

TECHNICAL AUDIT REPORT

Environmental Audit



Submitted to

**MANNAR THIRUMALAI NAICKER COLLEGE
(AUTONOMOUS)
MADURAI - 625 004, TAMIL NADU**

Date of Audit: 24.08.2022

Submitted by



NATURE SCIENCE FOUNDATION

(A Unique Research and Development Centre for Society Improvement)

[ISO Certified and Ministry of MSME Registered Organization]

No. 2669, LIG-II, Gandhi Managar, Peelamedu

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1. ENVIRONMENT AUDIT

1.1. Introduction

Environmental (Eco) audit is quantitative and qualitative data to track air, soil and water and to gain actionable insights to improve the operational performance in the atmosphere. It provides a 360° view of a surrounding campus and makes it easy for Owners / Managers / Environmentalists to collaborate, measure, control and reduce environmental negative impacts. Finally, it leads to enhancing the quality of life of all living organisms. Eco audit initiatives are the need of the hour across the world due to changing environmental conditions and global warming besides ever-increasing human population and anthropogenic activities (Maltby, 1995; Haahkim and Yunus, 2017). Eco audit aims to make a sustainable and friendly environment for the stakeholders. In this context, to conserve the eco-friendly atmosphere of an organization, well-developed environmental objectives and targets should be undertaken to reduce the harmful effects to a greater extent (Gnanamangai *et al.*, 2022).

The audit process can remarkably minimize the environmental pollution in the campus which in turn reduces the impact of global warming scenario. As per the Rules and Regulations laid by the Government, the environmental legislations should be followed by all the Institutions and Organizations and make sure that their activities should not degrade the environment (Ramachandra and Bachamanda, 2007). The environmental audit involves systematic documentation of periodic objective review by a regulated entity on available facilities, their operations and practices related to resolving the environmental requirements (Conde and Sanchez, 2017). In general, environmental audit is planned to achieve an optimum resource utilization and improved process performance in the audit sites. Venkataraman (2009) stated that it is a 'Common Sense Approach' to identify the problems and solve those problems pertaining to curb eco- friendly atmosphere (Aparajita, 1995; APHA, 2017). Environmental audit enables an overall and complete overview at the audit sites to facilitate our understanding of flow of materials and to focus the priority areas where waste reduction is achieved thereby cost saving is made possible (Gowri and Harikrishnan, 2014).

Purpose of the audit is to determine performance of the environmental management systems and equipment related to environmental safety. Audit reports can provide key information to the management in relation to risk areas, progress towards strategic objectives and targets (Adeniji, 2018). Audit work can be undertaken voluntarily for the benefit/advantage of the company and it can be executed with the help of environmental auditing authorities. As mentioned earlier, it helps in the proper natural resource utilization and on the whole, it improves the quality of the environment.

An environmental auditor will study an organization's performance towards the environmental sustainability in a systematic manner where environmental management systems and equipment are performing with the aims of a) facilitating management control of environmental practices, b) assessing compliance with company policies, c) facilitating professional competence, d) sustenance activities without harming the environment and e) practicing the environmental conservation

1.2 Environmental Friendly Campus

Literally, eco-friendly means earth-friendly/environment friendly or not hazardous to the environment. The term commonly refers to the products that contribute to green living or practices that help conserve natural resources. Companies and educational institutions use the ambiguous terms to promote goods and services including working/learning atmosphere conditions, at times with



additional, more specific certifications (eco-labels). To ensure the successful meeting of sustainable development goals, companies and educational institutions are advised to implement environmental friendly processes in their production as well as providing good ambience to the stakeholders in their workplace. The International Organization for Standardization has developed ISO 14001:2015, 14 020 and ISO 14024 to establish principles and procedures for environmental labels and declarations that certifies the environmentally friendly campus. Specifically, these standards communicate with avoidance of financial conflicts of interest, utility of sound scientific methods, accepted test procedures, honest and transparent setting of standards.

In order to provide efficient eco-friendly atmosphere to the stakeholders, the organization should take responsibility to provide good drinking water facility, use of the organic manure for manuring the plants, avoidance of non-compostable, single-use disposable plastics items/utensils and reduction in use of papers alternated with e- services and e-circulars, etc., besides proper disposal of wastes, recycling and suitable waste management system. These parameters should be considered while implementing the environmental friendly campus in an organization which in turn confine the environmental pollution.

1.3 Environmental Policy

The environmental policy aims to afford an understanding of a clean environment to the stakeholders in relation to environmental compliance. Scope of this policy applies to all employees and students of the Institution to establish and sustain an Eco-friendly atmosphere. Policy making dealt with cleanliness on the campus maintained through utilization of eco-friendly supplies, disseminating the concept of eco-friendly culture among the students and public through various awareness programmes. Head of the Organization, Departmental Heads and Senior Managers including Management Representatives are responsible for monitoring the eco-friendly initiatives of the Institution and maintaining a clean campus. In addition, the staff and student volunteers from various functional clubs are committed to strictly follow the environmental policies of the Organization.

1.3.1 Environmental Management Plan (EMP)

A clean environment is required for progressive success of an organization to safeguard the upcoming generations to ensure the safe use of air, land and water resources. The management of any organization should continuously attempt to continuously improve the environmental performance and to prevent/minimize the pollution.



All the stakeholders of the organization expected to support our environmental goals while providing clean and environmentally friendly work space. Main purpose of the EMP is to determine the environmental protection measures to be followed during day-to-day activities and to minimize environmental ill-effects. It addresses the issues starting from sanitation pertaining to human health and protection of plants, animals and microorganisms including wildlife habitats. EMP is an integrated document with various approvals, authorizations and specific components and/or activities that to be carried out in the campus without harming the environment. EMP should provide a reference document as per the legislative requirements for employees when planning and/or performing specific activities in the campus surroundings.

