.

Smoking & Tobacco Free Campus

In compliance with the framework provided by the National Tobacco Control Programme of Govt. of India, the university prohibits smoking and the use of other tobacco products and promotes a tobacco free environment. As a step in this direction, smoking and use of tobacco in and around the campus is strictly prohibited. The university ensures enforcement of the anti-smoking policy.

Plastic-Free Campus

BIHER has been observing most of its duties in terms of solid waste management since its inception. In view of the Government of India's resolution to ban all single use plastics due to the hazardous impact of plastic use and pollution, the university administration strictly bans the use of single use plastics in its premise to make it a 'Plastic Free Campus'.

Environment and Energy Usage Principles

BIHER pledges to fulfil its commitment to the enviro11ent through the following levelsof actions:

1. Achieving transparency about our environmental and energy impact, giving importance to our own carbon footprint, through institutional reporting.
2. Integrating energy and environmental considerations into the design of all new infrastructural facilities at BIHER.
3. Improving operational efficiency and minimizing impact on the environment
   - Improving the carbon efficiency.
   - Reduce local air pollution emissions by minimizing the entry of vehicles in campus.
   - Complying with the applicable international, regional, and national environmental regulations, as well as legal requirements regarding energy consumption and energy efficiency.
   - Taking additional measures by reducing energy consumption.
   - Considering environmental aspects and energy efficiency in all major investment and procurement decisions - adopt a green procurement philosophy.
10. Improving resource efficiency in operations, especially for key resources such as energy and water.
11. Adopt a sustainable water conservation and water management philosophy.
12. Strive towards a "greener campus".
13. Continuous monitoring and reviewing of objectives to achieve continual improvement in environmental and climate performance.
14. Preserve and enhance biodiversity inside the campus.
15. Educate the administrators, students, teaching and staff with seminars and sessions on environment sustainability.
16. Focusing on renewable energy systems like solar energy and wind energy.
17. Focusing on increasing water efficiency and sustainable waste management.
18. Funding for research and Development on environmental aspects, issues, challenges, and solutions.
19. Engage in dialogue with the stakeholders, co-operate with universities and industries, and actively work with national and international organizations in the areas of environment, energy efficiency and sustainable development.

20. Review the environmental policy and systems to ensure its continuing applicability and relevance to its purpose.
21. Support various local communities to engage in environmentally friendly initiatives and practices.

Save Energy Initiatives

BIHER is dedicated to minimizing and sustainably manage its use of electricity. The university believes in reducing the consumption of electricity produced by non-renewable resources by switching to clean energy sources like solar energy for purposeslike lighting the campus.

Alternative Energy Systems

The university shall plan for increasing the energy procurement mix with an increase in renewable sources like solar energy.

Roof top Solar PV systems: BIHER recognizes this aspect as an important facet of its operation and adopts an energy policy supplementing the existing environment policy.In line with this, BIHER shall shift from conventional energy use to renewable energy use and sourcing, through installation of rooftop Solar PV systems in the shadow free area on existing buildings. This substantially will reduce BIHER dependence on conventional energy sources thus mitigating carbon emissions as well as a shift towards sustainable energy use.

Energy Efficiency Equipment

Energy conservation is an ever-present theme in the planning and developing of all our campus facilities. BIHER is committed to the use of environment-friendly electrical appliances that save energy and reduce wasteful inefficiencies. The university believes in using cleaner energy such as LED lighting.

A few of the measures to be taken to make the campus energy efficient:

- Upgradation of the air-conditioning systems. This may be achieved by replacement of dated air-conditioning units with power-efficient star rated units. Central air conditioning systems adopting state of the art water cooled screw chillers, and unitary air-conditioner controls with automation system for buildings with sensors for efficient cooling and automatic switching on and off depending on occupancy and fixed time schedule are installed replacing old systems. Environment-friendly gas systems may be used in all cooling systems.
- Energy efficiency measures: Reducing maximum load and introduction of measures to improve quality of power by exchanging energy efficient transformers,

pumps, detuned filters for capacitor banks, and LED lighting, auto synchronization panels for load optimization and energy efficient power equipment.

Adopting conservative austerity measures

- Activate power management features on your computer and monitor so that it will go into a low power "sleep" mode when you are not working on it.
- Turn off your monitor when you leave your Table.
- Activate power management features on your laser printer.
- Whenever possible, shut down rather than logging off.
- Turn off unnecessary lights and use daylight instead.
- Avoid the use of decorative lighting.
- Use LED or compact fluorescent bulbs.
- Keep lights off in conference rooms, classrooms, lecture halls when they are not in use.
- Use the fans only when they are needed.
- Unplug appliances not plugged into power strips (like TVs, Refrigerators, ACs, tea/coffeepots, printers, faxes, and chargers etc.)

Water Conservation Measures & Rainwater Harvesting System

BIHER is committed to replenish the groundwater table by practicing rainwater harvesting. This practice helps in the replenishment and recharge of the groundwater.

Water Conservation Measures

- Construction of bore-wells & open well recharge systems, underground sumps, overhead tanks to ensure the conservation of water for an uninterrupted supply.
- Regular maintenance of the water storage & distribution system
- Maintain leak proof water fixtures.
- Minimize the use of water by constructing more Indian style toilets instead of western style toilets.
- Periodic inspection & monitoring to prevent water leakage through taps, pipes, tanks, toilet flush etc.

Rainwater harvesting

Rainwater harvesting systems to be built in all buildings to increase in water table and self-sufficiency during water stressed periods.

Wastewater recycling

For management of the water resources, BIHER shall scrupulously adhere to the 3 R's: Reduce, Recycle, Reuse. Sewage treatment plants (STPs) shall be set up and maintained to treat the wastewater generated in the campus. This recycled water may be utilized to maintain the vast and lush greenery of the campus.

Waste Management

BIHER strives to have a minimal impact on the environment and is dedicated to reducing and manage the waste generated in the campus. The following specific procedures will be undertaken to ensure BIHER's commitment in protecting the environment.

Solid Waste Management

With its aim to provide holistic education that also has a positive impact on the environment, the university will adopt practices that will mitigate the generation, and manage solid waste through the following methods:

- Systematically engage with the 3R's of environment friendliness (Reduce, Reuse and Recycle).
- Collect paper waste produced on campus and collaborate with scrap dealersfor recycling.
- Reduce solid waste by developing a technology-centric teaching and administrative model.
- Reduce use of paper by supporting digitization of attendance and internalassessment records.
- Reduce requirement of printed books by updating the e-books and e-journalscollection of the university library.
- Encourage the students and teachers to use emails for assignment submissions.
- Take initiatives to spread awareness amongst students about
  - ✓ Food wastage and ways of minimizing it
  - ✓ Minimizing the use of packaged food
  - ✓ The habit of reusing and recycling non-biodegradable products
  - ✓ Organizing workshops for students on solid waste management.

- ***Domestic Waste*:** This is to be collected from all the buildings, hostels and residential facilities on the campus.
- ***Garden waste*:** This includes trimmed away branches, dried leaves, and all manner of garden waste – used in gardens.
- ***Dry waste*** is further to be segregated into different categories and sent to recyclers (Daily sorting & weekly disposal)
- ***Wet waste*:** Biodegradable & food waste from residences, cafeterias and eating joints is to be composted.
- Paper, metals, plastics, glass materials, thermocol and other recyclable materials shall be disposed through paid disposal to approved scarp dealers.
- Disposal of solid (dry & wet) and biomedical wastes are to be outsourced to a certified agency (Saniclean pvt. ltd.)
- ***Hazardous waste*:** The major components shall be disposed through authorized recyclers.
- ***Biomedical waste*:** This is generated in the hospital and nursing facilities within the campus and is to be handled as per the Biomedical Waste Rules. Medical waste is sent for incineration to a licensed handler.

  Biomedical waste shall be segregated at source in a strictly implemented regimen, using color coded bins. Individual units need to send their biomedical waste to a central unit from where authorized agencies shall pick it up at regular intervals. They ensure the waste is treated and disposed of in a safe manner. Education and training form an important part of the effective implementation of disposal processes; they are also a critical indicator, not only from the environmental point of view but also from the standpoint of employee and patient safety.
- Reject waste is to be sent to a landfill by the institute admin.
- BIHER shall ensure a zero-waste campus with its staff ensuring complete conversion of food waste garden waste into compost to be utilized for Gardens and Farms.

Liquid Waste Management

- **Wastewater recycling:** Reuse of wastewater generated by the Reverse Osmosis (RO) system in washrooms. For management of the water resources, BIHER shall scrupulously adhere to the 3 R's: Reduce, Recycle, Reuse. Sewage treatment plants (STPs) shall be set up and maintained to treat the

wastewater Generated in the campus. This recycled water may be utilized to maintain the vast and lush greenery of the campus.

E-Waste Management

BIHER ensures that its usage of technology and generation of e-waste does not impact the environment.

The university plans to strive towards:

- To make provisions for the disposal of e-waste.
- IT waste including desktop computers and accessories, compact fluorescent lights, printer cartridges are to be collected through separate waste streams and shall be disposed through authorized recyclers through Auction.
- Collaboration with e-waste recycling agencies for disposal and recycling.
- Awareness amongst students about reduction of e-waste and environment friendly disposal practices for e-waste.
- Encouraging department and society level activities pertaining to e- waste management.

Green, Energy & Environmental Audit

1. To perform periodic environmental audit.
2. To include the sustainable development goals.
3. To ensure that environment, health and safety standards that meet the requirement of relevant laws, regulations and codes of practice are implemented in institutions.

Energy Audit

BIHER shall conduct Annual External Energy Audit to identify wastage of energy, if any.Such an inspection/audit often reveals several different flaws which cause a loss of significant amounts of energy which the university will not be able to detect. These flaws often have easy and affordable solutions and provide significant savings.

Green & Environment Audit

The university shall conduct Annual Green and Environment Audits. These audits will be useful tool to determine how and where most energy or water or resources are being used.

The university can then consider how to implement changes and make savings. It can determine the type and volume of waste. Recycling projects or waste minimization plans can be adopted. It will create health consciousness and promote environmental values and ethics. It provides a better understanding of the impact of eco-friendly practices on campus. Green auditing will promote financial savings through reduction of resource use. It is imperative that the university evaluate its own contributions toward a sustainable future. The audit will assess the strengths and weaknesses to further goals of long-term sustainability.

Awareness Initiatives

Outreach and education are of utmost importance so that all members of the campus community may value the objectives of the policy and aid in its implementation. This is why BIHER supports and encourages awareness campaigns, seminars, workshops, conferences and other interactive sessions to facilitate effective implementation of the Green Campus, Energy and Environment policies.

BIHER encourages all the departments, student clubs & chapters, NSS & NCC units to organize events, competitions and training sessions that will bring about positive environmental changes at the grassroots level. The university supports departments and student societies in moulding the students into active agents of environment protection and conservation. Institutional changes towards sustainability and eco-friendly practices to be percolated down to all the stakeholders & the society as a whole.

Policy Communication and Review

This policy shall be communicated to all stake holders including the administrators, students, teaching and non-teaching staff.

Conclusion

At BIHER, ample concern is given to the environment as the institution aims towards sustainability. BIHER shall strive to fulfill our obligations and commitments to the environment as a truly responsible global citizen. The policy will be reviewed in the first week of January and June every year by the designated committee.

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Bhaarath Medical College and Hospital

GREEN AND ENVIRONMENTAL AUDIT


Swachhta Hi Sewa Hai
Swachh Bharat
स्वच्छ भारत
एक कदम स्वच्छता की ओर

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Introduction

Bharath medical college and hospital aims at providing an eco-friendly and sustainable environment,in this regard the initiatives taken to attain the same was an questionnaire based audit was undertaken by the stakeholders and also initiatives were taken to conduct workshops and to adapt to the government initiatives of **Swach Bharat Abhiyan** and **'Green Campus And Clean Campus Mission** ' established by the university grants commission .

Goal of environmental audit:

- Identification and documentation of green practices followed in the institution.
- Identify strength and weakness in green practices.
- Conduct a survey to know the ground reality about green practices
- Analyze and suggest solutions for problems identified from surveys.
- Identify and assess environmental risk.
- The long term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental issues before they get complex.
- To motivate staff for optimized sustainable use of available resources

Initiatives taken to Establish Green Environment

1. Swach Bharath Abiiyan activity inside the campus
2. Awarding all faculty with a medicinal tree pot on doctors day
3. Conducting bicycle rally
4. Conduction sparrow conservative workshop
5. Ground level questioner auditing on green campus establishment
6. Pollution free environment certificate
7. Implementation of biomedical waste management
8. Implementation of e waste, solid waste, and general waste management appropriately

Advantages of Conducting the Green and Environment Audit to the Institute

- It would help to protect the environment in and around the campus.
- Empower the organization to frame a better environmental performance.
- It portrays a good image of the institution through its clean and green campus.
- To create pollution free campus and evolve health consciousness among the stakeholder
- Point out the prevailing and forthcoming complications
- Benchmarking for environmental protection initiatives
- Development of ownership, personal and social responsibility for the institution and its environment
- Developing an environmental ethic and value systems in youngsters.
- Green auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programs of the institute.
- Finally, it will help to build a positive impression for through green initiatives the upcoming accreditation process.

Annexure 1

Swach Bharath Abiiyan activity inside the campus

Annexure 2

Awarding faculty with a medicinal tree pot on Faculty development Programmes

Annexure 3

Detailed Report on Environmental Awareness-Bicycle Rally

Activities conducted in the Program

- Bicycle rally for a distance of about 10 kms.
- Awareness quotes on benefits of cycling using placards.
- Sensitisation to the general public through media coverage.

A bicycle rally event was organised by the Department of Physiology in association with 1(TN) MED.UNIT NCC, on the occasion of World Bicycle Day observed on 3rd June 2022. The bicycle rally event had 80 participants including the students, faculty and non-teaching staff. The rally was headed by our Dean, Dr. Arunachala Edukondalu and his participation in the rally was a source of motivation and enthusiasm to the students. The cycle rally was flagged off at 07.00 AM from Bhaarath Medical College and Hospital, headed towards Santhoshpuram Police checkpoint and returned to the starting point covering a distance of about 10kms. The cyclists were provided with cycles, helmets for personal protection, T-shirts and refreshments. An ambulance accompanied the rally to provide emergency care. The police personnel of Selaiyur area extended their support and protection for the rally. The cyclists carried placards to create awareness among the public to adopt cycling in their daily lives for physical fitness and also to protect the environment. Our Dean and a student representative Ms. Benitta addressed the media about the rally and its importance. The event gained momentum among the public and the event was concluded by applauding the participants and organisers.

A bicycle rally event was organised by the Department of Physiology, Bhaarath Medical College and Hopsital in association with 1(TN) MED.UNIT NCC, on the occasion of World Bicycle Day observed on 3rd June 2022. There were 80 participants who cycled for 10 kms from Bhaarath Medical College & Hospital till Santhoshpuram Police Checkpoint and returned back to the start point. The participants were provided with personal protective equipments and the rally was safe guarded by police personnel of Selaiyur area


Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
[Declared as DEEMED-TO-BE-UNIVERSITY u/s 3 of the UGC Act, 1956]
1 (TN) MED.UNIT NCC
Bhaarath
MEDICAL COLLEGE AND HOSPITAL
Department of Physiology
in association with 1 (TN) MED.UNIT NCC
Cordially invites you for
Bicycle Rally
on
World Bicycle Day
Date : 3rd June, 2022 | Time : 07.00 TO 09.00 AM


GPS Map
Camera Lite
Bharath University Bharath Medical And Hospital, Selaiyur, Chennai, Tamil Nadu 600126, India
Latitude
12.90806569°
Longitude
80.13992361°
Local 07:18:09 AM
GMT 01:48:09 AM
Altitude -70.2 meters
Friday, 03-06-2022


BHAARATH MEDICAL COLLEGE AND HOSPITAL
GPS Map
Camera Lite
W45Q+9X8, Maruthi Ave 1st St, Selaiyur, Chennai, Tamil Nadu 600126, India
Latitude
12.90815316°
Longitude
80.13998486°
Local 07:18:54 AM
GMT 01:48:54 AM
Altitude -66.62 meters
Friday, 03-06-2022


TOBACCO FREE CAMPUS
GPS Map
Camera Lite
W45Q+4XG, Selaiyur, Chennai, Tamil Nadu 600126, India
Latitude
12.90768272°
Longitude
80.13980887°
Local 07:08:08 AM
GMT 01:38:08 AM
Altitude -49.39 meters
Friday, 03-06-2022

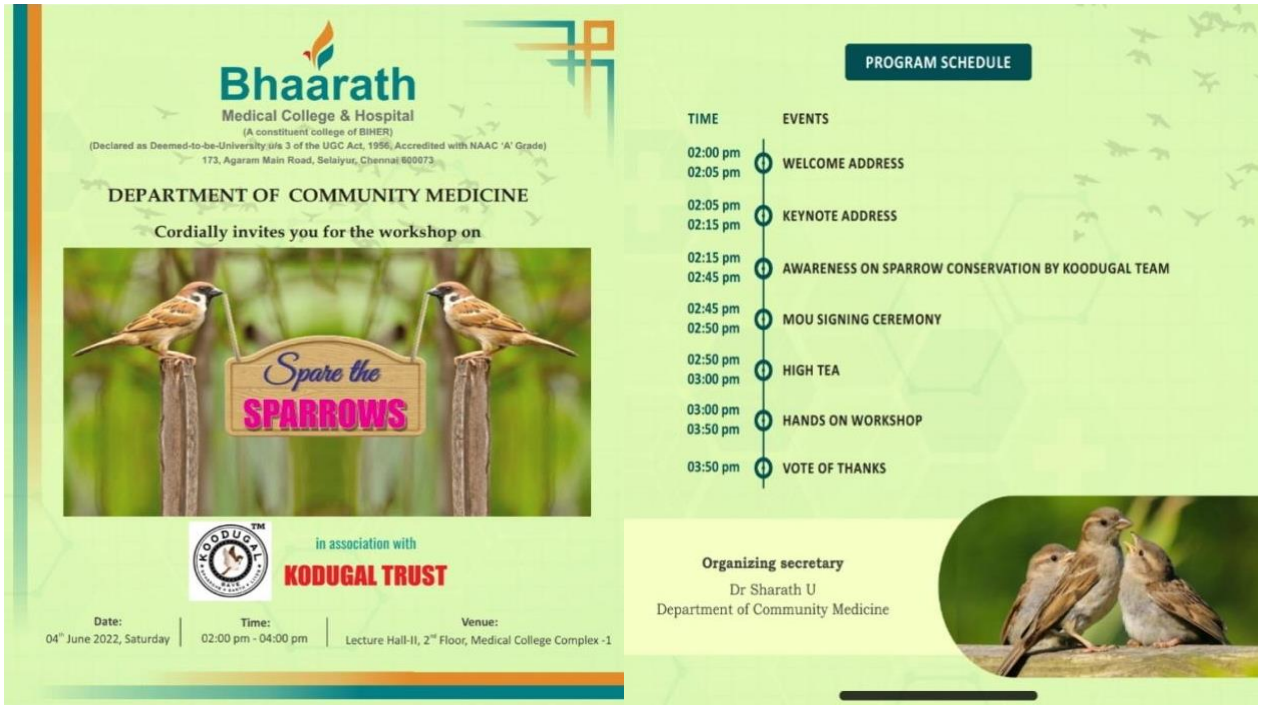
Annexure 4

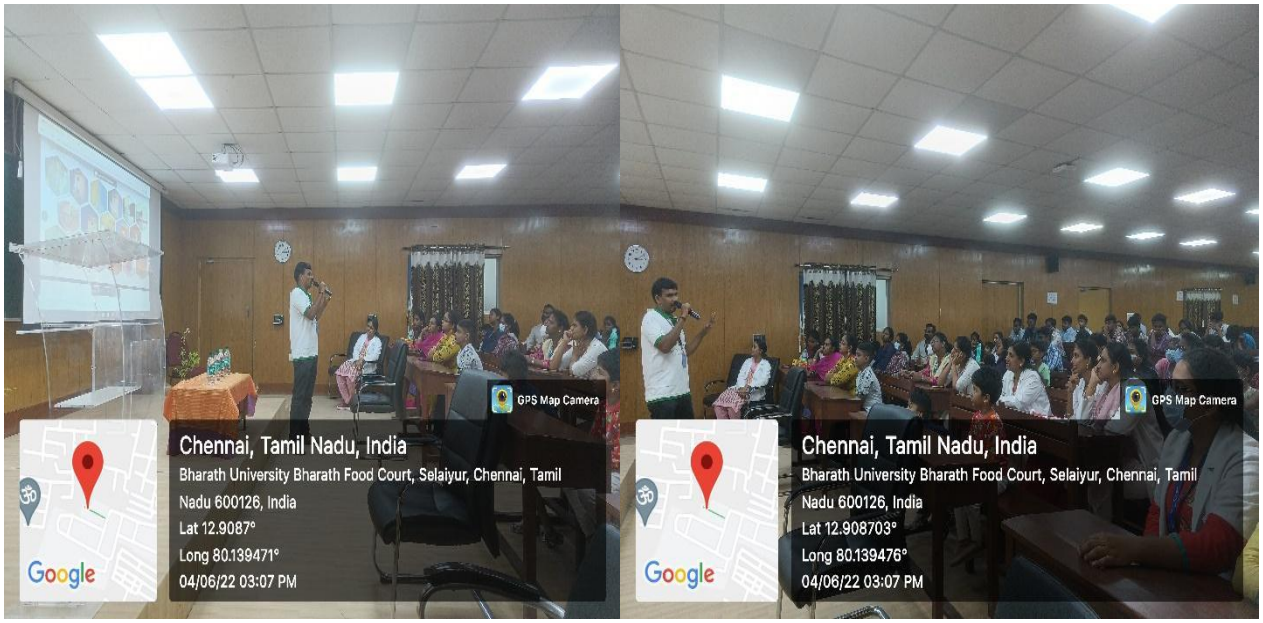
Awareness about Conservation of the Endangering Species of Sparrows

Activities conducted in the Program

- Awareness talk was given by Mr Ganesan, Koodugal Trust, on sparrow conservation
- Materials for building a nest was given and participants were taught to make a nest
- Talk on how to install the nest and methods to maintain was given
- A whatsapp group was created for the participants for update about the sparrows at their household and to follow up with the team in future
- MoU was signed by BMCH and Koodugal trust for the future programs to make this a continuous process

'Spare the sparrows' program was organised on a note of extending our support to build a sustainable environment by conserving the sparrows which are in the endangered species list. The program was organised on 04/06/2022 between 2.00pm – 4.00pm, at Bhaarath Medical College, Complex I, Lecture hall II. Awareness talk was given by Mr Ganesan, Koodugal Trust, on sparrow conservation with his experience and expertise. Followed by which materials for building the nest were given to the participants, and they were taught to make a nest. Once the nest was built a talk on how to install the nest and methods to maintain it, was explained. Furthermore, a whatsapp group was created for the participants to update about the sparrows at their household and to follow up with the team in the future. MoU was signed by Dean, BMCH and Koodugal Trust, for the future programs to make this a continuous process. Spare the sparrows' program was organised on a note of a social responsibility of a college towards its environment. Awareness talk was given by Mr Ganesan, Koodugal Trust, on sparrow conservation, followed by which materials for building the nest were given to the participants, and they were taught how to make a nest. Once the nest was built a talk on how to install the nest and methods to maintain it, was explained. Furthermore, a whatsapp group was created for the participants to update about the sparrows in their household and to follow up with the team in the future. MoU was signed by Dean, BMCH and Koodugal Trust, for the future programs to make this a continuous process.


Bhaarath
Medical College & Hospital
(A constituent college of BIHER)
(Declared as Deemed-to-be-University u/s 3 of the UGC Act, 1956, Accredited with NAAC 'A' Grade)
173, Agaram Main Road, Selaiyur, Chennai 600073
DEPARTMENT OF COMMUNITY MEDICINE
Cordially invites you for the workshop on
Spare the
SPARROWS
in association with
KODUGAL TRUST
Date:
04th June 2022, Saturday
Time:
02:00 pm - 04:00 pm
Venue:
Lecture Hall-II, 2nd Floor, Medical College Complex -1
PROGRAM SCHEDULE
TIME
EVENTS
02:00 pm 02:05 pm WELCOME ADDRESS
02:05 pm 02:15 pm KEYNOTE ADDRESS
02:15 pm 02:45 pm AWARENESS ON SPARROW CONSERVATION BY KOODUGAL TEAM
02:45 pm 02:50 pm MOU SIGNING CEREMONY
02:50 pm 03:00 pm HIGH TEA
03:00 pm 03:50 pm HANDS ON WORKSHOP
03:50 pm VOTE OF THANKS
Organizing secretary
Dr Sharath U
Department of Community Medicine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Bharath University Bharath Food Court, Selaiyur, Chennai, Tamil Nadu 600126, India
Lat 12.9087°
Long 80.139471°
04/06/22 03:07 PM
Google
GPS Map Camera
Chennai, Tamil Nadu, India
Bharath University Bharath Food Court, Selaiyur, Chennai, Tamil Nadu 600126, India
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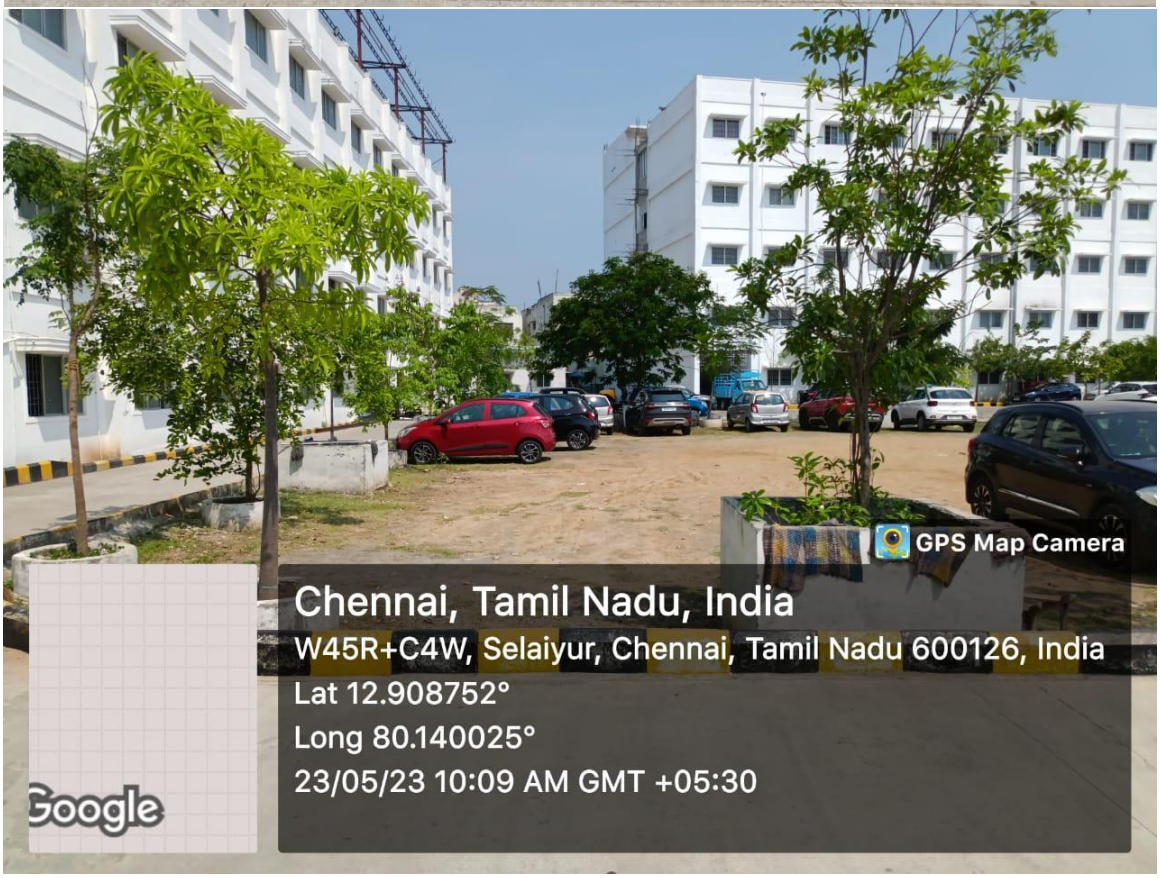
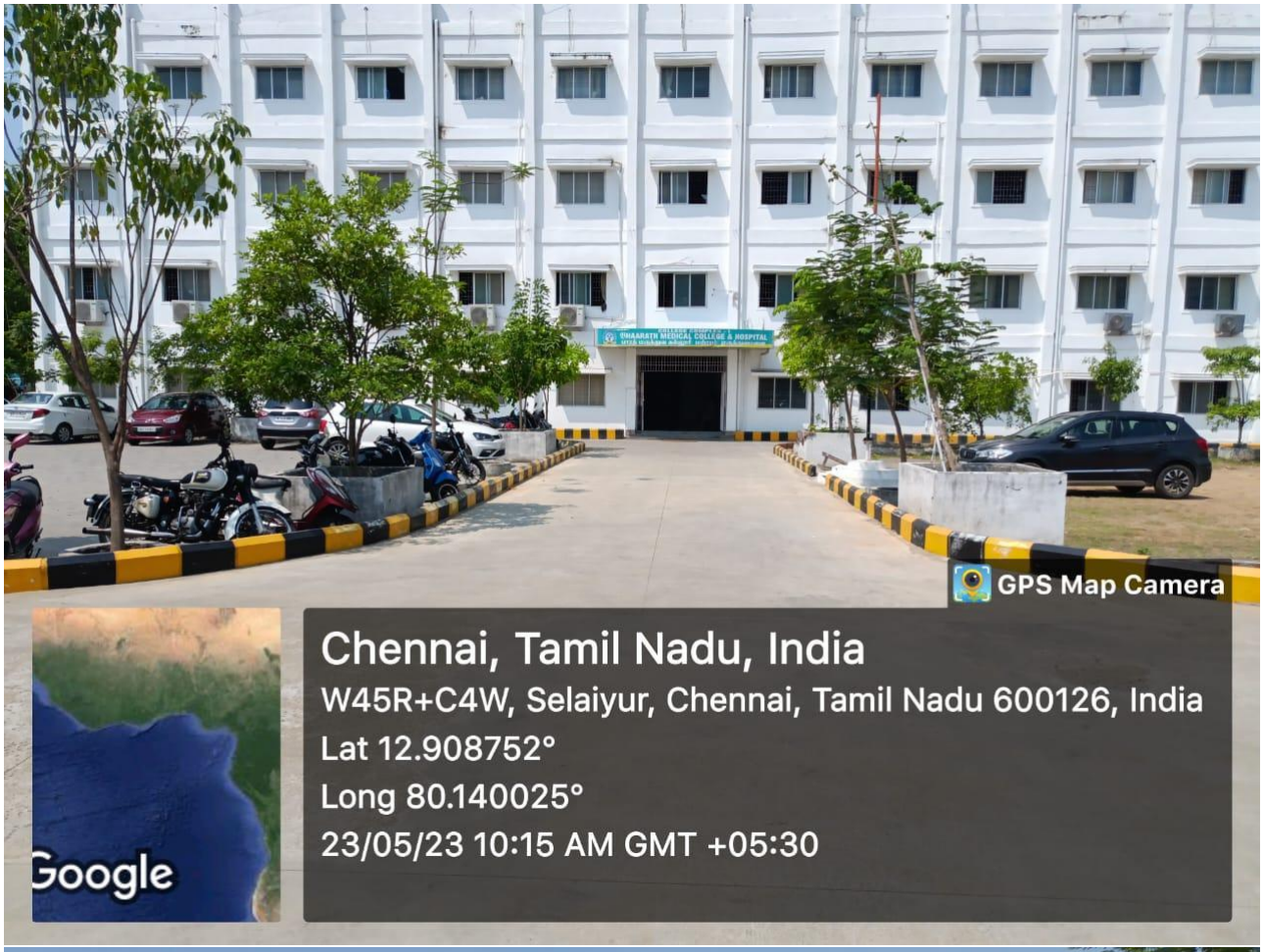
Long 80.139476°
04/06/22 03:07 PM
Google

Annexure 5

Ground Level Questioner Auditing on Green Campus Establishment – Evidence of Success of Green Campus Establishment

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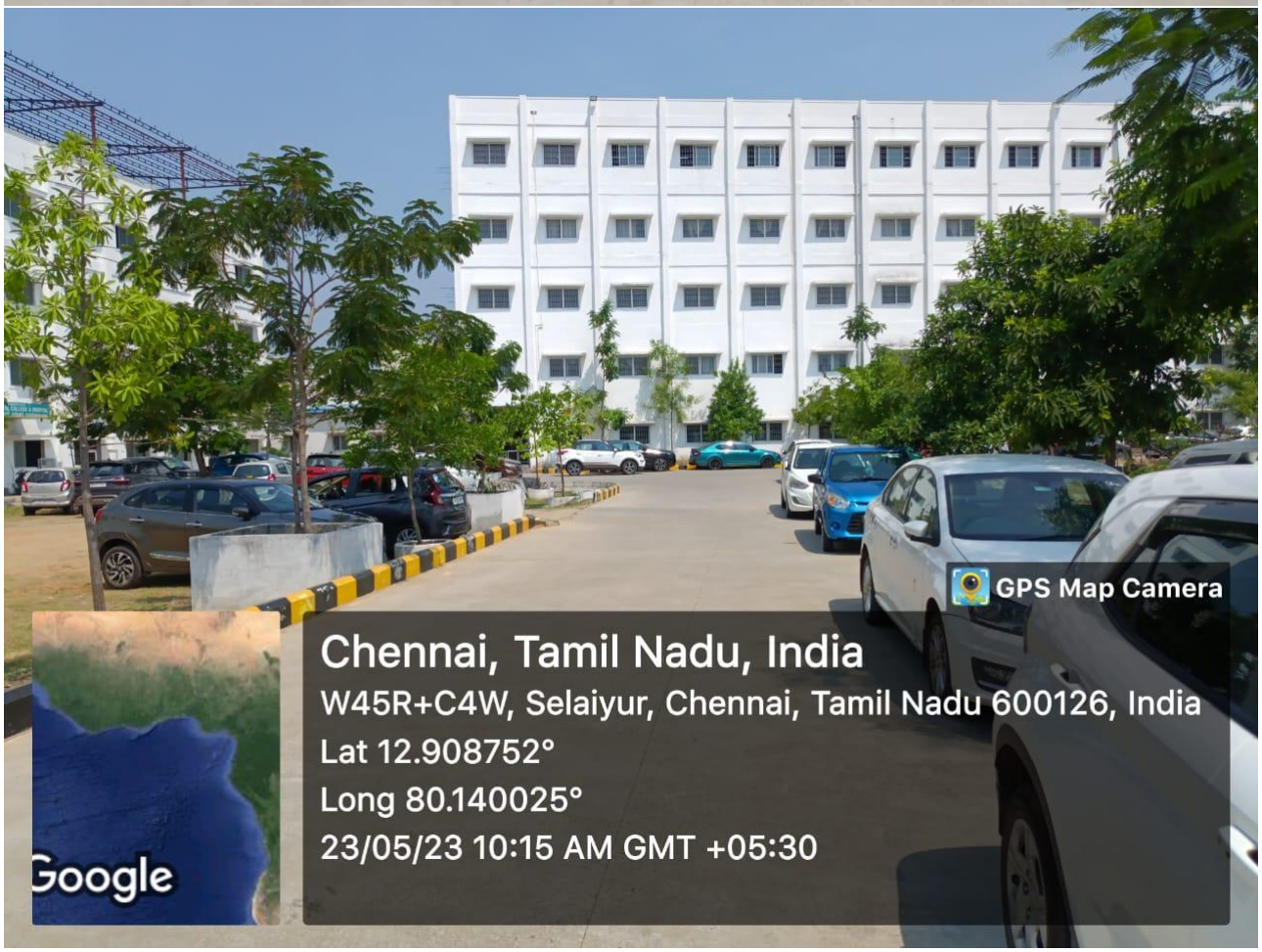
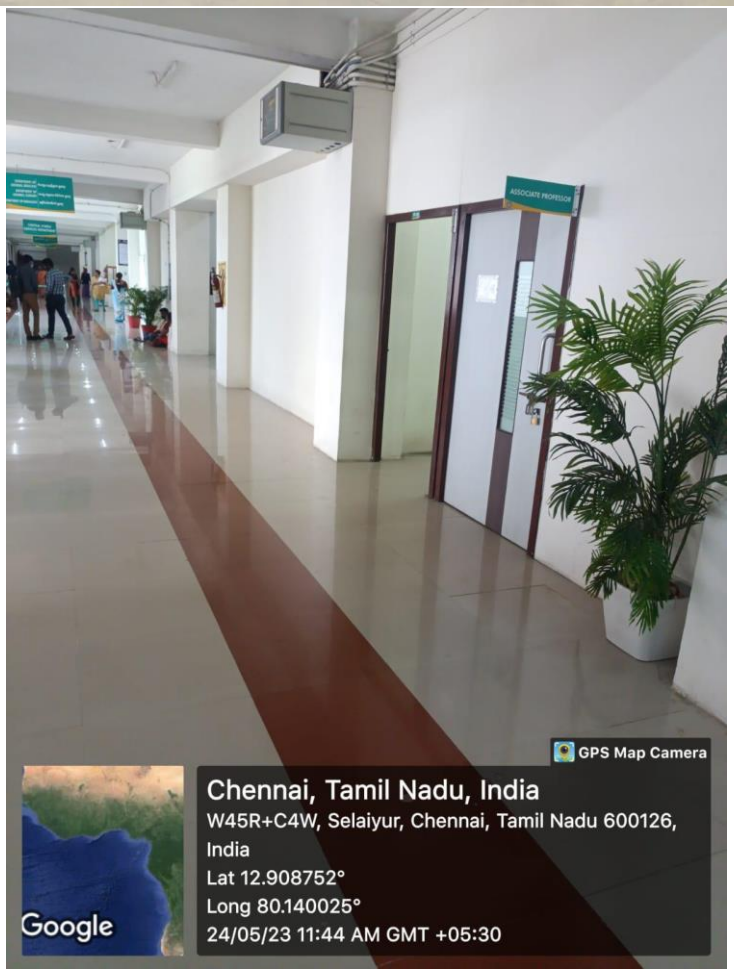
Long 80.140025°
23/05/23 10:15 AM GMT +05:30
Google


