

Green Audit Report

(2024-25)



VELS INSTITUTE OF SCIENCE, TECHNOLOGY AND ADVANCED STUDIES (VISTAS)- School of Maritime Studies

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Green Audit Report

VISTAS (Vels Institute of Science, Technology & Advanced Studies)

1. Introduction

A Green Audit is a systematic, documented, and periodic process that identifies, quantifies, records, analyzes, and reports the environmental aspects and impacts of an institution. The primary objective of a green audit is to assess environmental practices within a campus and evaluate their effectiveness in fostering an eco-friendly and sustainable environment.

For higher educational institutions, green audits serve as an essential management and planning tool. They provide critical insights into how resources such as **energy, water, materials, and land** are utilized and help identify opportunities for conservation, efficiency improvement, and environmental performance enhancement.

2. Importance of Green Audit for Educational Institutions

Green audits are particularly valuable for universities and colleges as they:

- Identify areas of **high resource consumption**, such as electricity and water usage
- Enable **data-driven decisions** for sustainable resource management
- Support the development and strengthening of **waste minimization and recycling programs**
- Encourage **environmentally responsible behavior** among students, faculty, and staff
- Contribute to long-term **cost savings** through efficient resource utilization

By conducting a green audit, institutions can assess their environmental footprint and align their operations with sustainability goals and national development priorities.

3. Role of Higher Educational Institutions in Sustainability

Institutional self-evaluation is an integral component of a quality educational institution. In the context of increasing environmental challenges and climate concerns, universities have a vital role in promoting sustainability through:

- Environmental education and awareness
- Responsible campus operations
- Demonstration of best environmental practices

As environmental sustainability becomes increasingly significant for national and global development, the contribution of higher educational institutions in nurturing environmentally conscious citizens assumes even greater importance.

4. Green Initiatives in Educational Campuses

Educational institutions are becoming progressively sensitive to environmental factors and are adopting various strategies to develop green campuses. These initiatives typically include:

- **Energy conservation and efficiency measures**
- **Water conservation**, including rainwater harvesting
- **Solid and liquid waste management**, with emphasis on recycling and reduction
- Promotion of **eco-friendly infrastructure and landscaping**

Such measures aim not only to preserve the campus environment but also to serve as a living laboratory for students to understand sustainability in practice.

5. Environmental Auditing and Institutional Responsibility

The activities carried out within a university campus can generate a variety of environmental impacts, both positive and adverse. Environmental auditing is a structured process that evaluates an organization's environmental performance against its policies, objectives, and regulatory expectations.

A **Green Audit** represents a formal assessment of a university's environmental impacts and management practices. As part of this initiative, an **internal green audit** is conducted to evaluate the actual on-ground environmental conditions, operational controls, and compliance status of the campus.

6. Objectives of the Green Audit at VISTAS

The green audit at **VISTAS** was undertaken with the following objectives:

- To assess the consumption patterns of **energy, water, and other natural resources**
- To evaluate **waste generation, segregation, and disposal practices**
- To identify opportunities for **resource conservation and environmental improvement**
- To promote a culture of **environmental awareness and responsibility**
- To support sustainable campus development and continuous improvement

7. Audit Methodology

The green audit process involved a comprehensive and participative approach, which included:

- Initial data collection and review of available records
- Detailed **site walkthroughs** across the campus in coordination with the VISTAS team
- Review of **environmental policies, procedures, documents, and records**
- **Interviews and interactions** with faculty members, staff, and students
- Observation of existing practices and assessment of visible outcomes

This systematic approach ensured an accurate understanding of the environmental performance of the institution.

8. Benefits of Green Auditing

Green auditing and the implementation of recommended mitigation measures create a **win-win situation** for the institution, its stakeholders, and the environment. Key benefits include:

- Reduction in environmental impact and resource consumption
- Improved **health, hygiene, and safety awareness**
- Enhanced environmental values and ethics among students and staff
- Financial savings through efficient use of resources
- Development of **ownership, accountability, and social responsibility** within the campus community

9. Conclusion

The Green Audit of VISTAS reflects the institution's commitment to environmental stewardship and sustainable development. The findings of the audit provide a strong foundation for implementing targeted improvement measures and strengthening existing green initiatives. Continuous monitoring and periodic audits will further enhance the institution's environmental performance and contribute positively to a sustainable future.

Acknowledgement

We sincerely thank the **Management of VISTAS**, faculty members, staff, and students for their active cooperation and support throughout the green audit process. Their commitment and participation were instrumental in the successful completion of this audit.

For Pragnaa Shree Venture Pvt. Ltd.

Murali Radhakrishnan

Babu Sambandam

Introduction to VISTAS

VELS Institute of Science, Technology, and Advanced Studies (VISTAS), founded in 2018. VISTAS is located on Velan Nagar, P.V. Vaithiyalingam Road, Pallavaram, Chennai-600 117, Tamil Nadu, India.

The Vels Group of Institutions is run by the Vael's Educational Trust, a charitable, non-profit organization established in 1992 by Dr. Ishari K. Ganesh. The trust was founded to commemorate the memory of his father, Shri. Isari Velan, a former Deputy Minister in the government of Dr. M.G.R. Shri. Isari Velan was also associated with the film industry.

Vael's Educational Trust has always strived to take education to first-generation learners and underprivileged communities. Their vision is to instill self-reliance and discipline in the youth and to improve the quality of higher education.

The multifaceted Vels Group of Institutions under Vael's Educational Trust highlights the organization's commitment and dedication to the noble cause of higher education. By lighting the lamp of education for countless students across India, Vael's holds high the torch of quality education.

This institution of higher learning and excellence stands as a leviathan in the ever-expanding ocean of education. Dr. Ishari K. Ganesh, the founder, Chairman, and Managing Trustee, is the driving force behind Vels' success story.

A firm believer in the philosophy of hard work, Dr. Ganesh is a visionary and inspiring academician. He has instilled in generations of students a love for quality education, one that is tempered by discipline and enlivened by dedication.

Vels Institute of Science, Technology and Advanced Studies (VISTAS) began its journey with Vels College of Pharmacy in 1992. Vels College of Physiotherapy (1993) and Vels College of Science (1993) were established soon thereafter. In recognition of its

achievements, the Ministry of Human Resource Development (MHRD), Government of India, conferred the esteemed Deemed University status upon these institutions collectively under the registered name VISTAS on June 4, 2008. The UGC (University Grants Commission) granted the Deemed University status considering the institute's rich experience and commitment to quality in higher education.

The VISTAS head office is located in Pallavaram, Chennai, about 2 kilometers south of Pallavaram Railway Station and nearly 4 kilometers from Chennai Airport.

VISTAS has flourished into a multi-disciplinary institute offering over 100 undergraduate (UG) and postgraduate (PG) programs, in addition to doctoral programs. These programs are delivered through 16 schools and 45 departments. All programs have the approval of relevant statutory regulatory agencies such as UGC, AICTE, PCI, BCI, NCTE, DGS, etc. VISTAS boasts a student body of nearly 14,500 and a faculty of nearly 709, with 348 holding doctoral degrees.