Table 1. EMP and its Execution in an Organizational Premises

S. No	Monitoring areas	Parameters monitored	Monitoring frequency	Reason for monitoring
1.	Dredging	Erosion, landscape, sedimentation, vegetation, disposal of dredging	Continuous	Dredging results in disturbance of Benthic community and causes soil erosion and sedimentation
2.	Marine Ecology	Biodiversity survey and conservation	Continuous	Unmitigated operations may result in loss of biodiversity as per the Indian Biodiversity Act
3.	Vegetation (Flora and Fauna)	Survey of macro and micro plants, animals (mammals, birds, moths, houseflies, reptiles, amphibians, termites) and soil and air microbial biodiversity	Continuous	Conservation of macro and micro plant, animals and soil and air microbial biodiversity conservation for future generations through modern technology
4.	Air Emission	O ₂ , CO, CO ₂ , SO ₂ , NO ₂ level in the open, car parking and indoor areas	Monthly monitoring	Unmitigated operations may result in deterioration of air quality
5.	Solid Waste	Solid waste quality and quantity, waste disposal, reuse, solid waste treatment	Monthly monitoring	Compliance of Environmental Laws and Legislative policy

6.	Wastewater	Primary, secondary and tertiary pollutants and their recycling, wastewater minimization, storage and handling, reuse, treatment before disposal	Monthly monitoring	Minimize the water pollution and to provide quality water as per the Central Pollution Control Board
7.	Soil	Soil contamination, soil edaphic parameters, soil, gravel and sand composition, water holding capacity, soil erosion	Half yearly	Soil surface and water pollution cause diseases as per the Compliance of Environmental Laws and Legislative policy
8.	Noise	Noise intensity, causes and impact, remedies, standard operating procedure	Monthly monitoring	Uncontrolled noise cause nuisance which affects the health
9.	Occupational Safety & Health	Safety, health and welfare of people at occupation, measures taken, Fire safety, First aid box, Safety protocol, Hospital facility	Continuous	Department of Occupational Safety & Health
10.	Land reclamation	Soil quality, soil micro and macro elements, soil composition	Half yearly	Legal obligation and structure protection, prevention of soil erosion and sedimentation to the port
11.	Restoration of the sites	Forest vegetation, plant vegetation, visual analysis, photographic records	Continuous	Maintain the soil fertility and soil original reclamation

1.3.2. Environmental Health and Safety Management System

It outlined the mitigation measures and the best management practices followed in the organization in terms of developing an eco-friendly campus. It is suggested to perform complete assessment and control of entirely possible hazardous and risks arising in the organization (Rajalakshmi *et al.*, 2021). The facility should be designed to include fire protection equipment/system including flame, multiple gas, smoke and low- and high temperature detectors/ alarms, automated and manual shut-down systems in terms of planning and implementing the best practices of environmental health and safety management systems.

High level of automation, periodical preventative maintenance and safeguards the environmental pollution besides the provision for safe emergency shut downs/exits should be maximized in the organization. Alarm signals may be used to begin evacuation of the facility in the organization if any unfavorable situation takes places like uncertain firing, etc. Internal facility alarms as well as communications systems, wherever applicable, to notify all facility personnel should be activated. Evacuation maps and important phone numbers may be prominently displayed throughout the facility. Emergency equipment like fire extinguishers and first aid boxes should be placed in all the places to minimize the major environmental impact. It should be developed and practiced a spill clean-up procedure where to find emergency equipment and how to use it properly should be trained to all the stakeholders. All the employees and management people should be trained properly about environmental health and safety measures which will be useful for protecting the environment.

1.4 Aims and Objectives of Environmental Audit

Primary objective of an Environmental audit is to promote the environmental safety management and preservation of natural resources for future generations. Major objective of environmental audit confined to:

- a. Protecting the environmental health and minimize the threats posed to human safety by the performance of the organization
- b. To take steps to minimize the environmental pollution and degradation
- c. To adopt measures to reduce water waste generation and waste water recycling
- d. Evaluation and documentation of wastewater quality, its characteristics and their effects on living system
- e. Maintenance of labor/occupational health & medicine followed by proper documentation of environmental compliance status
- f. Annual environmental auditing will render education to overcome existing issues and to conduct outreach programmes to the public.
- g. To establish a baseline information about the eco-friendly environment in the campus and to create consciousness among the stakeholders about the requirement of clean environment and its conservation

1.5 Importance of Environmental Audit

Management of the Organization (Auditee) should be shown their inherent commitment towards making an eco-friendly atmosphere through the environmental auditing and ready to encourage all types of environment related activities. Environmental audits may be beneficial to the campus in improving the greenery activities which in turn are useful to save the planet for future generations. It is necessary to conduct an environmental audit at least once in three years because students and staff members should be aware of the advantages of environmental audit and help the institution to set a “bench- mark” (icon) to the community.

1.6 Role of Environmental Audit and Environmental Management System

A vital role of an environmental audit (EA) is to recognise the areas for development, but an audit does not itself provide the methods to implement changes. However, EA should set the agenda of an environmental management system while EMS provide a framework to 1) identify the environmental effects and document regulatory documents requirements, 2) set the objectives/targets for ensuing

environmental performance/programmes, 3) implement protocols and procedures for achieving the objectives/ targets and 4) undertake audits to measure environmental performance and its efficacy measures to attain the well-defined objectives/targets. All the events pertaining to environmental effects, regulations, objectives and targets and the procedures are usually documented. As far as stakeholders are concerned EMS usually rely heavily on documentation and verification.