GPS Map Camera
Chennai, Tamil Nadu, India
W45R+C4W, Selaiyur, Chennai, Tamil Nadu 600126, India
Lat 12.908752°
Long 80.140025°
23/05/23 10:15 AM GMT +05:30
Google


GPS Map Camera
Chennai, Tamil Nadu, India
W45R+C4W, Selaiyur, Chennai, Tamil Nadu 600126, India
Lat 12.908752°
Long 80.140025°
23/05/23 10:08 AM GMT +05:30
Google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Long 80.140025°
24/05/23 11:44 AM GMT +05:30
Google


GPS Map Camera
Chennai, Tamil Nadu, India
W45R+C4W, Selaiyur, Chennai, Tamil Nadu 600126, India
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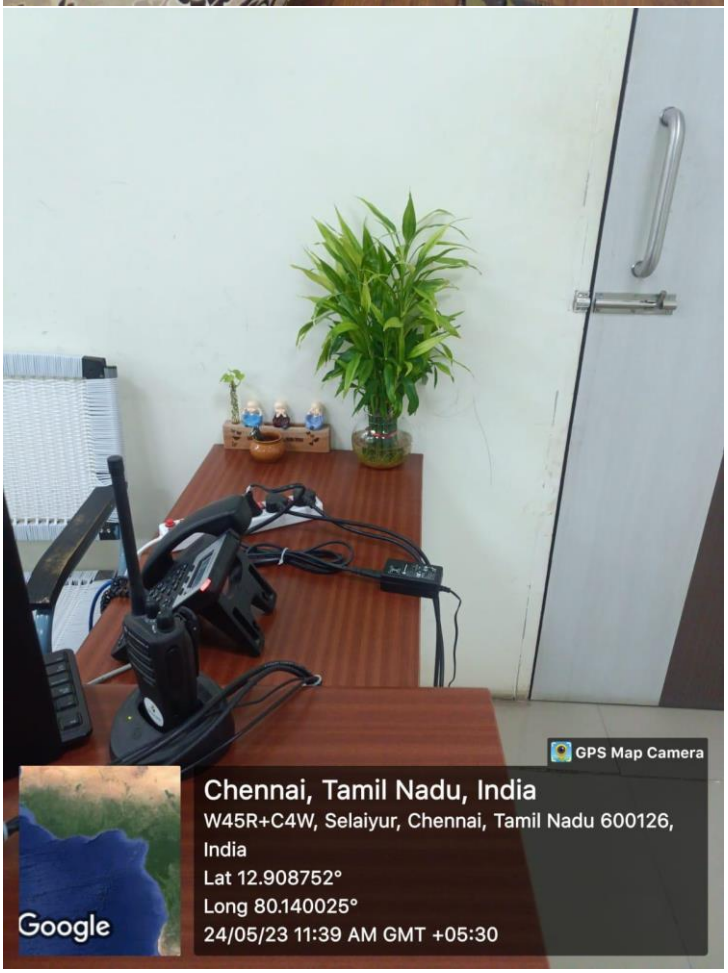
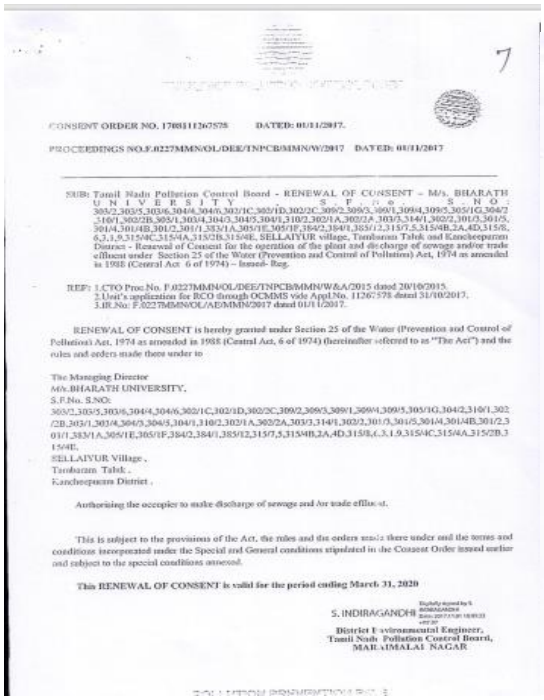
Long 80.140025°
24/05/23 11:44 AM GMT +05:30
Google


GPS Map Camera
Chennai, Tamil Nadu, India
W45R+C4W, Selaiyur, Chennai, Tamil Nadu 600126, India
Lat 12.908752°
Long 80.140025°
24/05/23 11:39 AM GMT +05:30
Google


How does diabetes affect the kidneys?
Kidney
Healthy
Urine
Diabetes
UDAPA M
VERMIKIND
ENJOY
every moment
JANUARY - 2023
SITAXADM
TelsaRA

Annexure 6

Pollution free environment certificate



CONSENT ORDER NO. 1708111267578 DATED: 01/11/2017.

PROCEEDINGS NO.F.0227MMN/OL/DEE/TNPCB/MMN/W/2017 DATED: 01/11/2017

SUB: Tamil Nadu Pollution Control Board - RENEWAL OF CONSENT – M/s. BHARATH U N I V E R S I T Y S . F . N o . S . N O : 303/2,303/5,303/6,304/4,304/6,302/1C,302/1D,302/2C,309/2,309/3,309/1,309/4,309/5,305/1G,304/2 ,310/1,302/2B,303/1,303/4,304/3,304/5,304/1,310/2,302/1A,302/2A,303/3,314/1,302/2,301/3,301/5, 301/4,301/4B,301/2,301/1,383/1A,305/1E,305/1F,384/2,384/1,385/12,315/7,5,315/4B,2A,4D,315/8, 6,3,1.9,315/4C,315/4A,315/2B,315/4E, SELLAIYUR village, Tambaram Taluk and Kancheepuram District - Renewal of Consent for the operation of the plant and discharge of sewage and/or trade effluent under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act 6 of 1974) – Issued- Reg.

REF: 1.CTO Proc.No. F.0227MMN/OL/DEE/TNPCB/MMN/W&A/2015 dated 20/10/2015.
2.Unit's application for RCO through OCMMS vide Appl.No. 1126757S dated 31/10/2017.
3.IR.No: F.0227MMN/OL/AE/MMN/2017 dated 01/11/2017.

RENEWAL OF CONSENT is hereby granted under Section 25 of the Water (Prevention and Control of Pollution) Act, 1974 as amended in 1988 (Central Act, 6 of 1974) (hereinafter referred to as "The Act") and the rules and orders made there under to

The Managing Director
M/s.BHARATH UNIVERSITY,
S.F.No. S.NO:
303/2,303/5,303/6,304/4,304/6,302/1C,302/1D,302/2C,309/2,309/3,309/1,309/4,309/5,305/1G,304/2,310/1,302 /2B,303/1,303/4,304/3,304/5,304/1,310/2,302/1A,302/2A,303/3,314/1,302/2,301/3,301/5,301/4,301/4B,301/2,3 01/1,383/1A,305/1E,305/1F,384/2,384/1,385/12,315/7,5,315/4B,2A,4D.315/8,c.3.1.9.315/4C,315/4A,315/2B.3 15/4E,
SELLAIYUR Village ,
Tambaram Taluk ,
Kancheepuram District .

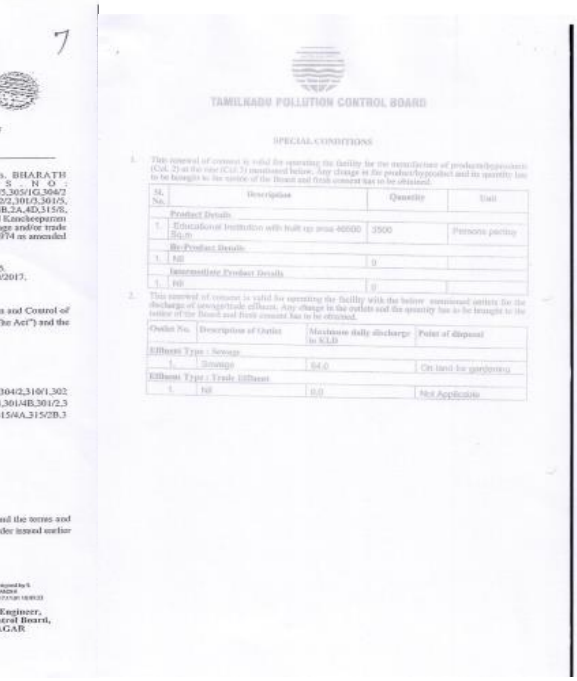
Authorising the occupier to make discharge of sewage and /or trade effluent.

This is subject to the provisions of the Act, the rules and the orders made there under and the terms and conditions incorporated under the Special and General conditions stipulated in the Consent Order issued earlier and subject to the special conditions annexed.

This RENEWAL OF CONSENT is valid for the period ending March 31, 2020

S. INDIRAGANDHI

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
MAHAMALAI NAGAR



TAMILNADU POLLUTION CONTROL BOARD

SPECIAL CONDITIONS

1. This renewal of consent is valid for operating the facility for the manufacture of products/byproducts (Col. 2) at the rate (Col.3) mentioned below. Any change in the product/byproduct and its quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Sl. No.	Description	Quantity	Unit
	Product Details		
1.	Educational Institution with built up area 40000 Sq.m	3500	Persons pacing
	By-Product Details		
1.	Nil	0	
	Intermediate Product Details		
1.	Nil	0	

2. This renewal of consent is valid for operating the facility with the below mentioned outlets for the discharge of sewage/trade effluent. Any change in the outlets and the quantity has to be brought to the notice of the Board and fresh consent has to be obtained.

Outlet No.	Description of Outlet	Maximum daily discharge in KLD	Point of disposal
Effluent Type : Sewage			
1.	Sewage	64.0	On land for gardening
Effluent Type : Trade Effluent			
1.	Nil	0.0	Not Applicable

TAMILNADU POLLUTION CONTROL BOARD

Additional Conditions:

1.The unit shall maintain the Air pollution Control measures such as stack attached to the D.G. Set efficiently so as to satisfy the Ambient Air Quality/Emission standards prescribed by the Board.
2.The unit shall continue to develop green belt in and around the periphery of the unit.
3.In case of creation of nuisance due by the Government, the unit shall revert the difference in amount within one month from the date of notification, failing to renew the consent fee, this consent order will be withdrawn without any notice and further action will be initiated against the unit as per law.

S. INDIRAGANDHI

District Environmental Engineer,
Tamil Nadu Pollution Control Board,
MAHAMALAI NAGAR

To
The Managing Director,
M/s.BHARATH UNIVERSITY ,
173, AGARAM ROAD, SELAIYUR, CHENNAI,
Pin: 600073

Copy to:
1. The Commissioner, TAMBARAM Municipality, Tambaram Taluk, Kancheepuram District .
2. Copy submitted to the Member Secretary, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
3. Copy submitted to the JCEE Monitoring, Tamil Nadu Pollution Control Board, Chennai for favour of kind information.
4. File

TAMIL NADU POLLUTION CONTROL BOARD

OFFICE OF : DSE/ TMN

OFFICE CODE :

DOC TYPE : ☐ ☐ ☐

CODE :

ACCOUNTS	S.L.

ASH RECEIPT NO.

ate : 26/9/22 150968

eceived from M/s - Sri Lakshmi Ammal Educational Trust, (Selaiyur)

e sum of Rupees Fourteen Lakhs Twenty Eight Thousand only

Cash / by D.D./ Banker's Cheque No 347024 dated 26/9/22

awn on PNB Payable at Chennai

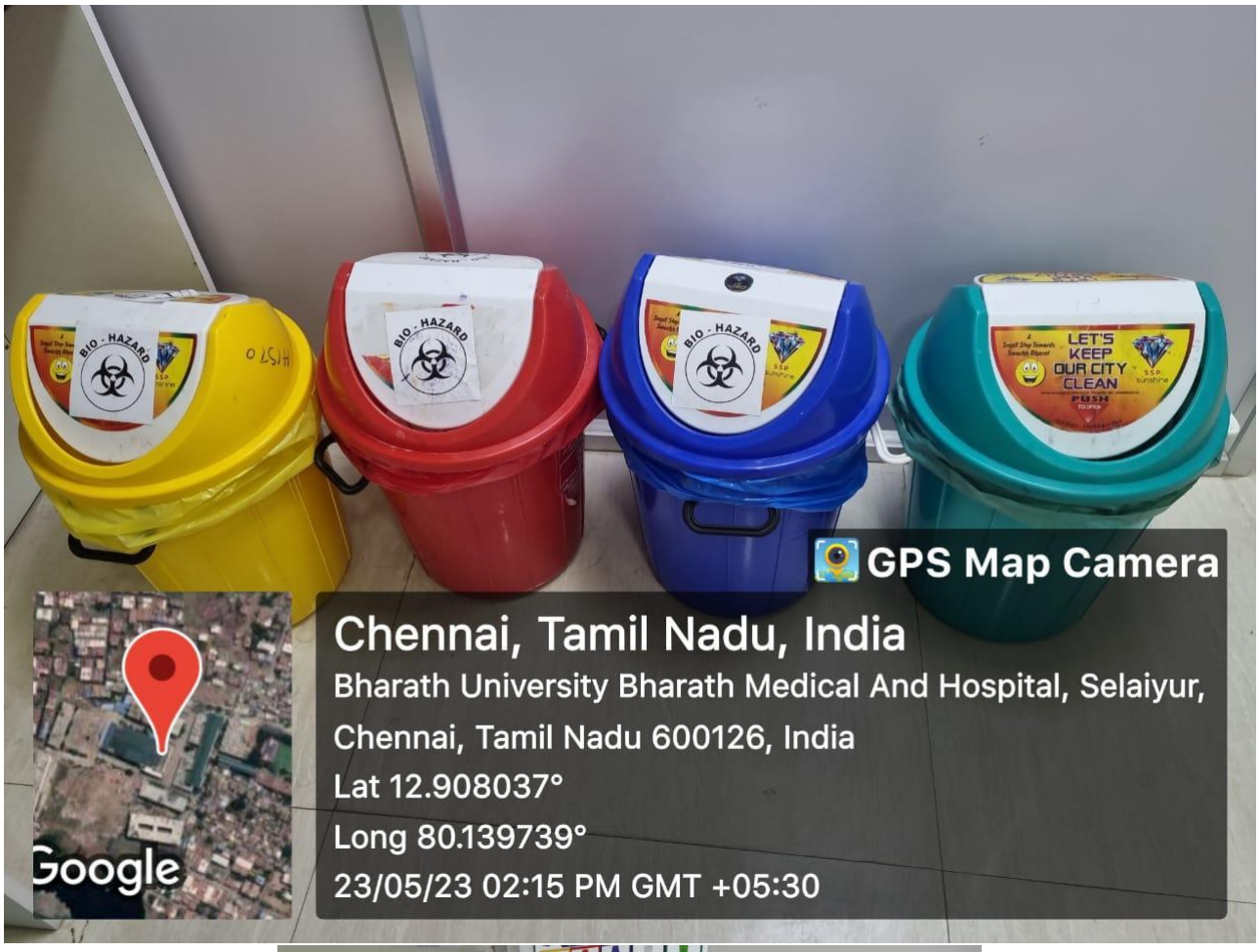
wards Cess / EMD / SD / Consent Fee to Air / Water / Analysis fees / AAQS / M Test Fees / ETI / Other CTO - Direct - 2023 - 2028

Rs. 14,28,000/-

District Environmental E...
Tamilnadu Pollution ...
Signature & Seal
Chengalpattu Dist...

Annexure 7

Implementation of biomedical waste management



Annexure 8

Implementation of e waste, solid waste, and general waste management appropriately

OUTSIDE CAMPUS ENVIRONMENTAL AWARNESSS PROGRAM –REPORT OF EVENTS

Coastal Cleaning Day –Swachh Sagar Surakshitsagar
17-09-2022

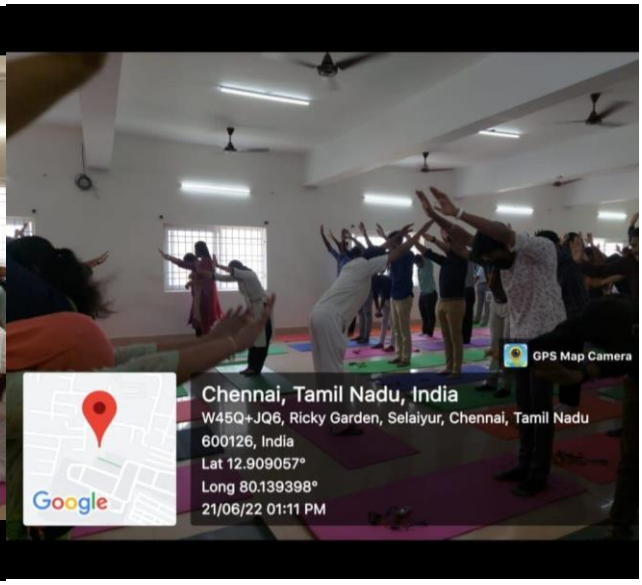
Bharath Institute of Higher Education and Research, Bhaarath Medical College, &BIHER NSS CELL and Participated in this programme at ECR JUHU Beach Chennai. More than 170 Volunteers Participated including in this Coastal Cleaning activity.

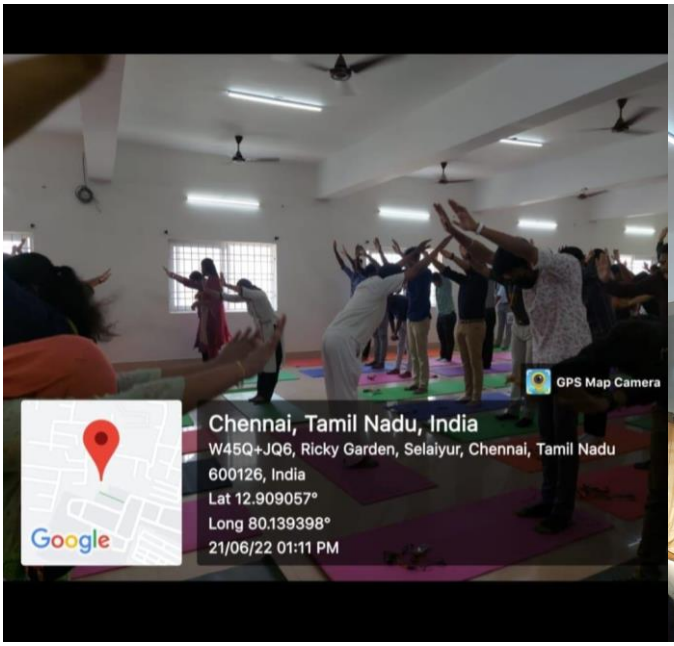
Our NSS Volunteers Moto and pledge was taken.

- We save marine animals. ...
- We preserve our natural treasures. ...
- We keep toxic chemicals out of the water. ...
- We help the local economy. ...

YOGA EVENT

In a vision to take yoga and its benefits to the world , our county and nearly 170 nations across the world came together on 11th December 2014 to make June 21st as 'International day of yoga'. Every year International day of yoga is celebrated across the world. Following the celebration of IDY in 2021, our institution planned to have a commemoration of this year (2022) by inviting Ishasamskriti students from Isha foundation, Coimbatore to demonstrate their skills on traditional folk songs and kalaripayattu. Sadhguru, the founder of Isha foundation was rallying 30000 kms in a motor bike from London to Coimbatore in 100 days to create awareness on the desertification of world soil, its organic content reduced to nearly 0.5 percent for the minimum requirement of 3 to 6 percent. Hence, this event marked the support of our college for 'save soil' along with a beautiful demonstration of kalaripayattu and traditional folk songs by Isha Samskriti students. On behalf of this event, our yoga teacher Mr.Ananad Ganesh conducted three yoga sessions every day from 12 June to 20 June 2022 for all faculties, staffs and students. International yoga day celebrations culminated on 21 June with a debate on **Yoga Vs Exercise** by our 2021-2022 batch MBBS students and lecture on the need of yoga in modern times by our chief guest Smt. Shobana Srinivasan, Director, Healing chants department, Krishnamachari Yoga Mandiram. There is a clear message to the world from our country is our nation about the need of healthy individuals to make healthy nations. Healthy soil makes healthy individuals, as soil is the basis of nourishment. Healthy food is the real medicine as put forwards by our ancestors 'உணவேமருந்து. Its time, we as individual human beings begin to think the role of each of us in contributing at least a minimum to the evolution of a healthy society. As the word Yoga means union, let's move towards creating a union of healthy beings through healthy soil and healthy food.





MINISTRY OF ENVIRONMENT FOREST AND CLIMATE CHANGE
GOVERNMENT OF INDIA

NITI Aayog

mygov
मेरी सरकार

'Lifestyle for the Environment' Pledge

Certificate

This is to certify that

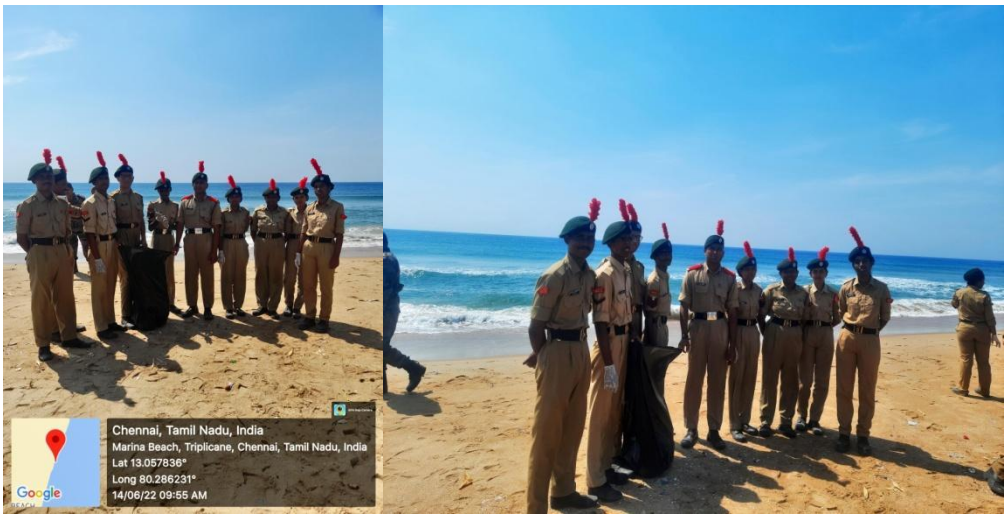
Manjani Bhaavat Medical College And Hospital

has taken the 'Lifestyle for the Environment' Pledge and committed himself/herself to consciously participate in taking up environmental lifestyle and inculcate long-term environment-friendly habits.

6983923354

October, 20 2022

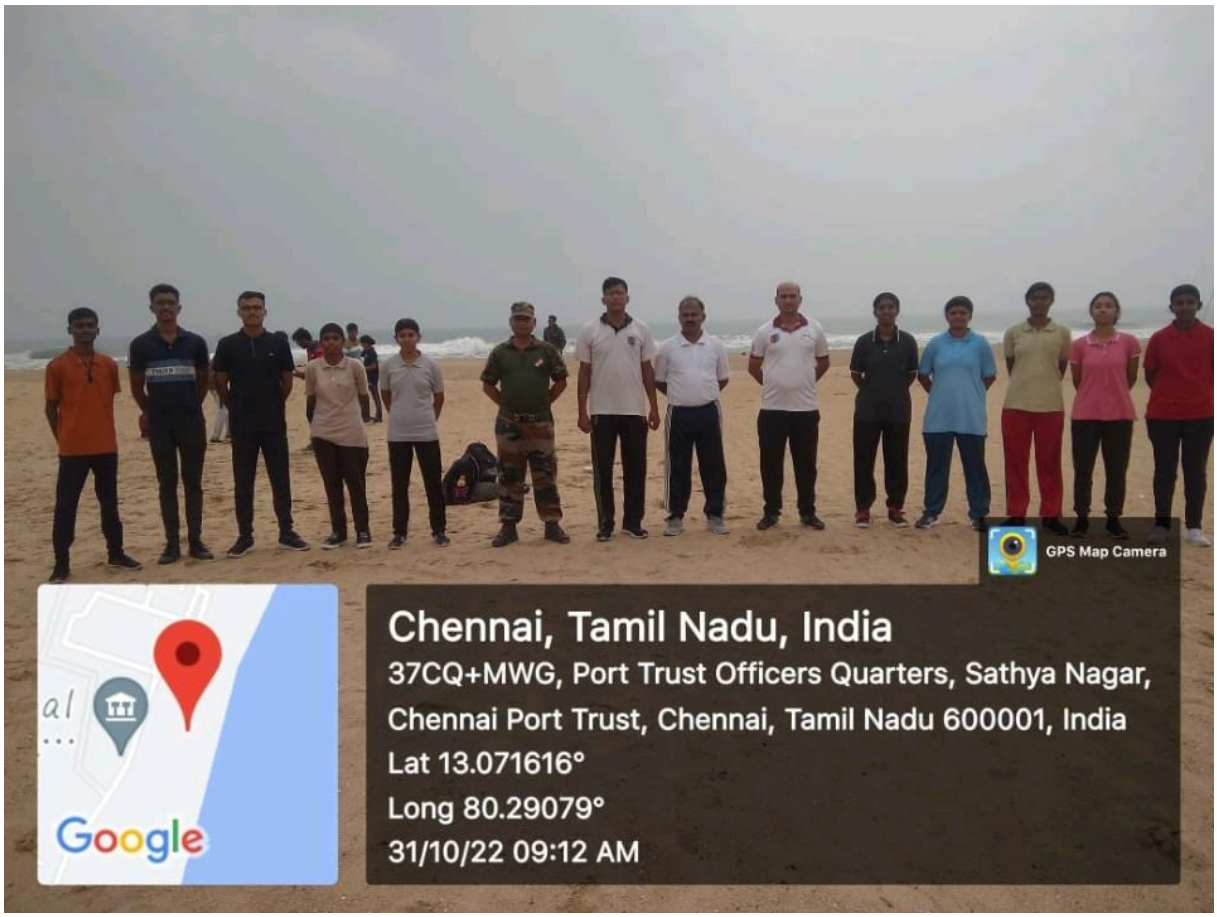
PUNNEET SAGAR ACTIVITY



Report of Swachh Bharat Abhiyan activity

The National Cadet Corps, Bharath Institute of Higher Education & Research, Selaiyur, Tambaram organized a rally on Swachh Bharat followed by a health education program to school children of Bharath Vidyashram, Tambaram on Handwashing on 9th December 2020. Dr Vidya D C, Assistant Professor, Dept of Community Medicine, Bhaarath Medical College & Hospital spoke to the schoolchildren about Handwashing – steps and its benefits and demonstrated the steps in handwashing. The students of first and third standard participated in the program.

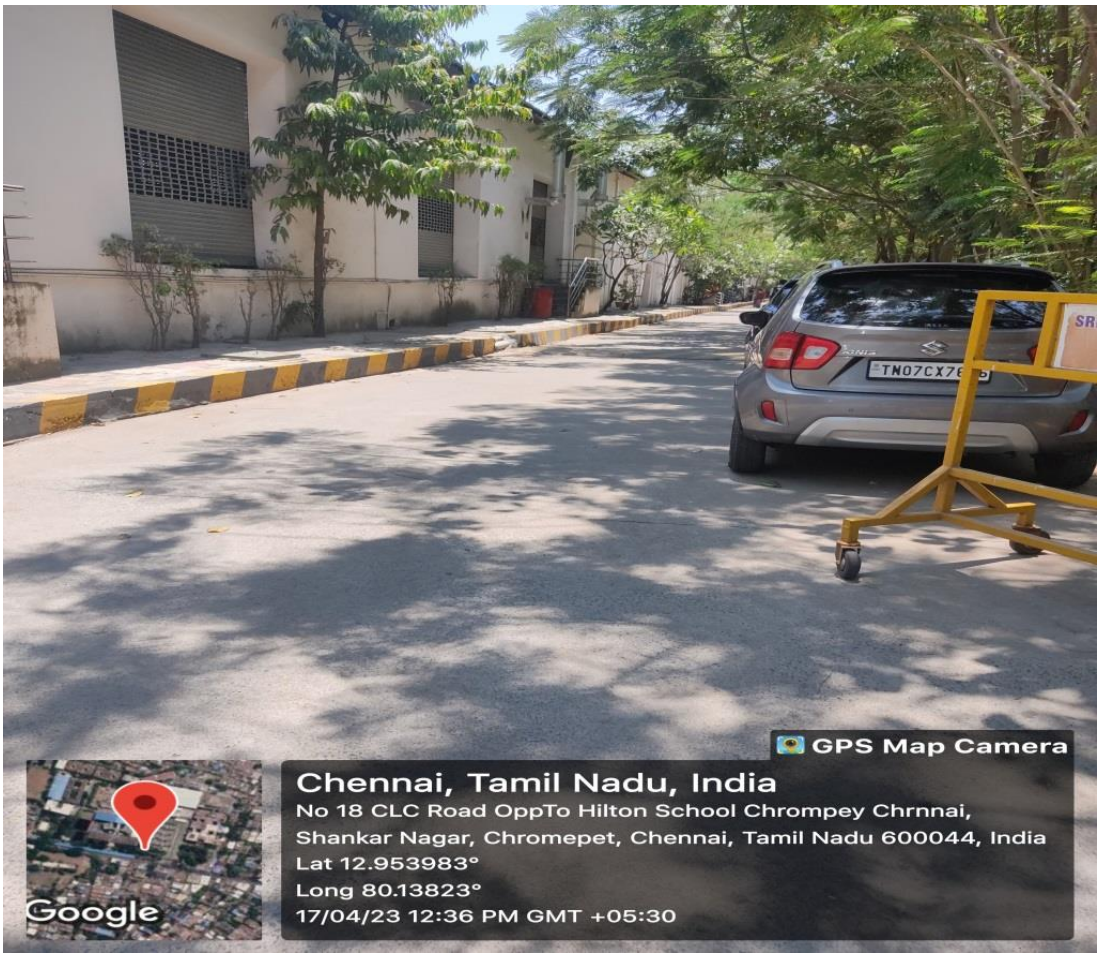
Raksthiya ekita nivas



SREE BALAJI COLLEGE OF NURSING

7.1.6 CLEAN AND GREEN CAMPUS INITIATIVES

Sree Balaji College of Nursing college strives to preserve the college campus as a green environment since it's' inception. This eco-friendly campus had practiced various efforts like sapling plantations, taking care of trees, lawns; gardens etc. landscaping in the each block provides the most scenic beauty for minds of students and visitors. The campus is also maintained as a plastic free campus.