VISTAS has further distinguished itself by being recognized as a Scientific and Industrial Research Organization (SIRO) by the Ministry of Science and Technology, Government of India. The institute boasts improved infrastructure, modernized laboratories, expanded hostel facilities, and enhanced sports facilities.

Since becoming a deemed university, VISTAS has undertaken a periodic review and revamp of syllabi across all disciplines. This has resulted in a significant increase in student enrollment, particularly among women students. The university is well-equipped with cutting-edge ICT facilities, including smart classrooms, video conferencing capabilities, online courses, and the Vels Knowledge Resource Centre.

Introduction to School of Maritime Studies

School of Maritime Studies (SMS) was formerly known as Vels Academy of Maritime Education & Training (SMS). School of Maritime Studies is an educational institution formed under the Vels Group of Institutions to offer comprehensive training in Nautical Science and Marine Engineering, encompassing all facets of technological advances in this field.

The **Vel's Institute of Science, Technology and Advanced Studies (VISTAS)** has been declared as a deemed to be University under section 3 of the University Grants Commission (UGC) by Ministry of Human resource Development, Department of higher Education, government of India, vide Notification, dated the 14th June, 2008.

VELS ACADEMY OF MARITIME EDUCATION & TRAINING has since been renamed as **SCHOOL OF MARITIME STUDIES (SMS)**

SMS, Offers BSc (Nautical Science) course and Marine Engineering courses were conducted at two different campuses, the former at Pallavaram campus and the latter at Thalambur campus. On 2nd January 2012, for administrative convenience, BSC Nautical science course also was shifted to Thalambur campus and now all the Maritime courses are conducted at Thalambur campus.

The campus provides well-built class rooms, fully equipped laboratories, workshops, modern computer center and a well-stocked library comparable with the best available elsewhere. The management has also taken all efforts to build a team of committed teachers who form an integral part of the School in its growth.

The courses run by the School are fully residential in nature. The School has its own mess and the food provided is wholesome and tasty. The students enjoy our large spacious play grounds, gymnasium and recreational facilities. A swimming pool is available 12 km from the campus.

VISTAS 's VISION

To make the Institute an epitome of excellence in higher education by providing high-quality education and rigorous training in multiple streams of choice with ample scope for all-round development for the betterment of society.

VISTAS 's MISSION

- Effectively **imparting knowledge and** inculcating innovative **thinking**
- Facilitating **skill enhancement** through add-on courses and **hands-on training.**
- Doing original, socially relevant, **high-quality research.**
- Facilitating appropriate co-curricular, extracurricular and extension activities
- Instilling the spirit of **integrity, equity, professional ethics** and social **harmony.**

Vision School of Maritime Studies

To provide Excellent quality training leading candidates to become Chief Engineering Officers in the shipping industry by innovating new technologies, consistent with its strategic goals and by realizing maximum efficiency through superior management. To make the department an epitome of excellence in higher education by effectively providing high quality education and rigorous training to students in multiple streams of choice with ample scope for all round development to make them excel in their profession for betterment in Society.

Mission School of Maritime Studies

- To be an outstanding Academic Institution always aiming to impart comprehensive training to new aspirants to a maritime career.
- To select potential candidates and train them to be knowledgeable and competent marine engineers in conformance with global standards of the maritime industry.
- To develop Post Sea related training for the seafarers who seek higher certification and

To continuously update our education and training program in accordance with the latest developments in the Maritime industry through proactive and progressive measures.

The governance structure at VISTAS promotes autonomy, transparency, and accountability through the active participation of various stakeholders. It ensures the differentiation and integration of diverse activities within the institution. The organizational structure is designed in accordance with UGC regulations.

The regulatory bodies at VISTAS include the Board of Management, Academic Council, Planning and Monitoring Board, Board of Studies, and Finance Committee. These bodies operate as per the guidelines of the UGC and the Memorandum of Association, holding meetings periodically.

Key stakeholders at VISTAS, such as faculty, students, parents, industry experts, academic peers, and alumni, are actively involved in decision-making at all levels. To ensure smooth functioning, several sub-committees, comprising faculty and student representatives, have been established.

To decentralize the administrative and academic functions, authority has been delegated by appointing Deans for various domains, such as Schools, Admissions, Academics, Research, Student Affairs, Faculty Development, and IQAC, among others.

For transparency, processes related to admissions, academics, administration, accounts, and examinations have been automated using ERP systems.

An enriched teaching, learning, and evaluation process is carried out at VISTAS, catering to the diverse needs of students and faculty. Students at VISTAS benefit from a multivariate learning experience. Bridge courses are conducted to prepare students for their respective academic environments.

The entire teaching-learning process is student-centric, with a focus on LMS, KMS, and e-learning resources. Interactive and instructional lectures, focused discussions, classroom deliberations, practical sessions, hands-on training, projects, presentations, workshops, and guest lectures help students enhance their technical skills. Comprehensive lesson plans are regularly prepared by faculty to ensure effective teaching.

Independent, interactive, collaborative, and participatory learning is encouraged, with facilities such as SMART classrooms, a Wi-Fi-enabled campus, industrial interactions, projects, and field visits provided to support students.

To further enhance learning, video lectures are recorded using EduTech, NPTEL, EDX, and other MOOCs. Virtual learning platforms like AVIEW and Moodle, developed by IIT, are also available.

VISTAS implements an effective mentor-mentee system to offer regular guidance and counseling to students. Class committee meetings are conducted regularly to address the needs of all types of learners. Remedial and tutorial classes are organized for slow learners to improve their understanding, while fast learners are engaged in NPTEL courses, industrial problems, and projects.

All programs offered by VISTAS have clearly defined Program Outcomes (POs), Program Specific Outcomes (PSOs), and Course Outcomes (COs), which are assessed through direct and indirect methods. VISTAS employs a continuous assessment system that ensures both formative and summative evaluations to measure the attainment of course outcomes.

The core values of VISTAS are aligned with its vision and mission, reflecting the curricular and professional growth of the VISTAS community. With equity as its foremost value and the Women's Forum as its voice, VISTAS promotes gender sensitivity among all stakeholders. Special counseling is provided to girls to help them overcome challenges such as depression and abnormal behavior.

VISTAS has a well-defined environmental policy. The campus is green, serene, and pleasant. Initiatives have been taken to conserve energy and reduce the carbon footprint, including the installation of three windmills and solar-powered street lamps.

The institution adheres to best practices such as maintaining a herbal garden, ensuring a tobacco-free and green campus, implementing a biogas plant, practicing rainwater harvesting, and promoting renewable energy and carbon neutrality. E-waste is responsibly managed by selling it back to contractors for proper disposal. Additionally, a modern waste processing machine has been installed on campus to convert biodegradable waste into manure.

Being located in the heart of the city, VISTAS provides direct and indirect employment opportunities for local unemployed youth. Its strategic location offers excellent connectivity and proximity to industries, which are significant advantages.

The core values and developments mentioned above are displayed on the institute's website. In promoting a cosmopolitan culture, VISTAS also observes national festivals and commemorates the birth and death anniversaries of great Indian personalities.