1.7 Target Areas of Environment Audit

Target areas of environment audit are a) auditing for water management, particularly, wastewater management, b) physico-chemical properties of water resources, c) water conservation measures, d) per capita water consumption, e) soil health and its sustenance, f) safety measures and conservation of green building code and g) auditing the stakeholders for their contribution and environmental education besides implementing Swachh Bharath Abhiyan Scheme.

a. Soil Health Management

It is of paramount importance to keep the soil healthy for nurturing the vegetation and enhance the soil borne microorganisms. In this context, physico-chemical parameters of the soils will be analyzed or secondary data obtained from the Management will be utilized for Technical Report preparation.

b. Sanitation and Hygiene

Sanitation and hygiene is an important component of the environment audit where a) the water taps and sanitation plumbing, adequacy and efficiency, b) adequate clean drinking water facilities, c) kitchen staff apparel and hygiene, d) canteen and hostel hygiene maintenance, e) cutlery, crockery and utensils hygiene and f) dining hall hygiene were monitored and documented besides implementing Swachh Bharath Abhiyan Scheme.

1.8 Procedures Followed in Environment Audit

Environment audit involves monitoring an organization concerning the green campus, environment, sanitation and hygiene policies. It is a regular process that is conducted periodically by a regulated entity to check whether an organization meets the requirements of environmental compliance. The process of environment audit includes examining; collecting, evaluating, documenting the data and analyzing various components related to environmental aspects and carried out as per the procedures mentioned in the Manual of Gnanamangai *et al.*, (2021).

It is a customary stepwise process where it starts with an opening meeting among the audit team and auditees and is completed with a closing meeting. However, any specific parameter comes under this section will be highlighted hereunder.

- During onsite audit it has been monitored and documented the components as per the environment audit checklist.
- Monitoring the pH of the water sources (Tap-, Bore well-, RO- and Recycled-water, if any and turbidity/EC of above said samples with portable pH and TDS meters, respectively, as per the standard operating procedures.

- Identify the issues in the campus with respect to environment compliance and merits/demerits of the auditees Management controls. Collect information about Ecology and Environment studies, awareness programmes conducted and publications with respect to the Environment.



Collecting information about Ecology and Environment Studies

Table 2. Qualitative Measurements

S. No.	Part 11 clause as per the National Building Code	Audit Checklist / Parameters	Audit Findings (C / NC/ PC)
1.	3.7. Integrated water management system	Efforts taken for water conservation (Recycling, automatic water tap sensors, sign boards, prevention of leakage)	C
2.	7.1.2.2. Heat Island effect and parking design	Observation of open parking areas to reduce heat island effect (environmental parameters) (eg: parking vehicles under trees shade)	C
3.	7.2.1. Rainwater harvesting	Check on the availability and maintenance of the rainwater harvesting system	C
4.	7.3.2. Water conservation and irrigation practices	Availability of drip/sprinkler irrigation facilities	C
5.		Whether recycled water is used for irrigation purposes?	C
6.	9.1.2. Minimizing Green House Gas (GHG) Emission	Calculate carbon footprint using number of vehicles	C
7.	10.2.1. Planning and design of water supply system	Calculate the average daily demand of water based on the number of stakeholders	C
8.	10.2.1.1. Availability of	Availability of water facilities in the campus [Data on Physico-chemical properties of	C

	water & water sourcing	drinking / RO / Borewell / Open well / Municipal or Corporation waters such as pH, TDS, turbidity, salinity, etc.,]	
9.	10.2.4. Strategies for water efficiency	Observation on low flow fixtures for faucets, water closets and bath showers.	C
10.	10.3.1. Treated wastewater use for landscape and irrigation	Observation on the use of greywater (water used prior to recycling) for watering plants	C
11.	10.5. Process water requirements and effluent treatment	Availability of Sewage Treatment plant	C
12.	10.6.3. Solid waste system planning	Maintaining different coloured dustbins to segregate the organic and inorganic wastes.	C
13.	10.6.1-10.7 Planning and design of solid waste management system	Collection, segregation and disposal of solid, chemical, hazardous waste, bio-medical and e-wastes.	C
14.	waste management system	Collection, segregation and disposal of construction & demolition waste	C
15.		Availability of Biogas facility	C
16.	Safety measures	Availability of Fire Extinguisher	C

1.9 Safety Measures and Green Building Conservation Code

Environmental safety measures are very important in Institutional buildings as far as students, staff members and other stakeholders are concerned and it requires vigilance and awareness Organization work to foster safe environments; however, students honestly share equal responsibility. Management should extend by issuing guidance and the best safety tools. The organization has had a police force, escort services, call boxes, first aid box, fire extinguishers, fire alarms, security systems and staff towards the safety measures. Organization has very good safety measures as per the green building conservation code such as fire extinguisher and fire bell and alarms in all the places. In addition, in all the places, 'Exit', 'Entry' and other sign boards were kept across the place to give safety to the stakeholder.



Sign Boards in Mannar Thirumalai Naicker College, Madurai

1.9.1 Ventilation, Exhaust Systems and Lightening in Buildings

Ventilation is necessary in the buildings and continuous air flow removes 'stale' air and replaces it with 'fresh' air which facilitates moderate internal temperatures, reducing the accumulation of moisture, odors and other gasses. In addition, ventilation creates air movement which improves the comfort of occupants. Mechanical (“forced”) ventilation tends to be driven by exhaust fans to replace stale air with fresh air along with moderating the optimum temperature to the occupants. Natural ventilation is driven by pressure differences from one part of the building to another. Internal partitions may prevent the air paths, hence the creation of draughts adjacent to openings for adequate flow of air. If air quality is poor, natural ventilation by means of opening windows may be adopted to use in the building. It may also be useful to reduce the noise level to a greater extent. It has been recorded that the audited Organization has a large number of ventilators for effective air circulation.