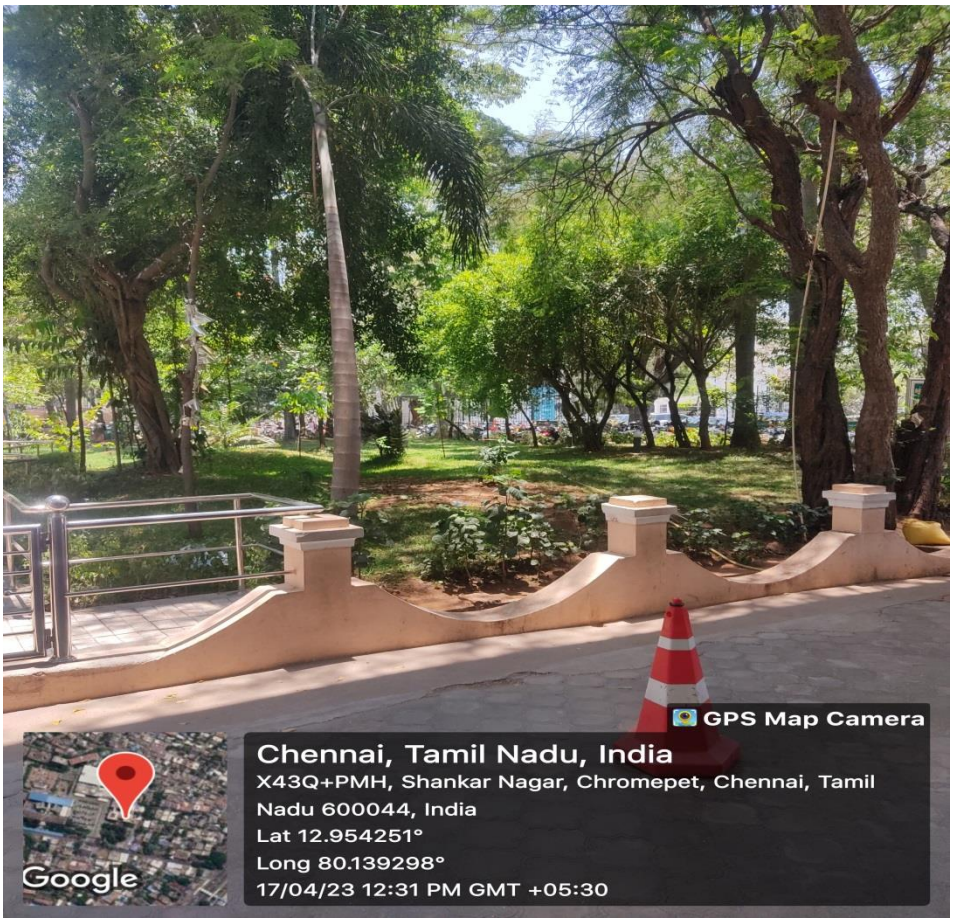


Green campus


GPS Map Camera
Chennai, Tamil Nadu, India
Sree Balaji Medical College and Hospital, Chrompet, X43Q+HG2, Shankar Nagar, Chromepet, Chennai, Tamil Nadu 600044, India
Lat 12.953997°
Long 80.138759°
17/04/23 12:35 PM GMT +05:30
Google

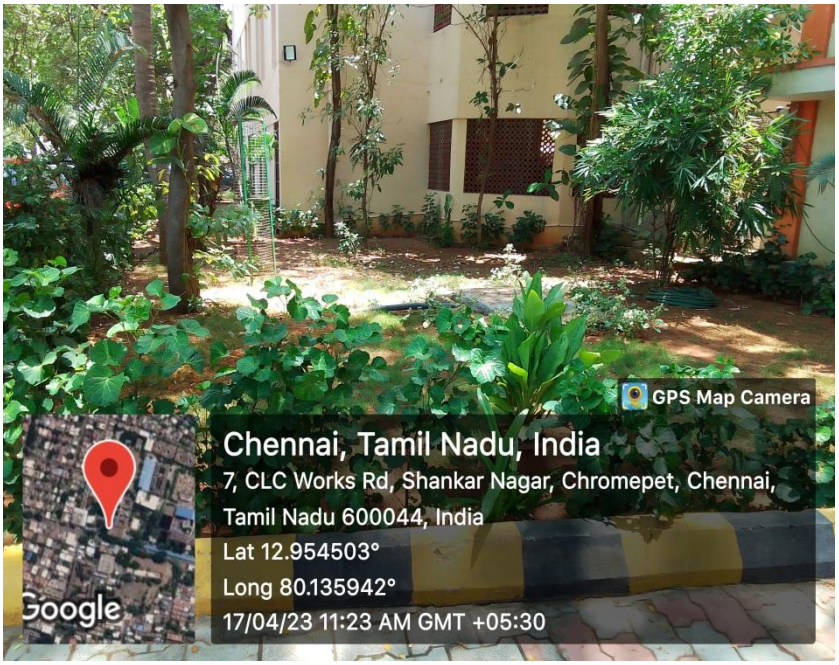

GPS Map Camera
Chennai, Tamil Nadu, India
Sree Balaji Medical College and Hospital, Chrompet, X43Q+HG2, Shankar Nagar, Chromepet, Chennai, Tamil Nadu 600044, India
Lat 12.953997°
Long 80.138759°
17/04/23 12:35 PM GMT +05:30
Google

Our college encompasses only a small percentage of build-up area while the rest of the premise is green covered. Green Landscaping is done around all the department buildings.



Restricted entry of automobiles. Almost all staff utilizes college bus facility. The staff and students are restricted to use their automobiles inside the college during the working hours. Vendors, parents, visitors are restricted to enter inside the college campus using automobiles and are asked to park their vehicles in the entrance.


GPS Map Camera
Chennai, Tamil Nadu, India
7, CLC Works Rd, Shankar Nagar, Chromepet, Chennai,
Tamil Nadu 600044, India
Lat 12.954505°
Long 80.135994°
17/04/23 11:24 AM GMT +05:30
Google


GPS Map Camera
Chennai, Tamil Nadu, India
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Tamil Nadu 600044, India
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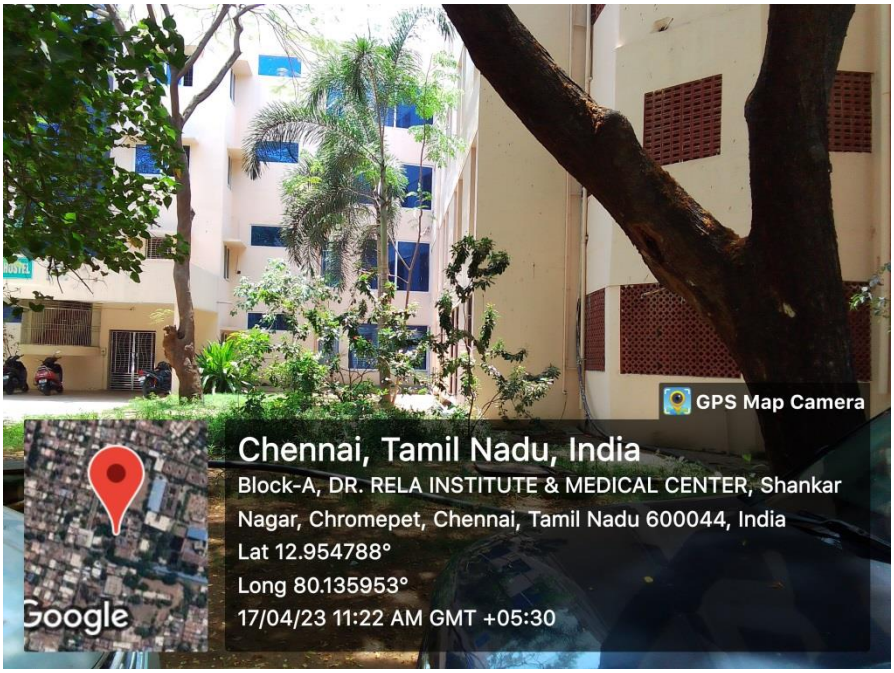
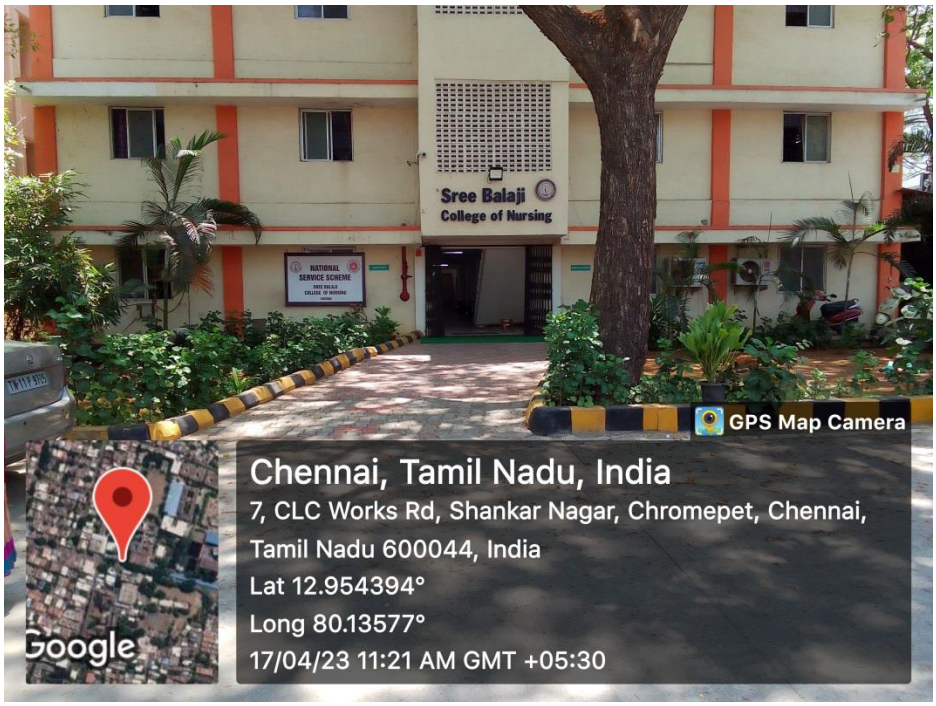
Long 80.135942°
17/04/23 11:23 AM GMT +05:30
Google


GPS Map Camera
Chennai, Tamil Nadu, India
Block-A, DR. RELA INSTITUTE & MEDICAL CENTER, Shankar Nagar, Chromepet, Chennai, Tamil Nadu 600044, India
Lat 12.954788°
Long 80.135953°
17/04/23 11:22 AM GMT +05:30
Google


Sree Balaji
College of Nursing
GPS Map Camera
Chennai, Tamil Nadu, India
7, CLC Works Rd, Shankar Nagar, Chromepet, Chennai, Tamil Nadu 600044, India
Lat 12.954394°
Long 80.13577°
17/04/23 11:21 AM GMT +05:30
Google

SREE BALAJI COLLEGE OF NURSING

7.1.6 BEYOND THE CAMPUS ENVIRONMENTAL PROMOTION AND SUSTAINABILITY ACTIVITIES

Each year, ICN leads the celebrations on International Nurses Day, which is traditionally held on 12 May, the anniversary of Florence Nightingale's birth. The theme for 2020, ***Nurses: A Voice to Lead – Nursing the World to Health***, demonstrates how nurses are central to addressing a wide range of health challenges. It will encourage nurses and the public to celebrate the big day, but also provide information and resources that will help to raise the profile of the profession throughout the year and attract a new generation into the nursing family.

SAPLING THE PLANT on Nurses Day to protect the environment

Planting trees

Planting trees in the college premises

LIGHTING THE LAMP


நாட்டு நலப்பணித் திட்ட சிறப்பு முகாம்


நாட்டு நலப்பணித் திட்ட சிறப்பு முகாம்

NSS SPECIAL CAMP WHICH WAS CARRIED OUT FROM 17 FEBRUARY TO 23 FEBRUARY 2022 AT PADAPPAI.

As organized, 7days special camp in the adopted village padappai, Kanchipuram district by NSS unit of Sree Balaji college of nursing, Chrompet, Chennai, Which was inaugurated on 17th february2022.The special camp was inaugurated by our college principal Dr .V.Hemavathy along with the head mistress of the government middle school Mrs.Subhavidhya,Padappai in the presences of NSS programme officer ,volunteers and school student. The **awareness programme relating to the child sexual abuse** to the children were explained by the NSS Volunteers. In the first day of afternoon session, survey was done at adopted village Kelpadappai.

Environment pollution has become a major challenge to human being. It possesses a big threat to human civilization due deforestation and lack of proper afforestation. The Students & Faculty members of **Sree Balaji College of Nursing** have participated in the Special Plantation drive Camp. The event was attended by more than 75 Students & 41 students have expressed their views & thoughts about how to protect the environment. All students have taken oath to plant as **tress sapling** to make our environment

SAPLING OF PLANTS

Special camp at Srnivasa Perumal temple for environmental hygiene

(students cleaned the temple premises)

The third day of special camp was started in the morning with prayer people of the adopted village and the NSS volunteers participated. In this session cleanliness drive was done in the Srinivasa perumal temple, padappai. In afternoon session an discussion with women self-help group was carried out at padappai.

(students cleaned the temple premises)

(students cleaned the temple premises)

As per plan and schedule by NSS volunteers visit to little drops old age home at Somangalam village in Kundrathur panchayat. In the old age home Nearly 400 old age people were residing .As requested by the manager of the home the provision like Toor dhal, Sugar, Oil, Old clothes were donated by Sree Balaji College Of Nursing. Afternoon was highlighted with the sapling of the trees in the campus.

Sri Lakshmi Narayana Institute of Medical Sciences (SLIMS)

7.1.6 ENVIRONMENTAL CONSCIOUSNESS AND SUSTAINABILITY

GREEN CAMPUS INITIATIVES INCLUDE

The Institutional environment and energy initiative are confirmed through Green Audit, Energy Audit, Environmental Audit, the environmental promotional activities and Clean & green recognitions and Awards.

Pedestrian Friendly Pathway

Restricted entry of automobiles & Pedestrian Friendly pathway Landscaping withTrees and Plants in SLIMS Institutional initiatives for greening the Campus

Sree Balaji Medical College & Hospital

7.1.6 QUALITY AUDITS ON ENVIRONMENT AND ENERGY REGULARLY UNDERTAKEN BY THE INSTITUTION

1. GREEN AUDIT

A checklist of flora and fauna diversity in and around the college campus is takennote off.

- Measures to improve biodiversity within the college campus is suggested.
- Energy consumption pattern of the college is monitored.
- Quantity of water usage within the college campus is assessed.
- Various sources of organic and solid waste generation and mitigation possibilities is also found out.

Green audit of the institute is conducted annually

2. ENVIRONMENT AUDIT:

This indicator addresses biodegradable waste from college and hostel canteen, paper waste to hazardous wastes of laboratories and worn-out electric & electronic goods, and plastic wastes. Hazardous materials represent significant risks to human health and ecological integrity. Environment audit of the institute is conducted 6monthly.

3. CLEAN AND GREEN CAMPUS RECOGINITION /AWARDS:

“Clean and green campus” awareness generation conducted.

School of Nursing

SREE BALAJI COLLEGE OF NURSING

CRITERIA 7: BEST PRACTICES

7.1.6 QUALITY AUDITS ON ENVIRONMENT AND ENERGY ARE REGULARLY UNDERTAKEN BY THE INSTITUTION

BEYOND THE CAMPUS ENVIRONMENTAL PROMOTIONAL ACTIVITIES:

RESPONSE:

1. SWACH BHARATH PROGRAMME

As a part of NSS Programme "Swach Bharath Mission" special Outreach programme awareness rally was conducted on 26.10.2018. This programme was conducted in collaboration with Pallavaram Municipality and Central Ministryof Telecommunication and Broadcasting.

In this rally 350 students of Sreee Balaji College of Nursing including B.SC (N), P.B.B.Sc (N) and M.Sc(N) participated in the programme. The rally started from the campus of Sree Balaji College of Nursing and ended in Government Boys Higher Secondary School, Chrompet.

7.1.6 Activities conducted for promotion of Universal values, ethics

Objective: To promote truth, nonviolence, care for the need among society.

1. Father of our Nation Mahatma Gandhiji's 150th year birth anniversary was celebrated with competition, among students to promote truth and non-violence among Faculty and students.
2. Leprosy, an infectious disease especially prevalent in Asia and Africa, with a taboo attached, Faculty and students along with Government of Tamil nadu Health authorities have taken a pledge to work against leprosy and actively participated for a month long (National Leprosy Eradication Programme) with -Faculty - students having involved in this drive benefiting subjects.

   These activities were carried with Faculty and student's social responsibility to our people in need of healthcare.

Objective: To promote communal harmony and religious tolerance.

3. Religious functions such as Christmas, Pongal and Ramzan with students and Faculty participating highlighting the importance of each function. These activities were conducted to promote tolerance, respect other religion, while valuing their faith.

   Two hours programme with highlighting of importance of each religious activity, by lectures, songs, cultural activities with presence of all Faculty and students.

   Students actually look forward to these activities. On the following days they were conducted

   2018 2019 2020 2021 2022 -photos

Any other details

4. With an objective to promote Ethics among students.

   Ethics was included into BPT program curriculum as a course in third year of their study.

   From academic year 2018, learning professional ethics as a subject enable student to adhere and faculty to be fit to practice what they are teaching.

5. Students Council

With an objective to develop democratic values and involve in decision making students Council was formed with two years' tenure since 2018.

Chairman, Vice Chairman, Secretary for Academics, Secretary for Sports and Cultural, Secretary for student's welfare are to be selected by students in a transparent manner and an Election Officer, a senior faculty to Norse the process.

Members of the Council are informed, discussed, their feedback obtained in major decision making of the Institution.

These activities help for expressing student's views, perception in a democratically way along with discipline as these were coordinated in a typical office style meeting with Principal, few faculty members attending each council meeting with an agenda.

Two such student Council elections were conducted first in 2018 and second in 2019.

6. Teachers are sculptors and living role models, with this objective Teachers Day celebrations were conducted on September 5th of each year where each teacher is facilitated with a greeting card and their contributions to the profession and to students were remembered with gratitude as evidenced with few photos taken on those occasions.
7. Even though women's rights and the contribution are much spoken than reality, we regularly celebrate Women's day inviting women achievers in different fields including Medicine, Sports, Education, Law, Physiotherapy, Entrepreneurs, Dietitian each year and sensitise faculty and students for motivation, respect and appreciate values of role played by women for betterment of our society. This was evidenced with few photographs taken on every year Women's Day celebration on March 8 as below.
8. Donate and save life with Blood donation with Faculty and students as registered members of Indian Red Cross Society, the Institution has a

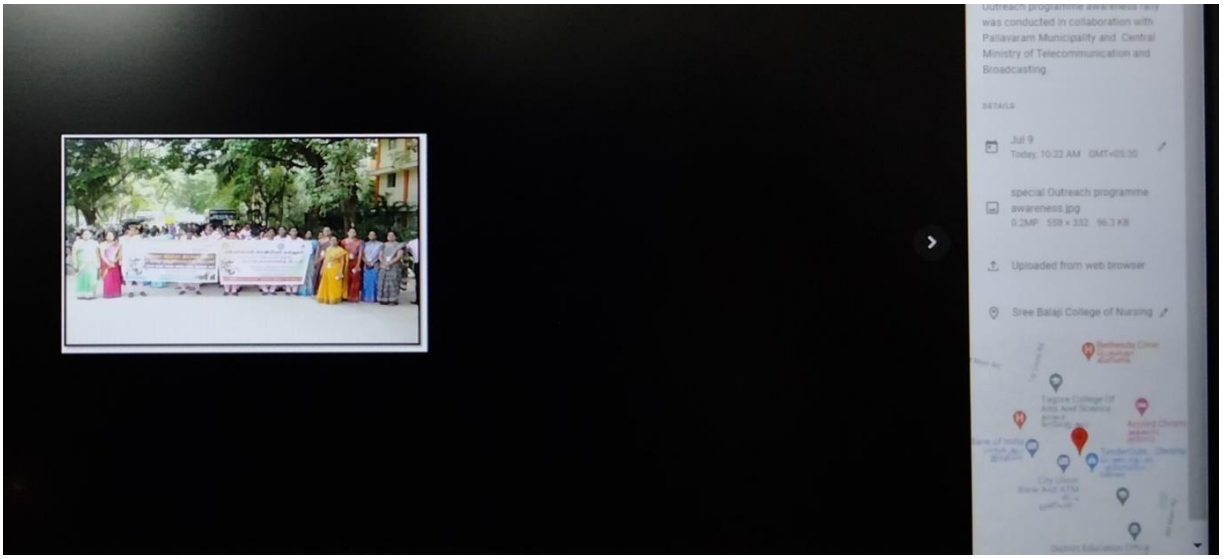
functional Youth Red Cross Society which regularly organised voluntary Blood donation camp every year since 2003 till 2020. With a register maintained with regular blood donors frequently help by donating blood to those in need. As seen below are few photographs taken on those occasions along with certificates issued for these noble activities by IRCS.

9. When GAJA cyclone has hit in 2018 various parts of Tamil Nadu were affected, to support the needy, Faculty and students have collected medicine, food and other relief materials to the affected people as can be seen in the below photos
10. Community Health Care especially for rural subjects are greater service to mankind having MOU with S.G.S trust Faculty and students of this school of Physiotherapy regularly participate in rural health camp conducted at Nadupalani a village in Kanchipuram District and 100 km from Metro Chennai conducted with a monthly once frequency where 30 students of B P T programme with 3 Faculty along with Physician, Dentist, Optometrist, Pharmacist, Gynaecologist and a Paediatrician in every month camp 500 subjects were screened, 75-100 were treated with Physiotherapy the records were maintained and later used for research activities with time spend from dawn to dusk serving these village since 2006 till today, participants from this Physiotherapy Organisation are not only serving rural residents but knows the value of health and human life which are indirectly learnt with lifestyle, habits, diseases and above all to help the needy in the society irrespective of caste, creed, religion, socio economic status are sown among pupil physiotherapist with these Community Health camps.
11. Celebration of National Health days mainly World Hand Hygiene Day celebrated on 5th May since 2018 every year holds value in prevention of many communicable diseases including SARS COVID 19 aid safe practices, cultivated among budding professionals as seen below:

7.1.6 QUALITY AUDITS ON ENVIRONMENT AND ENERGY ARE REGULARLY UNDERTAKEN BY THE INSTITUTION

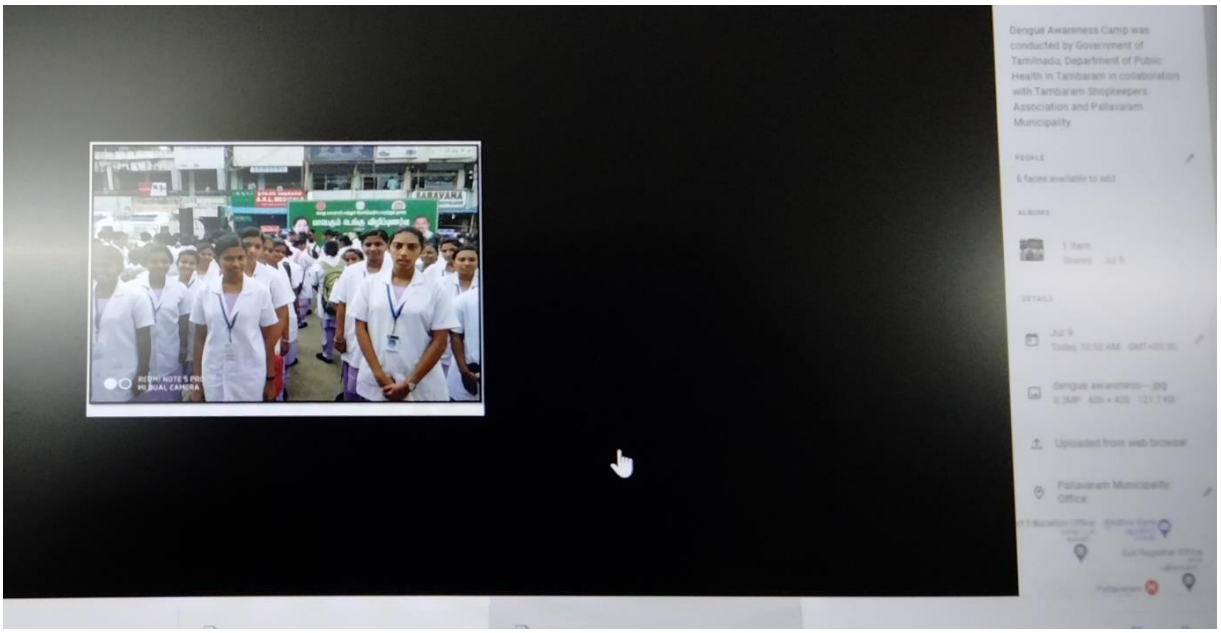
7.1.6.1 beyond the Campus Environmental Promotional Activities Response:

"Swach Bharath Mission"**Special Outreach Programme Awareness** rally was conducted in collaboration with Pallavaram Municipality and Central Ministry of Telecommunication and Broadcasting.



https://photos.app.goo.gl/jmAxgV3gGb9iM6Wm6

Dengue Awareness Camp was conducted by Government of Tamilnadu, Department of Public Health in Tambaram in collaboration with Tambaram Shopkeepers Association and Pallavaram Municipality.



https://photos.app.goo.gl/j7vaeoNBtPbHH7Wq8

From our college B.sc nursing final year students were participated in the pulse **polio programme** were conducted at various of primary health care centers in Tamil nadu and includes hasthinapuram, Pallavaram.

https://photos.app.goo.gl/qUK51wCxmEGrCApi6

we successfully started the event of **Tree plantation under the** national service scheme at Hasthinapuram government higher secondary school campus.

https://photos.app.goo.gl/CKaqbrdD1s6nGrwd8

Our college conducted a program on **Road Traffic Awareness**. The program was conducted with the aim of creating awareness among the youngster about the perils of rash and negligent driving given the fact that most victims of road accidents are youths. The volunteers urged to community people to follow the traffic rules like wearing seats belts, etc.

https://photos.app.goo.gl/nDXidbteb7s5cNpq7

Sri Lakshmi Narayana Institute of Medical Sciences

7.1.6 QUALITY AUDITS ON GREEN, ENVIRONMENT AND ENERGY in Sri Lakshmi Narayana Institute of Medical Sciences

The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution. With this in mind, the specific objectives of the audit were to evaluate the adequacy of the management control framework of Environment Sustainability as well as the degree to which the Departments are in compliance with the applicable regulations, policies and standards. During the initial planning of the audit, an analysis was conducted in order to identify, evaluate and prioritize the risks associated with the environmental sustainability. The analysis was based upon an examination of the policies, manuals and standards that govern the environmental sustainability, on data analysis, and on the results of preliminary interviews with personnel considered key in the environmental management in the campus. The criteria and methods used in the audit were based on the identified risks. The methodology used included physical inspection of the campus, review of the relevant documentation, and interviews.

Audits in the last five years (from 2018 to 2022) are as follows:

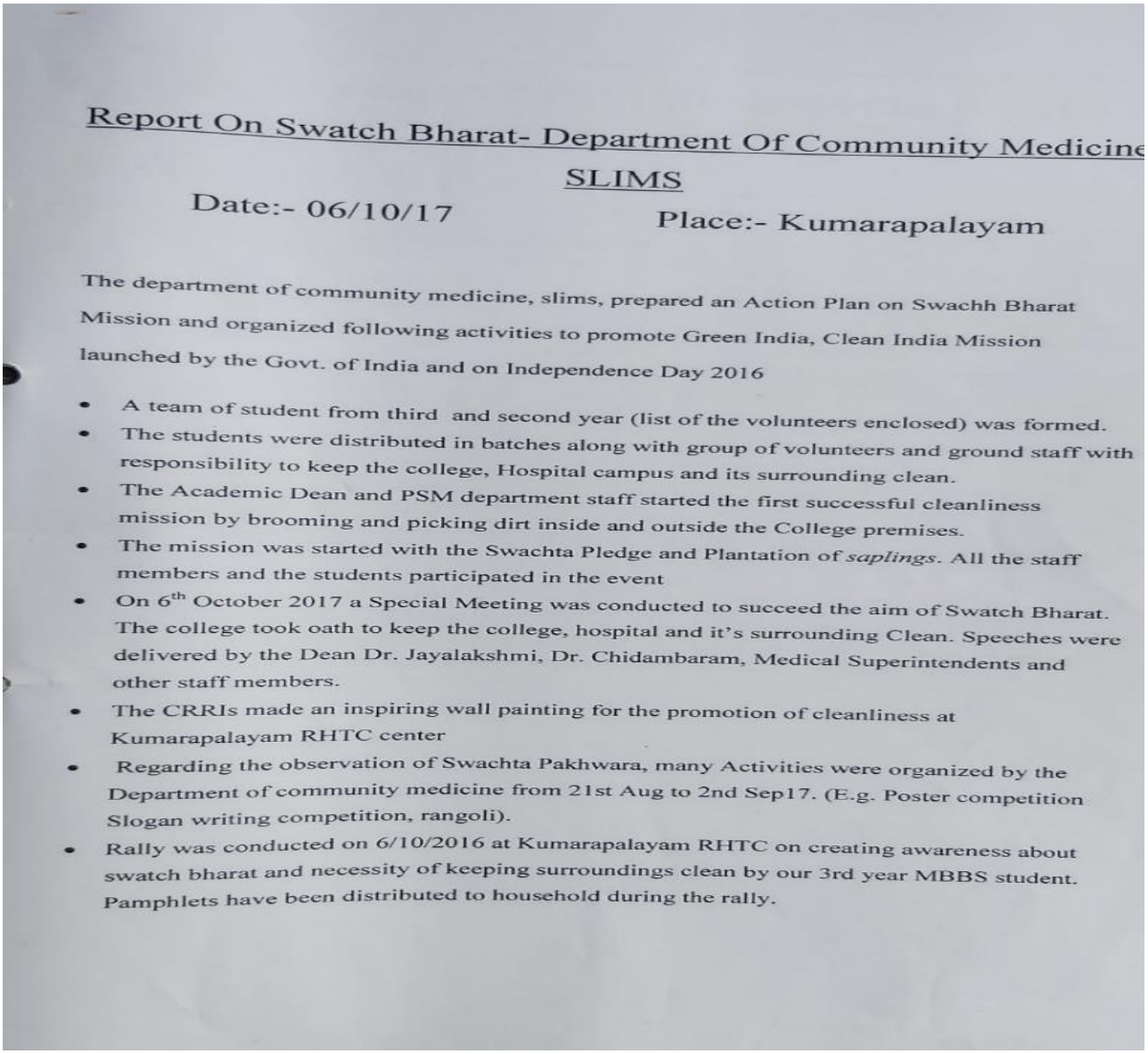
GREEN AUDIT:

The following audit framework is used for conducting Green Audit in 2018-19. Physical inspection has been carried out for all the eleven college separately and findings are noted as below.

Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse

Reduce the absolute amount of waste that it produces from college kitchens, buttery, staff offices and student accommodation. College has functional Sewage Treatment Plant and Waste Treatment Plant to recycle the recyclable waste.

The college may use more reusable resources and containers and avoid unnecessary packaging where possible to maximize the proportion of waste that is recycled and minimize the quantity of non-recyclable refuse. • The College may provide more sufficient, accessible and well-publicized collection points for recyclable waste, with responsibility for recycling clearly allocated. • The college may frequently make the specific arrangements for garbage collection at events, such as cultural Events, internal and external seminars and conferences, where significant recyclable waste is likely to be produced, in order to both minimize the waste produced and maximize what is recycled/reused to maximize the proportion of waste that is recycled and minimize the quantity of non-recyclable refuse.



Report On Swatch Bharat- Department Of Community Medicine

SLIMS

Date:- 06/10/17 Place:- Kumarapalayam

The department of community medicine, slims, prepared an Action Plan on Swachh Bharat Mission and organized following activities to promote Green India, Clean India Mission launched by the Govt. of India and on Independence Day 2016

- A team of student from third and second year (list of the volunteers enclosed) was formed.
- The students were distributed in batches along with group of volunteers and ground staff with responsibility to keep the college, Hospital campus and its surrounding clean.
- The Academic Dean and PSM department staff started the first successful cleanliness mission by brooming and picking dirt inside and outside the College premises.
- The mission was started with the Swachta Pledge and Plantation of *saplings*. All the staff members and the students participated in the event
- On 6th October 2017 a Special Meeting was conducted to succeed the aim of Swatch Bharat. The college took oath to keep the college, hospital and it's surrounding Clean. Speeches were delivered by the Dean Dr. Jayalakshmi, Dr. Chidambaram, Medical Superintendents and other staff members.
- The CRRIs made an inspiring wall painting for the promotion of cleanliness at Kumarapalayam RHTC center
- Regarding the observation of Swachta Pakhwara, many Activities were organized by the Department of community medicine from 21st Aug to 2nd Sep17. (E.g. Poster competition Slogan writing competition, rangoli).
- Rally was conducted on 6/10/2016 at Kumarapalayam RHTC on creating awareness about swatch bharat and necessity of keeping surroundings clean by our 3rd year MBBS student. Pamphlets have been distributed to household during the rally.

ENERGY AUDIT:

The most primary objective lies in learning about the data and analyzing it to find energy consumption pattern of such facilities. On the basis of the results of the first objective, the second objective is identified in terms of calculation of the wastage pattern. The final objective is to find and implement solutions that are acceptable and feasible

Our college has been implementing several solar energy implementations as alternative energy sources to supplement energy needs at our schools and campuses. On analyzing the average power consumption graph in The Slims campus, it was noted that a minimum of 25 KW power is consumed daily. There are days, on which average consumption exceeds 30 KW. Thus, it was very essential to reduce the power consumption, which we obtain from the conventional form with renewable energy resources. Solar energy was adopted as an alternate way for reducing the maximum power consumption from the powerhouses. The site selection was based on solar insolation availability, grid

Connectivity, availability of adequate rooftop space for power generation and green belt development, availability of load centres (town) vicinity, availability of labor force in the proximity and easy accessibility of the site. The terrace area is used for the solar panel installation.

SNO	TYPE OF LIGHT FITTINGS	AREA	QTY	KW LOAD
1	LED LIGHT	STREET LIGHT		
		POOL LIGHT S	120	2.2
2	LED TUBE	BLOCK-C		
		AND BACK AREA	120	5.2
	MOTOR LOAD(PUMPS)			
3	AUTO WATER TANK LEVAL	BLOCK -A,B,C,D	4	20
	CONTROLER PROVIDED			
	SAVING			27.4 KW
	ENERGY SAVING FOR THE YEAR			78912KWH

V. THIRUNAVUKKARASU, B.E., MBA,
Electrical Consultant & Energy Auditor
Certificate No. 4058 Reg. No. EA 6397

SATHVIK SOLAR

INVOICE

ORIGINAL FOR BUYER

SATHVIK SOLAR CHENNAI

SATHVIK SOLAR

Regd. office :
Old No.18, New No.39, South Usman Road,
T.Nagar, Chennai - 600 017 , Tamil Nadu.
Email Id: sathviksolar@gmail.com
PH:044-22425838, Mobile: 08939406424

To

Sree Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram Village, Villianur Commune
Kudupakkam Post, Puducherry - 605 502

Invoice No: SS/02	Date: 05.03.2016
D.C. No: 02	Date: 30.01.2016
P.O.No. Verbal	
Lorry No.	
TIN No : 33096288358	

Description of Goods	Quantity	Rate		Amount	
8000 Litres per day Solar water heater system (ETC - INSTITUTION 500 x 16 units)	1	1,142,857	00	1,142,857	00
		Sub-Total		1,142,857	00
		CST-5%		57,143	00
		Total		1,200,000	00

Total Value in words:- Twelve Lakhs Rupees only

Certified that the Particulars given above are true and correct and the amount indicated represents the price actually charged and that there is no flow of additional consideration directly or indirectly from the buyer.

For SATHVIK SOLAR

Authorised Signatory

E.&O.E.

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

Date: 16/11/2015
Ref: Quotation dated 15/11/2015

To,

SATHVIK SOLAR
New No: 39, Old No: 18, South Usman Road
T Nagar, Chennai 600017
TIN: 33096288358

Sub: Purchase order for 8000 Liters Per Day Solar water heater System
(ETC - INSTITUTIONAL 500 x 16 units)

Dear Sir,

Here by consider this order as confirmation of Solar water heater system for capacity of 8000 LPD (i.e 500 LPD X 16 Nos)
Total value of system is **Rs.12,000,00 (Twelve Lakhs rupees only).**
4 Solar water heater systems will be installed separately (2000 liters / day capacity each) 2 in boy's hostel and 2 in ladies hostel.