VISTAS adopts best practices such as Outcome-Based Education, student mentoring, external academic and administrative audits, the implementation of ERP in all activities, the NSS Unit's participation in Swachh Bharat Abhiyan, collecting students' feedback about teachers, MHRD digital initiatives, fostering a research culture, institution-industry interaction, the use of renewable energy, student internships, and the inclusion of a Parent Corner on the website.

The institution maintains a strong industry-institution relationship. Industries actively develop products at the Incubation Centre. Additionally, certain academic programs, such as B.Tech and MBA, are conducted in collaboration with M/s IBM. Experienced professors are involved in solving industrial problems through consultancy projects.

Our vision is to provide quality education. To ensure this, an external academic and administrative audit is conducted in all departments annually.

A center named "Centre for Advanced Research and Development (CARD)" has been established to promote research activities. In addition to 12 advanced, dedicated research labs across various schools, a Central Instrumentation Lab has been set up, equipped with state-of-the-art instruments such as the BET Surface Area Analyzer, Field Emission Scanning Electron Microscope, High-Performance Thin-Layer Chromatography, X-Ray Diffractometer, Particle Size and Zeta Potential Analyzer, Raman Spectrometer, and more. Research scholars from nearby universities also utilize the VISTAS lab for their research work.

Due to a strong industry-institution tie-up, senior faculty members actively work on solving industrial problems through consultancy projects. Ten industries are currently engaged at the Incubation Centre, developing products beneficial to society.

Staff members are provided with incentives to publish research papers and attend seminars. Over the past three years, 1,374 research papers have been published in UGC-listed journals. Turnitin software is available to ensure originality and eliminate plagiarism in research work.

Under the **Unnat Bharat Abhiyan** program, VISTAS has taken significant steps to promote institutional social responsibility through various activities in neighboring rural communities. Generic medicines are made available to society through the **Pradhan Mantri Jan-Aushadhi Yojana Scheme**.

The road map of VISTAS is well-defined. Our vision is to transform VISTAS into an international institute where students from across the globe can gather to enrich themselves with knowledge. We aim to provide world-class physical and academic infrastructure, including advanced laboratory facilities, to create a “reverse flow” of students seeking higher education in India.

By 2030, we aspire to secure research projects worth at least ₹100 crores. There are numerous paths to explore and countless opportunities to embrace. Many achievements await to be added as feathers in the VISTAS cap of success.

Our endeavours are guided by determination: **"to strive, to seek, to find, and not to yield."** The institute is committed to achieving excellence in every activity, with intelligent planning and focused execution to ensure impactful outcomes.

We have achieved a lot, yet we feel there is much more to accomplish. Our journey in higher education continues, and we are steadfast in our pursuit of excellence.

Student Information

| S. No | Description (2024-25) | Male | Female |
|--------------|------------------------------|-------------|---------------|
| 1 | Students | 770 | 40 |
| 2 | Teaching Staff | 36 | 7 |
| 3 | Non-Teaching Staff | 73 | 16 |
| 4 | Total | 879 | 63 |

| S. No | Description (2024-25) | Male | Female | Total |
|--------------|------------------------------|-------------|---------------|--------------|
| 1 | Total UG Students | 639 | 39 | 678 |

Facilities available at Campus

- Canteens
- Waste Management
- Transport facilities
- RO Plant
- Pharmacy
- Diesel Generators
- Girls Hostels
- Boys Hostels
- Throwball Court
- Tennikoit Court
- Swimming Pool (25mtsX14 mts)
- Workshops

Campus Plan



10.0 COLLEGE

EXISTING PANCHAYAT ROAD (30.0 WIDE)

10.0 COLLEGE

Vision, Mission and Core Values

Vision

- To make the Institute an epitome of excellence in higher education by providing high-quality education and rigorous training in multiple streams of choice with ample scope for all-round development for the betterment of society.

Mission

- Effectively **imparting knowledge** and inculcating **innovative thinking**.
- Facilitating **skill enhancement** through add on courses and **hands-on training**.
- Doing original, socially relevant, **high-quality research**.
- Facilitating appropriate **co-curricular, extracurricular and extension activities**.
- Instilling the **spirit of integrity, equity, professional ethics and social harmony**.

Core Values

VISTAS believe that:

- VISTAS students and scholars should be well-founded on the pursuit of knowledge through, teaching and learning research, with fellowships required based on intellectual merit, ability and the potential for excellence.
- Perspectives, arising from diverse knowledge backgrounds, that redefine our identities, deepen scholarly inquiry and enrich path-breaking newer knowledge horizons.
- Cherish the key values of academic freedom, creative and innovative thought, ethical standards and integrity, accountability and social justice, and nurturing an open mind and open society.
- Foster inquiry-led and evidence-based approach to creative knowledge; facilitate a vibrant academic ambience to nurture the intellectual climate.

Management Commitment

The Management of **Vels Institute of Science, Technology & Advanced Studies (VISTAS)** has demonstrated a clear and proactive commitment toward environmental sustainability and green governance during the Green Audit interaction. Senior leadership actively participated in the audit discussions and expressed strong support for institutionalizing environmentally responsible practices across academic, administrative, and infrastructural functions of the University.

The Management affirmed its readiness to provide strategic direction, policy-level support, and necessary resources to promote and strengthen eco-friendly initiatives on campus. Based on the outcomes of the Green Audit, the University has resolved to further enhance sustainability-focused activities, including the organization of environmental awareness and sensitization programs, promotion of campus-based farming and gardening initiatives, and expansion of green cover through systematic tree plantation drives.

Furthermore, the Management has shown a positive intent to review, update, and formulate institutional environmental policies in line with the observations, findings, and recommendations of the Green Audit report. This includes integrating sustainability considerations into planning, operations, and decision-making processes, thereby ensuring continual improvement in environmental performance.

The commitment demonstrated by the Management reflects alignment with the principles of environmental stewardship, regulatory compliance, and continual improvement.

Scope and Goals of Green Audit

A clean, safe, and healthy environment is fundamental to effective teaching–learning processes and the overall well-being of academic communities. Globally, higher educational institutions are increasingly recognizing their responsibility in addressing environmental challenges through structured environmental education and sustainable campus management practices. In this context, a **Green Audit** serves as a systematic and strategic tool for evaluating and improving environmental performance.

Green auditing is a professional and ethical responsibility that integrates **environmental, economic, financial, and social considerations** into institutional decision-making. It enables universities to assess their current environmental practices, identify areas of concern, and adopt sustainable measures that minimize ecological footprints while optimizing resource efficiency.

Scope of the Green Audit

The scope of the Green Audit encompasses a comprehensive assessment of the university campus, including but not limited to:

- **Energy management** (electricity consumption, renewable energy initiatives, efficiency measures)
- **Water management** (sources, consumption patterns, conservation and harvesting practices)
- **Waste management** (solid, liquid, hazardous, and e-waste handling)
- **Green cover and biodiversity** (tree cover, landscaping, native species conservation)
- **Air, noise, and soil quality** within campus premises
- **Sustainable practices** in laboratories, hostels, canteens, offices, and common facilities
- **Environmental awareness and participation** among students, faculty, and staff
- **Compliance** with applicable environmental regulations and statutory requirements

The audit also evaluates institutional policies, operational controls, and documentation related to environmental management.