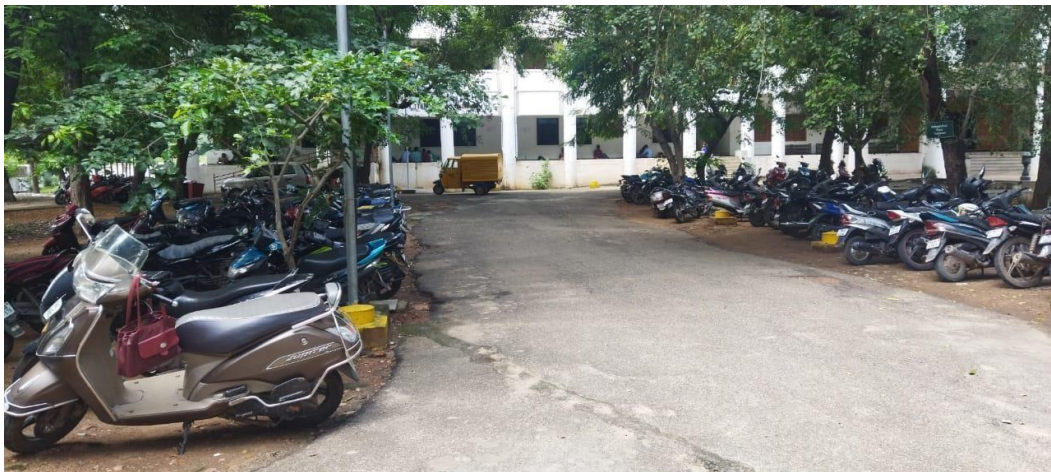
Sufficient Ventilation in Mannar Thirumalai Naicker College, Madurai

1.10 Public Transport, Low Emitting Vehicles and Control of Car Smokes

Utility of public transportation (buses) reduces carbon emissions greatly and decreases the development of smog within the towns. This means that human beings have healthy air to respire. Comparing a bus traveling with a car transport for a person, it has been observed that buses are the most effective system by producing lower quantum of emission of carbon when compared to that of car transport. This will be a huge decrease in the utility of natural resources per person. Public transportation is better for the surroundings which have been proven through research on emissions. Other than this, it also gives more benefits like less noise and traffic congestion. Whenever possible, try to take public transport in place of one's own vehicle. The audited Organization is provided two E- Vehicles to maintain an eco-friendly environment in the campus and to reduce carbon dioxide emissions. Apart from the e-vehicles, students are encouraged to use bicycles.



**Two Wheelers & Four Wheelers are parked at Proper Places
in Mannar Thirumalai Naicker College, Madurai**



**Two Wheelers & Four Wheelers are parked at Proper Places
in Mannar Thirumalai Naicker College, Madurai**

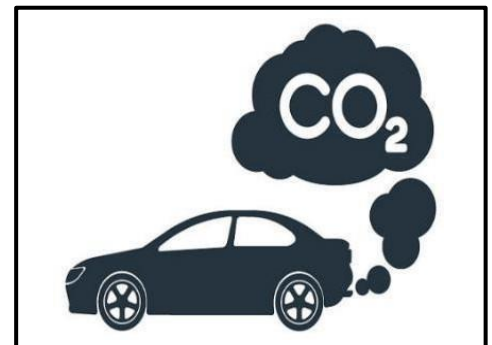


**Cycles and E-Vehicles are Used in
Mannar Thirumalai Naicker College, Madurai**

1.10.1 Auditing Carbon Footprint

Carbon footprint means measuring/recording the greenhouse gasses (GHG) emissions of an organization within its defined boundary. Burning fossil fuel emits carbon which accumulates in the atmosphere if there is not sufficient bio capacity dedicated to absorb the same. Commutation of stakeholders has an impact on the environment through the emission of greenhouse gasses consequent to burning of fossil fuels. The most common greenhouse gasses are carbon dioxide, methane, nitrous oxide and ozone; among them, carbon dioxide is the prominent one.

An important aspect of doing an audit is to assess the impact within a defined boundary which can be helpful to derive better ways to minimize its impact. It is necessary to assess the carbon footprints of an organization to understand how far they contribute towards sustainable development. It is therefore essential that any environmentally responsible organizations should examine their carbon emission and be subjected to calculate carbon footprint (Woo and Choi, 2013).



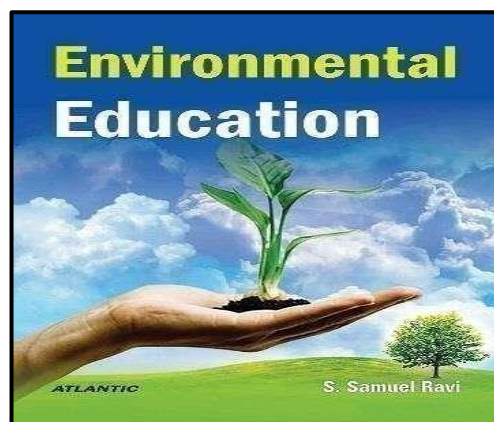
Observations on carbon dioxide and oxygen levels monitored in different parts of the campus are presented under the Green Audit section while observations on carbon footprint due to electricity usage per year at the Organization along with other fossil fuel utilities are presented under the Energy Audit portion of this Technical Report.

1.10.2 Climatic Condition

The climate in Madurai during August can be summarized as hot, humid and wet. August is in the summer in Madurai and is typically the 6th coldest month of the year. Daytime maximum temperatures average around a steamy 32°C (89°F), whilst at night 24°C (75°F) is normal.