Terms and conditions:

1. Above price including VAT.
2. Transportation and Packing included.
3. Installation and commissioning
4. 1 Year Guarantee and 5 Years warranty
5. Inlet water tank under SLIMS scope of work

Payment terms:

a. 60 % advance payment
b. 25% payment towards supply of material
c. 15 % towards installation and commissioning of the system

Thanking you

For Sri Lakshmi Narayana Institute of Medical Sciences

General Manager

Phone : Off :0413 - 2661978. Fax :0413 - 2661996. e-mail : slims_h@yahoo.com

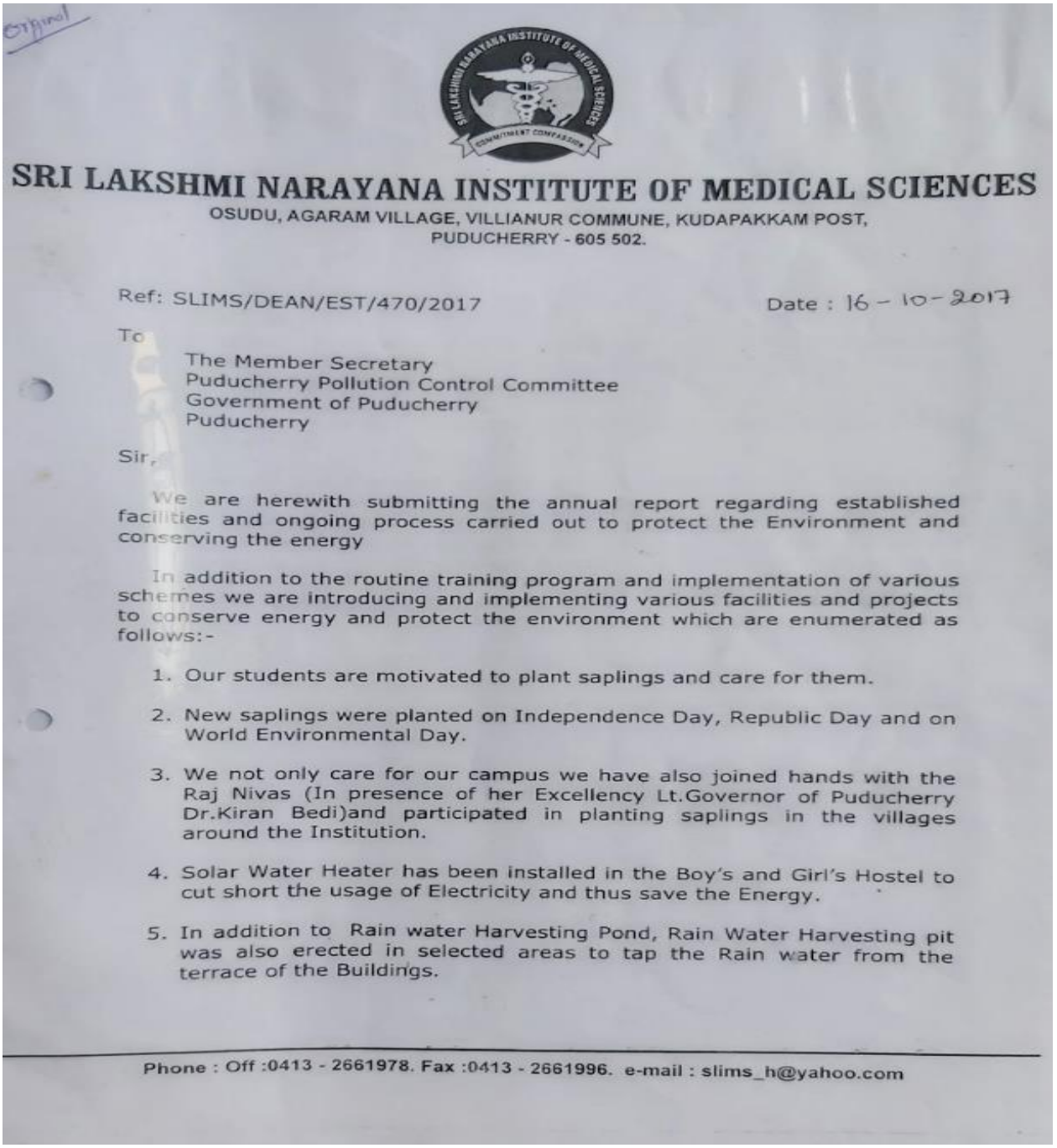
ENERGY AUDIT SEQUENCE

SNO	DESCRIPTION OF AREA	POSSIBLE SAVING	SAVING KWH	COST SAVING PER MONTH
1	TRANSFORMER IN COMING LOAD FACTOR	76%	NOT POSSIBLE	0
2	INDUCTION MOTOR LOAD / EE MOTORS	NOT APPLICABLE		0
3	HEATERS LOAD	BY SOLAR WATER HEATER	9600 KWH	57600
4	CABLE DISRTIBUTION	NOT APPLICABLE		
5	POWER FACTOR IMPROVEMENT	0.93 - 0.99	40	6300
8	COMPRESSED AIR	NOT APPLICABLE		0
9	COMPRESSED AIR SYSTEM	NOT APPLICABLE		0
10	HVAC AND Refrigeration system		50 KWH	7875
11	Centrifugal Pump application	NOT APPLICABLE		
12	FAN AND BLOWERS	NOT APPLICABLE		
13	VFD APPLICATION	NOT APPLICABLE		
14	LIGHTING SYSTEM BY LED BULBS	150	6000	31500
15	DG SET PERFORMANCE	2 NOS	NOT POSSIBLE	
	TOTAL COST SAVING APROXIMATELY RS			103275

V. THIRUNAVUKKARASU, B.E., MBA,
Electrical Consultant & Energy Auditor
Certificate No. 4058 Reg. No. EA 6397

ENIVRONMENT AUDIT:

Various environment related activities has been done in the college.



SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

Ref: SLIMS/DEAN/EST/470/2017 Date : 16 - 10 - 2017

To

The Member Secretary
Puducherry Pollution Control Committee
Government of Puducherry
Puducherry

Sir,

We are herewith submitting the annual report regarding established facilities and ongoing process carried out to protect the Environment and conserving the energy

In addition to the routine training program and implementation of various schemes we are introducing and implementing various facilities and projects to conserve energy and protect the environment which are enumerated as follows:-

1. Our students are motivated to plant saplings and care for them.
2. New saplings were planted on Independence Day, Republic Day and on World Environmental Day.
3. We not only care for our campus we have also joined hands with the Raj Nivas (In presence of her Excellency Lt.Governor of Puducherry Dr.Kiran Bedi)and participated in planting saplings in the villages around the Institution.
4. Solar Water Heater has been installed in the Boy's and Girl's Hostel to cut short the usage of Electricity and thus save the Energy.
5. In addition to Rain water Harvesting Pond, Rain Water Harvesting pit was also erected in selected areas to tap the Rain water from the terrace of the Buildings.

Phone : Off :0413 - 2661978. Fax :0413 - 2661996. e-mail : slims_h@yahoo.com

AKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

6. Periodical monitoring of all the equipments used in the Environmental Protection management is done on regular basis and the Worn out ones are replaced.

7. The water samples are tested and AIR pollution monitoring are done periodically.

8. The institution adopts all innovative methods to tap the material energy, conserve and reuse the available forms.

9. We are in the verge of implementing new innovative methods for the cause as discussed above and hence we request your good office to share the details of any innovative new methods to be followed to save energy and protect the environment.

Yours faithfully

For,

Sri Lakshmi Narayan Institute Of Medical Sciences

INDIA NON JUDICIAL

Government of Puducherry

e-Stamp

सत्यमेव जयते

Certificate No.	:	IN-PY16384177119290P
Certificate Issued Date	:	03-Mar-2017 05:03 PM
Account Reference	:	IMPACC (SH)/ pyshimp17/ OULGARET/ PY-PU
Unique Doc. Reference	:	SUBIN-PYPYSHIMP17251873382911 39P
Purchased by	:	PONDICHERRY SOLID WASTE MANAGEMENT COMPANY PVT LTD
Description of Document	:	Article 5 Agreement or Memorandum of Agreement
Property Description	:	AGREEMENT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	PONDICHERRY SOLID WASTE MANAGEMENT COMPANY PVT LTD
Second Party	:	SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
Stamp Duty Paid By	:	PONDICHERRY SOLID WASTE MANAGEMENT COMPANY PVT LTD
Stamp Duty Amount(Rs.)	:	20 (Twenty only)

----------Please write or type below this line----------

Puducherry Solidwaste Management Company (P) Ltd.,
Rajiv Gandhi Land Mark, R.S.No.7915 & 8012
Thethipet Village, Villianur Commune, Puducherry-605 502

Dr. G. JAYALAKSHMI, BSC., MBBS., DTCD., M.D.,
DEAN
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram, Kudapakkam Post,
Villianur Commune, Puducherry-605502.

VO 0005818784

Statutory Alert:
1. The authenticity of this Stamp Certificate should be verified at "www.shcilestamp.com". Any discrepancy in the details on this Certificate and as available on the website renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

13. Agreement can be terminated by giving one-month notice from either side or will be automatically terminated if the services are not started within a month from the date of this agreement.

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIEN
OSUDU, AGARAM VILLAGE VILLIANUR COMMUNE, KUDAPAKKAM POST, PONDICHERRY - 6

Dated:31-01-2017

From

General Manager,

Slims,

Pudhucherry 605502.

To

The Member Secretary,

Pudhucherry Pollution Control Committee ,

Pudhucherry.

Sir,

Sub: Air and Water consent fees for the year 2017-18

I hereby submit the Air and Water consent application along with PNB DD no 511008 30-01-2017 ,as fees for the amount of Rs 49,200/-. kindly acknowledge it.

Thanking you

Yours sincerely

For SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

Authorised Signatory


TO THE STARS BY HARD WORK
BIHER
INDIA
Bharath
INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(Declared as Deemed to be University under section 3 of UGC Act 1956)
LIVELY CAMPUS
Ranked as
BEST INSTITUTE FOR CAMPUS LIFE
MHW Rankings 2021
"The MHW Ranking 2021 for Indian Institutions, are honoured as, Private University of Eminence – Super Excellence Category; and, three bands,A1, A2 and A3 Bands for Institution of Excellence"
Source: www.wiranking.com
Private University of Eminence
38 Years of Academic Excellence
ABET
NAAC 'A' GRADE
QS I-GAUGE GOLD
NIRF RANKING 2017 NO.1 IN INDIA
Ministry of Human Resource Development Government of India
For OUTREACH AND INCLUSIVITY
GLOBAL RANKING Top-10 INDIAN UNIVERSITY (PRIVATE)
AICTE Approved
Super Excellence Category
MHW Rankings 2021
Admission Helpline
044-6111 6299, 044 - 2229 0247
Online admissions @
www.bharathuniv.ac.in

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Government of Puducherry

e-Stamp

सत्यमेव जयते

Certificate No.	:	**IN-PY41524592717767S**
Certificate Issued Date	:	24-Sep-2020 11:31 AM
Account Reference	:	IMPACC (SH)/ pyshimp17/ VILLIANUR/ PY-PU
Unique Doc. Reference	:	SUBIN-PYPYSHIMP17686394085289 43S
Purchased by	:	SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
Description of Document	:	Article 5 Agreement or Memorandum of Agreement
Property Description	:	AGREEMENT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	PONDICHERRY SOLID WASTE MANAGEMENT COMPANY PVT LTD
Second Party	:	SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
Stamp Duty Paid By	:	SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
Stamp Duty Amount(Rs.)	:	20 (Twenty only)

Please write or type below this line

Certificate No: PSMPL/AGMT/2020-21/1150

SERVICE AGREEMENT

This agreement is entered into **01.09.2020** (day/month/year).

Between

M/s. Pondicherry Solid Waste Management Company Private Limited, Rajeev Gandhi land mark, Thuthipet, Villiyanur commune, Puducherry- 605502, here in after, referred as **PSMPL** represented by **Mr. N. Sriniwasa prabhu, Director & CEO.**

And

Sri Lakshmi Narayana Institute Of Medical Science (SLIMS), Osudu, Agaram village, Villianur commune, koodapakkam (P.O), Puducherry- 605502, represented by Dr. S. Rajasekaran, M.S. Director.

PONDICHERRY SOLIDWASTE MGMT.CO.P.LTD Puducherry 605 502

LR 0007461315

Prof.S.RAJASEKARAN,M.S.,(Gen.)
DIRECTOR
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram, Kudapakkam Post,
Pondicherry - 605 502.

Statutory Alert:

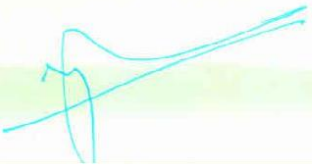
1. The authenticity of this Stamp certificate should be verified at 'www.shcilestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

PSMPL, as the approved common Biomedical Solid Waste Management Facility by Pondicherry Pollution Control Committee, has been contracted by **SLIMS** for collection, Treatment and disposal of the segregated Bio medical solid waste in bar code enable color coded bags.

Whereas, **SLIMS** as a statutory requirement, need to manage their Bio Medical Waste in adherence to **Biomedical wastes (Management and Handling) Rules, 2018.**

Whereas **SLIMS** agrees to utilize the services of **PSMPL** in the scope of the following Terms and Conditions of the agreement

1. **PSMPL** will collect the Bio-Medical Wastes, in Bar code enabled color-coded bags, properly tied and in leak proof condition as per **BMW Rules, 2018**. This waste shall be collected by **PSMPL** from only one point of activity from **SLIMS**.
2. **PSMPL** will collect the Bio-Medical Wastes, in Bar code enabled color-coded bags, properly tied and in leak proof condition as per **BMW Rules, 2018**.
3. **SLIMS** already deposited Rs.99,000/- (by cheque no. 924654 dated 20/07/2011) which is refundable by PSMPL and against which **PSMPL** will issue a duly stamped receipt to **SLIMS**.
4. **PSMPL** agrees to provide the services to **SLIMS** to be complied with the **BMW Rules, 2018**, on a '*user-pay-principle*' at **Rs.8.25/- per bed per day for 600 beds**. **PSMPL** is agreed to extend the entire service contract for a lump sum price of **Rs. 2,15,000/- per month**. This is to be paid on monthly basis plus taxed/ duties if applicable.
5. **PSMPL** is bound to disclose all details about this agreement and services to PPCC, as and when it is required.
6. **PSMPL** shall not demand or utilise any of the manpower who are on regular or contract employment with **SLIMS**.
7. **PSMPL** shall collect wastes from **SLIMS** daily (within 24 hours of time) from mutually agreed location and time. **PSMPL** will not collect the Bio-medical wastes, which are not segregated or properly packed.
8. In case, if **PSMPL** fails to collect the waste within 24 hours of previous collection time the same shall be cleared within the next 24 hours.
9. **PSMPL** shall be responsible for any violation under the **Bio- medical waste (Management and Handling) Rules, 2018** from the time, the waste is handed over to **PSMPL** at the premises of **SLIMS** and shall comply with all the rules and regulations stipulated by the **PPCC.**
10. The **Bio-Medical Waste** will be collected only in Bar Code enabled color coded bags. **SLIMS** shall be responsible for scanning all the Bar coded bags before handling over to **PSMPL** at the premises of **SLIMS.**
11. **SLIMS** will give its Bio Medical Waste including all disposable plastic materials (i.e. Gloves, Tubes, IV sets, plastic IV bottles and Urine bags etc.), properly packed in Bar code enabled color coded bags as per **Bio-Medical Waste (Management and Handling) Rules (amended) 2018,** for treatment and disposal to **PSMPL**. The BMW should be given at one single point by **SLIMS** to **PSMPL**'s vehicle.
12. In case **SLIMS** finds any irregularities in the collection of waste they can send a notice in writing to **PSMPL** for immediate action. All complaints (if any) shall be attended to in the shortest possible time, (48 hours).
13. **PSMPL** shall raise the INVOICE for payment on monthly basis on or before 2nd of every month. **SLIMS** is liable to make the payment vide DD/Cheque on or before 5th of every month.
14. In case of non-receipt of payment on the agreed date from **SLIMS, PSMPL** will stop the listed services immediately with intimation to PPCC.
15. Agreement can be terminated by giving one month notice from either side or will be automatically terminated if the services or not started within a month from the date of this agreement.
16. This "Agreement of Service" shall be valid up to **31st August 2021** and with due clause for renewable by mutual consent for the future periods



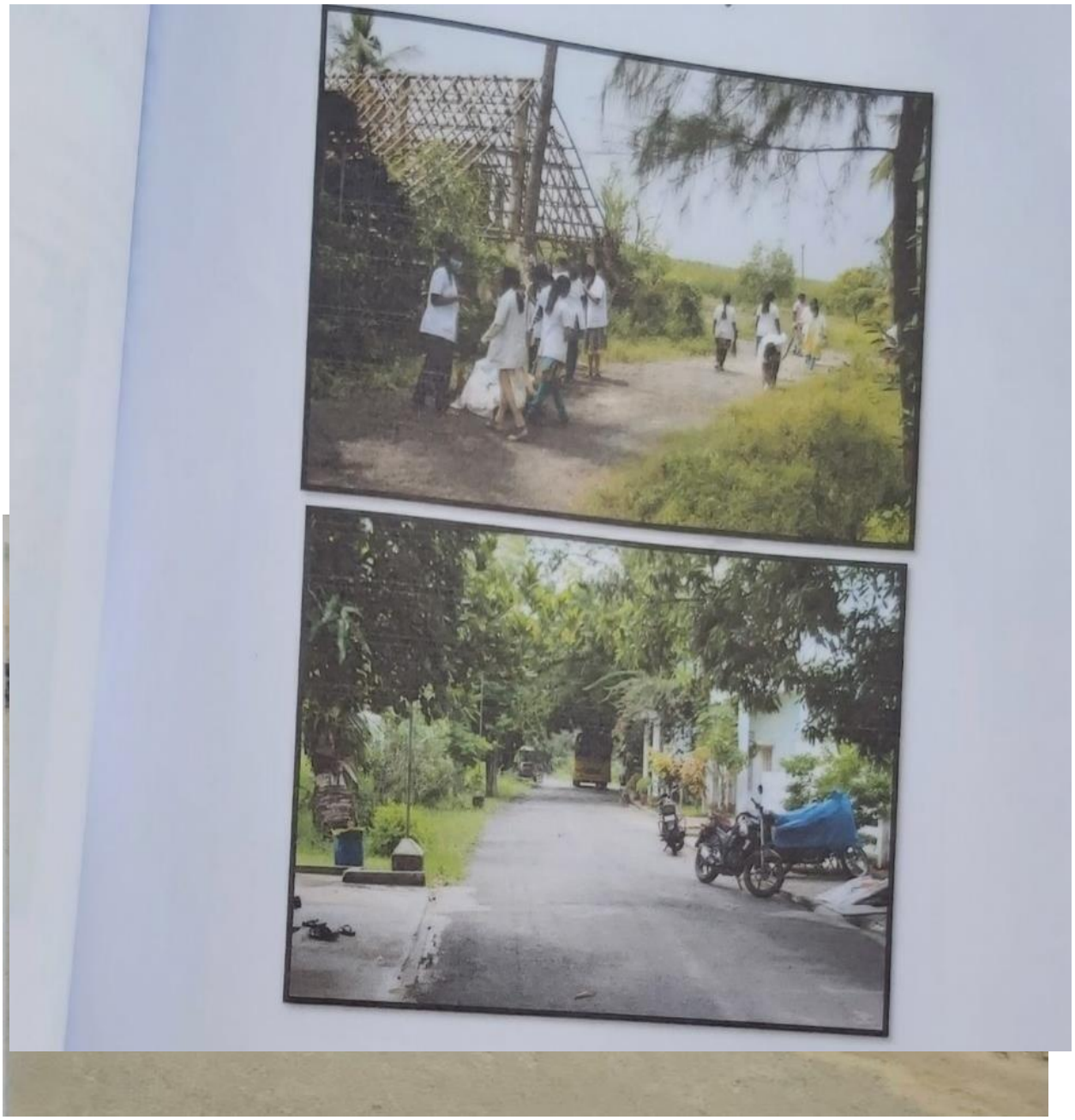
CLEAN AND GREEN CAMPUS

To promote SWACHTA PAKHWADA, College campus was cleaned in order to provide clean and healthy environment and its done along with students. This was started in the year 2018 September 1 and every year this program was organized regularly.

The main purpose of this programme was to create awareness among the medical and paramedical students regarding cleanliness in the campus.it motivated the students towards **CLEAN CAMPUS TODAY AND CLEAN INDIA TOMORROW**

BEYOND THE ENVIROMENTAL PROMOTIONAL ACTIVITY

In order to make our country clean, it is not only clean our campus cleaning the surroundings is the most important thing so we have cleaned the roads leading to the institution with voluntary students along with the municipal bodies



SCHOOL AWARENESS PROGRAMME

INTERNATIONAL YOGA DAY CELEBRATION IN THE SCHOOL

International yoga day and Health awareness programme was conducted for students of govt higher secondary school in kodapakkam, Pondicherry. The purpose of the programme was to sensitise the students about the importance of yoga, healthy diet and hygienic measures to promote better health. The children were sensitised about importance of yoga and healthy habits by means of activities like song, skit, puppet and dance, the head master, children's and teachers of the school learnt a lot from the programme and are cooperative volunteered and happily joined with great happiness in yoga demonstration and promised to follow all the good habits that they had learnt from the programme.


Programme/College name	CRITERIA 7.1.6	AVAILABLITY
Sri Lakshmi Narayana Institute of Medical Sciences, Puducherry	GREEN AUDIT	AVAILABLE
	ENERGY AUDIT	AVAILABLE
	ENVIRONMENTAL AUDIT	AVAILABLE
	CLEAN AND GREEN CAMPUS	AVAILABLE
	BEYOND THE ENVIROMENTAL PROMOTIONAL ACTIVITY	AVAILABLE

National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)

NABL / M-2482 03.10.2020

C NAVEEN KUMAR
SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES MOLECULAR BIOLOGY LAB, A UNIT OF SRI LAKSHMI AMMAL EDUCATIONAL TRUST
OSUDU, AGARAM VILLAGE, VILLIANUR
COMMUNE
VILLIANUR,PUDUCHERRY-605502
Mobile: 9047765601
E-mail: slimsmbl@gmail.com

Subject: **Grant of accreditation in accordance with ISO 15189:2012**

Dear Sir,

I would like to inform you that NABL is pleased to grant accreditation to in accordance with ISO 15189:2012 in the field of Medical testing for the discipline of Molecular Testing as per the scope recommended by the assessment team.

Further, the following is also advised which the laboratory has to address and same will be verified in the next assessment:

- LOD in test reports.
- Use of chemical and biological indicators for discard autoclave to be included in the SOP.

All the personnel proposed by the laboratory (except Dr. V. Abarna) to review the results and authorize the release of reports are accepted.

Dr. V. Abarna proposed by the laboratory to review the results and authorize the release of reports is not accepted as she was not present during the assessment.

With respect to the persons to review the results and authorize the release of reports, it is the responsibility of laboratory to abide by the National/ Regional/ State/ Local regulatory requirement/ Acts/ Rules/ Legal orders/ Court Decisions/ Orders issued by Government/ Statutory Bodies as applicable and effective from time to time.

The accreditation certificate no. MC-3753 with issue date 03.10.2020 valid till 02.10.2022 is under preparation. The accreditation Certificate will be issued to you shortly.

The accreditation is granted for two years subject to your satisfactory compliance to the terms and conditions for maintaining NABL accreditation (refer NABL 131). There will be a annual surveillance after completion of ten months.

NABL is now allowing its accredited CABs (Testing, Calibration and Medical laboratories) to use NABL Accredited CAB Combined ILAC MRA Ma on their test / calibration reports though a valid Agreement. For more details, please refer NABL document NABL 133 available on NABL website 'www.nabl-india.org' under publications section.

Yours Sincerely,
Haribabu Aennampalli
haribabu@nabl.qcin.org

NABL Accreditation and quality and competence in medical testing and molecular testing

The acquiring of the National Accreditation Board for Laboratories certification of our labs at Sri Lakshmi Narayana institute of medical sciences, Pondicherry was yet another addition of a colorful feather to our golden crown. The NABL was very much satisfied with the test results and the high precision calibration of our laboratory equipment. Our state-of-the-art machines and testing protocols have raised the precision in the diagnosis and standard of care provided to our patients. The accreditation team has highlighted certain areas of fine tuning to be incorporated in our testing methods and test results, which we believe to follow in the future testing methods.

Furthermore, the award of "medical laboratories - requirement for quality and competence in medical testing" accreditation has increased our scope and precision in the medical tests rendered. The expansion of the scope to include molecular testing has widened our testing strategies and increased our understanding of the disease processes and their pathogenesis at the molecular level.

NABL is pleased to grant accreditation to in accordance with ISO 15189:2012 in the field of Medical testing for the discipline of Molecular Testing as per the scope recommended by the assessment team.

The accreditation is granted for two years subject to your satisfactory compliance to the terms and conditions for maintaining NABL accreditation (refer NABL 131). There will be an annual surveillance after completion of ten months. NABL is now allowing its accredited CABs (Testing, Calibration and Medical laboratories) to use NABL Accredited CAB Combined ILAC MRA Mark on their test / calibration reports though a valid Agreement

Formal recognition of competence of a laboratory by NABL in accordance with international criteria has many advantages:

❖ A ready means for customers to identify and select reliable testing, measurement and calibration services that are able to meet their needs.

❖ Increased confidence in Testing/ Calibration Reports issued by the testing, calibration and medical testing laboratories which emphasize on accuracy and reliable results.

❖ The results from accredited laboratories are used extensively by regulators for the public benefit in the provision of services that promote an unpolluted environment, safe food, clean water, energy, health and social care services.

❖ Better control of laboratory operations and feedback to laboratories as to whether they have sound Quality Assurance System and are technically competent.

❖ Helpful in participating in tenders that require independently verified laboratories

➢ Improvement in the performance of tests/calibrations following investigation and identification of the cause(s) of unsatisfactory PT performance, and the introduction of corrective action to prevent re-occurrence

➢ Evaluation of methods, including the establishment of method precision and accuracy

➢ Contribution to the facility's overall risk management system

➢ Confidence building with interested parties, e.g. customers, accreditation bodies, regulators, specifiers.

Proficiency testing providers play an important role in the value chain for assurance of products and services. Being an NABL accredited PTP in accordance with ISO/IEC 17043 gives the organization credibility for their PT services.

National Accreditation Board for Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES MOLECULAR BIOLOGY LAB, A UNIT OF SRI LAKSHMI AMMAL EDUCATIONAL TRUST

has been assessed and accredited in accordance with the standard

ISO 15189:2012

"Medical laboratories - Requirements for quality and competence"

for its facilities at

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, VILLIANUR, PUDUCHERRY, INDIA

in the field of

Medical Testing

Certificate Number: MC-3753

Issue Date: 03/10/2020 **Valid Until:** 02/10/2022

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : SRI LAKSHMI AMMAL EDUCATIONAL TRUST

Signed for and on behalf of NABL

N. Venkateswaran
Chief Executive Officer

Biomedical Plant @ SLIMS

SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
(RECOGNIZED BY MEDICAL COUNCIL OF INDIA & AFFLIATED BY BHARATH UNIVERSITY)

ENERGY AUDIT

ENERGY AUDIT 2022

This Audit has been conducted by a Committee constituted by the Experts & Scientists from different reputed Institutes. The Committee developed a questionnaire for audit based on the regulatory & statutory requirements of Central as well State. The basic data was gathered &compiled, which the committee analyzed. By and large, the audit reveals a healthy environment inside SLIMS campus. The committee has suggested short term as well as long-term suggestions for improved environmental conditions about energy efficiency to a higher levels and authorities and all stakeholders of the University conforms that they will give due attention and utilize opportunities for identified improvements. Energy Audit is a process of systematic, documented, periodic and objective evaluation of components of Energy sources with the aim of safeguarding the environment and natural resources in its operations. It aims to analyse environments within and outside of the concerned area, which will have an impact on the eco-friendly atmosphere. Energy audit is a valuable means for a university to determine how and where they are using the most energy or other resources; the university can then consider how to implement changes and make savings. It can create to resources consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Energy save impact on their area of work. This includes all emissions to air; land and water; legal constraints; the effects on the neighboring community; landscape and ecology; the public's

Constraints; the effects on the neighboring community; landscape and ecology; the public's perception of the operating company in the local area. SLIMS seeks to become a centre of excellence by providing its students a comprehensive education with special emphasis on responsible citizenship, secular outlook, moral values and abiding faith in Environmental ethics expressed inactive concern for others. On analyzing the average power consumption graph in The Slims campus, it was noted that a minimum of 25 KW power is consumed daily. There are days, on which average consumption exceeds 30 KW. Thus, it was very essential to reduce the power consumption, which we obtain from the conventional form with renewable energy resources. Solar energy was adopted as an alternate way for reducing the maximum power consumption from the powerhouses.

SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
(RECOGNIZED BY MEDICAL COUNCIL OF INDIA & AFFLIATED BY BHARATH UNIVERSITY)

ENERGY AUDIT 2021

Hospital buildings are large energy consumers in many countries. In order to evaluate energy saving possibilities in such facilities an energy audit was conducted in a typical Hospital campus. The audit objective was to provide background for similar applications in all Hospital facilities. The ever-increasing energy costs and environmental concerns make paramount the rational use of energy and the energy conservation acts. Attention must be paid both in the industry and the building sectors. The last has attracted considerable interest in large scale, country wide, and in small scale, for example residential, commercial and hospital buildings. The audit implementation mode and recommendations may serve as a guide for audits in Hospital campuses country-wise and/or to form a basis for estimations of energy saving investment possibilities in the Hospital sector.

NEED FOR ENERGY AUDIT:

In any building, the three top operating expenses are often found to be energy (both electrical and thermal), labour and materials. If one were to relate to the manageability of the cost or potential cost savings in each of the above components, energy would invariably emerge as a top ranker, and thus energy management function constitutes a strategic area for cost reduction. Energy Audit will help to understand more about the ways energy and fuel are used in any building, and help in identifying the areas where waste can occur and where scope for improvement exists. The Energy Audit would give a positive orientation to the energy cost reduction, preventive maintenance and quality control programs

Which are vital for production and utility activities. Such an audit programme will help to keep focus on variations which occur in the energy costs, availability and reliability of supply of energy, decide on appropriate energy mix, identify energy conservation technologies, retrofit for energy conservation equipment etc. The primary objective of Energy Audit is to determine ways to reduce energy consumption per unit of product output or to lower operating costs. Energy Audit provides a “Bench-mark” (Reference point) for managing energy in the building and also provides the basis for planning a more effective use of energy throughout the Campus.

OBJECTIVE OF ENERGY AUDIT IN THIS HOSPITAL BUILDING:

The Objectives of the study are to:

- Develop a suitable tool for energy audit for SLIMS
- Review the energy related activities in SLIMS
- Measurement and quantification of energy consumption by all utility areas at SLIMS
- Identify areas of energy wastage at SLIMS
- Establishing of energy balance
- Identification of energy improvements opportunities

- Development of energy management's proposals
- Preparation of standard operating practices for efficient use of energy at SLIMS
- Create energy conservation awareness among the end users.

Actions adopted in this audit:

- Visual inspection and data collection
- Observations on the general condition of the facility and equipment andquantification
- Identification / verification of energy consumption and other parameters by
- Measurements
- Detailed calculations, analyses and assumptions
- Validation
- Potential energy saving opportunities
- Implementation

Field work:

- The mechanical and electrical systems are examined in order to verify that their implementation, operation and use correspond to that designed.

• The most essential factors affecting energy use, the present operating situation andthe most important savings potential are investigated.

• The staff and occupants at the site are guided on matters related to energy use.

• The most obvious operational energy saving measures is carried out immediately

• Data collection forms are a helpful reminder while checking and writing results.

Detailed Reporting:

• Includes a comprehensive description of the Hospital Building

• The number of lights, fans, computers and air conditioners, their type and their hours of usage were noted down. The power consuming equipment in the laboratory were identified and listed.

• Details of the equipment like name of the equipment, hours of usage per day were collected and recorded.

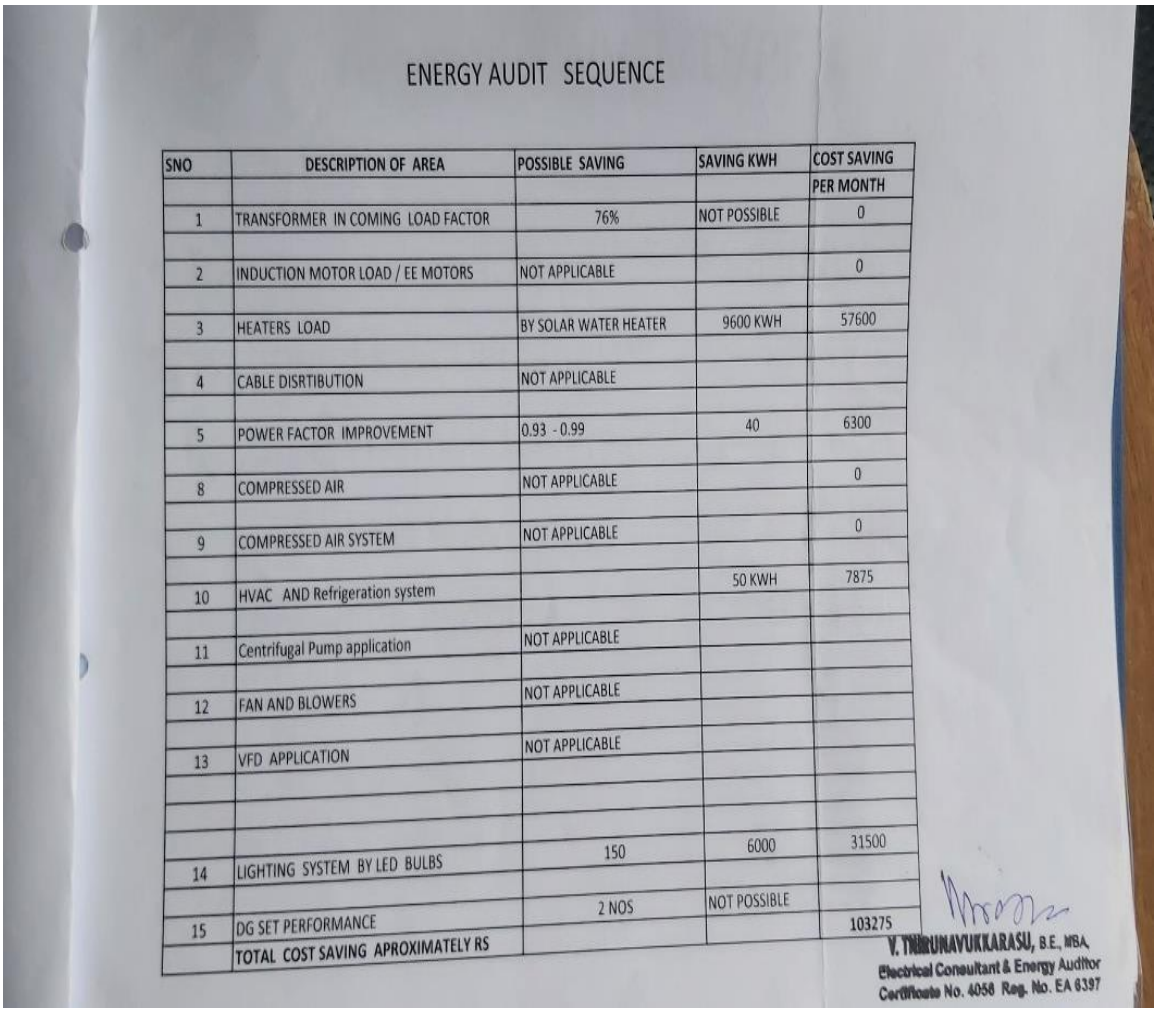
• Data regarding the type of lights, fans, computers, and air conditioners, their numbers and hours of usage per day and their location were collected and listed out.

• Introduces all profitable energy saving measures in detail, including some comments on implementation, saving calculations, cost estimates

• Ranks the saving measures according to e.g. simple payback time

Analysis of Data:

On analyzing the average power consumption graph in The Slims campus, it was noted that a minimum of 25 KW power is consumed daily. There are days, on which average consumption exceeds 30 KW. Thus, it was very essential to reduce the power consumption, which we obtain from the conventional form with renewable energy resources. Solar energy was adopted as an alternate way for reducing the maximum power consumption from the powerhouses.