Goals and Objectives of the Green Audit

The primary goals of conducting a Green Audit at the university level are to:

1. Assess Environmental Performance

To systematically evaluate the institution's environmental practices and resource utilization across academic and administrative operations.

2. Identify Gaps and Risks

To identify areas of environmental risk, inefficiencies, non-compliance, and opportunities for improvement.

3. Promote Sustainable Resource Management

To encourage optimal use of energy, water, and materials, thereby reducing waste generation and environmental impact.

4. Enhance Environmental Awareness

To sensitize students, faculty, and staff about environmental issues and promote eco-friendly behavior and responsible citizenship.

5. Support Regulatory and Accreditation Requirements

To align institutional practices with **NAAC quality indicators, ISO 14001 Environmental Management Systems, and Sustainability Guidelines.**

6. Encourage Continuous Improvement

To establish a baseline for future monitoring and enable continuous improvement through measurable targets and action plans.

7. Foster a Culture of Environmental Responsibility

To instill environmental ethics among students, empowering them to contribute positively to national and global sustainability goals.

Benefits of Green Audit

A Green Audit is a structured and systematic mechanism that enables higher education institutions to evaluate, manage, and enhance their environmental performance. The key benefits of conducting a Green Audit are outlined below:

1. Efficient Resource Management

Facilitates optimal utilization of natural resources such as energy, water, and Greenery by identifying inefficiencies and promoting conservation practices across the campus.

2. Foundation for Enhanced Sustainability

Provides a robust baseline for planning, implementing, and monitoring sustainability initiatives, thereby supporting long-term environmental stewardship and institutional resilience.

3. Development of a Green Campus

Supports the transformation of the campus into an environmentally responsible and eco-friendly space through green infrastructure, biodiversity conservation, and sustainable landscaping.

4. Improved Waste Management Systems

Enables effective waste management by promoting reduction at source, segregation, recycling of solid waste, composting of organic waste, and reuse of treated wastewater.

5. Promotion of Plastic-Free and Health-Conscious Campus

Encourages elimination of single-use plastics and fosters health-conscious behaviors among students, staff, and other stakeholders through awareness and policy interventions.

6. Identification of Cost-Saving Opportunities

Recognizes potential financial savings through waste minimization, energy efficiency improvements, water conservation, and optimized procurement practices.

7. Identification of Environmental Risks and Challenges

Helps identify existing and emerging environmental issues, risks, and impacts, enabling proactive mitigation and adaptation strategies.

8. Regulatory and Legal Compliance

Ensures adherence to applicable environmental laws, regulations, and statutory requirements, thereby reducing the risk of non-compliance and associated penalties.

9. Enhanced Environmental Performance

Empowers the institution to continually improve its environmental performance through measurable targets, performance indicators, and corrective actions.

10. Increased Awareness and Accountability

Enhances awareness among stakeholders regarding environmental responsibilities, guidelines, and best practices, fostering a culture of shared accountability.

11. Strengthening Environmental Education

Promotes environmental education and research through a systematic environmental management approach, contributing to improved academic and operational environmental standards.

12. Benchmarking of Environmental Initiatives

Enables benchmarking of environmental protection and sustainability initiatives against best practices, peer institutions, and national/international standards.

13. Financial Savings through Resource Efficiency

Achieves long-term financial benefits by reducing consumption of energy, water, and materials, thereby lowering operational costs.

14. Institutional Ownership and Social Responsibility

Develops a strong sense of ownership, civic responsibility, and environmental citizenship among students, faculty, and staff.

15. Enhanced Institutional Image and Reputation

Strengthens the university's public image and credibility as an environmentally responsible institution, supporting rankings, accreditations, and stakeholder trust.

16. Cultivation of Environmental Ethics and Values

Instills environmental ethics, values, and sustainable lifestyles among students, contributing to responsible future leaders and professionals.

17. Effective Monitoring of Sustainability Programs

Serves as a valuable management tool for continuous monitoring, review, and improvement of environmental and sustainable development programs across the university.

Target Areas of Green Auditing

Green auditing is a critical and systematic component of the overall resource management and sustainability governance framework of an educational institution. While individual green initiatives and assessments provide limited insights, the **true value of a green audit lies in its periodic and structured execution**, enabling institutions to monitor performance trends, identify gaps, and demonstrate continual environmental improvement over time.

The concept of an **eco-campus** is rooted in the principles of sustainable development and responsible resource utilization. It emphasizes the **efficient use of natural resources**, reduction of environmental footprints, and integration of environmental responsibility into institutional planning and operations. Green auditing serves as a comprehensive evaluation mechanism to assess these objectives in a measurable and verifiable manner.

Through green auditing, educational institutions systematically assess key environmental indicators, including:

- Energy efficiency and conservation practices
- Water usage, conservation, and management systems
- Waste generation, segregation, recycling, and disposal practices
- Pollution prevention and control measures
- Campus biodiversity and environmental stewardship initiatives.

An eco-campus strives to:

- Reduce greenhouse gas emissions and overall environmental impact
- Ensure a reliable, cost-effective, and sustainable energy supply
- Promote energy and water conservation through technology and behavioral change
- Minimize waste generation and reduce waste sent to landfills
- Encourage individual and collective environmental responsibility among students, staff, and stakeholders
- Integrate environmental considerations into procurement, contracts, services, and infrastructure development that may have significant environmental impacts

Green auditing evaluates the effectiveness of these initiatives by examining policies, operational controls, infrastructure, awareness programs, and compliance with applicable environmental regulations and best practices.

Core Target Areas of Green Auditing

The primary target areas assessed under a comprehensive green audit framework include:

1. Water Management

Assessment of water sourcing, consumption patterns, conservation measures, rainwater harvesting, wastewater treatment, and reuse practices.

2. Energy Management

Evaluation of energy consumption, renewable energy integration, energy-efficient equipment, lighting systems, and energy conservation initiatives.

3. Waste Management

Analysis of solid, liquid, hazardous, and e-waste handling, segregation practices, recycling mechanisms, and waste minimization strategies.

4. Environmental and Ecosystem Management

Review of green cover, biodiversity conservation, pollution control measures, campus landscaping, and initiatives promoting environmental awareness and sustainability.

Through systematic evaluation of these target areas, green auditing supports institutions in achieving regulatory compliance, improving environmental performance, enhancing resource efficiency, and demonstrating commitment to sustainability and environmental responsibility.

Methodology of Green Auditing

The Green Audit was conducted with the objective of evaluating whether the environmental practices and operational controls implemented on the university campus are aligned with the institution's approved Green Policy and sustainability commitments. The audit framework, criteria, tools, and recommendations were developed based on identified environmental aspects, associated risks, and opportunities for improvement.

The audit methodology adopted a **systematic, evidence-based approach**, combining qualitative and quantitative techniques. It involved the preparation and administration of structured questionnaires, physical inspection of the campus, review of relevant documents and records, interactions with responsible stakeholders, and analysis of collected data. Measurements, observations, and verifications were carried out to ensure the accuracy and reliability of findings. Based on the assessment outcomes, practical and implementable recommendations were proposed.