1.11 Environmental Education

An environmental study is the learning principle of the ecosystem and how it will expand sustainable techniques to defend the surroundings. It enables people to develop an understanding of the environment in which we live and helps to overcome tough environmental troubles affecting nature. In addition, the physical aspects of the environment should be studied, it also emphasizes the need to conserve biodiversity and undertake an extra sustainable way of life and make use of sources in a



responsible manner. To create attention amongst today's generation on pressing environmental troubles, the University Grants Commission (UGC) in India has made it mandatory for the Universities and Autonomous Colleges to introduce a course in 'Environmental studies' and teach the students about the ecosystem, pollution and problems associated with the environment. Environmental education refers to structured efforts to deliver how natural environments function, how human beings can manage to protect the ecosystems in a sustained manner (Breiting and Mogensen, 1999).

1.12 Compliances

1. In addition to natural ventilation and exhaust fans are made available in all buildings to replace 'stale' air with 'fresh' air which helps to create favorable microclimate during the occupied periods.
2. It is observed that the Organization has created massive facilities for wastewater treatment to purify the wastewaters using activated- sludge to manage the wastewaters effectively without harming the environment.
3. Dust bins and eco-friendly trashes are kept in different place across the campus to provide a dust free atmosphere to the stakeholders which are labeled properly
4. There is a Reverse Osmosis (RO) water unit to produce RO water which is periodically tested for the physico-chemical properties.
5. A well-established rainwater harvesting system to recharge water ground status by collecting rainwaters from the campus coinciding with the contour of the terrain and natural drains.
6. Swachh Bharath Abhiyan and National service schemes are implemented effectively towards sanitation and refining drinking water quality to promote cleanliness to rural and tribal people across the Madurai district.

7. Organization provides E- vehicles for campus students to maintain an eco-friendly atmosphere in the campus and to reduce carbon dioxide foot prints.
8. 'Environ Club' along with NSS Units are functioning well and conducting a large number of awareness programmes related to nature conservation and environmental protection.

1.13 For Further Improvements

1. A proper step may be taken to minimize the environmental degradation by means of developing 'Sanitation and hygiene policy', 'Water conservation policy', in collaboration with Governmental and Non-Governmental Organizations.
2. The concept of eco-friendly culture and sensitizing students to minimize the use of plastics, non-biodegradable materials and exploitation of natural resources which pose environmental hazards may be carried out.
3. Policy on paper usage may be initiated with certain guidelines to reduce the number of papers that are being used by the students for assignments, mini-projects and final year projects which in turn reduce 60% usage of paper as a commitment to curb the environmental damage.
4. Students may be taken to some industrial areas including the waste management sites to teach about the recycling of wastewaters, natural ecosystems, pollution-free environment and environmental education.

1.14 Conclusion

The Organisation is one among the well-established colleges adopting substantially the environmental protection initiatives. Campus has wastewater treatment facility to recycle the wastewaters. Swachh Bharath Abhiyan is implemented effectively by the campus to promote sanitation and cleanliness. Environmental audit is carried out to provide an indication to the management about how the environmental system and equipment are performing. As a result, the best practicable means can be applied to preserve air, water, soil, plant and animal life from the adverse effect.

Certificates of Nature Science Foundation Coimbatore, Tamil Nadu.

1. ISO Certificate (QMS 9001:2015)
2. ISO Certificate (EMS 14001:2015)
3. ISO Certificate (OHSMS 45001:2018)
4. ISO Certificate (EnMS 50001:2018)
5. MSME Certificate

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Certificate of Registration



This is to Certify That The Quality Management System of



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LIG II, GANDHIMAA NAGAR, PEELAMEDU, COIMBATORE - 641004, TAMILNADU, INDIA.

has been assessed and found to conform to the requirements of

ISO 9001:2015

for the following scope :

PROVIDING ENVIRONMENT, ENERGY, GREEN AND HYGIENE AUDITS
TO ACADEMIC INSTITUTIONS AND ORGANISATIONS
AS PER THE OWN CHECKLIST AND AWARDS TO
MERITORIOUS CANDIDATES.

Certificate No	20DQHY90		
Initial Registration Date	: 08/01/2021	Issuance Date	: 08/01/2021
Date of Expiry*	: 07/01/2024		
1st Surve. Due	: 08/12/2021	2nd Surve. Due	: 08/12/2022

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TAMILNADU, INDIA.

has been assessed and found to conform to the requirements of

ISO 14001:2015

for the following scope :

PROVIDING CONSULTANCY SERVICES FOR ENVIRONMENT, ENERGY, GREEN, HYGIENE, SOIL AND WATER, WASTE MANAGEMENT, BIOMEDICAL WASTE MANAGEMENT, E-WASTE MANAGEMENT, PLASTIC WASTE MANAGEMENT AND ACADEMIC AND ADMINISTRATIVE AUDITS TO EDUCATIONAL INSTITUTIONS AND INDUSTRIAL SECTORS AS PER THE OWN CHECKLISTS, START UP THE INTERNATIONAL ECO CLUB STUDENTS CHAPTER, OFFERING LEAD AUDITOR COURSE ON ENERGY AND ENVIRONMENT, AWARDS TO MERITORIOUS CANDIDATES.