ENERGY AUDIT SEQUENCE

SNO	DESCRIPTION OF AREA	POSSIBLE SAVING	SAVING KWH	COST SAVING PER MONTH
1	TRANSFORMER IN COMING LOAD FACTOR	76%	NOT POSSIBLE	0
2	INDUCTION MOTOR LOAD / EE MOTORS	NOT APPLICABLE		0
3	HEATERS LOAD	BY SOLAR WATER HEATER	9600 KWH	57600
4	CABLE DISRTIBUTION	NOT APPLICABLE		
5	POWER FACTOR IMPROVEMENT	0.93 - 0.99	40	6300
8	COMPRESSED AIR	NOT APPLICABLE		0
9	COMPRESSED AIR SYSTEM	NOT APPLICABLE		0
10	HVAC AND Refrigeration system		50 KWH	7875
11	Centrifugal Pump application	NOT APPLICABLE		
12	FAN AND BLOWERS	NOT APPLICABLE		
13	VFD APPLICATION	NOT APPLICABLE		
14	LIGHTING SYSTEM BY LED BULBS	150	6000	31500
15	DG SET PERFORMANCE	2 NOS	NOT POSSIBLE	
	TOTAL COST SAVING APROXIMATELY RS			103275

V. THIRUNAVUKKARASU, B.E., MBA,
Electrical Consultant & Energy Auditor
Certificate No. 4058 Reg. No. EA 6397

Advantages of Energy Audit:

- To develop to more efficient resource management.
- To provide basis for improved sustainability.
- To create a GHG free campus.
- Recognize the cost saving methods through Energy minimizing and Managing.
- Energy auditing should become a valuable tool in the management andmonitoring of environmental and sustainable development.

CAMPUS SURVEY:

Energy audit forms part of a resource management process. Although they are individual events, the real value of energy audits is the fact that they are carried out, at defined intervals, and their results can illustrate improvement or change over time. Eco-campus concept mainly focuses on the efficient use of energy, pollution and also economic efficiency. All these indicators are assessed in process of Energy Auditing of educational institute". Eco-campus focuses on the reduction of contribution to emissions, procure a cost effective and secure supply of energy, encourage and enhance energy use conservation, promotes personal action, reduce the institute's energy and integrate environmental considerations into all contracts and services considered to have significant environmental impacts.

The Audit covered the following major areas:

1. Sources of Energy
2. Consumption of Energy
3. Cost of Energy
4. Energy Efficiency and Energy Management

MONTHLY POWER CONSUMPTION FY-20-21				
MONTH	KWH	KVAH	P.F	M.D
Apr-20	216300	228600	0.95	536
May-20	247500	220744	0.95	572.6
Jun-20	220044	220838	0.94	516.4
Jul-20	230030	236300	0.93	528.6
Aug-20	194380	212520	0.91	505.6
Sep-20	193680	210240	0.92	475.8
Oct-20				
Nov-20				
Dec-20				
Jan-21				
Feb-21				
Mar-21				
AVERAGE	216410	221589	0.93	582.4

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ENERGY AUDIT 2020

A nation is tiring to advance in quantity and quality to the spread of education among the common India and development of their intelligence. In India the entire field of education and other fields of intelligent activities had been monopolized by a handful of men before independence. But today we are marching towards the desirable status of a developed nation with fast strides. But the development should be a sustained one. For achieving such an interminable development energy management is essential. As far as concerning electricity crisis, we are facing lack of electricity during office work. So, institutional management is taking design regarding production of electricity and saving electricity for ecosocial aspect.

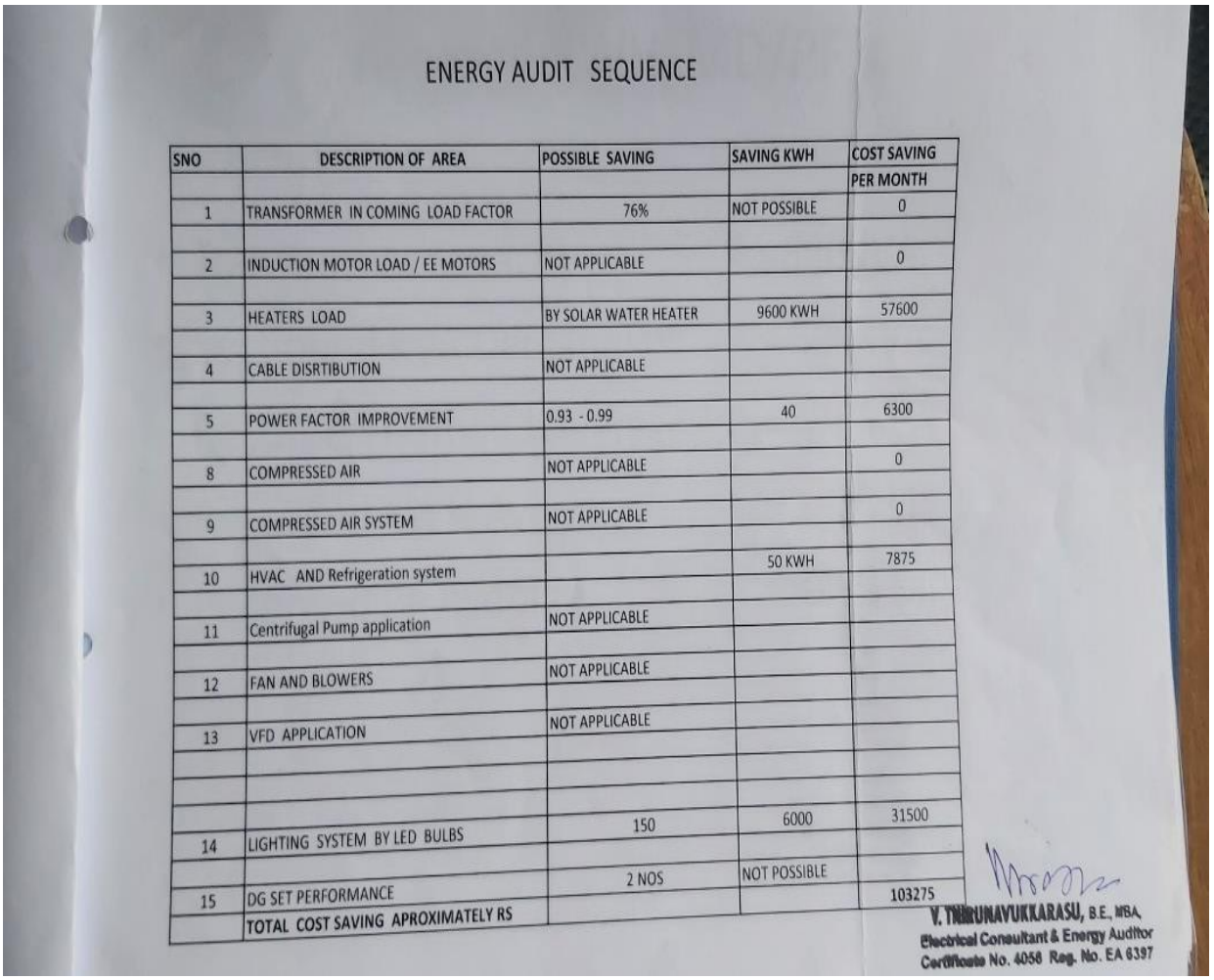
Energy requirement of India is growing and incomplete domestic fossil fuel treasury. The country has motivated strategy to enlarge its renewable energy resources and policy to establish the nuclear power plants. India increases the involvement of nuclear power to largely electrical energy development facility from 4.2% to 9%. India's industrial demand accounted for 35% of electrical power requirement, domestic household use accounted for 28%, agriculture 21%, commercial 9%, and public lighting and other miscellaneous applications accounted for the rest. A successful energy management program begins with energy conservation; it will lead to adequate rating of equipment's, using high efficiency equipment and change of habits which causes enormous wastages of energy.

By observing all these study lack of electricity and huge electricity demands. It is necessary to plan to being self-sufficient in electricity requirement. In the present study, college electricity audit has been done. In this study considered practical laboratory, instrument, Fans, air conditioners, Computers etc are considered in this study. We have studied total budget of the college, total economic investment of college on the electricity and total generation electricity from the solar wind hybrid electricity generation unit. Also, we have studied total saving of electricity and money from solar wind generation and requirement of solar energy. Also, it is studied that exact

contribution of bulb, fans, computer, instruments etc in the total requirement of electricity. We studied all these mentioned thinks by collecting exactly data form survey.

Analysis:

On analyzing the average power consumption graph in The Slims campus, it was noted that a minimum of 25 KW power is consumed daily. There are days, on which average consumption exceeds 30 KW. Thus, it was very essential to reduce the power consumption, which we obtain from the conventional form with renewable energy resources. Solar energy was adopted as an alternate way for reducing the maximum power consumption from the powerhouses.



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Electrical Consultant & Energy Auditor
Certificate No. 4058 Reg. No. EA 6397

Average KWH/MD/PF

- Transformer capacity =630KVA
- Sectioned KVA Demand =500KVA
- Recorded Demand Average = 475 KVA
- Recorded KWH Average = 182331
- Recorded PF Average = 0.93 Lag

V. THIRUNAVUKKARASU, B.E., MBA,
Electrical Consultant & Energy Auditor
Certificate No. 4058 Reg. No. EA 6357

Component of Electricity Billing

1. Energy charges RS -5.25/ KWH
2. Max Demand Charges RS- 250 / KVA
3. Sales TAX 5% on energy charges
4. Surcharges 2.64 on energy + MD charges
5. Meter rent RS - 500 / month

V. THIRUNAVUKKARASU, B.E., MBA,
Electrical Consultant & Energy Auditor

ENERGY SAVING ACTIVITY YEAR-2020-21

S.NO	TYPE OF LIGHT FITTINGS	AREA	QTY	KW LOAD
1	LED LIGHT	STREET LIGHT		
		POOL LIGHT	120	2.2
2	LED TUBE	BLOCKC		
		AND BACK AREA	120	5.2
	MOTOR LOAD(PUMPS)	BLOCK ABCD	4	20
3	AUTO WATER TANK LEVEL			
	CONTROLER PROVIDED			
	SAVING			**27.4 KW**
	ENERGY SAVING FOR THE YEAR			**78912KWH**

V. THIRUMURUGAN, B.E., MBA,
Electrical Consultant & Energy Auditor
Certificate No. 4058 Reg. No. EA 0317

Recommendation:

Replace all CFL Tube light using LED Bulb, to save more power.

Replace CRT monitor using LED or LCD monitor.

Summary of Energy Auditing:

The communication process for awareness in relation to energy conservation is found inadequate.

Assessment of electrical load calculation is yet to be done by the university.

Monthly use of electricity in the university is very high.

Objectives for reducing energy, water and fuel consumption are meager.

There are fans and Tube light of older generation and non-energy efficient which can be phase out by replacing with new energy efficient fans and tubes.

Regular monitoring of equipment and immediate rectification of any problems.

Follow Up Action and Plans:

Energy Audits are exercises which generate considerable quantities of valuable management information.

The time and effort and cost involved in this exercise is often considerable and in order to be able to justify this expenditure, it is important to ensure that the findings and recommendations of the audit are considered at the correct level within the organization and that action plans and implementation programs result from the findings.

Audit follow up is part of the wider process of continuous improvement. Without follow-up, the audit becomes an isolated event which soon becomes forgotten in the pressures of organizational priorities and the passing of time.

Conclusion and Recommendations:

The green and environmental audit assists in the process of testing performance in the environmental arena and is fast becoming an indispensable aid to decision making in a university. The energy audit reports assist in the process of attaining an ecofriendly approach to the sustainable development of the university. Hope that the results presented in the energy auditing report will serve as a guide for educating the university community on the existing environment related practices and resource usage at the university as well as spawn new activities and innovative practices. A few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. This may lead to the prosperous future in context of Green Campus and thus sustainable environment and community development. It has been shown frequently that the practical suggestions, alternatives, and observations that have resulted from audits have added positive value to the audited organization. An outside view, perspective and opinion often helps staff who have been too close to problems or methods to see the value of alternative approaches. An energy audit report is a very powerful and valuable communications 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.

General Recommendations:

All Class Rooms and labs to have Display Messages regarding optimum use of electrical appliances in the room like lights, fans, computers and projectors.

Save electricity. Display the stickers of save electricity, save nature everywhere in the campus. So, that all stakeholders are encouraged to save the electricity.

Most of the time, all the tube lights in a class room are kept on, even though, there is sufficient light level near the window opening.

In such cases, the light row near the window may be kept off.

All projectors to be kept OFF or in idle mode if there will be no presentation slides.

All computers to have power saving settings to turn off monitors and hard discs, say after10 minutes/30 minutes.

The Power Factor to reduce the utility power bill.

Most utility bills are influenced by KVAR usage.

A good Power Factor provides a better voltage.

Reducing the pressure on electrical distribution network.

Reducing cable heating, cable over loading and cable losses.

Reducing over loadings of control gears and switch-gears etc

SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
(RECOGNIZED BY MEDICAL COUNCIL OF INDIA & AFFLIATED BY BHARATH UNIVERSITY)

ENERGY AUDIT 2019

Energy is one of the major inputs for the economic development of any country. The fundamental goal of energy management is to produce goods and provide services with the least cost and least environmental effect. Also it can be said as "the strategy of adjusting and optimizing energy, using system and procedure so as to reduce energy requirements per unit of output while holding constant or reducing total costs of producing the output from these systems". The energy audit is key to a systematic approach for decision making in the area of energy management. It attempts to balance the total energy inputs with its use, and serve to identify all the energy streams in a facility.

By observing all these study lack of electricity and huge electricity demands. It is necessary to plan to being self-sufficient in electricity requirement. In the present study, college electricity audit has been done. In this study considered practical laboratory, instrument, Fans, air conditioners, Computers etc are considered in this study. We have studied total budget of the college, total economic investment of college on the electricity and total generation electricity from the solar wind hybrid electricity generation unit. Also, we have studied total saving of electricity and money from solar wind generation and requirement of solar energy. Also, it is studied that exact contribution of bulb, fans, computer, instruments etc in the total requirement of electricity. We studied all these mentioned thinks by collecting exactly data form survey.

OBJECTIVES:

Primary: --

1) The first objective is to acquire and analyze data and finding the necessary consumption patternof these facilities.

2) The second objective will be to calculate the wastage pattern based on the results of the firstobjective.

3) The final objective is to find and implement solutions that are acceptable and feasible.

Secondary: -

1) This would be our first exposure to this field hence experience gain would bevital.

2) This project will precede many follow up projects and hence helps to gaintechnical and management exposure required for future energy projects.

3) It is sure to help create a repertoire of vital contacts hence will develop interactionwith alumni, faculty and students.

NEED FOR ENERGY AUDIT:

In any building, the three top operating expenses are often found to be energy (both electrical and thermal), labor and materials. If one were to relate to the manageability of the cost or potential cost savings in each of the above components, energy would invariably emerge as a top ranker, and thus energy management function constitutes a strategic area for cost reduction. Energy Audit will help to understand more about the ways energy and fuel are used in any building, and help in identifying the areas where waste can occur and where scope for improvement exists. The Energy Audit would give a positive orientation to the energy cost reduction, preventive maintenance and quality control programs which are vital for production and utility activities. Such an audit programme will help to keep focus on variations which occur in the energy costs, availability and reliability of supply of energy, decide on appropriate energy mix, identify energy conservation technologies, retrofit for energy conservation equipment etc. The primary objective of Energy Audit is to determine ways to reduce energy consumption per unit of product output or to lower operating costs. Energy Audit provides a "Bench-mark" (Reference point) for managing energy in the building and also provides the basis for planning a more effective use of energy throughout the Campus.

OBJECTIVE OF ENERGY AUDIT IN THIS HOSPITAL BUILDING:

The Objectives of the study are to:

- Develop a suitable tool for energy audit for SLIMS
- Review the energy related activities in SLIMS
- Measurement and quantification of energy consumption by all utility areas atSLIMS
- Identify areas of energy wastage at SLIMS
- Establishing of energy balance
- Identification of energy improvements opportunities
- Development of energy management's proposals
- Preparation of standard operating practices for efficient use of energy at SLIMS
- Create energy conservation awareness among the end users.

Field work:

- The mechanical and electrical systems are examined in order to verify that their implementation, operation and use correspond to that designed.
- The most essential factors affecting energy use, the present operating situation andthe most important savings potential are investigated.
- The staff and occupants at the site are guided on matters related to energy use.
- The most obvious operational energy saving measures is carried out immediately
- Data collection forms are a helpful reminder while checking and writing results.

Detailed reporting:

- Includes a comprehensive description of the Hospital Building
- The number of lights, fans, computers and air conditioners, their type and their hours of usage

were noted down. The power consuming equipment in the laboratory were identified and listed.

• Details of the equipment like name of the equipment, hours of usage per day were collected and recorded.

• Data regarding the type of lights, fans, computers, and air conditioners, theirnumbers and hours of usage per day and their location were collected and listed out.

• Introduces all profitable energy saving measures in detail, including somecomments on implementation, saving calculations, cost estimates

• Ranks the saving measures according to e.g. simple payback time

Analysis of data:

On analysing the average power consumption graph in The Slims campus, it was noted that a minimum of 25 KW power is consumed daily. There are days, on which average consumption exceeds 30 KW. Thus, it was very essential to reduce the power consumption, which we obtain from the conventional form with renewable energy resources. Solar energy was adopted as an alternate way for reducing the maximum power consumption from the powerhouses.

SATHVIK SOLAR

INVOICE

ORIGINAL FOR BUYER

SATHVIK SOLAR CHENNAI

SATHVIK SOLAR

Regd. office :
Old No.18, New No.39, South Usman Road,
T.Nagar, Chennai - 600 017 , Tamil Nadu.
Email Id: sathviksolar@gmail.com
PH:044-22425838, Mobile: 08939406424

To

Sree Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram Village, Villianur Commune
Kudupakkam Post, Puducherry - 605 502

Invoice No: SS/02	Date: 05.03.2016
D.C. No: 02	Date: 30.01.2016
P.O.No. Verbal	
Lorry No.	
TIN No : 33096288358	

Description of Goods	Quantity	Rate		Amount	
8000 Litres per day Solar water heater system (ETC - INSTITUTION 500 x 16 units)	1	1,142,857	00	1,142,857	00
		Sub-Total		1,142,857	00
		CST-5%		57,143	00
		Total		**1,200,000**	**00**

Total Value in words:- Twelve Lakhs Rupees only

Certified that the Particulars given above are true and correct and the amount indicated represents the price actually charged and that there is no flow of additional consideration directly or indirectly from the buyer.

For SATHVIK SOLAR

Authorised Signatory

E.&O.E.

ENERGY AUDIT SEQUENCE

SNO	DESCRIPTION OF AREA	POSSIBLE SAVING	SAVING KWH	COST SAVING PER MONTH
1	TRANSFORMER IN COMING LOAD FACTOR	76%	NOT POSSIBLE	0
2	INDUCTION MOTOR LOAD / EE MOTORS	NOT APPLICABLE		0
3	HEATERS LOAD	BY SOLAR WATER HEATER	9600 KWH	57600
4	CABLE DISRTIBUTION	NOT APPLICABLE		
5	POWER FACTOR IMPROVEMENT	0.93 - 0.99	40	6300
8	COMPRESSED AIR	NOT APPLICABLE		0
9	COMPRESSED AIR SYSTEM	NOT APPLICABLE		0
10	HVAC AND Refrigeration system		50 KWH	7875
11	Centrifugal Pump application	NOT APPLICABLE		
12	FAN AND BLOWERS	NOT APPLICABLE		
13	VFD APPLICATION	NOT APPLICABLE		
14	LIGHTING SYSTEM BY LED BULBS	150	6000	31500
15	DG SET PERFORMANCE	2 NOS	NOT POSSIBLE	
	TOTAL COST SAVING APROXIMATELY RS			103275

Y. THIRUNAVUKKARASU, B.E., MBA,
Electrical Consultant & Energy Auditor
Certificate No. 4056 Reg. No. EA 8397

MONTHLY POWER CONSUMPTION FY-19-20

MONTH	KWH	KVAH	P.F	M.D
Apr-19	171760	177140	0.97	401
May-19	173060	179900	0.96	401.6
Jun-19	176300	184200	0.96	454
Jul-19	196300	204200	0.96	461.2
Aug-19	190920	200000	0.95	480
Sep-19	193380	206560	0.94	505.4
Oct-19	211420	227660	0.93	608.2
Nov-19	167120	181260	0.92	531.2
Dec-19	211412	227760	0.93	535.2
Jan-20	167120	181255	0.92	511.2
Feb-20	142052	151256	0.91	377.8
Mar-20	136585	197722	0.95	475
AVERAGE	216410	221589	0.93	459.2

Y. THIRUNAVUKKARASU, B.E., MBA,
Electrical Consultant & Energy Auditor
Certificate No. 4056 Reg. No. EA 8397

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

Date: 16/11/2015
Ref: Quotation dated 15/11/2015

To,

SATHVIK SOLAR
New No: 39, Old No: 18, South Usman Road
T Nagar, Chennai 600017
TIN: 33096288358

Sub: Purchase order for 8000 Liters Per Day Solar water heater System
(ETC - INSTITUTIONAL 500 x 16 units)

Dear Sir,

Here by consider this order as confirmation of Solar water heater system for capacity of 8000 LPD (i.e 500 LPD X 16 Nos)
Total value of system is **Rs.12,000,00 (Twelve Lakhs rupees only).**
4 Solar water heater systems will be installed separately (2000 liters / day capacity each) 2 in boy's hostel and 2 in ladies hostel.

Terms and conditions:

1. Above price including VAT.
2. Transportation and Packing included.
3. Installation and commissioning
4. 1 Year Guarantee and 5 Years warranty
5. Inlet water tank under SLIMS scope of work

Payment terms:

a. 60 % advance payment
b. 25% payment towards supply of material
c. 15 % towards installation and commissioning of the system
Thanking you

For Sri Lakshmi Narayana Institute of Medical Sciences

General Manager

Phone : Off :0413 - 2661978. Fax :0413 - 2661996. e-mail : slims_h@yahoo.com

SRI LAKSHMI NARAYAN
INSTITUTE OF MEDICAL SCIENCE
(RECOGNIZED BY MEDICAL COUNCIL OF INDIA & AFFLIATED BY BHARATH UNI

Environmental Audit

ENVIRONMENTAL AUDIT 2022

Auditing for Waste Management:

Pollution from waste is aesthetically unpleasing and results in large amounts of litter in our communities which can cause health problems. Plastic bags and discarded ropes and strings can be very dangerous to birds and other animals. This indicator addresses waste production and disposal, plastic waste, paper waste, food waste, and recycling. Solid waste can be divided into two categories: general waste and hazardous waste. General wastes include what is usually thrown away in homes and schools such as garbage, paper, tins and glass bottles. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals and petrol. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies, and produce greenhouse gases contributing to global climate change.

Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Thus the minimization of solid waste is essential to a sustainable college. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems. It is therefore essential that any environmentally responsible institution examine its waste processing practices.

A waste audit is a physical analysis of waste composition to provide a detailed understanding of problems, identify potential opportunities, and give a detailed analysis of waste composition.

A waste audit will help to clearly identify waste generation to:

- Establish baseline or benchmark data.
- Characterize and quantify waste streams.
- Verify waste pathways.
- Identify waste diversion opportunities.

Obtain detailed data on waste generation.

Solid waste can be divided into two categories: general waste and hazardous waste. General wastes include what is usually thrown away in homes and colleges such as garbage, paper, tins and glass bottles. Hazardous waste is waste that is likely to be a threat to health or the environment like cleaning chemicals and petrol. Unscientific landfills may contain harmful contaminants that leach into soil and water supplies, and produce greenhouse gases contributing to global climate change.

Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Thus the minimization of solid waste is essential for a sustainable college. The auditor diagnoses the prevailing waste disposal policies and suggests the best way to combat the problems.

Types of waste:

Biodegradable waste:

Biodegradable waste is a type of waste, typically originating from plant or animal sources, which may be degraded by other living organisms.

Non – biodegradable waste:

Waste that cannot be decomposed by the biological processes is known as “Non- biodegradable wastes”. Most of the inorganic waste is non-biodegradable. Non- biodegradable wastes that can be recycled are known as “Recyclable waste” and those which cannot be recycled are known as “Non-recyclable waste”.

Biomedical waste:

Biomedical waste is any kind of waste containing infectious (or potentiallyinfectious) materials. It may also include waste associated with the generation of biomedical waste that visually appears to be of medical or laboratory origin (e.g. packaging, unused bandages, infusion kits etc.), as well research laboratory waste containing biomolecules or organisms that are mainly restricted from environmental release.

Bio Medical waste consists of

- Human anatomical waste like tissues, organs and body parts
- Microbiology and biotechnology wastes
- Waste sharps like hypodermic needles, syringes, scalpels and broken glass
- Discarded medicines and cytotoxic drugs
- Soiled waste such as dressing, bandages, plaster casts, material contaminatedwith blood, tubes and catheters
- Liquid waste from any of the infected areas
- Incineration ash and other chemical wastes

Biomedical Plant

SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
(RECOGNIZED BY MEDICAL COUNCIL OF INDIA & AFFLIATED BY BHARATH UNIVERSITY)

ENVIRONMENT AUDIT 2021

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. 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, SLIMS firmly believes that there is an urgent need to address the environmental challenges and improve their environmental footprint. True to its belief, SLIMS has implemented rainwater harvesting in the campus. Continuing with rainwater harvesting, the college can also investigate the following recommendations:

 Attain water positive status: SLIMS 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. 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. SLIMS can also explore adopting lakes, desilting of ponds and restoration of water bodies in

localities surrounding the campus. Water getting harvested in those structures canoffset the freshwater consumption of the college.

Install water efficient fixtures: Best way to conserve water is at the source. Therefore, SLIMS will have to install water efficient fixtures to reduce waterconsumption. 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.

Install level sensors for main water tank: Main source of water for the campus are two bore wells. The bore wells pump water to the main water tank. The pumpsupplying water to the main tank is switched on/off manually based on the tank level.

In the present operation, there is a chance that the overflow of water may occur because of human interference and may lead to water and energy wastage. Therefore, it is recommended to install water level sensors for the tank operate the pumps automatically based on the level of water in the tank.

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: SLIMS 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. Observation: Though the collection of waste is being done in an orderly fashion, the storage of waste needs an improvement. Presently, the wastes are segregated at the source. The collected wastes are then taken to waste storage yard. The storage of wastes in the waste storage yard needs to be improved upon. 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 a raw material for a subsequent process.

Enhance awareness creation, training and capacity building SLIMS should focus on implementing sustainable waste management practices. SLIMS 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 SLIMS has already invested in STP to treat and recycle water. The treated water from STP can be used to substitute freshwaterby utilizing the treated water in both high end and low-end applications.

SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
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ENVIRONMENTAL AUDIT 2020

Environment audit report is one such initiative that has been introduced to make the educational institute environmentally sustainable and active in spreading the education about the same. It is a tool to assess general practices implemented by the organization in terms of the impact on environment. The report also aims to spread the awareness on the adverse practices that are responsible for the degradation of the environment and how strongly the institute is involved in curtailing those practises. It helps in recognizing the need of a college to work around the year for environment sustainability. Thus, Environment audit forms the base line survey to decide for the Green policy.

College is also aimed at giving solution to the different burning topics related to the environment, its awareness as well as its protection. As the government is taking initiative to sensitize mass with environment protection, newer concepts are being introduced to make college eco-friendly. To create and conserve the environment within the campus and to solve the environmental problems such as promotion of the energy savings, energy conservation, water reduction, water harvesting, solid waste management, improvement in the air quality of the campus, control on noise pollution, and minimizing the use of Plastic, etc. is one of the prime objective of the college.

Environment audit: An Hour of Need

Environment auditing is the process of identification and determination of the institution's practices in creating awareness and practising the environment friendly measures. Over the period of time over exploitation of resources like energy, water, etc. have resulted in the environmental degradation. It is necessary to check whether our way of living and handling resources is not going to cause detrimental effects in our surroundings. Environment audit Report aims at summarising the college's contribution and its activeness in creating awareness and consciousness in practically applying the environmental friendly measures towards an institute.

Goals of Environment audit:

1. A baseline survey to know the real status of green practices.
2. Identification of the problems faced while practicing green practices in the college campus.
3. Examination of the current practices that have impact on the environment such as resource utilization, waste management, energy conservation etc.
4. Analysis and suggestion for the plausible solutions for problems identified from Audit Report.
5. Increasing and spreading the awareness for environmental consciousness and sustainable use of resources amongst the students, teaching and non- teaching staff members.
6. Identification and assessment of any environmental risk if any inside the college campus.
7. Giving direction and guidance working on local environmental issues.

सत्यमेव जयते

INDIA NON JUDICIAL

Government of Puducherry

e-Stamp

Certificate No.	:	IN-PY41524592717767S
Certificate Issued Date	:	24-Sep-2020 11:31 AM
Account Reference	:	IMPACC (SH)/ pyshimp17/ VILLIANUR/ PY-PU
Unique Doc. Reference	:	SUBIN-PYPYSHIMP17686394085289435
Purchased by	:	SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
Description of Document	:	Article 5 Agreement or Memorandum of Agreement
Property Description	:	AGREEMENT
Consideration Price (Rs.)	:	0 (Zero)
First Party	:	PONDICHERRY SOLID WASTE MANAGEMENT COMPANY PVT LTD
Second Party	:	SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
Stamp Duty Paid By	:	SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
Stamp Duty Amount(Rs.)	:	20 (Twenty only)

Please write or type below this line

Certificate No: PSMPL/AGMT/2020-21/1150

SERVICE AGREEMENT

This agreement is entered into **01.09.2020** (day/month/year).

Between

M/s. Pondicherry Solid Waste Management Company Private Limited, Rajeev Gandhi land mark, Thuthipet, Villiyanur commune, Puducherry- 605502, here in after, referred as **PSMPL** represented by **Mr. N. Sriniwasa prabhu, Director & CEO.**

And

Sri Lakshmi Narayana Institute Of Medical Science (SLIMS), Osudu, Agaram village, Villianur commune, koodapakkam (P.O), Puducherry- 605502, represented by Dr. S. Rajasekaran, M.S. Director.

PONDICHERRY SOLIDWASTE MGMT CO. P. LTD. Puducherry 605 502

I.B 0007461315

Prof.S.RAJASEKARAN,M.S.,(Gen.)
DIRECTOR
Sri Lakshmi Narayana Institute of Medical Sciences
Osudu, Agaram, Kudapakkam Post,
Pondicherry - 605 502.

Statutory Alert:

1. The authenticity of this Stamp certificate should be verified at 'www.shcilestamp.com' or using e-Stamp Mobile App of Stock Holding. Any discrepancy in the details on this Certificate and as available on the website / Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the users of the certificate.
3. In case of any discrepancy please inform the Competent Authority.

PSMPL, as the approved common Biomedical Solid Waste Management Facility by Pondicherry Pollution Control Committee, has been contracted by **SLIMS** for collection, Treatment and disposal of the segregated Bio medical solid waste in bar code enable color coded bags.

Whereas, **SLIMS** as a statutory requirement, need to manage their Bio Medical Waste in adherence to **Biomedical wastes (Management and Handling) Rules, 2018**.

Whereas **SLIMS** agrees to utilize the services of **PSMPL** in the scope of the following Terms and Conditions of the agreement

1. **PSMPL** will collect the Bio-Medical Wastes, in Bar code enabled color-coded bags, properly tied and in leak proof condition as per **BMW Rules, 2018**. This waste shall be collected by **PSMPL** from only one point of activity from **SLIMS**.
2. **PSMPL** will collect the Bio-Medical Wastes, in Bar code enabled color-coded bags, properly tied and in leak proof condition as per **BMW Rules, 2018**.
3. **SLIMS** already deposited Rs.99,000/- (by cheque no. 924654 dated 20/07/2011) which is refundable by PSMPL and against which **PSMPL** will issue a duly stamped receipt to **SLIMS**.
4. **PSMPL** agrees to provide the services to **SLIMS** to be complied with the **BMW Rules, 2018**, on a '*user-pay-principle*' at **Rs.8.25/- per bed per day for 600 beds**. **PSMPL** is agreed to extend the entire service contract for a lump sum price of **Rs. 2,15,000/- per month**. This is to be paid on monthly basis plus taxed/ duties if applicable.
5. **PSMPL** is bound to disclose all details about this agreement and services to PPCC, as and when it is required.
6. **PSMPL** shall not demand or utilise any of the manpower who are on regular or contract employment with **SLIMS**.
7. **PSMPL** shall collect wastes from **SLIMS** daily (within 24 hours of time) from mutually agreed location and time. **PSMPL** will not collect the Bio-medical wastes, which are not segregated or properly packed.
8. In case, if **PSMPL** fails to collect the waste within 24 hours of previous collection time the same shall be cleared within the next 24 hours.
9. **PSMPL** shall be responsible for any violation under the **Bio- medical waste (Management and Handling) Rules, 2018** from the time, the waste is handed over to **PSMPL** at the premises of **SLIMS** and shall comply with all the rules and regulations stipulated by the **PPCC.**
10. The **Bio-Medical Waste** will be collected only in Bar Code enabled color coded bags. **SLIMS** shall be responsible for scanning all the Bar coded bags before handling over to **PSMPL** at the premises of **SLIMS**.
11. **SLIMS** will give its Bio Medical Waste including all disposable plastic materials (i.e. Gloves, Tubes, IV sets, plastic IV bottles and Urine bags etc.), properly packed in Bar code enabled color coded bags as per **Bio-Medical Waste (Management and Handling) Rules (amended) 2018,** for treatment and disposal to **PSMPL**. The BMW should be given at one single point by **SLIMS** to **PSMPL**'s vehicle.
12. In case **SLIMS** finds any irregularities in the collection of waste they can send a notice in writing to **PSMPL** for immediate action. All complaints (if any) shall be attended to in the shortest possible time, (48 hours).
13. **PSMPL** shall raise the INVOICE for payment on monthly basis on or before 2nd of every month. **SLIMS** is liable to make the payment vide DD/Cheque on or before 5th of every month.
14. In case of non-receipt of payment on the agreed date from **SLIMS**, **PSMPL** will stop the listed services immediately with intimation to PPCC.
15. Agreement can be terminated by giving one month notice from either side or will be automatically terminated if the services or not started within a month from the date of this agreement.
16. This "Agreement of Service" shall be valid up to **31st August 2021** and with due clause for renewable by mutual consent for the future periods

SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
(RECOGNIZED BY MEDICAL COUNCIL OF INDIA & AFFLIATED BY BHARATH UNIVERSITY)

ENVIRONMENTAL AUDIT 2018

An environmental audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes outdated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. SLIMS already done internal green assessment and annual reports published for continual improvements; QS Programme and doing their bid towards environmental protection and environmental awareness at local and global front. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.

Environmental audit is a general term that reflects various kinds of evaluations intended to identify environmental compliance and management system, implementation gaps, along with related corrective actions. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the ecofriendly ambience. Green audit is a useful tool to determine how and where the most energy or water resources are being used; and can then considerations be given on how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It imparts a better understanding of Green impact on campus to staff and students.

Sources of Pollution:

The main sources of air pollution near our institute are Vehicular, Road dust, Construction & Demolition activities, Industries (Point source & Areas source), Garbage burning & Agriculture waste burning etc. Ambient Air is being monitoredregularly

SOIL:

Source of soil contamination is often because of extensive use of chemicalsand discharge of untreated water. Construction activities also contribute but here they are confined.

NOISE LEVEL:

The college is very quiet and no noise pollution is seen. The maximum observed noise level is between 55 – 70dB in most of the places and at times 80 –85 dB near some of machines in lab. Noise levels are well within limits.