The Green Audit was executed through a **three-step process**, as detailed below:

1. Data Collection

The preliminary phase focused on the comprehensive collection of environmental data using multiple sources and methods to ensure adequate coverage and representation of campus activities.

The following approaches were adopted for data collection:

- Physical site visits to various functional areas of the campus
- Direct observation of facilities, infrastructure, and operational practices
- Collection of general information through structured interviews with faculty members, administrative staff, maintenance personnel, and other responsible individuals
- Circulation of questionnaires among students to capture awareness levels and participation in sustainability practices
- Review of utility records, operational logs, and maintenance documents

- Recording of power consumption data for selected appliances and systems by considering average operating values where direct measurements were not feasible

This phase ensured the collection of primary and secondary data related to energy use, water consumption, waste generation, and environmental management practices.

2. Data Analysis

The data collected during the assessment phase was systematically analyzed to evaluate the environmental performance of the campus. The analysis included:

- Calculation and interpretation of total and area-wise energy consumption
- Review and verification of recent electricity bills to assess consumption trends
- Assessment of water usage patterns and conservation practices
- Evaluation of solid and liquid waste generation, segregation, handling, and disposal mechanisms
- Review of greenery, landscaping practices, and biodiversity initiatives

The analysis enabled identification of gaps, inefficiencies, and potential areas for resource optimization and environmental impact reduction.

3. Recommendations

Based on the outcomes of data analysis, physical observations, and stakeholder interactions, targeted recommendations were proposed. These recommendations focus on:

- Reducing energy consumption through efficiency improvement and responsible usage practices
- Optimizing water consumption and strengthening conservation measures
- Enhancing waste segregation, treatment, recycling, and disposal practices
- Minimizing the use of fossil fuels and promoting cleaner and sustainable alternatives to protect environmental quality and community health

The recommendations are designed to be practical, scalable, and aligned with institutional objectives for environmental sustainability and continual improvement.

Target Areas Covered

For effective evaluation, target areas specific to the university were assessed using structured questionnaires and on-site verification. The following key focus areas were covered during the Green Audit:

- 1. Environment & Waste Management**
- 2. Energy Management**
- 3. Water Management**
- 4. Greenery Management**

Auditing for Green Campus Management – Biodiversity and Tree Cover

Biodiversity across the globe is under significant threat due to habitat degradation, environmental pollution, excessive consumption of natural resources, and the spread of invasive species. The rapid decline in species diversity disrupts ecological balance and weakens essential ecosystem functions, ultimately affecting environmental stability and human well-being. The preservation and enhancement of biodiversity within institutional campuses therefore play a critical role in promoting ecological resilience and sustainable development.

Green campus initiatives emphasize the protection, enhancement, and sustainable management of natural resources. Trees and green cover constitute a vital component of campus biodiversity, contributing directly to climate regulation, air quality improvement, carbon sequestration, and ecosystem health. Both newly planted and existing trees actively reduce atmospheric carbon dioxide levels and release oxygen, thereby mitigating the effects of climate change.

Scientific studies indicate that a single mature tree can absorb approximately 48 pounds of carbon dioxide annually and release oxygen sufficient to meet the daily requirement of one individual. Through this natural process, trees significantly improve ambient air quality, particularly in urban and semi-urban institutional settings. As students, faculty, and staff engage in academic and professional activities, the campus green cover continuously supports a healthier and cleaner environment.

Beyond environmental benefits, campus trees and green spaces contribute positively to mental health and psychological well-being. Research has consistently demonstrated that exposure to green environments reduces stress, anxiety, and mental fatigue. This benefit is especially relevant in academic institutions, where students often experience academic pressure and stress. The presence of trees and landscaped areas supports a calm and conducive learning atmosphere.

As part of its commitment to environmental sustainability and biodiversity conservation, the campus has undertaken systematic plantation and greening initiatives. Along with a diverse range of **medicinal plants**, have been planted and are maintained across the campus. These initiatives demonstrate institutional responsibility toward ecological conservation, carbon footprint reduction, and the creation of a sustainable and health-oriented campus environment.

| Greenery – Trees | | |
|-------------------------|--------------------------|----------------|
| S. No | Type with Numbers | Numbers |
| 1 | Mango Tree | 10 |
| 2 | Forest Tree | 13 |
| 3 | Matchwood Tree | 26 |
| 4 | Banyan Tree | 10 |
| 5 | Indian Almond Tree | 8 |
| 6 | Custard Apple Tree | 1 |
| 7 | Neem Tree | 16 |
| 8 | Cluster Fig free | 2 |
| 9 | Drumstick Tree | 2 |
| 10 | Small Amla Tree | 1 |
| 11 | Java Plum Tree | 8 |
| 12 | Honey Flower Tree | 26 |
| 13 | Indian Beech Tree | 1 |
| 14 | Bael Tree | 2 |
| 15 | Coconut Tree | 18 |
| 16 | Pine Tree | 1 |
| 17 | Spanish Cherry Tree | 4 |
| 18 | Indian Butter Tree | 6 |
| 19 | Banana Tree | 22 |
| 20 | Peepal Tree | 2 |
| 21 | Teak tree | 20 |
| 22 | Guava Tree | 2 |

List of Medicinal Plants

| Greenery - Medicinal Plants | | | | |
|-----------------------------|------------------|--------------------|-------------|---------|
| S. No | Common Name | Botanical Name | Tamil Name | Numbers |
| 1 | Betel | Piper betle | வெற்றிலை | 10 |
| 2 | Gale of the wind | Phyllanthus niruri | கீழாநெல்லி | 100 |
| 3 | Holy Basil | Ocimum tenuiflorum | துளசி | 20 |
| 4 | Star Gooseberry | Phyllanthus acidus | அருநெல்லி | 1 |
| 5 | Mexican mint | Coleus aromaticus | கற்பூரவல்லி | 20 |







Participation of Teams

At **VISTAS**, the Green Audit was conducted with the professional support of **Pragna Shree Venture India Pvt. Ltd.**, with active participation from student volunteers, teaching faculty, and non-teaching staff. This inclusive, cross-functional approach ensured comprehensive coverage of campus operations and strengthened data reliability.