Certificate No	22DEJI67	Issuance Date	: 21/05/2022
Initial Registration Date	: 21/05/2022	Date of Expiry*	: 20/05/2025
1st Surve. Due	: 21/04/2023	2nd Surve. Due	: 21/04/2024



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Certificate Number : QCS/EUAS/OHS/002

Issue Date	: 03/08/2022	1 ST Surveillance Audit Within	: 02/07/2023
Expiration Date	: 02/08/2023	2 nd Surveillance Audit Within	: 02/07/2024
		Re-certification Due Date	: 02/08/2025



Partha Bagchi
(Managing Director)

Validity of this Certificate is subject to Surveillance Audits to be conducted before scheduled due dates of surveillance audits as mentioned on the certificate, failing which the certificate will stand to be withdrawn and need to be treated as an initial certification process to reactivate its continuity on the register of EUAS and QCS. This Certificate is valid when confirmed by data listed on the (Euro Universal Accreditation Systems) EUAS™ www.euas-ac.org. The authenticity & validity of this certificate may be re-affirmed by referring to our company website - www.qcspl.com. Lack of fulfillment of conditions as set out on the 'Certification Contract' (Annex 13) may render this certificate invalid. Any alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of law. This certificate remains the property of QCS and to be returned on request.

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and is compliant with the requirement of:

ISO 50001:2018

Energy Management Systems

For the following scope of activities:

PROVIDING CONSULTANCY SERVICES FOR ENVIRONMENT, ENERGY, GREEN, HYGIENE, SOIL AND WATER, WASTE MANAGEMENT, BIOMEDICAL WASTE MANAGEMENT, E-WASTE MANAGEMENT, PLASTIC WASTE MANAGEMENT AND ACADEMIC AND ADMINISTRATIVE AUDITS TO EDUCATIONAL INSTITUTIONS AND INDUSTRIAL SECTORS AS PER THE OWN CHECKLISTS, START UP THE INTERNATIONAL ECO CLUB STUDENTS CHAPTER, OFFERING LEAD AUDITOR COURSE ON ENERGY AND ENVIRONMENT, AWARDS TO MERITORIOUS CANDIDATES.

Date of Certification: 9th August 2022

2nd Surveillance Audit Due: 8th August 2024

1st Surveillance Audit Due: 8th August 2023

Certificate Expiry: 8th August 2025

Certificate Number: 305022080903EN



Head of Certification

Validity of this certificate is subject to annual surveillance audits to be done successfully on or before 365 days from date of the audit.
(In case surveillance audit is not allowed to be conducted: this certificate shall be suspended / withdrawn).

The Validity of this certificate can be verified at www.qrocert.org

This certificate of registration remains the property of QRO Certification LLP, and shall be returned immediately upon request.

India Office : QRO Certification LLP

142, IInd Floor, Avtar Enclave, Near Paschim Vihar West Metro Station, Delhi-110063, (INDIA)

Website : www.qrocert.org, E-mail : info@qrocert.org



भारत सरकार
Government of India
सूक्ष्म, लघु एवं मध्यम उद्यम मंत्रालय
Ministry of Micro, Small and Medium Enterprises



UDYAM REGISTRATION CERTIFICATE



UDYAM REGISTRATION NUMBER	UDYAM-TN-03-0073706																							
NAME OF ENTERPRISE	M/S NATURE SCIENCE FOUNDATION																							
TYPE OF ENTERPRISE *	MICRO																							
MAJOR ACTIVITY	SERVICES																							
SOCIAL CATEGORY OF ENTREPRENEUR	GENERAL																							
NAME OF UNIT(S)	<table border="1"> <thead> <tr> <th>S.No.</th> <th colspan="3">Name of Unit(s)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td colspan="3">Green Campus, Energy and Environment Management Audits</td> </tr> </tbody> </table>				S.No.	Name of Unit(s)			1	Green Campus, Energy and Environment Management Audits														
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OFFICIAL ADDRESS OF ENTERPRISE	<table border="1"> <thead> <tr> <th>Flat/Door/Block No.</th> <th>LIG-IL2669</th> <th>Name of Premises/ Building</th> <th>GANDHIMAA NAGAR</th> </tr> </thead> <tbody> <tr> <td>Village/Town</td> <td>Gandhinagar S.O</td> <td>Block</td> <td>LIG-II</td> </tr> <tr> <td>Road/Street/Lane</td> <td>Poalamodu</td> <td>City</td> <td>Coimbatore South</td> </tr> <tr> <td>State</td> <td>TAMIL NADU</td> <td>District</td> <td>COIMBATORE , Pin 641004</td> </tr> <tr> <td>Mobile</td> <td>956677255</td> <td>Email:</td> <td>chairmansnf@gmail.com</td> </tr> </tbody> </table>	Flat/Door/Block No.	LIG-IL2669	Name of Premises/ Building	GANDHIMAA NAGAR	Village/Town	Gandhinagar S.O	Block	LIG-II	Road/Street/Lane	Poalamodu	City	Coimbatore South	State	TAMIL NADU	District	COIMBATORE , Pin 641004	Mobile	956677255	Email:	chairmansnf@gmail.com			
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State	TAMIL NADU	District	COIMBATORE , Pin 641004																					
Mobile	956677255	Email:	chairmansnf@gmail.com																					
DATE OF INCORPORATION / REGISTRATION OF ENTERPRISE	28/11/2017																							
DATE OF COMMENCEMENT OF PRODUCTION/BUSINESS	12/03/2020																							
NATIONAL INDUSTRY CLASSIFICATION CODE(S)	<table border="1"> <thead> <tr> <th>S.No.</th> <th>NIC 2 Digit</th> <th>NIC 4 Digit</th> <th>NIC 5 Digit</th> <th>Activity</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>69 - Legal and accounting activities</td> <td>6920 - Accounting, bookkeeping and auditing activities; tax consultancy</td> <td>69201 - Accounting, bookkeeping and auditing activities</td> <td>Services</td> </tr> <tr> <td>2</td> <td>85 - Education</td> <td>8542 - Cultural education</td> <td>85420 - Cultural education</td> <td>Services</td> </tr> <tr> <td>3</td> <td>85 - Education</td> <td>8549 - Other education n.e.c.</td> <td>85499 - Other educational services n.e.c.</td> <td>Services</td> </tr> </tbody> </table>	S.No.	NIC 2 Digit	NIC 4 Digit	NIC 5 Digit	Activity	1	69 - Legal and accounting activities	6920 - Accounting, bookkeeping and auditing activities; tax consultancy	69201 - Accounting, bookkeeping and auditing activities	Services	2	85 - Education	8542 - Cultural education	85420 - Cultural education	Services	3	85 - Education	8549 - Other education n.e.c.	85499 - Other educational services n.e.c.	Services			
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DATE OF UDYAM REGISTRATION	26/02/2022																							

* In case of graduation (upward/reverse) of status of an enterprise, the benefit of the Government Schemes will be availed as per the provisions of Notification No. S.O. 2119(E) dated 26.06.2020 issued by the Mo MSME.