NEED FOR ENVIRONMENTAL AUDIT:

If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and necessary outgrowth ofa quality educational institution. Thus, it is imperative that BGSBU evaluates its 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. 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 imperative to adopt the system of the "Green Campus" for the Institutes which will lead to sustainable development and at the same time reduces a sizable amount of atmospheric carbon dioxide from the environment.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory that all Higher Educational Institutions should submit an annual Green Audit Report. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

Objectives of environmental audit:

Concern about environmental degradation and realization of values of environment are logical consequences of scholarly research, teaching and learning process. In its pursuit for improving environmental quality and to maintain a pristine environment for the future generations of students, BIHER has made a self-inquiry on environmental quality of the campus with the following objectives to achieve:

i. Establishing a baseline of existing environmental conditions with focus on natural and physical environment;
ii. Understanding the current practices of sustainability with regard to the use of water and energy, generation of wastes, purchase of goods, transportation, etc;
iii. Awareness generation among students concerning real issues of environment and its sustainability
iv. Promotion of environmental awareness through participatory auditing process; and

v. To create a report that document baseline data of good practices and provide strategies and action plans towards improving environmental quality for future.

Areas of improvement:

- Environment Policy to be adopted by the College Campus.
- Water Meter should be installed and maintain the inventory of ground waterextraction resource bore well.
- Storage of chemicals like; paints, gums resins, oils, lubricants, acids etc. indesignated place and safety/warning signs should be displayed.
- Internal inspection system should be developed for various aspects of environmentavailable in campus
- Waste Management plan should be prepared for the campus.
- Display of environment awareness posters should be there in the prominent areasof campus.

Original

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

Date : 16-10-2018

To

The Member Secretary
Puducherry Pollution Control Committee
Government of Puducherry
Puducherry

Sir,

We are herewith submitting the annual report regarding established facilities and ongoing process carried out to protect the Environment and conserving the energy

In addition to the routine training program and implementation of various schemes we are introducing and implementing various facilities and projects to conserve energy and protect the environment which are enumerated as follows:-

1. Our students are motivated to plant saplings and care for them.
2. New saplings were planted on Independence Day, Republic Day and on World Environmental Day.
3. We not only care for our campus we have also joined hands with the Raj Nivas (In presence of her Excellency Lt.Governor of Puducherry Dr.Kiran Bedi)and participated in planting saplings in the villages around the Institution.
4. Solar Water Heater has been installed in the Boy's and Girl's Hostel to cut short the usage of Electricity and thus save the Energy.
5. In addition to Rain water Harvesting Pond, Rain Water Harvesting pit was also erected in selected areas to tap the Rain water from the terrace of the Buildings.

Phone : Off :0413 - 2661978. Fax :0413 - 2661996. e-mail : slims_h@yahoo.com

AKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

6. Periodical monitoring of all the equipments used in the Environmental Protection management is done on regular basis and the Worn out ones are replaced.

7. The water samples are tested and AIR pollution monitoring are done periodically.

8. The institution adopts all innovative methods to tap the material energy, conserve and reuse the available forms.

9. We are in the verge of implementing new innovative methods for the cause as discussed above and hence we request your good office to share the details of any innovative new methods to be followed to save energy and protect the environment.

Yours faithfully

For,

Sri Lakshmi Narayan Institute Of Medical Sciences

EKDANT ENVIRO SERVICES (P) LTD

[NABL (ISO / IEC 17025: 2005) Accredited & MOEF Recognized Laboratory
ISO 9001: 2008 and OHSAS 18001: 2007 Certified Company]

TEST REPORT

Sample Ref No : EES/STP/139/17

Issued To : **M/s.Sri Lakshmi Narayan Institute of Medical science Osudu Village Pondicherry**

Sample Description : Water
Sample Drawn By/ Date : Customer /28.09.2017
Customer's Reference :
Sample Mark : STP Water

Report No. : 143/17
Report Date : 05.10.17
Page: 1 of 2
Received On :
Commenced On :
Completed On : 29.09.2017

Sl. No	PARAMETERS	UNIT	RESULTS	Tolerance Limits for treated outlet as per TNPCB	PROTOCAL Alpha 22nd Ed 2012
1	pH value at 25°C	-	7.38	5.5 to 9.0	4500 H+ B
2	Total Suspended Solids	Mg/l	18.0	30	IS: 3025: P.17:1984:R.2012
3	Total Dissolved Solids	Mg/l	660	2100	IS: 3025: P.17:1984:R.2012
4	COD	Mg/l	88.0	250	IS: 3025: P.17:1984:R.2012
5	BOD at 27°C for days	Mg/l	10.0	20	Is:3025 P 44 1993 R 209
6	Chlorireds as Ci	Mg/l	115	1000	4500 Cl B
7	Sulphates as SO4	mg/l	27.0	1000	4500 SO4 2E
8	Total Dissolved Solids	mg/l	<1.0	10	IS 3025:P.39:1991:R.20

End of Page 1

Verified By:

R. Nirmala Devi
Deputy Technical Manager

for EKDANT ENVIRO SERVICES (P) LTD
Laboratory Services Division

Authorized Signatory
M.Maria Frank Omer – Quality Cum Tech Manager

NOTE:
1. Test results shown in this test report relate only to the items tested.
2. This test report shall not be reproduce anywhere except in full and in same format without the approval of the laboratory
3. Unless informed by the customer the test items will not be retained for more than 7 days from date of issue of test report .

EKDANT ENVIRO SERVICES (P) LTD

[NABL (ISO / IEC 17025: 2005) Accredited & MOEF Recognized Laboratory
ISO 9001: 2008 and OHSAS 18001: 2007 Certified Company]

TEST REPORT – ADDITIONAL SHEET

Sample Ref No : EES/W/138/107

Report No. : 142/17
Report Date : 05.10.2017

Sl. No	PARAMETERS	UNIT	RESULTS	As Per IS 10500:2012		PROTOCOL: APHA 22nd Edition 2012
				Requirement (Acceptable limit)	Permissible limit in the absence of alternate source	
9	Total Hardness as $CaCO_3$	mg/l	588	200	600	2340 C
10	Calcium Hardness as $CaCO_3$	mg/l	416	-	-	3500 - Ca B
11	Magnesium Hardness as $CaCO_3$	mg/l	172	-	-	3500 - Mg B
14	Phenolphthalein Alkalinity as $CaCO_3$	mg/l	Nil	-	-	2320 B
15	Total Alkalinity as $CaCO_3$	mg/l	144	200	600	2320 B
16	Chlorides as Cl	mg/l	215	200	1000	4500 Cl^- B
18	Total Iron as Fe	mg/l	BDL (DL=0.09)	0.3	0.3	3500 Fe B
19	Silica (Reactive) as SiO_2	mg/l	24.0	-	-	4500 SiO_2 C
20	Carbonate Hardness as $CaCO_3$	mg/l	152	-	-	2340 A
22	Free Residual Chlorine	mg/l	<0.2	0.2	**1	4500 Cl B

BDL=Below Detectable Limit; DL=Detection Limit

End of Report

* May be extended to 400 provided that Magnesium does not exceed 30.
** To be applicable only when water is chlorinated.

Report Opinion: The above submitted water sample does not comply with drinking water specification as per IS 10500:2012 with respect to Total Hardness & Calcium.

Verified By:

R. Nirmala Devi
Deputy Technical Manager

for EKDANT ENVIRO SERVICES (P) LTD
Laboratory Services Division

Authorized Signatory
M.Maria Frank Omer – Quality Cum Tech Manager

NOTE:
1. Test results shown in this test report relate only to the items tested.
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A.C.'S INWARD NO. 6 11 / 04 / 1 1 1

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY AND ENVIRONMENT
PONDICHERRY POLLUTION CONTROL COMMITTEE
III Floor, Housing Board Building, Anna Nagar, Puducherry – 605 005

No.

Rs.100/-

Phone: 0413 – 220 1256
Fax : 0413 – 220 3494

FORM – I

Application for Consent for Emission / Continuation of Emission under Section 21 of the Air (Prevention and Control of Pollution) Act, 1981

From

G. VAIRAKUMAR
GENRAL MANAGER,
SLIMS
PUDUCHERRY - 605502

To

The Member Secretary,
Puducherry Pollution Control Committee,
Puducherry.

Sir,

I/We hereby apply for consent to operate / renewal of consent under section 21 of the Air (Prevention and Control of Pollution) Act, 1918 (14 of 1981) to bring into use a new/ altered stack for the discharge of emission / to begin to make discharge of emission / to continue to discharge emission from stack in industry owned SLIMS by SRI LAKSHMINARAYANA INSTITUTE OF MEDICAL SCIENCES, OSUDU, AGARAM VILLAGE, KUDAPAKKAM POST, PUDUCHERRY - 605502.

The relevant details are as below:

1. Full name of application, designation with address and Telephone No. : SRI LAKSHMINARAYANA INSTITUTE OF MEDICAL SCIENCES, OSUDU, AGARAM VILLAGE, KUDAPAKKAM POST, PUDUCHERRY - PIN 605502
2. Name of full – time Directors with address and Telephone No. : -DO-
3. (a) Full factory address (with name of plot/premises) and telephone No : SLIMS - 2666130
   (b) Extent of land acquired / proposed to be Acquired : 25 ACRES.
   (c) Existing / Proposed – Built up area : 76000 Sq mtr. App
4. Date of commissioning of factory or proposed date of Commission of factory : 2005

5. Capital Investment made (Rs. In lakhs)
   (i) Land :
   (ii) Building :
   (iii) Machinery :
   (iv) Miscellaneous : 3797+7567.70
   (v) Total Investment : 3822.1093
   (vi) Cross Fixed Amount : 65475296570

6. Total number of employees : 100 NOS ABOVE.

7. (a) Name of the product and their quantities :

   (b) Licensed annual capacity of the factory :

   (c) Attach a brief description of the Manufacturing Process along with a flow diagram and the position of corresponding stack on the plot plan :

   (d) Power requirement (HP) : 500 KVA

8. State the number of boilers, heater, and furnaces installed in the factory along with their capacity, type/quantity of fuel used and the emissions from the stacks :

9. Stack details :

   a) Number of stacks :
   b) ID fan/ FD fan / Natural draft :
   c) Material of Construction of stack :
   d) Stack Height :
   i) Above ground – level (Meters) :
   ii) Above factory roof (Meters) :

10. Attach drawing on air pollution control equipment in Respect of each of the stacks listed in item 9 above. :
    Also provide information about stand - by pollution Control equipment
    a) Name of the equipment : N.A.
    b) Existing or proposed and for which pollutant and Date of installation :
    c) Reduction efficiency guaranteed by the Manufacturer :
    d) Quantity and quality of current / expected Emission :
    e) Whether the Industry works in general shift or 2 Shift or round the clock :
    f) Whether monitoring is being done or proposed :
    g) Energy meter reading for the Air Pollution Control Systems (Attach previous statement of readings) :

A/C'S INWARD NO. 6 U 102, 01-11

No

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY AND ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
III Floor, Housing Board Building, Anna Nagar, Puducherry 605 005

100/-

Phone : 0413 – 2201256
Fax : 0413 – 2203494

FORM – XIII
(See rule 32)

Application for Consent for establishment or taking any steps for establishment of industry / Operation /process/or any treatment/disposal system for discharge or Continuation of Discharger under Section 25 or Section 26 of the Water (Prevention and Control of Pollution) Act, 1974

From G.VAIRAKUMAR,
GENRAL MANAGER,
SLIMS,
PUDUCHERRY-605502.

To
The Member Secretary,
Puducherry Pollution Control Committee,
Puducherry.

Sir,

*I/We hereby apply for consent to operate / renewal of consent under section 25 or Section 26 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) for establishing or taking any steps for establishment of ,Industry / Operation / Process /or any treatment / disposal system to bring, into used a new / altered outlet for the discharge of sewage / trade effluent / to continue to discharge sewage / Trade effluent from land/premises owned by SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES, OSUDU, AGARAMVILLAGE, KUDAPAKKAM POST, PUDUCHERRY - 605502

The other relevant details are as below:

1.	Full name of the applicant	:	SRI LAKSHMI NARAYANA INSTITU
2.	Nationality of the applicant	:	MEDICAL SCIENCES, OSUDU, AG
3.	Status of the applicant	:	VILLAGE, KUDAPAKKAM POST, PUD
	(a) Individual	:	INDIAN. PIN: 60
	(b) Proprietary concern	:	TRUST.
	(c) Partnership firm (Whether Registered or unregistered)	:	N.A.
	(d) Joint family concern	:	N.A.
	(e) Private limited Company	:	
	(f) Public Limited Company	:	
	(g) Government Company	:	
	1. State Government	:	
	2. Central Government	:	
	3. Union Territory	:	
	(h) Foreign company (if a foreign company, the details of registration, incorporation, etc.,)	:	N A.
	(i) Any other association or body.	:	TRUST.
4.	Name of the person authorized to sign this form (the original authorization except in the case Of individual/Proprietary concern is to be enclosed)	:	G.VAIRAKUMAR,
5.	Name, address and telephone Nos, of the applicant the full List of individuals, partner's persons, Chairman (Full-time or Part time), Managing Directors, Managing Partner, Directors, (Full-time or part time), other kinds of office-bearers are to be furnished with their period of tenure in the respective Office with telephone Nos, and address)	:	DEED ENCLOSED.

11. Attach information on compliance of emissions with Respect to the standards (Analysis report to be enclosed) : N A

12. *I/we declare that the information furnished above is correct to the best of my / our knowledge.

13. *I/we hereby submit that in case of change either of the point of the emission or its quality a fresh application for consent shall be made unit such consent is granted no emissions shall be made.

14. *I/we hereby agree to submit the Department of Science, Technology and Environment / Pondicherry Pollution Control Committee, Puducherry an application for renewal to consent one month in advance of the date of expiry of the consented period for stack emissions if to be continued thereafter.

15. *I/we undertaken to furnish any information within one month of its being called by the Department of Science, Technology and Environment / Pondicherry Pollution Control Committee, Puducherry.

I/We enclosed herewith Demand / Banker's Draft No. 511008

Yours faithfully,

(Seal and signature of the applicant)

G. VAIRAKUMAR
General Manager
Sri Lakshmi Narayana Institute of Medical Sciences
Pondicherry-605 502.

AIR CONSENT FEES

Investment	Fees (in Rs.)		
	Green	Orange	Red
Up to 5 lakhs	1000	2000	4000
5 to 20 lakhs	2000	4000	8000
20 lakhs to 1 Crore	4000	8000	12000
1 to 5 Crore	10000	12000	16000
5 to 20 Crore	14000	16000	20000
20 to 50 Crore	16000	24000	30000
50 to 100 Crore	18000	32000	40000 ✓
Above 100 crores	20000 + 10,000/- per additional 100 crores	40000+10,000/- per additional 100 crores	50000+10,000/-per additional 100 crores

Note: Fees to be calculated based on cross fixed amount valid of the unit.

A/C'S INWARD NO. 6U/22, dt.[illegible]

No

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY AND ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
III Floor, Housing Board Building, Anna Nagar, Puducherry 605 005

100/-

Phone : 0413 – 2201256
Fax : 0413 – 2203494

FORM – XIII
(See rule 32)

Application for Consent for establishment or taking any steps for establishment of industry / Operation /process/or any treatment/disposal system for discharge or Continuation of Discharger under Section 25 or Section 26 of the Water (Prevention and Control of Pollution) Act, 1974

From G.VAIRAKUMAR,
GENRAL MANAGER,
SLIMS,
PUDUCHERRY-605502.

To
The Member Secretary,
Puducherry Pollution Control Committee,
Puducherry.

Sir,

*I/We hereby apply for consent to operate / renewal of consent under section 25 or Section 26 of the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) for establishing or taking any steps for establishment of Industry / Operation / Process /or any treatment / disposal system to bring into used a new / altered outlet for the discharge of sewage / trade effluent / to continue to discharge sewage / Trade effluent from land/premises owned by SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES, OSUDU, AGARAM VILLAGE, KUDAPAKKAM POST, PUDUCHERRY - 605502

The other relevant details are as below:

1.	Full name of the applicant	: SRI LAKSHMI NARAYANA INSTITU : MEDICAL SCIENCES, OSUDU, AG : VILLAGE, KUDAPAKKAM POST, PUDU
2.	Nationality of the applicant	: INDIAN. PIN: 60
3.	Status of the applicant	: TRUST.
	(a) Individual	: N.A.
	(b) Proprietary concern	: N.A.
	(c) Partnership firm (Whether Registered or unregistered)	:
	(d) Joint family concern	:
	(e) Private limited Company	:
	(f) Public Limited Company	:
	(g) Government Company	:
	1. State Government	:
	2. Central Government	:
	3. Union Territory	:
	(h) Foreign company (if a foreign company, the details of registration, incorporation, etc.,)	: N A.
	(i) Any other association or body.	: TRUST.
4.	Name of the person authorized to sign this form (the original authorization except in the case Of individual/Proprietary concern is to be enclosed)	: G.VAIRAKUMAR,
5.	Name, address and telephone Nos, of the applicant the full List of individuals, partner's persons, Chairman (Full-time or Part time), Managing Directors, Managing Partner, Directors, (Full-time or part time), other kinds of office-bearers are to be furnished with their period of tenure in the respective Office with telephone Nos, and address)	: DEED ENCLOSED.

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIEN
OSUDU, AGARAM VILLAGE VILLIANUR COMMUNE, KUDAPAKKAM POST, PONDICHERRY - 6

Dated:31-01-2017

From

General Manager,
Slims,
Pudhucherry 605502.

To

The Member Secretary,
Pudhucherry Pollution Control Committee ,
Pudhucherry.

Sir,

Sub: Air and Water consent fees for the year 2017-18

I hereby submit the Air and Water consent application along with PNB DD no 511008 30-01-2017 ,as fees for the amount of Rs 49,200/-. kindly acknowledge it.

Thanking you

Yours sincerely

for SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

Authorised Signatory

DEPARTMENT OF SCIENCE TECHNOLOGY AND ENVIRONMENT
RECEIVED
DATE 31/01/17

SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES
PONDICHERRY

BANK PAYMENT VOUCHER

V.No
Date 30.01.2017

DEBIT Account

Rs. 49,200/-

PAY TO Yawuff

Rupees forty nine thousands And Four Hundreds Only,

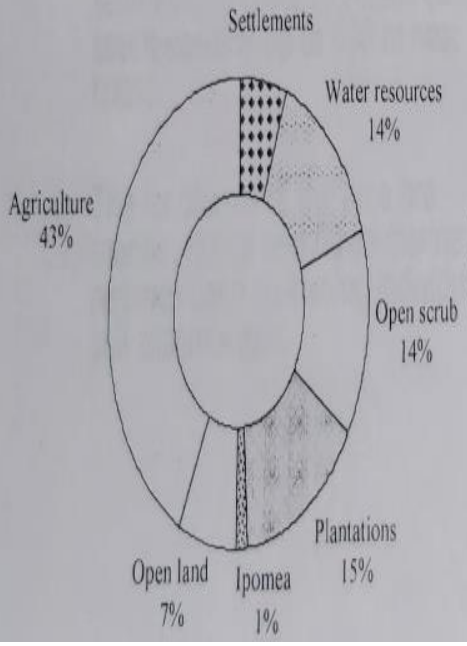
towards the renewal of Pollution Control Committee

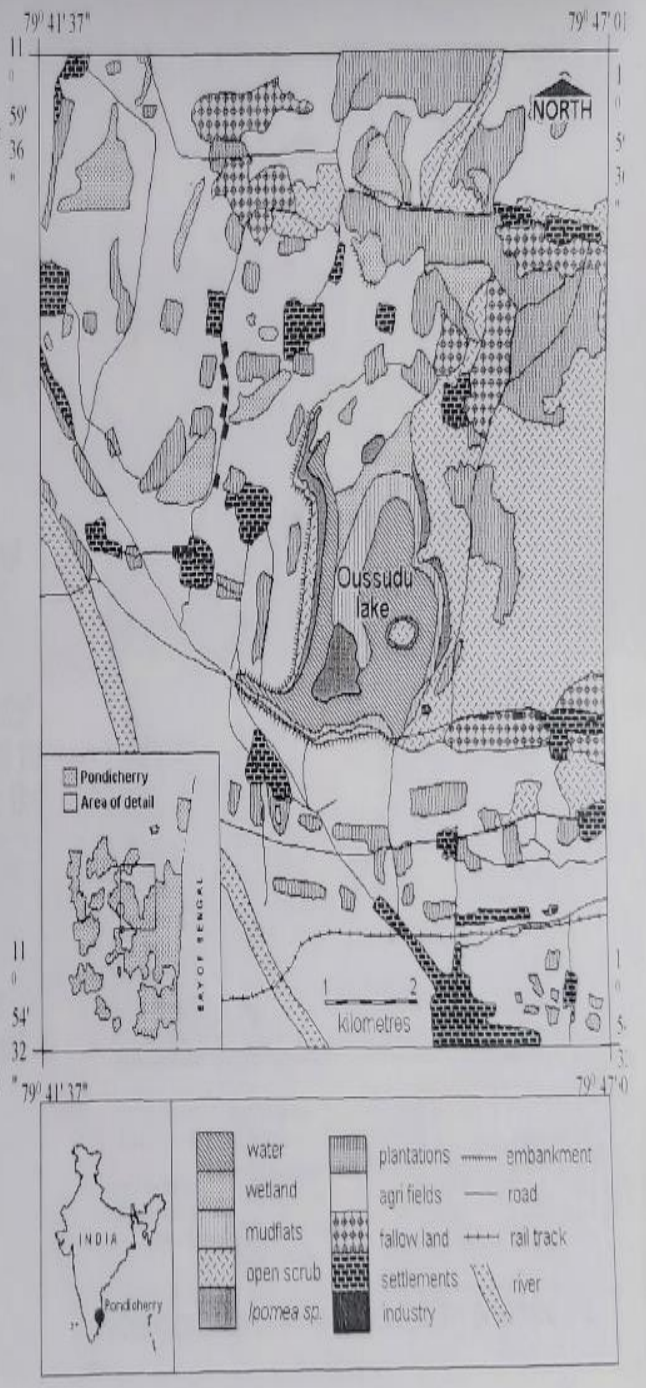
Cheque No. 511008 Dt 30-1-17 Bank PNB - Main

Authorised by Senior Accountant Payee's Signature

Land Environment

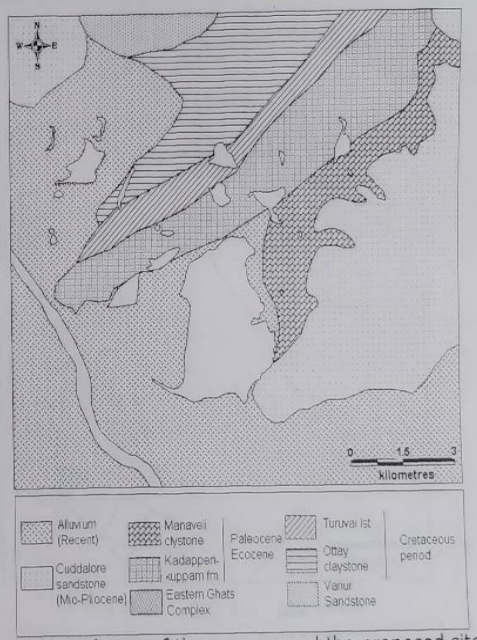
- Located at 11°57′ North and 77°45′ East near Oussudu village
- The study area (~81.52 Km^2) has diverse land use and land cover patterns





Geology

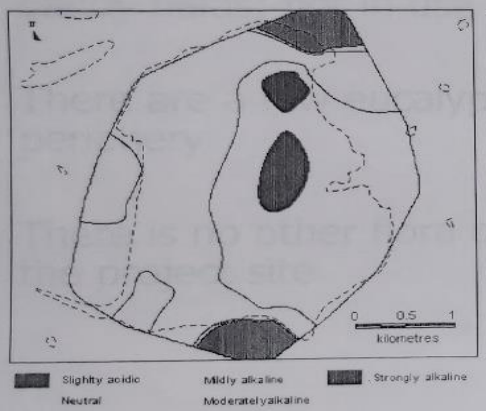
- The landscape is a product of the Cretaceous, Paleocene, Ecocene, Mio-Pliocene, of recent eras
- The geology comprises of charnocklite overlain by a cover of sedimentary sequence.
- The thickness of the sub-horizontal sedimentary cover increases east to south-easterly up to 600 m near the coast.
- The landforms of the area are marine, fluvial and fluvio-marine regimes each sustaining individual soil assemblages.



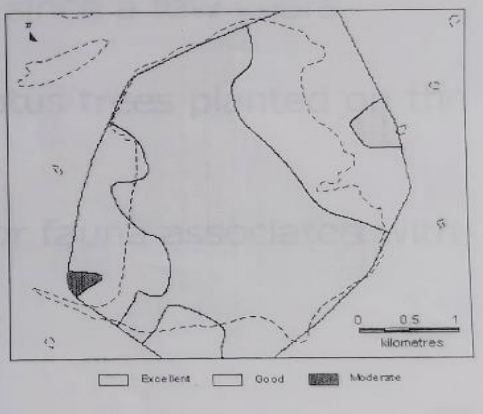
Geological map of the area around the proposed site

Soil quality

- Nearly 53% of the soil samples are moderately alkaline and 35% were mildly alkaline
- Most of the soil samples belonged to class 1 and class 2, posing very low to moderate salinity hazard



Spatial distribution of pH



Spatial distribution of EC

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY AND ENVIRONMENT
PONDICHERRY POLLUTION CONTROL COMMITTEE
3rd Floor, Housing Board Complex, Anna Nagar, Puducherry - 5
Phone : (0413) 2201256 Fax : (0413) 2203494

* * *

Puducherry, dated

MONITORING AND ANALYTICAL DIVISION, PUDUCHERRY

EFFLUENT ANALYTICAL REPORT

Name of the Industry : M/s.Lakshmi Narayana Medical College
Osudu Agaram Village
Villianur Commune,
Koodapakkam Post, Puducherry – 605 502.

Date and Time of Monitoring : 22.06.2015, 11.30 AM

Sampling Point : Outlet of the treatment plant

Nature of sample : Grab

Weather Condition : Clear

Sl. No.	Parameters	Sample	Standard Limit
1	Temperature(°C)	31.0	--
2	pH	7.83	6.5 – 9.0
3	Total Suspended Solids (mg/l)	2.0	100
4	Chemical Oxygen Demand(COD) (mg/l)	Nil	250
5	Biochemical Oxygen Demand (BOD) (mg/l)	BDL	30
6	Oil & Grease(O&G) (mg/l)	4.7	10
	Sample Collected by	Thiru. P. Tamilarasan, JLA Thiru. M. Anandan, JLA	
	Analysed by	Thiru. T. Ponram, JSA Thiru. P. Tamilarasan, JLA Thiru. M. Anandan, JLA	

Inference:- The above result reveals that all the parameters are within the prescribed standard limit.

22/7/15

(Dr.V.R.Sumathi)
Scientist

Copy Submitted to:
The Member Secretary, PPCC.

Copy to:
The Guard File.

No.17/PPCC/MAC/SCI/2015/637

GOVERNMENT OF PUDUCHERRY
DEPARTMENT OF SCIENCE, TECHNOLOGY & ENVIRONMENT
PUDUCHERRY POLLUTION CONTROL COMMITTEE
III FLOOR, PHB BUILDING, ANNA NAGAR, PUDUCHERRY – 605 005.
Phone : (0413) 2201256 Fax : (0413) 2203494

*****

Puducherry, the 23 JUL 2015

To
M/s.Lakshmi Narayana Medical College
Osudu Agaram Village
Villianur Commune,
Koodapakkam Post, Puducherry – 605 502.

Sir,

Sub: PPCC – Collection of effluent sample in your institution – Forwarding of Analytical Report - Reg.

Ref: i) This Office's Memorandum.No.33/PPCC/MAC/SCI/2015/459, dt. 22.06.2015.
ii) Your Lr. No. SLIMS/DEAN/EST/230/2015, dt. 14.07.2015.

* * *

With reference to the above, the analytical report of Effluent sample collected in your institution on 22.06.2015 is enclosed herewith.

Yours Sincerely,
22/7/15
(Dr.V.R.Sumathi)
Scientist

O/C

Encl: a/a

Copy to:
Guard File.

23/7/2015
SPEED POST

SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
(RECOGNIZED BY MEDICAL COUNCIL OF INDIA & AFFLIATED BY BHARATH UNIVERSITY)

GREEN AUDIT

GREEN AUDIT 2022

Scope of Green Auditing:

A clean and healthy environment aids effective learning and provides a conducive learning environment. Green Audit is the most efficient and ecological way to manage environmental problems. It is a kind of professional care which is the responsibility of each individual who are the part of economic, financial, social, environmental factor. It is necessary to conduct green audit in college campus because students become aware of the green audit, its advantages to save the planet and they become good citizen of our country. Thus Green audit becomes necessary at the college level.

Benefits of the Green Auditing:

- ➢ More efficient resource management
- ➢ To provide basis for improved sustainability
- ➢ To create a green campus
- ➢ To enable waste management through reduction of waste generation, solid-wasteand water recycling
- ➢ To create plastic free campus and evolve health consciousness among thestakeholders

- ➢ Recognize the cost saving methods through waste minimizing and managing.
- ➢ Empower the organizations to frame a better environmental performance
- ➢ Enhance the alertness for environmental guidelines and duties
- ➢ Impart environmental education through systematic environmentalmanagement approach and improving environmental standards
- ➢ Benchmarking for environmental protection initiatives
- ➢ Financial savings through a reduction in resource use
- ➢ Development of ownership, personal and social responsibility for the Collegeand its environment

Target Areas of Green Auditing:

Green audit forms part of a resource management process. Although they are individual events, the real value of green audits is the fact that they are carried out,at defined intervals, and their results can illustrate improvement or change over time. Target areas included in the green auditing are

I. Water,

II. Waste,

III. Green campus

Auditing for Water Management

The world's water resources are finite but exist on a planet with a constantly growing population.

The development of water resources to man's benefit has beena fundamental factor in the evolution of civilizations throughout history. But, as our populations continue to grow and shift, the availability of quality water resources is in decline. Pollution, climate change and construction of cities in dry regions are some of the factors exacerbating evolving supply/demand imbalances. Many innovative technologies have been developed in recent times to assist the efficient delivery and utilization of drinking water. Water audits provide a rational, scientific framework that categorizes all water use in your system. It is a tool toovercome drought related problem, shortage, leakage and losses.

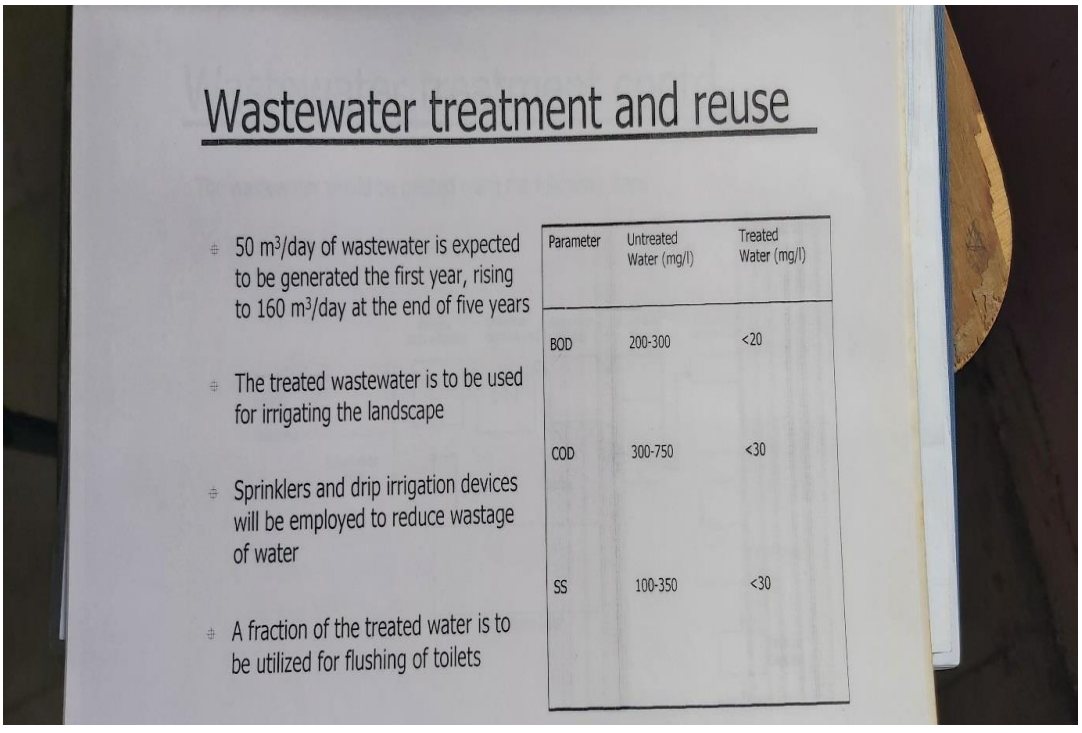
Water Usage in the Institute

Both Treated water and raw water are used in the Institute depending on the use such as for drinking purpose and non-drinking purpose

Water Quality of Drinking water:

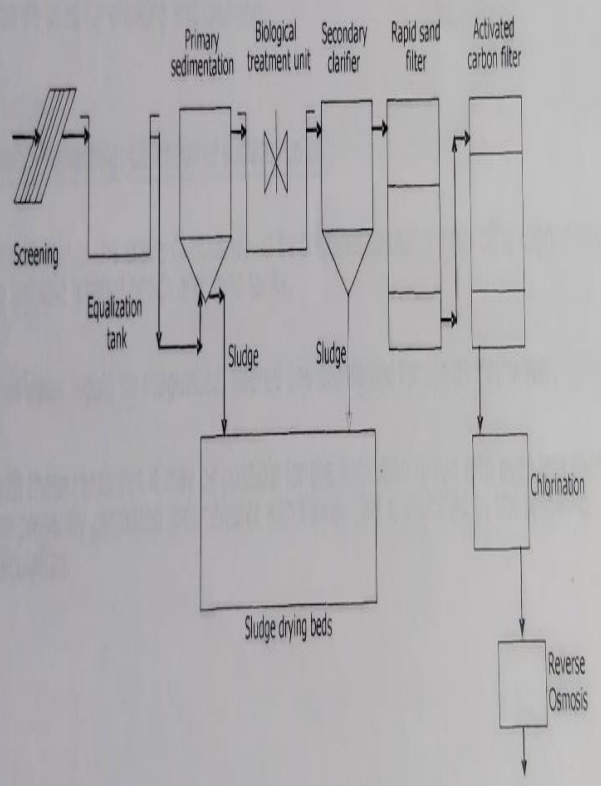
Water quality of Drinking water is regularly monitored. Drinking water samples are also taken and checked by Institute's staff regularly and the action is taken bythe staff accordingly.

Wastewater treatment and reuse:



Wastewater treatment contd.

The wastewater would be treated using the following steps



Sewage Treatment Plant

Rainwater Harvesting:

Rainwater harvesting is the accumulation and deposition of rainwater for reuse on-site, rather than allowing it to run off. Rainwater can be collected from roofs, and in many places the water collected is redirected to a deep pit (well, shaft, or borehole), a reservoir with percolation. Its uses include water for gardens, livestock, irrigation, domestic use with proper treatment etc. The harvested water can also be used as drinking water, longer-term storage and for other purposes such as groundwater recharge.

Rainwater harvesting provides an independent water supply during regional water restrictions and in developed countries is often used to supplement the main supply. It provides water when there is a drought, can help mitigate flooding of low-lying areas, and reduces demand on wells which may enable groundwater levels to be sustained. It also helps in the availability of potable water as rainwater is substantially free of salinity and other salts. Application of rainwater harvesting in urban water system provides a substantial benefit for both water supply and wastewater subsystems by reducing the need for clean water in water distribution system, less generated storm water in sewer system, as well as a reduction in storm water runoff polluting freshwater bodies.

Rainwater harvesting

Rainwater harvesting: rooftop collection

- The entire rooftop area is designed to maximize rainwater harvesting
- The harvest will go to filters and then to collection sumps.
- The harvested water would be treated for turbidity removal and disinfection so that it can be used for drinking and cleaning.