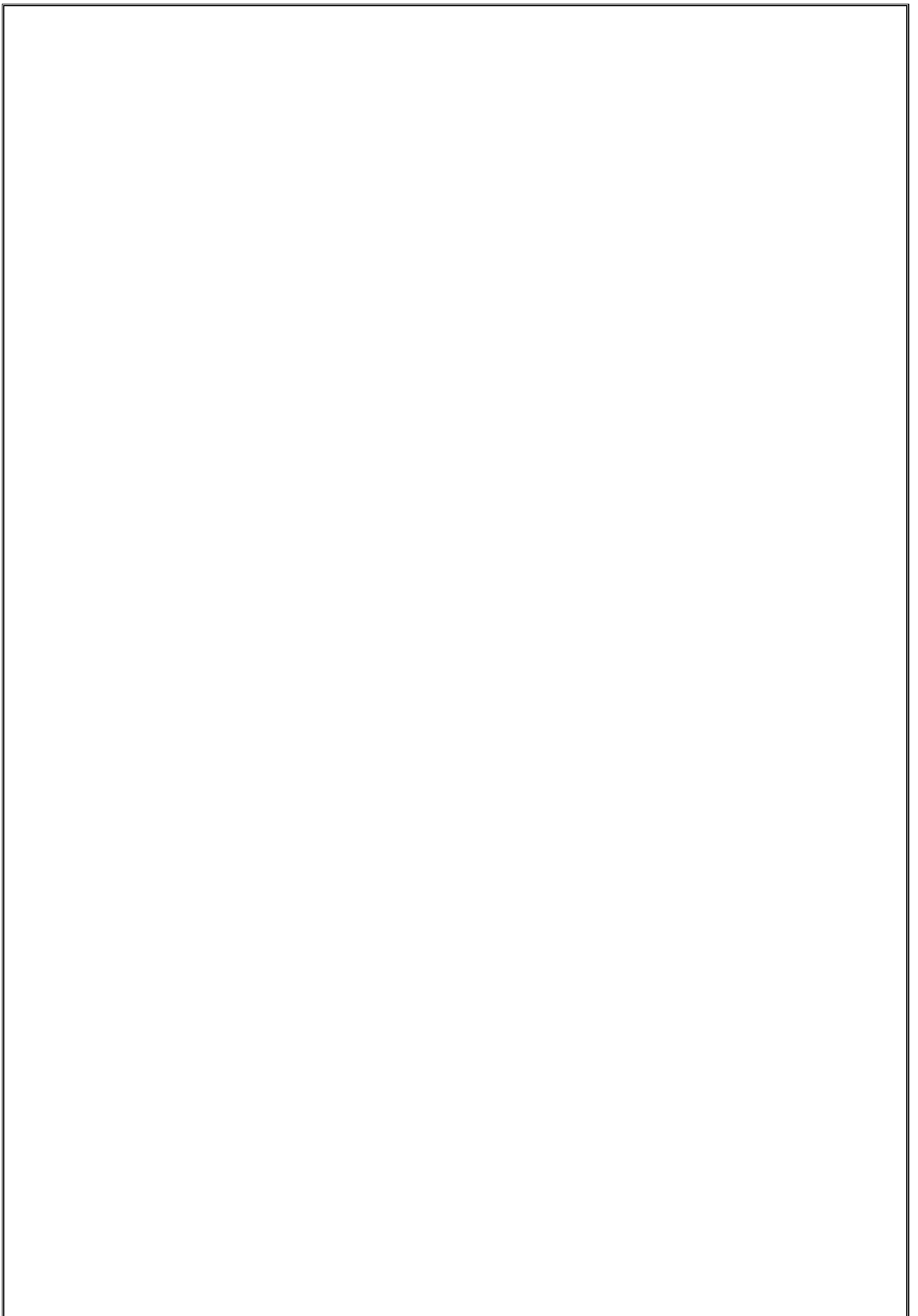
The audit commenced with structured walkthrough surveys across all academic, administrative, residential, and utility areas of the campus. Multidisciplinary teams systematically identified appliances and utilities—such as lighting fixtures, water taps, toilets, refrigerators, air-conditioning units, and other electrical equipment. Usage data were captured through direct observations and measurements, including rated power (watts) from appliance nameplates and water discharge volumes from taps, along with assessment of operating hours and frequency of use to establish consumption patterns and associated environmental impacts.

To supplement observational data, structured interviews and informal interactions were conducted with staff and students to understand actual usage behavior, operational practices, and maintenance characteristics of equipment and utilities. Primary data collection covered key sustainability domains, including energy consumption, water use, waste management, campus greening initiatives, and carbon footprint assessment.

In addition, relevant institutional records—such as utility bills, maintenance logs, procurement records, and previous audit reports—were reviewed and cross-verified multiple times. This triangulation of survey findings, stakeholder inputs, and documentary evidence enhanced data accuracy, ensured consistency, and supported a robust evaluation of the campus's environmental performance.

Anti- Discrimination Cell

| S. No | Name | Designation |
|-----------------|------------------------|--|
| Chairman | | |
| 1 | Dr Arvind Kishor T S | HOD / Naval Architecture and Offshore Engineering |
| Members | | |
| 2 | Mr S. Jawahar | Lecturer, School of Maritime Studies |
| 3 | Mr K Velmurugan | Lecturer, School of Maritime Studies |
| 4 | Dr K Chandrasekaran | Assistant Professor, School of Physiotherapy, Thalambur |
| 5 | Dr A. Sivasankarai, PT | Assistant Professor, School of Physiotherapy, Thalambur |



Anti-Ragging Committee

| S. No | Name | Designation |
|--|---|--|
| Chairman | | |
| 1 | Dr. M. Chandrasekaran Ph: 9962506245 Email: registrar@vistas.ac.in | Registrar, VISTAS |
| Civil & Police Administration | | |
| 2 | Mr. Dillibabu Ph: 7010339158 | Inspector, Law & Order, Thalambur Police Station, Chennai |
| Local Media | | |
| 3 | Mr. Sheldon Mark Jarrett Ph : 044 - 4002 5101 Email: jarrett.sylvester@gmail.com | Media Artist Sterio Scopic Division L.V.Prasad Studio Saligramam, Chennai – 600 093. |
| NGO'S | | |
| 4 | Mr Rangarajan A L Ph: 9444971268 Email: alrangarajan@ilpnet.org | Country Manager India Literacy Project Website: www.ilpnet.org |
| Members | | |
| 5 | Dr. Capt. N. Kumar | Director, School of Maritime Studies |
| 6 | Dr P Senthilselvam | Prof & Head, School of Physiotherapy, Thalambur |
| 7 | Mr C R Jude Ilango | Course Coordinator BE Marine Engineering |
| 8 | Dr Arvind Kishor T S | HOD / Naval Architecture and Offshore Engineering |
| 9 | Dr. Sandhiya M | Assistant Professor, |

| S. No | Name | Designation |
|---------------------------|--|---|
| | | School of Physiotherapy, Thalambur |
| 10 | Mr R Rajapriyan | Lecturer, School of Maritime Studies NODAL OFFICER |
| Parents | | |
| 11 | Mrs. S. Deepalakshmi Ph: 9840672973 | M/o. S. Shamukdan BSc Nautical Science - Ist Year |
| 12 | Mr. Selvam Ph: 8610620567 | Vasanth S, BPT Final Year |
| Senior Students | | |
| 13 | Mr. R Vignesh | MPT - Ist Year |
| 14 | Mr. Jagan Nambiar V | B.E. Marine Engineering - III Year |
| Junior Students | | |
| 15 | Ms. K J Aziza Fathima | BPT - I Year |
| 16 | Mr. Nikam Sameer Vishal | BSc Nautical Science - I Year |
| Non-Teaching Staff | | |
| 17 | Mr S Soundararajan | Senior Executive Admin School of Maritime Studies |
| 18 | Mrs. Malar Selvi. K | Office Assistant, School of Physiotherapy, Thalambur |
| Ant- Ragging Squad | | |
| 19 | Capt. Vivek Atheresh | Nautical Officer Nautical Science |
| 20 | Mr. Magesh Shanmugam | Senior Marine Faculty Marine Engineering |