Disclaimer: This is computer generated statement, no signature required. Printed from <https://udyamregistration.gov.in> & Date of printing: 26/02/2022

For any assistance, you may contact:

1. District Industries Centre: COIMBATORE (TAMIL NADU)
2. MSME-DI: CHENNAI (TAMIL NADU)

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8. Certificates of Lead Auditors

1. Bureau of Energy Efficiency (BEE), LEED AP and GRIHA Certificates of Er. D. Dineshkumar, Energy and Environment Auditor of NSF.
2. Indian Green Building Council (IGBC AP) Accredited Professional of Dr. B. Mythili Gnanamangai, Vice-Chairman of NSF.
3. Tamil Nadu Fire and Rescue Service Certificate of Er. S. Srinivash, Energy Auditors of NSF.
4. Energy Management System ISO 50001:2018 Certificate of Dr. D. Vinoth Kumar, Joint Director of NSF.
5. ISO 17020:2012 certificate of Ms. V. Sri Santhya, Assistant Director of NSF.



BUREAU OF ENERGY EFFICIENCY



Examination Registration No. : **EA-14056** Serial Number. **9176**

Certificate Registration No. : **9176**

[Handwritten signature]

Certificate For Certified Energy Manager

This is to certify that Mr./Mrs./Ms. **Dinesh Kumar D**
Son/Daughter of Mr./Mrs. **R M Dhanasekaran** who has passed the National Examination for certification of energy manager held in the month of **October 2011** is qualified as certified energy manager subject to the provisions of Bureau of Energy Efficiency (Certification Procedures for Energy Managers) Regulations, 2010.

This certificate shall be valid for five years with effect from the date of award of this certificate and shall be renewable subject to attending the prescribed refresher training course once in every five years.

His /Her name has been entered in the Register of certified energy manager at Serial Number **9176** being maintained by the Bureau of Energy Efficiency under the aforesaid regulations.

Mr./Mrs./Ms. **Dinesh Kumar D** is deemed to have qualified for appointment or designation as energy manager under clause (f) of Section 14 of the Energy Conservation Act, 2001 (Act No.52 of 2001).

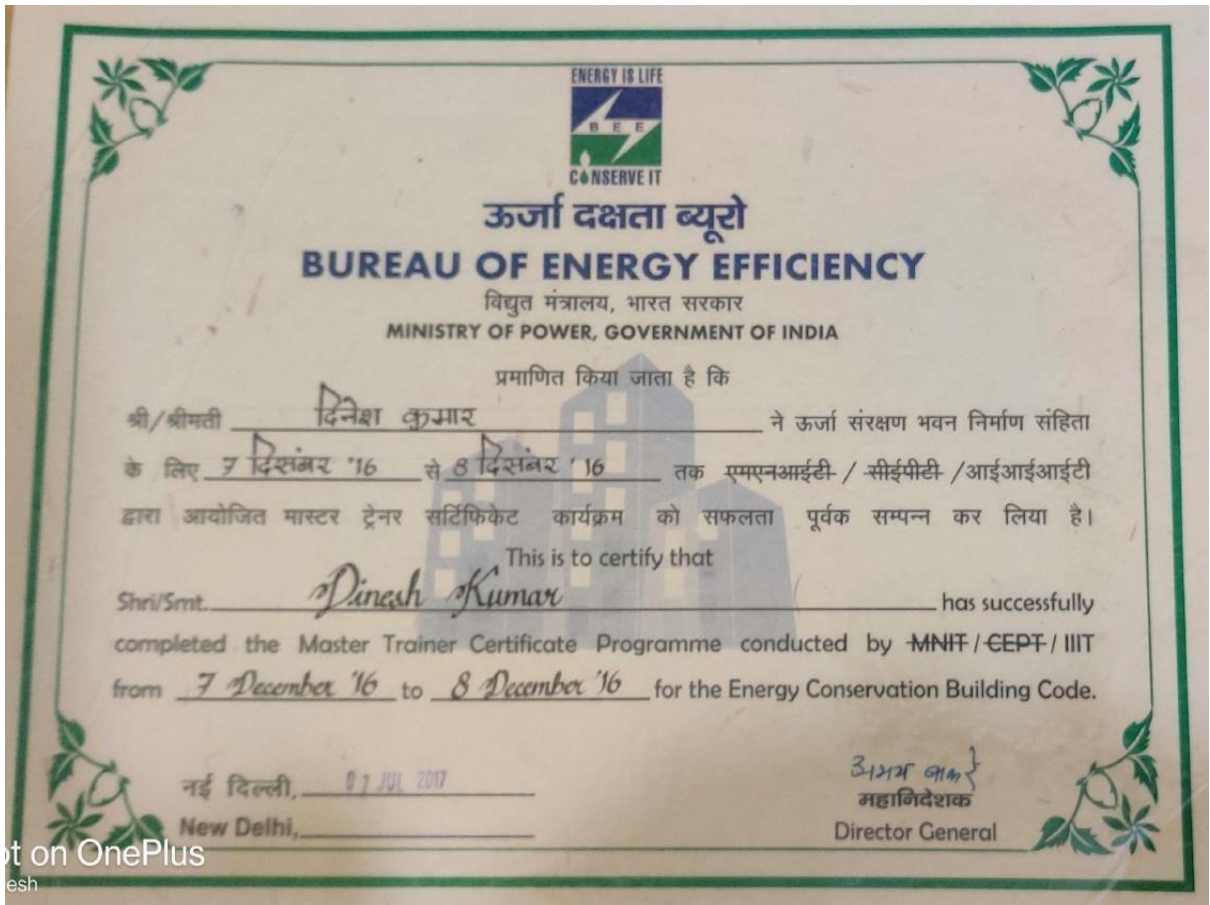
Given under the seal of the Bureau of Energy Efficiency, this **7th** day of **February, 2013**