Rainwater harvesting: Collection of surface run off

- The terrain of the entire campus would be prepared so that the run off is channelized to suitable located ponds and lined tanks.
- This water would be coagulated, filtered and disinfected for use as freshwater.
- With these measures it may be possible for the institution to run with even less than the presently permitted groundwater withdrawal. This is indicated by the following calculation.

Rainwater harvesting contd.

- Rainwater that can be realistically utilizable with rooftop collection

  Total built area (6 acre) : 24281 m^2
  Average annual rainfall : 1.3 m
  Utilizable harvested water (30% of the rooftop catch): 9470 m^3/year or ~26 m^3/day

- Rainwater that can be realistically utilizable with surface collection

  Total catchments (20 acres): 80940 m^2
  Average annual rainfall : 1.3 m
  Utilizable harvested water (20% of the surface catch): 21045 m3/year or ~57.7 m^3/day

- Thus, at least ~84 m^3/day of water can be obtained by meticulous rainwater harvesting; which can go up to ~112.5 m3/day

- Further, by proper catchment management, much of the un-harvested rainfall can be directed for groundwater recharge.

SRI LAKSHMI NARAYANA
INSTITUTE OF MEDICAL SCIENCES
(RECOGNIZED BY MEDICAL COUNCIL OF INDIA & AFFLIATED BY BHARATH UNIVERSITY)

GREEN AUDIT 2021

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, slims firmly believes that there is an urgent need to address the environmental challenges and improve their environmental footprint. True to its belief, SLIMS maintains an excellent landscaping in its campus. The whole campus is lush green, and trees are seen everywhere around the campus. CII congratulates the SLIMS team for their wonderful efforts to create a truly green campus. Based on the data submitted by SLIMS, following improvement opportunities have been identified in the campus in terms of landscaping:

- Implement ecosystem restoration by development of theme gardens in unusedareas of the campus
- Develop green corridors and connection between existing areas in the campus
- Develop natural areas to encourage bird roosting and nesting in built-up areas
- Increase tree density and canopy cover in the built-up areas by planting more fruityielding tree
- Conduct regular flora surveys for improving the existing data
- Develop strategies for regular monitoring & prevention of invasive plant species.

By addressing the improvement opportunities, the campus would be able to achievethe following benefits:

- Identifying & implementation of proper measure for conservation of endangered floral species in the campus
- Reduce the microclimate temperature of the campus by 1-2 degrees whichis quite significant
- As many of the species have the capability to absorb contaminants in theair and therefore this would lead to better air quality in the campus
- This can evolve as an excellent educational campus for spreading awareness on biodiversity and benefit the nation at large.

Urbanization and its effect on loss of biodiversity Urbanization causes biodiversityto decline. As cities grow vital habitat is destroyed or fragmented into patches not big enough to support complex ecological communities. In the city, species may become endangered or even locally extinct as natural areas are swallowed up by the urban jungle. Ironically, it is urban growth that is often responsible for the introduction of non-native species, either accidentally or deliberately, for food, petsor for aesthetic reasons.

SRI LAKSHMI NARAYANA
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GREEN AUDIT 2020

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 ambiance. It was initiated with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. Through Green Audit, one gets a direction as to how to improve the condition of the environment and there are various factors that have determined the growth of carrying out Green Audit.

The green audit is assigned to the criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India which declares the institutions as Grade A, B or C according to the scores assigned during the accreditation.

Objectives of the Study:

The main objective of the green audit is to promote the Environment Management and Conservation in the University Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies, and standards. The main objectives of carrying out Green Audit:

- To raise awareness among students towards the 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 consumption and use in the campus.
- To establish baseline data to assess future sustainability issues by avoiding the interruptions in an environment today as it requires more effort and cost to manage the consequences in the future.

- Ensuring preventive care to reduce/eliminate the cost of corrective care.
- To bring out a status report on environmental compliance.

In order to perform a green audit, the methodology included different tools such as preparation of questionnaire, a physical inspection of the campus, observation, and review of the documentation, interviewing key persons and data analysis, measurements, and recommendations.

The study covered the following areas to summarize the present status of environmental management on the campus:

- Water management
- Energy Conservation
- Waste management
- E-waste management
- Green area management

Recommendations:

- Review periodically the list of trees planted in the garden, allot numbers tothe trees and keep records. Assign scientific names to the trees.
- Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service. Create awareness of environmental sustainability and take actions to ensure environmental sustainability.
- Establish a Campus Environmental Committee that will hold responsibility for the enactment, enforcement, and review of the Environmental Policy. The Environmental Committee shall be the source of advice and guidance to staff and students on how to implement this Policy.
- Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings.
- Celebrate every year 5th June as ‘Environment Day’ and plant trees on this day to make the campus greener.
- Indoor plantation to inculcate interest in students, Bonsai can be planted in the corridor to bond a relationship with nature.
- The green library should be established.

SRI LAKSHMI NARAYANA
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GREEN AUDIT 2019

Colleges and Universities have broad impacts on the world around them, both negative and positive. The activities pursued by colleges can create a variety of adverse environmental impacts. But colleges are also in a unique position as educational institutions to be leaders in pursuing environmentally sustainable solutions. Green Audit is linked to Sustainable development process. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the progress of Green Audit process. The green audit practically involves energy conservation, use of renewable sources, rain water harvesting, efforts of carbon neutrality, planting of trees, hazardous waste management and E-waste management. Finally, Green audit is a requirement of NACC assessment to the Colleges and Universities.

It is necessary to conduct green audit in college campus because students have to be aware of the green audit, its advantages to save the planet and thereby get motivated to become good citizens of the country. Green audit and sustainable development process help to reduce wastage and associated cost as well as increase the product quality. 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 relevant. Green audit can be a useful tool for a college to determine how and where they are using most of energy , water or other resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan.

Green auditing can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of the impact of green methods on campus. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. All across the world, colleges and universities are looking to a sustainable future by working to become carbon neutral. Universities are taking responsibility for their environmental impact and are working to neutralize those effects. To

Become carbon neutral, universities are working to reduce their emissions of greenhouse gases, reduce their use of energy, use more renewable energy, and emphasize the importance of sustainable energy sources.

The findings of this report show that the college performs fairly well on sustainability issues and has made possible rectifications on the previous audit recommendations within a period of two years. The college does consider the environmental impacts of most of its actions and makes a concerted effort to act in an environmentally responsible manner. Even though the college does perform fairly well, the recommendations in this report highlight many ways in which the college can work to improve its actions and become a more sustainable institution.

Benefits of the Green Auditing:

- ✓ More efficient resource management
- ✓ To provide basis for improved sustainability
- ✓ To create a green campus
- ✓ To enable waste management through reduction of waste generation, solid-waste and water recycling.
- ✓ To create plastic free campus and evolve health consciousness among thestakeholders
- ✓ Recognize the cost saving methods through waste minimizing and managing
- ✓ Point out the prevailing and forthcoming complications
- ✓ Authenticate conformity with the implemented laws
- ✓ Empower the organizations to frame a better environmental performance
- ✓ Enhance the alertness for environmental guidelines and duties
- ✓ Impart environmental education through systematic environmental management approach and improving environmental standards
- ✓ Benchmarking for environmental protection initiatives

- ✓ Financial savings through a reduction in resource use
- ✓ Development of ownership, personal and social responsibility for the Collegeand its environment
- ✓ Enhancement of college profile
- ✓ Developing environmental ethic and value systems in youngsters.
- ✓ Green auditing should become a valuable tool in the management and monitoring of environmental and sustainable development programs of the college.

Auditing for Green Campus Management:

Since the beginning, trees have furnished us with two of life's essentials, food and oxygen. As we evolved, they provided additional necessities such as shelter, medicine, and tools. Today, their value continues to increase and more benefits of trees are being discovered as their role expands to satisfy the needs created by our modern lifestyles. Trees are an important part of every community. Our streets, parks, playgrounds and backyards are lined with trees that create a peaceful and aesthetically pleasing environment. Trees increase our quality of life by bringing natural elements and wildlife habitats into urban settings. We gather 17 under the cool shade they provide during outdoor activities with family and friends. Using trees in cities to deflect the sunlight reduces the heat island effect caused by pavement and commercial buildings. During the process of photosynthesis, trees take in carbon dioxide and produce the oxygen we breathe. According to the U.S. Department of Agriculture, "One acre of forest absorbs six tons of carbon dioxide and puts out four tons of oxygen. This is enough to meet the annual needs of 18 people." Trees, shrubs and turf also filter air by removing dust and absorbing other pollutants like carbon monoxide, sulfur dioxide and nitrogen dioxide. Trees control climate by moderating the effects of the sun, rain and wind. Leaves absorb and filter

the sun’s radiant energy, keeping things cool in summer. Trees also preserve warmth by providing a screen from harsh wind. Trees also lower the air temperature and reduce the heat intensity of the greenhouse effect by maintaining low levels of carbon dioxide. So while we are busy studying and working on earning those good academic grades, all the trees on campus are also working hard to make the air cleaner for us. Trees on our campus impact our mental health as well; studies have shown that trees greatly reduce stress, which a huge deal is considering that many students are under some kind of stress.

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GREEN AUDIT 2018

Colleges and Universities have broad impacts on the world around them, both negative and positive. The activities pursued by colleges can create a variety of adverse environmental impacts. But colleges are also in a unique position as educational institutions to be leaders in pursuing environmentally sustainable solutions. SLIMS expresses its commitment to sustainability in many ways. It has taken a number of positive steps to reduce its environmental impact. But many areas remain in which substantial improvements can be made. This report serves to highlight SLIMS many accomplishments, and to make recommendations for improving the College's environmental sustainability. The college conducts the internal Green Audit in each academic year and strives to maintain eco friendly atmosphere on the campus.

To maintain eco-friendly ambience a 10 point programme is followed –

Green building for quality living

Know green and think green is promoted on

thecampusWater conservation and prevention of

waterwastage Use of CFL bulbs instead florescent

bulbs

Small generators are substituted with 250 KVAgenerators to save diesel. CPCB approved.

Usage of recycled paper bags was promoted among students by displaying boards like 'Say No to Plastic'

Reduce – Reuse – Recycle methods are followed

Carbon dioxide neutrality is maintained on the campus by developing

greeneryTurning of monitors after the work

Global warming, bio-diversity and pollution incorporated in the curriculum

The initiatives taken by the college to make the campus Ecofriendly:

Energy conservation Use

of renewable energyWater

harvesting

Efforts for carbon neutrality.

Plantation

Hazardous waste managementE-

waste management

The college undertakes various activities through N.S.S. like beautification, water and power management. The biodegradable and non-biodegradable waste segregated by the college was utilized for composting. To create eco-friendly awareness among the students college arranges special programmes by inviting the eminent personalities, who in turn train and educate public. Students are encouraged to participate in eco-friendly activities by making the activities of eco-club part ofthe curriculum under Part II.

Energy Conservation

Architectural design for our college is based upon use of natural lighting and ventilation, to save extra power for bulbs and fans.

Florescent bulbs are replaced with CFL bulbs

Eco maps on energy utilization and noise levels of the campus are displayed.

The college has a canopy of trees and plants that make the environment carbon dioxide free and to maintain health of all the inmates. The garden has palm trees, neem trees and other trees, which provide shade and a beautiful ambience.

Energy is also conserved by using natural light in the classrooms.

Organizing lectures on energy conservation in order to give awareness to the students.

Since the beginning, trees have furnished us with two of life's essentials, food and oxygen. As we evolved, they provided additional necessities such as shelter, medicine, and tools. Today, their value continues to increase and more benefits of trees are being discovered as their role expands to satisfy the needs created by our modern lifestyles. Trees are an important part of every community. Our streets, parks, playgrounds and backyards are lined with trees that create a peaceful and aesthetically pleasing environment. Trees increase our quality of life by bringing natural elements and wildlife habitats into urban settings. We gather 17 under the cool shade they provide during outdoor activities with family and friends. Using trees in cities to deflect the sunlight reduces the heat island effect caused by pavement and commercial buildings. During the process of photosynthesis, trees take in carbon dioxide and produce the oxygen we breathe. According to the U.S. Department of Agriculture, "One acre of forest absorbs six tons of carbon dioxide and puts out four tons of oxygen. This is enough to meet the annual needs of 18 people."

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Trees on our campus impact our mental health as well; studies have shown that trees greatly reduce stress, which a huge deal is considering that many students are under some kind of stress.

Auditing for Carbon Footprint:

Colleges are adding new courses and programs for students. Students are passionate about making their campuses more sustainable and are trying hard to make it happen. Colleges are helping the cities reduce greenhouse gas emissions and save energy by reorganizing campus operations. They are leading research on clean technology and electric cars, alternative fuels, and the next generation of batteries. By renovating and retrofitting old buildings, they are reducing energy use and lowering carbon emissions. New low-carbon buildings will minimize our footprint for generations to come. These campus plans will reinforce College management's commitment to a sustainable future, including reducing energy use and emissions, and helping city to meet climate change targets.

Carbon footprint is produced via direct emissions of greenhouse gases associated with combustion of fossil fuels for heating and transportation, indirect emissions associated with electricity purchase and finally other emissions related to solid waste, refrigerants, land use management, air travel, etc. Commutation of stakeholders has an impact on the environment through the emission of greenhouse gases into the atmosphere consequent to burning of fossil fuels (such as petrol). The most common greenhouse gases are carbon dioxide, water vapor, methane, nitrous oxide and ozone.

An important aspect of doing an audit is to be able to measure the impact so that we can determine better ways to manage the impact. In addition to the water, waste, energy and biodiversity audits we can also determine what our carbon footprint is,

based on the amount of carbon emissions created. One aspect is to consider the distance and method travelled between home and college every day. It undertakesthe measure of bulk of carbon dioxide equivalents exhaled by the organization through which the carbon accounting is done. It is necessary to know how much the organization is contributing towards sustainable development. To become carbon neutral, Colleges are trying to reduce their emissions of greenhouse gases, cut their use of energy, use more renewable energy, and emphasize the importance of sustainable energy sources.

Benefits of the Green Auditing:

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- ✓ Impart environmental education through systematic environmental management approach and improving environmental standards
- ✓ Benchmarking for environmental protection initiatives
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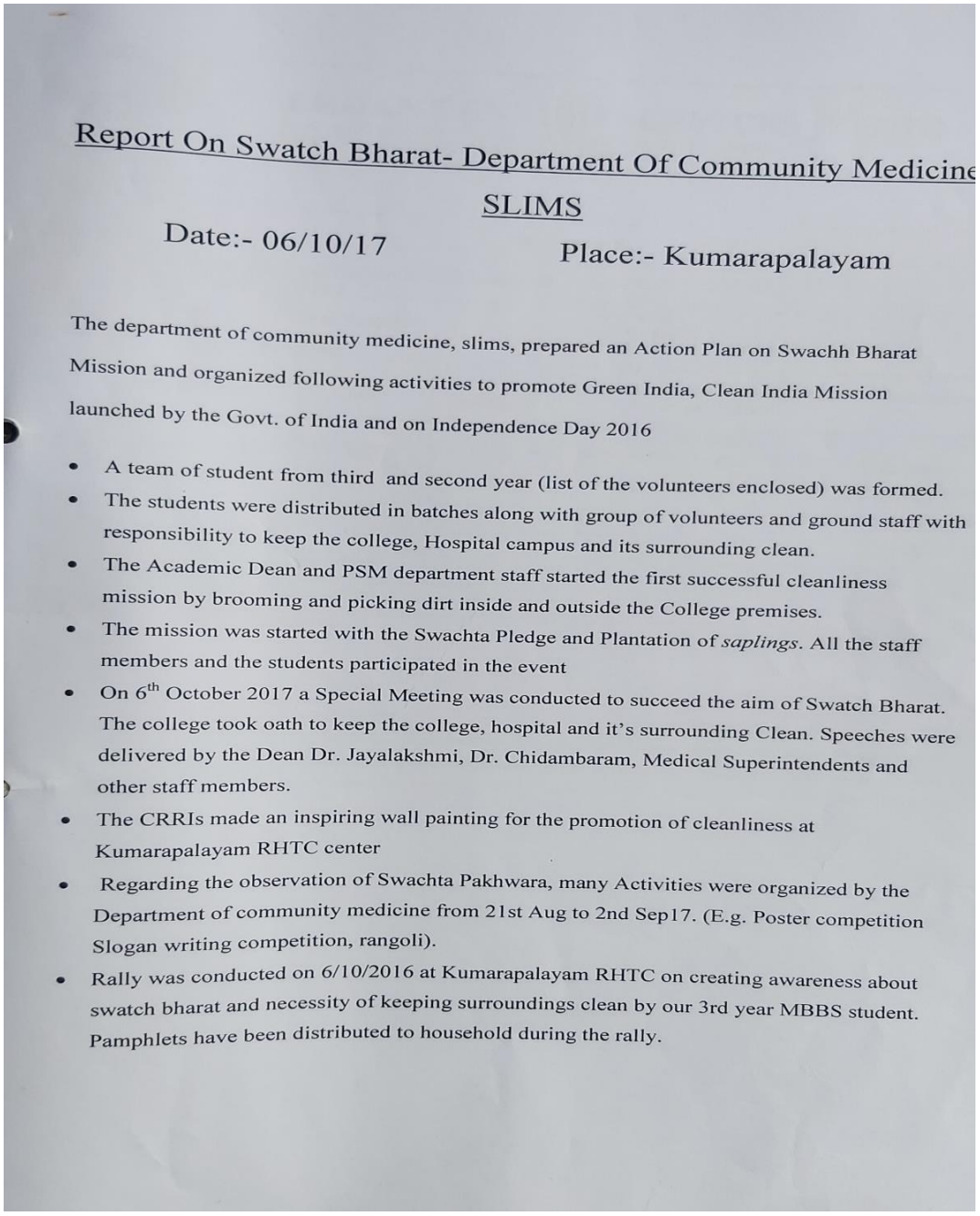

Report On Swatch Bharat- Department Of Community Medicine

SLIMS

Date:- 06/10/17 Place:- Kumarapalayam

The department of community medicine, slims, prepared an Action Plan on Swachh Bharat Mission and organized following activities to promote Green India, Clean India Mission launched by the Govt. of India and on Independence Day 2016

- A team of student from third and second year (list of the volunteers enclosed) was formed.
- The students were distributed in batches along with group of volunteers and ground staff with responsibility to keep the college, Hospital campus and its surrounding clean.
- The Academic Dean and PSM department staff started the first successful cleanliness mission by brooming and picking dirt inside and outside the College premises.
- The mission was started with the Swachta Pledge and Plantation of *saplings*. All the staff members and the students participated in the event
- On 6th October 2017 a Special Meeting was conducted to succeed the aim of Swatch Bharat. The college took oath to keep the college, hospital and it's surrounding Clean. Speeches were delivered by the Dean Dr. Jayalakshmi, Dr. Chidambaram, Medical Superintendents and other staff members.
- The CRRIs made an inspiring wall painting for the promotion of cleanliness at Kumarapalayam RHTC center
- Regarding the observation of Swachta Pakhwara, many Activities were organized by the Department of community medicine from 21st Aug to 2nd Sep17. (E.g. Poster competition Slogan writing competition, rangoli).
- Rally was conducted on 6/10/2016 at Kumarapalayam RHTC on creating awareness about swatch bharat and necessity of keeping surroundings clean by our 3rd year MBBS student. Pamphlets have been distributed to household during the rally.

OFFICE OF THE DEAN

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

[Recognised by Medical Council of India, Ministry of Health letter No. U/12012/249/2005-ME (P -II) dt. 11/07/2011]
[Affliated to Bharath University, Chennai - TN]

Ref: SLIMS/DIRECTOR/EST/314/2015 07.10.2015

To

The Member Secretary,
Puducherry Pollution Control Committee,
Government of Puducherry,
Puducherry.

DESPATCHER
DEPARTMENT ... NCE
TECHNOLOGY ... ONMENT
PUDU...

Sir,

After having gone personally to the areas concern and perusing the documents available, i am submitting the following details by point wise regarding the established facilities and ongoing process carried out to protect the environment.

1. To begin with, the institution periodically conducts training program for its maintenance team including sanitary workers and sweepers.
2. The hospital has constituted an infection control committee which in coordination with the waste disposal committee manages the disposal of BMW in hygienic and safe way.
3. For containing the noise pollution, generation of oxygen and for a clean and greenery environment more than 50% of the land of the institution and hospital is utilized for the development of green area.
4. Ample number of trees and shrubs are grown which resemble like a mini forest now.
5. We have enclosed herewith the photographs indicating before and after development of the greenery area.
6. Green patches are developed around the building for easy percolation of rain water.
7. Two rain water harvesting ponds are developed in more than 1 acre for storing the rain water.
8. The outer premises of the hospital are lit with LED street lights power by centrally installed solar system.
9. A state of art sewage treatment plant is established with RO to treat the waste water generated.
10. The treated water is utilized to irrigate our plantation and greenery areas.
11. To top the energy effectively old solar street lamps are changed with LED lights and solar panels and components.

Cont...

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slimsoffice@bharathuniv.ac.in / slims_hospital@yahoo.com

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[Affliated to Bharath University, Chennai - TN]

12. The STP plants are periodically serviced by a private company and their contract copy is enclosed herewith.
13. The bio-medical wastes generated are segregated and are disposed of through the centralized BMW collection agencies approved by the Pondicherry Pollution Control Board.
14. Periodically all the equipments concerned with the protection of the environment are monitored and the worn out are replaced with new one to effectively utilized and preserve the energy.
15. The institution is adoptive all innovative methods to tap the material energy conserve and reuse the available forms.

DIRECTOR

ENERGY AUDIT REPORT

for

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGRAM VILLAGE, VILLIYANUR COMMUNE, KUDAPAKKAM POST,

PUDUCHERRY – 605 502.

FY: (2018 – 2019)

Audited by,

V.Thirunavukkarasu BE, MBA

Certificate No.:4056
Reg No.: EA 6397

SRI GURU ENGINEERS

Plot No.6, Elangoadigal Street, Shanthi Nagar, Lawspet, Puducherry – 605 008.

Ph : 0413 – 2250895 / Cell : 9655828895

ENERGY AUDIT SEQUENCE

SL. NO	DESCRIPTION OF AREA	Remarks	Page No.
1	TRANSFORMER AND LOAD FACTOR		2
2	INDUCTION MOTOR LOAD / EE MOTOR	NOT APPLICABLE	
3	HEATER LOAD	NOT APPLICABLE	
4	CABLE DISTRIBUTION	NOT APPLICABLE	
5	POWER FACTOR IMPROVEMENT		5
6	HARMONICS STUDY	WITHIN THE LIMITS	7
7	AIR COMPRESSOR & DISTRIBUTION SYSTEM		8
8	HVAC AND REFRIGERATION SYSTEM		9
9	CENTRIFUGAL PUMP APPLICATIONS	NOT APPLICABLE	
10	FAN AND BLOWERS		10
11	VFD APPLICATION		11
12	COOLING TOWER PERFORMANCE	NOT APPLICABLE	
13	LIGHTING SYSTEM		12
14	DG SET PERFORMANCE		13
15	SOLAR POWER		14
16	RECOMMENDATIONS & COMMENTS		15

TRANSFORMER AND LOAD FACTOR

Transformer Efficiency

Transformer capacity	=	630 KVA
Load Loss (or copper Loss)	=	8034W
No Load Loss (or iron Loss)	=	1200W

Total Loss = No Load Loss + (KVA Load/rated KVA) X Full Load Loss

Total Loss	=	4.1 KW
Efficiency	=	98%

Average KWH/MD/PF 18-19

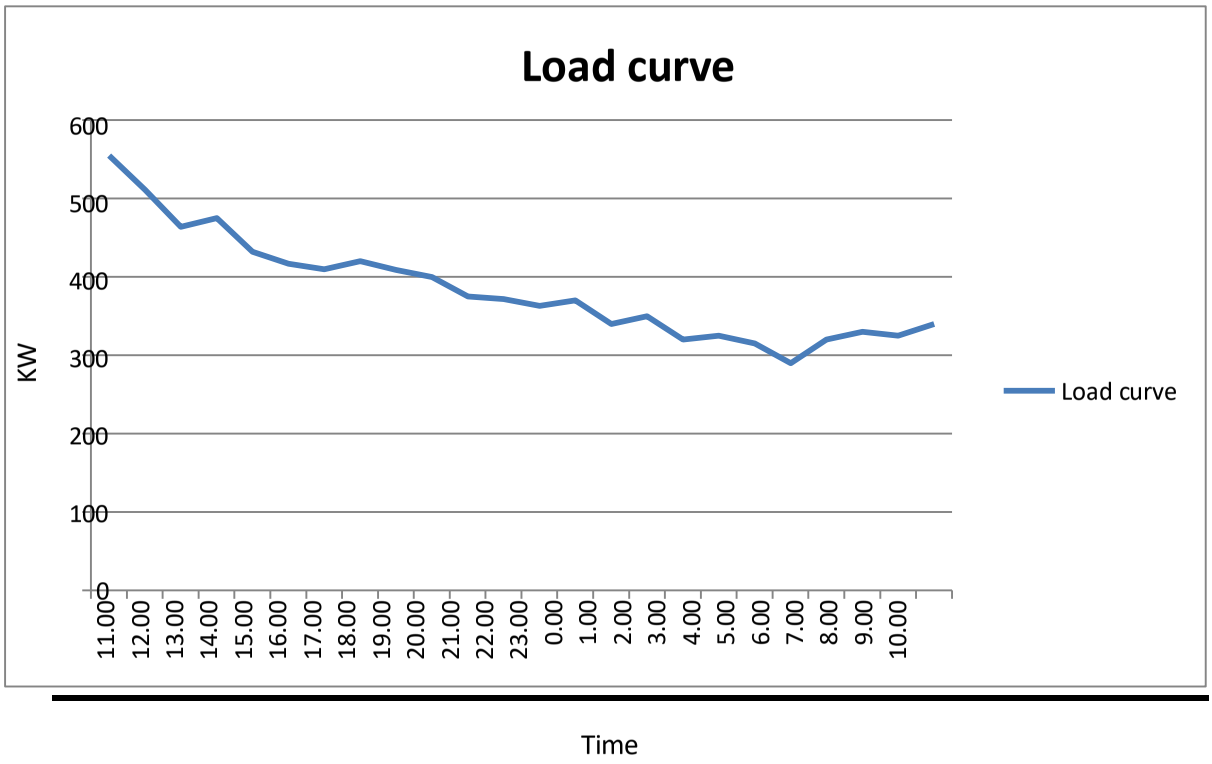
- Transformer capacity = 630 KVA
- Sectioned KVA Demand = 500 KVA
- Recorded Demand Average = 475 KVA
- Recorded KWH Average = 182332
- Recorded PF Average = 0.93

Components of Electricy Billing

- Energy charges (unit. kwh) = 5.25/Kwh
- Maximum Demand Charges = 250/KVA
- Electricity tax 2% on total amount

Daily Load Pattern in Amps. - 24Hrs (18-19)

Time, Hrs.	KW
11.00	555
12.00	511
13.00	464
14.00	475
15.00	432
16.00	417
17.00	410
18.00	420
19.00	409
20.00	400
21.00	375
22.00	372
23.00	363
00.00	370
01.00	340
02.00	350
03.00	320
04.00	325
05.00	315
06.00	290
07.00	320
08.00	330
09.00	325
10.00	340


Load curve
600
500
400
300
200
100
0
KW
11.00
12.00
13.00
14.00
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
23.00
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time
Load curve

POWER FACTOR IMPROVEMENT

Automatic Power Factor Controller installed

Power Factor Setting	=	0.99 Lag
50 KVAr Capacitor	=	6 Nos.
25 KVAr Capacitor	=	4 Nos.

Note: All Capacitors have Individual Control

Total Capacitor Installed	=	400 KVAr.

PF should improve from 0.92 to 0.99 for save maximum demand 40kVA/Month, Monthly cost saving is Rs. 16,800 in monthly EB Bill.

Comments:

The performance of the capacitor should monitor – monthly once, by Record the current reading of individual capacitor unit. If below 50 % of actual current, it should replace by New.

MONTHLY POWER CONSUMPTION FY 18-19

MONTH	KWH	KVAH	P.F	M.D, KVA
April-18	216300	228600	0.95	536.8
May-18	194800	207500	0.94	572.6
June-18	207300	220880	0.94	516.4
July-18	200500	215400	0.93	500.6
August-18	192680	208020	0.93	493.2
September-18	175720	190630	0.92	455
October-18	182380	196840	0.93	480
November-18	179220	192260	0.93	434.8
December-18	134560	147300	0.93	397.4
January-19	145380	159000	0.91	388
February-19	148100	161420	0.92	396
March-19	211040	227250	0.93	533
AVERAGE	**182332**	**196258**	**0.93**	**475**

HARMONICS STUDY

- Harmonics are created by various device like diodes, silicon controlled rectifiers, PWN systems, thermistors, voltage and current chopping, Saturated and core reactors, induction and arc Furnaces are also deployed for various requirements and due to their varying impedance characteristics the NON LINEAR device can cause distortion in voltage and current wave forms.

- The above devices are not used in our system so that harmonics Frequency may be varying negligible.

HVAC AND REFRIGERATION SYSTEM

- 120 TR vapor absorption system is running for Energy conservation. The old Voltas reciprocating chiller compressor is not in use.

- Energy saving is possible by VFD system fix in cooling tower pump and chilled water pump by replacing Y-Δ starter

- In chiller evaporator and condenser, shell and tube should be chemical cleaning periodically depend up on ΔT Temperature

- In the process Area, Heat exchange tube should be clean yearly once to maintain better efficiency and save energy.

LIGHTING SYSTEM (18-19)

Sub.: we have changed old type focus lamp and tube light fittings replaced by LED Lamps/fittings

Sl. No.	Type of Light Fittings	Area	Qty. Nos.	T. Power, W
1	LED Down lamp fittings 36W	Ground floor	50	1800W
2	LED Light fittings 22W	Ground floor	25	550W
3	LED 24W Fittings	Hospital	50	1200W
4	2 x 20W Tube Light LED fittings	Hospital & Hostel	100	4000W
5	20W LED Single Fittings	Hospital & Hostel	100	2000W
TOTAL				9550W
				9.55KW

LED Focus and LED Fitting installed in Hospital and hostel. We have saved energy in 216 units per day by running time of 12 hrs. per day

Energy savings per year = 77,760 units

Cost savings per year = Rs. 4,08,240.00

DG SET PERFORMANCE

DG set 250 KVA 2nos

- 250kva DG Set –I Generate 3.5 units/Ltr diesel.

- 250kva DG Set –II Generate 3.3 units/Ltr diesel.

- At max load of 160 KW enervation, the efficiency should be 3.8-4 Units/Ltr.

- By service the DG set, Engine can improve in fuel savings.

SOLAR POWER

Proposal Stage – I

- Use 10kW Solar Power for lighting circuit in the office and Hospital area.

Energy Production from Solar in 10kW	=	40 kwh /day
	=	1200 kwh/mth
Cost saving per year	=	Rs. 2,88,000.00
Initial Investment	=	Rs.5,00,000
Payback period	=	1.7 years

RECOMMENDATIONS & COMMENTS

Sl. No.	Description	RECOMMENDATIONS & COMMENTS
1	Sanction Load / Connected Load / Maximum Demand	Within Standard Limits
2	Power Factor	To improve 0.96 to 0.99
3	Lighting System	To be Replace By LED Lamps.
4	HVAC	By Cleaning of cooling coil and evaporator coil.
5	Automatic Power Factor Control	to set power factor in controller to be 0.99 Lag
6	Lighting ON / OFF	Timer Relay to be provide
7	AHU and FCU	Running by VFD drive
8	Solar Power	10kW for Light and Fan Load for Stage - 1

ENERGY AUDIT REPORT

for

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGRAM VILLAGE, VILLIYANUR COMMUNE, KUDAPAKKAM POST,

PUDUCHERRY – 605 502.

FY: (2019 – 2020)

Audited by,

V.Thirunavukkarasu BE, MBA

Certificate No.:4056
Reg No.: EA 6397

SRI GURU ENGINEERS

Plot No.6, Elangoadigal Street, Shanthi Nagar, Lawspet, Puducherry – 605 008.

Ph : 0413 – 2250895 / Cell : 9655828895

ENERGY AUDIT SEQUENCE

SL. NO	DESCRIPTION OF AREA	Remarks	Page No.
1	TRANSFORMER AND LOAD FACTOR		2
2	INDUCTION MOTOR LOAD / EE MOTOR	NOT APPLICABLE	
3	HEATER LOAD	NOT APPLICABLE	
4	CABLE DISTRIBUTION	NOT APPLICABLE	
5	POWER FACTOR IMPROVEMENT		5
6	HARMONICS STUDY	WITHIN THE LIMITS	7
7	AIR COMPRESSOR & DISTRIBUTION SYSTEM	NOT APPLICABLE	
8	HVAC AND REFRIGERATION SYSTEM		9
9	CENTRIFUGAL PUMP APPLICATIONS	NOT APPLICABLE	
10	FAN AND BLOWERS	NOT APPLICABLE	
11	VFD APPLICATION	NOT APPLICABLE	
12	COOLING TOWER PERFORMANCE	NOT APPLICABLE	
13	LIGHTING SYSTEM		12
14	DG SET PERFORMANCE		13
15	SOLAR POWER		14
16	RECOMMENDATIONS & COMMENTS		15

TRANSFORMER AND LOAD FACTOR

Transformer Efficiency

Load Loss (or copper Loss) = 2929W

No Load Loss (or iron Loss) = 1586W

Total Loss = No Load Loss + (KVA Load/rated KVA) X Full Load Loss

Total Loss = 4.55 KW

Efficiency = 98%

Average KWH/MD/PF 19-20

- Transformer capacity = 630 KVA
- Sectioned KVA Demand = 500 KVA
- Recorded Demand Average = 489 KVA
- Recorded KWH Average = 187801
- Recorded PF Average = 0.93

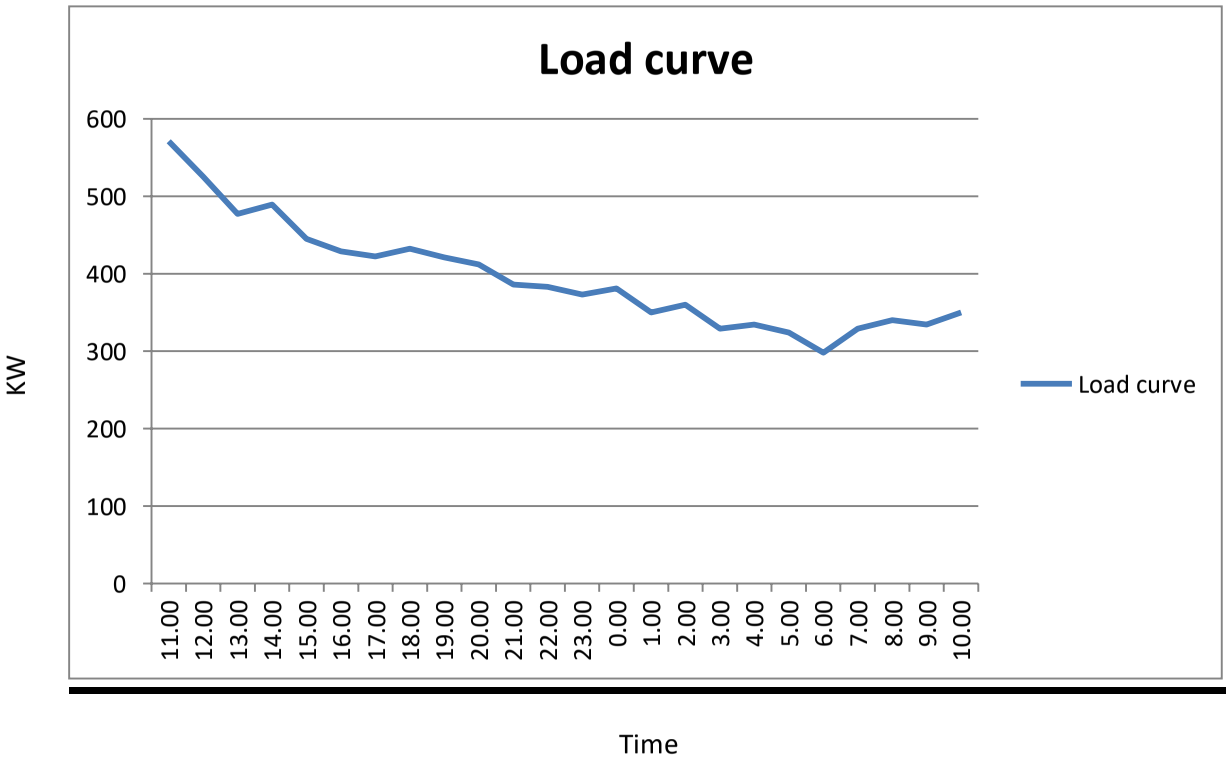
Components of Electricy Billing

- Energy charges (unit. kwh) = 5.25/Kwh
- Maximum Demand Charges = 250/KVA

Electricity tax 2% on total amount

Daily Load Pattern in Amps. - 24Hrs (19-20)

Time, Hrs.	KW
11.00	571
12.00	525
13.00	477
14.00	489
15.00	445
16.00	429
17.00	422
18.00	432
19.00	421
20.00	412
21.00	386
22.00	383
23.00	373
00.00	381
01.00	350
02.00	360
03.00	329
04.00	334
05.00	324
06.00	298
07.00	329
08.00	340
09.00	334
10.00	350


Load curve
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2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Load curve
KW
Time

POWER FACTOR IMPROVEMENT

Automatic Power Factor Controller installed

Power Factor Setting	=	0.99 Lag
5 KVAr Capacitor	=	3 Nos.
10 KVAr Capacitor	=	3 Nos.
25 KVAr Capacitor	=	6 Nos.