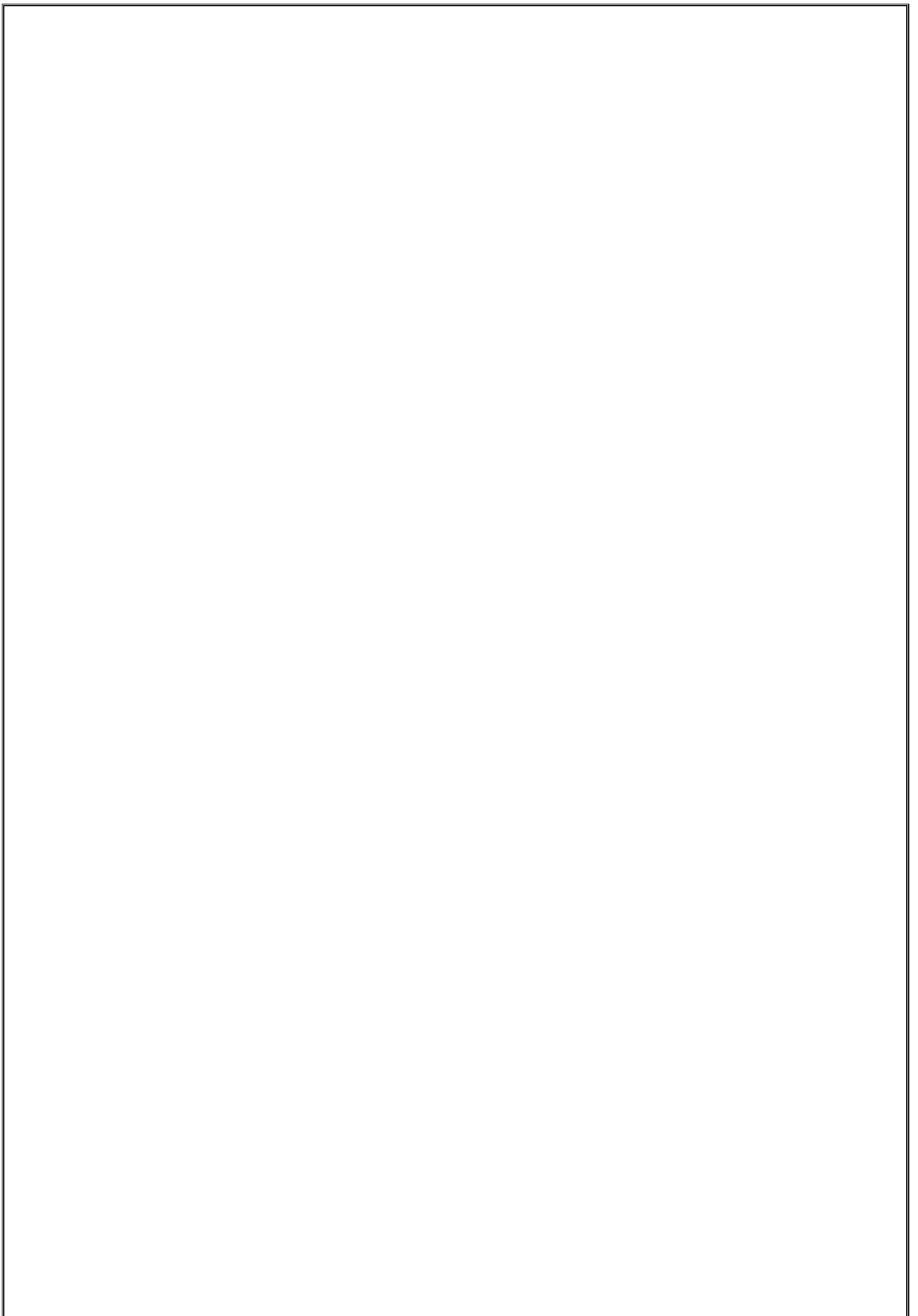
| S. No | Name | Designation |
|--------------|--------------------------------|---|
| 21 | Mr. P. Ragunath | Lecturer, School of Maritime Studies |
| 22 | Mr J Jeyasudha | Lecturer, School of Maritime Studies |
| 23 | Mrs C V Iraiyrasi | Lecturer, School of Maritime Studies |
| 24 | Dr. E Logesh, PT | Assistant Professor, School of Physiotherapy, Thalambur |
| 25 | Dr. U V Mahishree Bharathy, PT | Assistant Professor, School of Physiotherapy, Thalambur |

Disciplinary Committee

| S No | Name | Designation |
|-----------------|------------------------|--|
| Chairman | | |
| 1 | Capt Kumar Krishnasamy | Nautical Officer, School of Maritime Studies, Thalambur |
| Members | | |
| 2 | Dr. P Senthil Selvam | Prof. & Head, School of Physiotherapy |
| 3 | Mr. C R Jude Ilango | Course Coordinator BE Marine Engineering |
| 4 | Dr. Arvind Kishor T S | HOD / Naval Architecture and Offshore Engineering |
| 5 | Mr. R Rajapriyan | Lecturer, School of Maritime Studies |
| 6 | Dr. V K Jayaseelan | Assistant Professor, School of Physiotherapy, Thalambur |
| 7 | Mr. P Devarajan | Duty Officer, School of Maritime Studies |

Equal Opportunity Cell

| S. No | Name | Designation |
|-----------------|---------------------------|---|
| Chairman | | |
| 1 | Mr. Magesh Shanmugam | Senior Marine Faculty, School of Maritime Studies, Thalambur |
| Members | | |
| 2 | Capt. V. Gopinath | Nautical Officer, School of Maritime Studies, Thalambur |
| 3 | Dr. M. Sandhiya | Assistant Professor, School of Physiotherapy, Thalambur |
| 4 | Mr. A Britto | Lecturer, School of Maritime Studies |
| 5 | Dr. A V A Ajith Kumar, PT | Assistant Professor, School of Physiotherapy, Thalambur |
| 6 | Mr. K. Manikandan | Placement Officer School of Maritime Studies |
| 7 | Mr. Darwin Sibi K | BTech Naval Architecture - II Year |
| 8 | Ms. Siva Yoga Lakshmi A | BPT - II year |



Gender Sensitization Cell

| S. No | Name | Designation |
|-----------------|--|--|
| Chairman | | |
| 1 | Dr. Sandhiya M | Assistant Professor, School of Physiotherapy, Thalambur |
| Members | | |
| 2 | Mr. Shankaranarayanan K | Lecturer, School of Maritime Studies |
| 3 | Dr. U. V. Mahishree Bharathy, PT | Assistant Professor, School of Physiotherapy, Thalambur |
| 4 | Dr. R. Prabu | Lecturer, School of Maritime Studies |
| 5 | Mrs R. Gayathiri | Executive Admin, School of Maritime Studies |
| 6 | NGO Ms. M. Sophia Ph: 7401111432 | RIF, Women's Self Help Group, Velachery, Chennai |
| 7 | Ms. Swathika T | BSc Nautical Science - II Year |
| 8 | Ms. Devamirtha K B | BE Marine Engineering - II Year |
| 9 | Mr Ronald Leo raj | BTech Naval Arch - I Year |
| 10 | Mrs Priya Accal Thomas | Research Scholar - (Women) Physiotherapy, Thalambur |