[Handwritten signature]

Digitally Signed: RAKESH KUMAR RAI
Sun Mar 01 10:58:55 IST 2020
Secretary, BEE New Delhi

Secretary
Bureau of Energy Efficiency
New Delhi

Dates of attending the refresher course	Secretary's Signature	Dates of attending the refresher course	Secretary's Signature
22.12.2019	<i>[Handwritten signature]</i>		







TAMILNADU FIRE & RESCUE SERVICES
THIRUVALLUR DISTRICT
THIRUVALLUR

CERTIFICATE

This is to certify that Mrs. / Mr. S. SRINIVASH s/o B. SWAMIYAPPAN
A/ESS. ST. XAVIER'S STREET, PANDUR, THIRUVALLUR DISTRICT.....has under gone
the "Basic Fire Fighting & Rescue Operation" Training course conducted from 11.08.2016..... to
26.08.2016..... by Tamil Nadu Fire & Rescue Services Department at Thiruvallur District, Thiruvallur
as per G.O.M.S. No.713, dated 17.08.2005 Home (Police XVII) Department, Government of Tamil Nadu.

Station: Thiruvallur.
Date: 20.9.16

V. Muthusignee
District Officer, 20.9.16
Fire & Rescue Services
Thiruvallur District
Thiruvallur



GREEN RATING FOR INTEGRATED HABITAT ASSESSMENT

GRIHA CERTIFIED PROFESSIONAL CERTIFICATE

This is to certify that

Dinesh Kumar Dhanasekaran

has qualified as a **GRIHA** Certified Professional For V. 2015

Date of issue: 19th June 2020

Note : This certification is valid only for GRIHA version 2015.

Chief Executive Officer
GRIHA Council



GREEN BUSINESS CERTIFICATION INC. CERTIFIES THAT

DINESH KUMAR D

HAS ATTAINED THE DESIGNATION OF

LEED AP[®] Building Design + Construction

by demonstrating the knowledge and understanding of
green building practices and principles needed to
support the use of the LEED[®] green building program.

10531234-AP-BD+C

CREDENTIAL ID

26 DEC 2016

ISSUED

25 DEC 2022

VALID THROUGH

MAHESH RAMANUJAM
PRESIDENT & CEO, U.S. GREEN BUILDING COUNCIL
PRESIDENT & CEO, GREEN BUSINESS CERTIFICATION INC.



The CPD Accreditation Office

Certificate of Successful Attainment

This is to certify that

DR. D. VINOTH KUMAR

HAS SUCCESSFULLY COMPLETED THE FIVE DAYS (40 HOURS)

LEAD AUDITOR COURSE

BY PASSING THE WRITTEN EXAMINATION BASED ON

ISO 50001:2018

ENERGY MANAGEMENT SYSTEMS

Examination Date: 15/07/2022

Certificate issue Date: 22/07/2022

Certificate registration number: QCS/TR/C/0056

Total Course duration: 40 hours CPD Credits Earned: 32

Remarks: Roughly one hour of study time equals to 1 CPD Credit.

This certificate can be validated online from the industry wide Global Professional Register at www.qcspl.com.



Partha Bagchi
(Managing Director)

QCS MANAGEMENT PVT LTD

Accredited by "CPD Accreditation Office UK"

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KOLKATA-700075, WEST BENGAL, INDIA

BRANCHES: INDONESIA, BANGLADESH, QATAR, SAUDI ARABIA,
TURKEY, UAE

WHATS APP: +918697724963/+918902447427,

EMAIL:info@qcspl.com, WEB: www.qcspl.com





Regd. No. 114 / 2017



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& Ministry of MSME Registered Organisation)

Coimbatore - 641 004, Tamil Nadu, India. [www.nsfonline.org.in]



Certificate of Environment Audit

NSF/ECO AUDIT/MTNC/2022/43

This is to certify that Mannar Thirumalai Naicker College, Madurai – 625 004, Tamil Nadu has successfully undergone 'Environment Audit' on 24th August 2022 and assessed the eco-friendly initiatives planning carried out in the campus to maintain a sustainable environment to the stakeholders were found to be excellent.

This Certificate is valid till 28th August 2025.

Ref. No: ISO/NSF/SER/R/43

Rajalaxmi Jayaseelan

(Dr. S. RAJALAKSHMI JAYASEELAN)
Chairman of NSF
Certified ISO QMS, EMS, EnMS, OHMSMS

Sreekala K. Nair

(Dr. SREEKALA K. NAIR)
Director of Research & Development, NSF
Certified Lead Environment Auditor.

B. Mythili Gnanamangai

(Dr. B. MYTHILI GNANAMANGAI)
Certified Auditor IGBC AP &
ASSOCHAM
Indian Green Building Council

D. Dinesh Kumar

(Er. D. DINESH KUMAR)
BEE Certified Energy Auditor
Bureau of Energy Efficiency