Note: All Capacitors have Individual Control

Total Capacitor Installed = 195 KVAr.

PF should improve from 0.96 to 0.99 for save maximum demand 20kVA/Month, Monthly cost saving is Rs.7000 in monthly EB Bill.

Comments:

The performance of the capacitor should monitor – monthly once, by Record the current reading of individual capacitor unit. If below 50 % of actual current, it should replace by New.

MONTHLY POWER CONSUMPTION FY 19-20

MONTH	KWH	KVAH	P.F	M.D, KVA
April-19	222789	235458	0.95	552
May-19	200644	213725	0.94	589
June-19	213519	227504	0.94	531
July-19	206515	221862	0.93	515
August-19	198460	214260	0.92	507
September-19	180991	196348	0.92	468
October-19	187851	202745	0.93	494
November-19	184596	198027	0.93	447
December-19	138596	151719	0.93	408
January-20	149741	163720	0.91	399
February-20	152543	166262	0.92	407
March-20	217371	234067	0.93	549
AVERAGE	**187801**	**202141**	**0.93**	**489**

HARMONICS STUDY

- Harmonics are created by various device like diodes, silicon controlled rectifiers, PWN systems, thyristors, voltage and current chopping, Saturated and core reactors, induction and arc Furnaces are also deployed for various requirements and due to their varying impedance characteristics the NON LINEAR device can cause distortion in voltage and current wave forms.

- The above devices are not used in our system so that harmonics Frequency may be varying negligible.

HVAC AND REFRIGERATION SYSTEM

- 120 TR vapor absorption system is running for Energy conservation. The old Voltas reciprocating chiller compressor is not in use.

- Energy saving is possible by VFD system fix in cooling tower pump and chilled water pump by replacing Y-Δ starter

- In chiller evaporator and condenser, shell and tube should be chemical cleaning periodically depend up on ΔT Temperature

- In the process Area, Heat exchange tube should be clean yearly once to maintain better efficiency and save energy.

LIGHTING SYSTEM (19-20)

Sub.: we have changed old type focus lamp and tube light fittings replaced by LED Lamps/fittings

Sl. No.	Type of Light Fittings	Area	Qty. Nos.	T. Power, W
1	LED Down lamp fittings 36W	Ground floor	50	1800W
2	LED Light fittings 22W	Ground floor	30	660W
3	LED 24W Fittings	Hospital	60	1440W
4	2 x 20W Tube Light LED fittings	Hospital & Hostel	200	8000W
5	20W LED Single Fittings	Hospital & Hostel	200	4000W
TOTAL				15900W
				15.9KW

LED Focus and LED Fitting installed in Hospital and hostel. We have saved energy in 265 units per day by running time of 12hrs per day

Energy savings per year = 95,472 units

Cost savings per year = Rs. 5,01,228.00

DG SET PERFORMANCE

DG set 250 KVA 2nos

- 250kva DG Set –I Generate 3.5 units/Ltr diesel.

- 250kva DG Set –II Generate 3.3 units/Ltr diesel.

- At max load of 160 KW enervation, the efficiency should be 3.8-4 Units/Ltr.

- By service the DG set, Engine can improve in fuel savings.

SOLAR POWER

Proposal Stage – I

- Use 10kW Solar Power for lighting circuit in the office and Hospital area.

Energy Production from Solar in 10kW	=	40 kwh /day
	=	1200 kwh/mth
Cost saving per year	=	Rs. 2,88,000.00
Initial Investment	=	Rs.5,00,000
Payback period	=	1.7 years

RECOMMENDATIONS & COMMENTS

Sl. No.	Description	RECOMMENDATIONS & COMMENTS
1	Sanction Load / Connected Load / Maximum Demand	Within Standard Limits
2	Power Factor	To improve 0.96 to 0.99
3	Lighting System	To be Replace By LED Lamps.
4	HVAC	By Cleaning of cooling coil and evaporator coil.
5	Automatic Power Factor Control	to set power factor in controller to be 0.99 Lag
6	Lighting ON / OFF	Timer Relay to be provide
7	AHU and FCU	Running by VFD drive
8	Solar Power	10kW for Light and Fan Load for Stage - 1

ENERGY AUDIT REPORT

for

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGRAM VILLAGE, VILLIYANUR COMMUNE, KUDAPAKKAM POST,

PUDUCHERRY – 605 502.

FY: (2020 – 2021)

Audited by,

V.Thirunavukkarasu BE, MBA

Certificate No.:4056
Reg No.: EA 6397

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3	HEATER LOAD	NOT APPLICABLE	
4	CABLE DISTRIBUTION	NOT APPLICABLE	
5	POWER FACTOR IMPROVEMENT		5
6	HARMONICS STUDY	WITHIN THE LIMITS	7
7	AIR COMPRESSOR & DISTRIBUTION SYSTEM	NOT APPLICABLE	
8	HVAC AND REFRIGERATION SYSTEM		9
9	CENTRIFUGAL PUMP APPLICATIONS	NOT APPLICABLE	
10	FAN AND BLOWERS	NOT APPLICABLE	
11	VFD APPLICATION	NOT APPLICABLE	
12	COOLING TOWER PERFORMANCE	NOT APPLICABLE	
13	LIGHTING SYSTEM		12
14	DG SET PERFORMANCE		13
15	SOLAR POWER		14
16	RECOMMENDATIONS & COMMENTS		15

TRANSFORMER AND LOAD FACTOR

Transformer Efficiency

Transformer capacity	=	630 KVA
Load Loss (or copper Loss)	=	8034W
No Load Loss (or iron Loss)	=	1200W

Total Loss = No Load Loss + (KVA Load/rated KVA) X Full Load Loss

Total Loss	=	4.1 KW
Efficiency	=	98%

Average KWH/MD/PF 20-21

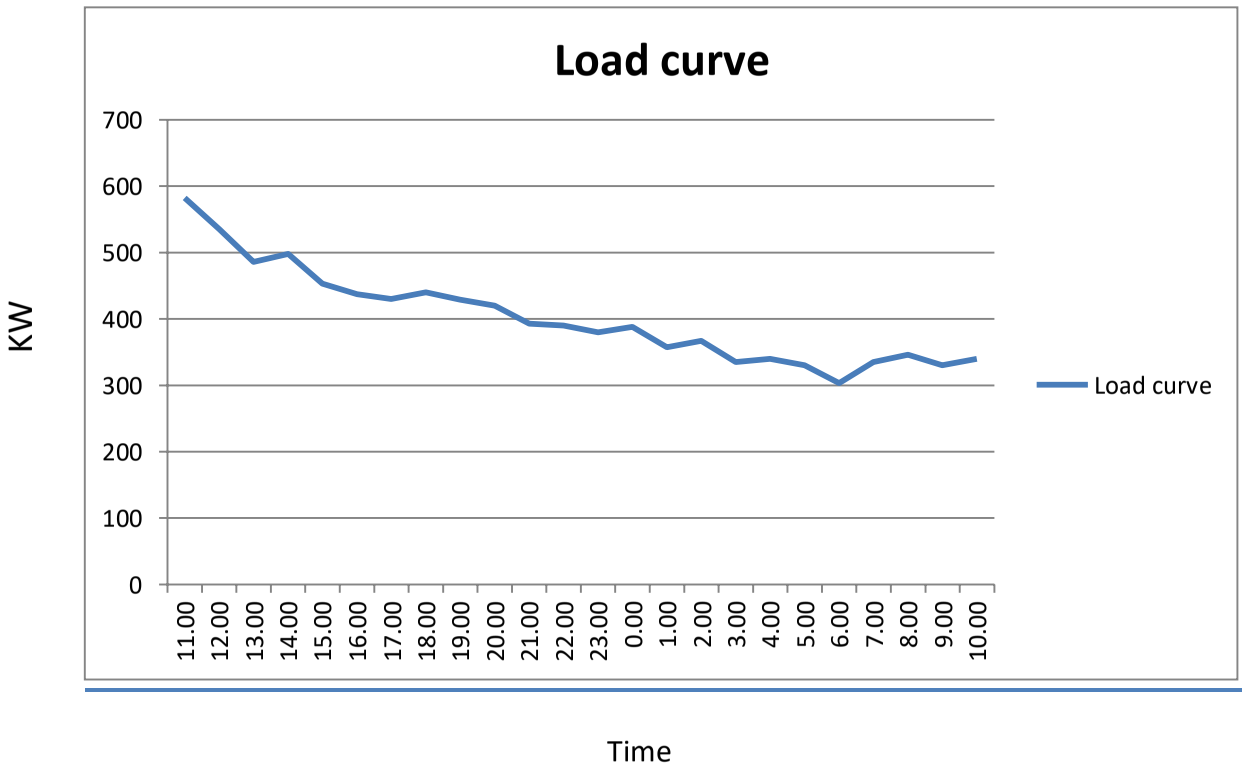
- Transformer capacity = 630 KVA
- Sectioned KVA Demand = 500 KVA
- Recorded Demand Average = 485 KVA
- Recorded KWH Average = 192455
- Recorded PF Average = 0.93

Components of Electricy Billing

- Energy charges (unit. kwh) = 5.25/Kwh
- Maximum Demand Charges = 250/KVA
- Electricity tax 2% on total amount

Daily Load Pattern in Amps. - 24 Hrs. (20-21)

Time, Hrs.	KW
11.00	582
12.00	535
13.00	486
14.00	498
15.00	453
16.00	437
17.00	430
18.00	440
19.00	429
20.00	420
21.00	393
22.00	390
23.00	380
00.00	388
01.00	357
02.00	367
03.00	335
04.00	340
05.00	330
06.00	303
07.00	335
08.00	346
09.00	330
10.00	340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700
600
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15.00
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17.00
18.00
19.00
20.00
21.00
22.00
23.00
0.00
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Load curve
Time

POWER FACTOR IMPROVEMENT

Automatic Power Factor Controller installed

Power Factor Setting	=	0.99 Lag
50 KVAr Capacitor	=	6 Nos.
25 KVAr Capacitor	=	4 Nos.

Note: All Capacitors have Individual Control

Total Capacitor Installed	=	400 KVAr.

PF should improve from 0.92 to 0.99 for save maximum demand 40kVA/Month, Monthly cost saving is Rs.16,800 in monthly EB Bill.

Comments:

The performance of the capacitor should monitor – monthly once, by Record the current reading of individual capacitor unit. If below 50 % of actual current, it should replace by New.

MONTHLY POWER CONSUMPTION FY 20-21

MONTH	KWH	KVAH	P.F	M.D, KVA
April-20	202478	215049	0.94	544
May-20	193962	204622	0.95	500
June-20	207309	217630	0.95	494
July-20	211479	225159	0.94	508
August-20	211499	225880	0.94	518
September-20	191343	205175	0.93	530
October-20	196328	215359	0.92	540
November-20	205194	223741	0.92	475
December-20	166103	180323	0.92	414
January-21	177530	193224	0.92	418
February-21	176579	190392	0.93	440
March-21	169653	199653	0.92	442
AVERAGE	**192455**	**208017**	**0.93**	**485**

HARMONICS STUDY

- Harmonics are created by various device like diodes, silicon controlled rectifiers, PWN systems, thyristors, voltage and current chopping, Saturated and core reactors, induction and arc Furnaces are also deployed for various requirements and due to their varying impedance characteristics the NON LINEAR device can cause distortion in voltage and current wave forms.

- The above devices are not used in our system so that harmonics Frequency may be varying negligible.

HVAC AND REFRIGERATION SYSTEM

- 5 x 5 = 25 TR refrigeration system is running for cooling system.

- Energy saving is possible by VFD system fix in AHU 5 nos.

- In AHU will be running by VFD save energy by 40%.

- All AHU coil and room cooling coil will be cleaning periodically for improve the performance.

LIGHTING SYSTEM (20-21)

Sub.: we have changed old type focus lamp and tube light fittings replaced by LED Lamps/fittings

Sl. No.	Type of Light Fittings	Area	Qty. Nos.	T. Power, W
1	LED Down lamp fittings 36W	Ground floor	60	2160W
2	LED Light fittings 22W	Ground floor	30	660W
3	LED 24W Fittings	Hospital	70	1680W
4	2 x 20W Tube Light LED fittings	Hospital & Hostel	500	20000W
5	20W LED Single Fittings	Hospital & Hostel	200	4000W
TOTAL				28500W
				28.5KW

LED Focus and LED Fitting installed in Hospital and hostel. We have saved energy in 564 units per day by running time of 12hrs per day

Energy savings per year = 2,03,040 units

Cost savings per year = Rs.10,65,960.00

DG SET PERFORMANCE

DG set 250 KVA 2nos

- 250kva DG Set –I Generate 3.5 units/Ltr diesel.

- 250kva DG Set –II Generate 3.3 units/Ltr diesel.

- At max load of 160 KW enervation, the efficiency should be 3.8-4 Units/Ltr.

- By service the DG set, Engine can improve in fuel savings.

SOLAR POWER

Proposal Stage – I

- Use 10kW Solar Power for lighting circuit in the office and Hospital area.

Energy Production from Solar in 10kW	=	40 kwh /day
	=	1200 kwh/mth
Cost saving per year	=	Rs. 2,88,000.00
Initial Investment	=	Rs.5,00,000
Payback period	=	1.7 years

RECOMMENDATIONS & COMMENTS

Sl. No.	Description	RECOMMENDATIONS & COMMENTS
1	Sanction Load / Connected Load / Maximum Demand	Within Standard Limits
2	Power Factor	To improve 0.96 to 0.99
3	Lighting System	To be Replace By LED Lamps.
4	HVAC	By Cleaning of cooling coil and evaporator coil.
5	Automatic Power Factor Control	to set power factor in controller to be 0.99 Lag
6	Lighting ON / OFF	Timer Relay to be provide
7	AHU and FCU	Running by VFD drive
8	Solar Power	10kW for Light and Fan Load for Stage - 1

ENERGY AUDIT REPORT

for

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGRAM VILLAGE, VILLIYANUR COMMUNE, KUDAPAKKAM POST,

PUDUCHERRY – 605 502.

FY: (2021 – 2022)

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4	CABLE DISTRIBUTION	NOT APPLICABLE	
5	POWER FACTOR IMPROVEMENT		5
6	HARMONICS STUDY	WITHIN THE LIMITS	7
7	AIR COMPRESSOR & DISTRIBUTION SYSTEM	NOT APPLICABLE	
8	HVAC AND REFRIGERATION SYSTEM		9
9	CENTRIFUGAL PUMP APPLICATIONS	NOT APPLICABLE	
10	FAN AND BLOWERS	NOT APPLICABLE	
11	VFD APPLICATION	NOT APPLICABLE	
12	COOLING TOWER PERFORMANCE	NOT APPLICABLE	
13	LIGHTING SYSTEM		12
14	DG SET PERFORMANCE		13
15	SOLAR POWER		14
16	RECOMMENDATIONS & COMMENTS		15

TRANSFORMER AND LOAD FACTOR

Transformer Efficiency

Transformer capacity	=	630 KVA
Load Loss (or copper Loss)	=	8034W
No Load Loss (or iron Loss)	=	1200W

Total Loss = No Load Loss + (KVA Load/rated KVA) X Full Load Loss

Total Loss	=	4.1 KW
Efficiency	=	98%

Average KWH/MD/PF 21-22

- Transformer capacity = 630 KVA
- Sectioned KVA Demand = 500 KVA
- Recorded Demand Average = 485 KVA
- Recorded KWH Average = 198407
- Recorded PF Average = 0.93

Components of ElectricityBilling

- Energy charges (unit. kwh) = 5.45/Kwh
- Maximum Demand Charges = 420/KVA
- Electricity tax 2% on total amount

Daily Load Pattern in Amps. - 24 Hrs. (21-22)

Time, Hrs.	KW
11.00	593
12.00	545
13.00	495
14.00	507
15.00	462
16.00	445
17.00	438
18.00	448
19.00	437
20.00	428
21.00	400
22.00	397
23.00	387
00.00	395
01.00	364
02.00	374
03.00	341
04.00	346
05.00	336
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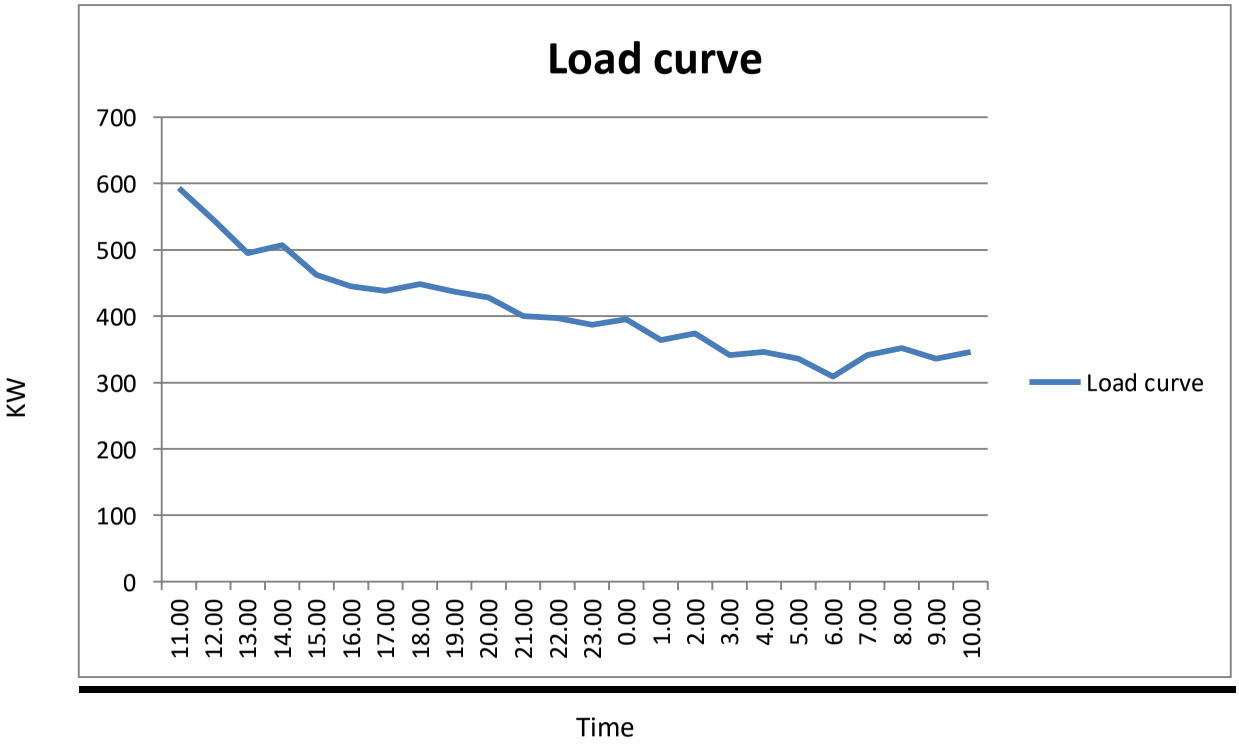
10.00	346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6.00
7.00
8.00
9.00
10.00
Time
Load curve

POWER FACTOR IMPROVEMENT

Automatic Power Factor Controller installed

Power Factor Setting	=	0.99 Lag
50 KVAr Capacitor	=	6 Nos.
25 KVAr Capacitor	=	4 Nos.

Note: All Capacitors have Individual Control

Total Capacitor Installed	=	400 KVAr.

PF should improve from 0.96 to 0.99 for save maximum demand 40kVA/Month, Monthly cost saving is Rs. 16,800 in monthly EB Bill.

MONTHLY POWER CONSUMPTION FY 21-22

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April-21	208740	221700	0.94	544
May-21	199960	210950	0.95	500
June-21	213720	224360	0.95	494
July-21	218020	231700	0.94	508
August-21	218040	232860	0.94	518
September-21	197260	211520	0.93	530
October-21	202400	221710	0.92	540
November-21	211540	230660	0.92	474
December-21	171240	185900	0.92	414
January-22	183020	199200	0.92	418
February-22	182040	196280	0.93	440
March-22	174900	189540	0.92	442
AVERAGE	**198407**	**213032**	**0.93**	**485**

HARMONICS STUDY

- Harmonics are created by various device like diodes, silicon controlled rectifiers, PWN systems, thyristors, voltage and current chopping,Saturated and core reactors, induction and arc Furnaces are also deployed for various requirements and due to their varying impedance characteristics the NON LINEAR device can cause distortion in voltage and current wave forms.

- The above devices are not used in our system so that harmonics Frequency may be varying negligible.

HVAC AND REFRIGERATION SYSTEM

- 5 x 5 = 25 TR refrigeration system is running for cooling system.

- Energy saving is possible by VFD system fix in AHU 5 nos.

- In AHU will be running by VFD save energy by 40%.

- All AHU coil and room cooling coil will be cleaning periodically for improve the performance.

LIGHTING SYSTEM (21-22)

Sub.: we have changed old type focus lamp and tube light fittings replaced by LED Lamps/fittings

Sl. No.	Type of Light Fittings	Area	Qty. Nos.	T. Power, W
1	LED Down lamp fittings 36W	Ground floor	100	3600W
2	LED Light fittings 22W	Ground floor	50	1100W
3	LED 24W Fittings	Hospital	50	1200W
4	2 x 20W Tube Light LED fittings	Hospital & Hostel	500	20000W
5	20W LED Single Fittings	Hospital & Hostel	200	4000W
TOTAL				29900W
				29.9KW

LED Focus and LED Fitting installed in Hospital and hostel. We have saved energy in 613 units per day by running time of 12hrs per day

Energy savings per year = 2,20,752 units

Cost savings per year = Rs. 11,58,948.00

DG SET PERFORMANCE

DG set 250 KVA 2nos

- 250kva DG Set –I Generate 3.5 units/Ltr diesel.

- 250kva DG Set –II Generate 3.3 units/Ltr diesel.

- At max load of 160 KW eneration, the efficiency should be 3.8-4 Units/Ltr.

- By service the DG set, Engine can improve in fuel savings.

SOLAR POWER

Proposal Stage – I

- Use 10kW Solar Power for lighting circuit in the office and Hospital area.

Energy Production from Solar in 10kW	=	40 kwh /day
	=	1200 kwh/mth
Cost saving per year	=	Rs. 2,88,000.00
Initial Investment	=	Rs.5,00,000
Payback period	=	1.7 years

RECOMMENDATIONS & COMMENTS

Sl. No.	Description	RECOMMENDATIONS & COMMENTS
1	Sanction Load / Connected Load / Maximum Demand	Within Standard Limits
2	Power Factor	To improve 0.96 to 0.99
3	Lighting System	To be Replace By LED Lamps.
4	HVAC	By Cleaning of cooling coil and evaporator coil.
5	Automatic Power Factor Control	to set power factor in controller to be 0.99 Lag
6	Lighting ON / OFF	Timer Relay to be provide
7	AHU and FCU	Running by VFD drive
8	Solar Power	10kW for Light and Fan Load for Stage - 1

ENERGY ADUIT REPORT

for

Sri Lakshmi Narayana Institute of Medical Sciences

OSUDU, AGARAM VILLAGE,VILLIANUR COMMUNE,KUDAPAKKAM POST,

PUDUCHERRY – 605 502.

FY: (2022 – 2023)

Audited by,

V. Thirunavukkarasu BE, MBA

Certificate No.: 4056
Reg. No.: EA 6397

SRI GURU ENGINEERS

Plot No.6, Elangoadigal Street, Santhi Nagar, Lawspet,Puducherry – 605 008.

Ph : 0413-2250895 / Cell : 9655828895

ENERGY AUDIT SEQUENCE

SL. NO	DESCRIPTION OF AREA	Remarks	Page No.
1	TRANSFORMER AND LOAD FACTOR		2
2	INDUCTION MOTOR LOAD / EE MOTOR	NOT APPLICABLE	
3	HEATER LOAD	NOT APPLICABLE	
4	CABLE DISTRIBUTION	NOT APPLICABLE	
5	POWER FACTOR IMPROVEMENT		5
6	HARMONICS STUDY	WITHIN THE LIMITS	7
7	AIR COMPRESSOR & DISTRIBUTION SYSTEM	NOT APPLICABLE	
8	HVAC AND REFRIGERATION SYSTEM		9
9	CENTRIFUGAL PUMP APPLICATIONS	NOT APPLICABLE	
10	FAN AND BLOWERS	NOT APPLICABLE	
11	VFD APPLICATION	NOT APPLICABLE	
12	COOLING TOWER PERFORMANCE	NOT APPLICABLE	
13	LIGHTING SYSTEM		12
14	DG SET PERFORMANCE		13
15	SOLAR POWER		14
16	RECOMMENDATIONS & COMMENTS		15

TRANSFORMER AND LOAD FACTOR

Transformer Efficiency

Total Loss at 50% Load	=	5302W
Total Loss at 100% Load	=	15750W
Transformer Efficiency at 50%	=	99%

Average KWH/MD/PF

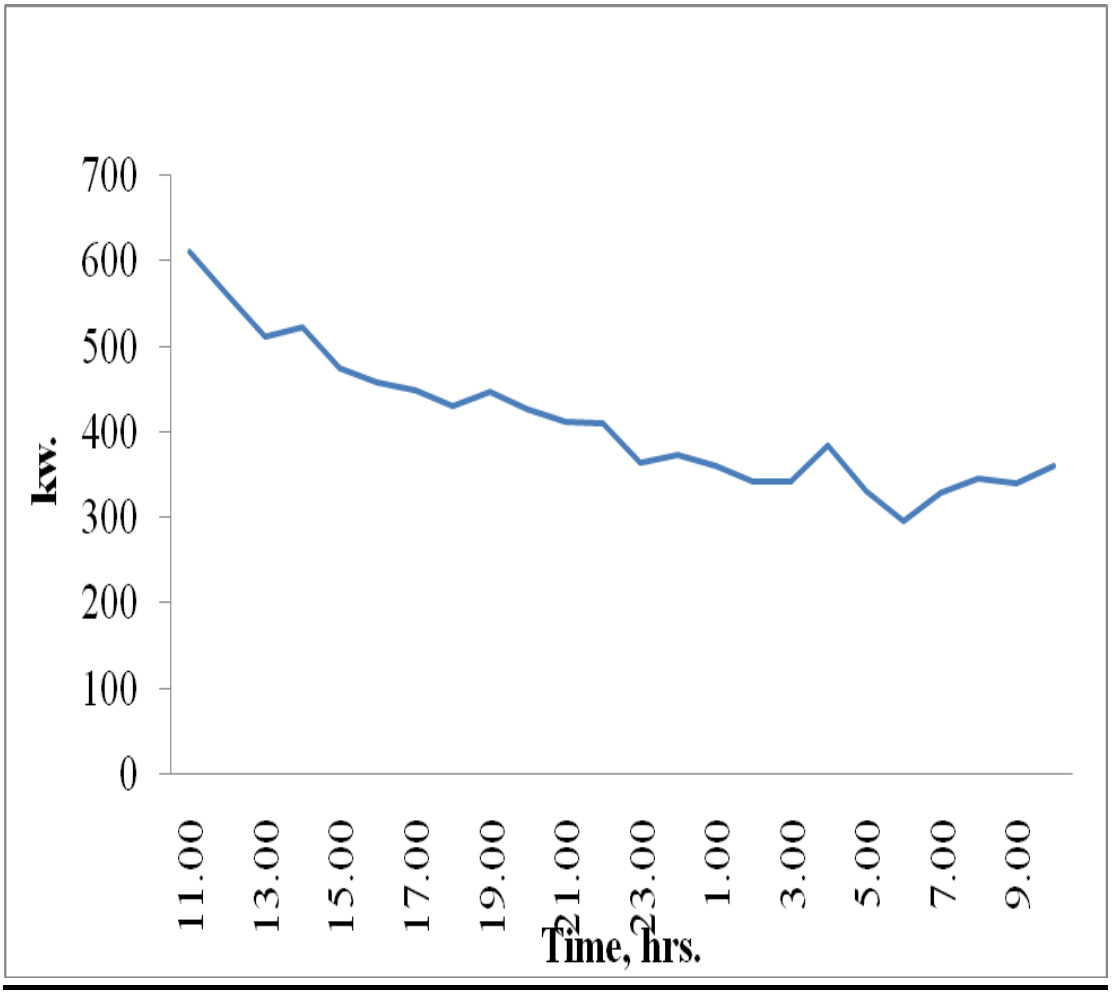
Transformer capacity	=	2000 KVA
Sanctioned KVA Demand	=	1250 KVA
Recorded Demand Average	=	472 KVA
Recorded KWH Average	=	189921
Recorded PF Average	=	0.92 Lag

Component of Electricity Billing

Energy charges (unit.kwh)	=	Rs.5.45/KWH (As per Billing)
Max Demand Charges	=	Rs.420/KVA
BPSC Charge 2%	=	$\frac{\text{Bill Amount X 2\% X no of days}}{30}$

Daily Load Pattern in kw - 24Hrs	
Time	**KW**
11.00	610
12.00	561
13.00	510
14.00	522
15.00	474
16.00	457
17.00	447
18.00	430
19.00	446
20.00	426
21.00	411
22.00	410
23.00	363
0.00	373
1.00	359
2.00	341
3.00	341
4.00	384
5.00	330
6.00	295
7.00	329
8.00	344
9.00	340
10.00	360

LOAD CURVE


700
600
500
400
300
200
100
0
kw.
11.00
13.00
15.00
17.00
19.00
21.00
23.00
1.00
3.00
5.00
7.00
9.00
Time, hrs.

POWER FACTOR IMPROVEMENT

Automatic Power Factor Controller installed

Power Factor Setting	=	0.99 Lag
50 KVAr Capacitor	=	6 Nos.
25 KVAr Capacitor	=	4 Nos.

Note: All Capacitors have Individual Control Total

Capacitor Installed = 400 KVAr.

PF should improve from 0.92 to 0.99 for save maximum demand 40kVA/Month, Monthly cost saving is Rs.16800 in monthly EB Bill.

Comments:

The performance of the capacitor should monitor – monthly once, by Record the current reading of individual capacitor unit. If below 50 % of actual current, it should replace by New.

Monthly Power Consumption F.Y. 22-23

MONTH	KWH	KVAH	P.F	M.D, KVA
April-22	153120	164420	0.93	414
May-22	172500	184780	0.93	408
June-22	160680	173580	0.93	416
July-22	150700	164180	0.92	380
August-22	152500	164800	0.93	386
September-22	182960	199720	0.92	512
October-22	229440	252140	0.91	506
November-22	160120	178020	0.9	492
December-22	219060	242540	0.9	428
January-23	219720	240880	0.91	514
February-23	207620	224460	0.92	576
March-23	270640	290080	0.93	636
AVERAGE	**189921**	**206633**	**0.92**	**472**

HARMONICS STUDY

- Harmonics are created by various device like diodes, silicon controlled rectifiers, PWN systems, thyristors, voltage and current chopping, Saturated and core reactors, induction and arc Furnaces are also deployed for various requirements and due to their varying impedance characteristics the NON LINEAR device can cause distortion in voltage and current wave forms.

- The above devices are not used in our system so that harmonics Frequency may be varying negligible.

HVAC AND REFRIGERATION SYSTEM

- 5 x 5 = 25 TR refrigeration system is running for cooling system
- Energy saving is possible by VFD system fix in AHU 5 nos.
- In AHU will be running by VFD save energy,

LIGHTING SYSTEM

Sub.: we have changed old type CFL/FOCUS lamp and tube light fittings replaced by LED Lamps/fittings

Sl. No.	Type of Light Fittings	Area	Qty. Nos.	T. Power, W
1	LED Down Lamp fittings 36W	Ground floor	380	1368W
2	LED Light fittings 22W	Ground floor	133	2926W
3	LED 24W Fittings	Hospital	295	7080W
4	2 x 20W Tube Light LED fittings	Hospital & Hostel	3000	120000W
5	20W LED Single Fittings	Hospital & Hostel	1100	22000W
6	10W LED Bulb	Hospital & Hostel	60	600W

Total KW = 264

LED Focus and LED tube light fittings installed in Hospital & College Hostel area. We have saved energy in 167 units per day.

Energy savings per year = 60,120 units

Cost savings per year = Rs.300600

DG SET PERFORMANCE

DG set 250 KVA 2nos

- 250kva DG Set-I Generate 3.5 units/Ltr diesel.

- 250kva DG set –II Generate 3.3 units/Ltr diesel.

- At max Load of 160 KW generation, the efficiency should be 3.8-4 Units/Ltr.

- By service the DG set, Engine can improve in fuel savings.

SOLAR POWER

Proposal Stage – I

1. Use 10kW Solar Power for lighting circuit in the office and Hospital

Energy Production from Solar in 10kw	=	80 kwh /day
	=	2400 kwh/mth
Cost saving per year	=	Rs. 156960
Initial Investment	=	Rs.5,00,000
Pay Back Period	=	3 years

2. Solar Heater Installed 50LPH capacity 10 Nos

The replacement of electrical heaters.

The saving of 70 Kwh/day

Monthly saving = 70 x 30 = 2100 Units.

Yearly power saving = 25200 Units

Cost Saving = 137340/-

3. Solar street Light 24W Installed 30 nos for the replacement of 150w Focus Lamps.

The energy saving = 37.8 Units per day x 30 days = 1134 Units

Yearly savings = 13608 Units

Yearly Cost savings = Rs.73483

RECOMMENDATIONS & COMMENTS

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3	Lighting System	To be Replace By LED
4	HVAC	By Cleaning of Heart Exchanger Yearly Once.
5	Automatic Power Factor Control	to set power factor in controller to be 0.99 Lag
6	Lighting ON / OFF	Timer Relay to be provide
7	Solar Power	10kW for Light and Fan Load for Stage - 1