Institutional Grievance Redressal Committee

| S. No | Name | Designation |
|-----------------|-----------------------|--|
| Chairman | | |
| 1 | Dr. Capt. N. Kumar | Director, School of Maritime Studies |
| Members | | |
| 2 | Dr. P. Senthil Selvam | Prof & Head, School of Physiotherapy, Thalambur |
| 3 | Mr. C. R. Jude Ilango | Course Coordinator BE Marine Engineering |
| 4 | Dr. Arvind Kishor T S | HOD / Naval Architecture and Offshore Engineering |
| 5 | Dr. V. K. Jayaseelan | Assistant Professor, School of Physiotherapy, Thalambur |

Internal Complaint Committee (ICC)

| Sl. No | Name | Designation |
|-----------------|--|--|
| Chairman | | |
| 1 | Dr. P Senthil Selvam | Prof & Head School of Physiotherapy |
| Members | | |
| 2 | Dr. V K Jayaseelan | Assistant Professor, School of Physiotherapy, Thalambur |
| 3 | Dr. T. Priyanka, PT | Assistant Professor, School of Physiotherapy, Thalambur |
| 4 | Mrs. Karunya F | Lecturer, School of Maritime Studies |
| 4 | Mr. S Soundararajan | Senior Admin Executive, School of Maritime Studies |
| 5 | Mrs. I Jayalakshmi | Accountant, School of Maritime Studies |
| 6 | NGO Mr. Nagarajan Jayachandra Ph:9884050810 E-Mail: nagarajan.jobsdb@gmail.com | Head PR Ooruni Foundation, Level 2, Setraa Towers, No. 304, GST Road, Chrompet, Chennai, India 600044. |
| 7 | Mr. Karvinkar Firas Firoz | B.Sc. Nautical Science - II Year |
| 8 | Mr. Snehashis Mitra | B.E. Marine Engineering - III Year |
| 9 | Mr. Udhayan J | Research Scholar - Maritime Studies, Thalambur |
| 10 | Ms. Remya M Nair | Research Scholar - Physiotherapy, Thalambur |

SC/ST/OBC Grievance Committee

| Sl No | Name | Designation |
|-----------------|-------------------------|--|
| Chairman | | |
| 1 | Mr C. R. Jude Ilango | Course Coordinator BE Marine Engineering |
| Members | | |
| 2 | Dr. V K Jayaseelan | Assistant Professor, School of Physiotherapy, Thalambur |
| 3 | Mr J Jahan | Lecturer, School of Maritime Studies |
| 4 | Dr. T. Priyanka, PT | Assistant Professor, School of Physiotherapy, Thalambur |
| 5 | Mr L Ranjith Kumar | Lecturer, School of Maritime Studies |
| 6 | Mr S Amirtharaj | Lecturer, School of Maritime Studies |
| 7 | Mr S Ranjith | Executive Admin School of Maritime Studies |
| 8 | Ms. Aarthi V | BPT - III Year |
| 9 | Mr. Adhil Mubarak P A P | BSc Nautical Science - II Year |
| 10 | Ms Sukritha M G | BE Marine Engineering - III Year |

Student Grievance Redressal Committee

| S. No | Name | Designation |
|------------------------|--|---|
| Chairman | | |
| 1 | Dr A Subramanian Ph: 9841229552 dean.studentaffairs@vistas.ac.in | Prof & Dean Student Affairs |
| Members | | |
| 2 | Dr. Capt. N. Kumar | Director, School of Maritime Studies |
| 3 | Dr P Senthil Selvam | Prof & Head, School of Physiotherapy, Thalambur |
| 4 | Capt Kumar Krishnasamy | Nautical Officer, School of Maritime Studies |
| 5 | Mr R Rajapriyan | Lecturer, School of Maritime Studies |
| Special Invitee | | |
| 6 | Mr Arun Kumar | Alumni Member, Physiotherapist |
| Ombudsman | | |
| 7 | Capt I Keshavamurthy | Retd Prof. Master Mariner [FG] |

Disclaimer

The following disclaimer applies to the Green Audit process and the associated observations, findings, recommendations, and reports prepared as part of this assessment:

Scope of the Green Audit

The Green Audit is conducted based on the defined scope covering selected environmental aspects, facilities, activities, and practices of the organization. It is not intended to be an exhaustive or comprehensive assessment of all environmental impacts, statutory obligations, or sustainability risks that may exist. The audit represents a snapshot of environmental performance and practices observed at the time of assessment and should not be construed as a complete evaluation of all environmental conditions.

Limitations of the Audit

The audit methodology includes site inspections, document reviews, data analysis, and interactions with designated personnel using information available at the time of the audit. Findings and recommendations are based on observed conditions, records provided, and responses received during the audit process. The audit does not involve detailed laboratory testing, environmental sampling, or forensic verification unless explicitly stated, and may not reflect changes, corrective actions, or improvements implemented after the audit date.

No Assurance of Absolute Environmental Performance

While the Green Audit aims to identify key environmental aspects, impacts, gaps, and opportunities for improvement, it cannot guarantee the elimination of all environmental risks or impacts. The implementation and effectiveness of recommended corrective and preventive actions depend on organizational commitment, resource allocation, and operational controls, and therefore cannot be assured by the audit alone.

Compliance and Advisory Nature of Recommendations

The audit evaluates environmental practices with reference to applicable regulations, guidelines, and recognized sustainability frameworks in force at the time of the audit. Recommendations are advisory in nature and are based on professional judgment, best practices, and observed gaps. Regulatory compliance remains the sole responsibility of the

organization, and it is recommended that the organization regularly review applicable legal and statutory requirements to ensure ongoing compliance.

Professional Judgment and Subjectivity

Certain audit conclusions may involve professional interpretation and judgment, particularly in areas such as environmental management practices, awareness levels, behavioral aspects, and sustainability initiatives. These conclusions are derived from the auditor's expertise and the information available during the audit and may therefore involve a degree of subjectivity.

Responsibility for Implementation

The recommendations provided in this report are intended to support environmental improvement and sustainable development. They are not mandatory directives and should be evaluated, prioritized, and implemented by the organization based on its objectives, risks, feasibility, and available resources. The responsibility for decision-making and implementation rests solely with the organization.

Limitation of Liability

The audit team and associated parties shall not be held liable for any direct or indirect environmental, financial, legal, or operational consequences arising from the audit findings or recommendations. The Green Audit is an advisory exercise aimed at facilitating environmental awareness and improvement, and ultimate accountability for environmental performance lies with the organization's management.

Continuous Improvement Perspective

The Green Audit should be considered part of an ongoing process of environmental management and continuous improvement. It is not a one-time certification or guarantee of sustainability performance and should be supplemented with periodic reviews, monitoring, and follow-up audits to ensure sustained environmental compliance and improvement.